ISSN 2090-3359 (Print)
ISSN 2090-3367 (Online)

Advances in Decision Sciences

Volume 27
Issue 4
December 2023

亞洲大學
ASIA UNIVERSITY

Published by Asia University, Taiwan

Stock market Reaction to General Election in Pakistan: An Event Study Methodology

Mosab I. Tabash
College of Business, Al Ain University
Al Ain, United Arab Emirates
E-mail: mosab.tabash@aau.ac.ae
ORCID: https://orcid.org/0000-0003-3688-7224

Musla Valappil
Department of Commerce & Management Studies,
Farook College (Autonomous), Kozhikode, India
E-mail: muslavalappil@gmail.com

Uzma Iqbal
Department of Management Sciences, Pakistan Institute of Development Economics,
Islamabad, Pakistan

Umar Farooq
[a] School of Economics and Finance, Xi'an Jiaotong University, P. R. China
[b] Research Fellow, Department of Economics
University of Religions and Denominations, Qom, Iran
***Corresponding author* Email**: umerrana246@gmail.com
ORCID: https://orcid.org/0000-0002-5772-5243

Kai-Yin Woo
Department of Economics and Finance,
Hong Kong Shue Yan University, Hong Kong
Email: kywoo@hksyu.edu
ORCID: https://orcid.org/0000-0003-1168-3313

Received: November 8, 2023; First Revision: November 15, 2023;

Last Revision: December 11, 2023; Accepted: December 30, 2023;

Published: August 20, 2024

Abstract

Objective: This study investigates the impact of the 2018 General Election on stock prices of firms listed on the Pakistan Stock Exchange (PSX).

Methodology: A sample of 34 listed companies selected from PSX and the KSE-100 index were used to investigate the impacts of the 2018 General Elections in Pakistan, on firms listed on the Pakistan Stock Exchange. We adopt the event study for analysis. The research timeline spans 120 days for estimation window, and 21 days for event window with the day after the General Election as the event date. The impact of the national elections is market-related. Hence, unlike the market model used in most of the previous studies, we use the constant mean model to calculate the abnormal returns. In addition to OLS, we apply the t-distributed threshold GARCH model to obtain more efficient parameter estimates in the context of fat tails and asymmetry in conditional variance of errors.

Results: The results of this study indicate a positive impact of the event (2018 General Election in Pakistan) on the sample of listed companies and KSE-100 index. This positive impact can be attributed to the stock market response to the favorable informational content of the general election outcome. The information is fully reflected in the stock market over about 3 days around the event date. Such fast response indicates the existence of semi-strong form of market efficiency in Pakistan stock market.

Implications: The empirical analysis presented in this research not only sheds light on the correlation between political events and stock market performance but also offers valuable insights for formulation of equity investment and portfolio management strategies. This study, therefore, serves as a vital contribution to the existing literature by providing innovative empirical evidence on the intricate relationship between political events, investor sentiment and stock prices in the specific context of Pakistan's 2018 General Election.

Keywords: Event study; General Election, Pakistan Stock Exchange; constant mean model; Threshold GARCH

JEL Classification: C10, G10

1. Introduction

1.1 Background

Stock markets provide capital to listed companies and then play an important role in the economy of the country by adding to business activities of commerce and industry (Irshad, 2017). Stock market performance is therefore an indicator of the performance of an economy. Investors seek profits in return for their capital investments in stock markets. Stock market development is essential for building up a healthy financial system and it also indicates the direction of economic development as well as variations (Adebayo, et al., 2022). Stock prices are highly unpredictable (TajMazinani, et al., 2022) and they change, going up or down, on a daily basis. Stock market is one of the complex and co-dependent markets where price movements depend upon numerous variables and other dynamics (Memon, et al., 2020). Government policies, investor behavior, economic conditions and political events influence stock markets.

Political events, especially the General Election is a non-economic factor that can influence investors' decisions to invest in stock markets because of the expected changes in economic policies in the case of a new party taking control over the government (Ratnaningsih & Widanaputra, 2019). Understanding the relationship between political events and stock prices is of paramount importance for both investors and policymakers. Stock market performance is a leading indicator of the overall economic health of a country. It reflects not only current economic conditions but also future expectations and investor confidence. As such, it can be highly sensitive to political developments, particularly elections that may lead to changes in government administration, economic policies and regulations (Islam, et al., 2023). General elections, especially in emerging economies like Pakistan, as important political events, have the potential to significantly influence the business environment, economic policies and investor sentiment (Ashraf, et al., 2020).

The 2018 General Election in Pakistan marked a significant political event in the country's history (Behera, 2018). With a new government coming into power, there was a sense of anticipation in the financial markets. Also, the stock market exhibited a mix of reactions, including fluctuations in stock prices and trading volumes. Prior studies have investigated the positive or negative impacts of political events on the movements in stock markets (Suleman, 2012). This study seeks to empirically analyze and provide evidence on how this 2018 General Election influenced stock market performance in Pakistan. Our aim is to contribute to the existing body of knowledge on the relationship between political events and stock markets.

1.2 Stock market and political events

Stock prices in the long term depend upon the expected cash flows from the net assets of the listed companies, which are affected by economic fundamentals, such as money supply, interest rates, dividend payments, profitability, taxes, inflation and foreign exchange rates (Riaz, et al., 2023; Siddiqui & Iqbal, 2020). In the short term, public attention from mass media, the occurrence of natural disasters and economic hazards, as well as investors’ emotions and sentiments, that spread bearish and bullish

atmosphere in stock markets, often result in excessive market volatility (Hon, et al., 2021; Kashif, et al., 2021). Additionally, political events such as general elections and presidential elections may be important factors that we should not ignore when analyzing stock markets (Lausegger, 2021).

Our research purpose is to investigate how the 2018 General Election affected the Pakistani stock market performance. The 2013 elected government ruled by Pakistan Muslim League Nawaz (PMLN) handed over all powers to a caretaker government after completing the five-year term. The caretaker government was supposed to conduct fair general elections in 2018. Though there were allegations of rigging, it was not witnessed on a large scale as was the case in 2013 General Election. In all the earlier General Elections of Pakistan, only two major parties at the national level contested but in 2018 General Election, Pakistan Tehreek-e-Insaf founded by Imran Khan was the third party, which contested against the Pakistan People's Party and PMLN at national level. All political parties joined the 2018 General Election held in a fully independent and democratic atmosphere. Finally, Imran Khan won the election and became the Prime Minister of Pakistan. The 2018 General Election of Pakistan was therefore different from all previous elections (Islam, et al., 2019).

1.3 Development of Pakistan stock markets

There were three stock exchanges named Karachi stock exchange (KSE), Lahore stock exchange (LSE), and Islamabad stock exchange (ISE) in Pakistan (Iqbal, 2012). KSE was built on 18 September 1947. In October 1970, the Government of Pakistan formed LSE in response to the needs of the province of Punjab, after issuing the Securities and Exchange Ordinance 1969. Initially 83 companies were listed and the LSE was headquartered at Bank Square in Lahore. ISE was incorporated as a guarantee-limited company on 25 October 1989 in Islamabad. It was licensed as a stock exchange on 7 January 1992 and started trading in July 1992. Among these three stock exchanges, KSE was the most important and the largest stock exchange of Pakistan. KSE started with just 5 companies and a total market capitalization of 37 million Pakistani rupees (Rs) in 1949.[1] KSE-50 index was the first stock market index constructed by KSE based on only 50 companies. By 1971, the number of companies listed on KSE expanded to 318.[2] In November 1991, KSE-100 index was launched with a base of 1,000 points with 100 constituents included. Companies with the highest market capitalization were selected but to ensure full market representation, companies with the highest market capitalization from each sector were also included. In January 2017, KSE-100 index hit the all-time high of about 50,000 points for the first time in the history of KSE. Another market index is the KSE-30 Index launched by KSE in 2006 and includes the top 30 most liquid companies listed.

