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Event Study on the Partisan Effect on National Elections on Stock Market Performance
Evidence from 1985 – 2017 in the European Union

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Abstract

This thesis examines the abnormal returns of national stock markets composed by the Datastream Country Index around the national election dates of 27 countries in the European Union over the last three decades. The abnormal returns of an event window of four days around the election date and an estimation period of 100 days prior to the election date are determined by means of an event study. The partisan effect, for example right-wing, left-wing or center, of election outcomes is used as a measurement variable to capture the effect on the abnormal returns. Also, the orientation change of the government with respect to the previous and current election outcome is taken in perspective as variable. A significant effect with respect to the abnormal returns is observed for Austria, Croatia, Cyprus, Ireland, Malta and Portugal in these countries during the election period. A modest effect of the partisan effect with a right-wing party as election outcome and an orientation change from left to center is found.

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I. Introduction

National elections are the foundation of the democracy in the European Union. The elections are held domestically by each European country every four or five year. During election time, citizens have the right to vote for their preferred political party representing their beliefs, and subsequently the next national government is formed. Differences in the way citizens vote are seen on as well education level as on employment status and class distinction (Heuristic, 2017). Democracy enables people, regardless of their socioeconomic background, to vote for the representatives of their country. Considering each European citizen is affected by the ruling policies of the government, elections are of importance for everyone. Depending on the ideologies of the political parties and the formation of these different political parties in the government, the direction of a country is set. Political parties make decisions on daily basis about the modern laws and regulations which determine the direction of the country for their term.

If the composition of the government changes after the election, which is very plausible, the ruling policy will most likely change too. Political decisions made by the government affect the economy and hence directly and indirectly the stock markets. The stock markets capture the newly available information remarkably good into stock prices (Forsythe et al, 1992). This makes it important for companies to take a close look at the upcoming election of a country, because the possibility of changing governments is always present. Greater economic inequality, a migrant crisis, a more distinct feeling towards the European Union and an increasingly sense of losing national identity than before can cause people to vote differently relative to the previous elections (Erlanger, 2002).

An example of one of the changes in the European Union is in the Netherlands where Geert Wilders became runner-up with his party and Mark Rutte first with their right-wing party during the elections of 2017. The number of votes increased in the last ten year from a sparse 21% in 2006 to 34% in 2017. Also, Geert Wilders managed to let other parties adopt tougher stances on typical right wing minded thoughts like anti-immigration (Munde, 2017). Another example, in Austria where the Freedom Party, a right-wing party, managed to double the number of votes from 11% in 2006 to 20% in 2013. Traditionally, Austrians used to vote for center and left-wing parties (Pelinka, 2004). An even bigger movement towards the right can be seen in Poland after the Law and Justice Party of Jaroslaw Kaczynski

received more than a third of the votes in 2015. This party was founded in 2001 and still growing ever since. This change from left-wing to right-wing is not solely noticed in Western Europe only, but also for several Eastern European countries like Slovakia, Estonia, Bulgaria and Poland (Norwegian Centre for Research Data, 2017).

These latter countries are dealing more and more with unwanted refugees causing people to vote more on right-wing parties and causing mainstream parties to move slightly to the right as well (Shuster, 2016). During the eighties, extreme right-wing parties had around 1 per cent of the votes. More recently, in 2011 already 11 countries had an extreme right-wing party with 5% or more of the total votes. A year later this has increased to an average of 9.8% for 13 countries with at least 5% or more vote share for extreme right-wing parties (Otti, 2012). The growing trend from the past decades seems to be somewhat broken, with the loss for the right-wing party of Marine le Pen in France and the victory for Jeremy Corbyn with his left-wing party in the United Kingdom. Nonetheless, apart from the trend, there appears to be a shift of election outcomes in the European Union to more right-wing oriented parties.

The European Union consists of many countries with different cultures. The northern countries, such as Sweden, Denmark, Finland and the Netherlands, are in general countries associated as welfare states (Rhodes, 1996). In these welfare states the government takes more care to protect the health and well-being of citizens by means of grants of pensions and health care. Also, the power distance tends to be smaller in these countries, this means there is overall less acceptation of inequality (Hofstede, 1983). This results in approaches by the government which reduces inequality between citizens. Ireland and the United Kingdom are seen as countries where competitiveness is high. There are less strict rules, but a higher value is placed on fair play. Innovation and productivity are keywords in this competiveness (National Competitiveness Council, 2017). Country specific characteristics of Austria, Hungary, Poland and the Czech Republic are the rightist-radical attitudes and a feeling of nationalism resulting in a high intolerance of ethnic minorities and a sceptic attitude towards economic interference (Weiss, 2003). Southern Europe and the Balkan countries tend to be less individualistic. The income inequality is on average higher according to the Gini-coefficient. This coefficient represents the country's income equality. Therefore, the people in the Southern region of the European Union tend to rely more on friends and family. Corruption is more present which must be controlled by inspections to make sure everyone

does their job lawfully (Löfström, 2013). These cultural differences create distinct standards and values in each and every country. Political preferences are based on these standards and values, resulting in different political beliefs from citizens and thus governments.

Previous studies on the partisan election effect consists predominantly on studies on the presidential elections in the United States. The results of these researches in the United States is often inconsistent and not applicable on the European Union due to a different electoral system. Much less focus has been on partisan effect of national elections in the European Union. And if any, research focussed on the European Union often only examined a single country or a combination of several handful of countries. This thesis will aim to fill this gap by taking a look at different orientations of political parties for countries member of the European Union. Therefore, the research question for the thesis is as follows:

Is there a partisan effect of elections on stock market performance for country members of the European Union for the period of 1985 until 2017?

The abnormal returns of countries in the European Union are examined by using an event study with an event window of four days around the election dates for the period 1985 – 2017. Where the estimation period is a hundred days period prior to the event and the Datastream Country Index is used to measure the country specific abnormal returns. The outcome of the elections determines the newly elected government, which directly determines the new legal and regulatory framework. Investors seem to react on these changes of political nature. The orientation outcome of the newly elected government after the election on the abnormal returns is observed and studied for a relation. Furthermore, the orientation change, a change in the government from the last election to the newly elected government, is observed to detect an effect. Significant cumulative abnormal returns are found for 6 of the 27 countries. However, a positive relation between a right election result and the stock market performance is observed. Also, a modest effect of an orientation change from left to center is observed.

The thesis is structured as follows, in chapter 2 a description of the theories associated with the partisan effect of elections on stock markets is found followed by previous research which is done on this subject. In chapter 3 the selected data will be explained. Chapter 4 methodology will clarify the analysis of this research. Following up with

the results in chapter 5 belonging to the data and methodology. In chapter 6, the conclusion is stressed with recommendations for further research.

II. Theoretical Framework and relevant literature

The aim of this thesis is to investigate the effect of parliamentary elections on the stock market returns for country members of the European Union. Stock market returns are in fact based on future cash flows and profitability of a company. So, if it is believed that a company will have a financially good upcoming year, the stock price will rise. The price of the stock will be priced downwards if it is expected to be a financially tough year. The change of circumstances can change the price of a stock. If elections are approaching, the future value of the underlying assets of the stock could change in both ways. For example, if a left-wing government is being replaced by a right-wing government, the tax and regulations could become more favourable to companies. Each political party has diverse ideas on which economic system is in favour of their country, often they steer the economy in such way that it will be most beneficial for their voter base. Hence, investors can somewhat deduce the economic policy and beliefs on forehand. Consequently, these different economic policies can cause different reactions on the stock market.

2.1 Efficient market hypothesis

First, when considering the ability of the stock market to signal information an assumption must be made in this thesis. From the point of view of economists, markets are efficient if the price fully reflects the information. (Fama, 1970). Stock markets are aggregators of information, which means that changes in expectations are priced immediately in stock prices. Nonetheless, the economic theory makes a distinction between three degrees of models for which information influences the stock prices. The three degrees all assume that the market is efficient, however they differ on the degree of information incorporation.

