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Electing Sovereign Credit Risk

Name student: Ayrton van Deelen

Student ID number: 469933

Supervisor: Kan Ji

Second assessor: Jan Lemmen

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Abstract

This research examines whether the existing literature on sovereign credit risk still applies with modern data, while also thoroughly investigating the role elections might have on sovereign credit risk. The analyses show that there is no reason to question the validity of the results by Longstaff, Pan, Pedersen & Singleton (2011). The election based analyses show that elections can significantly, and consistently, impact sovereign credit risk. U.S. presidential elections are proven to be very influential, with sovereign credit default swap (CDS) spreads commonly increasing by 15% for other countries. Furthermore, the cross border effect of elections in financial hub countries and GIIPS countries is proven to be mainly based on the ideology of the winning party where a more extreme ideology leads to more severe effects. Applying a Difference-in-Difference model demonstrates that national parliamentary elections generally lead to increases in the sovereign CDS spread of the country. The results relating to national parliamentary elections also highlight that citizens can strongly influence the effect of elections with their vote.

Keywords: CDS, Difference-in-Difference, Elections, Event Studies, Sovereign Debt

JEL Classification: *D72, F34, G14*

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Introduction

Political elections are some of the biggest events a country experiences on a reoccurring basis, yet little has been done to study the effects of these events on sovereign credit risk in developed nations. During these elections the citizens of the nation cast their vote in an attempt to push the views of the nation's leadership towards their own personal views, potentially leading to drastic changes. The most influential aspect of these elections lead back to the world of economics, namely, what are the economic consequences of pursuing the proposed ideas and applying their general ideology. Many studies have researched the topic of sovereign credit risk, yet few incorporate political elections in their research. This is peculiar because political elections belong to a rare type of event, not only are they events of great importance, but they are also reoccurring events that mostly follow a predetermined schedule. This means that it is very plausible that political elections could influence sovereign credit risk.

A number of academics have taken a look at the effects of an election on the financial markets, they find that election periods are generally coupled with an increase in perceived risk. One of these papers is the paper by Block and Vaaler (2004), they exclusively look at developing nations and observe a decrease in the agency sovereign risk ratings and an increase in the bond spreads during election periods. In other words, they find definitive proof that elections increase the risk of these countries. Existing literature has also shown that there seems to be a historic trend where perceived risk decreases for developing countries when a right-wing political party gains control over a nation (Vaaler, Schrage, & Block, 2005). Furthermore, the findings by Suh (2015) show that sovereign risk contagion exists between Eurozone countries, further supporting the idea that political election shocks could also apply to foreign countries. Most noteworthy is the paper by Li, Balding and Lee (2013), they find among other things that elections and government turnovers expand bond spreads. Vaaler, Schrage and Block (2006) expand on their paper from 2005 and find that, among other things, incumbency plays a role. They suggest that there might even be an interaction present between ideology and incumbency.

Girardi (2020) expands the existing literature by analysing both financial markets and sovereign bond spreads. They analyse a total of 758 national elections that took place after the Second World War. Similar to the results covered earlier, they find that the market does not like the news of parties with a left leaning ideology winning the election. The common reaction to the left winning being a strong, short-term, devaluation of the national stock market. However, the reaction for the sovereign bond market differs from this, they show that unlike the stock market, the sovereign bond market is far more robust to election results and has both a weaker and smaller reaction to elections.

The paper by Bachman (1992) finds that the forward exchange bias is influenced by political events. Half of the political events this paper covers are proven to be linked to significant changes in the average forward bias. They also suggest that more refined methods, which might be able to categorize certain elections as ‘good’ and others as ‘bad’, could lead to stronger results as they focus more on a generalised approach.

The paper by Spanakos and Renno (2009) analyse the presidential elections in South American countries. They expand their research from just a qualitative one regarding the 2002 Brazilian presidential elections to a more quantitative one where they analyse other elections on the continent as well. What they find is interesting, unlike the majority of literature on this topic they find that, after opening up the research to include more elections, that there is no longer a definitive answer, instead they discover the uniqueness of elections. They discover that it isn’t partisanship and instead more general policies and articulation that are of importance.

Bahaj (2014) sheds more light on the sovereign risk premia of the crisis-hit countries. They show that fluctuations in the sovereign risk premia can explain between 20-40% of the movements in the private borrowing costs. Additionally, they find strong cross-border influence of country-specific events. Most interesting is the fact that they find that 40-60% of the trough-to-peak changes in bond yields of crisis-hit countries can be linked to foreign events. In other words, they find that foreign events played a huge role in causing the financial crisis. Thus, they were not exclusively caused by the fact these countries had weak local economic conditions. Therefore, their findings add to the literature that there can be spill over effects and that data from other countries should be included when researching sovereign credit risk.

The inspiration for this thesis is the U.S. presidential elections, a reoccurring spectacle that manages to capture the attention of the people around the globe, regardless of nationality. In a way the U.S. is the centre of the Western world, including the Western financial market. However, this leading role makes it very difficult to accurately analyse the effects of the presidential elections on the rest of the world. This is reaffirmed by the lack of literature on the relation between the U.S. presidential elections and sovereign risk. The paper by Brogaard, Dai, Ngo and Zhang (2020) is one of the first papers that attempts to look into the effects of the U.S. elections on a number of different financial aspects. They find strong results and conclude that equity market returns fall in the lead up to the U.S. election periods in non-U.S. markets. The paper by Antonakakis and Vergos (2013) demonstrates how, among other things, there is severe spill over of government bond yield spreads (BYS) between Euro zone countries. Additionally, they note rather strong directionality in the BYS spill overs. They find that the GIIPS countries, short for Greece, Ireland, Italy, Portugal and Spain, influence Euro zone countries more than vice versa. Thus it can be seen that there is a precedent of GIIPS countries influencing other countries. In addition to highlighting the relationship between the GIIPS countries and other countries, they also find a spill over relationship between what they call the core countries of the Euro zone. These core countries are Austria, Belgium, France and the Netherlands. However, this relationship is far weaker than the one found for the GIIPS countries. This perfectly encapsulates the expectations for this thesis, a negative contagion effect on other European countries as a result of an election in another country. Instead of focussing on the Western world, most academics have shifted their focus towards developing countries, or less Western countries in general, to study the effects of these type of political events as these markets tend to be more volatile.

The U.S. plays a fundamental role in the context of studies like this because the U.S. financial market is commonly used as a reference point for the global economy. The paper by Longstaff, Pan, Pedersen & Singleton (2011) will form the blueprint for this thesis, their paper takes a quantitative look at the different sources of sovereign risk. This thesis aims to expand on their work by also introducing the aspect of political elections. Not only will political elections as a general event be analysed, but also aspects such as whether it was a close election, whether the incumbent won, and most importantly, how the ideology of the winning party factors into the equation.

The intricacies of the political system have been collected for each of the forty countries in the sample. Surpassing even the scope of the paper by Longstaff et al. (2011) whose paper has laid the groundworks for this thesis. For this reason it has been chosen to take their paper as an inspiration source for a new quantitative research project on the same topic. Their paper uses the U.S. data as the backbone of their research, here they find that the U.S. has a very large and significant role in explaining the movements of other nations. They also find a strong correlation between different countries, with correlations of 80% or higher not being uncommon, further implying that shocks in one country can spill over into other countries. Even though their database differs from the one in this thesis, results are still very similar.

