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ELECTIONS AND STOCK MARKET RETURNS: EVIDENCE FROM BORSA ISTANBUL

HALK OYLAMALARI VE HİSSE PİYASASI GETİRİLERİ: BORSA İSTANBUL'DAN BULGULAR

Nuri Volkan KAYAÇETİN [1*]

Abstract

Stock prices may display predictable patterns around major political events, particularly in emerging market economies where political risk is a key component of asset risk premiums. One distinct event that would be expected to result in an abrupt increase in political risk is elections. Motivated by this notion, we study the returns for a set of indicator and sectoral indices of Borsa Istanbul stocks and the U.S. Dollar–Turkish Lira exchange rate around political elections held in Turkey over 2001–2020. Our tests reveal an accumulation of economically and statistically significant positive abnormal returns for all Borsa Istanbul stock indices and negative abnormal returns for the U.S. Dollar–Turkish Lira exchange rate over a window that starts as early as a month before the election date and extends for two weeks into the post-election period, with the effect being particularly strong in the week that immediately follows the election. Consistent with a political risk-based story, volatility of index returns starts increasing over the same period and plateaus out at a level that is roughly one-and-a-half to two-folds greater than its pre-election period average.

Keywords: Political risk, elections, stock market, abnormal returns, Borsa Istanbul
JEL Classification: G10, G12, G15

Öz

Hisse senedi fiyatlarının, özellikle siyasi riskin beklenen risk primlerinin önemli bir bileşeni olduğu gelişmekte olan ekonomilerde, önemli siyasi olaylar etrafında öngörülebilir kalıplar göstermesi beklenebilir. Siyasi riskte belirgin bir artışa yol açabilecek önemli olaylardan biri de seçimlerdir. Bu makalede,bu düşünceden yola çıkılarak Borsa İstanbul gösterge ve sektörel endekslerinin ve Amerikan Doları-Türk Lirası döviz kurunun 2001–2020 yılları arasında Türkiye'de gerçekleştirilen seçimler etrafındaki davranışı incelenmiştir. Testlerimiz seçim tarihlerinden bir ay önce başlayan ve seçim sonrasında iki hafta devam eden bir pencerede, ağırlıkla seçim gününü takip eden haftada olmak üzere, Borsa Istanbul endekslerinde ekonomik ve istatistiksel olarak anlamlı bir kümülatif pozitif anormal getiri, Amerikan Doları-Türk Lirası döviz kurunda ise negatif bir kümülatif anormal getiri ortaya koymaktadır. Siyasi risk temelli bir hikaye ile tutarlı olarak, günlük endeks getirilerindeki oynaklığın aynı periyot içerisinde artmaya başladığı ve seçim öncesi dönemdeki ortalamasından kabaca bir buçuk ila iki kat daha yüksek bir seviyede doyuma ulaştığı gözlemlenmiştir.

Anahtar Kelimeler: Siyasi risk, seçimler, pay piyasası, anormal getiriler, Borsa Istanbul
JEL Sınıflandırması: G10, G12, G15

* Corresponding Author: Assistant Professor, FMV Işık University, Faculty of Engineering and Nature Sciences, Department of Industrial Engineering,volkan.kayacetin@isikun.edu.tr, ORCID: 0000-0001-7441-8053.

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1. Introduction

Governments play an important role in the economy, directly through guiding public investments and expenditures (e.g., Aschauer (1989)) and indirectly by influencing policies pursued by central banks and other major economic institutions (e.g., Haslag (1988)). Given this role, the stability of a government and its economic policies can be expected to have a significant bearing on the risk borne by financial market investors. [1] Following this notion, a large and growing strand of literature studies the impact of political risk on stock returns. Pastor and Veronesi (2013), for instance, devise a theoretical model of government policy choice and demonstrate that political uncertainty instills a significant risk premium into equity returns, the size of which varies as a function of the state of the economy. In line with this notion, Diamonte et al. (1996) and Erb et al. (1996) find that the mean equity return in countries experiencing a reduction in political risk is larger than those in counties experiencing a risk increase, with the effect being more pronounced in emerging markets. More recently, Dimic et al. (2015) document that political risk is priced in developed, emerging, and frontier markets, with government stability acting as a unique factor for frontier markets.

A distinct event that can be expected to lead to an increase in political risk is elections. Under the *efficient markets hypothesis,* all relevant information about an election's outcome will be priced prior to the election date and the stock market response to any event day surprises should occur immediately and in full once the market reopens. Brown et al. (1988), however, argue that usual definitions of rationality do not imply that stock prices should react to major information shocks instantaneously and advance the *uncertain information hypothesis* (UIH), which holds that a noisy piece of favorable or unfavorable news causes risk-averse investors to set risky asset prices significantly below their conditional expected values and the resolution of uncertainty results in a positive price drift, on average, regardless of the nature of the catalyzing event. Adapted to our setting, the UIH predicts stock prices should remain depressed prior to election dates and a risk relief would take place in the form of a post-election price rally once the election outcome is known and the uncertainty is resolved. This risk relief may begin earlier in the pre-election period if the election outcome becomes evident before the event date or with a delay in the post-election period if the market is unsure about the implications of the observed outcome on future economic activity.

The extant literature on the impact of elections on equity market returns goes back to Niederhoffer et al. (1970) who document significant positive abnormal returns on days immediately preceding and succeeding U.S. presidential elections. Pantzalis et al. (2000) study equity market returns around national elections in thirty-three countries and document positive and significant abnormal returns over a ten-day pre-event period, the magnitude of which varies as a function of political, economic, and press freedom, election timing, and the success or failure of the incumbent. Last, Li and Born (2006), Goodell and Vähäma (2013), and Bialkowski et al. (2008) all demonstrate that political elections tend to induce significant increases in stock market volatility and/or in average stock returns both in the U.S. equity market and on an international scale across many countries.

1 This impact may be expected to be particularly strong in emerging market countries, where the policies followed by key economic institutions such as central banks tend to be closely intertwined with those of the incumbent government.

While the findings from international markets point to a prevalence of positive abnormal returns and increased volatility around elections, the evidence on Borsa Istanbul (BIST) is limited to four papers and is somewhat conflicting and incomplete in terms of its conclusions. Mandaci (2003) examines a 30-day window centered around general election dates and documents positive and statistically significant post-election abnormal returns for elections of 1995, 1999, and 2002, but not for 1991. Ada et al (2013) analyze a sample of 12 elections between 1991-2011 and uncover positive post-election abnormal returns for general and local elections. Konak and Guner (2016) study a sample of 12 elections held between 2000–2014 and conclude that the significant abnormal returns over the same 30-day window as in Mandaci (2003) and Ada et al (2013) are predominantly negative. Last, Yılmaz and Elmas (2019) study 16 political elections held between 1991–2017 and report significant abnormal returns (positive in 8 and negative in 6 cases) over a 20-day window centered around the election dates. All four papers, however, examine a single benchmark index (namely, BIST100), focus only on its returns (and thus ignore volatility), and only one (Ada et al, 2013) tests whether the aggregate impact is positive or negative across all the elections studied.

This paper provides a comprehensive analysis of the election period behavior of the Turkish equity market that helps reconcile the evidence on the impact of elections on BIST index returns with one another and with the reciprocating evidence from the U.S. and other foreign markets. Our analysis differs from the extant papers in the literature in that (a) it takes a broader perspective on the subject matter by analyzing a richer set of test assets over an up-to-date sample period; (b) it offers a more complete treatment by jointly examining the return and volatility patterns around elections; (c) it focuses on the aggregate price and statistical significance of election risk across all elections.

In our event study tests, we examine the daily abnormal returns of various BIST indices around political elections held in Turkey over the period from January 2001 to December 2021. Consistent with the predictions of the UIH, we observe an abnormal positive drift over a 20-day pre-election window and an accumulation of statistically significant and economically large positive abnormal returns amid heightened volatility (one-and-a-half to two-folds greater than the pre-event average) over a 10-day post-election window for all indices. The mean cumulative abnormal return over the pre – and post-election periods combined is 6.28% for an index of the 30 largest and most actively traded BIST stocks (XU030), 6.16% for a value-weighted index of large-to-medium market cap stocks (XYUZO), 3.90% for a benchmark index of medium-to-small market cap stocks (XTUMY), and is significantly greater for finance and technology stocks (8.34% for XUMAL and 6.38% for XUTEK) than for industrial and services stocks (4.00% for XUSIN and 3.51% for XUHIZ).