The Pakistan Stock Exchange (PSX) was established on 11 January 2016 after the merger of KSE, LSE and ISE. PSX is now a stock exchange in Pakistan with trading floors in Karachi, Lahore and

[1] https://www.ksestocks.com/AboutPSX.

[2] When a political event, Bangladesh separation, happened at that time, 60 companies in East Pakistan were delisted and after that, the Government of Pakistan started nationalization of every private sector company, which resulted in near total annihilation of the private sector in Pakistan in 1973 and 1974.

Islamabad. As of January 2022, about 375 companies were listed on the PSX with a total market capitalization of Rs 7,756 billion (Bajwa & Syed, 2022).

1.4. Research Aims

The motivation behind this study is to investigate how a significant political event of the 2018 General Election in Pakistan impacted stock prices. Moreover, this research is not only academically relevant but also practically important for investors, financial analysts and policymakers. It explains the extent to which election outcomes influence stock market performance, which in turn can guide investment decisions, risk management strategies and formulation of economic policies. Furthermore, it can help stakeholders better understand the dynamics of stock markets in emerging economies like Pakistan and how they respond to political change, thereby contributing to a more informed and resilient financial environment.

The following null and alternative hypotheses have guided this study:

H_0: There was no significant impact of 2018 General Election on Pakistan stock market

H_a: There was a significant impact of 2018 General Election on Pakistan stock market

The rest of this study is organized as follows. Section 2 reviews the related literature. Section 3 outlines the research methodology and the results are presented in Section 4. The final section concludes.

2. Literature Review

Oehler, et al. (2013) argue that election outcomes may influence performance of listed companies in stock markets because of the impending changes in government policies after the change of government. Different industries might benefit or suffer from sector-specific governmental decisions. Stock market participants also incorporate, to some extent, the expectation of policy changes into stock prices prior to an election and adjust managerial decisions after the election. The above leads to actual impact of political events such as national elections on stock market returns.

Wong and McAleer (2009) studied the relationship between Presidential Election Cycle and US stock market performance. From January 1965 through to December 2003, US stock prices closely followed the 4-year Presidential Election Cycle. The cyclical trend of stock prices was that during the first half of a Presidency, prices fell, reached a trough in the second year, rebounded during the second half of the Presidency, and went to a peak in the third or fourth year. The existence of the Presidential Election Cycle may constitute an anomaly in the US stock market, which could be useful for investors. Brogaard, et al. (2020) found that global political uncertainty measured by the U.S. election cycle, on average, led to a drop in stock returns in 50 non-U.S. countries between January 1990 and December 2017, together with a rise in market volatilities, depreciation of local currencies and an increase in sovereign bond returns. Global political uncertainty increases global risk aversion, which results in investors selling off risky securities and putting money in safer assets. The market price for risk also increases in response to U.S.

elections. Using county-level variation in stock market participation from 1992 to 2016, Crane, et al. (2024) document the correlation between stock market returns and US election outcomes. High-participation counties in US are more likely to vote for the incumbent party when the stock market has performed well relative to low-participation counties.

Koulakiotis, et al. (2016) studied the impact of 8 Greek political elections on stock returns and volatility from January 1985 to February 2008. The results indicate positive pre-election and post-election abnormal returns, but negative on the election day. Also, the election outcome significantly affected the stock return but the impact on volatility was limited. The empirical findings might have important implications for investors with respect to investment strategies during elections. Moreover, Repousis (2016) examined the influence of major non-economic events such as the results of 5 Greek national Parliamentary elections during 1996-2009 on the Greek bank stocks. Using event study methodology and market model, the results reveal that the 5 Greek national Parliamentary elections under study had no statistically significant effect on Greek bank stocks. The cumulative average abnormal returns were slightly positive or negative for Greek bank stocks, without any statistical significance.

Volodin, et al. (2017) investigated the impact of political news on price dynamics in Russian stock market from January 2014 to December 2015. They found that positive (negative) political news resulted in increase (decrease) in return for all sectors of the market as well as for the market as a whole.

Osuala, et al. (2018) examined the effect of the 2011 and 2015 Presidential elections in Nigeria on the stock market performance. The results of this event study show that the 2011 presidential election result had negative significant impact on the stock market. The 2015 Presidential election outcome had positive but insignificant impact on the stock market as evidenced by the average and cumulative abnormal returns on the event date and one day post-event date.

Ratnaningsih and Widanaputra (2019) examined the reaction of the KOMPAS 100 to the 2019 Indonesian presidential election announcements. The event study method indicates that the average abnormal returns were positive around the event date. Likewise, event studies of Argantha and Sudirman (2019), Fidiana (2020) and Putri, et al. (2020) of LQ-45 companies on the Indonesia Stock Exchange found a significant abnormal return on elections and election announcements in 2019. Rochimah and Yuliana (2024) analyzed the differences in market reaction towards 11 sectors in the Indonesia Stock Exchange during the political event of announcement of the Indonesian presidential and vice-presidential nominees in 2023 using the event study method. Results indicate a mixed reaction by 11 sectors to this political event, in which there was difference in some cases and no difference in other reactions.

Chavali, et al. (2020) examined the influence of elections held in 2014 and 2019 on the Bombay Stock Exchange in India using the event study methodology. The results indicate that the stock market reacted positively with significantly positive average abnormal returns and reveal that the impact on these two elections was not the same even though the same party came to power for the second time.

Hashim and El Mosallamy (2020) undertook an event study for investigating the impact of presidential election outcome on stock market volatility in Egypt and US. The results show that presidential elections had no significant impact on stock market volatility in these markets and suggests an increase in abnormal returns and a decline in volatility after each relevant election announcement. Both markets efficiently absorbed the news and reflected it in stock prices while shifts in volatility were statistically insignificant.

Lausegger (2021) explores the impact of 87 elections on stock markets across diverse political institutions in 21 countries from 1999 to 2016. He found that different electoral and party systems produced different cumulative abnormal returns on stock markets.

Roy and Khan (2021) unearthed the impacts of 6 national general elections on the stock market returns in Bangladesh held between 1991 and 2018 using event study methodology. It is found that the general election strongly influences both the abnormal returns for the group of 20 stocks and the broad index returns. The impacts of individual elections on the returns were also found the same in most cases.

Bash and Al-Awadhi (2023) adopted the event-study methodology to investigate the effect of the Turkish Presidential elections in 2023 on Borsa Istanbul returns over the period from 13 June 2022, through 7 June 2023. Results show that reaction of stock markets was different in the first round of elections from reaction to round 2 (re-elections). The event generated a significant negative effect on most of the sectors' returns during the first round while it exerted a significant positive impact on most of the sectors' returns during the second round.

For Pakistan, Irshad (2017) examined the relationship between political instability and stock prices from the year 1998 to 2012. Results indicate negative relationship between these two variables. Mehta, et al. (2020) examined how uncertain political events affected Pakistan's stock market from 2012 to 2019. The findings show that effect on Islamic stock market was significant after 5 events and the conventional market was impacted significantly in case of 6 out of 21 events. Sulehri and Ali (2020) used event study methodology to investigate whether political events and uncertainty affected the stock market in Pakistan. A total of 18 political events were considered in the study out of which 8 events had positive and the other 10 had negative effects. The study finds evidence that there were impacts of all events but certain events had the strongest impact on the stock market, like general elections in Pakistan. Audi, et al. (2022) collected a total of 66 political events held between October 1993 and May 2013 out of which 33 events had positive impact and the other 33 had negative impact on the Pakistan stock market index. Results indicate that political events affected the Pakistan stock market performance, but their impacts varied due to different economic and political expectations. Political events related to general elections generally had more consistent effects, where elections yielded positive stock returns. In addition, Raza, et al. (2023) analyzed the impact of economic conditions, financial policies and politics on the KSE-100 index between 2012 and 2022 through daily market news signals in Pakistan. Based on OLS and GARCH methods, the results reveal that global and political, good and bad, news had an asymmetric impact on KSE-100 index. Investors reacted to negative news quicker than to positive news.