The weak form of the efficient market hypothesis states that only past public information is priced into stock prices whether this information is available to investors or not. Future stock prices cannot be predicted by analyses of past stock returns. This theory also states that excess returns are not possible in the long run by using specific investment strategies, because no information can be retrieved from past returns (Maikiel, 1989).

The semi-strong form of the efficient market hypothesis states that all publicly available, past and future information, is priced into stock prices. Stock markets react immediately to new information available. This hypothesis implies that only non-public

information could earn abnormal returns. According to the research of Brealy et al. (1992), the semi-strong efficient market hypothesis stock market prices are best available estimates of the real value of the asset.

The strong efficient market hypothesis states that all information that is known to anyone participating in the market is incorporated into stock prices. This means that both future and past information and both inside and outside information is incorporated into stock prices. All private information is perfectly reflected in the stock prices (Maikiel, 1989). The main difference between the semi-strong efficient market hypothesis and the strong efficient market hypothesis is that generating profits systematically is impossible in case of the strong efficient market hypothesis (Clarke et al., 2001).

In this thesis, an event study is used to capture the adjustment of prices to information. Considering the work of Fama (1991), event studies are the best way to measure the effect of released information and prices adjust efficiently to firm-specific information. Fama (1991) also states that using an event study the effect of both the semi-strong and strong efficient market hypothesis is captured. Information new to investors will be incorporated in stock prices immediately. By using an event study the returns at the time of the release of the information can be measured.

2.2 Theoretical framework

Following the efficient market hypothesis all information should be priced instantly in a country's stock market. With this assumption, it can be deduced that the country's stock market reflects the opinion of investors on national elections. A practical implication of the efficient market hypothesis is that post-election results do not always match pre-election results. This can lead to incorrect incorporated stock market prices.

Previous research has found abnormal returns around parliamentary elections. An explanation for these abnormal returns around parliamentary elections could be that political uncertainty creates economic uncertainty, this causes investors to become more risk averse (Lehander, Lonnqvist, 2011). Additionally, it depends greatly on the set of countries which is taken, what kind of political event is being researched and the preferred political ideology of citizens. In Europe, there seems to be no consistency in geographical location and the way citizens vote left, right or center (Nardelli, Arnett, 2015). Therefore, a distinction on geographical level cannot be made.

2.2.1 Political business cycle theory

Kalecki (1943) was a pre-eminent economist and discovered an interaction between politics and the economy. He modelled the effect of government expenditure on employment in 1943, he stated that with sufficient government budgeting, full employment can be attained. In the modern time, politics and economics cannot be seen separate from each other. Downs and Nordhaus shed another light on the relation between politics and economics. As stated by Downs (1957) and Nordhaus (1975) the governments' popularity is based on the economic state of a country, which goes hand in hand with the political business cycle theory also known as the electoral business cycle theory. This theory suggests that in order for politicians to be re-elected the next term, the state of the current economy has to be good. In other words, the better the economy, the more popular the politician. To reach a good state of the economy a politician will manipulate the economy to achieve personal ends, especially during or close around election periods. The incumbent government will try to use expansionary economic policy prior to the elections to lower unemployment rates and increase real incomes. A contraction policy will be implemented after the elections to compensate for the insufficient budget. Since stock markets are subject to daily media many voters relate the state of the economy with the stock market. Additionally, the stock market is seen as a good indicator for the state of the economy (Gärtner and Wellershoff, 1999). This way, the politics and stock market are of relevance and well connected to each other. Döpke and Pierdzioch (2004) suggest in their working paper that the performance of the stock market of a country is a fair method to test the political business cycle theory, because the stock market integrates all public information immediately in its value.

The stock market is an aggregation of the value of multiple individual companies. The value of companies is determined by several distinct factors. One of these factors is the firms' profit; the better the economy, the better the companies' profits should be. The better the profit, the higher the value of the company and thus the higher the value of the stock market. Consequently, when the total value of the stock market increases, positive returns are made for investors.

The value of a company is also determined by other factors such as, output growth, inflation, employment rates and technological progress. The economic growth is a measure of a combination of these factors. An analysis of Levine and Zervos (1998) shows a

correlation of 0.773 between economic growth and stock growth. This means that stock growth and economic growth fluctuate highly together. Another country specific factor which influences the companies' value indirectly are national elections (Riley & Luksetich, 1980). The ruling policy made by the government affects the companies' profits (Ganghof, Genschel, 2008) A change in the government could mean a shift in the ruling policy. Investors are aware of the possible change in policy and react to this by trading on the stock market.

2.2.2 Partisan effect

Another theory describing a relation between government and economics is the partisan cycle theory developed by Hibbs (1975). The partisan cycle theory is compatible with the political business cycle theory. This theory suggests that political parties want to implement economic policies that are in line with their core beliefs. Since the core beliefs differ greatly amongst political parties, an alternative economic policy will be proposed. Considering the different economic policy of each political party is relevant, because different economic policies cause different reactions on the stock market.

A political party can be roughly split into three orientations, a left-wing party, a right-wing party or a center party. Traditionally, the left-wing parties are focused to defend the rights of the labour force in that country. Left-wing parties also stand for a progressive policy, they want to change the current policy because they believe it is unfair for the less fortunate people in the society. They do so by using taxation as an instrument to level the incomes and by redistributing these taxes among the society. Furthermore, left-wing parties are willing to accept a higher inflation rate which let the real rate of return decline for investors (Füss, Bechtel, 2008). A lower real rate of return will result in lower stock market prices. Left-wing parties are also believed to have a higher government expenditure (Barro, 1991), a higher tax rate and a higher minimum wage (Leigh, 2007).

Right wing parties on the other hand are more conservative with respect to the current policy. Their focus is on the already accomplished state of economy and therefore conservative towards change for more economic freedom. Different political parties carry out different economical patterns in their policies which cause different responses of the stock market.

Furthermore, a right-wing party in one country can be a center party in another country. However, left and right-parties must be seen relative to each other. It is important to know if a party is a left, right or center party in a specific country. A switch from left to right, left to center or vice versa can mean a change in policy and hence the economic policy of a country, which can possibly affect the stock market.

2.3 Monetary policy in the European Union

Economists used to see stocks as an inflation neutral investing option. This means that there is no relation between the inflation rate going up or down and the real rate of return. The research of Bodie et al (2005) suggests that there is a negative relation between inflation and the stock market returns. This perception is nowadays accepted among economists. Leblang and Mukerjee (2005) came to the same conclusion of Bodie et al (2005), however, they added next to the negative relation between inflation and stock market performance a link with left and right-wing policies.

In their paper, they conclude that an expected win for a left-wing or a right-wing party affects the volume of trading, due to a higher or lower expected inflation because of the policy of the chosen political party. The lower trading volume will result in a lower volatility. Hence, a lower volatility means a lower risk premium, which causes lower mean stock prices. As depicted in a previous paragraph, a different political party means a different economic policy. Poor stock market performance will be a consequence of governments formed by left-wing parties, as they try to achieve a lower unemployment rate at the expense of higher inflation rate. On the other hand, a right-wing party will try to keep the inflation lower than a left-wing party causing a lower inflation and higher trading volumes.

However, a link between inflation and government partisanship can only be made if the government has a majority in the democracy and when the government has direct control over the monetary policy. In Europe, there is a central bank for every European country which uses the euro. It is founded in 1999, at the same time of the introduction of the euro, which means that after the introduction of the euro, the monetary policy and the government are split. Some, but not all governments in the European Union, have control over the inflation and thus can use this as an instrument to influence the economy. Investors are aware of this, therefore the argument is irrelevant for the time after the introduction of

the European Central Bank. However, not all European Union members are in the European monetary union, only 19 out of the 28 countries. Thus, still nine countries are able to control their own monetary policy.