By way of regressions, we confirm that these effects are consistent across subsamples and robust to controlling for stylized calendar patterns and serial dependencies in returns. The subsample tests reveal that the post-election abnormal performance observed in the event study tests is significant in both the early and the late halves of our sample period, but stronger in the early half. The positive pre-election period drift, however, turns out to be specific to the early half of our sample period. In regressions that control for calendar effects and lagged returns, we obtain evidence of a strong

turn-of-the-month effect in all stock indices analyzed, a weak Halloween effect [2] in medium – and small-cap stock indices and technology stocks, and a strong Friday effect in service and technology stocks, along with several statistically significant but economically negligible serial dependencies. The statistical and economic significance of the abnormal election period returns implicated by the loadings on our election period dummies, however, remain robust to the presence of these controls.

The rest of the paper is organized as follows. The next section provides a brief review of the extant literature on the impact of political elections on stock market returns. Section 3 explains the sources and characteristics of our data and explains our event study and regression methodologies. Section 4 presents and discusses the results from our event study analysis in its former half and those from our regression tests in its latter half. Section 5 presents our concluding remarks.

2. Literature Review

There is ample evidence of the role governments and their policies play in spurring or destroying economic growth, either directly through public investments (e.g., Aschauer (1989), Easterly and Rebelo (1993), and Bom and Ligthart (2014)) [3] or indirectly through their influence on policies pursued by key economic institutions such as central banks (e.g., Haslag (1988), Gertler and Karadi (2015), and Aastveit et al. (2017)) [4]. Considering the importance of this role, it is conceivable that uncertainty regarding the stability of a government and its policies would have an adverse impact on real economic activity (e.g., Julio and Yook (2012) and Fernandez-Villaverde et al. (2015)). [5]

Given its adverse impact on economic activity, political risk should be an important consideration for investors. [6] In line with this notion, Pastor and Veronesi (2013) devise a general equilibrium model of government policy choice and show that political risk should be a significant component

2 Despite the name with which it is commonly referred to, the Halloween effect has nothing to do with the actual Halloween event. The name merely derives from the fact that the period over which the seasonal pattern is observed begins at the end of October, concurrently with Halloween. It is also called the 'Sell in May' effect in the literature.

3 Aschauer (1989) finds that public investment has positive direct and indirect effects on private sector output and productivity growth. Easterly and Rebelo (1993) uncover a strong correlation between government budget surplus and investment policies and economic growth. Bom and Ligthart (2014) conduct a meta-analysis of three decades of research on the link between public capital and private output and estimate a positive co-integrating relationship over the long-run between public capital and private output, which is almost thrice as strong as its short-run effects.

4 Haslag (1988) studies monetary policy effects and finds that inflation and reserve requirements are negatively linked to economic growth. Gertler and Karadi (2015) find that unanticipated shocks to monetary policy lead to a significant decline in economic output through their impact on credit costs. Aastveit, Natvik, and Sola (2017) document that monetary policy shocks affect economic activity, with the effect being weaker when economic uncertainty is higher.

5 Julio and Yook (2012) study a large cross-section of companies from across the globe and document slower corporate investment during national election years, with firms reducing their investment expenditures by an average of 4.8%. Fernandez-Villaverde et al. (2015) find that increasing uncertainty about taxes, social security, and fiscal policy has a negative impact on the economy. For Turkey, Şahinöz and Coşar (2018) show that economic policy uncertainty, which rises around elections and crises, adversely impacts output growth, consumption, and corporate investment.

6 Sialm (2006), for instance, studies the effect of stochastic taxation in a dynamic general equilibrium model and finds that investors require higher risk premia as compensation for the risk introduced by tax changes. Croce, Nguyen, and Schmid (2012) explore the economic impact of countercyclical deficit policies aimed at short-run stabilization and show that such policies increase long-run risk premiums and reduce incentives for economic growth.

of the equity premium. Diamonte, Liew, and Stevens (1996) find that the mean quarterly equity market return is greater by 11% in emerging markets and 2.5% in developed markets in countries experiencing a reduction in political risk than in those experiencing an increase. Bilson, Brailsford, and Hooper (2002) document that political risk is more important in explaining return variation in emerging markets than in developed markets. Dimic, Orlov, and Piljak (2015) show that political risk is priced in developed, emerging, and frontier markets alike, government action acting as a common factor in all markets and government stability acting as a unique factor in frontier markets.

A unique event that can be expected to result in increased political risk is elections. The literature on elections and stock market returns goes back to Niederhoffer, Gibbs, and Bullock (1970), who provide evidence of significant positive returns on days immediately preceding and succeeding U.S. presidential elections. Pantzalis, David, and Turtle (2000) analyze equity market returns of 33 countries around national elections and document significant positive abnormal returns over a 10-day pre-election window, which may persist up to four weeks past the election date. Li and Born (2006) examine U.S. presidential elections and find that stock market volatility and average returns both rise if an election lacks a candidate with a dominant lead. Bialkowski, Gottschalk, and Wisniewski (2008) study national elections held in 27 OECD countries and show that the country-specific component of index return volatility can easily double up during the election week. Last, Goodell and Vähäma (2013) show that the volatility of stock market returns tends to increase in response to changes in the probability of success for the eventual winner in line with the idea that investors form and revise expectations about future macroeconomic policy based on these results.

The evidence on the impact of elections on Borsa Istanbul returns is limited to four papers and in conflict with the evidence from international markets and with one another. Mandaci (2003), for instance, examines a 30-day window centered around the four general elections held between 1991 and 2002 and documents positive and statistically significant post-election abnormal returns for the elections of 1995, 1999, and 2002, but not for the election held in 1991. Ada, Bolak, and Suer (2013) analyze 12 elections held between 1991-2011 and uncover positive post-election abnormal returns for general and local elections. Konak and Guner (2016) explore a sample of 12 elections held between 2000–2014 and conclude that the significant abnormal returns over the same 30-day event window as in Mandaci (2003) are predominantly negative. [7] Yılmaz and Elmas (2019) study 16 elections held between 1991–2017 and find statistically significant abnormal returns (positive in 8 and negative in 6 cases) over a 20-day window centered around elections. [8] All four of these papers examine a single index (namely, BIST100), focus only on returns, and study each election

7 This conclusion is made based on a simple count of elections with significantly positive and significantly negative event period abnormal returns. Unfortunately, the significance statistics (p-values) of – cumulative abnormal returns seem to be miscalculated in the paper for elections with positive abnormal returns due to a coding error. The author's conclusion would be reversed if significance statistics of positive abnormal return periods were computed correctly.

8 An analysis of the cumulative abnormal returns presented in Yılmaz and Elmas (2019) has led us to believe that their abnormal return estimates may be plagued by a simple computational error. The authors, for instance, report negative abnormal returns over a twenty-day window centered around the 2002 general election, while the evidence here and those in Mandaci (2003) and Konak and Guner (2016) point to large and positive abnormal returns. The issue appears to generalize over some of the other elections studied in the paper (e.g., the local election of 2014), which makes it hard to guess the exact number of elections with significant positive or negative cumulative abnormal returns.

as an individual event with the exception of Ada et al (2013). Our paper thus fills a void in this line of literature by jointly analyzing election period returns and volatilities of a richer set of test assets over an up-to-date sample, and by quantifying the aggregate impact of the political risk induced by elections and interpreting it from the looking glass of alternative hypotheses.

