DO LOCAL POLITICAL ELECTIONS AFFECT DAILY STOCK RETURNS? EVIDENCE FROM THE REPUBLIC OF NORTH MACEDONIA'S MBI10 INDEX

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Abstract: Even though "all politics" are supposedly "local", as reportedly said Tip O'Neil, the majority of studies on the link between politics and finance focused on presidential elections. This argues that overlooking local elections could result in a gap in the literature, thus it focused on the effect of the 2021 local elections on the stock market in the Republic of North Macedonia. The results could not reject the null hypothesis that local elections did not have any statistically significant effect on the stock prices as only 10% of the stocks traded experienced significant abnormal returns during the election period.

1. Introduction

Climate The intersection between politics and finance has been discussed extensively in the popular media and the academic literature in political science (Alt & Lowry, 1994; Alvarez & Saving, J., 1997; Anderson et al., 2003), and finance (Herron et al., 1999; Leblang & Bumba, 2005; Shon, 2010). These discussions often revolve around the influence of politics on macroeconomic activities. A steady

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stream of research has evolved since the early 1970s that has examined the effect of political activities, specifically presidential elections, on stock returns in various countries, but primarily in the US. However, to the best of our knowledge, no study has yet examined the effect of local political elections on macroeconomic activities such as the stock.

This constitutes a gap in the literature given the fact Tip O'Neil of the US House of Representatives as well as Byron Price (Associated Press' Washington bureau chief in the 1930s) (see Popik, 2010), and Finley Peter Dunne (Chicago writer, who lived 1867-1936) (see Johnson, 1990) have all at one time or the other reportedly observed that "All politics is local" to serve as an indication of the importance of local politics and its connection to the national politics. To help fill this gap, we examine the effect of the (2021) local elections on the stock market in the Republic of North Macedonia using previous studies in the literature. Our findings, however, show that only 10% of stocks (the case of MBI10 Index) traded on the Macedonian Stock Exchange experienced a statistically significant change during the 2021 local elections.

2. Literature Review

The analyses of the evolution of stocks/indices are related to stock market theories (Dumiter and Turcaş, 2022) which allowed for stock prices to be examined from different points of view (see e.g., Vrînceanu, Horobeţ, Popescu and Belaşcu, 2020). However, the spread of financial markets has important and underappreciated political implications (Margalit and Shayo, 2021). As shown by Benton and Philips (2020), the new information about the likely future policy direction of a government affects financial markets.

Besides being the natural confluence of politics and finance, presidential cycles have received attention from financial economists because of interest in the informational efficiency of the markets. Huang (1985) noted that the belief that equity markets are informationally efficient in at least the semi-strong sense (that is the market quickly adjusts to incorporate all publicly available information) is widely shared amongst academics, however, this has not been so strongly held by practitioners. He also noted that even though there were overwhelming bodies of evidence from the 1960s and the early 1970s to support market efficiency, evidence supporting anomalous market returns also seem to be accumulating.

One of the more surprising developments noted by Huang (1985) was the discovery of a number of remarkably consistent patterns in security returns that were statistically significant and suggested the possibility of profitable trading rules. While such rules have not yet been documented, the possibility of such a development could disprove even the weak form of EMH (the Efficient Market Hypothesis). The possibility that such a rule could be developed prompted Huang

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(1985) to question whether common stock returns exhibit a four-year cycle (the so-called presidential election cycle).

Presenting the results on the pattern of common stock returns over the four-year election cycle and different administrations during the postwar period produced by Allvine and O'Neill (1980), Huang (1985) argued that even though data showed mixed results under formal statistical tests, the pattern was nonetheless hard to ignore, and showed strong evidence in support of such a phenomenon over the postwar period. Using a switching rule developed from the results of Allvine and O'Neill's (1980) which kept the investor out of stocks and in Treasury bills during the first and second years of Republican administrations, Huang (1985) was able to produce returns superior to those from a policy of being continuously invested in common stocks over the three periods considered. However, whether the stock market will continue to manifest the four-year pattern was unknown, nevertheless, the results of his study suggest that investors should not ignore consistent patterns in the market.

