Presidential Elections and Stock Market: A Comparative Study

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Abstract Purpose- This paper is an event study that aims to find empirical evidence on the significance of the impact of presidential election outcome announcements on stock market return volatility in emerging markets versus developed markets; an application on the Egyptian and the US markets. **Design/Methodology/ Approach-** A mixed methods approach, combining qualitative data to guide sample selection and quantitative analysis to predominately conduct the empirical test was employed. The study used the mean-adjusted return model on secondary data collected for the EGX100 and S&P500 indices, for a single comparable election from each country. **Findings-** The empirical results show that presidential elections have no significant impact on stock market volatility in both markets, although the data suggests an increase in abnormal returns and a volatility decrease after each relevant election announcements. It is concluded that both markets efficiently absorb the news and reflect it into stock prices, as no statistically significant shifts in volatility can be detected. **Originality/ Value-** This study is unique as no existing studies addressed the issue of comparing different markets' behaviour to presidential outcome announcements, and whether markets at different economic development stages may present similar efficiency in reacting to presidential elections. This can provide insight on emerging market behaviour, compared to developed markets, contributing to the comprehension of investors, academics and policymakers.

Keywords: event study, presidential elections, stock market volatility, market efficiency

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1. Introduction

A country's stock market is a vital feature of its financial system, and a catalyst of economic growth [1]. Thus, it has been of prominence for a body of literature to develop around factors affecting the stability and growth of stock markets, for economists, investors and policymakers. Stock market volatility is a function of the perceived uncertainty associated with a market's returns. The contemporary literature on stock market volatility moves towards studying the impact of diverse variables on investor confidence and the subsequent impact on price fluctuations. Among the various factors studied, political instability embedded in wars, revolts and leadership changes has been of recent interest. The political dynamics of a country cannot be separated from its economic conditions, where investors execute their relevant investment decisions. Uncertainty regarding presidential elections results embodies a highly influential factor on policymaking which affects the investment environment, thus influencing stock market movements [2]. Accordingly, markets reactions are relative to the nature of a political event, where returns increase, and volatility decreases for favourable events, as perceived by investors, and vice versa [3].

The dissemination of new information, and its reflection into security prices has been of interest to the financial press and scholars for decades, where extraordinary price movements are explained by the efficient market hypothesis (EMH) [4]. This hypothesis implies that stock prices properly reflect all publicly available information disseminated to investors, thus markets adjust rapidly to newly disseminated information [5]. Accordingly, deviations of actual returns from excepted returns is assumed to be random, and abnormal price movements can be explained by EMH [5]. Markets are classified according to efficiency forms: weak, semi-strong, and strong forms, relative to their information availability [5]. Weak-form efficiency asserts that all historical information is already reflected into prices. This form implies that it is worthless to conduct trend analysis where historical stock information is widely available, as it becomes impossible to earn excess returns in the market. Semi-strong form efficiency implies that prices reflect all public information regarding a firm's prospects and financial condition. Moreover, the strong-form efficiency states that public and private information are embedded within a stock's price, which is impractical [4]. Thus, a given event should have no significant impact on returns. This is the fundamental basis of event studies investigating the impact of an event on stock return volatility. The EMH is widely tested through conducting

event studies, where it is tested if markets fully reflect newly published information regarding any information announcements.

Another school of thought, behavioural finance, addresses investor expectations of future variables, as earnings and dividends. This affects decisions to buy or sell securities that cause prices to fluctuate, by altering supply and demand [6]. The interplay of macroeconomic factors and behaviour components leads to the relationship between presidential elections and stock market volatility. The literature addressing the relationship of political news and market returns, remains mixed, however emerging markets reveal more vulnerability to local information and events [7].

Presidential elections have significant informational value, as governments shape the investment environment, through tax reforms, subsidies, foreign and local policies, and regulatory controls [8]. Uncertainty regarding elections is more substantial to emerging markets, where stability of the political regime is a major determinant for investment decisions [2].

While several markets were analysed to identify the impact of elections on stock market volatility, no existing studies addressed the issue of comparing different markets' behaviour to presidential outcome announcements, and whether markets at different economic development stages may present similar efficiency in reacting to presidential elections. This is of value to investors, domestic and foreign, who engage in international diversification, as the contemporary investment trends direct towards emerging economy investments [2]. Findings can provide insight on emerging market behaviour, compared to developed markets, contributing to the comprehension of investors, academics, and policymakers on market behaviour during periods of political uncertainty.

The purpose of this research moves along the strand of literature studying presidential elections' impact on stock market volatility and contributes to the existing literature and public debate. However, this paper takes a converged approach, it aims to provide a comparative study between a developed market (USA), and an emerging market (Egypt). A single presidential election, with comparable conditions, from each market as well as representative stock market indices to reflect the market reaction were selected for the study, guided by the insights of market experts. Changes in abnormal returns and their volatility were examined and compared over five different event windows, and the significance of each event's impact on market returns. In this context, it is presumed that election results are unknown, and that new information would be revealed, and incorporated into stock prices. Thus, market efficiency would be tested, for markets with different characteristics.

The remaining of this paper is organised as follows: Section 2 reviews the most prominent pieces of literature and discusses relevant arguments and highlights gaps in the literature. Section 3 follows with the methodological techniques used to conduct the appropriate empirical test and arrive at a statistical inference about the results. Section 4 presents results and analysis of findings. Lastly, Section 5 puts forward the study's main contributions to the literature.