Our findings may raise questions about market efficiency. While the idea of efficient markets goes back to earlier work (e.g., Bachelier (1900), Friedman (1953), and Samuelson (1965)), the *efficient market hypothesis* (EMH) is formally introduced in the landmark paper by Fama (1970), where an efficient market is defined as one in which prices always fully reflect all available information. Fama (1991) examines market efficiency in three forms: weak, semi-strong, and strong. The prices reflect all available information in historical returns under weak-form efficiency, all public information including that in historical returns under semi-strong form efficiency, and all available public and private information under strong-form efficiency. Recent studies testing the weak-form efficiency of the Turkish equity market yield mixed conclusions with some indicating weak form efficiency holds for Borsa Istanbul indices (e.g., Gozbasi et al. (2014) and Yucel (2016)), some rejecting weak form efficiency (e.g., Malcioglu and Aydin (2016), Aliyev (2019), and Hailu and Vural (2020)) and some arguing the weak form efficiency is regime dependent (e.g., Cevik (2018)).

In the context of elections, the EMH predicts that all available information about the outcome of the election should be incorporated in prices prior to the election date and the stock market should respond to any event day surprises immediately and in full, without any return continuations. An alternative hypothesis that may apply to the election period behavior of stock market returns is the *uncertain information hypothesis* of Brown, Harlow, and Tinic (1988). The authors argue that usual definitions of rationality do not imply that security prices should react to major information surprises instantaneously and show that a noisy and major piece of information, regardless of whether it is favorable or unfavorable, would cause a market comprised of risk-averse investors to set risky asset prices significantly below their conditional expected values and gradual resolution of uncertainty surrounding the information event would result in a positive price drift following its release. Mehdian, Nas, and Perry (2018) and Akkoc and Ozkan (2013) provide evidence that demonstrates that Borsa Istanbul returns behave in a manner consistent with the predictions of the UIH around major information events, with the pattern being more significant in earlier periods.

3. Data and Methodology

3.1. Data Sources and Characteristics

Political elections analyzed in this paper include: (a) *general elections*, which are cast to choose the members of the parliament; (b) *local elections*, cast to select the majors of municipality areas; (c) *presidential elections*, cast to select the president of the state; and (4) *constitutional referenda*, cast on an as-needed basis if the incumbent government fails to achieve the supermajority required to make constitutional amendments. Historically, local and general elections in Turkey were held via direct ballot every 5 years and presidential elections were held through indirect proxy voting every 7 years

unless an early or late election is declared. Following the constitutional referendum of October 2007, a 4-year cycle was adopted for general elections and presidential elections moved to a 5-year cycle and direct ballot, while local elections continued to be held at a 5-year cycle.

Table 1: Types and Dates of Political Elections in Turkey: 2001–2020.

Type	Date	Type	Date	Type	Date	Type	Date
General	2002-11-03	Local	2009-03-22	Presidential	2014-08-10	General	2018-06-24
Local	2004-03-28	Referendum	2010-09-12	General	2015-06-07	Presidential	2018-06-24
General	2007-07-22	General	2011-06-12	General *	2015-11-01	Local	2019-03-31
Referendum	2007-10-21	Local	2014-03-30	Referendum	2017-04-16	Local **	2019-06-23

* Repeat Election ** Istanbul Election

This table lists the dates of all political elections held in Turkey between January 1st, 2001, and December 31st, 2020. The list includes two repeat elections. The first is the repeat general election that was held on November 1st, 2015, due to an electoral lock-down that prevented the formation of the government following the original general election on June 7th, 2015. The second is the Istanbul municipality repeat local election held on June 23rd, 2019, that ensued after multiple vote recounts due to a tight race between the incumbent party candidate and the eventual winner.

Data on political election dates and outcomes come from the website of the Supreme Election Council (www.ysk.gov.tr), a venue that contains comprehensive information on elections held in Turkey. The type and date of each election held over the period from 1/1/2001 to 31/12/2020 are listed chronologically in Table 1. The full list of elections in our sample is comprised of six general elections (including one repeat election), four municipal elections, three presidential elections (one coinciding with a general election), and three constitutional referenda, suggesting that Turkey has gone to the ballot a total of fifteen times in our twenty-year sample period. Due to the limited number of political elections in our sample, we choose not to differentiate between different types of elections in our analysis and treat each election as a distinct event that may have significant repercussions on the stability and longevity of the incumbent government and its socio-economic policies, an assumption that likely holds well in Turkey's fragile political environment.

In our analysis, we use seven different indices of Borsa Istanbul (BIST) stocks and the USDTRY exchange rate as test assets. The stock indices analyzed include: XU030—a value-weighted index of the top 30 largest and most actively traded BIST stocks (i.e. the BIST30 index); XYUZO—a value-weighted index of the stocks that remain once the BIST30 components are removed from an index of the top 100 largest and most actively traded BIST stocks (i.e., the BIST100 index); XTUMY—a value-weighted index of the stocks that remain once the BIST100 components are removed from a value-weighted index of all BIST stocks; and XUMAL, XUSIN, XUHIZ, and XUTEK—value-weighted indices of stocks issued by firms operating in the financial, industrial, service, and technology sectors, respectively. Given their 'residual' nature, XYUZO and XTUMY are used as proxies that capture the performance of medium – and small-cap BIST stocks.

Table 2: Information on Important Borsa Istanbul Indices

Index Name	Symbol	Start Date	End Date	Description
BIST 30	XU030	1997-01-01	2020-12-31	A value-weighted index of the 30 largest & most actively traded stocks.
BIST 100	XU100	1988-01-01	2020-12-31	A value-weighted index of the 100 largest & most actively traded stocks.
BIST All	XUTUM	1997-01-01	2020-12-31	A comprehensive value-weighted index of all BIST stocks.
BIST 100 – 30	XYUZO	2009-01-01	2020-12-31	A value-weighted index of the BIST100 stocks minus the BIST30 stocks.
BIST All – 100	XTUMY	2009-01-01	2020-12-31	A value-weighted index of all BIST stocks minus the BIST100 stocks.
BIST Financials	XUMAL	1997-02-01	2020-12-31	A value-weighted index of the stocks issued by financial sector companies.
BIST Industrials	XUSIN	1997-01-01	2020-12-31	A value-weighted index of the stocks issued by industrial sector companies.
BIST Services	XUHIZ	1997-01-01	2020-12-31	A value-weighted index of the stocks issued by services sector companies.
BIST Technology	XUTEK	2000-07-01	2020-12-31	A value-weighted index of the stocks issued by technology sector companies.

This table reports the names, symbols, data ranges, and brief descriptions of the stock market indices we use as test assets. All indices listed herein are free-float market capitalization-weighted price indices that do not account for cash dividends. XU030 and XU100 are indices of a selection of largest and most actively traded BIST stocks. XUTUM is an index all of stocks. XYUZO and XTUMY are residual indices comprised of a smaller subset of XU100 and XUTUM stocks. XUMAL, XUSIN, XUHIZ, and XUTEK are indices of financial, industrial, services, and technology stocks.

Data on daily closing levels of all stock indices are obtained from the Thomson Reuters database, while those for the USDTRY exchange rate come from the website of the Central Bank of Turkey. Daily price data is available starting on 1/1/1988 for XU100; on 1/1/1997 for XU030, XUTUM, XUMAL, XUSIN, and XUHIZ; on 1/7/2000 for XUTEK; and on 1/1/2009 for XYUZO and XTUMY. We manually compute daily returns on XYUZO and XTUMY going back to 1/1/2001 using daily returns on XU030, XU100, and XUTUM and set our sample period between 1/1/2001 and 31/12/2020. The daily return on trading day t is then computed as $R_t = (P_t - P_{t-1})/P_{t-1}$, where P_t and P_{t-1} reflect closing prices observed at the end of trading days t and $t-1$. To ensure that our results are not driven by extreme positive or negative observations, we trim the top and bottom 0.25% extreme observations of daily returns for each test asset and apply a log transformation, $r_t = ln(R_t)$, to facilitate the compounding of returns across multiple trading days.