Concerned about whether the market can operate extremely well despite failures in the information-processing capabilities of some of its participants, Forsythe et al. (1992) constructed and operated the Iowa Presidential Stock Market (IPSM). The IPSM was designed and operated in 1988 to yield predictions of the expected vote shares of the presidential candidates in that year's fall election. Results of the "experiment" showed that the "market worked extremely well, dominating opinion polls in forecasting the outcome of the 1988 presidential election, even though traders in the market exhibited substantial amounts of judgment biases". The authors concluded that the market prices fully reflected the publicly available information about the election given the fact that its prediction of the President's "margin of victory was off by less than one percentage point".

Contributing further to accumulating body of work on the link between politics and finance, Leblang & Mukherjee (2005) observed that much effort by academics in such disciples as political science and economics has been devoted to studies that link "government partisanship, elections, coalition formation, and electoral systems to the performance of financial markets (Alter and Goodhart, 2004; Freeman et al., 2000; Herron, 2000; McGillivray, 2003). The problem with those efforts as observed by Leblang & Mukherjee (2005) is the fact that the analyses of all the previous studies were invariably based on single US presidential elections e.g., 1980 or 1990 (see Herron et al. 1999; Roberts, 1990), or the 1987 or 1992 general election in Britain (see Gemmill, 1992; Herron, 2000). The focus on single elections makes the results statistically not generalizable.

To "cure" the problem identified above, Leblang & Mukherjee (2005) used the extant literature on the effects of partisanship on the economy (Alt & Crystal, 1983;

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Hibbs, 1987; Kothari & Shanken 1992) and constructed a model of speculative trading that examined how the mean and volatility of stock prices were affected both by government partisanship and traders' expectations of electoral victory by the right-wing or left-wing party. The model predicted that rational expectations of higher inflation under left-wing administrations resulted in a lower volume of stocks traded in the stock markets. This decline in volume led to a decrease in the mean and volatility of stock prices not only when left-wing governments were in power, but also when traders expected left-wing party to win elections. On the other hand, the expectation of lower inflation under right-wing administrations led to higher trading volume which in turn led to an increase in the mean and volatility of stock prices when right-wing governments were in power, and when traders anticipate the right-wing party to win elections. The model's predictions were supported by Daily and monthly data from U.S. and British equity markets between 1930 and 2000.

Also pointing out the flaws in the previous studies on the linkages between politics and finance, Li & Born (2006) argued that even though there is substantial evidence of the influence of political outcomes on the business cycle and stock market (Pantzalis et al., 2000; Amihud and Wohl 2004; Santa-Clara and Valkanov, 2003), previous studies suffered from a serious flaw by using ex-ante trading rules that were developed on the basis of an ex-post criterion: the party of the victorious presidential candidate was assumed known. However, given the fact that election outcomes are by nature often uncertain makes such an assumption introduces "an errors-in-variables bias". In addition, prior studies failed to allow for the possibility of serial correlation in daily stock returns, which could affect abnormal return test statistics.

Li & Born (2006) hypothesized that uncertainty about the outcome of a U.S. presidential election should be reflected in pre-election common stock returns and therefore used as a candidate preference (i.e., polling) data to construct a measure of election uncertainty. The results, when this is done, showed that the stock market volatility (risk) and average returns rose in approximately a three-month period before a presidential election, if an election does not have a candidate with a dominant lead, similarly, there is weak evidence that the presidential election cycle is associated with higher return variability when the outcome is uncertain. On the other hand, returns during the election season are virtually indistinguishable from nonelection periods when the incumbent party is assured of reelection or when the election outcome is not in doubt. Li & Born (2006) concluded that their findings were consistent with the "hypothesis that investors see a causal link between political uncertainty and common stock return generation".

Białkowski et al. (2008) expanded the investigation on the presidential election cycle effect beyond the US and examined the effect in a sample of 27 OECD countries to test whether national elections do induce higher stock market volatility. The study

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found that the country-specific component of index return variance could easily double during the week around an election, which is evidence that investors were surprised by the election outcome. The study also found that such factors as a narrow margin of victory, lack of compulsory voting laws, change in the political orientation of the government, or the failure to form a government with a parliamentary majority significantly contributed to the magnitude of the election shock. Furthermore, there was evidence that suggested that markets with short trading histories exhibited stronger reactions. The authors averred that the results of the study have implications for optimal "strategies of institutional and individual investors who have direct or indirect exposure to volatility risk".