3. Methodology

We first specify that the event of interest is the 2018 General Election in Pakistan. Then, we conduct the event study methodology as described in MacKinlay (1997) to investigate the impacts of the event on stock market performance in Pakistan. Also, under the event study, there are estimation and event windows. The estimation window is represented by the period prior to the event window from t = To +1 to t = T_1 while the event window covers the period from t = T_1 +1 to t = T_2 with the event day t = 0 in between.

3.1 Normal and abnormal returns:

One common model for normal returns in literature is the market model, which relates the return of any given asset i, R_{it}, to the return of the market index or market portfolio R_{Mt} given as:

$$R_{it} = \alpha_i + \beta_i R_{Mt} + e_{it}, \quad (1)$$

$$i = 1 \ldots N, \qquad t = T_o+1 \ldots T_1$$

where α_i and β_i are OLS parameters estimated on the estimation window in the absence of the event, e_{it} represents the disturbance term normally distributed with zero mean $E(e_{it}) = 0$ and constant variance $var(e_{it}) = \sigma^2_{ei}$, N is the number of assets in the event study. The normal returns are estimated over the estimation window in the absence of the event.

Given the estimated α_i and β_i from the market model, we can measure the abnormal returns defined as the difference between the observed returns $R_{i\tau}$ and normal returns ($\alpha_i + \beta_i R_{M\tau}$) within the event window:

$$AR_{i\tau} = R_{i\tau} - (\alpha_i + \beta_i R_{M\tau}) = e_{i\tau}, \quad (2)$$

$$\tau = T_1+1 \ldots T_2$$

In other words, abnormal return is the disturbance term of the market model estimated within event window. When α_i and β_i are estimated on the estimation window, and $R_{M\tau}$ is assumed not to be affected by the event, so that ($\alpha_i + \beta_i R_{M\tau}$) measures the normal return as if the event had not occurred.

The variance of $AR_{i\tau}$ is denoted by $\sigma^2(AR_{i\tau})$, is equal to σ^2_{ei} plus additional variance due to sampling error in α_i and β_i. If the length of estimation window $L_1 \equiv T_1 - T_o$ is large enough, $\sigma^2(AR_{i\tau})$, approximates to σ^2_{ei} only when the second component of $\sigma^2(AR_{i\tau})$ asymptotically falls to zero.

Another model for normal returns is the constant mean return model:

$$R_{it} = \alpha_i + e_{it}, \quad (3)$$

$$t = T_o+1 \ldots T_1$$

where α_i is the mean return for asset i on the estimation window and $e_{it} \sim N(0.\sigma_{ei}^2)$. The same logic of $AR_{i\tau}$ and $\sigma^2(AR_{i\tau})$ are applicable to the constant mean return model when $\beta_i = 0$.

3.2 Cumulative average abnormal returns and hypothesis testing:

When the abnormal returns on individual assets, $AR_{i\tau}\ \forall$ i, are taken a simple average over N assets, we get the average abnormal return AAR_τ as follows:

$$AAR_\tau = \frac{1}{N}\sum_{i=1}^{N} AR_{i\tau}. \quad (4)$$

For large L_1, the variance of AAR_τ is equal to:

$$\sigma^2(AAR_\tau) = \frac{1}{N^2}\sum_{i=1}^{N} \sigma_{ei}^2. \quad (5)$$

The cumulative average abnormal return $CAAR(\tau_1, \tau_2)$ is obtained by aggregating the AAR_τ over any interval $[\tau_1, \tau_2]$ in the event window where $T_1 + 1 \leq \tau_1 \leq \tau_2 \leq T_2$.

$$CAAR(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AAR_\tau. \quad (6)$$

The variance of $CAAR(\tau_1, \tau_2)$ is given:

$$\sigma^2\big(CAAR(\tau_1, \tau_2)\big) = \sum_{\tau=\tau_1}^{\tau_2} \sigma^2(AAR_\tau). \quad (7)$$

The null hypothesis that $AAR_\tau = 0$ can be tested using t-statistic:

$$t(AAR_\tau) = \frac{AAR_\tau}{\sigma(AAR_\tau)}. \quad (8)$$

Likewise, the null hypothesis that $CAAR(\tau_1, \tau_2) = 0$ can be tested:

$$t(CAAR(\tau_1, \tau_2)) = \frac{CAAR(\tau_1, \tau_2)}{\sigma(CAAR(\tau_1, \tau_2))}. \quad (9)$$

4. Data

The data in our study comprise daily closing price series of 34 selected constituents of KSE-100 index listed on PSX, and also KSE-100 as the market index. The selection criteria are that maximum of 3 firms in each industry group are selected from the KSE-100 index on the basis of highest market capitalization with trading data available on all relevant days during the sample period. All data are downloaded from Bloomberg. The sample period of data consists of 161 business days, including the estimation window of 120 days (from 2 January 2018 to 26 June 2018), and the event window of 41 days (from 27 June 2018 to 29 August 2018) covering 20 days before and after the event day. The 2018 General Election of Pakistan was on 25 July but the market was closed on that day. The event day is therefore set on the next day (26

July 2018). The estimation window of 120 trading days for daily data is sufficient to calculate normal returns and variance of abnormal returns (MacKinlay, 1997). When all data are natural-log transformed, their first differences are the daily returns.

5. Empirical results

We apply unit root tests to the data and the results (unreported) indicate that all return series are stationary. Next, we estimate the OLS parameters, α_i and β_i, of the market model (1), and calculate the normal returns on asset i, where i = 1 … 34, on the estimation window. We follow the steps to estimate $AR_{i\tau}$, AAR_τ, $CAAR(\tau_1, \tau_2)$, $\sigma^2(AAR_\tau)$, and $\sigma^2\big(CAAR(\tau_1, \tau_2)\big)$. For hypothesis testing, $t\,(AAR_\tau)$ and $t(CAAR(\tau_1, \tau_2))$ are computed to examine the statistical significance of AAR_τ and $CAAR(\tau_1, \tau_2)$ around the event window. The results are reported in Table 1.

Table 1. AAR_τ and $CAAR_\tau$ estimated using market model (1)

Event window	$\mathbf{AAR_\tau}$	$\mathbf{t_{AAR}}$	$\mathbf{CAAR_\tau}$	$\mathbf{t_{CAAR}}$
-20	0.611**	2.258	0.611**	2.252
-19	0.577**	2.126	1.188***	3.096
-18	0.291	1.073	1.480***	3.147
-17	0.144	0.533	1.625***	2.993
-16	0.048	0.179	1.673***	2.757
-15	0.062	0.230	1.736**	2.610
-14	0.266	0.982	2.003***	2.788
-13	-0.013	-0.051	1.989**	2.590
-12	-0.540**	-1.990	1.448*	1.778
-11	-0.545**	-2.007	0.903	1.052
-10	0.466*	1.719	1.370	1.522
-9	-0.085	-0.315	1.284	1.366
-8	-0.652**	-2.402	0.632	0.646
-7	0.358	1.321	0.991	0.975
-6	0.729**	2.686	1.720	1.636
-5	0.506*	1.866	2.227**	2.051
-4	0.200	0.737	2.427**	2.168
-3	-0.171	-0.632	2.256**	1.958
-2	0.047	0.173	2.303**	1.946
-1	0.210	0.777	2.514**	2.070
0	0.058	0.215	2.572**	2.068
1	0.470*	1.731	3.043**	2.389
2	-0.057	-0.211	2.985**	2.293
3	0.101	0.372	3.086**	2.320
4	0.290	1.070	3.377**	2.488
5	0.397	1.463	3.774**	2.726
6	-0.225	-0.830	3.549**	2.515
7	0.133	0.492	3.682**	2.563
8	0.619**	2.280	4.301***	2.942
9	0.009	0.036	4.311***	2.899

10	0.236	0.869	4.548***	3.008
11	0.304	1.121	4.852***	3.159
12	-0.311	-1.147	4.540***	2.911
13	-0.160	-0.590	4.380***	2.767
14	-0.225	-0.831	4.154**	2.586
15	0.699**	2.576	4.854***	2.980
16	-0.009	-0.034	4.845***	2.933
17	0.264	0.972	5.109***	3.052
18	-0.099	-0.364	5.010***	2.955
19	-0.419	-1.543	4.590**	2.673
20	-0.324	-1.193	4.266**	2.454

Notes:
$CAAR_\tau$ stands for $CAAR(\tau_1, \tau_2)$. t_{AAR} refers to $t(AAR_\tau)$ and t_{CAAR} refers to $t(CAAR(\tau_1, \tau_2))$.
The abnormal returns and cumulative abnormal returns are in percentage.
*, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

The results in Table 1 show that abnormal returns AAR_τ are small and statistically insignificant on most of the days including the event date (t = 0) on which AAR_τ is 0.058% only. It appears that the impact of the 2018 General Election was not large enough on the stock prices. From Equations (1), (2) and (4), the evidence of weak and insignificant AAR_τ may have been caused by the movements of normal returns $(\alpha_i + \beta_i R_{M\tau})$ closely together with the actual returns $R_{i\tau}$ around the event window.