Table 3 reports the descriptive statistics of daily raw returns on our test assets in its left panel. Over the period from 1/1/2001 to 31/12/2020, the mean daily return is 0.072% with a standard deviation of 2.05% and extreme values of – 18.18% and 14.72% for XU030; 0.065% with a standard deviation of 1.68% and extreme values of – 17.71% and 11.37% for XYUZO; 0.082% with a standard deviation of 1.45% and extreme values of – 15.71% and 11.71% for XTUMY; and 0.055% with a standard deviation of 1.33% and extremes of – 10.45% and 52.73% for USDTRY. For the sectoral indices, the mean daily return is 0.075% with a standard deviation of 2.25% for XUMAL; 0.077% with a standard

deviation of 1.66% for XUSIN; 0.068% with a standard deviation of 1.76% for XUHIZ; and 0.070% with a standard deviation of 2.14% for XUTEK. The first-order daily return autocorrelations of all indices are statistically insignificant and close to zero.

Table 3: Descriptive Statistics of Daily Returns on Borsa Istanbul Indices and USD/TRY Exchange Rate

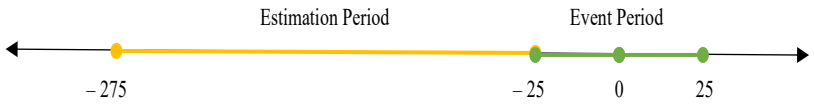
Daily Raw Returns						Daily Trimmed Log Returns					
Index	Mean	Std Dev	Min	Max	AC1	Index	Mean	Std Dev	Min	Max	AC1
XU030	0.072%	2.05%	-18.18%	14.72%	-0.002	XU030	0.053%	1.96%	-7.80%	8.26%	0.013
XYUZO	0.065%	1.68%	-17.71%	11.37%	0.029	XYUZO	0.056%	1.62%	-8.63%	7.19%	0.049
XTUMY	0.082%	1.45%	-15.71%	11.71%	-0.008	XTUMY	0.076%	1.45%	-7.27%	6.01%	0.034
XUMAL	0.075%	2.25%	-18.81%	16.06%	-0.001	XUMAL	0.051%	2.16%	-8.75%	9.30%	0.014
XUSIN	0.077%	1.66%	-16.48%	13.22%	0.013	XUSIN	0.066%	1.59%	-7.11%	6.94%	0.039
XUHIZ	0.068%	1.76%	-17.52%	12.49%	0.006	XUHIZ	0.056%	1.69%	-6.93%	7.86%	0.011
XUTEK	0.070%	2.14%	-17.92%	15.06%	0.027	XUTEK	0.051%	2.06%	-9.87%	8.58%	0.043
USDTRY	0.055%	1.33%	-10.45%	52.73%	-0.062	USDTRY	0.041%	1.00%	-4.13%	5.07%	-0.051

This table reports the means and standard deviations (Mean and StDev), the minimum and maximum values (Min and Max), and the first-order autocorrelations (AC1) of daily raw and trimmed log returns for three indicator indices (XU030, XYUZO, XTUMY) and four sectoral indices (XUMAL, XUSIN, XUHIZ, XUTEK) of Borsa Istanbul stocks in addition to the U.S. dollar–Turkish lira exchange rate (USDTRY) over the period from 1/1/2001 to 31/12/2020. Trimmed returns exclude 0.25% extreme observations on each tail of the distribution. The stock indices are as described in Table 2.

The descriptive statistics of daily trimmed log returns are presented in the right panel. The sample mean is 0.053% with a standard deviation of 1.96% and extreme values of –7.80% and 8.26% for XU030; 0.056% with a standard deviation of 1.62% and extreme values of –8.63% and 7.19% for XYUZO; 0.076% with a standard deviation of 1.45% and extreme values of –7.27% and 6.01% for XTUMY; and 0.041% with a standard deviation of 1.00% and extremes of –4.13% and 5.07% for USDTRY. For sectoral indices, the sample mean is 0.051% with a standard deviation of 2.16% for XUMAL; 0.066% with a standard deviation of 1.59% for XUSIN; 0.056% with a standard deviation of 1.69% for XUHIZ; and 0.051% with a standard deviation of 2.06% for XUTEK. Trimming of extreme observations, as demonstrated in the extreme values reported in this panel, reduces the likelihood that our results are driven by unduly high or low return observations.

3.2. Methodology

In the first part of our analysis, we apply the standard event study methodology to our test assets. Each election date T_i is taken as an event occurring at origin $t_0^i = 0$, and daily returns of the test assets are studied over a fifty-day event period between days $t_1^i = t_0^i - 25$ and $t_2^i = t_0^i + 25$.



The estimation period for each election is set as the 250-trading-day period preceding the event window, i.e., between days $t_3^i = t_0^i - 275$ $t_4 = t_i^0 - 26$. and For each asset, abnormal returns are computed as the excess daily return over and above the estimation period mean of its daily returns:

$$AR_{i,t} = R_{i,t} - \bar{R}_{i,t}, \ where \ \bar{R}_{i,t} = \sum_{t=t_3^i}^{t_4^i} R_{i,t}, \ where \ S_{AR_i}^2 = \frac{1}{249}\sum_{t=t_3^i}^{t_4^i}\left[AR_{i,t}\right]^2 \quad (1)$$

The average abnormal return on each day within the event period is computed as the arithmetic mean of the abnormal returns on that day across all political elections in our sample period and the cumulative average abnormal returns are computed for various windows within the fifty-day event period as the simple sum of the average abnormal returns on days falling into that specific window.

$$AAR_t = \sum_{i=1}^{N} AR_{i,t} \quad and \quad CAAR_t^{t+k} = \sum_{s=0}^{k} AAR_{t+s}, \quad (2)$$

where N is the number of elections and k is the length of the CAR window.

The significance of the AAR and $CAAR$ for each test asset is tested with the following t-statistics:

$$t_{AAR_t} = \frac{AAR_t}{\sqrt{\frac{1}{N}\sum_{i=1}^{N} S_{AR_i}^2}} \quad and \quad t_{CAAR_t^{t+k}} = \frac{CAAR_t^{t+k}}{\sqrt{\frac{k}{N}\sum_{i=1}^{N} S_{AR_i}^2}}, \quad (3)$$

The second part of our analysis applies a linear regression methodology. The ordinary least squares method is used to estimate the slope coefficients on three election period dummies, {D_1, D_2, D_3} meant to capture the abnormal performance at different stages of the election period, together with controls for stylized calendar patterns and daily and monthly serial dependencies in the returns of our test assets. The dummy D_1 is equal to 1 for days that fall into [-15, – 1] and 0 otherwise, D_2 is 1 for days that fall into [+1, +10] and 0 otherwise, and D_2 is 1 for days that fall into [+11, +20] and 0 otherwise. The standard errors in these regressions are adjusted through the Newey-West (1987) methodology to account for serial correlation and heteroskedasticity in regression residuals.

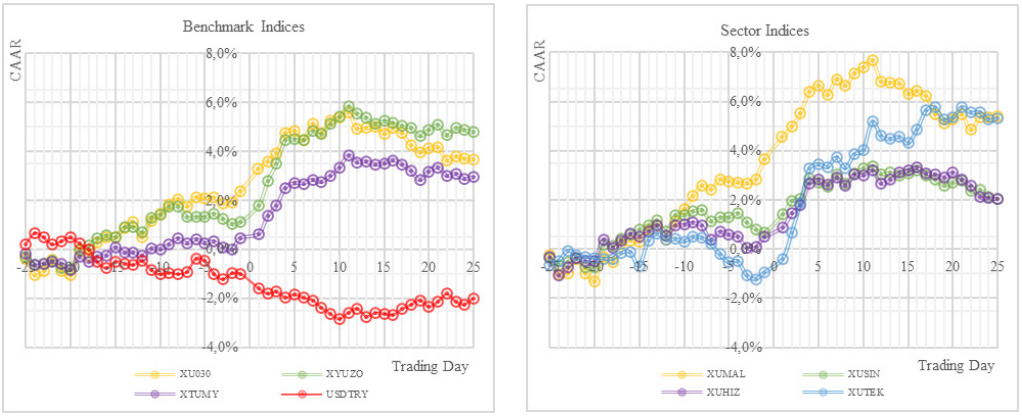
4. Research Findings

4.1. Event Study Tests

We launch our analysis off by examining the abnormal returns on our test assets around political elections using the standard event study method. In this analysis, the abnormal return (AR) on each asset is computed for each day t within a fifty-day event window centered around election dates as the spread between its log return on day t and its average log return over trading days *t – 51* through *t – 300*. The cumulative abnormal returns $(CAAR)$ are then computed for various subperiods $[t_1, t_2]$

within the election event period as the sum of the abnormal returns between days t_1 and t_2.