Putting together the findings of previous studies on the links between politics and finance, Wisniewski (2013) posited that either directly through personal investments or indirectly through pension funds, most people participate in the stock markets around the world, as such movements in the market as a result of politics are topics that are frequently discussed in the media and everyday conversations, however, starkly absent in these discussions is the impact of election periods on the stock markets. However, despite its absence in the popular media and daily conversations, Wisniewski (2013) observed that an increasing number of academics in different disciplines, during the past decades, have started studying the impact of elections on the stock market, as a result, a vast body of research publications has been created.

To provide an outline of directions that research in the area could take and offer guidance to investors and policymakers alike on future research directions, Wisniewski (2013) systematically examined around one hundred previously published studies in the field, and suggested that six different themes indicated below emerged from his review:

i) The value of political connectedness

ii) Political orientation of the leadership and stock market performance

iii) Political business cycle and elections

iv) Impact of political events on stock prices - Wars and international political crises, Terrorist attacks

v) The impact of political uncertainty – communications

vi) Reverse causality – can stock markets affect political outcomes?

The author concludes that even though the research conducted thus far is informative, further research is still needed in three areas to fully appreciate the interaction between politics and stock markets. These three areas are: i) On the direction of causality between the accountability of politicians for the stock market and the effect of wide fluctuations in the equity market on political outcomes. ii) The need for more theoretical research to guide investors on how to precisely adjust their valuation models taking political activities into consideration. iii) The need for more

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cross-country analysis to determine whether the political anomalies observed in the US stock market are genuine or have arisen as a result of data mining.

In one of the recent academic discussions on the presidential cycle effect, Obradović and Tomić (2017) analyzed the effect of the 2012 US presidential election on the stock prices of 85 companies that are traded on the New York Stock Exchange (NYSE). This study was similar to previous studies such as Herron et al. (1999) who analyzed the effect of the 1992 U.S. presidential elections on the various sectors of the economy and the stock market, similar to Vuchelen (2003) who analyzed the effect of Belgium coalition government on Belgium's stock prices, and Shon (2010) who analyzed the impact of ballot recounts in Florida in the 2000 US presidential elections. Obradović and Tomić (2017) however distinguished their study from the previous studies on the basis that they used the parametric and non-parametric tests to determine abnormal returns around the event day plus and minus five days which served as the event window.

Unlike most of the previous studies, the results of this study were mixed; while the parametric tests show a statistically significant negative impact of the presidential election on stock returns, the nonparametric tests produced no consistent estimation. The authors suggested that the mixed results might be due to the absence of absolute values in the nonparametric test, which relies on the value sign that is ranked, unlike the parametric test which uses absolute values, and concluded that the 2012 US presidential election presidential did have an effect on stock returns however, they were unable to confirm the effect's statistical significance.

Kim et al (2012) investigated the broader issue of why political geography may matter for stock returns. The authors also collected data on US election results over a 40-year period and on the political alignment index (PAI) of each state's leading politicians with the ruling (presidential) party to proxy for local firms' proximity to political power. The results showed that firms whose headquarters are located in high PAI states outperform those located in low PAI states, both in terms of raw returns and on a risk-adjusted basis. The authors surmised that even though they could not rule out indirect political connectedness advantages as an explanation of the PAI effect, their findings were consistent with the notion that proximity to political power has stock return implications because it reflects firms' exposure to policy risk.

While most of the studies on the presidential election effect have been conducted in advanced democracies, there is growing evidence of such studies being conducted in emerging democracies also. For example, Nezerwe (2013) examined the performance of publicly traded stocks on the Egyptian Exchange (EGX) following 2005 (September 7th) and the 2012 (June 17th) presidential elections in Egypt (note that the study did not address the 2011 revolution). The results according to the author showed that both Presidential Elections had a positive impact on the stock

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returns in Egypt (with the t-tests showing a statistical significance at the 5% level on each event).