The used data consists out of sovereign credit default swap (CDS) data, the function of sovereign CDS contracts is to provide investors with a way of protecting themselves from the risks associated with sovereign debt. In other words, by entering into a sovereign CDS contract the investor is now shielded from the event where a sovereign is no longer able to meet their debt obligations and defaults on their debt or chooses to restructure its debt. This study will separate the three European countries that are home to Europe’s three biggest financial hubs from the rest of Europe. These countries are home to at least one of the biggest European financial markets while also ranking in the top three countries with the highest GDP in Europe (Eurostat, 2021). These three countries are the beating heart of Europe’s financial market and could even be considered as the U.S. of Europe. Additionally, the aftermath of the global financial crisis was stacked with challenges such as issues in the banking sector, credit crunches, government debt crises, and most noticeably severe recessions. The European countries that were hit the hardest by this perfect storm were Greece, Ireland, Italy, Portugal, and Spain, collectively they were given the moniker of GIIPS countries (Moro, 2014). The majority of these five countries required financial assistance to avoid, the otherwise imminent, complete bankruptcy as a country. Ever since these countries have been looked at less favourably than their European peers. This is why this thesis also separates these countries from the rest of Europe to test whether their scarred history still haunts them to this day.

In order to limit the scope of this thesis the decision was made to not treat all countries as equals. That is to say, not all countries were analysed to the same extent. Out of the total forty countries included in this thesis 29 are located in Europe. Only the European countries whose nominal GDP belonged to the top ten of all EU member states in any given year within the sample period are automatically selected for the extended analysis. If a country belonged to the top ten during the sample period at least once, this country will be incorporated in the whole study. In total eleven countries meet this criteria. While this criteria serves as the main filtering method, not all countries have to meet it. Due to the weight that this thesis puts on the GIIPS countries it was decided that these countries should also receive this special treatment. The final tally of countries that is eligible for extensive analysis is equal to thirteen; Austria, Belgium, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden and the United Kingdom.

This group of thirteen countries includes all the financial hub countries and all the GIIPS countries. This means it is possible to study whether the results differ between the countries that belong to the GIIPS group and the countries that don’t. The paper by Kalbaska and Gątkowski (2012) finds that the GIIPS countries, who have a poor reputation for their policy regarding government debt, are likely to influence the other European countries. They namely find that shocks in these countries spilled over into the bigger European countries and not the other way around. However, it should be noted that the data used in that paper is data from during the European Sovereign Debt Crisis, a crisis that was essentially caused by the GIIPS countries. This makes it very interesting to investigate whether countries react differently to political elections in the GIIPS countries compared to the other countries in the database as there is a precedent that the opposite can happen. This isn’t the only finding that has been found for this group of countries, Aizenman, Hutchison and Jinjarak (2013) find that the default risk for the countries in this group is priced much higher than for comparable countries in 2010, even after taking differences in fundamentals into account.

This thesis does not strive to answer the question what an investor should or shouldn’t do with the results that are found, instead this thesis merely aims to answer the objective question whether there is an effect, and if so, what this effect is. The focus of this thesis is aimed at Europe for a couple of factors. For instance, there is a lack of literature that uses Europe as the point of focus and it actively prevents the scope of the thesis from getting too large. Additionally, there is already literature that covers other regions.

This leads to the main research question of the this thesis which tests whether parliamentary elections truly effect the perceived sovereign credit risk, but also whether the population of a country can influence this effect with their vote. For example, is the observed effect influenced by whether the population voted on the incumbent party, is it influenced by whether the population is at odds with each other resulting in a very close election, and arguably most importantly, does the observed effect depend on the ideology of the political party the population have elected. These questions are combined to create the following research question:

Do parliamentary elections influence sovereign credit risk for the country itself, do these elections have an effect on other countries, and can the population of a country influence how an election is perceived?

Furthermore, a total of five hypotheses have been created to answer the main research questions. As was mentioned previously, this thesis tries to both reproduce the findings that were found by Longstaff et al. (2011) while also expanding up on it. The first hypothesis aims to validate the former by shining a light on whether their results still hold true even when completely different data is used. This hypothesis is formulated as follows:

The findings by Longstaff, Pan, Pedersen & Singleton (2011) are also observed with a different dataset.

The function of the second hypothesis is to test whether the existing literature regarding the presidential election in the United States of America also applies to the topic of sovereign credit risk. Discovering evidence which supports this hypothesis will present ample justification for more detailed analysis of elections as a whole. Thus the second hypothesis is formulated as follows:

The presidential elections of the United States of America has a significant effect on the perceived sovereign credit risk of other nations.

The following hypotheses address the same general issue from different perspectives. The third hypothesis relates to whether national parliamentary elections play a role for sovereign credit risk and whether this is in line with the results for the second hypothesis. Not only does this hypothesis suggest that it is just the general election that matters, but it also suggests that factors related to the election matter. Three specific factors are taken into consideration; the ideology of the winning political party, whether the winner is an incumbent, and whether it was a closely fought election. This leads to the third hypothesis being formulated as follows:

National parliamentary elections, including factors related to these elections, have a significant effect on the perceived sovereign credit risk for a country.

As is evident from the previously mentioned literature, countries like the GIIPS countries, but potentially also the European countries who are home to the three largest financial hubs might be interesting in the context of sovereign credit risk. For example, these countries might be effected differently, or more interestingly, might influence other countries with their parliamentary elections. The fourth hypothesis aims to touch on these two groups and the impact of their elections and is formulated as follows:

> *Parliamentary elections in either financial hub countries or GIIPS countries have a significant effect on the perceived sovereign credit risk for both these countries as well as other countries.*

The fifth and final hypothesis aims to answer the question of whether national parliamentary elections still have a significant effect on the perceived sovereign credit risk when directly compared to other countries. In other words, is it still possible to observe any significant effect when the Difference-in-Difference (DID) methodology is applied. The paper by Papafilis, Psillaki and Margaritis (2019) functions as the basis of why the DID methodology is used. Their paper analyses CDS spreads with the use of this methodology and find strong results in regards to the sovereign crisis. The DID methodology in this thesis matches a country to a control group, made up of other countries, that resembles the country's movements of its perceived sovereign credit risk as accurately as possible. Thus leading to a situation where the effect of an election can be perfectly separated from unrelated movements. Additionally, this thesis employs an exhaustive search method also known as the brute-force technique to find the best possible control group countries. This leads to the fifth hypothesis being formulated as follows:

> *National parliamentary elections have an effect on the sovereign credit risk of a country, even when applying the Difference-in-Difference methodology.*

The results related to both the research question in general but also all the hypotheses are generally very positive. For starters, the findings by Longstaff et al. (2011) have not only stood the test of time but also remain present across a range of different countries. Even more interesting is that both analyses report results of similar strength. The findings by Brogaard et al. (2020) regarding the U.S. presidential elections also align with the results here. The analyses show that the U.S. presidential elections generally lead to increases in the sovereign CDS spread for a large number of countries. In other words, the U.S. presidential elections even increase the perceived sovereign credit risk of countries located on a different continent. These findings prove that these elections are one of the most influential events in the world, but also that the effects of it are not limited to just the equity market. The majority of analysed factors appears to be significant for around a third or fourth of the countries analysed. Furthermore, the results remain significant when more countries are included in the models.

The general effect of national parliamentary elections is smaller than the general effect of the U.S. presidential elections. Unlike the U.S. presidential elections, that unanimously report an increase to risk, the national parliamentary elections are equally balanced between increasing risk and decreasing risk. Analysing these elections with more countries at the time demonstrates that the general effect of the election itself leads to a decrease in risk. Factors such as incumbency and whether it was a close election both increase risk. Parliamentary elections taking place in financial hub countries and GIIPS countries has limited effect on other countries as only a few countries report significant results. The general reaction to these elections for the countries that do find significant results is mostly that they, just like national parliamentary elections, decrease risk.