2.4 Stock market returns

The stock market is an aggregation of all individual stocks in a country. It is a representation of the value of all stocks listed on a particular exchange. Several studies have discovered an interaction between the stock market of a country and the uncertainty of a political event.
A recent study of Pastor and Veronesi (2013) modelled how stock prices respond to political news with an equilibrium model. This model suggests that more political uncertainty calls for a higher risk premium with a multiplier for weaker economies. Next to the risk premium, it also makes stocks more volatile and correlated to each other. A year later, Pastor and Veronesi extended their own work with Kelly (2014). They narrow down their previous research by taking only national elections and global summits in scope with respect to the option market. They find three different risks associated with political events, namely price risk, tail risk and variance risk. Their model predicts a negative relation between these three variables and economic conditions. Furthermore, the model predicts that all three risk variables should be larger when political uncertainty is higher. The adoption of a new policy causing different economic conditions or political uncertainty will move the stock market prices.

The combination of the political cycle and the partisan theory seems to cause a higher volatility during election times (Bialkowski et al., 2008). This could be a compensation for the decrease of the stock markets prior to the election. The uncertain information hypothesis is closely connected with political risk and higher volatility during elections. With the increase of political risk, the stock market's volatility will increase too. In the paper of Brown et al. (1988) the uncertain information hypothesis is used to clarify that the higher risk implies a lower asset price resulting in a relatively higher return. However, the level of uncertainty diminishes in the weeks prior to the election date, as more accurate polls increase the predictability of the election outcome

Several studies have discovered an interaction between the stock market of a country and the uncertainty of a political event. From previous research of Budge et al (2001) it can be stated that right-wing parties are more beneficial to firms' profits than left-

wing parties. Left-wing policies prefer a more equal income distribution. Therefore, they use higher taxations on firms and high income class citizens than right-wing parties to redistribute incomes to the working class (Budge et al. 2001). Higher taxation on firms' profits, lower the profits of firms, which affects their financial reports negatively. This could subsequently cause lower stock market returns.

Other research of Füss and Bechtel (2008), following the semi-strong efficient market hypothesis, reason that if there is going to be a negative effect on firm's profits due to changing governments this will be incorporated in the stock price immediately. The effects on the stock market by the changing policy will be incorporated at the time of revelation. Nowadays, the media reveals new polls every day around the election date. The effect on the stock market might be present, but the link between government partisanship and stock market performance might not be revealed.

Based on these papers and the assumption made above with regards to the semi-strong efficient market hypothesis it can be rationally expected that different governments create different patterns in the stock market returns. When information is being released about the newly elected government this will be priced into the stock market prices with a positive effect on stock prices when a right-wing party is expected to win and the opposite effect when a left-wing party is expected to win.

2.5 United States

Most previous research considering the link between government partisanship stock market performances is done with data samples of the United States. The research of Riley and Luksetich (1980) mainly focuses on the fact whether a president was a democrat or a republican. A republican president is associated with a right-wing party, whereas a democratic president is associated with a left-wing party. A dataset of 20 presidential elections from 1900 and forward was used. They found support for their hypothesis that stock markets perform significantly better during republican incumbencies. However, this result remains inconclusive, because of another research of Huang (1985) in the United States shows that for a longer period, running from 1832 until 1980, a higher average stock market return over a four year cycle is found for democratic presidents. The results of these two studies are completely contradictory to each other. Santa-Clara and Valkanov (2003) found later more evidence for higher returns during democratic incumbencies. Their

evidence towards the existence of the partisan theory show higher returns during the incumbency of democratic presidents than republican presidents, mainly because of higher real stock returns and lower real interest rates. These abnormal returns are not explained by business cycle variables like higher government expenditure or abnormal returns around election dates. They argue that there is no legit reason to justify a risk-premium around election dates.

Furthermore, a distinction is made by Gärtner and Wellershoff (1995) between the first half and the second half of the president's incumbency. They conclude that the stock markets perform better during the second half than the first half of the president's term. In the United States, in contrast to Europe, after the election a single party will govern the country.

Leblang and Mukherjee (2005) also examined the United States and the United Kingdom with evidence from 1930 until 2000. They argue that for the United States an expected victory for left-wing parties lowers the volume traded on the stock market. As a result of the lower traded amount, the mean and volatility of the stock prices decreased, while the contrary is seen for right-wing parties. If a democratic president is incumbent, the stock returns are on average lowered by 0.008% per day, which is a poor 2% per year with five per cent significance. The same effect which is found in the United States is tested for the United Kingdom. They found similar results and effects for left-wing parties instead of democratic parties.

The United States political system differs from the European system. The United States has a two party system where always one party will have the majority. In European countries there are several parties in the running for national elections. Furthermore, in the United States there is a senate and a house of representatives next to the government. The House of Representatives can have a majority of a different party than the incumbent president. This way the government can be divided from the incumbent president and disapprove laws that are made by the government. A similar political system is found for some European countries.

2.6 Europe

However, all European Union countries are characterized by a different political system in which in principal more than two parties exist. The national elections are either divided in

multiple rounds, in which the first round consists of over two parties and only two parties in the last round, or the other variant where only one round of elections exist with multiple parties. Some European countries also have a two-party system, however this only applies to countries with also a multiple round system. So, in the first round, there is a multiple party system and a two party-system in the second round. See appendix A for a specification of the political system per country. Due to the fact that the political system is predominantly different from the United States the results cannot be extrapolated one-to-one to Europe. Füss and Bechtel (2008) performed a research on the federal elections of 2002 in Germany. They found lower returns on daily basis for small firms on the stock market when left-wing parties increased in victory chances. With the lower returns, the volatility of the stock market also decreased. However, these results were not found for other firms on the stock market.

2.7 Research question
To answer the research question, several hypotheses will be developed.
The main research question in this paper is as follows:

Is there a partisan effect of elections on stock market performance for country members of the European Union for the period of 1985 until 2017?

First, to answer if there is a partisan effect, the effect of national elections on stock market performance must be answered. The partisan cycle theory predicts that abnormal returns around election dates exist. Therefore the first hypothesis is as follows:

H1: National elections will have a significant effect on stock market performance.

Second, the partisan effect will be examined. To analyse this, the average cumulative abnormal return of the election outcomes from right-wing parties must be different from zero. This also applies for left-wing parties and center parties.

H2a: National elections with a predicted outcome towards left-wing parties will have a negative effect on stock market performance.

H2b: National elections with a predicted outcome towards center parties will have a positive or negative effect on stock market performance.

H2c: National elections with a predicted outcome towards right-wing parties will have a positive effect on stock prices.

III. Data and methodology

3.1 Countries

The dataset contains 28 countries which are member of the European Union. Since the number of members is changing from time to time, the current members are chosen at the time of writing.

The following countries are included in the dataset: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom. The sample period runs from January 1985 until 2017. From 1985 and forward most data is available, before 1985 data becomes scarce for some of the countries.

3.2 Election events

The data with respect to the dates of the national elections are collected from the Parline database, which is maintained by the Inter-Parliamentary Union. This database contains data on national parliamentary elections from 1985 until 2017 for every country in the world where a national legislature exists. From this database the dates, the percentage of votes for the winning party and the percentage of votes for the runner-up party are extracted. The orientation of the winning party and the second party is collected from the Database of Political Institutions. The Parline database also provides data if the previous government has completed their term or had a premature dissolution.

Some countries have multiple cycles in their electoral system. Depending on the country, the next round takes place a couple of weeks after the first round. For example, France uses an electoral cycle in which the first round is used to choose the president of the republic and the second round is used to choose members of the National Assembly. Also, if there are multiple candidates for one party, this will be decided in the first round. In the case of multiple rounds only the first round is in scope of this research. After the first round, there is likely to be a reaction on the stock market due to the election result. Also, the control period for the second round would be influenced due to the first round. The stock market returns will be incorporated in the control period for the second round. To keep the election events independent only the first round will be in scope for this research

The total dataset of elections contains 193 observations. The number of observations is unevenly distributed through time and per country. The cause of the unevenly distribution is primarily because the number of premature dissolutions differs through the time. Furthermore, not all stock returns or election dates are available for some countries the first years in scope.

Two of the election events occur in less than 104 days after the previous election. A period of at least 104 days is needed to calculate the normal returns and the cumulative abnormal returns. Therefore, these two elections will be excluded from the dataset, resulting in a final sample with 191 observations.