Kabiru et al (2015) also conducted a similar study in Kenya, East Africa. These authors also hypothesized based on the extant literature (Peel and Pope, 1983; Gemmil, 1992; Booth and Booth, 2003) that the political environment during general elections significantly impacts the performance of financial markets in Kenya. The authors tested their hypothesis focusing on the 1997, 2002, 2007 and 2013 general elections in Kenya and with stock market data from the Nairobi Securities Exchange surrounding those dates. The study found that market reaction to general political elections in Kenya was highly negative or positive depending on the volatility of the election environment. The cumulative abnormal returns (CAR) surrounding the 2002 and 2013 general elections were not significant, on the other hand, the CAR around the 1997 and 2007 general election events were significant (at a 5% level of significance). The authors recommended on the basis of the study, that investors and other stakeholders not to overlook electioneering events, and to implement policies that will cushion the security market against political risks during general elections.

Chung-Hua et al (2017) investigated whether political factors such as government policy and political connections affected stock returns during the 2008 presidential election in Taiwan. The authors found that firms that benefitted from the proposed Three-Links (open up postal, transportation, especially airline, and trade) policy of the winning party, which favored improved relations with China, experienced positive stock returns during the election.

The authors used the sensitivities of firms' returns to bilateral trade flows between Taiwan and China to measure the government-policy effect. The results showed that while the effects of political connections weakly exist, their significance increases when the support ratio of the winning party increased in polling data. Furthermore, the authors found that only the government-policy effect holds for different crash-risk and corporate-governance levels, however, positive abnormal returns can be generated in the Fama-French Three-factor Model using investment strategies based and political factors.

In a previous study on Macedonia, Trajkovska (2018) examined the volatility of the MBI10 (The Macedonian Stock Exchange) around five parliamentary elections for the period 2006 – 2016 using a simple generalized autoregressive conditional heteroscedasticity GARCH model. Similarly, Boshkovska (2018) investigated the political crisis in the Republic of Macedonia and its impact on the capital market. However, as indicated earlier, none of the previous studies in Macedonia or elsewhere has examined the effect of local elections on stock returns which is the focus of the present study. To determine if there is any relationship between local elections and the stock market in the Republic of North Macedonia, we used a novel

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approach in which we examined the performance of the ten stocks separately rather than the market index (MBI10). The null hypothesis is that local elections have no effect on returns on stocks.

3. Data and Methodology

Data used in this study are downloaded from the MSE web page (https://www.mse.mk/) and cover the period from November 16, 2020, to November 12, 2021. The study uses daily stocks returns calculated as:

$$R_{i,t} = \left(\frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \right) \tag{1}$$

where $R_{i,t}$ is the return of stock i at day t,
$P_{i,t}$ is the last traded price of stock i at day t, and
$P_{i,t-1}$ is the last traded price of stock i at day t-1.

The market daily returns are calculated as follows:

$$IR_t = \left(\frac{I_t - I_{t-1}}{I_{t-1}} \right) \tag{2}$$

where IR_t is the MBI10 index return on day t,
It is the closing value of the MBI10 index at day t, and
It-1 is the closing value of the MBI10 index at day t-1.

The MBI10 index presents price index weighted with the free float market capitalization (for more see: https://www.mse.mk/mk) and is comprised of ten listed stocks: Alkaloid Skopje (ALK), Stopanska banka Skopje (STB), Granit Skopje (GRNT), Komercijalna banka Skopje (KMB), Makpetrol Skopje (MPT), TTK Banka Skopje (TTK), Makedonski Telekom Skopje (TEL), Makedonijaturist Skopje (MTUR), NLB banka Skopje (TNB), and Stopanska banka Bitola (SBT).
In addition, the general form of the model which is estimated is as follows:

$$R_{i,t} = \alpha_i + \beta_i IR_t \tag{3}$$

Equation (3) presents the OLS market model which is the single-factor model. From equation (3) the excess is as follows:

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i IR_t) \tag{4}$$

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where $AR_{i,t}$ is the abnormal return of the stock i at day t.