However, the major result of this thesis is that it has presented strong evidence related to how ideology is valued by the market. In almost every single model, that produces significant results for the ideology factor, it can be seen that the market often 'punishes' countries for electing a left government. Interestingly enough, this punishment even applies to countries that had no influence on the election. For example, a fourth of the countries are explicitly affected by the parliamentary elections of GIIPS countries. Further analysis shows that even when all countries are analysed at the same time, the ideology factor variable still returns significant results. The further this government's ideology leans to the left, the more severe the 'punishment'. This punishment taking shape as increased sovereign CDS spreads for the country in question, or in other words, higher risk. Meanwhile, the opposite is observed for elected governments that have a right leaning ideology. Interestingly enough, elections in the financial hub countries generally result in the opposite taking place where the market prefers left leaning governments in the context of risk.

Meanwhile, the results from the DID models also show significant results. Of the elections for which a model could be built, between a third to a fourth of the elections return significant results. The significant results presenting evidence that elections do in fact increase risk. Therefore, the general conclusion of this thesis is that elections can in fact influence sovereign credit risk. It has been proven that factors such as incumbency, how close the election was, and ideology all can significantly influence the effect of an election of sovereign credit risk. The results of this thesis have figuratively bridged the gap between the world of politics and the world of sovereign credit risk. These results can now be used to further research this relationship, potentially leading to the standardization of including election variables in all future sovereign credit risk models.

There are some shortcomings to these findings. Brexit could potentially have vast implications on the results due to the uniqueness and gravity of the situation. Brexit was an event which impacted more countries than just the United Kingdom. However, excluding Brexit influenced data is not viable either, not only would this reduce the number of elections that can be studied but at its core Brexit played an enormous role in the 2017 British elections. For this reason it was chosen to not adjust the data to compensate for Brexit. Another shortcoming of this paper is that not all European countries have been included. This means that there is always the possibility that the results do not apply to the excluded countries. The COVID-19 pandemic also poses as a potential shortcoming. The pandemic might have had unpredictable implications for the results. For example Germany's 2021 election is at risk of being influenced by the COVID-19 pandemic. Cevik and Öztürkkal (2021) prove that this might be the case, in their paper they find that the COVID-19 pandemic has had effects unlike any other pandemic. Their analysis shows that CDS spreads, especially those of developed nations, were significantly adversely impacted by the pandemic.

Data

The main CDS spread data will be obtained from Bloomberg, while other financial data is collected from WRDS and Eikon. Data is collected for the period Q1 2013 – Q1 2022, this period has been chosen for a number of reasons. Firstly, on the first of November 2012 the "Short Selling Regulation" came into effect which changed the rules around short selling and CDS (Central Bank of Ireland, 2022). For this reason it is unwise to include data prior to this as not only will this have lasting effects after it went into effect, but it would also have increased the level of uncertainty in the market prior to the finalisation of the regulation change. Secondly, most existing literature uses relatively old data, the use of newer data will therefore not only make the results more relevant but it also makes it possible to test whether existing academic findings have stood the test of time.

Unlike existing literature this thesis uses an almost unprecedented range of countries to test the proposed hypotheses. In total, CDS spread data is collected for forty countries covering six regions (See Appendix A). These forty countries are the only countries that meet the criteria of having CDS spread data available in addition to being included in the Manifesto Project Database. These forty countries experience 105 unique elections during the sample period, each one being investigated. As was stated previously, the goal is to investigate the effect of elections in Europe, thus data from European countries plays a leading role while data from the remaining countries play a complimentary role. The European countries can be split into three distinct groups, the financial hub countries, the GIIPS countries, and the countries that don't belong to either, the financial hub countries consisting out of France, Germany and the United Kingdom. This essentially means that there will be two sub-groups of countries in the dataset, the financial hub countries and the GIIPS countries.

The first variables that have to be created, collected and defined are the dependent variables and the other variables on which most if not all the analyses rest. The first of the dependent variables can simply be collected as it takes the form of the raw CDS spreads for any given sovereign collected on a monthly basis. Meanwhile, the second of the dependent variables looks at the percentage change in the CDS spreads that were previously mentioned and takes the following form:

$$CDSperChange_{st} = \frac{CDSSpread_{st}}{CDSSpread_{s,t-1}} - 1$$

Here *t* denotes the time which is expressed in months, that is to say that *t-1* refers to the previous month. Furthermore, subscript *s* denotes the country that is being analysed. The interpretation for models that use this as the dependent variable is that the coefficients are expressed as mathematical percentages. That is to say, a coefficient of 0.05 should be interpreted as a 5% increase relative to the previous month's CDS spread. Employing the use of this percentage change variable is a rather significant deviation from the paper by Longstaff et al. (2011) as they only use the raw month-on-month change in CDS spread. However, comparison of the absolute change versus the absolute percentage change demonstrates that the absolute percentage change removes a substantial amount of the bias that can be found in their approach.

The third of the dependent variables is a very experimental approach which intends to improve the comparability of the CDS spreads between countries in the context of DID models. Due to the nature of the DID methodology it is not possible to use the percentage change variable that was created above. DID models rely on the ability to build a trend over time, meanwhile, the percent change variable does not allow this as it presents all observations separate. That is to say, a random shock on t=3 can only be seen on t=3 and not on t=4 and t=5. Dividing each CDS spread by the earliest CDS spread theoretically provides an even playing field for comparing countries in the DID model. Doing so results in all countries having a common starting point and therefore operating on the same scale. The interpretation of coefficients of models that use this as the dependent variable is that a coefficient of 0.05 represents a 5% increase relative to the country's CDS spread on January 2013. The formula used to create this variable looks as follows:

$$Alternative\ CDSSpread_{st} = \frac{CDSSpread_{st}}{CDSSpread_{s,t=0}} * 100$$

The variables that remain to be defined in this category are the variables that play a fundamental role, specifically the variables that help decipher the panel data aspect of the data. The group variable in the data is the country to which the observation belongs, each observation is appointed a numerical value that corresponds to a certain country. These value are allocated alphabetically based on country name. The time variable is similarly light on complexity and counts the number of elapsed months since 1960. That is to say that January 1960 has a value of 1 while January 2013, which is the date of the earliest observation, has a value of 636.

There is also a list of independent explanatory variables that will have to be collected or created depending on the variable. For starters the variables used by Longstaff et al. (2011) will also appear in this thesis, this is necessary as one of the earliest tests that will be performed is built around testing whether their results are also observed with a different dataset.

The first type of variables that will be collected are the 'local variables' which try to approximate the state of the local economy for a country. This is done with three variables. Firstly, the percentage change in the monthly MSCI index return denominated in USD, or Euro if USD is the local currency, will be collected for each country to represent the local stock market. Correcting for the movements in the currency exchange rate makes it possible to properly analyse the effect of both the stock market movements and the currency exchange movements separately. This variable will be referred to as the local stock market variable, or ‘LSM’ for short. The formula for this variable looks as follows where $MSCI_{st}$ is the local stock market return for country s at time t:

$$LSM_{st} = \frac{\frac{MSCI_{st}}{CurrencyExchangeRate_{st}}}{\frac{MSCI_{s,t-1}}{CurrencyExchangeRate_{s,t-1}}} - 1$$

Secondly, a variable will be created to track the percentual changes in the exchange rate of the local currency in respect to the U.S. Dollar, except for the United States of America where this is in respect to the Euro. This variable will be referred to as the local exchange rate variable, or ‘Exchg’ for short. The formula for this variable is simply the exchange rate for this month divided by the exchange rate from the previous month, afterwards the resulting value is reduced by one (1) so only changes are observed. Thirdly, a variable will be created to track the changes in the foreign currency reserves a sovereign holds, also referred to as ‘FCR’ for short. This is done by looking at the percentage change in the value of the sovereign’s foreign currency reserves relative to the previous month, expressed in U.S. Dollars. This variable uses the same approach as the currency exchange rate variable described above.

