Did Bicton prices show Abnormal Returns Different from Zero on the Election of President Trump in 2016 and 2024?

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ABSTRACT

Research work has shown that the sentiments expressed by President Trump in Twitter posts can be a predictive factor in the return of Bitcoin (Huynh, 2021). However, no work exists in the literature that documents the abnormal returns of Bitcoin around the election days of President Trump. The current research shows that the hypothesis of the median abnormal return of Bitcoin being zero cannot be rejected within a short period around the day of the election of President Trump. As the samples of abnormal returns of Bitcoin are not normally distributed, non-parametric hypothesis tests have been used in this work. The results from this work will be of importance to portfolio managers who will be encouraged to use the information presented here to predict the return of Bitcoins on days of political significance.

Keywords: Bitcoin, Presidential Election, President Trump, event study, abnormal returns

INTRODUCTION

Huynh (2021) showed that the sentiments expressed by President Trump in Twitter posts can be a predictive factor in the financial return of Bitcoin. The goal of the current research is to determine whether the election of President Trump in 2016 and 2024 has produced a short-term abnormal return in Bitcoin. Hong & Zhang (2023) wrote that the exponential growth in Bitcoin trading in the recent years has led to increased energy usage and carbon dioxide emissions. Yelkenci,Yelkenci, Vadar,& Avdogan (2024) documented that the sentiments expressed in tweets by influential personalities affect the price of Bitcoin. In response, to these expressed sentiments, Bitcoin prices are impacted by the sentiments expressed in tweets about Bitcoin.

We propose that the elections of President Trump in 2016 and 2024 have shown short term effects on the financial returns of Bitcoin prices. Our main hypothesis is that Bitcoin prices have displayed abnormal returns in response to the election of President Trump. Thus, the primary objective of this study is to determine the abnormal returns (if any) of Bitcoin prices on the days of the election of President Trump in 2016, and in 2024, and a few days before and after those important event days are also considered. This type of study on abnormal returns of Bitcoin on the Presidential election days does not exist in the current literature.

There is a reason to believe that the election victories of President Trump on November 8, 2016, and on November 5, 2024, have impacted the short-term returns of Bitcoin, based on the uncertainty information hypothesis (Brown et al., 1988) and on the findings from past studies supporting this hypothesis (e.g., Pantzalis et al., 2000). This leads to our hypothesis that the election victories of President Trump have significant impact on the financial performance of Bitcoin. This study has used an event-study methodology to evaluate the effect of the victories of President Trump on the abnormal returns of Bitcoin. To conduct the empirical analysis for this study, price data of Bitcoin, listed on New York Stock Exchange (NYSE), have been collected. The next section provides a brief literature review on the methods of evaluating abnormal returns, which is then followed by the results section, the discussion section, and finally the conclusion section.

LITERATURE REVIEW

Event-Study Methodology

Fama (1970, 1991) proposed a methodology for event study. This methodology is based on the efficient market hypothesis ensuring that security prices fully reflect all available market information. According to Fama (1991), past event studies indicated that stock prices would adjust within one day of an event announcement. He reported that this quick adjustment of stock price in response to an event announcement is consistent with efficient market hypothesis. Corrado (2011) in his detailed review of event studies pointed out that the event study methodology, originally developed for empirical research in finance and accounting, is now widely adopted in other disciplines including economics, history, law, management marketing, and political science.

Past research reported mixed results concerning the impacts of major political events on stock market performance. On the one hand, some researchers found

that election results had no impact on stock market performance. Repousis (2016) studied the impact of the 2000, 2004, and 2007 Greek elections on bank stocks using the event study methodology but found no evidence for the effects of these elections on stock prices. He therefore concluded that the two major political parties were unable to manipulate the stock prices of Greek banks for political purposes. In other words, stock market trading can efficiently absorb market information, which implies market efficiency. On the other hand, some researchers found that election results impacted domestic stock market performance. Ying et al. (2016) analyzed the returns to Malaysian stocks before and after the elections in Malaysia from 2004 to 2013 and reported that both AAR (Average Abnormal Return) and CARR (Cumulative Average Abnormal Return) within the 15-day window before and after the elections were statistically significant. They therefore concluded that the Malaysian stock market did not show the properties of the semi-strong form of market efficiency in the dissemination of news about the elections. Similarly, Ahmad et al. (2017) reported significant impacts of political events on the abnormal returns in the Karachi Stock Exchange (KSE)100 Index and found significant CARRs of the KSE100 Index in the windows of 20 days before and 20 days after significant political events in Pakistan.