As equation (4) shows, $AR_{i,t}$ presents residuals derived from the econometric estimation ($\varepsilon_{i,t}$). Dodd and Warner (1983) explained that the prediction errors are not residuals because they need not sum to zero. Based on the event study methodology (see e.g., Brown and Warner, 1985), the event day (the election's day) is considered t0. The Stock Exchange is open on the day of the election as well as the after the second election.

In general, local political elections were organized in two rounds (the first election date was October 17 and the second was October 31). Thus, only after the second round were the winners announced. Following Brown and Warner (1985) the event period (window) covers – 5 through + 5. However, due to the uncertainty from the election process as an exogenous factor which is investigated in this study, the event period is expanded and covers ten days before the elections to nine days after the elections (t-10 through t+9) for further examination.

The objective of expanding the event window is to examine whether stock prices were affected on the day right after the first-round through following 9 days after the second-round date (Note that Sunday was the first-day election. The Stock Exchange opens on Monday after the election on Sunday). The ninth day is Friday, and the trading week is closed on that day. Consequently, the window after the second round was + 9 rather than + 10. Expanding the event window is wise given the subsequent political crises generated after the Prime Minister announced his resignation (RFE/RL's Balkan Service, 2021). For stability in the parameters, we adjusted the estimating period according to the event windows. The Prime Minister's resignation announcement effect is already included in the analysis with the effect from election results. We must note here that the speculation was that the Prime Minster would resign, as such his resignation was not eventful, and it has already been absorbed in the market prices.

4. Results and Discussion

Appendix 1 presents some descriptive statistics (confidence level 95%) for different time periods and is summarized below.

First, the results show that through the events period the market index and each of the selected stocks, on average, have positive returns. KMB and TNB have the highest returns, whilst SBT has the highest risk measured using standard deviation. Further, in the interval from - 11 to -236 (i.e., from the beginning of the estimation period until the first day of the event window), the SBT has the highest risk and KMB's highest return. During the event period (-10, + 9) TKK has the highest risk, whilst SBT has the highest return. During this period, ALK realizes a negative

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average return. However, considering the event period was shorter, e.g. from -5 through +5, seven of the stocks realized negative returns similar to the market. Obviously, during the events' period uncertainty existed. As Figure 1 shows, there is a negative trend line of the overall market returns.
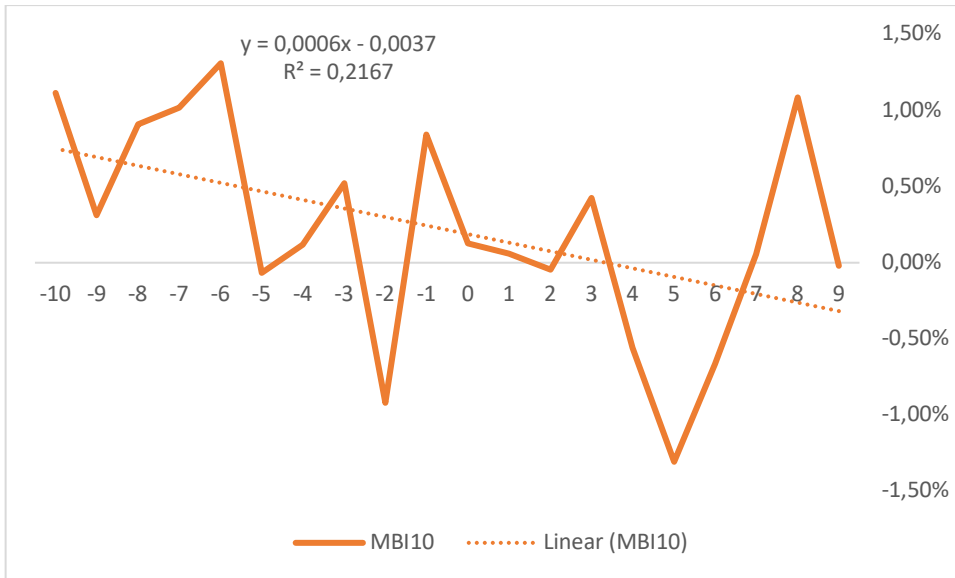

Figure 1 MBI returns (-10, +9)
Source: By the author.