3.3 Indices

The data for the daily returns for each country per day for the event study is attained from Thomson Reuters Datastream. Thomson Reuters provides a wide range of financial data worldwide. The Datastream Country Index is designed by Thomson Reuters, whereas Datastream provides the data used to calculate the returns per day. This Country Index represents a representative list of stocks of the market capitalization of a country. The list of stocks consists of at least 75% of the total market capitalisation of the specific country, which enables to calculate the returns of the market index. The residual 25% of the stocks is not included in the Country Index; if available the data is collected since 1985. The Datastream Country Index provides a good and representative dataset of the total market of a country, whereas the major stock exchange of a country only consists of the companies with the highest value. This index is available for every country, except for Latvia. Latvia will therefore be excluded from this research.

3.4 Event study

In order to find a potential link between the partisan election effect of national elections and stock market returns, the abnormal returns around the election dates must be examined. To measure the abnormal returns the Datastream Country Index is used. The dependent variable in this research is cumulative abnormal return. This variable is tested and used to make a regression analysis.

In line with the theory of semi-strong and strong efficient market hypothesis, stock markets should react to newly released information. In an efficient market, all relevant available information about past and future values of a company should be incorporated. Thus, after the election outcome becomes public, the stock market should react. An event study is a statistical method commonly used to examine the impact of an event on stock prices. In finance research, event studies are a common tool to examine returns. For example, it is used for events as mergers and acquisitions, earnings announcements and issues of debts and equity (Mackinlay, 1997). But outside the perspective of finance, it is also used in the field of law, to examine the effect of a change in the regulatory environment on the value of a firm. An event study is the most successful empirical technique to isolate the impact of information on stock prices (Kothari, Warner, 2004). An event study captures a certain moment of interest to be analysed. The main concept of an event study is to find the abnormal return around the event date. The abnormal return during the event date is compared to the predicted, normal return based on the estimation period. The estimation period is the period as if there was no event.

3.4.1 Event date

In order to execute an event study the event date must be set. The event date is the day of the national election, defined as t=0. This is the date the voting takes place. On this date concrete new released information reaches the media through polls on the day itself.

3.4.2 Event window

The event window is the period of time over which the abnormal returns will be calculated. This is a period of time around the event date. Around the date of the national elections, there is a constant stream of new released information through polls and media when the outcomes become more certain. Therefore, a period of multiple days around the event date is examined. A period of 2 days before the event date and 1 day after the event date will be taken. The election outcomes are published late in the evening or the next morning, therefore the event window ends 1 day after the event date. The stock markets need to react and incorporate the election outcome. Increasing the length of the event window will make the results less convincing since it can be affected by other factors and

noise not related to the event. Thus, the period of the event window is set on [-2, 1], a total of four days including the day of the national election.

3.4.3 Estimation period

The estimation period is the control period, which is used to calculate the normal returns and will be used as a benchmark. The normal returns serve as the expected returns in absence of the event. In order to prevent a bias due to a short estimation period relative to the event window an estimation period of 100 days is chosen. Using this method only a small bias in the uncorrected test statistic remains (Distler, 2017). Therefore, this estimation period runs from [-102, -3]. The length of this estimation period is long enough to make a good estimation of the normal returns based on the literature of Distler (2017).

3.5 Calculating normal returns

To calculate the normal returns the returns of the benchmark hundred days prior until 3 days prior to the national election event must be calculated. The benchmark is different for every election date. The benchmark is determined by the country where the election is and the date of the election. For example, if the election is in Austria, the returns in the hundred days prior to the election date is the benchmark for that specific election. For every election event the average return of this index is calculated.

To calculate the returns the market model will be used. This is a commonly used model in event studies (MacKinlay, 1997). Furthermore, the market model provides a good estimation of the normal returns for event studies (Brown & Warner, 1985). The market model is based on the assumption that there is a linear relation between the individual asset returns and the return of a market index. Thus, the higher the individual asset, the higher the returns of a market index. The formula of the market model is as follows:

$$R_{i,\tau} = \alpha_i + \beta_i R_{M,\tau} + \epsilon_{i,\tau}$$

With

$E[\epsilon_{i,\tau}] = 0$

And

$VAR[\epsilon_{i,\tau}] = \sigma_{\epsilon i}^2$

Where α_i is the intercept of the event date i. The β is a measure of the systematic risk of the specific event date. It is also the coefficient of the expected return. $R_{M,\tau}$ stands for the expected return, where M is defined as the Datastream Country Index of the specific country in scope and τ stands for time. $\epsilon_{i,\tau}$ is the error time, which is expected to be zero. The daily returns of the country specific stock market are calculated by using the following formula:

$$R_t = \frac{index_t - index_{t-1}}{index_{t-1}}$$

The calculation of the normal returns will be done for every country as well as for the European index on daily basis.

3.6 Calculating cumulative abnormal returns

In this thesis, an event study around every individual election date will be performed by using Country Index data over approximately three decades. So, the total event study captures a time from 1985 until 2017. The country specific cumulative abnormal returns around the election date will be compared to the control period. An abnormal return is specified as abnormal if it is above or below the expected return in the absence of the event. For the cumulative abnormal returns the timespan will be 4 days, running from [-2, 1].

The first step in calculating abnormal returns is calculating a daily return. The abnormal returns are calculated by taking the returns on the event date of the index minus the normal returns of the country index calculated over the control period. The normal return is actually the return that would be notified on the stock market, in absence of a national election. The formula for the abnormal returns is:

$$AR_{i,\tau} = R_{i,\tau} - E(R_{i,\tau} | X_\tau)$$

Where AR is denoted as abnormal return, where i stands for the specific event and τ for the time of the event. The R stands for the actual return on the date of the event and E R X as the normal returns for time period t. The abnormal returns are calculated on a daily basis. The cumulative abnormal returns of the event window are obtained by adding the daily abnormal returns.

$$CAR_{i(\tau_1,\tau_2)} = \sum_{t=\tau_1}^{\tau_2} AR_{i,t}$$

In the formula above, τ_1 is denoted as the start of the event window and τ_2 as the end of an event window. CAR stand for the cumulative abnormal returns for the chosen time corresponding of τ_1 and τ_2. The abnormal returns will be calculated for every election event from [-2, 1] and added up as cumulative abnormal returns. Cumulative abnormal returns are used because it is necessary to analyse a time period with multiple consecutive days.

The average cumulative abnormal returns give more information than the individual cumulative abnormal returns with respect to daily abnormal returns. It is a more useful statistical analysis, because it helps to get a better sense of the aggregate effect of the abnormal returns (Agrawal & Kamakura, 1995). Furthermore, if the partisan effect is not exclusively on the event date itself the cumulative average abnormal return can still be useful. The tests performed are based on the cumulative average abnormal returns. So, the cumulative abnormal returns are aggregated and divided by N, the number of observations. To obtain this, the following formula is used:

$$CAAR_{(\tau_1,\tau_2)} = \tfrac{1}{N} \sum_{i=1}^{N} CAR_{i(\tau_1,\tau_2)}$$

3.7 Variables

In order to measure the effect of the national elections on the returns, several variables are needed. The variables will be explained in the next paragraphs.

3.7.1 Dependent variable

The dependent variable in this research is the cumulative abnormal return of a country's specific stock market. This variable should be affected by the independent variables. The cumulative abnormal return measures the total effect of the national elections on the national stock market.

3.7.2 Independent variables

From previous research and earlier theories several factors are in scope that can potentially influence the CAR. The following variables will be discussed in the next paragraph: election result, surprise, majority, completed term, central bank, joint government, largest party, margin, decade, month and central bank.

Election result: This variable consists of two dummies for the election result. The dummies are called election result left and election result right. It can take the value 1 and 0 for right-wing or left-wing outcomes, representing the orientation of the largest political party after the election. Center is the starting point. The largest party is not necessarily the leading party in the government. However, in practice the largest party will most likely be in the government. The Parline database and the European Election Database is checked to see which party had the most votes. The Database of Political Institutions is checked to see if the winning party is a left-wing, right-wing or center-wing party.