Literature Review Politics have recently been at the forefront of scholarly debate, it has been identified that political events present a significant input to investor perception of risk, where political uncertainty emphasizes greater risk premiums. Pastor and Veronesi [8] identify three types of shocks influencing stock prices: capital shocks, impact shocks, and political shocks. The first two shocks reflect economic phenomena, while political shocks occur due to information about potential policy changes. Accordingly, the flow of political news affects expectations about the government's influence on markets.

Presidential elections are a periodic attribute of democracy, where an electoral system governs the process of collecting votes to a presidential position [9]. The impact of presidential elections has been of recent interest, where the theory of The Political Business Cycle (PBC) further supports the association between politics and macroeconomic variables. The PBC proposes that economic policies are pursued by government officials to amplify voter support [10], As indicated by Bin [11], this could substantially affect corporate investment strategies and asset market pricing.

Furthermore, for countries with presidential systems that have governmental and state power nested with the presidential position, the presidential elections are highly influential for the political and investment environment. Uncertainty of election results along with the appreciation of the current government can accordingly influence stock market movements [2].

Stock markets react relative to the nature of a political event, where returns increase, and volatility is reduced if events are favourable to investors. While in cases where events or news are unfavourable to investors, returns are negatively impacted, and volatility increases by a much greater magnitude as it would be reduced in favourable events [3]. Notably, there is extensive literature studying stock market behaviour in relation to various events, where much of early literature was concerned with macro-economic or corporate announcements [12]. However, recent research started addressing the impact of political events and political instability on stock markets. While political events caught less attention in early literature due to difficulties in quantification, the contemporary trend confirms that politics and economics interact [13]. Empirical evidence regarding the impact of political instability, political events and elections in developed economies differs from emerging markets, thus evidence would be put forward in this manner.

2.1. Empirical Evidence in Developed Markets

Gemmill [14] concluded a significant relationship between UK elections and stock prices. A more recent empirical study confirmed the impact of political risk and macroeconomic uncertainties on stock returns in the UK, in which macroeconomic uncertainty showed more significant impact on returns [15]. A Different study testing market efficiency in the USA, by exploring the market's ability to absorb all information regarding presidential elections into stock prices from the period of 1986 to 2016, further confirms this relationship [16]. A

study on 85 companies in the USA further confirms the significance of the 2012 presidential elections on stock returns [17]. Another study on the USA market confirms that presidential elections significantly increase stock market volatility [18]. Santa-Clara and Valkanov [19] argue that there is a prevalence of a "Democratic risk premium", given higher excess return during democratic regimes. This phenomenon was concluded to be unique to the US, as a sample of 24 other stock markets in developed countries did not exhibit such reactions to different political orientations [20]. Furthermore, market adjustments were argued to reflect political decisions that benefit the economy, where investors' political values influence investment decisions [21,22].

Opposing evidence regarding the Political Business Cycle (PBC) valuation impact in developed economies showed that volatilities and returns are insignificantly related to political transitions [23]. In Germany, the existence of a PBC, where elections interact with stock returns was inferred to be mixed [24,25]. Additionally, a recent paper investigating the impact of the USA 2016 elections using a GARCH forecasting methodology, revealed that the elections had an insignificant impact on the market's volatility [26]. In summary, it is concluded that evidence on the prevalence of a significant relationship between presidential elections and stock market returns or volatility is inconsistent in developed markets.

2.2. Empirical Evidence in Emerging Markets

Developing economies show more prevalent changes in stock market returns and volatility, especially in conditions where political unrest is present [11]. Conclusive results regarding the impact of presidential elections on stock market volatility are more extensive [3,27,28,29]. A Similar study in Pakistan, finds that only events that cause change in key governmental policies influence stock market returns. However, the volatility was short termed [30].

A recent paper in Egypt, examined the impact of political regime changes on stock prices. Events as presidential elections during 2011-2014 were selected, and daily stock index closing prices were analysed using an ESA [31]. It was determined that political uncertainty profoundly impact the volatility of almost all market sectors, with varying intensities [31]. Another study compared 34 OECD countries and 21 emerging markets, in terms of stock market behaviour to parliamentary and presidential election in 1995-2014. Emerging markets were concluded to have stronger impact in terms of returns and volatility [2]. A paper by Osa [32] examined 48 stock markets indices for their reactions to political leadership change events, such leadership change was found to significantly increase market volatility but not mean returns. It was confirmed that developing markets were more severely affected However, it is noteworthy that not all countries were included in this study [32]. To conclude, evidence in developing markets is stronger, however limitations of studies may prohibit drawing a generalised conclusion. Moreover, durations of the persistence of return changes and volatility in understudied.

It can be concluded that despite the existence of research on the relationship between presidential elections and changes in abnormal returns or stock market volatility, the prevalent conclusions were inconsistent for developed markets. As for emerging markets, the evidence was more supportive, however both markets are not extensively studied [2]. Nevertheless, there is a deficiency of studies using a comparative approach between developed and emerging markets to assess market efficiency in response to election outcomes. A need exists for investigating how markets at different economic development stages react to presidential elections, and whether similar patterns of efficiency exist between both market types. It seems reasonable to expect that markets at different development stages, would reflect different patterns of market efficiency when responding to such political events.