Event study is usually adopted in literature for analyzing the impacts of, for example, dividend announcements (Maitra & Dey, 2012; Chaudhary, et al., 2016; Rosario & Chavali, 2016), stock split or reverse stock split (Bhuvaneshwari & Ramya, 2014; Jamroz & Koronkiewicz, 2013; Nadig, 2015) and earnings announcements (Kimbrough, et al., 2024; Prakash, 2013; Syed & Bajwa, 2018). Such impacts are firm-specific so that $R_{M\tau}$ is not affected by the events of interest as assumed in the event study. However, our event under study is the 2018 General Election of Pakistan, which might have led to changes in economic policies with change of ruling party, thereby impacting the overall economy in the next administrative term of the Pakistan Government. Fluctuations of stock markets due to political uncertainty constitute a kind of macroeconomic risk (Irshad, 2017). Hence, the impacts are market-related and are therefore significant on $R_{M\tau}$. In other words, the variability of $R_{i\tau}$ can be traced by the fluctuations of $R_{M\tau}$ around the event window.

Hence, we exclude R_{Mt} from the estimation of normal return by using constant mean return model (3) instead. We use OLS to estimate the constant mean of returns, α_i, as a normal return on each of the 34 individual stocks on the estimation window. $AR_{i\tau}$ is then equal to the mean adjusted return, which is similar to that adopted in the event study of for example, Ratnaningsih and Widanaputra (2019) and Ruven, et al. (2019). After that, we then re-estimate AAR_τ, $CAAR(\tau_1, \tau_2)$ and their corresponding t-statistics. Unlike the results in Table 1, the abnormal returns AAR_τ as reported in Table 2 become larger in absolute value and also significant on most of the days including the event day on which AAR_τ is 1.818% and is statistically significant. The general election result in 2018 had positive impact on and around the event day, implying that the business sectors expected to have favorable policy changes on the Pakistan economy

with the new government of Imran Khan. It therefore supports the alternative hypothesis of significant impact of the 2018 General Election on stock market.

When the AAR_τ is fluctuating, the overall trend for AAR_τ can be observed from the movements of $CAAR_\tau$ in Table 2 and the shape of the curve in Figure 2. It is found that $CAAR_\tau$ falls initially, and becomes negative. $CAAR_\tau$ starts to rise from 7 days before the event day and remain steady after the event day. In other words, the overall AAR_τ tends to be negative with falling $CAAR_\tau$, reflecting the concern about and uncertainties related to election results which, however, is alleviated when the election day comes closer. As a consequence, AAR_τ turns positive with rising $CAAR_\tau$ up to the event day t = 0. When all favorable information about the election results is already released over 2 days after the event day, AAR_τ fluctuates within a small range with steady $CAAR_\tau$ afterwards. The fast reflection of the stock market in response to the 2018 General Election outcome around the event day signifies the semi-strong form of market efficiency in PSX (Fama, 1970).

Furthermore, when the impacts of General Election are market-related, we treat market index as a separate asset in the normal return model as in Audi, et al. (2022) and detect the response of the market index to the 2018 General Election. It is found that AAR_τ for KSE-100 index are generally smaller than those for the group of individual stocks with smaller number of statistically significant AAR_τ. This is because compared with the group of 34 individual stocks, the relatively small and inactive KSE-100 index constituents may not be affected much by the event. Nonetheless, comparing Figure 3 with Figure 2, overall patterns of their AAR_τ and $CAAR_\tau$ are similar. Also, AAR_τ for KSE-100 index is still positive on the event day (1.786%), which is near 1.818% for the group of individual stocks. In other words, the overall fluctuations of AAR_τ for KSE-100 index within the event window are affected by the event of 2018 General Election to a certain degree.

Table 2. AAR_τ and $CAAR_\tau$ estimated using constant mean model (OLS)

	Group of Individual stocks				**KSE-100 index**			
Event window	$\mathbf{AAR_\tau}$	$\mathbf{t_{AAR}}$	$\mathbf{CAAR_\tau}$	$\mathbf{t_{CAAR}}$	$\mathbf{AAR_\tau}$	$\mathbf{t_{AAR}}$	$\mathbf{CAAR_\tau}$	$\mathbf{t_{CAAR}}$
-20	1.721***	5.523	1.721***	5.523	1.126	1.311	1.126	1.311
-19	1.225***	3.930	2.946***	6.684	0.657	0.765	1.784	1.468
-18	0.076	0.245	3.023***	5.599	-0.218	-0.253	1.566	1.052
-17	-0.282	-0.905	2.740***	4.396	-0.433	-0.504	1.132	0.659
-16	-0.363	-1.165	2.377***	3.411	-0.418	-0.486	0.714	0.371
-15	-2.879***	-9.239	-0.502	-0.657	-2.986***	-3.477	-2.272	-1.080
-14	-0.005	-0.016	-0.507	-0.615	-0.276	-0.321	-2.548	-1.121
-13	0.086	0.276	-0.421	-0.477	0.101	0.118	-2.446	-1.007
-12	-3.016***	-9.677	-3.437***	-3.676	-2.513***	-2.926	-4.960**	-1.924
-11	-0.144	-0.464	-3.582***	-3.634	0.406	0.473	-4.553*	-1.676
-10	0.789**	2.534	-2.792**	-2.701	0.328	0.381	-4.225	-1.483
-9	0.618**	1.984	-2.173**	-2.013	0.714	0.832	-3.510	-1.179
-8	0.310	0.995	-1.863*	-1.658	0.977	1.137	-2.533	-0.818
-7	-1.143***	-3.668	-3.007**	-2.578	-1.525*	-1.775	-4.059	-1.262