Orientation change center to left: This variable shows if there was an orientation change from the previous largest party to the current largest party. It is a dummy that takes the value 1 if there is a change from center to left. To construct this variable, we take a look at the largest party of the previous government. If this was a center government and there is a left government now, this variable takes the value of 1, otherwise 0. All of the orientation change variables are retrieved from the data of the Parline database in combination with the Database of Political Institutions. In addition, similar dummies are constructed for orientation changes center to right, right to left, right to center, left to right and left to center. Also, a dummy is constructed in the event of no orientation change.

3.7.3 Control variables

Decade: This variable is a time-dummy which differentiates between the different decades (80, 90, 00, 10). This variable shows the effect of election outcomes in different decades and should be a proxy for changes over time. The data of the election dates is retrieved from the Parline database.

Votes largest party: This is a control variable for majority that measures the share of votes of the largest party and the second party received. The more share of votes a party has, the less votes the other parties have combined. With just a few big parties, there should be less uncertainty on the stock market, because it is more certain what the outcome of the

final government will be. Also, the share of votes could mean that it will be easier to implement new policies and rules. The percentage of votes is collected from the Parline database.

Surprise: This variable measures the surprise effect of the election outcome with respect to stock markets. To reconstruct a surprise effect, the volatility prior to the election outcome and after the election outcome is measured. First, the sensitivity of the country is compared to the benchmark. The sensitivity is calculated by taking the average country specific daily volatility of the control period, divided by the average daily volatility of the European index. The country specific average volatility during the event window is measured and divided by the average daily volatility of the European index during the event window, which is multiplied by the sensitivity. The event window starts 2 days before the election and ends 1 day after the election. The volatilities are calculated through the indices of Datastream.

$$Surprise = \frac{Country\ specific\ daily\ volatility}{Sensitivity * Average\ European\ volatility}$$

Majority: This variable measures whether the winning party of the elections has the majority of the votes. A dummy will be used, taking the value of one if the winning party had 50 per cent or more of the total votes. If the winning party has less than 50 per cent of the votes, the dummy takes the value of zero. This data is collected from the Parline database.

Early elections: This variable measures if the previous government completed their full term. A dummy is used that takes the value of zero if the previous government completed a full term. The dummy takes the value of 1 if there were earlier elections due to a premature dissolution and 0 otherwise. Data on premature dissolutions is collected from the Parline Database.

European Central Bank (ECB): This variable shows if the government has control over its own monetary system or whether it is controlled by the ECB. In case the government has no control over its own monetary system the dummy will take the value of one and zero otherwise. A country has control over the central bank of his country if it does not use the euro as currency. This can be either before the euro was introduced as a currency or if the country simply chose to not use the euro as currency.

Joint government: This variable checks whether the national parliament controls a majority of the senate. Thus, if the composition of the government is the same as the composition of the majority of the senate, the government controls the senate. This variable is a dummy and takes the value of one if the parliament also controls the senate. It takes the value of zero otherwise. This data is retrieved from the database of political institutions.

3.8 Regression analysis

In the event study the expected daily returns are compared with the returns around the election date. If the stock market performs significantly better or worse around an election event, an abnormal return is found.

3.8.1 Linear regression

To find an explanation for the potential abnormal returns the variables discussed above will be used to make a regression analysis. This linear regression indicates the significance of the relationship between the dependent and the independent variables. Also, it shows the strength of impact of multiple independent variables. First, the countries are separately regressed to measure the effect and the significance of the cumulative abnormal returns. Then, the countries will jointly be regressed against several variables.

First the partisan effect will be examined by regressing the election outcomes, left, center and right on the cumulative abnormal returns. This effect measures if there is an effect of political direction and the performance of the stock market. It is tested whether a party with a specific orientation is able to attain a higher cumulative abnormal return.

$$CAR = constant + Election\ resul\ \ left * X_1 + Election\ result\ center * X_2$$
$$+ Election\ result\ Right * X_3$$

Secondly, different orientation changes are regressed on the cumulative abnormal returns. This regression measures the effect of a orientation change of the government on the stock market performance.

$$CAR = constant + OC\ left\ tot\ right * X_1 + OC\ left\ to\ right * X_2 + OC\ center\ to\ left * X_3$$
$$+ OC\ center\ to\ right * X_4 + OC\ right\ \ o\ left * X_6 + OC\ right\ to\ center * X_6$$

Subsequently, a combination of the variables election outcome and orientation change will be jointly regressed. This should give a measure of the total partisan effect on cumulative abnormal returns.

$$CAR = constant + Election\ result\ left * X_1 + Election\ result\ center * X_2$$
$$+ Election\ result\ Right * X_3 + OC\ left\ tot\ right * X_4 + OC\ left\ to\ right$$
$$* X_5 + OC\ center\ to\ left * X_6 + OC\ center\ to\ right * X_7 + OC\ right\ to\ left$$
$$* X_8 + OC\ right\ to\ center * X_9$$

Another test will be performed on election outcomes with respect to time. To test if there are changes in the cumulative abnormal returns over time a regression analysis will be performed. The cumulative abnormal returns will be regressed against the dummies made for each decade.

$$CAR = constant + Decade\ 80 * X_1 + Decade\ 90 * X_2 + Decade\ 00 * X_3 +$$
$$Decade\ 10 * X_4$$

Thereafter, a regression will be performed with the variables accounting for number of votes the largest party and the second party received including with the variable if the largest party received a majority.

$$CAR = constant + Largest\ party * X_1 + Second\ party * X_2 + Majority * X_3$$

3.8.2 Correlation

Appendix B shows an overview of the correlation between all variables. The correlation table shows in what way the different variables are correlated to each other. If r is above zero a positive relationship is noticed, if r is beneath zero a negative relationship is noticed. Correlation does not necessarily mean causation.

The election result outcomes are almost all correlated with the orientation change variables. This is not surprising, since these variables sometimes capture a part of the same effect. As a result of this correlation, the explanatory power of the regression where election result and orientation changes are regressed together could be reduced. The variables are

regressed individually, which resulted in the same results with respect to the sign and significance for the following variables: election result right and orientation change left to center. It is noticed that the election result variable on itself, so for example election result left, is negatively correlated to election result right and election result center. This makes sense, since if the election result is left, the election result right and election result center are no possible outcomes anymore. This also holds for the positive correlation between election result left and the orientation change from center to left and the orientation change from right to left. A negative correlation is found for the orientation changes to center and right for the election result left variable. For the variables election result center and election result right the same correlation is found.

Table 1: Correlation between election results and orientation changes

This table represents the correlation between the variables election results and the orientation changes. Pearson statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. In the table OC is abbreviated for orientation change.

	Election result left	Election result center	Election result right
Election result left	1		
Election result center	-0.418***	1	
Election result right	-0.640***	-0.432***	1
OC left to center	-0.175**	0.419	-0.181**
OC left to right	-0.238***	-0.161**	0.372***
OC center to left	0.232	-0.058	-0.181**
OC center to right	0.165**	-0.111	0.257***
OC right to left	0.397***	-0.166**	-0.254***
OC right to center	-0.185**	0.442***	-0.191***

Furthermore, the decade variables and the ECB variable are highly correlated with each other. This is due to the fact that all these variables are linked with some point in time. The European Central Bank is introduced at a certain moment of time and therefor correlated with the decade variables. If the European Central Bank variable is regressed in itself on the cumulative abnormal return, there is no change in significance and not so much change in the coefficient or whatsoever.

3.8.3 Bootstrapping

Bootstrapping is a statistical method that allows for resampling. It has often been useful when the number of observations is too small. It may also be used when the data is not normally distributed. The bootstrapping method has been successfully used before by Santa-Clara and Valkanov (2003) in their research on the partisan effect during the election cycle of the United States. The bootstrapping method replicates the number of observations. This is allowed if the data is not normally distributed in order to make the data normally distributed. Furthermore, if the data suffers from small-sample bias due to a lag of observations, the bootstrap method counters this bias. This technique simply resamples the data in such a way that it becomes normally distributed and is more suitable for statistical testing.