Figure 1: Cumulative Abnormal Returns on Borsa Istanbul Indices around Election Dates

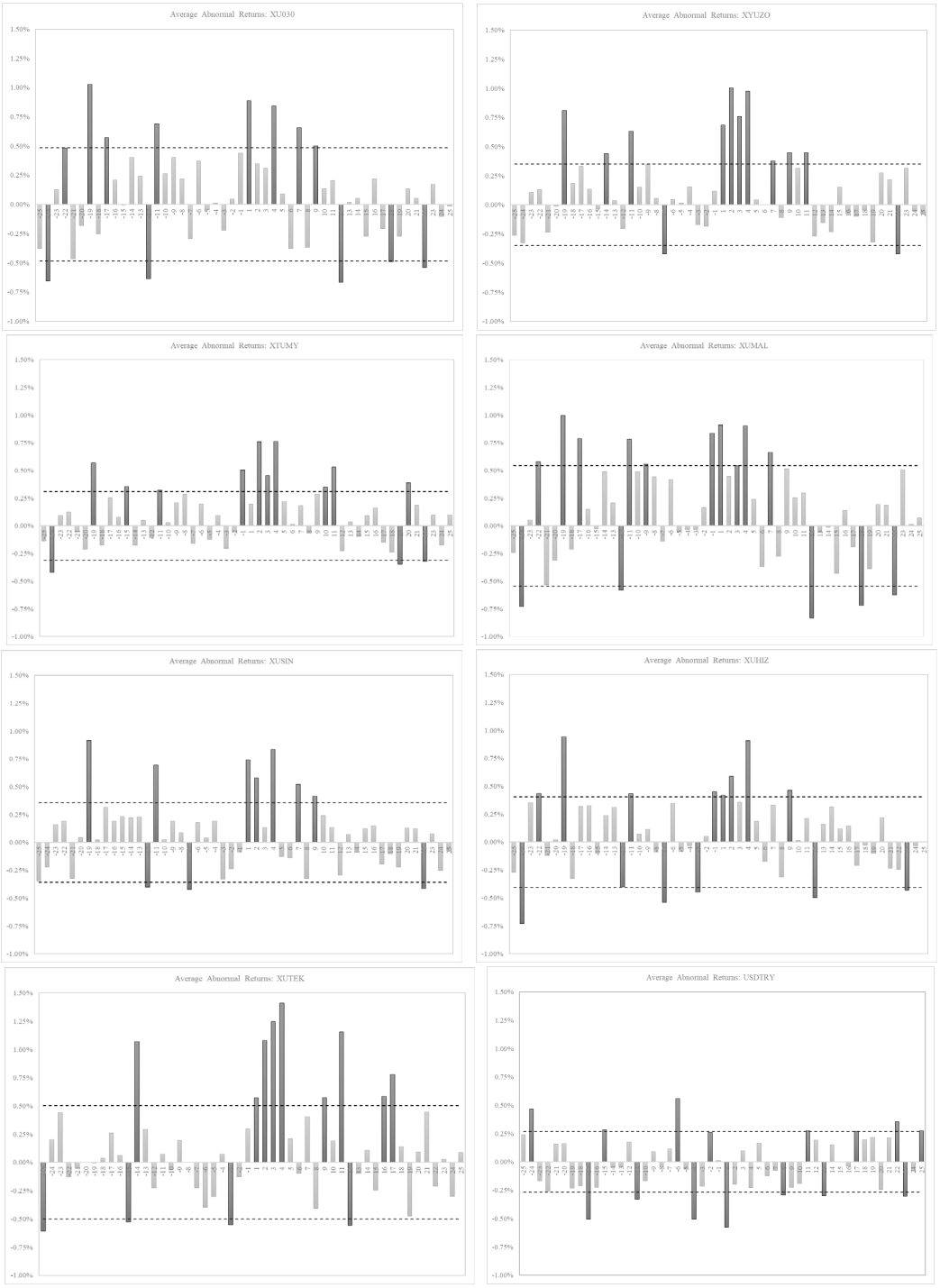


This figure plots the cumulative average abnormal returns (CAAR) over a 50-day window centered around political elections held in Turkey between 1/1/2001 and 31/12/2020 for the USD/TRY exchange rate and three indicator indices representing large, medium, and small-cap stocks (XU030, XYUZO, XUTUM) in its left panel, and for four sector indices of financial, industrial, services, and technology stocks (XUSIN, XUHIZ, XUMAL, XUTEK) in its right panel.

Figure 1 plots the evolution of cumulative abnormal returns around political elections for each of our test assets. [9] The plots suggest that positive abnormal returns begin to accumulate three to four weeks prior to elections, gain momentum in the week that follows the determination of election outcome, and plateau out thereafter. The magnitude of abnormal election period returns appears slightly greater for XU030 and XYUZO than for XTUMY, and for XUMAL and XUTEK than for XUSIN and XUHIZ. There also is evidence of a decline in the USDTRY rate around elections.

9 The test assets include three benchmark indices capturing the performance of large-, medium-, and small-cap stocks (XU030, XYUZO, and XTUMY), four sectoral indices representing financial, industrial, service, and technology stocks (XUMAL, XUSIN, XUHIZ, and XUTEK, respectively), and the USD/TRY exchange rate (USDTRY).

Figure 2: Mean Daily Abnormal Returns on Borsa Istanbul Indices and USDTRY around Election Dates



To formally establish the economic significance of election period abnormal returns, we first plot average daily abnormal returns over a fifty-day event period centered around election dates for all assets along with a ±2 standard error band formed based, following Boehmer et al. (1991), on the volatility of event period returns. The results from this exercise, plotted in Figure 2, reveal some isolated instances of upward spikes (a pattern that is the most apparent for financial sector stocks) over a twenty-day pre-election period and clustering of significant positive abnormal return days over a ten-day post-election period for all indices analyzed. In particular, the week immediately following political elections sees a concentration of adjacent high positive abnormal return days.