-6	1.379***	4.427	-1.627	-1.348	0.660	0.768	-3.398	-1.021
-5	2.848***	9.137	1.220	0.979	2.376***	2.766	-1.021	-0.297
-4	2.328***	7.470	3.549***	2.761	2.160**	2.514	1.138	0.321
-3	-1.544***	-4.954	2.004	1.516	-1.393	-1.622	-0.254	-0.069
-2	-1.791***	-5.746	0.213	0.157	-1.866**	-2.172	-2.121	-0.566
-1	2.308***	7.405	2.522*	1.809	2.129**	2.478	0.007	0.002
0	1.818***	5.835	4.340***	3.039	1.786**	2.080	1.794	0.455
1	2.078***	6.667	6.419***	4.390	1.632**	1.900	3.427	0.850
2	1.689***	5.419	8.108***	5.424	1.773**	2.064	5.200	1.262
3	-1.837***	-5.895	6.270***	4.106	-1.968**	-2.294	3.232	0.768
4	0.504	1.619	6.775***	4.347	0.217	0.253	3.449	0.803
5	-0.723**	-2.321	6.052***	3.807	-1.137	-1.324	2.311	0.527
6	0.169	0.543	6.221***	3.841	0.401	0.466	2.712	0.607
7	0.824**	2.643	7.045***	4.271	0.700	0.815	3.413	0.751
8	0.496	1.593	7.542***	4.493	-0.124	-0.144	3.289	0.711
9	-0.065	-0.211	7.476***	4.379	-0.077	-0.089	3.212	0.682
10	0.667**	2.140	8.143***	4.692	0.437	0.509	3.650	0.763
11	0.105	0.339	8.249***	4.678	-0.201	-0.234	3.449	0.709
12	-0.793**	-2.546	7.455***	4.163	-0.489	-0.569	2.958	0.599
13	-0.613**	-1.967	6.842***	3.764	-0.459	-0.535	2.499	0.498
14	-1.370***	-4.396	5.472***	2.967	-1.161	-1.352	1.337	0.263
15	1.822***	5.848	7.294***	3.900	1.140	1.327	2.477	0.480
16	-0.069	-0.224	7.224***	3.810	-0.061	-0.071	2.415	0.462
17	0.631**	2.026	7.856***	4.088	0.373	0.434	2.788	0.526
18	0.253	0.814	8.110***	4.166	0.358	0.417	3.147	0.586
19	-0.894***	-2.871	7.215***	3.660	-0.482	-0.562	2.664	0.490
20	-1.020***	-3.273	6.195***	3.104	-0.706	-0.822	1.957	0.355

Notes: See notes to Table 1.

The parameters of the normal return model are estimated using OLS method under the assumption that the variance of the OLS residuals are constant variance σ^2_{ei}. When the frequency of our data is daily, heteroscedasticity is likely to be there in the conditional variance of residuals (Engle, 1982). If it is not taken into account, the parameter estimates would become inefficient (Corhay & Rad, 1994). Allowing for GARCH effect in the normal return model can generate more efficient parameters (Bera, et al., 1988). We adopt the following threshold GARCH (p, r, q) model (Glosten, et al., 1993) to represent the conditional variance h_t at time t of the residuals e_t (with the subscript *i* omitted for brevity):

$$e_t|\Omega_{t-1} \sim \boldsymbol{t}(0.\, h_t) \tag{10}$$

$$h_t = \varphi_{i0} + \sum_{j=1}^{q} \phi_j e_{t-j}^2 + \sum_{k=1}^{r} \gamma_k e_{t-k}^2 I_{t-k}^- + \sum_{n=1}^{p} \delta_n h_{t-n}, \tag{11}$$

where Ω_{t-1} denotes information set up to t-1; **t**(.) stands for Student's t-distribution; I_{t-k}^- = 1 if $e_{t-k} < 0$ and = 0 otherwise.

Figure 1 AAR and CAAR estimated from the constant mean model (OLS): the group of individual stocks.

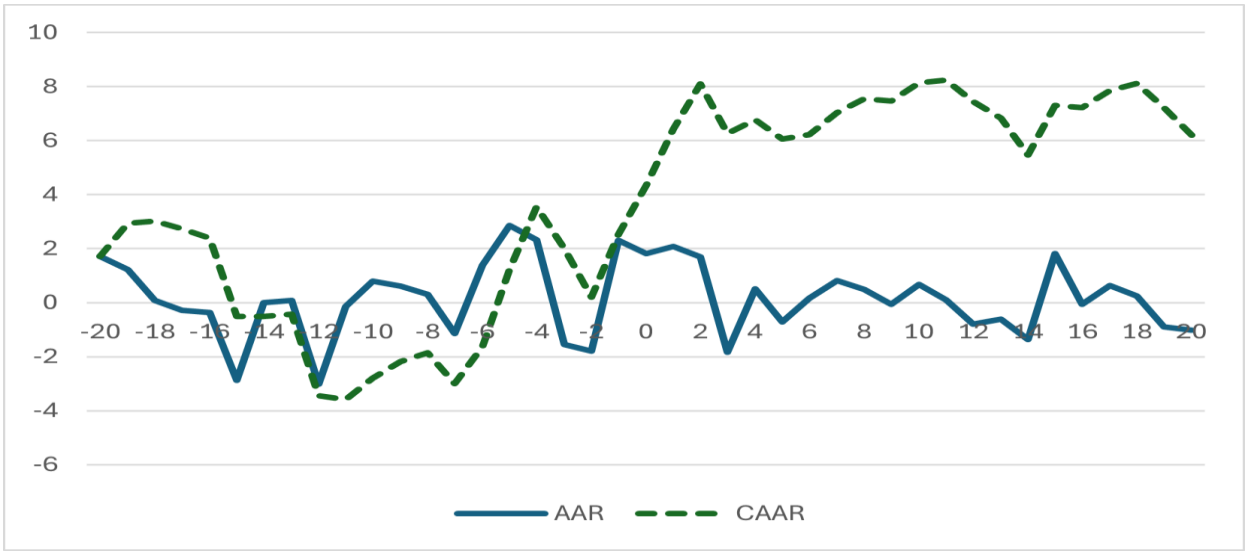
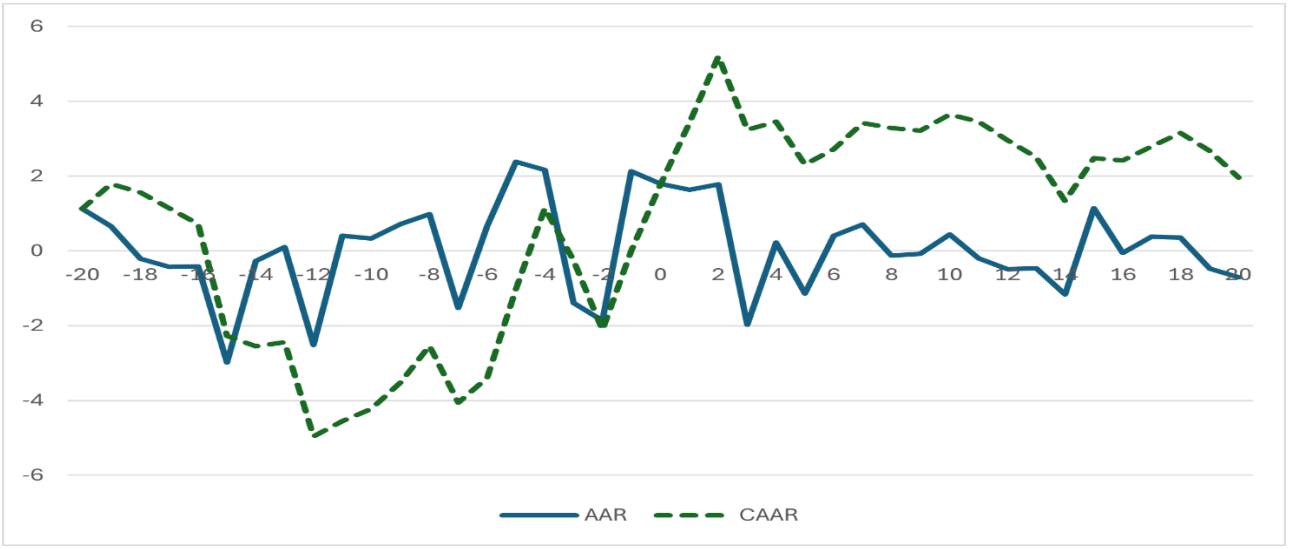


Figure 2 AAR and CAAR estimated from the constant mean model (OLS): KSE-100 index



In Equation (10), t-distribution of conditional errors can better model their fat-tailed features. In Equation (11), good news $e_{t-k} > 0$ and bad news $e_{t-k} < 0$ have asymmetric effects on the conditional variance h_t. Good news has an impact ϕ_j on the market while bad news has an impact $\phi_j + \gamma_k$. If $\gamma_k > 0$, and then bad news increases volatility. This is consistent with Raza, et al. (2023), who found that bad news has a greater impact on KSE-100 index than good news and the impact of negative shocks on the stock market's volatility is stronger than positive shocks. Unlike the standard GARCH model with normal distribution adopted in Sayed and Eledum (2023), the t-distributed threshold GARCH has the advantages of capturing the property of both fat tails and asymmetry in conditional variance.