2.3. Stock Market Volatility in Emerging vs. Developed Economies

Trends of daily stock return volatility in developed and emerging markets may not conform to the same patterns. From an investment perspective, different volatility patterns affects investment decisions, as well as international trading strategies. A recent study using wavelet decomposition investigated return volatility differences between emerging and developed markets, by decomposing time series returns into time scales to assess return variability [33]. Findings showed no evidence that return dynamics of the different market types are dissimilar, as time scale dependence was the critical factor. Emerging markets expressed higher volatility, however, the influence of the time scale was highly similar to the impact found in developed markets [33].

2.4. Event Studies

The procedure of investigating events is a common practice of econometrics, where economists conduct the Event Study Approach (ESA) to measure an event's influence on stock prices. An event can be defined as an informational announcement, unexpected by the market [34].

Fama, Fisher, Jensen and Roll (FFJR) [4] initially introduced the event study methodology, which manifested a revolutionary shift in economics, finance and accounting research [35]. The ESA represents the primary approach of measuring stock price reactions to a given announcement. Event studies are primarily used for two purposes: first, for hypothesis testing of the null hypothesis proposing that the market fully reflects information into prices as of the EMH [36], and thus the given event has no significant impact on stock returns behaviour. The significance of event studies resides in its value to testing for market efficiency on the long-term [36].

Second, while further holding the EMH to publicly available information, to study the impact of a given event on the value of wealth of a firm's shareholders [35]. Financial information is used to measure the impact of an event on firm value [37]. Thus, it compatible for testing the EMH, by assessing the impact of events on securities prices. Consequently, event studies provide a method of testing market efficiency [38].

Event studies do not necessarily take a rigid process, however a broad flow encompassing all event studies exists. The initial step involves identifying the kind of event or events of interest [37]. Second, the duration over which the stock or index would be investigated should be selected, this represents the event window [37]. It is of importance that the defined event windows are larger than the period under scrutiny, to allow for pre and post-event days to be studied. Extending the event window to the days before the event, and the days after, thus captures the event's impact on price movements. The impact on price materialises subsequent to the closure of the stock market on the announcement day and is accordingly reflected in the following days [37]. The pre and post-event windows are required for valid comparison of the effect of the event on returns.

The initial approach introduced by FFJR extends to two broad methodologies, the use of abnormal returns as an excess of some benchmark return, and the formulation of dummy variables for the event, and regressing it to parametrise the event impact [35].

2.4.1. Traditional Event Study Approach

The standard procedure for ESA requires measurement of abnormal returns, which is derived by deducing the normal return from actual returns after the event over a pre-determined window. Normal returns are expected returns without factoring the event's impact [37]. For firm i and date t, the abnormal return is:

$$AR_{i,t} = R_{i,t} - E(R_{i,t} \mid X_t)$$

Where $AR_{i,t}$, $R_{i,t}$ and $E(R_{i,t} \mid X_t)$ are the abnormal, normal and actual returns, respectively for period t, respectively [37]. Abnormal returns reflect the unexpected change in returns associated with the event. This approach assumes markets are semi-strong form efficient and respond efficiently to publicly available information [39].

The literature presents several alternative models to estimating normal (expected) returns. The most prevalent models are the CAPM, the Market Model (MM), the Mean-Adjusted Returns Model (MAR) and the Market-Adjusted Returns/ Index Model (IM) [39]. It can be noted that no model predominates other models all of the time [39].

The CAPM is a statistical model applicable to individual securities, where expected returns are a linear function of the market returns and the risk-free rate, by regressing against a market index [40]. The use of CAPM in event studies prevailed in the 1970s. However, the CAPM provides constrained returns, for which the validity of these restrictions has been problematic, thus employing the CAPM in event studies ceased [37]. The market model is an economic model which relates a stock's return to the return on the market portfolio. The return of a stock is equal to the market return, which is applied through using a broad stock index [37]. Despite being the simplest model, Brown and Warner [41] find that the market-adjusted return model yields results comparable to more sophisticated models. The mean-adjusted returns model measures expected return for a stock or index is a constant return, calculated by averaging a series of historical returns [42].

In a study comparing the performance of three normal return models: The Mean-Adjusted Returns Model, Market-Adjusted Returns Model, and Market Model, findings indicated that their ability to estimate abnormal returns are highly similar [42]. Thus, the selection of a model is restricted by data availability, where the market-adjusted return model best fits situations where data resources are limited [37].

2.4.2. Testing Procedure

Earlier event studies conducted no statistical tests of significance but relied on descriptive statistics. Nevertheless, several test procedures exist to statistically test for significance of abnormal returns [43]. The standard T-test is prevalent in the literature for testing the null hypothesis, where the T-value is determined by dividing the abnormal return by the SD of returns [43].

Research Questions

Are presidential elections outcome announcements associated with significant changes in market abnormal returns in Egypt and USA?

Do presidential elections outcome announcements directly affect stock market volatility in Egypt and USA in a similar manner? And in what direction?

Hypotheses

H1: Presidential election outcomes have a positive significant relationship with stock market volatility in Egypt.

H1: Presidential election outcomes have a positive significant relationship with stock market volatility in USA.