The second type of variables that will be collected are the ‘global financial market variables’ which try to approximate the state of the global economy. Similar to Longstaff et al. (2011) this thesis will use both the U.S. equity market and the U.S. fixed income market as the source for these variables. The U.S. financial market is ideal for this, the paper by Sakthivel, Bodkhe and Kamaiah (2012) gives one of the reasons as to why this is the case. They find that the U.S. generally is one of the first markets to receive and respond to external news and transmits this to other financial markets. Their findings in essence show that the U.S. financial markets are the perfect vessel to estimate the global economy due to the fact that it not only is one of the first markets to receive and respond to external news, but also because this market transmits this news to other markets. In other words, the U.S. acts like a benchmark for the global economy. Further proof of the transmitting claims can be found in Roll (1988), this paper shows how the U.S. stock market crash that took place in the last quarter of 1987 lead to significant declines in other stock markets around the globe. In other words, the stock market crash in the U.S. was transmitted to the rest of the world as a sign of a change in the global economy, if it were to only be observed as a country specific event than the global reactions would not have been as severe. This mirrors the sentiment of Longstaff et al. (2011) who theorize that the U.S. financial market contains information that is relevant to many other nations around the world.

Another reason why the U.S. is so important is due to its ties to both the IMF as well as to the World Bank. The U.S. is the controlling shareholder in both these entities, meaning that when the U.S. is doing bad, everyone involved with either of these two entities could also be influenced negatively due to the extensive reach that both these entities have. The CRSP Value-Weighted Index will fulfil the role of the ‘equity market variable’, or to be more precise, the excess return on this index will. This variable will also be referred to as ‘Mrkt’ for short. The choice for this index was deliberate, in addition to Longstaff et al. (2011) using this index, there are also additional reasons as to why this index will be used. The benefit of using the CRSP Value-Weighted Index is that this index has a far greater reach than many other indexes, meaning this index will draw a far more accurate picture of the market than other indexes. Furthermore, the CRSP Value-Weighted Index includes many of the alternative indexes that could be chosen instead, meaning that the information of these indexes is still incorporated when using the chosen index.

The variable representing the fixed income market will be build up from the change in the U.S. Treasury bond yields and will be also referred to as ‘Trsy’ for short. The specific type of Treasury bond that will be used is the five-year Constant Maturity Treasury (CMT) which is in line with the duration of all other bonds that will be used. Not only does the yield on these bonds indicate how active the bond market is at the moment, it also indicates what the general economic conditions are currently (U.S. Department of the Treasury, 2022). This means that the yield changes on these bonds reflect how the economic conditions have changed. There is reason to believe the phenomena’s that are flight-to-quality and flight-to-liquidity might also play a role. The paper by Beber, Brandt and Kavajecz (2009) finds that differences in credit quality (flight-to-quality) explain a large part of the sovereign yield spreads, or in other words, differences in credit quality play a large role in the valuation of bonds. However, they also find that liquidity (flight-to-liquidity) plays a significant role for countries with low credit risk and during times where the degree of market uncertainty exceeds nominal levels. This means that while credit quality plays a big role in valuing bonds, it is the liquidity that investors base their decisions on during times of uncertainty in the Eurozone. Their findings essentially state that investors care about both aspects, but their preferences change dependent on the state of the market. The paper by Longstaff (2004) backs these claims up, this paper namely states that during flight-to-liquidity it has been observed that the demand for U.S. Treasury bonds increases sharply. The important finding of this paper is that a significant, and rather large, liquidity premium was found for U.S. Treasury bonds. These premia can account for ten to fifteen percent of the bonds value.

After covering the U.S. treasury bonds and equity there is still a category remaining, namely the category of corporate bonds. There are two grades of corporate bonds: Investment-grade bonds (IG), which are known for having relatively low yield and risk, and speculative-grade bonds, commonly referred to as both ‘junk bonds’ and ‘high-yield bonds’ (HY), which are known for having relatively high yield and risk. The rating agency that will be used is the S&P, bonds with a rating from ‘AAA’ to ‘BBB‘ are categorized as investment-grade bonds, bonds with a rating of ‘BB’ are categorized as the relatively safest category of speculative-grade bonds, Moody’s describes these bonds as having ‘substantial credit risk’. By also collecting the changes in these type of bonds it is possible to observe these two categories separately. The changes in the spreads of investment-grade corporate bonds are collected by taking the change between ‘BBB‘ and ‘AAA’ bonds. The changes in the spreads of the relatively safest speculative-grade bonds are collected by taking the change between ‘BB’ and ‘BBB’ bonds. There is a reason why the speculative-grade bonds are compared to the riskiest type of investment-grade bond, namely, there is only one category of speculative-grade bonds that is looked at meaning that there is no other category of speculative-grade bond that it can be compared to. The data that is collected gives an approximation of the variation within the yields for the respective bond grade. Like with all bonds in this thesis, the corporate bonds are also of the five-year variety.

The third type of variables that will be collected are the ‘global risk premia variables’ which try to include the aspect of a risk premium. Longstaff et al. (2011) theorize that sovereign spreads might have more in common with corporate credit spreads than initially thought, for this reason they suggest that sovereign spreads might be influenced by similar factors as corporate credit spreads. These global risk premia variables therefore aim to provide the necessary variables to test this theory. The paper by Borri and Verdelhan (2011) finds proof for this theory, for starters they show that there is indeed a risk premia in play. They can make this claim by looking at their data, if all investors were risk-neutral then they would observe excess returns that were equal to zero on average. Their actual findings however do not line up with this, instead they observe excess returns spanning from 4% to 15%, demonstrating that there is in fact a risk premia mechanism in place.

The first premium that is collected will be the one for the equity risk premium variable or ‘Equ’ for short, this variable is created by looking at the monthly changes in a relevant index. The chosen index for this is the S&P 500 where the changes in the price-to-earnings ratio are collected. There is a reason that the S&P 500 index was chosen instead of the S&P 100 index, it was namely chosen to avoid the risk of cherry picking data sources. The second premium that is collected will be the one for the volatility risk premium variable or ‘Vol’ for short, the creation of this variable will require the use of the open-high-low-close estimator by Garman and Klass (1980). For starters, the volatility risk premium has been theorized to be the difference between implied and realized volatility. The VIX index will provide the implied volatility data, the use of the VIX index is also the reason why the S&P 500 index is used instead of the S&P 100. The VIX index shows the market expectations of volatility for the next thirty days in the S&P 500. In other words, the VIX index shows the implied volatility for the S&P 500, for this reason it has been decided to also calculate the realized volatility based on data from the S&P 500 instead of the S&P 100. This means that this thesis, like Longstaff et al. (2011), will use the open-high-low-close estimator by Garman and Klass (1980) to calculate a rolling 20-day estimator of the realized returns. The last step in creating the ‘volatility risk premium variable' is to take the difference between the newly calculated realized volatility from the implied volatility.