Table 3. AAR_{τ} and $CAAR_{\tau}$ estimated using constant mean model (threshold GARCH)

	Group of Individual stocks				KSE-100 index			
Event window	$\mathbf{AAR_{\tau}}$	$\mathbf{t_{AAR}}$	$\mathbf{CAAR_{\tau}}$	$\mathbf{t_{CAAR}}$	$\mathbf{AAR_{\tau}}$	$\mathbf{t_{AAR}}$	$\mathbf{CAAR_{\tau}}$	$\mathbf{t_{CAAR}}$
-20	1.775***	5.689	1.775***	5.689	1.127	1.312	1.127	1.312
-19	1.279***	4.099	3.054***	6.921	0.658	0.766	1.786	1.470
-18	0.130	0.418	3.185***	5.893	-0.217	-0.253	1.568	1.054
-17	-0.228	-0.731	2.956***	4.737	-0.432	-0.504	1.135	0.661
-16	-0.309	-0.990	2.647***	3.794	-0.417	-0.485	0.718	0.373
-15	-2.825***	-9.055	-0.178	-0.232	-2.986***	-3.476	-2.267	-1.077
-14	0.048	0.156	-0.129	-0.156	-0.275	-0.320	-2.543	-1.119
-13	0.140	0.449	0.011	0.012	0.102	0.119	-2.440	-1.004
-12	-2.962***	-9.492	-2.951***	-3.152	-2.512***	-2.925	-4.953**	-1.922
-11	-0.090	-0.290	-3.041***	-3.082	0.407	0.474	-4.546*	-1.673
-10	0.843**	2.704	-2.197**	-2.123	0.328	0.382	-4.217	-1.480
-9	0.672**	2.155	-1.525	-1.411	0.715	0.833	-3.501	-1.176
-8	0.364	1.167	-1.161	-1.032	0.977	1.138	-2.523	-0.814
-7	-1.089***	-3.491	-2.250**	-1.927	-1.524*	-1.774	-4.048	-1.259
-6	1.434***	4.595	-0.816	-0.675	0.6612	0.769	-3.386	-1.018
-5	2.902***	9.299	2.085*	1.670	2.377***	2.767	-1.009	-0.293
-4	2.382***	7.634	4.467***	3.472	2.161**	2.515	1.151	0.325
-3	-1.490***	-4.775	2.977**	2.249	-1.392	-1.621	-0.240	-0.066
-2	-1.737***	-5.566	1.240	0.911	-1.865**	-2.171	-2.106	-0.562
-1	2.362***	7.570	3.602**	2.581	2.129**	2.479	0.023	0.006
0	1.872***	6.001	5.475***	3.829	1.787**	2.081	1.811	0.460
1	2.132***	6.832	7.607***	5.197	1.633*	1.901	3.444	0.854
2	1.743***	5.586	9.351***	6.248	1.773**	2.065	5.218	1.266
3	-1.783***	-5.715	7.567***	4.950	-1.967**	-2.290	3.250	0.772
4	0.558*	1.790	8.126***	5.208	0.218	0.253	3.469	0.807
5	-0.669**	-2.145	7.457***	4.686	-1.137	-1.323	2.332	0.532
6	0.223	0.716	7.680***	4.736	0.401	0.467	2.733	0.612
7	0.878***	2.813	8.558***	5.183	0.701	0.816	3.435	0.755
8	0.550*	1.764	9.109***	5.420	-0.123	-0.143	3.311	0.715
9	-0.011	-0.037	9.097***	5.322	-0.076	-0.088	3.235	0.687
10	0.721**	2.311	9.818***	5.651	0.438	0.510	3.674	0.768
11	0.159	0.512	9.978***	5.652	-0.200	-0.233	3.473	0.714
12	-0.739**	-2.370	9.238***	5.153	-0.488	-0.569	2.984	0.604
13	-0.559*	-1.791	8.679***	4.770	-0.459	-0.534	2.525	0.504
14	-1.316***	-4.218	7.363***	3.988	-1.161	-1.351	1.364	0.268
15	1.876***	6.014	9.240***	4.935	1.141	1.328	2.505	0.486
16	-0.015	-0.051	9.224***	4.859	-0.060	-0.070	2.444	0.467
17	0.685**	2.196	9.909***	5.151	0.373	0.435	2.818	0.532
18	0.307	0.986	10.217***	5.242	0.359	0.417	3.177	0.592
19	-0.840**	-2.694	9.376***	4.751	-0.482	-0.561	2.695	0.496
20	-0.966***	-3.096	8.410***	4.209	-0.705	-0.821	1.989	0.361

Notes: See notes to Table 1.

Figure 3 AAR and CAAR estimated from the constant mean model (threshold GARCH): the group of individual stocks

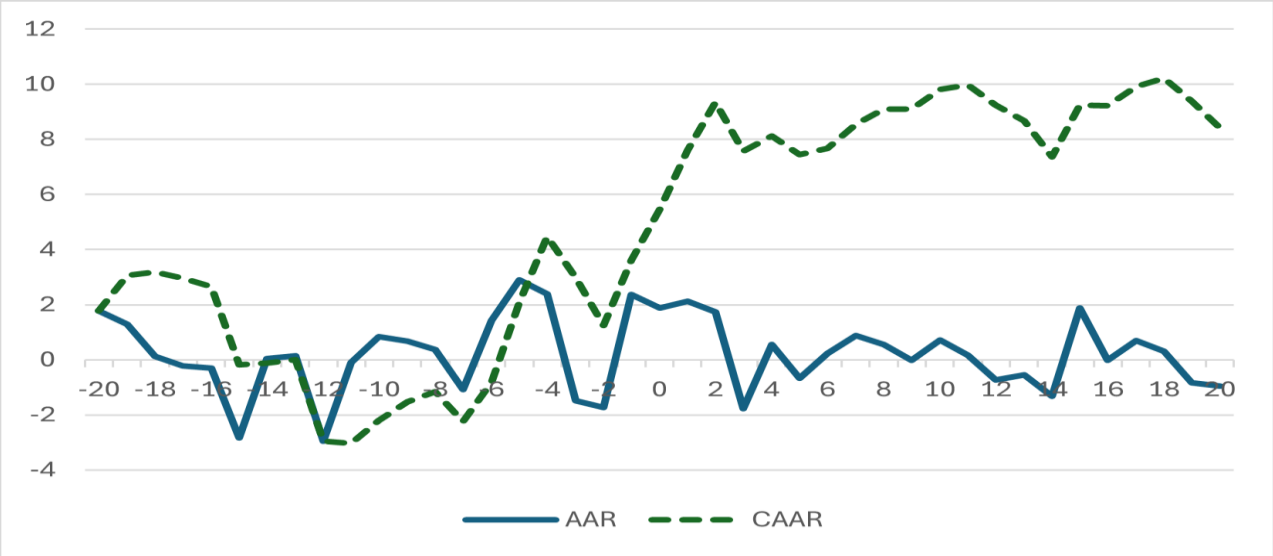
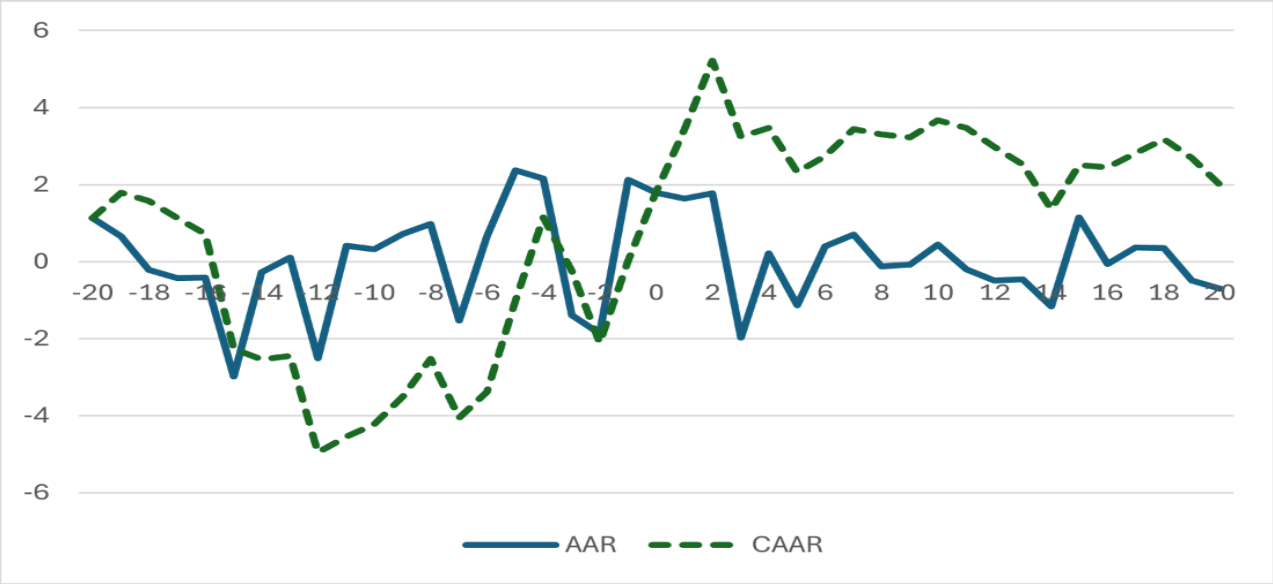