Nandy & Sussan (2020) used event-study methodology to study overseas stock markets and reported that the news of the 2014 parliamentary elections in India affected the short-term returns of ADRs (American Depository Receipts) and those of the underlying equities traded in Indian stock market. They found that the CAARs of ADRs were lower than those of the underlying Indian equities immediately before and after the elections, suggesting that the market was efficient in absorbing the election information.

Using event-study methodology, Nandy & Sussan (2022) reported the abnormal returns stocks of Fintech companies in response to the national emergency declaration during the COVID19 pandemic on March 13,2020. These authors did not reject the null hypothesis that the abnormal returns of Fintech digital payment companies are zero in the week following the declaration of the national emergency.

Tomic, Todorovic, & Jaksic (2023) used event-study methodology to report that stocks of electronic industry traded in the New York Stock Exchanges showed no statistically significant abnormal return after the 2016 Presidential elections. However, Tomic et al. (2023) showed that the stocks of electronic industry showed statistically significant positive abnormal return after the 2020 Presidential elections.

Nandy & Susan (2025) also used event-study methodology to determine abnormal returns of Pfizer and Moderna stocks. COVID-19 vaccines developed by Pfizer and Moderna were given Emergency Use Authorizations (EUA) by Federal Drug Administration. Nandy et al. (2025) found that the abnormal return of Pfizer stock on the day of EUA was not zero, while the abnormal return of Moderna stock was zero at a 5% level of statistical significance.

Event Study on Financial Returns of Bitcoin

Bouoiyour, Selmi,& Wehar (2019), documented that Bitcoin can act as an effective haven against political risk exposure; but such property varies over time. Huynh (2021) showed that the sentiments expressed by President Trump in Twitter posts can be a predictive factor in the financial return of Bitcoin. Meyer, Wolpe & Sandner (2023) analyzed data from YouTube influencers' predictions on market movements of cryptocurrency. These authors found that the influencers are not correct in their market analysis. Meyer et al. (2023) concluded that the large audience of such YouTube crypto influencers should refrain from adopting any investment advice on cryptocurrency.

Zhou (2024) employed event-study methodology to determine the effect of various types of events on the volatility and returns of cryptocurrency, such as Bitcoin. Zhou (2024) showed that political conflict events cause significant short-term return volatility. Zhou (2024) determined that cryptocurrency recognition and support events have significant and sustained positive impacts on market returns. Further, Zhou (2024) determined that social media statements made by influential public figures have a significant and substantial although short-lived effect on the returns of cryptocurrency.

Based on the above research findings, we have reason to believe that the median abnormal return (A_o) of Bitcoin will differ from zero on the event day of the election victories of President Trump on November 8, 2016, and November 5, 2024. More formally, we hypothesize:

H_1: Ceteris Paribus, the median abnormal return will differ from zero.

DATA COLLECTION

Bitcoin is listed on the New York Stock Exchange with the ticker symbol of BTC and has a market capitalization of $202 billion, Stock market prices of Bitcoin were obtained from Yahoo Finance website. Price data of the New York Stock Exchange Index were also obtained from Yahoo finance website.

METHOD

In the current research event-study method is used to determine the abnormal returns of Bitcoin on

November 8, 2016, and on November 5, 2024. We have also determined the cumulative abnormal returns of Bitcoin for three days before and after those two event dates. Daily equity prices for one year prior to the Presidential election (250 trading days) for Bitcoin from October 2015 to October 2016 and from mid-October 2023 to October 2024 were obtained from https://finance.yahoo.com/.

The return of equity *i* on day *t* is calculated as follows:

$$R_{it} = (M_C - M_O)/M_O$$

where, R_{it} = Market return on day *t* for equity *i*, M_O = Market opening price of equity *i* on day *t* and M_C = Market closing price of equity *i* on day *t*.

The CAPM (Capital Asset Pricing Model) model is used to evaluate the abnormal return of Pfizer stock on the day of the event as:

$$A_o = R_{it} - (\alpha_i + \beta_, R_{mt}),$$

where A_{oi} = abnormal return of Bitcoin, R_{mt} = return of Dow Jones Industrial Average index on day t, α_i and $\beta_,$ are parameters obtained from ordinary least squares regression between R_{it} and R_{mt}.