The fourth type of variables that will be collected relate to the net flow of capital in the market. This type of variable consists out a bond flow variable and an equity flow variable. A lot of literature has been dedicated to the topic of these flows and how they influence financial assets. Longstaff et al. (2011) covers multiple of these papers, highlighting how these flows might even influence the world of sovereign CDS. Just like Longstaff et al. (2011), the data required to create these variables is collected from the Investment Company Institute and accessed through Eikon Refinitiv. Both variables are created in the same way, the difference lies in the funds from which data is collected. The equity flow variable uses data from funds who focus on the international equity market while the bond flow variable uses funds who focus on the international bond market. The actual variables are created by first compiling the total assets for the respective type of fund, afterwards the net flows are calculated. The net flows are simply the difference between what is invested and what is sold, negative net flows indicating that they sold more of their assets that period compared to how much they invested in new assets. These net flows are calculated for both type of funds. The bond/equity net flows are then divided by the respective total assets for that type of fund. These variables are also referred to as 'Bond' and 'Stock' respectively in the formulas and tables.

The fifth type of variables that will be collected are the 'other sovereign spreads variables' which take on the task of filling in the blanks. These variables are proxies with the goal of demonstrating the explanatory power of unnamed or unspecified external factors. This is done by incorporating how the credit spreads of other sovereigns have changed. If one of these variables has a significant effect it can be interpreted as evidence that there are additional external factors in play that have not been directly identified. However, by including these variables the factors are still included in the analyses, improving the robustness of the results. Two variants are created of this type of variable; a global variant and a regional variant. Both of these variants use the same methodology and only differ in what countries are used. The global spreads variable, also referred to as 'Globe' for short, is built by taking the average percentage change in the CDS spread at time t for all countries that do not belong to the same region as the country of interest. This average value is then regressed against the explanatory variables that were discussed previously. Doing so purifies the data by removing the change in the average CDS spread that is already explained by the other explanatory variables. The residual of this regression is equal to the percentage change in the CDS spread that is caused by unidentified external economic factors for this country. This means that the final values are equal to the orthogonalized residuals for each country. It is important to note that the values that the independent variables hold is bound to the country of interest. Furthermore, it means that each model with a unique combination of independent variables has a different version of this variable to ensure continuity. For example, only the models where elections are investigated will include election variables in the creation of the regional and global variables. The regional spreads variable, also referred to as ‘Reg’ for short, uses almost the exact same method as the global version. The only difference between the two is that, instead of using the countries outside the region, it uses the other countries from the same region as the country of interest.

The fifth type of variables that will be collected are the ‘election variables’ which take on the task of encompassing the entire election aspect. The first of these variables is the most critical one, namely, whether a certain period is an election period or not. This ‘election period variable’ will either have a value of ‘1’ or ‘0’ where a value of ‘1’ represents an election in that month while a value of ‘0’ represents no election in that month. To guarantee robustness of the results, it is assumed that the efficient market hypothesis (EMH) holds. Only the month in which the election took place will gain a value of 1, even when the election took place on the last day of the month. The only exception is when the election took place at the end of the month and during the weekend. In those cases, the next month is taken as this month is the first moment the market could respond to the election results. Additional variables are created to capture potential cross border effects of elections. The first of which is a dummy variable which indicates if the U.S. presidential elections were taking place in a given month. Additionally two types of variables are created for elections in the financial hub group of countries and the GIIPS countries. The first being similar to the one described previously where this dummy variable indicates whether there was an election in either one of the financial hub countries or in the GIIPS countries. If the country in question belongs to one of these groups, the variable will exclude the elections from this country. In other words, German elections are not included in the financial hub election variable for Germany. The second variable relates to the ideology and will be explained in the respective paragraph later in this section.

Another variable tests whether the winner of the election was an incumbent, or in other words, was already in power and was re-elected. The inclusion of this variable is based on the theory that the market and population expect a re-elected leader to behave and rule the same in the next period as they did in the previous period. In other words, if the winner is an incumbent it should be far easier for the market to set realistic expectations. Further evidence for this can be found in the paper by Rogoff and Sibert (1988) who also state that the opposition party has no effective way to demonstrate how they would have done better than the incumbent party. This means that the opposition can realistically only make unbased promises with no real evidence to support their claims. This is why they assume that statements from the opposition cannot be taken at face value. It can be deduced that the opposition winning against the incumbent will increase the degree of political uncertainty as the promises made by the opposition cannot be trusted outright. On the other hand, the market can use the incumbent party’s actions while they were in power as a fair representation of how they will behave if they are re-elected, decreasing uncertainty.

Another variable that will be created relates to how easily a party won the election by looking at the difference in votes between the two parties that received the most votes. The theory behind this variable is that when elections are close, it is far harder for the market to accurately predict the outcome, meaning that there is more uncertainty in the market. Redl (2020) finds evidence of this, they show that macroeconomic uncertainty increases prior to close elections. When a party wins an election by a very large margin, the market most likely saw this coming in advance, meaning that the market would have already incorporated this information. The difference in votes is obtained by taking the percentage of total votes the winning party got and deducting this with the percentage of total votes their main opponent received. This method was intentionally chosen instead of a direct comparison between the two parties because this method also indirectly includes the votes that the smaller parties received. Girardi (2020) also includes the topic of close elections, they use a rather large margin of ten percent. However, the term 'Too Close To Call' is generally used for elections when the difference in votes between the most prominent two parties is less than 5% of the total votes which is in line with commonly used error margins in statistics (Ballotpedia, n.d.). Including a stricter criteria than Girardi (2020) is expected to improve the strength of results. For this reason the 'TCTC variable' will have a value of '1' for election where the difference in votes is less than 5% of the total votes and will have a value of '0' for all other elections.

Another type of variables that are created are the ideology variables which are inspired by the findings of Vaaler et al. (2005). They find that there is a distinct difference in the movement of credit spreads on sovereign bonds depending on the expected outcome of an election in developing nations. They find that these credit spreads decrease when a left-wing government is expected to be replaced by a right-wing government and that they increase when the opposite is expected. By analysing the manifesto of every single political party it is possible to quantify how left or right leaning a party's ideology is. This has been made possible by the Manifesto Project Database, a database dedicated to analysing political parties and the respective elections. They analyse each party's manifesto on many different points using the RILE method developed by Budge (2013). Certain topics are categorized as 'right' while others are categorized as 'left', in some cases simply mentioning certain points is enough to earn a point for either the right or left side. In other cases it also matters whether a point was covered in a positive light or in a negative light, a prime example being the military. If a party positively mentions the military in its manifesto it will gain a 'right' point, meanwhile, talking negatively about the military earns the party a 'left' point. Here positive could be a military budget increase while negative being military budget cuts. In total Budge (2013) covers 26 different point scoring topics (See Appendix B). The final ideology rating is created by first subtracting the 'left' score from the 'right' score, the remainder is then divided by the sum of the 'left' and 'right' scores. The last step is to simply multiply this outcome by one hundred so it can be expressed as a value that ranges between -100 and (+)100. This means that the ideology variables are continuous variables.

For some elections not all political parties had existing ideology scores available, leading to two situations. The first is the situation where the ideology score is not available, but the Manifesto Project has made the fully analysed manifesto of this party available. In this scenario the ideology score was manually computed following their exact methods. In the remaining scenario there is no analysed manifesto available to use, while it would be possible to manually reproduce their methods it would open the door to massive inconsistencies. Thus, in cases where neither the ideology score nor the analysed party manifesto is available, the party is given an ideology score of zero for that particular election. This approach is used for all ideology variables, for the financial hub and GIIPS versions this variable treats all countries that belong to one of these groups as one country. This is possible due to the fact that there are no overlapping elections in either of these two groups. These variables also exist for countries within these groups, for these countries the variable is adjusted so it excludes elections from the country in question. For example, the GIIPS election variables will not use Spanish elections for Spain.