Figure 4 AAR and CAAR estimated from the constant mean model (threshold GARCH): KSE-100 index



For the event study, we obtain more efficient estimates of α_i in the constant mean model under threshold GARCH (1,1,1)-**t** model, which was also adopted in Raza, et al. (2023) for modeling volatility of the KSE-100 index returns. The estimates of AAR_τ for the group of individual stocks and KSE-100 index under threshold GARCH as presented in Table 3 together with Figures 3 and 4, are slightly larger than those under OLS. For example, AAR_τ for the group of individual stocks (KSE-100 index) at t = 0 is 1.872% (1.787%) in Table 3 compared with 1.818% (1.786%) in Table 2. The overall patterns of AAR_τ and $CAAR_\tau$ under threshold GARCH in Figures 3-4 are similar to those under OLS in Figures 1-2. The results

of event study with the implications of market efficiency generated by threshold GARCH and OLS are qualitatively the same.

6. Conclusion

This study identifies the impact of General Election 2018 in Pakistan on stock prices of firms listed in PSX. The impact of national election should be macroeconomic or market-related. Different from most of event studies for national elections in literature, we use constant mean model to estimate the normal return when calculating abnormal returns when national elections are market-related and affect the movements of market index. Also, not only OLS method but also threshold GARCH method are used to obtain more efficient estimates when the errors are assumed to follow threshold GARCH-t distribution to capture both time-varying, fat-tailed and asymmetric conditional variances. The findings of the event study reveal that there is a positive and statistically significant impact of the new reign of Imran Khan in Pakistan on prices of stocks of selected listed companies and the KSE-100 index on and around the event date. It is in contrast to the evidence of negative impact from Sagheer (2019) due to different length of estimation and event windows, estimation methods and sample of listed individual companies employed. Additionally, the favorable information contained in the event of 2018 General Election outcome is fully reflected over three days around the event date. The fast reaction satisfies the condition for semi-strong form of market efficiency (Woo, et al., 2020).

The results of our event study have key policy implications. The general elections affect performance of firms listed in PSX. Policymakers should focus on enhancing investor education and awareness, particularly regarding the potential impact of political events on stock prices. This could involve public awareness campaigns, educational programs, and resources that help investors understand the dynamics of the relationship between politics and financial markets. Investors and financial institutions may need to reassess their risk management strategies in light of the observed negative impact on stock prices. This could involve diversifying portfolios, incorporating hedging strategies, and adopting a more cautious approach during periods of political uncertainty. All the above can also help increase stock market participation rate (Naveed, et al., 2023). Our event study can be extended by adding different political events in order to find their differential effects on stock markets. Further, researchers should try to improve the parameter estimation by applying more advanced GARCH or other econometrics methods. Further, the impact on different sectors or industries should be investigated (Javid & Ahmad, 2020).

Our event study addresses how political events, such as national elections, introduce uncertainty into the financial markets. It is connected with decision sciences (Chang, et al., 2018; Tisdell, 2018), which often focuses on understanding and improving decision-making processes under conditions of uncertainty. The findings of this study contribute to the understanding of how investors make decisions during politically uncertain times, providing insights into decision-making under such situations.

References

Adebayo, T. S., Saint Akadiri, S., & Rjoub, H. (2022). On the relationship between economic policy uncertainty, geopolitical risk and stock market returns in South Korea: a quantile causality analysis. *Annals of Financial Economics*, 17(1), 2250005

Argantha, I. P. A., & Sudirman, I. M. S. N. (2019). Stock market reaction to the event of Indonesia's general election events in 2019. *American Journal of Humanities and Social Sciences Research*, 4(1), 202-208.

Ashraf, A., Hassan, M. K., Abbas, K., & Zaman, Q. U. (2020). Do firms harvest from political connections during general elections? Case of Pakistan. *Journal of Financial Crime*, 27(1), 258-273.

Audi, M., Sulehri, F. A., Ali, A., & Al-Masri, R. (2022). An event based analysis of stock return and political uncertainty in Pakistan: Revisited. *International Journal of Economics and Financial Issues*, 12(5), 39-56.

Bajwa, I. A., & Syed, A. M. (2022). A bibliometric review of the Pakistan Stock Exchange literature. *International Journal of Entrepreneurship*, 26(1), 1-10

Bash, A., & Al-Awadhi, A. M. (2023). Presidential elections and stock market outcomes: An event-study on the effect of Turkey's Presidential Elections on Borsa Istanbul. *Cogent Economics & Finance*, 11(2), 2265659.

Behera, A. D. (2018). Pakistan General Elections 2018: Clear signs of a guided democracy. *International Studies*, 55(3), 238-252.

Bera, A., Bubnys, E., & Park, H. (1988). Conditional heteroscedasticity in the market model and efficient estimates of betas. *Financial Review*, 23(2), 201-214.

Bhuvaneshwari, D., & Ramya, K. (2014). Impact of stock split announcement on stock prices. *International Journal of Management*, 5(3), 36-46.

Brogaard, J., Dai, L., Ngo, P. T., & Zhang, B. (2020). Global political uncertainty and asset prices. *The Review of Financial Studies*, 33(4), 1737-1780.Chavali, K., Alam, M.,

Chang, C. L., McAleer, M., & Wong, W. K. (2018). Decision sciences, economics, finance, business, computing, and big data: Connections. *Advances in Decision Sciences*, 22(1), 36-94.

Chaudhary, G. M., Hashmi, S. H., & Younis, A. (2016). Does dividend announcement generate market signal? Evidence from Pakistan. *International Journal of Economics and Financial Issues*, 6(1), 65-72.

Chavali, K., Alam, M., & Rosario, S. (2020). Stock market response to elections: An event study method. *The Journal of Asian Finance, Economics and Business*, 7(5), 9-18.

Corhay, A., & Rad, A. T. (1994). Statistical properties of daily returns: Evidence from European stock markets. *Journal of Business Finance & Accounting*, 21(2), 271-282.

Crane, A. D., Koch, A., & Lin, L. (2024). Real effects of markets on politics: Evidence from US presidential elections. *American Economic Review: Insights*, 6(1), 73-88.

Engle, R. F. (1982). Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation. *Econometrica*, 50(4), 987-1007.

Fama, E. F. (1970). Efficient capital markets. *Journal of Finance*, 25(2), 383-417.

Fidiana, F. (2020). Market reaction on the announcement of elected president. *Journal of Accounting and Strategic Finance*, 3(1), 71-87.