3. Research Methodology

Following the event study procedure proposed by Mackinlay [37], the event study methodology is used to assess price response of indices, in terms of magnitude and direction, to presidential election outcome announcements [12,34,36].

Differences in abnormal returns before and after the event would be tested to determine if a statistically significant difference in volatility exists. This further gives insight on each market's response, as well as the behavioural similarity between both markets [31]. This technique is grounded on the EMH [4]. This was used to measure the impact of political events following the work of Bailey & Chung [28], Beaulieu et al [44], Ahmed [31] and Warner & Brown [41], among others.

3.1. Sample and Event Identification

A comparative study between the market reaction to presidential elections outcome announcement in the Egyptian market as a judgment sample of emerging markets versus the USA as a judgement sample of developed markets is conducted. Despite having different levels of market transparency and cultures, this proposition can be supported through the fact that both of the selected presential elections revealed a polarization phenomenon. This polarization is presented in terms of the political shifts assosiated with each of the selected elections, thus similarly inducing an informational shock.

The polarization dynamics in Egypt underlies among Islamists (Muslim Brotherhood's Freedom and Justice Party and Salafist groups), opposed to non-islamists [45]. In the USA this polarization similarly exists, where states are divided as red or blue states. Red states support republicans at the presidential level, while blue states are democrats [46]. Furthermore, huge uncertainty was engendered from Trump's election on the future of USA policy. Donald Trump was perceived as having a distinct set of republican priorities than that of previous democratic president Obama, where high controversy on Obama's assumptions and results prevailed. The induction of a new president to the White House was viewed as a paradigm shift in US regime [47].

Likewise, previous Egyptian president Morsi's policies had led to widespread opposition and unrest within a year of his election [48]. Thus, similar patterns of ambiguity regarding the events in both markets exist. This differs from Jandl [2], as it takes a more concise approach of using two recent presidential elections. In this paper, it is proposed that despite that Egypt and the USA present differences in market characteristics, available financial tools, and economic conditions, this does not affect the validity of investigating the specific phenomenon of market behaviour in response to a similar event in both markets. In conjunction with the comparability of underlying pre-event conditions prior to the presidential election selected for each market.

Additionally, this study empirically examines the reaction of stock markets the following presidential election accouchement, which represent the independent variable:

The Egyptian presidential election of 2014 (outcome announcement date: 3 June 2014).

The United States presidential election of 2016 (outcome announcement date: 8 November 2016).

The selection of events is further supported by the qualitative data collected. Findings of the semi-structured interviews indicated that the similar political paradigm shifts in Egypt and USA present parity of conditions. The Egyptian president was re-elected on March 26, 2018; however, the first election was used to provide consistency of election circumstances and prevent distortion of volatility in pre and post-event windows. It can be noted that selection of different years may lack consistency as other non-political factors intervene with statistical testing. However, no two elections coincided in similar years. In 2016, the USA interest rates increased for the second time after the 2008 financial crisis by 0.25% [49], while rates in Egypt in the election year of 2014 were announced to remain stable [50]. A study examining the relationship between interest rate changes in developed and developing countries, found that a significant negative relationship exists between interest rates and stock prices [51]. This is further considered in the analysis.

Stock market indices returns are the dependent variable, the EGX100 is selected as a proxy for the Egyptian market, following Ahmed [31], and S&P500 is selected as a benchmark for the USA market, as it measures the overall state of the market (Osa, 2014). The selection of EGX100 as a market proxy followed the initial screening of the most followed indices, EGX30, EGX70 and EGX100. The

EGX30 is a free-float market-value weighted index, and the most followed barometer for the market [52]. The EGX70 is a price-index initially introduced to provide additional indicators for investors, and the EGX100 is similarly a price-weighted index. Subsequently, the test was executed on both the EGX30 and EGX100, where both indices gave similar results. Thus, the EGX100 was selected under the proposition that it is the most inclusive Egyptian index, including both EGX30 and EGX70 stocks [44]. This is further supported by Fortune [53], where it was concluded that indices including larger number of firms, are more representative. The selection of these indices follows previous research [16,31,32], where representative stock indices are used as a proxy for markets. Further, given the large number of firms within each of the selected indices, this accounts for biases that could occur due to one or two firms in analysis [37].

3.2. Event Window

To determine the short, and longer-term impact of each event, the existing literature and market expert opinions were used. The immediate reactions reflecting prompt adjustments caused by expectations about future policies, was judged to be a period of two to four weeks, as per interviews. Additionally, a period of up to one-year pre and post-events was disclosed as a highly sufficient period to reflect longer-term market behaviour. Thus, following the study of Oehler et al. [54], A two-week, four-week, ten-week, eighteen-week and twenty-six-week horizon preceding and following the election was analysed, as previous research finds insignificant immediate effects of outcome announcements [19]. Consequently, these time-horizons are best suited for this study to provide higher data sufficiency, opposed to Nazir et al., [55], where two, five and fifteen days were used.

The two, four and ten-week event windows address short term effects of the newly absorbed information of the presidential results. It can be noted that, in the initial four-week after presidential inauguration the president discloses their regime and future policy decisions. This presents the possibility to validate or invalidate market assumptions [54,56]. Conversely, the eighteen and twenty-six-week period determines the longer-term impact of the new presidential induction. Additionally, to judge whether the post-election volatility is driven by election results, a twenty-six-week period is further studied [54].