It should be noted that almost all variables can be proven to be stationary with the Im–Pesaran–Shin unit-root test at the 1% significance level. In total only three variables cannot be proven to be stationary at the 10% level or better, however, these three variables simply do not have enough data in each panel to apply the actual test. These three variables are the incumbency variable, the TCTC variable and the national winning ideology variable. All other variables manage to reject the null hypothesis of all panels having a unit root in favour of the alternative hypothesis that some panels are stationary. The Im–Pesaran–Shin unit-root test was chosen as this test is most appropriate when there are relatively few panels. Additionally, the existence of large scale stationarity implies that the variables are not cointegrated.

Cross-Border Correlation of CDS Spreads

The cross-bored correlation of CDS spreads relates to how the sovereign CDS spreads of countries are related to that of other countries. This section is split up into multiple different chapters, first a pairwise correlation matrix is discussed, than the principal component analysis is discussed and then the section is closed by discussing the cluster analysis.

The Pairwise Correlation Matrix

The first way the between country correlation of spreads is analysed is by creating a pairwise correlation matrix. This matrix (See Appendix C) demonstrates how the percentual changes of a country's sovereign CDS spread are correlated to that of another country. The correlation coefficients are based exclusively on the dates for which both countries have data, the number of observations on which the correlation coefficients are based can therefore slightly differ between pairs. However, this difference is negligible, all correlation coefficients are based on either 113 or 114 months of data.

An important takeaway from the pairwise correlation matrix is the range of correlations that can be found. Some country pairings show incredibly high correlations, France and Belgium having one of the highest correlations with a coefficient that exceeds 0.9. Other country pairings are far less correlated, the country pairing of the Netherlands and Estonia having one of the lowest correlations with a coefficient of around -0.16. The relationships generally seem strongly influenced by one of the two countries, with certain countries having really low correlations across the board. Surprisingly the U.S. is one of those countries, the highest correlation for the U.S. is with Norway but even this coefficient doesn't exceed 0.4. A possible interpretation could be that this indicates that the literature regarding U.S. financial markets does not extend to the changes in the sovereign CDS market. The common assumption would be that the U.S. would be a great control group for DID models, however, the consistently low correlation coefficients proves the opposite in this situation. Meanwhile, the country pairings with high correlation coefficients show a lot of promise as control groups. Only the correlation coefficients that at least meet the 10% significance level are mentioned and used. This does not limit the results greatly, the vast majority of the pairwise correlation matrix are significant at the 10% level or better.

The Principal Component Analysis

The principal component analysis is applied to get a better insight on the patterns that might be hidden in the pairwise correlation matrix. This analysis essentially boils this entire matrix down to a number of common factors that reveal patterns in this matrix (See Appendix D). The results from this analysis prove that there are very strong relationships between the countries, the first principal component alone explaining approximately 38% of all the variation in the correlation matrix (See Table 1). Additionally, the first principal component has a correlation of -0.5447 with the U.S. stock market returns while also having a correlation of 0.3626 with changes in the VIX index. Meanwhile, the U.S. stock market return and the changes in the VIX index have a correlation of -0.7768 with each other. These results echo those found by both Longstaff et al. (2011) and those by Pan and Singleton (2008) who show that sovereign credit spreads share a strong relationship with the VIX index among other things. The correlation with the U.S. stock market returns show that good news for the U.S. stock market often coincides with good news for the sovereign CDS spreads. However, a large decrease in explanatory power can be found between the first principal component and those that follow it. The second principal component explains close to 9% while the third principal component explains around 7%. The first three principal components explain a slightly more than 53% of the variation, which is close to identical to what Longstaff et al. (2011) found.

Table 1

Principal Component 1-9 Standard and Equamax Rotation

Principal Component	Standard Rotation		Equamax Rotation	
	Proportion Explained	Cumulative Proportion Explained	Proportion Explained	Cumulative Proportion Explained
First	0.3810	0.3810	0.2163	0.2163
Second	0.0864	0.4674	0.1337	0.3500
Third	0.0673	0.5347	0.0944	0.4444
Fourth	0.0407	0.5754	0.0713	0.5157
Fifth	0.0375	0.6129	0.0531	0.5688
Sixth	0.0322	0.6451	0.0524	0.6212
Seventh	0.0308	0.6758	0.0407	0.6619
Eighth	0.0280	0.7038	0.0373	0.6993
Nineth	0.0261	0.7299	0.0306	0.7299

Note. Cumulative Proportion Explained is the sum of all Principal Components to that point. The Standard Rotation is the rotation in which the results are presented by default.

In total nine principal components were discovered with an eigenvalue that exceeds the required value of 1. Interpreting the principal components can be challenging, one way of making this more approachable is to apply a rotation. One of these methods is called the equamax rotation, this orthogonal rotation essentially tries to rearrange who is allocated to which principal component. It does this in such a way that each principal component is specialised and independent from the other components. This leads to countries being spread out over fewer principal components, leading to far better interpretability of the principal components. This is accomplished by setting two goals, the first requires that each factor only has a few variables with high loadings rather than many. This goal is what leads to the strong interpretability of this rotation. The second goal is maximising how much of the variance can be explained by all factors, leading to a model that optimally uses the data.

Many of the components are dominated by countries from a specific region (See Appendix E). The first component for example consists out of Denmark, Germany, the Netherlands and Norway, all four countries being located either somewhat near or in Scandinavia. The second component is dominated by Latin American countries with three of the five countries coming from this region. The third component consists out of five countries and is dominated by the three Baltic states. The other two countries being Czechia and Slovenia, two European countries whose longitude are separated by less than half a degree (*Distance Between Countries*, 2019). A far more interesting component to cover is the fourth component. Not only does the fourth component consist out of countries that are located near each other, but more interesting, all three of those countries are GIIPS countries. This component strengthens the case that has been made to analyse the GIIPS countries separately. The fifth component consists out of Poland and Ukraine, two neighbouring countries. The sixth component consists out of three countries, Estonia and Finland essentially being neighbouring countries. Serbia is also in this component but does not share a clear relationship with the other two countries. The seventh component consists out of Greece and Romania, both being countries in South-eastern Europe. The eight component, consisting out of Argentina and South Korea, has no clear relationship between the countries. The ninth component consists out of Cyprus, Greece and Israel. With Cyprus located between the other two countries, all countries are located in the same general area.

Cluster Analysis

The high similarity between the countries opens the door towards the method of cluster analysis. Applying the cluster analysis methodology by Ward (1963) makes it possible to split up these countries into a number of groups that maximises the similarity within the groups while minimising the similarity between the groups. The number of groups is determined with the same rule of thumb as was used by Longstaff et al. (2011) who divide the total number of countries by four. Sovereign CDS spread data is collected for 40 unique countries from around the world, leading to the creation of ten unique clusters.