3.8.4 Descriptive statistics

In table 2 the descriptive statistics are shown. Remarkable about the table is that the election result center is slightly dominated by election results right and left. Furthermore, the deviation of the cumulative abnormal results is widespread, but the mean is near zero. This is because the cumulative abnormal returns are either somewhat positive or somewhat negative, this is balanced out to almost zero. Some dummy variables have a very low mean. From here, it can be deduced that there is a low number of observations for these variables, reducing the explanatory power of these variables.

Table 2: Descriptive statistics

This table represents the descriptive statistics of the dependent variable and the independent variables. All dummy variables take a value of one or zero and hence will not be displayed in the descriptive statistics.

	Mean	Median	Standard deviation	Minimum	Maximum
CAR	0.32%	-0.15%	3.38%	-16.86%	10.55%
Election result right	0.39	0	0.49	0	1
Election result center	0.22	0	0.42	0	1
Election result left	0.39	0	0.49	0	1
Orientation change left to center	0.05	0	0.21	0	1
Orientation change left to right	0.09	0	0.28	0	1
Orientation change center to left	0.05	0	0.21	0	1
Orientation change center to right	0.04	0	0.20	0	1
Orientation change right to left	0.09	0	0.28	0	1
Orientation change right to center	0.04	0	0.22	0	1
Completed term	0.63	1	0.48	0	1
Joint government	0.27	0	0.45	0	1
ECB	0.65	1	0.48	0	1
Surprise	1.28	1.45	0.73	0.21	4.31
Largest party	37.0%	36,4%	10.0%	12%	78%
Second party	28.0%	27.0%	8.9%	9%	49%
Majority	0.08	0	0.27	0	1

IV. Results

First, the results of the cumulative abnormal returns in general will be discussed. Subsequently, the cumulative abnormal returns will be discussed per country. Thereafter, the distinct variables with respect to the orientations and the orientation changes will be reviewed, followed by an analysis over time and number of votes.

4.1 Test of significance

The first test to perform is whether the cumulative average abnormal returns are significantly different from zero. This test is performed using a one sample T-test. This test checks if the abnormal returns are significant different from zero on election days and if so with what amount of certainty it can be said that these abnormal returns are different from zero. A significance of 1%, 5% and 10% will be used. The test of significance will be performed on every t value found. The formula of the test of significance is as follows:

$$t = \frac{\bar{X} - \mu}{s / \sqrt{n}}$$

Where t is the t value, $\bar{X}$ is the mean of the sample, μ is the tested value of the hypothesis, in this research zero. The S is the standard deviation of the sample $\sqrt{n}$ and is the square root of the number of observations.

4.2 CAR's by country

The average cumulative abnormal returns of all countries are first jointly tested. The coefficient of the average cumulative abnormal return is only 0.003. This means that there is an overall positive effect of 0.32% on the stock market if there is a national election event. The P-value is 0.111 and therefore not significant, hence, it cannot be concluded that the cumulative abnormal return is different from zero on average for all countries. Several countries show on average a negative effect around the election dates, however the positive effect dominates the negative effect slightly but not significantly.

Subsequently, the cumulative abnormal returns are tested for every individual country. However, there are no significant cumulative abnormal returns observed for all countries. On the contrary, only six countries are found to generate abnormal returns of

which four at the 0.10 level and two at the 0.01 level. These six countries with abnormal returns are: Austria, Croatia, Cyprus, Ireland, Malta and Portugal.

Table 3: CAR's broken down by country

This table represents the cumulative abnormal returns which are observed. The cumulative abnormal returns are broken down for every individual country. The ranking is based on the size of economy measured by amount of GDP. The total number of observations is 191. The * stands for a significance level of 10%, ** for a significance level of 5% and *** for a significance level of 1%.

Country	Observations	Coefficient	P-value
Germany	8	0.003	0.675
United Kingdom	7	0.003	0.502
France	7	0.000	0.455
Italy	8	-0.009	0.115
Spain	8	-0.024	0.373
Netherlands	10	0.006	0.502
Sweden	9	-0.007	0.241
Poland	9	-0.007	0.291
Belgium	9	0.014	0.230
Austria	8	0.005	0.075*
Denmark	9	0.002	0.784
Ireland	8	0.019	0.010***
Finland	8	-0.012	0.189
Portugal	8	0.018	0.059*
Greece	12	-0.008	0.640
Czech Republic	6	0.013	0.308
Romania	5	0.005	0.422
Hungary	6	-0.003	0.658
Slovakia	3	0.001	0.143
Luxembourg	5	0.014	0.206
Croatia	4	0.020	0.047**
Bulgaria	6	-0.011	0.312
Slovenia	5	0.013	0.192
Lithuania	5	0.015	0.494
Estonia	5	0.004	0.443
Cyprus	5	-0.019	0.004***
Malta	8	0.014	0.061*

A linear regression with the bootstrap method on the six countries left returns a coefficient of 0.005 for the cumulative average abnormal return with a significance of 0.06. This means there is on average a cumulative abnormal return of 0.53% during the election event, or 0.13% per day. Consequently, one can say that on average national elections had a positive effect on the stock market performance for these six countries. However, the other 21 countries showed no significant positive or negative effect. Without the bootstrap method the same coefficient is found by all means, but the P-value changes from 0.06 to 0.08 due to the increase of the standard error. This means the first hypothesis; *National elections will have a significant effect on stock market performance. has to be* rejected for our full sample, as the cumulative abnormal returns are not all or jointly significantly different from zero during the national election period.

4.3 CAR's by election outcome

The results below provide an answer to the second hypotheses. In the table below, a negative effect of a left election result as biggest party on the stock market performance is observed. However, this effect is not significant. Hence, we cannot state that the average cumulative abnormal return is negative. For the election outcome with respect to center party as biggest party, a very minor negative effect is observed. This effect is not significant either. Finally, A positive effect is observed for an election outcome with respect to a right-wing party. This effect seems to be highly significant with a level of significance of 1%. The table also shows that the positive effect of an election outcome with a right-wing party as biggest party is 1.1%.

Table 4: CAR's broken down by election outcome

This table represents the cumulative abnormal returns broken down by election result by using a linear regression with the bootstrap method. The variables display the election outcome of the biggest political party. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

Election outcome	Observations	Coefficient	Standard error	P-value
Election result left	73	-0.003	0.011	0.215
Election result center	76	-0.000	0.004	0.919
Election result right	42	0.011	0.004	0.002***
Constant		-0.000	0.004	0.918
R-squared 0.069				
F-statistic 11.40***				

4.4 CAR's by orientation change

The table below shows a significant effect for an orientation change from left to center with a negative cumulative abnormal return. In case a leading left-wing party of the previous government is succeeded by a center party, the stock market performs 3.3% worse than if there was no orientation change during the election event.

In case the orientation changes are merged with respect to the outcome and disregarded of the previous election outcome, the results remain approximately the same. See appendix C for the results. The negative coefficient of an orientation change to center is weakened due to the low coefficient of an orientation change from right to center, but still remains significant. The orientation change effect towards a left government is no longer significant.

Table 5: CAR's broken down by orientation change

This table represents the cumulative abnormal returns broken down by election result by using a linear regression with the bootstrap method. It shows the effect of an orientation change of the biggest party before and after the election by using a linear regression using the bootstrap method. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

Orientation change	Observations	Coefficient	Standard error	P-value
Orientation change left to center	9	-0.033	0.008	0.000***
Orientation change left to right	16	0.007	0.017	0.426
Orientation change center to left	9	-0.012	0.006	0.044**
Orientation change center to right	8	0.012	0.012	0.920
Orientation change right to left	17	-0.005	0.008	0.527
Orientation change right to center	10	0.000	0.066	0.887
Constant		0.005	0.002	0.032

R-squared 0.079

F-statistic 18.47**

4.5 CAR's by election outcome and orientation change

The results in the table below show that the results observed in the previous paragraphs remain partly significant. The election outcome with a right-wing party as biggest party has a coefficient of 0.011, which means that the daily abnormal returns are 0.28%. The election outcome with a left-wing party as biggest party is significantly negative at the 0.10 level. This means the stock market performs 1.1% worse than in absence of the national election event. The effect of the orientation change seems to be negligible for most orientation changes. The only significant effect is observed for an orientation change from left to center. This might be due to the fact that the orientation change effect is partly already integrated in the election outcome variables.