Table 4: Cumulative Average Abnormal Returns around Election Dates

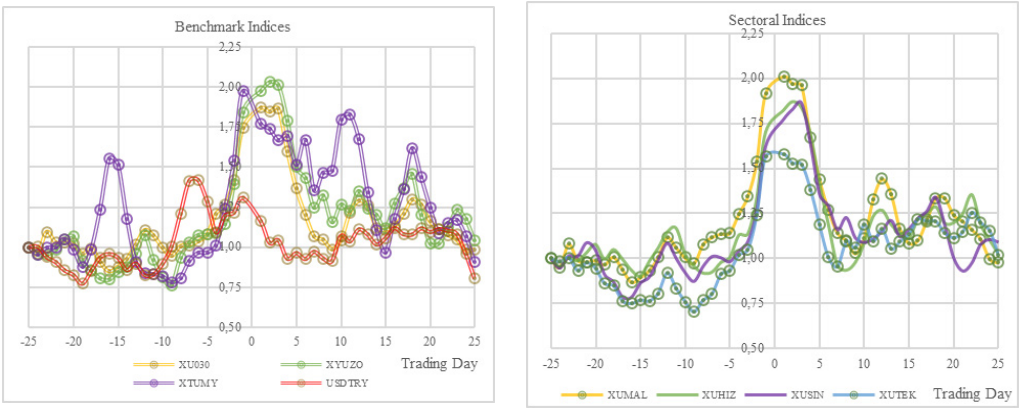
	[-20,-16]	[-15,-11]	[-10, – 6]	[– 5, – 1]	[+1,+5]	[+6,+10]	[+11,+15]	[+16,+20]	[-20, – 1]	[+1,+10]	[+11,+20]
XU030	**1.371%**	0.694%	**0.962%**	0.231%	**2.473%**	0.548%	-0.658%	-0.621%	**3.258%**	**3.021%**	-1.225%
	(0.007)	(0.103)	(0.040)	(0.336)	(0.000)	(0.158)	(0.115)	(0.128)	(0.002)	(0.000)	(0.058)
XYUZO	**1.303%**	**0.726%**	0.048%	-0.193%	**3.351%**	**0.924%**	-0.161%	-0.358%	**1.884%**	**4.275%**	-0.771%
	(0.001)	(0.035)	(0.452)	(0.312)	(0.000)	(0.011)	(0.341)	(0.182)	(0.010)	(0.000)	(0.085)
XTUMY	0.332%	0.267%	0.395%	0.054%	**2.236%**	**0.616%**	0.191%	-0.319%	1.048%	**2.852%**	-0.254%
	(0.172)	(0.223)	(0.131)	(0.438)	(0.000)	(0.041)	(0.292)	(0.181)	(0.069)	(0.000)	(0.304)
XUMAL	**1.321%**	0.787%	**1.694%**	0.814%	**2.988%**	0.738%	**-1.083%**	-0.999%	**4.615%**	**3.726%**	**-2.103%**
	(0.017)	(0.101)	(0.004)	(0.094)	(0.000)	(0.116)	(0.041)	(0.054)	(0.000)	(0.000)	(0.009)
XUSIN	**1.309%**	**0.794%**	-0.103%	-0.584%	**2.013%**	0.568%	-0.193%	-0.381%	**1.416%**	**2.581%**	-0.689%
	(0.001)	(0.026)	(0.399)	(0.076)	(0.000)	(0.081)	(0.316)	(0.173)	(0.042)	(0.000)	(0.115)
XUHIZ	**1.123%**	0.328%	-0.246%	-0.208%	**2.324%**	0.191%	0.185%	-0.093%	0.997%	**2.515%**	0.381%
	(0.008)	(0.236)	(0.295)	(0.324)	(0.000)	(0.338)	(0.342)	(0.419)	(0.138)	(0.000)	(0.277)
XUTEK	0.191%	0.539%	-0.629%	-0.730%	**4.410%**	0.572%	0.274%	**1.041%**	-0.628%	**4.982%**	**1.405%**
	(0.367)	(0.171)	(0.134)	(0.100)	(0.000)	(0.157)	(0.314)	(0.035)	(0.289)	(0.000)	(0.041)
USDTRY	**-1.113%**	-0.068%	0.456%	-0.613%	**-0.847%**	**-1.010%**	0.216%	0.291%	**-1.338%**	**-1.857%**	0.637%
	(0.000)	(0.589)	(0.067)	(0.023)	(0.003)	(0.001)	(0.237)	(0.167)	(0.015)	(0.000)	(0.069)

This table reports the cumulative average abnormal returns (CAAR) and the p-values from a standard t-test of the null hypothesis that these returns are equal to zero for the test assets explained in Tables 2 and 3 over alternative windows within a fifty-day event period centered around political elections held in Turkey between 1/1/2001 and 31/12/2020. CAAR of an asset over a given window [t_1, t_2] is the sum of daily abnormal log returns from day t_1 to day t_2. The daily abnormal log return on an asset on a given event day t is the spread between its log return on day t and its mean log return over a 250-day window that precedes the event period. Bold indicates significance at a 95% confidence level.

To quantify the aggregate impact of the abnormal returns in Figure 2, we compute the cumulative average abnormal return (CAAR) over various election period windows and test its significance via a standard t-test based on the standard error of event-period returns. The results reported in Table 4 indicate significantly positive CAARs on all indices and a significant negative CAAR on USDTRY over the pre – and post-election windows: 3.26% for XU030, 1.88% for XYUZO, 4.62% for XUMAL, 1.42% for XUSIN, and –1.34% for USDTRY between days t–20 and t–1 and 3.02% for XU030, 4.28% for XYUZO, 2.85% for XTUMY, 3.73% for XUMAL, 2.58% for XUSIN, 2.52% for XUHIZ, 4.98% for XUTEK, and – 1.86% for USDTRY between days t+1 and t+10.

Our analysis thus suggests a CAAR of 6.28% on XU030, 6.16% on XYUZO, and 3.90% on XTUMY, 8.34% on XUMAL, 4.00% on XUSIN, 3.51% on XUHIZ, and –3.19% on USDTRY between event days t–20 and t+10 and 6.39% on XUTEK between days t+1 and t+20. A question that immediately follows up is whether these returns are obtained as a reward for bearing elevated risk around elections. To address this question, we compute the standardized volatility of returns for our test assets on each event day t as the arithmetic mean of squared index returns on that day across all elections in our sample, divided by the mean squared index return on day t–25 of the event period. The standardized volatilities that come out of this exercise are plotted in Figure 3.

Figure 3: Standardized Volatility of Borsa Istanbul Index Returns around Election Dates



This figure plots the standardized volatility of daily returns over a 50-day window centered around political election dates between 1/1/2001 and 31/12/2020 for the indicator indices (XU030, XYUZO, XTUMY) and the USD/TRY rate in its left panel and that for the sectoral indices (XUMAL, XUSIN, XUHIZ, XUTEK) in its right panel. The standardized volatility on day t is the square root of squared day t returns averaged across all political elections in our sample period divided by the volatility computed similarly for the first day of the election window (i.e., trading day t–25).

For all stock indices analyzed, the volatility of daily returns begins to increase about two weeks in advance of the date of the election, reaches a peak about one-and-a-half to twice as large as its pre-election level in the week that pursues the election, and then declines sharply to its pre-election level thereafter. The pattern described herein is qualitatively similar across the different indices we study, but the behavior of return volatility is somewhat more tumultuous for financial sector stocks (as proxied by XUMAL) and small-cap stocks (as proxied by XTUMY). The volatility of daily USDTRY exchange rate returns plotted in red in the left panel of Figure 2, on the other hand, reaches a plateau about a week before the election date, a bit earlier than the stock market indices, and then declines gradually to its pre-election level in the weeks that follows the election.

While our focus is not on the abnormal returns around individual elections, it is still worthwhile to benchmark our findings to those reported in earlier studies conducted on the BIST100 index. To this end, we test the significance of election period abnormal returns on BIST100 and compare our findings to the significant abnormal returns reported in Mandaci (2003), Ada et al (2013), and Yilmaz and Elmas (2018) for elections that are jointly covered. Our results are given in Table 5.

Table 5: Comparison of Significant Abnormal Returns across Existing Studies

Year	Date	Type	Mandaci	Ada et al	Yilmaz & Elmas	This Paper
1991	Oct 20	General	No Significance	No Significance	No Significance	Not Analyzed
1994	Mar 27	Local	Not Analyzed	– 3, +5, +6, +7, +8	– 3, +5, +6, +8, +9	Not Analyzed
1995	Dec 24	General	+1, +12	– 10, +1, +2, +12	– 10, +1, +2	Not Analyzed
1999	Apr 18	General/Local	– 4, – 3, +2	– 4, – 3, +2	– 4, – 3, +2	Not Analyzed
2002	Nov 03	General	– 11,+1,+2,+4	– 11, +1, +2, +4	+1, +2, +4	– 11, +1, +2, +4
2004	Mar 28	Local	Not Analyzed	No Significance	No Significance	No Significance
2007	Jul 22	General	Not Analyzed	– 7, – 2, +1, +4	– 7, – 2, +1, +4	– 7, – 2, +1, +4
2007	Oct 21	Referendum	Not Analyzed	No Significance	No Significance	– 2, +2
2009	Mar 29	Local	Not Analyzed	-8	No Significance	No Significance
2010	Sep 12	Referendum	Not Analyzed	No Significance	No Significance	No Significance
2011	Jun 12	General	Not Analyzed	No Significance	No Significance	No Significance
2014	Mar 30	Local	Not Analyzed	Not Analyzed	-3	-3
2014	Aug 10	Presidential	Not Analyzed	Not Analyzed	No Significance	No Significance
2015	Jun 07	General	Not Analyzed	Not Analyzed	+1	– 5, +1
2015	Nov 01	General	Not Analyzed	Not Analyzed	+1	+1
2017	Apr 16	Referendum	Not Analyzed	Not Analyzed	-5	-5
2018	Jun 24	General/Presidential	Not Analyzed	Not Analyzed	Not Analyzed	– 10, – 7, +1, +12, +13
2019	Mar 31	Local	Not Analyzed	Not Analyzed	Not Analyzed	– 6, – 3, +4
2019	Jun 23	Local	Not Analyzed	Not Analyzed	Not Analyzed	+6

The first three columns of this table contain the timing and type of the political elections held in Turkey between 1991-2020. The next three columns report the election period days for which the abnormal return on a value-weighted index of the top 100 largest and most active Borsa Istanbul stocks is significant, as reported in Mandaci (2003), Ada et al. (2013), and Yilmaz and Elmas (2019). The last column reports the reciprocating evidence from the current paper.