3.3. Data Collection

Similar data is employed, related to each presidential election in USA and Egypt. YahooFinance.com and Investing.com were utilised to retrieve daily returns of the stock market indices of each market, denominated in local currency, Egyptian Pounds for EGX100 and US dollars for S&P500. Daily returns could sufficiently provide precise data, as Bollerslev and Wright [57] suggest that higher frequency timeframes do not offer precision benefits or reduce bias. The election dates have been sourced from ElectionGuide.com, an international platform for electoral systems [58].

3.4. Model

Following Nazir et al. (2014) normal returns for the market indices were measured using the mean-adjusted return model, where they identified that this model more efficiently explains the relationship between political events and stock market returns volatility for indices, as some of the models presented previously do not apply to indices. Daily index returns were initially computed to conduct the analysis. The following analysis was conducted on the Egyptian and USA markets, where each market analysis included the five pre and post-event windows previously elaborated. Further, the subsequent model follows the study of Nazir et al. (2014), representing the analytical measures used.

The model considers the expected return of an index is a constant number, R^*:

$$R^* = \left(\frac{1}{T}\right)\sum_{t=1}^{t} R_t$$

T= number of days in an event window.
t = market index returns on day t of an event window.

The abnormal returns of a market index are the differences between the actual and expected returns for each day in the event window. Abnormal returns are required for appraising the announcement's impact [37].

$$AR_t = R_t - R^*$$

AR_t = abnormal return of market index on day t.
R_t = the actual return of market index on day t.
R^* = the expected/ normal return of the market index for the event window.

Afterwards, the average abnormal returns before and after the event are calculated for each event window:

$$AR_{before}^* = \frac{\sum_{t=-k}^{t=-1} AR_{before,t}}{n}$$

K= number of days taken before the announcement.
AR_{before}^* = average abnormal return before the announcement.

Subsequently, average abnormal returns are computed through:

$$AR_{after}^* = \frac{\sum_{t=1}^{t=k} AR_{before,t}}{n}$$

K = number of days taken after the announcement.
AR_{after}^* = average abnormal return after the announcement.
the standard deviation (volatility) of the average abnormal return, before and after the announcement day:

$$\delta_{after} = \sqrt{\frac{\sum_{t=k}^{t=1}\left(AR_{after,t} - AR_{after,t}^*\right)^2}{n-1}}$$

$$\delta_{before} = \sqrt{\frac{\sum_{t=-k}^{t=-1}\left(AR_{before,t} - AR_{before,t}^*\right)^2}{n-1}}$$

a combined standard error for the difference between pre and post sample means is computed to test the difference of means:

$$\delta_{pre-post} = \sqrt{\left(\frac{(n_1-1)\delta_1^2 + (n_2-1)\delta_2^2}{n_1+n_2-1}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

δ_1^2 = the variance of pre-announcement period.
δ_2^2 = the variance of post-announcement period.
n_1, n_2 = the number of days in pre and post announcement window

Finally, the t-statistic is used to infer if relationship is significant and markets are efficient in absorbing information. Following Nazir et al. [55], the P-Values are compared to significance levels of 1%, 5% and 10%, where insignificant results confirm that the given market is efficient in reflecting new information into prices, further confirming EMH. Given the five event windows, we analyse T values using:

$$t == \frac{AR_{after}^* - AR_{before}^*}{\delta_{pre-post}}.$$

The analysis is conducted using excel software and MINITAB statistical software, this is to be carried out on the Egyptian market and USA market to conduct the comparative analysis.

The methodology addresses the first research question by identifying change in abnormal market returns, in response to each event under scrutiny. The calculation of standard deviations for each event window before and after the announcement would address the changes in market volatility evoked by the event. Further, the P-Values would confirm whether markets absorb new information into aggregated stock prices through changes in stock indices returns. The second research question is addressed by replication of the same procedures for Egypt and USA and the analytical comparison of results, thus allowing for gaining insights on how emerging markets differ from developed markets in efficiency and behaviour.

4. Empirical Results and Discussion

4.1. Egyptian Market Results

A preliminary analysis of performance of average returns, abnormal returns, and volatility pre and post the announcement of Abdel Fattah el-Sisi as the president of Egypt is made (see appendix, Table A1 and Table 2). It is shown that average returns in the post-event windows are considerably higher. The largest variation is found within the 2,4 and 10 event windows, where returns diverged from negative values to positive.

In a general sense, abnormal returns elevated in post-event windows for the 2,10,18 and 26 weeks, while the 4-week event window presented an anomaly showing a decline in abnormal returns in the post-event window. The discrepancy between pre and post 26-week abnormal returns is less prevalent in the case of Egypt, as returns in pre and post-windows were equal. Furthermore, negative abnormal returns in the

2-week and 8-week windows changed to positive returns, indicating a sharp increase in stock prices. This reflects higher value placed on the index by investors. It was also noted that volatility, as measured by the standard deviation was considerably reduced in all post-event windows, reflecting lower risk, and lower perceived uncertainty.

The test conducted indicated that P-Values are statistically insignificant at 10%,5% and 1% significance levels (See appendix, Table A3). Despite the apparent fluctuation in average returns, abnormal returns, and standard deviations, there is no statistical evidence supporting the significance of the event's impact. It is inferred that the event affected the stock market only descriptively, as seen in Figure 1 that abnormal returns are similarly dispersed around the mean abnormal return in the pre and post-event windows.