Table 6: CAR's broken down by election outcome and orientation change

This table represents the cumulative abnormal returns broken down by election result by using a linear regression with the bootstrap method. It shows the effect of the election outcome result and the orientation change with respect to the previous election on the cumulative abnormal returns. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

	Coefficient	Standard error	P-value
Election result left	-0.011	0.006	0.066*
Election result center	-0.004	0.001	0.561
Election result right	0.011	0.004	0.005***
Orientation change left to center	-0.035	0.008	0.000***
Orientation change left to right	0.000	0.009	0.989
Orientation change center to left	-0.005	0.006	0.386
Orientation change center to right	-0.005	0.013	0.679
Orientation change right to center	-0.002	0.007	0.841
Orientation change right to left	0.003	0.008	0.651
No orientation change	Omitted	-	-
Constant	0.008	0.005	0.006***

R-squared 0.120

F-statistic 26.83***

4.6 CAR's by decade

The table below shows no significant effect between a decade effect in which the national election took place and the cumulative abnormal returns. The returns of every decade are not significant. This means that the cumulative abnormal returns are independent of the variable time.

Table 7: CAR's broken down by decade

This table represents the cumulative abnormal returns broken down by election result by using a linear regression with the bootstrap method. The table shows the effect of elections in each decade on the stock market performance. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

Decade	Coefficient	Standard error	P-value
Decade 80	0.003	0.061	0.566
Decade 90	0.003	0.034	0.397
Decade 00	0.001	0.034	0.786
Decade 10	0.006	0.004	0.158
Constant	0.006	0.004	0.157
R-squared 0.02			
F-statistic 3.31			

4.7 CAR's by voting percentages

The table below indicates that the number of votes for the largest and second largest party has no significant influence on the cumulative abnormal returns. However, if the largest political party received a majority of the votes, there is a significant positive effect on the stock market returns. The number of votes without controlling for a majority as variable does not seem to have effect on the cumulative abnormal returns.

Table 8: CAR's broken down by voting percentages

This table represents the cumulative abnormal returns broken down by voting percentages of the largest party, the second largest party and the margin by using a linear regression with the bootstrap method. The table shows the effect of the number of votes on the cumulative abnormal returns. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

	Coefficient	Standard error	P-value
Largest party	-0.046	0.032	0.161
Second party	0.037	0.026	0.144
Majority	0.015	0.009	0.075*
Constant	0.008	0.010	0.438

R-squared 0.01

F-statistic 1.87

The voting percentages of the first and second party also has no significant effect on the cumulative abnormal returns. The ECB variable, a proxy for controlling monetary policy, does not seem to have a significant effect. The variable joint government does not appear to have a significant effect on the cumulative abnormal return. The surprise variable, a proxy for volatility, has a positive significant effect with a coefficient of 0.003 in the univariate analysis, however the effect is negligible in the multivariate analysis. However, the control variable early elections shows a significant positive effect of 0.7% with a 10% level of significance. This means that stock markets perform better during the next national election, if the previous government is dissolved prematurely. See appendix D for the results of the control variables.

4.8 Robustness checks

Several robustness checks were conducted. The regressions performed above were also performed on the six countries which showed significant cumulative abnormal returns to check if the results changed. The results remained somewhat the same. The coefficients create the impression to change for a bit, but no change in signs appear.

The data may have suffered from small sample bias due to the number of observations in combination with the number of variables, however, this potential issue has been resolved by using the bootstrap regression method.

Furthermore, the variables with respect to election outcome and orientation change are regressed in itself as well as on the variables largest party, second party, majority, early elections, joint government, ECB and surprise. The results of the coefficients and P-values remain similar (see appendix E for the results).

V. Conclusion

This thesis examined the effect of national elections on the stock market performance by observing the stock market returns around the election dates. For the countries Austria, Cyprus, Croatia, Ireland, Malta and Portugal structural significant cumulative abnormal returns are found, 0.5%, 2.0%, -1.9%, 1.9%, 1.4% and 1.8% respectively. This means the stock market performs differently around election days than in absence of the event. All countries with cumulative abnormal returns, except for Cyprus, showed a positive significant effect. The other 21 countries showed no significant effect, which means the stock market does not structurally behave differently around national elections.

The cumulative average abnormal return does not differ significantly from zero. This implies that no forecasts can be given on the stock market performance following national elections. A potential explanation for the absence of structural cumulative abnormal returns could be that the abnormal returns occurred outside the event window in scope. Extending the event window could overcome this problem, however a bigger event window can also reduce the overall effect of the cumulative abnormal returns. Another explanation could be that investors have priced the changes into the stock market before the event window. Further research could shed a new light on this subject.

The cumulative abnormal returns broken down by election outcomes show a doubtful partisan effect. The election outcomes resulting in left and center as result are not significant. The election outcomes with right as result show a highly significant effect. The stock market performs 1.1% better if the newly elected government chosen is a right-wing party than in absence of the elections. This can also be applied on the other election outcomes, since the left and center outcomes do not differ significantly from zero, an election outcome with right as result makes the stock market perform 1.1% better. This is in line with the partisan cycle theory stating that every political party implements different legal and regulatory framework in line with their core beliefs. Investors are aware of the different policies and their effects which causes a positive reaction on the stock market.

The cumulative abnormal returns broken down by orientation change show a significantly negative effect for a change from left to center as well as a change from center to left with -3,3% and -1,2% respectively. The stock market performs, with a changing government from center to left or with a changing government from left to center, worse

than it does without the elections. The alternative orientation change variables show no significant effects. There is an overall positive effect towards orientation changes to the right, however these are not significantly different from zero. On basis of the other variables it cannot be concluded that the stock market performs worse or better than expected on normal trading days.

The cumulative abnormal returns broken down by voting percentages observe a significant positive effect of 1.5% if there is a majority for a political party. This indicates that investors experience a majority as a good thing as it lowers uncertainty on the political and legislative direction which will be taken. A majority win provides investors certainty about the policies likely to be implemented during the next government term.

It seems irrelevant whether the government has control over their own monetary policy. There was no significant effect observed for the ECB variable. This argues that there is no relation between the ability to control monetary policy individually and the stock market performance in the European Union on the short term. Investors appear to focus on other factors around the election date.

The variable surprise which proxies the volatility around the election date seems to be related to the cumulative abnormal returns. A higher volatility is observed around election dates. Also, the higher the abnormal returns are, the higher the volatility will be. However, it does not seem to have explanatory power of the higher cumulative abnormal returns.

The fundamental conclusion of this research is that in general cumulative abnormal returns can hardly be predicted on forehand. Though, there seems to be a limited partisan effect on national elections which can be partly explained by election outcomes and orientation changes.

A potential limitation of this research could be that the biggest party elected does not necessarily has to become part of the government, which could reduce the partisan effect. However, directly after the election outcome there can be no exact prediction of the new government. Investors anchor and decide on basis of these election outcomes. The partisan effect is only partly processed in the stock market.

Another limitation of this research is that for countries with multiple election rounds, only the first round was in scope of the research. Due to this limitation, the partisan effect could be reduced and less deviant returns could be noticed relative to the normal returns.

Investors might not want to anchor too much on vague predictions of the new government. In further research, multiple election rounds could be examined by fabricating an estimation period with the previous election round or rounds excluded.

One more limitation, and also explaining why there could be cumulative abnormal returns for some countries and none for others, is that there is no insight in the polls of the specific election events. Major changes in the polls could make investors adjust their expectations with cumulative abnormal returns as consequence. Election polls could be added as measurement variable for the returns of the stock market performance.