We find that the set of trading days with significant abnormal returns on BIST100 are identical or extremely similar to those reported in the papers listed above for the general elections of 2002, 2007, 2011, and 2015; for the local elections of 2004, 2009, and 2014; and for the constitutional referenda of 2010 and 2017. Unlike Ada et al (2013) and Yilmaz and Elmas (2018), however, we find that the abnormal returns on days –2 and +2 are significant around the 2007 referendum. For the period not covered by these benchmark studies, we report significant abnormal returns on days –10, –7, +1, +12, and +13 around the general/presidential election of 2018, on days –6, –3, and +4 around the local election of 2019 and on day +6 around the repeat local Istanbul election of 2019.

4.2. Regression Tests

Our event study tests suggest significantly positive abnormal index returns and negative abnormal USDTRY returns around elections. One downside of the event study methodology is that it assumes

identical standard errors for event period returns, which stands at odds with the volatility patterns depicted in Figure 3. To ensure our results are robust to relaxing this assumption and over different subperiods, we conduct time-series regressions, over the full sample and over its early and late subperiods, of the abnormal index and USDTRY returns on event period dummies, $\{D_1, D_2, D_3\}$, that indicate returns that occur within [-20, -1], [+1, +10], and [+11, +20] of the election date.

Table 6: Full Sample and Subperiod Regressions of Returns on Election Period Dummies

$$Model: \; r_t - \bar{r}_t = a + b_1 D_{1,t} + b_2 D_{2,t} + b_3 D_{3,t} + e_t$$

	Full Sample: 2001-2020				Early Sample: 2001-2010				Late Sample: 2011-2020			
	Int	b_1	b_2	b_3	Int	b_1	b_2	b3	Int	b_1	b_2	b_3
XU030	-0.018%	**0.181%**	**0.320%**	-0.110%	-0.025%	**0.373%**	0.429%	-0.141%	-0.006%	0.083%	**0.310%**	-0.131%
	(0.545)	(0.100)	(0.036)	(0.470)	(0.607)	(0.063)	(0.126)	(0.614)	(0.871)	(0.478)	(0.057)	(0.419)
XYUZO	-0.016%	0.110%	**0.443%**	-0.036%	-0.026%	**0.326%**	**0.683%**	-0.109%	0.003%	-0.012%	**0.344%**	-0.026%
	(0.493)	(0.207)	(0.000)	(0.767)	(0.501)	(0.041)	(0.002)	(0.625)	(0.923)	(0.899)	(0.010)	(0.848)
XTUMY	-0.006%	0.058%	**0.291%**	-0.007%	-0.023%	**0.318%**	**0.449%**	-0.057%	0.025%	-0.109%	**0.254%**	-0.010%
	(0.773)	(0.440)	(0.005)	(0.946)	(0.492)	(0.023)	(0.021)	(0.770)	(0.273)	(0.153)	(0.016)	(0.928)
XUMAL	-0.021%	**0.252%**	**0.394%**	-0.187%	-0.033%	**0.467%**	**0.564%**	-0.166%	-0.001%	0.140%	**0.346%**	-0.264%
	(0.523)	(0.039)	(0.020)	(0.267)	(0.533)	(0.033)	(0.065)	(0.586)	(0.981)	(0.303)	(0.066)	(0.159)
XUSIN	-0.011%	0.082%	**0.269%**	-0.047%	-0.017%	**0.287%**	**0.420%**	-0.130%	0.001%	-0.026%	**0.241%**	-0.023%
	(0.647)	(0.351)	(0.027)	(0.699)	(0.650)	(0.072)	(0.059)	(0.558)	(0.982)	(0.788)	(0.068)	(0.863)
XUHIZ	-0.011%	0.061%	**0.262%**	0.020%	-0.014%	0.219%	0.282%	-0.044%	-0.001%	-0.028%	**0.283%**	0.050%
	(0.656)	(0.507)	(0.039)	(0.876)	(0.729)	(0.190)	(0.227)	(0.849)	(0.968)	(0.780)	(0.042)	(0.720)
XUTEK	-0.014%	-0.017%	**0.513%**	0.146%	-0.002%	0.169%	**0.531%**	-0.117%	-0.028%	-0.090%	**0.628%**	0.293%
	(0.644)	(0.878)	(0.001)	(0.355)	(0.965)	(0.380)	(0.047)	(0.662)	(0.507)	(0.524)	(0.001)	(0.136)
USDTRY	0.010%	-0.076%	**-0.196%**	0.041%	0.002%	-0.030%	**-0.250%**	0.091%	0.020%	**-0.122%**	**-0.229%**	0.014%
	(0.518)	(0.173)	(0.012)	(0.596)	(0.935)	(0.754)	(0.059)	(0.493)	(0.346)	(0.089)	(0.021)	(0.887)

This table reports the coefficient estimates and the p-values from ordinary least squares regressions of the returns on the test assets on election window dummies (D_1, D_2, and D_3), which capture trading days that fall between event days t-20 and t-1, event days t+1 and t+10, and event days t+11 and t+20, respectively, over the full sample period between 1/1/2001 and 31/12/2020 (left panel), over the early period between 1/1/2001 and 31/12/2010 (middle panel), and the late period between 1/1/2011 and 31/12/2020 (right panel). Bold indicates significance with 90% confidence.

The results in Table 6 indicate significant abnormal returns over a ten-day post-election period for all indices, with coefficients implying a mean daily abnormal return of 0.32% for XU030 (0.43% in the early sample and 0.31% in the late sample), 0.44% for XYUZO (0.68% in the early sample and 0.34% in the late sample), 0.29% for XTUMY (0.45% in the early sample and 0.25% in the late sample), 0.39% for XUMAL (0.56% in the early sample and 0.35% in the late sample), 0.27% for XUSIN (0.42% in the early sample and 0.24% in the late sample), 0.26% for XUHIZ (0.28% in both the early and late samples), 0.51% for XUTEK (0.53% in the early sample and 0.63% in and late sample), and –0.20% for USDTRY (0.25% versus 0.23% in the early and late samples).

These regressions also point to a statistically significant mean daily abnormal return of 0.18% on XU030 and 0.25% on XUMAL in the pre-election window between days t–20 and t–1 over the full sample. The subperiod tests, however, suggest that a pre-election pattern does not exist around elections that occurred in the latter half of our sample: the coefficient estimates for the early subperiod

indicate a significant mean daily abnormal return of 0.37% for XU030, 0.33% for XYUZO, 0.32% for XTUMY, 0.47% for XUMAL, and 0.29% for XUSIN. Last, our regressions yield no evidence of any over or underperformance for the window between trading days t+11 and t+20, with predominantly negative but statistically insignificant coefficients in both subperiods.