This indicates that the Egyptian stock market was efficient in reflecting the given event into stock prices. Subsequent to the announcement, the stock market absorbed the appointment of a new president and started normalising. Thus, the results do not support the alternative hypothesis H1: Presidential election outcomes have a positive significant relationship with stock market volatility in Egypt.

4.2. USA Market Results

Identical descriptive statistics are similarly analysed for comparability (See appendix, Table A1 and Table A2). Likewise, average returns considerably increased in post-event windows where the largest increase was found in the shorter event windows of 2,4 and 10 weeks. Abnormal returns positively elevated in all post-event windows, and the negative abnormal return in the 2-week pre-event window likewise adjusted to a positive return in the 2-week post-event window. Furthermore, abnormal returns volatility was similarly reduced in all post-event windows.

The P-values for all the given event windows are statistically insignificant (See appendix, Table A3), as P-values did not fall below the 10%, 5% or 1% threshold. Thus, presidential elections do not significantly affect stock market volatility, despite descriptive evidence previously indicated on the impact of the event. This constitutes evidence for stock market efficiency in the USA, consistent with the preposition that as markets develop into more sophisticated forms, they display higher progression in efficiencies [59]. The abnormal returns pre and post-event are depicted in Figure 2. These empirical results do not endorse the hypothesis H1, as differences in means represent random sample fluctuations only.
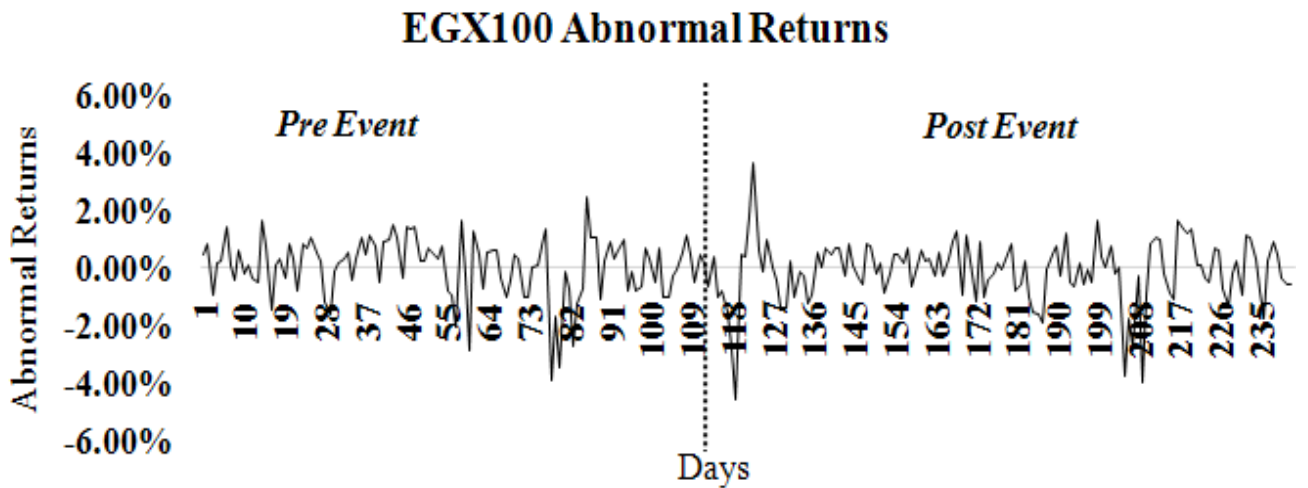

Figure 1. EGX100 Abnormal Returns Pre and Post Presidential Election announcement
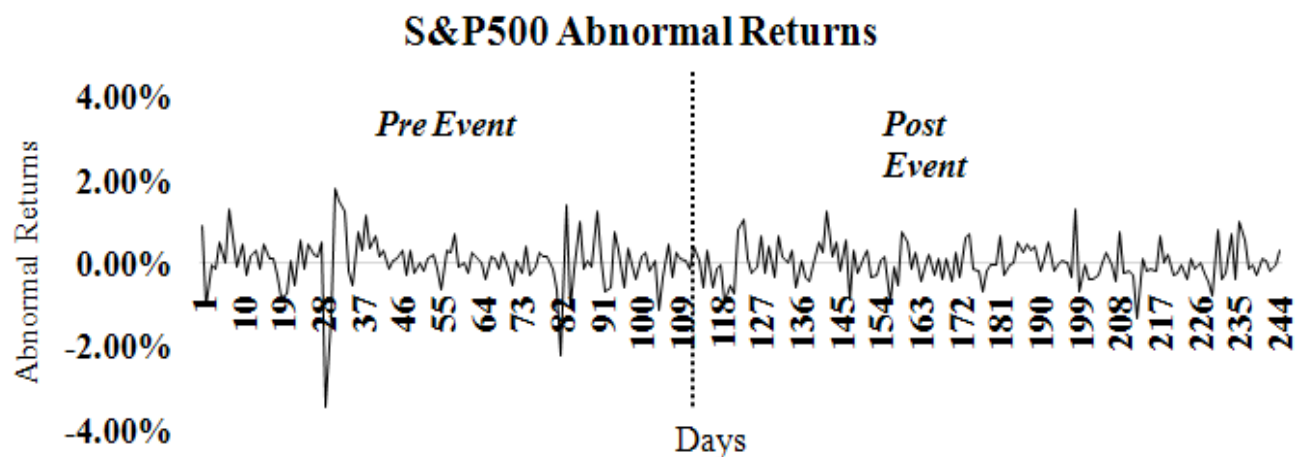