Figure 1 showed by comparing, the last day (Friday) and the opening day (Monday), i.e., immediately after the second-round election day that an intraday analysis confirms that MBI10 Index returns dropped from 0.84% to 0.13%. Thus, there is a significant decrease of -85% points.
A similar trend could be seen in Figure 2 also.

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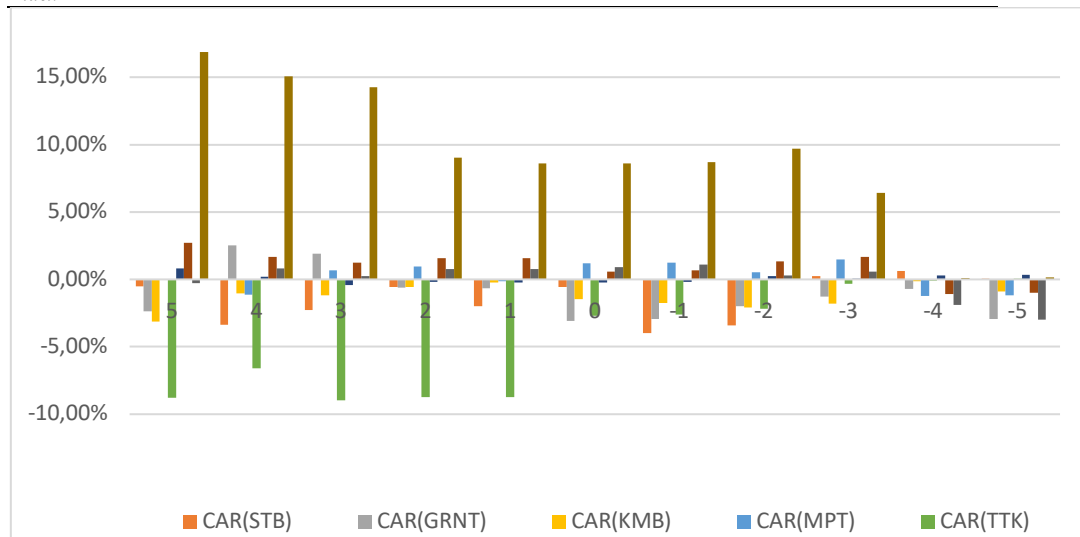
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Figure 2 Cumulative Abnormal Returns (-5, +5)
Source: By the author.

Looking at the interval from -10 to +9, except TTK and ALK, all stocks show negative price trend lines, including the market. Further, an examination is done through the time period to the event day by presenting Cumulative Abnormal Returns (CAR) from -5 to +5. On the fifth day, SBT realized the highest CAR (roughly 17%), whilst TTK shows the lowest CAR (roughly -9%. See Appendix 2). Furthermore, Abnormal Returns (AR) are calculated, and statistical significance is tested as presented in Appendix 3.

The results show that on the event day, only the stock of STB yielded a positive significant excess return. Also, STB on day -2 generated a significantly negative AR and on day +5 realized a significant positive AR. On day +5, GRNT realized a significantly negative AR. MPT realized a significantly positive AR (day -3), and a significantly negative AR (day +4). TTK showed the lowest negative significantly AR, and that was just only one day after the event day. TNB realized a significantly negative AR on day -5, whilst SBT showed positive and significant ARs on days -3 and +3.

Thus, overall, the results showed that AR for all firms in the interval -5, +5 only 10, or 9% from 110 observations are statistically significant. Similar results have been found testing during the interval -10, + 9, i.e., where 10% were found to be significant. These results show that in general, the effect is trivial (all results are tested at a 5% statistical significance level).

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Furthermore, as Appendix 3 shows, the regression results in the intervals from -6 to -236, only stocks such as GRNT, KMB, TNB and SBT have slopes (Beta coefficients) higher than 1. So, the returns of such stocks are more volatile relative to the entire market index. In other words, just four stocks are found to be aggressive investments whilst others are conservative.