Glosten, L. R., Jagannathan, R., & Runkle, D. E. (1993). On the relation between the expected value and the volatility of the nominal excess return on stocks. *The journal of finance*, 48(5), 1779-1801.

Hashim, N., & El Mosallamy, D. (2020). Presidential elections and stock market: a comparative study. *Journal of Finance and Economics*, 8(3), 116-126.

Hon, T. Y., Moslehpour, M., & Woo, K. Y. (2021). Review on behavioral finance with empirical evidence. *Advances in Decision Sciences*, Vol. 25, Issue 4, p.15-41.

Iqbal, J. (2012). Stock market in Pakistan: An overview. *Journal of Emerging Market Finance*, 11(1), 61-91.

Irshad, H. (2017). Relationship among political instability, stock market returns and stock market volatility. *Studies in Business and Economics*, 12(2), 70-99.

Islam, M. S. U., Wong, W. C., & Yusoff, M. Y. B. M. (2023). Types of political connections, election years, and firm performance in Pakistan: Moderating role of external monitoring. *Cogent Business & Management*, 10(2), 2224139.

Islam, S., Zubair, M., & Muhammad, I. (2019). An analysis of 2018 General Elections in Pakistan. *Journal of the Research Society of Pakistan*, 56(2), 191.

Jamroz, P., & Koronkiewicz, G. (2013). Stock market reactions to the announcements and executions of stock-splits and reverse stock-splits. *Optimum Studia Ekonomiczne*, 5(65), 34-50.

Javid, A. Y., & Ahmad, B. (2020). Event study and impulse indicator saturation analysis to assess reaction of terrorist and political events: Evidence from oil and gas sector of Pakistan. *Journal of Quantitative Methods*, 4(1), 77-98.

Kashif, M., Palwishah, R., Ahmed, R. R., Vveinhardt, J., & Streimikiene, D. (2021). Do investors herd? An examination of Pakistan stock exchange. *International Journal of Finance & Economics*, 26(2), 2090-2105.

Kimbrough, M. D., Paharia, N., Wang, X., & Wei, S. (2024). The brand value of earnings: An event study of consumer responses to earnings announcements. *The Accounting Review*, 99(3), 259-285.

Koulakiotis, A., Papapanagos, H., & Papasyriopoulos, N. (2016). Political elections, abnormal returns and stock price volatility: the case of Greece. *Investment Management and Financial Innovations*, 13(1), 161-169.

Lausegger, M. (2021). Stock markets in turmoil: political institutions and the impact of elections. *Economics & Politics*, 33(1), 172-204.

MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35(1), 13-39.

Maitra, D., & Dey, K. (2012). Dividend announcement and market response in Indian stock market: An event-study analysis. *Global Business Review*, 13(2), 269-283.

Mehta, A. M., Sohail, A., Rehman, S. U., Naqvi, F. N., & Sair, S. A. (2020). Pakistan's political economy and stock market returns. *Academy of Accounting and Financial Studies Journal*, 24(4), 1-10.

Memon, B. A., Yao, H., & Tahir, R. (2020). General election effect on the network topology of Pakistan's stock market: network-based study of a political event. *Financial Innovation*, 6, 1-14.

Nadig, A. (2015). An empirical study of stock split announcements of Select BSE Sectors using event study methodology. *SDMIMD Journal of Management*, 6(1), 1-12.

Naveed, M., Sindhu, M. I., Ali, S., & Wong, W. K. (2023). To invest or not to invest? Determinants of low stock market participation: Qualitative perspective from Pakistan Stock Exchange. *Advances in Decision Sciences*, 27(1), 113-171.

Oehler, A., Walker, T. J., & Wendt, S. (2013). Effects of election results on stock price performance: evidence from 1980 to 2008. *Managerial Finance*, 39(8), 714-736.

Osuala, A. E., Onoh, U. A., & Nwansi, G. U. (2018). Presidential election results and stock market performance: evidence from Nigeria. *Applied Economics and Finance*, 5(2), 117-124.

Prakash, A. S. (2013). Event study test of incorporating earning announcement on share price. *Journal of Economic and Finance*, 2(1), 9-18.

Putri, D. N., Sadalia, I., & Irawati, N. (2020). Analysis of LQ45 stock market index reaction on Presidential Election 2019. *International Journal of Research and Review*, 7(3), 463-472.

Ratnaningsih, N. M. D., & Widanaputra, A. A. G. P. (2019). The reaction of Indonesian capital market to political event the announcement of Indonesia Presidential Election 2019 results: event study on KOMPAS 100. *International Research Journal of Management, IT and Social Sciences*, 6(6), 87-94.

Raza, S., Baiqing, S., Kay-Khine, P., & Ali Kemal, M. (2023). Uncovering the effect of news signals on daily stock market performance: An econometric analysis. *International Journal of Financial Studies*, 11(3), 99.

Repousis, S. (2016). Stocks' prices manipulation around national elections? An event study for the case of Greek banking sector. *Journal of Financial Crime*, 23(2), 248-256.

Riaz, K., Sheikh, M. R., Hussain, I., & Mushatq, M. I. (2023). Cash flows, earnings, and dividend payout nexus in Pakistan: A case study of KSE-100 Index. *Audit and Accounting Review, 3*(1), 101-124.

Rochimah, A., & Yuliana, I. (2024). Eleven sectors' reaction to the political event 2023: evidence from Indonesia Stock Exchange. *Journal of Accounting and Investment*, 25(2), 526-550.

Rosario, S., & Chavali, K. (2016). Market reaction on dividend announcement in Oman-An event study methodology. *International Journal of Economics and Financial Issues*, 6(1), 103-108.

Roy, G., & Khan, M. A. (2021). Does election impact on stock market returns in Bangladesh? *Asian Finance & Banking Review*, 5(1), 1-18.

Ruven, R., Azam, A. N., & Ferry, S. (2019). Impact of presidential election on Indonesian capital market: an event study analysis. *Russian Journal of Agricultural and Socio-Economic Sciences*, 91(7), 177-185.

Sagheer, F. (2019). *The Impact of General Election 2018 on Stock Prices: Evidence from Pakistan*, Master's thesis, Pakistan Institute of Development Economics, Pakistan.

Sayed, O. A., & Eledum, H. (2023). The short-run response of Saudi Arabia stock market to the outbreak of COVID-19 pandemic: An event-study methodology. *International Journal of Finance & Economics*, 28(3), 2367-2381.

Siddiqui, A., & Iqbal, A. (2020). Pakistan Stock Exchange and macroeconomic indicators: A case study of KSE 100 Index. *Karachi University Business Research Journal*, 1(1), 25-37.

Sulehri, F. A., & Ali, A. (2020). Impact of political uncertainty on Pakistan Stock Exchange: An event study approach. *Journal of Advanced Studies in Finance*, 11(2), 194-207.

Suleman, M. T. (2012). Stock market reaction to good and bad political news. *Asian Journal of Finance & Accounting*, 4(1), 299-312.

Syed, A. M., & Bajwa, I. A. (2018). Earnings announcements, stock price reaction and market efficiency–the case of Saudi Arabia. *International Journal of Islamic and Middle Eastern Finance and Management*, 11(3), 416-431.

TajMazinani, M., Hassani, H., & Raei, R. (2022). A comprehensive review of stock price prediction using text mining. *Advances in Decision Sciences*, 26(2), 116-152.

Tisdell, C. A. (2018). Diversity in economic decision-making and behaviour: A new brief review. *Advances in Decision Sciences*, 22(A), 351-368.

Volodin, S. N., Kuranov, G. M., & Yakubov, A. P. (2017). Impact of political news: Evidence from Russia. *Scientific Annals of Economics and Business*, 64(3), 271-287.

Wong, W. K., & McAleer, M. (2009). Mapping the Presidential Election Cycle in US stock markets. *Mathematics and Computers in Simulation*, 79(11), 3267-3277.

Woo, K. Y., Mai, C., McAleer, M., & Wong, W. K. (2020). Review on efficiency and anomalies in stock markets. *Economies*, 8(1), 20.