Figure 2. S&P 500 Abnormal Returns Pre and Post Presidential Election announcement

4.3. Discussion and Comparative Analysis

It was concluded from experts' opinions that political events have an effect on stock markets, through fluctuation of prices. This phenomenon is explained through the impact on investors' confidence in the prevailing political stability and the forthcoming political and economic conditions, which is reflected in buying and selling decisions. This is consistent with findings of Bin [11], indicating that corporate investment strategies are directly related to the actions of existing political regime.

The presidential position was indicated to be a major contributor in the financial health of the Egyptian market, as the governmental power is nested with the president. This proposition moves along previous literature [2,3]. It was confirmed by all responded that the 2014 presidential elections had a positive impact on the market performance in Egypt, through better regulations, which in turn positively impacts returns and reduces return volatility. Nevertheless, this is further tested statistically to confirm or reject the hypothesis that return volatility before and after presidential elections is different.

In Egypt, the descriptive pre-event average returns in the 2,4,10-week event-windows had negative returns, reflecting the uncertainty associated with the coming political regime, while the divergence to positive returns indicates that the announcement was perceived positively by investors. The favourable impact on investor confidence, driven by potential political stability, was reflected into EGX100 returns on the short-term, this is consistent with market experts' opinions.

The abnormal returns increase in all windows analysed, except the 26-week event window where returns were similar pre and post-event. Thus, it can be concluded that the period closest to the outcome announcement presents the highest market instability.

This study descriptively shows that emerging markets display higher returns volatility in periods prior to presidential elections. However, these fluctuations are not statistically significant. This opposes the work of Ahmed [31], where the study confirmed the impact of political regime changes on stock prices in Egypt, and the results of Murtaza et al., [30] in Pakistan, where short-term changes in stock market returns were prevalent subsequent to changes in key political matters in emerging markets. The results also contradict findings of Jensen & Schmith [27], Bailey & Chung [28], Suleman [3], and Benton [29].

In the USA, market abnormal returns increased, and abnormal returns volatility similarly decreased in all post-event windows. The five event windows had different degrees of variation in pre and post windows, this may be evidence of investors' overreactions to news. Further, it can be explained by the gradual market price adjustment to pre-event window performance as time passes over the event [60,61]. This further points out the possible indifference of having a democratic or a republican president to affect stock market returns volatility. Accordingly, this may contradict the notion of a "Democratic risk premium" explained by Santa-Clara and Valkanov [19], as higher excess returns were seen post-appointment of republican president Donald Trump as president of the USA. This study concludes that the USA market is similarly efficient, as the event did not significantly affect returns.

This result stands on the view rejecting the relationship between political events and stock market volatility in developed markets, given the controversial state of literature previously demonstrated [23]. This moves along the work of Desiatkov & Tjahjakartana [26], where the study similarly proved that the 2016 election had an insignificant impact on stock market volatility using a different methodology. Results are also consistent with the conclusions of Doepke & Pierdzioch [25] for developed markets but is not consistent with finding of Papachristopoulos [16], Obradović & Tomić [17] and Bowes [18] in the USA market.

It should be noted that, the Egyptian stock market showed more prevalent variance in pre and post-event average and abnormal returns, confirming that emerging markets display higher sensitivities to political events [11]. This attributes to higher uncertainties accompanied by such markets, and lower investor confidence patterns as in more stable developed markets. This may also be attributed to the lower number of firms with high-volume trading; thus, any slight changes are largely reflected in the market index volatility.

Table 1.

Average Abnormal Returns (AR*) and Abnormal returns Volatility Before and After the Event

Market			26 Weeks		18 Weeks		10 Weeks		4 Weeks		2 Weeks	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
USA	Average Abnormal Returns		0.000%	0.001%	0.000%	0.001%	0.000%	0.003%	0.000%	0.009%	-0.024%	0.027%
	P-Values		0.993		0.982		0.97		0.959		0.867	
	Average Standard Deviation		0.65%	0.43%	0.51%	0.43%	0.62%	0.45%	0.56%	0.42%	0.54%	0.46%
Egypt	Average Abnormal Returns		0.001%	0.001%	0.000%	0.003%	-0.005%	0.007%	1.389%	0.013%	-0.223%	0.189%
	P-Values		0.999		0.967		0.96		0.942		0.663	
	Average Standard Deviation		1.13%	1.03%	1.27%	1.03%	1.31%	0.87%	1.39%	1.27%	1.59%	1.29%

Values in brackets represent p-values. *, ** & *** denote 1%, 5% and 10% level of significance.

While event studies in isolation do not give an absolute conclusion to which EMH form a market belongs, an indication about market efficiency through market reactions to a given event can be deduced. It can thus be concluded that the USA and Egypt hold similar stock market characteristics in responding to presidential election outcomes. The impact of presidential elections on stock market volatility in both markets is inferred to be similarly insignificant, where no significant difference of abnormal return means exists between all the pre and post-event windows for Egypt and USA. Table 1 shows abnormal returns in pre and post-events, and their significance test results, where all event windows for both markets were insignificant at 1%, 5% and 10%. It is thus concluded that average abnormal returns pre and post-event windows were not different from zero, indicating no substantial influence of outcome announcements on stock market volatility.