In the context of North Macedonia, since our study examines the local political election effect, which could be considered a pioneering one, our results cannot be compared with the previous studies. However, it must be noted that even the previous studies revealed that the parliamentary elections impacted the Macedonian Stock Exchange (see Trajkovska, 2018). In addition, our study shows that the local political election effect combined with the Prime Minister's resignation announcement effect yielded only a trivial impact. This result is similar to Boshkovska's (2018) which showed that the political crises generally have no negative consequences.

5. Conclusion and Research Limitations

This study examines the Efficient Market Hypothesis in the case of the Macedonian Stock Exchange. The study focuses on ten stocks that make up the MBI10 Index and used the event study methodology to investigate whether recently held local political elections (2021) impact daily returns. The study reveals that four stocks are aggressive investments, and the rest could be considered conservative stocks that relied on using the market index model.

The study also shows that on the day of the announcement of election results, there was a significant reaction from STB, whilst there was no evidence of any significant reaction from other stocks. Using the overall reactions from the results, one could surmise that such information or news was almost irrelevant from the perspective of financial decision-makers. Thus, the national stock exchange was found to be almost not sensitive to those kinds of news. Interestingly, one could also the same token surmise that the Prime Minister's resignation announcement was also irrelevant.

Overall, although the study shows the existence of abnormal returns, the evidence is rather weak as far as local political elections affecting daily stock returns are concerned. The effect seems to be significant only in a few instances (of daily returns).

Even though the study offers limited evidence, it could help investors prepare better trading strategies in line with whether to enter the market, stay or exit the Macedonian Stock Exchange market.

The major limitation of the study is that we used only a single-factor model, however, with limited stocks in a rather small trading exchange (ten companies), using other models such as the three-factor Fama-French model might be inappropriate. The important lesson here though is the fact that both practitioners

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and academics in even newly emerging democracies and newly established stock markets should also be cognizant of the linkages between political activities and market returns. This awareness might also lead to the development of new regulations to curb arbitrage conditions, especially in small markets.

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Author Contributions

Fitim Deari and Paul Sergius Koku conceived the study and were responsible for the design, the literature review, and the conclusion section. Fitim Deari was responsible for data collection and analysis, and for data interpretation. Paul Sergius Koku was responsible for the introduction, literature review and edited the text.

Disclosure Statement

The authors have not any competing financial, professional, or personal interests from other parties.

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Appendix 1 Descriptive statistics

	MBI10	ALK	STB	GRNT	KMB	MPT	TTK	TEL	MTUR	TNB	SBT
Full sample											
Mean	0.0012	0.0014	0.0011	0.0013	0.0019	0.0004	0.0005	0.0006	0.0012	0.0019	0.0015
Standard Deviation	0.0056	0.0092	0.0140	0.0191	0.0128	0.0098	0.0137	0.0137	0.0151	0.0159	0.0206
Kurtosis	1.0064	3.1934	3.5006	5.0901	9.8303	9.5093	15.8629	16.3826	18.2035	5.8997	10.2207
Skewness	0.1304	-0.1252	-0.4804	0.9386	-0.7774	1.3934	1.0572	-0.7140	1.8151	-0.2360	0.8363
Count	246	246	246	246	246	246	246	246	246	246	246
(-11, -236)											
Mean	0.0012	0.0016	0.0009	0.0012	0.0019	0.0004	0.0004	0.0005	0.0012	0.0017	0.0006
Standard Deviation	0.0054	0.0089	0.0136	0.0188	0.0128	0.0093	0.0116	0.0136	0.0156	0.0155	0.0202
Kurtosis	1.2987	3.0397	4.0155	5.5472	10.6917	12.3655	8.9711	17.7647	17.3752	6.6465	11.4662
Skewness	0.1911	-0.2947	-0.5397	1.1978	-0.7617	1.7752	-0.2131	-0.8130	1.7707	-0.4268	0.6753
Count	226	226	226	226	226	226	226	226	226	226	226
(-10, +9)											
Mean	0.0022	-0.0005	0.0033	0.0021	0.0022	0.0013	0.0014	0.0014	0.0011	0.0050	0.0108