First and foremost, it should be noted that neither the number that is assigned to the clusters nor the order in which they are presented holds any weight (See Appendix F). The created clusters do tell an interesting story, for starters four of the clusters exist out of one singular country; Turkey, Greece, Argentina and Ukraine. Meanwhile, the opposite can be seen for one of the remaining clusters in particular, Cluster 7 consisting out of fourteen unique countries. While the other clusters fall in between these two extremes, it can be seen that geography is also a factor here just as it was in the principal component analysis. After further inspection it can be seen that the originally hypothesised groups representing the financial hub countries and the GIIPS countries makes a reappearance. All three financial hub countries can be found in Cluster 1, the other three countries in this cluster all share a border with at least one of these financial hub countries. Cluster 2 consists primarily of Scandinavian countries, meanwhile all countries in Cluster 3 belong to the group of GIIPS countries. Cluster 4 covers most of Latin America while also including South Africa. Cluster 7 is the biggest cluster and consists primarily out of both Eastern and Southern European countries. The remaining clusters either lack a specific geographical affiliation or are compromised out of a single country.

Methodology

The first linear regression models that are performed refrain from using all available independent variables, by leaving out all new variables it is possible to compare these results from this thesis with the results from Longstaff et al. (2011). In order to accomplish this, linear regressions are performed one by one for each of the forty countries regardless of region. The dependent variable in the linear regression models is the percentage change in the sovereign's CDS spread relative to the previous month. The core regression formula uses Huber-White robust standard errors and looks as follows:

$$CDSPC_{it} = \beta_0 + \beta_1 LSM_{it} + \beta_2 Exchg_{it} + \beta_3 FCR_{it} + \beta_4 Mrkt_{it} + \beta_5 Trsy_{it} + \beta_6 IG_{it} + \beta_7 HY_{it} + \beta_8 Equ_{it} + \beta_9 Vol_{it} + \beta_{10} Bond_{it} + \beta_{11} Stock_{it} + \beta_{12} Reg_{it} + \beta_{13} Globe_{it} + \varepsilon_{it}$$

The values of these variables is bound to both the country and the time, Germany and Portugal might have completely different values for the local stock return variable on the same date. This is why this formula includes two subscripts. Subscript *i* represents the different countries in the database, having a unique value for each country. Meanwhile, subscript *t* stands for the time-level index, which represents the number of elapsed months as was defined in the data section. Each version of the used linear regression models builds further on this formula. For each iteration of the formula the global residual and regional residual variables are recalculated for the sake of robustness. In respect of the readers time not all iterations will be written out in full, instead the most expansive iteration will be presented below. This iteration is applied when at least three countries are analysed at the same time.

$$CDSPC_{ist} = \beta_0 + \beta_1 LSM_{ist} + \beta_2 Exchg + \beta_3 FCR_{ist} + \beta_4 Mrkt_{ist} + \beta_5 Trsy_{ist} + \beta_6 IG_{ist} + \beta_7 HY_{ist} + \beta_8 Equ_{ist} + \beta_9 Vol_{ist} + \beta_{10} Bond_{ist} + \beta_{11} Stock_{ist} + \beta_{12} Election_{ist} + \beta_{13} Ideology_{ist} + \beta_{14} TCTC_{ist} + \beta_{15} Incumbent_{ist} + \beta_{16} ElectionFin_{ist} + \beta_{17} IdeologyFin_{ist} + \beta_{18} ElectionGIIPS_{ist} + \beta_{19} IdeologyGIIPS_{ist} + \beta_{20} ElectionUS_{ist} + \beta_{21} Reg_{ist} + \beta_{22} Globe_{ist} + \varepsilon_{ist}$$

This formula includes three subscripts. Subscript *t* stands for the time-level index, which represents the number of elapsed months as was defined in the data section. Subscript *s* stands for the group-level index, which represents the group of countries that is analysed at the same time. Subscript *i* represents the observation-level index which represents the different countries in the group, having a unique value for each country. It can be observed that these formulas don't make use of any interaction terms that use election related variables, this is due to the fact that these variables only apply during an election. In other words, they fundamentally function as interaction variables even without explicitly including the interaction term in the formula. The national election terms relating to incumbency, whether it was a close election and the ideology of the winning party, can only be applied when looking at multiple countries, the minimum requirement being set to three countries for consistency sake. A single country does not have enough unique elections to analyse the different aspects of elections in detail. Expanding the pool of countries that is tested solves the issue of limited observations.

The models that analyse all European countries in the dataset at once and the models that analyse all countries in the dataset at once use fixed effects. In addition to using a fixed effects model, these models also use robust standard errors that are clustered by country. These standard errors deliver more trustworthy results while also being immune to both heteroskedasticity and serial correlation. These models successfully reject the null hypothesis that all fixed effects are equal to zero at the 10% significance level or better. Thus, a fixed effects model is preferred over a pooled OLS model. The decision on whether to use a fixed effects model or pooled OLS is based on the outcome of this test for each linear regression model. It should be noted that a design choice regarding significance influences a large portion of the linear regression models in this thesis. It is possible that a certain model specification fails to produce a model that is significant at the 10% level or better for a certain country. Let's call this country A, the results of this linear regression demonstrate that the used model is not applicable to country A. In cases where multiple countries are used in a single regression, the decision was made to exclude countries such as country A because it was already demonstrated that the model does not work for country A. Including country A in regressions with other countries would lead to misleading results because it was already proven that the model does not significantly explain the data for country A.

The methodology used to further investigate the effect of elections on a sovereigns CDS spread is a difference-in-difference model. The cross sectional variant of the DID methodology is used even though panel data is used. The choice for this specification of the model is based on the characteristics of the used dataset. The amount of observations and groups that can be used for each model is relatively low when compared to the more traditional DID models with panel data, this is a shortcoming that cannot be avoided as elections are reoccurring events that happen at different times for different countries. When performing linear regression analysis with panel data it is the convention that one uses the non-panel data specification of the linear regression model when only few groups are included in the regression. Usage of the panel data specification in these situations is likely to lead to misleading results as there is not enough data available to properly compute the panel, this same logic applies to the DID methodology. Additionally, The standard DID model is formulated as follows:

$$y_{ist} = \gamma_i + \gamma_t + z_{ist}\beta + D_{st}\delta + \epsilon_{ist}$$

This formula includes three subscripts. The subscript t stands for the time-level index, which represents the number of elapsed months as was defined in the data section. The subscript s stands for the group-level index, which represents the different countries in the database. The last subscript in the formula is i which stands for observation-level index, unlike the other subscripts it is rather obsolete here. Each country has only one observation for each time period, therefore the group-level index and the observation-level index are essentially the same. The group and time fixed effects are denoted as γ_s and γ_t respectively. Meanwhile, the covariates are denoted by z_{ist} while the error term is denoted by ϵ_{ist} as is the norm. The main point of interest of the DID model, the treatment itself, is denoted by D_{st} and represents a parliamentary election in the treatment country. The degrees-of-freedom adjustment that was originally proposed by Bell and McCaffrey (2002) is used to create bias-corrected cluster robust standard errors for each DID model.

The time window used for the models starts at fifteen months prior to the election, this leaves 15 months of data to properly examine compatibility between the control and treatment group. The post effect period is equal to six months, this is based on the findings by Brogaard et al. (2020) who find that U.S. elections can still have a significant effect six months after the election. Including such a long post treatment period also means it is possible to see whether these elections have effects that last. However, it should be noted that this window is not a hard requirement. As was described earlier, the changes to the CDS regulations prior to 2013 mean it is unadvisable to include data prior to this change. As a result it is not possible to gather the full fifteen months of data for every single election as some elections take place in either 2013 or early 2014. The same applies to the post effect window of six months, some elections take place in either late 2021 or early 2022, meaning it is not possible to guarantee the six months of post treatment data. The described window is only part of the story, in addition to finding post-election effects, Brogaard et al. (2020) also find effects prior to the election. This is why a three month grace period was implemented to compensate for both anticipatory and lasting effects of elections in regards to the control countries. That is to say, none of the control countries can have their own parliamentary election in the eighteen months prior to the treatment group election nor in the nine months after said election. Due to the reoccurring nature this, in combination with the minimum correlation requirement, put very severe limitations on the pool of possible control countries. While having a longer pre-treatment period would be preferred, the data simply does not allow it.