Table 7: Regressions of Returns on Election Period and Calendar Pattern Dummies and Past Returns

$$r_t - \bar{r}_t = a + b_1 D_{1,t} + b_2 D_{2,t} + b_3 D_{3,t} + c_1 D_{HAL} + c_2 D_{TOY} + c_3 D_{TOM} + c_4 D_{Mon} + c_5 D_{Fri} + c_6 r_{t-1} + c_7 \bar{r}_{t-1}^{t-20} + e_t$$

	Int	b_1	b_2	b_3	c_1	c_2	c_3	c_4	c_5	c_6	c_7	R^2
XU030	-0.060%	**0.185%**	**0.312%**	-0.097%	0.019%	0.033%	**0.147%**	-0.058%	0.069%	0.007	-0.001	0.329%
	(0.215)	(0.094)	(0.042)	(0.528)	(0.732)	(0.817)	(0.037)	(0.413)	(0.329)	(0.643)	(0.984)	
XYUZO	**-0.101%**	0.119%	**0.396%**	-0.053%	**0.078%**	0.026%	**0.146%**	-0.030%	0.063%	**0.043**	**0.194**	1.098%
	(0.008)	(0.173)	(0.001)	(0.665)	(0.084)	(0.817)	(0.009)	(0.591)	(0.266)	(0.004)	(0.001)	
XTUMY	**-0.085%**	0.077%	**0.270%**	-0.017%	**0.064%**	0.073%	**0.103%**	**-0.008%**	**0.060%**	**0.029**	**0.181**	0.774%
	(0.002)	(0.310)	(0.010)	(0.871)	(0.095)	(0.527)	(0.028)	(0.050)	(0.066)	(0.002)	(0.000)	
XUMAL	-0.070%	**0.256%**	**0.372%**	-0.182%	0.037%	0.007%	**0.157%**	-0.076%	0.065%	0.008	0.044	0.410%
	(0.191)	(0.036)	(0.029)	(0.284)	(0.551)	(0.964)	(0.043)	(0.335)	(0.407)	(0.611)	(0.507)	
XUSIN	**-0.070%**	0.086%	**0.249%**	-0.041%	0.039%	0.051%	**0.127%**	-0.008%	0.038%	**0.041**	0.095	0.530%
	(0.066)	(0.328)	(0.041)	(0.737)	(0.385)	(0.647)	(0.023)	(0.881)	(0.503)	(0.007)	(0.131)	
XUHIZ	**-0.068%**	0.066%	**0.265%**	0.040%	0.030%	0.035%	**0.130%**	-0.054%	**0.152%**	-0.007	-0.076	0.467%
	(0.090)	(0.470)	(0.038)	(0.751)	(0.523)	(0.764)	(0.026)	(0.357)	(0.010)	(0.648)	(0.278)	
XUTEK	**-0.145%**	0.000%	**0.482%**	0.127%	**0.104%**	-0.029%	**0.151%**	0.075%	**0.142%**	**0.031**	**0.117**	0.739%
	(0.003)	(0.999)	(0.002)	(0.420)	(0.075)	(0.841)	(0.038)	(0.302)	(0.052)	(0.038)	(0.054)	
USDTRY	0.004%	-0.080%	**-0.188%**	0.051%	-0.029%	0.037%	-0.055%	**0.091%**	0.033%	**-0.038**	**0.146**	0.423%
	(0.859)	(0.156)	(0.016)	(0.513)	(0.313)	(0.612)	(0.124)	(0.012)	(0.364)	(0.011)	(0.030)	

This table reports the coefficient estimates and the p-values from a standard t-test for ordinary least squares regressions of daily returns on the test assets on the election window dummies (D_1, D_2, and D_3) described in Table 5 and control dummies for the Halloween effect (D_{Hal}), the turn-of-the-year effect (D_{ToY}), the turn-of-the-month effect (D_{ToM}), and day-of-the-week dummies (D_{Mon} and D_{Fri}), in addition to the lagged daily own return (r_{t-1}) and the 20-day moving average of own return ($\bar{r}_{t-1}^{t-20}$) for each test asset. Bold figures indicate significance with 90% confidence.

As a final step, we re-run the full sample regressions on the event period dummies after controlling for stylized calendar patterns and past returns on the indices under analysis. The calendar patterns we control for in these tests include the Halloween effect (Bouman and Jacobsen (2002), higher mean returns from November through April), the turn-of-the-year effect (Keim (1983) and Roll (1983), higher mean returns on the last trading day of each year and the first ten trading days of the next year), the turn-of-the-month effect (Ariel (1987), higher mean returns on the last trading day of each month and the first three trading days of the next month), and the end-of-the-week effect (Keim and Stambaugh (1984), mean returns lower on Monday and higher on Friday).

The results reported in Table 7 indicate the presence of (i) a weakly significant Halloween effect in XYUZO, XTUMY, and XUTEK; (ii) a strongly significant turn-of-the-month effect in all stock indices; (iii) insignificant end-of-the-year effect in all assets; (iv) a weak Friday effect in XTUMY and a strong Friday effect in XUHIZ and XUTEK, and (v) economically negligible short – or long-run continuations in XYUZO, XTUMY, XUSIN, and XUTEK returns. The full sample estimates on

our event period dummies suggest that the significant pre – and post-election abnormal returns reported in Table 6 for different subperiods remain largely unscathed when these dummies are included together with controls for stylized calendar patterns and lagged daily and monthly returns.

5. Conclusion

This paper reports significant positive abnormal returns on a set of benchmark and sectoral indices of BIST stocks and a negative abnormal return on the USDTRY rate around political elections held in Turkey over 2001–2020. Our findings suggest that the bulk of the abnormal returns occurs over a ten-day post-election period amid heightened volatility roughly one-and-a-half to two-fold greater than the pre-election average. There also is an abnormal upward drift in large to medium cap stocks and financial and industrial stocks and an abnormal downward drift in USDTRY over the pre-election window. The abnormal post-election period performance is greater for financial and technology stocks than for industrial and service stocks, and for large-cap stocks than for small-cap stocks, consistent across subsamples, and robust to controlling for calendar patterns and serial dependencies in returns. The pre-election drift is specific to the early half of our sample.

The results of our analysis suggest that investors can trade around pre-scheduled election dates to earn abnormal returns, which appears inconsistent with the classical interpretations of the efficient market theorem. It should be recognized, however, that the abnormal returns in the standard event study method are based on the mean of estimation period returns, which would likely not capture the premium investors demand for the political and economic risks brought about by a possible adverse election outcome. To this end, a more appropriate angle from which our findings can be viewed is the uncertain information hypothesis of Brown et al (1988), which holds that a market comprised of risk-averse investors would set the prices of risky assets materially lower than their conditional expected values in advance of significant uncertain information events, leading to a positive post-event drift fueled by the resolution of uncertainty.

Taken together, our analysis adds to the existing literature (a) by taking a broader perspective on the subject matter by studying a richer set of test assets over an up-to-date sample period; (b) by offering a more complete treatment by jointly examining the return and volatility patterns around political elections; and (c) by quantifying the aggregate behavior of Borsa Istanbul index returns around election dates. Our results may prove valuable for researchers interested in the impact of political risk on stock market returns and on the risk-return tradeoff in emerging economies, and for practitioners who follow trading strategies based on major information events such as elections. They may also help policymakers and market regulators in institutionalizing strategies and circuit breakers that would protect individual investors against increased volatility over election periods.

Future research may incorporate ex-ante uncertainty of the outcome of the election as an additional conditioning variable to see whether the effect herein reported is more pronounced around political elections with less predictable outcomes. The most important limitation of the current study is its small sample size. Future work may benefit from extending the set of political risk events studied

to include periods of government in-fighting, reduced public approval, or lack of confidence in the incumbent government's longevity and periods of turmoil including economic crises or wars. An individual stock-level analysis of the relationship between the political connectedness of a firm's executives and the election period abnormal returns of its stock may also yield interesting results.

Conflict of Interest

There is no conflict of interest reported by the author.

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Resume

Nuri Volkan Kayaçetin (Asst. Prof.) is a member of the Industrial Engineering Department at FMV Işık University. He holds a Ph.D. in Finance from University of Alberta. His research is in empirical asset pricing and market microstructure, with current focus on the origins asset pricing factors, long-run risk in financial markets, calendar anomalies in stock market returns, and the impact of major information events on security market prices. He has papers published in local and international journals including the Journal of Banking and Finance, Finance Research Letters, and the Bogazici Journal of Social Sciences.