Standard Deviation	0.0071	0.0129	0.0179	0.0228	0.0136	0.0141	0.0289	0.0149	0.0083	0.0198	0.0236
Kurtosis	-0.3411	3.8738	1.0269	3.1202	2.5528	-0.0881	7.8448	6.1450	10.5878	1.6260	2.5926
Skewness	-0.3838	0.8486	-0.3236	-0.9575	-1.0149	-0.2210	1.6982	0.1745	2.7406	0.7595	2.0282
Count	20	20	20	20	20	20	20	20	20	20	20
(-5, +5)											
Mean	-0.0007	-0.0028	-0.0005	-0.0030	-0.0033	-0.0011	-0.0081	0.0003	0.0020	-0.0005	0.0135
Standard Deviation	0.0063	0.0061	0.0207	0.0269	0.0147	0.0154	0.0215	0.0016	0.0113	0.0175	0.0254
Kurtosis	0.1358	-0.7492	0.8073	1.6117	1.6745	0.4096	2.8946	1.8551	5.0795	0.1651	1.8115
Skewness	-0.7132	-0.7502	-0.2441	-1.0751	-0.9940	0.6151	-1.4930	0.1614	1.9489	-0.0467	1.7757
Count	11	11	11	11	11	11	11	11	11	11	11

Source: Own processing.

Appendix 2 Abnormal Returns (-5, +5)

Day	AR(ALK)	AR(STB)	AR(GRNT)	AR(KMB)	AR(MPT)	AR(TTK)	AR(TEL)	AR(MTUR)	AR(TNB)	AR(SBT)
5	-0.41%	**2.82%**	**-4.92%**	-2.07%	1.06%	-2.17%	0.65%	1.04%	-1.08%	1.79%
4	0.27%	-1.07%	0.62%	0.15%	**-1.81%**	2.38%	0.58%	0.44%	0.56%	0.82%
3	-0.21%	-1.73%	2.52%	-0.62%	-0.29%	-0.23%	-0.19%	-0.35%	-0.52%	**5.21%**
2	-1.32%	1.44%	0.05%	-0.35%	1.10%	0.00%	0.03%	0.03%	0.00%	0.43%
1	-0.39%	-1.43%	2.42%	1.26%	-1.33%	**-6.05%**	-0.02%	1.00%	-0.12%	0.01%
0	-0.16%	**3.43%**	-0.15%	0.26%	-0.05%	-0.08%	-0.05%	-0.11%	-0.19%	-0.08%
-1	-0.61%	-0.56%	-0.94%	0.36%	0.74%	-0.43%	-0.40%	-0.68%	0.78%	-1.02%
-2	1.06%	**-3.66%**	-0.70%	-0.32%	-0.94%	-1.86%	0.17%	-0.29%	-0.25%	3.27%
-3	-1.53%	-0.36%	-0.59%	-1.63%	**2.69%**	-0.27%	-0.24%	2.73%	2.47%	**6.34%**
-4	-0.16%	0.60%	2.22%	0.73%	-0.05%	-0.08%	-0.04%	-0.10%	1.07%	-0.07%
-5	-0.04%	0.00%	-2.93%	-0.88%	-1.18%	0.01%	0.34%	-0.98%	**-2.97%**	0.17%

Note: Bold indicates statistical significance at 5%.
Source: Own processing.

Appendix 3 Regression results (-6, -236)

Description	ALK	STB	GRNT	KMB	MPT	TTK	TEL	MTUR	TNB	SBT
Intercept (α_i)	0.0008	0.0004	0.0000	0.0005	-0.0005	0.0002	-0.0001	0.0001	0.0005	-0.0008
Slope (β_i)	0.6253	0.6141	1.1181	1.2590	0.7726	0.4809	0.4868	0.7996	1.0890	1.3064
R-Square	0.1532	0.0600	0.1057	0.2945	0.2065	0.0401	0.0366	0.0816	0.1435	0.1241
St. Error	0.0081	0.0134	0.0179	0.0107	0.0083	0.0130	0.0138	0.0148	0.0147	0.0191

Source: Own processing.