The control period used for linear regression contained *n* days – beginning with *n* + 5 days prior to the event date and ending on 3 days before the event date (Corrado, 2011). A value of *n* = 250 days was chosen to represent the number of trading days in a calendar year.

In previous studies Nandy et al. (2025), and Nandy et al. (2021) have assumed that the abnormal returns are normally distributed. Thus, Nandy et al. (2025) have used a parametric t-test to test the validity of the alternate hypothesis that the mean abnormal return is different from zero. However, for the present study we have determined that the abnormal returns of Bitcoins have a high degree of skewness, and thus, are not normally distributed. Thus, we will use a non-parametric sign test to test the alternate hypothesis that the abnormal median return of Bitcoin is different from zero on the Presidential election days. The median sign test is a test of a null hypothesis about the median of the population of abnormal returns being equal to zero.

The cumulative absolute return (CAAR) is calculated as:

$$CAAR\ [-10,10] = \Sigma\ A_0$$

where the summation of the abnormal returns (A_0) is carried out from ten days before happening of the event to ten days after the event.

RESULTS

Table 1 shows the abnormal returns of Bitcoin stock on three days before and three days after November 8, 2016, the Presidential Election Day.

Table 1 shows that the distribution of abnormal returns of Bitcoin stock three days prior and three days after the Presidential election on November 8, 2016, possess the characteristics of negative skew. Thus, the anormal returns are not normally distributed. The abnormal return of Bitcoin on the day of election (November 8, 2016) is slightly positive, with a value of 0.007.

Table 2 shows the abnormal returns of Bitcoin stock on three days before and three days after November 5, 2024, the Presidential Election Day

Table 2 shows that the distribution of abnormal returns of Bitcoin three days prior and three days after the Presidential election on November 5, 2024, have the characteristics of negative skew. Thus, the abnormal returns are not normally distributed. On the day of the election, the abnormal return is slightly negative, with a value of -0.007.

Table 3 shows the cumulative abnormal returns of Bitcoin for various time periods, starting with ten days prior and ten days after the Presidential election day on November 8, 2016. The cumulative abnormal return of Bitcoin three days prior and three days after the Presidential election day is also shown in this table (-3,3). The median values of abnormal returns for each period are also shown. Finally, the p-values for the non-parametric sign test for zero median value of the abnormal return (AR) in each of these periods are also shown in this table.

Table 1: Abnormal Returns of Bitcoin stock during a three-day period before and after the Presidential election on November 8, 2016

Nov 3	Nov 4	Nov 7	Nov 8	Nov 9	Nov 10	Nov 11	Skew
-0.005	-0.012	0.014	0.007	-0.014	0.019	-0.073	-1.815

Table 2: Abnormal Returns of Bitcoin stock during a three-day period before and after the Presidential election on November 5, 2024

Oct 31	Nov 1	Nov 4	Nov 5	Dec 14	Dec 15	Dec 16	Skew
-0.003	-0.002	-0.024	-0.007	0.002	0.002	0.006	-1.682

Table 3: Cumulative Abnormal Returns (CAAR) and Median Abnormal Returns (AR) in different time periods around the Presidential Election on November 8, 2016

Period	(-10,10)	(-5,5)	(-5,0)	(0,5)	(-3,0)	(0,3)	(-3,3)
CAAR	0.123	0.004	-0.006	0.017	0.061	-0.009	0.059
Median AR	0.007	0.005	0.011	0.004	0.003	0.003	-0.001
p-value for zero AR in each period	0.988	0.889	0.891	0.891	0.688	0.688	0.5

It is noted that all the p-values are greater than a significance level of 0.05. This suggests no support for the alternative hypotheses that the median values of abnormal returns are different from zero.

Table 4 shows the cumulative abnormal returns of Bitcoin for various time periods starting with ten days prior and ten days after the Presidential Election Day on November 5, 2024. The cumulative abnormal return of Bitcoin stock three days prior and three days after the Presidential election day is also shown in this table (-3,3). The median values of cumulative abnormal returns for each period are shown. Finally, the p-values for the non-parametric sign test for zero median value of the abnormal returns (AR) for each period are also shown in this table.