Further research could face up to one of these limitations by examining the cumulative abnormal returns around the establishing dates of the new government. During the establishment period the uncertainty about the new government is taken away which could lead to reactions on the stock market.

Also, the complete term of the government could be examined by comparing different government structures over different periods. This way, the partisan effect on government incumbencies can this way be further deepened. For example, the stock market returns over one complete government period can be compared to another.

Another suggestion for further research is to examine the effect of polls in combination with the partisan effect on the stock market performance. Investors may anchor on polls prior to the actual election date. The closer the polls to the actual election outcome, the less the stock market will response due to the partisan effect on the election date itself. However, there is view research on this subject and further research is needed.

In the results section, not for all countries were cumulative abnormal returns observed. This could be due to the fact that abnormal returns were made outside the event window which is observed. A suggestion for further research could be to examine multiple event windows and extent the event window to a larger timespan. Further research is needed to understand and give an explanation why there are cumulative abnormal returns in some countries and not for others.

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Appendix

Appendix A: Specification of political system per country in the European Union

This table represents whether a country in the EU has a two-party political system or multiple parties participate in the government. Also, a specification of the number of voting rounds is given before the government is formed.

Country	Two-party	Multiple party	1 round	2 rounds
Germany		X	X	
United Kingdom	X			X
France		X		X
Italy		X	X	
Spain		X	X	
Netherlands		X	X	
Sweden		X	X	
Poland		X	X	
Belgium		X	X	
Austria		X	X	
Denmark		X	X	
Ireland		X	X	
Finland		X	X	
Portugal		X	X	
Greece		X	X	
Czech Republic		X	X	
Romania		X	X	
Hungary		X	X	
Slovakia		X	X	
Luxembourg		X	X	
Croatia		X	X	
Bulgaria		X	X	
Slovenia		X	X	
Lithuania		X	X	
Estonia		X	X	
Cyprus		X	X	
Malta	X		X	

Appendix B: Correlation table

This table represents the correlation between the dependent, independent and the control variables.

	CAR	Decade 80	Decade 90	Decade 00	Decade 10	Election result left	Election result center	Election result right	Orientation change L to C	Orientation change L to R	Orientation change C to L	Orientation change C to R
CAR	1											
Decade 80	0.004	1										
Decade 90	-0.005	-0.203***	1									
Decade 00	0.058	-0.236***	-0.434***	1								
Decade 10	-0.063	-0.214***	-0.394***	-0.434***	1							
Election result left	-0.178**	0.099	-0.022***	-0.026**	-0.128	1						
Election result center	-0.070	-0.008	-0.113	0.052	0.064	-0.418***	1					
Election result right	0.236***	-0.092	-0.126	0.103	0.075	-0.640***	-0.432***	1				
Orientation change L to C	-0.249***	0.009	-0.026	0.052	-0.035	-0.175**	0.419***	-0.181**	1			
Orientation change L to R	0.095	-0.037	0.027	0.146**	-0.153**	-0.238***	-0.161**	0.372***	-0.067	1		
Orientation change C to L	0.024	0.018	-0.069	-0.038	0.095	0.232**	-0.058	-0.181**	-0.050	-0.067	1	
Orientation change C to R	-0.034	-0.043	0.057	0.066	0.041	0.165**	-0.111	0.257***	-0.047	0.063	-0.047	1

Orientations change R to L	-0.034	-0.043	0.057	-0.066	0.041	0.397***	-0.166**	-0.254***	-0.070	-0.095	-0.070	-0.065
Orientation change R to C	0.024	-0.078	-0.038	0.082	0.004	-0.185**	0.442***	-0.191***	-0.052	-0.071	0.052	-0.049
No orientation change	0.091	0.070	-0.005	-0.113	0.077	0.031	-0.127	0.077	-0.296***	-0.402***	0.296***	-0.278***
Largest party	-0.021	0.047	-0.081	-0.026	0.076	-0.107	-0.177	0.256	-0.118	-0.010	-0.116	0.004
Second party	0.079	0.116	0.024	0.088	-0.193**	-0.093	-0.149	0.218	-0.082	0.148	-0.066	0.029
Majority	0.091	-0.037	-0.015	-0.095	0.137	-0.160**	-0.069	0.218***	-0.067	0.045	0.067	0.031
Early elections	0.117	-0.118	-0.061	0.134	-0.002	-0.000	-0.028	0.024	0.011	0.028	0.062	0.046
Joint government	0.043	0.037	0.003	-0.052	0.001	-0.085	-0.149**	0.211***	-0.078	0.117	-0.078	0.110
Surprise	0.095	0.101	-0.074	0.028	-0.024	-0.092	-0.016	0.104	-0.052	0.210***	-0.037	-0.033
ECB	-0.021	0.247***	0.332***	0.144**	-0.0338***	0.247***	-0.080	-0.177**	-0.093	0.028	0.114	-0.063

	Orientation change R to L	Orientation change R to C	No orientation change	Largest party	Second party	Majority	Early elections	Joint government	Surprise	ECB
Orientation change R to L	1									
Orientation change R to C	-0.074	1								
No orientation change	-0.416***	-0.312***	1							
Largest party	0.074	-0.057	0.090	1						
Second party	0.103	-0.142	-0.028	0.500***	1					
Majority	0.038	0.014	-0.009	0.564***	0.260***	1				
Early elections	-0.075	0.028	-0.037	-0.111	-0.172	-0.120	1			
Joint government	0.144	0.018	-0.137	0.358***	0.462***	0.287***	0.243***	1		
Surprise	-0.006	0.013	-0.071	0.126	0.139	0.173**	0.086	0.049	1	
ECBEuro	0.040	-0.022	-0.013	0.025	0.024	0.067	0.018	-0.070	0.029	1

*. Pearson correlation is significant at the 0.05 level

**. Pearson correlation is significant at the 0.01 level

***. Pearson correlation is significant at the 0.001 level

Appendix C: CAR's broken down by orientation change without previous election outcomes

This table represents the effect of the orientation changes, without taking the previous elections in scope, on the cumulative abnormal returns by using a linear regression with the bootstrap method. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

	Coefficient	Standard error	P-value
Orientation change to the left	-0.007	0.006	0.189
Orientation change to the center	-0.015	0.007	0.026**
Orientation change to the right	0.005	0.007	0.484
Constant	0.005	0.002	0.036**
R-squared 0.039			
F-statistic 2.43			

Appendix D: Multivariate regression control variables

This table represents the effect of the control variables on the cumulative abnormal returns by using a linear regression with the bootstrap method. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

	Coefficient	Standard Error	P-value
Largest party	-0.044	0.033	0.182
Second party	0.038	0.028	0.180
Majority	0.013	0.008	0.112
Early elections	0.007	0.004	0.087*
Joint government	-0.002	0.005	0.578
ECB	-0.003	0.004	0.720
Surprise	0.002	0.003	0.521
Constant	0.001	0.012	0.902
R-squared 0.048			
F-statistic 7.94			

Appendix E: CAR's broken down by independent and control variables

This table represents the effect of the independent and the control variables on the cumulative abnormal returns by using a linear regression with the bootstrap method. Statistical significance is indicated by *, ** and *** for 10%, 5% and 1% respectively. The total number of observations is 191.

	Coefficient	Standard error	P-value
Election result left	-0.014	0.006	0.098*
Election result center	-0.003	0.007	0.041**
Election result right	0.004	0.008	0.007***
Orientation change left to center	-0.036	0.011	0.075*
Orientation change left to right	-0.001	0.009	0.725
Orientation change center to left	-0.006	0.006	0.999
Orientation change center to right	-0.006	0.013	0.633
Orientation change right to left	0.004	0.008	0.497
Orientation change right to center	-0.003	0.008	0.832
No orientation change	Omitted	-	-
Majority	0.014	0.006	0.823
Early elections	0.007	0.004	0.086*
Joint government	0.001	0.005	0.830
ECB	0.001	0.004	0.860
Surprise	0.001	0.003	0.583
Constant	0.005	0.007	0.230

R-squared 0.138

F-statistic 31.11**