In summary, similar patterns of efficiency in responding to presidential election outcome announcements in USA and Egypt exist, as the impact of presidential elections has no practical significance on stock market volatility. It is noteworthy to state that empirical findings on emerging markets (in our particular study; Egypt) oppose the literature available. However, results on the developed market (USA) is consistent with some of the recent literature. Accordingly, this study can conclude that presidential election outcomes have no significant relationship to stock market volatility, in both markets. It can be further deduced that emerging and developed markets display similar efficiency in incorporating information about presidential elections into stock prices.

5. Conclusion

In this study, the impact of presidential elections on stock market volatility has been examined for a developed stock market, opposed to an emerging stock market. This event-study provided evidence that both markets display an insignificant relationship between presdential electons and the relevant volatility in the country's stock market, supported by the mean-adjusted returns model.This study concluded that the developed and emerging markets display an indifferent reaction to presidential elections, given the samples under scrutiny. Despite observing a descriptive difference in volatility in the pre-event and post-event periods in both countries, the impact on abnormal returns' volatility was immaterial in a sense where both markets were efficient in absorbing the announcement news of each new president. This shows the market dynamics in developed and emerging countries in their response to highly important events to be statistically similar.

The theoretical implications of this paper include added to the existing body of literature investigating the interplay between politics and stock market returns volatility. Future research regarding political events and stock market volatility should be directed towards including political events other than presidential elections. Events inducing higher uncertainty to the financial health of a market as wars, revolts and financial crises should receive higher attention in the literature, as presidential elections do not have a significant impact, and are efficiently absorbed by the market. Based on findings, practical implications include that the financial sector should be considerate of the period prior to presidential election outcome announcements, as it presents a period of uncertainty and lower abnormal returns and higher volatility, despite the immateriality of the impact. A country's stock exchange should execute adequate media coverage to prevent misinformation about the stability and future performance of the market, leading to higher uncertainty. Capital market authorities should implement policies that amplify investor confidence, and hedge against political risk during unstable periods surrounding presidential elections. Moreover, investors engaging in international diversification, should take decisions with consideration of the similar efficiency of developed and emerging markets in incorporating presidential elections into prices. It can further be noted that business investment decisions should be minimised in periods prior to election announcements, as the market slightly drops due to the political uncertainty prevailing.

All empirical research withstands some limitations, the potential limitations are highlighted as follows: to further confirm the consistency of the aforementioned market efficiency, the restrictions to a limited sample arises. Thus, replicating the study on a larger sample of presidential elections for the USA and Egypt, examining the relationship on additional sample countries, as well as applying the study to other political events in both markets and testing their impact on volatility is needed. Furthermore, it is uncertain whether the markets would react efficiently to all political events, to develop a generalisation about market characteristics.In addition, using more sophisticated models or incorporating mediator variables could affect results. It is further noted that finding events with identical market circumstances and occurrence dates is inapplicable, due to the different political cycles found in each country.

Future research should address knowledge gaps including the longer-term impact of presidential elections on the performance of stock markets prior to political shifts. Investigation of which political regimes support the stock market health for each respective country also requires future study. As in the USA limited studies addressed the concept of a democratic risk premium, where higher excess returns are prevalent in democratic periods. No existing research in emerging economies addresses which political systems are positively correlated to higher excess returns.

The reasons for the Egyptian market to efficiently reflect information regarding presidential elections, similar to a developed market, presents an area of further investigation. The underlying causes of this immunisation of the Egyptian market to such a shift regardless of preceding unstable political conditions should be explored.

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Appendix

Table A1. Shows the descriptive statistics of average returns before and after each event for USA and Egypt

Average Returns (R*) Before and After the Event										
Market	**26 Weeks**		**18 Weeks**		**10 Weeks**		**4 Weeks**		**2 Weeks**	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
USA	0.02%	0.09%	-0.02%	0.12%	-0.07%	0.13%	0.00%	0.17%	-0.21%	0.25%
Egypt	0.11%	0.13%	0.01%	0.22%	-0.23%	0.31%	-0.39%	0.22%	-1.56%	1.32%

Table A2. Shows the descriptive statistics of abnormal returns before and after each event for USA and Egypt, and significance levels

Average Abnormal Returns (AR*) Before and After the Event										
Market	**26 Weeks**		**18 Weeks**		**10 Weeks**		**4 Weeks**		**2 Weeks**	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
USA	0.000%	0.001%	0.000%	0.001%	0.000%	0.003%	0.000%	0.009%	-0.024%	0.027%
Egypt	0.001%	0.001%	0.000%	0.003%	-0.005%	0.007%	1.389%	0.013%	-0.223%	0.189%

*, ** & *** denote 1%, 5% and 10% level of significance.

Table A3. Shows the tests' P-Values for each event window and results' significance

P Values					
Market	26 Weeks	18 Weeks	10 Weeks	4 Weeks	2 Weeks
USA	0.993	0.982	0.970	0.959	0.867
Egypt	0.999	0.967	0.960	0.942	0.663

*, ** & *** denote 1%, 5% and 10% level of significance.