It is noted that all the p-values are greater than a significance level of 0.05. This suggests that there is not enough evidence to support the alternative hypotheses that the median values are different from zero in each period. However, the p-value (shown in bold) for the period starting from the election day and continuing up to five days after the election day (0,5), is 0.094, which is less than 0.1. This shows that at a significance level of 0.1, we can support the alternate hypothesis that the median value of the abnormal return (AR) for that period is different from zero in that period.

Table 5 shows the cumulative abnormal returns (CAAR) during different time periods around the Presidential election day on November 8. 2016. The median value and the skew are also shown. Finally, the p-value to test the null hypothesis of zero CAAR across all the periods is shown.

Table 4: Cumulative Abnormal Returns (CAAR) and Abnormal Returns (AR) in different periods around the Presidential Election on November 5, 2024

Period	(-10,10)	(-5,5)	(-5,0)	(0,5)	(-3,0)	(0,3)	(-3,3)
CAAR	0.147	0.101	0.037	0.057	-0.035	0.004	-0.025
Median AR	0.002	0.001	0.001	-0.005	-0.005	0.002	-0.002
p-value for zero AR in each period	0.748	0.967	0.891	0.094	0.313	0.688	0.5

Table 6 shows the cumulative abnormal returns (CAAR) during different time periods around the Presidential election day on November 5. 2024. The median value and the skew are also shown. Finally, the p-value to test the null hypothesis for zero CAAR across all the periods is shown.

The high p-values across all periods in tables 5 and 6 indicate that there is not enough evidence to support the alternative hypothesis that the CAAR is different from zero in the different time periods. This means that the Bitcoin prices do not show abnormal returns during the election victories of President Trump. In other words, Bitcoin daily prices are not exceptionally influenced by politically important events. Thus, Bitcoin prices move in tandem with the movement of general stock market prices.

DISCUSSION

It is interesting to note that our results on abnormal return of Bitcoin after the Presidential Election Day on November 8, 2016, are in line with the results obtained by Tomic et al. (2023). Tomic, et al. (2023) documented that the stocks of electronic industry traded in the New York Stock Exchanges showed no statistically significant abnormal return after the 2016 Presidential elections. This means that the CAPM model had adequately predicted the daily returns of Bitcoin during the Presidential election in 2016. The current work shows that Bitcoin prices did not show any abnormal return on the Presidential election day on November 8, 2016. This result shows that the dissemination of important news does not affect the prices of digital assets abnormally.

The results from the present study also show that the abnormal return of Bitcoin following the Presidential election in 2024 is not statistically significant at 5% level of significance. However, the abnormal return of Bitcoin is statistically significant at 10% level of significance on the day of Presidential election – November 5, 2024. This result is in lines with the findings of Tomic et al. (2023), who showed that the stocks of electronic industry showed statistically significant positive abnormal return after the

Table 5: Cumulative Abnormal Returns (CAAR) in different periods around the Presidential Election on November 8, 2016

Period	(-10,10)	(-5,5)	(-5,0)	(0,5)	(-3,0)	(0,3)	(-3,3)	Median	Skew
CAAR	0.123	0.004	-0.006	0.017	0.061	0.004	-0.025	0.004	
p-value for zero CAAR across all the periods	0.938								

Table 6: Cumulative Abnormal Returns (CAAR) in different periods around the Presidential Election on November 5, 2024

Period	(-10,10)	(-5,5)	(-5,0)	(0,5)	(-3,0)	(0,3)	(-3,3)	Median	Skew
CAAR	0.147	0.101	0.037	0.057	-0.035	-0.035	0.004	0.037	
p-value for zero CAAR across all the periods	0.938								

2020 Presidential elections, The current study finds that Bitcoin shows a small negative abnormal return of on the Presidential election day in 2024. That means the CAPM model has predicted a return of Bitcoin which is slightly different from the actual daily return of Bitcoin on election day.

This research work has demonstrated that the CAPM model has adequately predicted the daily return of Bitcoin on election days in 2016 and 2024. However, at a 10% level of significance, there is adequate support for the alternate hypothesis that the median return is different from zero on the election day in 2024. Portfolio managers can use the CAPM model with a certain level of confidence to predict the daily return of Bitcoin. However, it will be worthwhile calculating the abnormal returns of Bitcoin on particular days of political significance, such as the day of Presidential election. On those days, the abnormal returns of Bitcoin can be different from zero with statistical significance. This work shows that the daily returns of Bitcoins can be affected by politically significant events.

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