The degrees-of-freedom adjustment that was originally proposed by Bell and McCaffrey (2002) is used to create bias-corrected cluster robust standard errors for each DID model. However, an interesting aspect about the employed DID models is that they do not include any covariates. This is due to the fact that this DID model employs preliminary screening, in other words, only those countries that are already similar can be used in the control group. This screening is based on the pairwise correlation results, only countries which have a correlation of 0.5 or higher can be used in the control group. The inclusion of covariates could undermine this screening process, as this might lead to weaker control groups.

Like any difference-in-difference model this model relies on the assumption that the control group moves in parallel to the treatment group (Wing, Simon & Bello-Gomez, 2018). The validity of this assumption has been tested in multiple ways. Firstly, the parallel trend test was applied, this test analyses whether the overall trend of the control and treatment group are significantly different. It is vital that the null hypothesis of no difference cannot be rejected as rejection of the null hypothesis proves that the parallel trend assumption does not hold.

Secondly, the granger causality test is applied to test if treatment effects can be found prior to the treatment taking place. The first step in this is done by taking the dummy variable that identifies treated observations and interacting this variable with the dummy variables that represent the individual time periods prior to the treatment bar one. In other words, this test creates counterfactual treatment time indicators for all periods prior to the treatment bar the very first period. For example, if an election took place in period $t = 4$, one counterfactual would be that a treatment took place at $t = 3$, while another counterfactual would be that a treatment took place on $t = 2$. These counterfactuals are commonly referred to as leads in the context of DID models (Stata Press, 2021). Thirdly, a visual inspection is performed on the graphical output. Even though this test is sensitive to subjectivity, it is still an essential test to validate validity of the control group. Due to the nature of subjectivity, it is not possible to express how this is done in numerical values (See Appendix G & H).

As was discussed in the data section, data was collected for a total of forty countries. Analysing which combination of these countries is the most suitable for every single election date would be an impossible job due to the sheer computing power required. That is where the previously described requirements come into play. A new criteria was introduced to reduce the computing power required; a minimum correlation requirement for the month-on-month percentual change in sovereign CDS spreads. The minimum correlation requirement is applied to all observations in the dataset rather than only the window used for the DID model. The benefit of analysing the correlation across the entire research period is that it paints a picture that is more in line with the long-term comparability rather than the short-term comparability. The latter approach would hurt the robustness of the results on account of the fact that it would make it far more plausible for a country to be wrongly included by chance. Here the term 'wrongly included' should be interpreted as the inclusion of a country that has historically seen very different movements in their CDS spreads relative to the treatment country yet was included due to similar movements in the short-term by chance.

The choice to base the correlation analysis on the percentage change in CDS spread was made for a number of reasons. Firstly, the mean CDS spread can differ wildly between countries where bigger absolute changes are more common when a countries CDS spread is relatively high. This is not unexpected because a high CDS spread implies high risk which is commonly paired by increased volatility levels. Secondly, there are multiple instances where a country's CDS spread changes dramatically relative to the previous month which leaves a long lasting mark on the data. To better convey the magnitude of these changes, there are four different instances where a percentage decrease of over 80% can be observed in a country's CDS spread relative to the month prior. Thirdly, finding strong correlation in the changes is far more indicative of suitability. The results when absolute values are used mainly report on the common trend between country A and B. However, when the percentual changes in the CDS spreads are used, the results look beyond this common trend and instead look at how well the month-on-month changes themselves align.

The correlation results themselves are obtained by performing a pairwise correlations analysis on the percentual change in CDS spread variable for each country. In order for a country to be eligible for the control group it must meet two additional criteria. Firstly, its correlation coefficient must be significant at the 5% level. Secondly, the absolute correlation coefficient must be greater than or equal to 0.50, according to Davis (1971) a correlation coefficient between 0.50 and 0.69 is categorized as strong correlation while a correlation of 0.70 and above is considered as very strong correlation. In other words, only those countries that are strongly correlated with the treatment country are considered for the control group. One disadvantage of these rather strict criteria is that it can also limit the pool of possible control countries for the DID model too much. In the scenario where there are not enough countries available that meet these criteria it is not possible to create a DID model that is consistent with the other models, as such these countries will not be analysed with a DID model.

The method used to find the best possible control group for each election is inspired by the world of cryptanalysis. One of the oldest methods of codebreaking is that of the brute-force technique, a technique which traces back to the time before computers were widely adopted. Rather than developing a system which predicts the ‘code’, the brute-force technique favours the approach of simply trying all combinations. In the context of this thesis this approach systematically tries out all possible country combinations up to five countries. This looks as follows when written out as a formula where *n* represents the number of countries that are eligible for the control group:

$$Combinations = \frac{n!}{2!\,(n-2)!} + \frac{n!}{3!\,(n-3)!} + \frac{n!}{4!\,(n-4)!} + \frac{n!}{5!\,(n-5)!}$$

In a scenario where ten countries pass the tests for eligibility into the control group, the total number of combinations that are analysed would therefore be equal to 36,090 combinations. This is why such strict preliminary screening is applied. Each of the resulting combinations is analysed on two points, the parallel trend test statistic and the granger causality test statistic. Only the combinations who fail to reject the null hypothesis of both these tests are considered. The graphs of the remaining combinations is visually analysed, the combination which produces the graph which resembles that of the treatment group the most is used as the control group for this election. It should be noted that the results of the corresponding DID models play no role in whether a certain control group is chosen.

Results

The first results that will be presented are presented with the purpose of substantiating the claims that will be made. For starters, the results regarding the choice to use the percentual CDS spread change instead of the raw change will be presented. While the method of comparing both methods is primitive in nature it still succeeds in substantiating the claims at hand. The hypothesised issue with using the raw change in CDS spread rather than the percentual change in CDS spread is that high CDS spreads are more likely to undergo above average changes in the CDS spreads. The median and average CDS spread for each country function as the benchmark to compare both methods to. For all countries separately, the thirty CDS spreads that correspond to the biggest changes are collected. In other words, the CDS spreads that correspond to the thirty biggest absolute CDS spread changes are collected for the raw changes method while the CDS spreads that correspond to the thirty biggest percentage changes are collected for the suggested percentage method. To clarify, the value for the change in CDS spread on time *t* corresponds to the CDS spread at time *t-1*. The decision to include the top thirty rather than only the top ten or top twenty is driven by robustness. Thirty observations account for slightly more than 25% of all observations for a country, demonstrating that a clear preference for either of the two methods cannot be explained by a simple outlier. The median and average of these thirty observations is compared to the median and average of all observations, the method with the smallest difference is deemed the least biased. If the percentage change approach can strongly out-perform the standard approach, only then will this approach be used.

The results for whether the percentage change in CDS spreads approach is more suitable than the unmodified change in CDS spreads approach that is used by Longstaff et al. (2011), will be reported first. In this analysis the CDS spreads that correspond to the thirty biggest changes according to each approach is compared to the median and average for all CDS spreads in that country. The first finding is that the mean CDS spread is higher than the median CDS spread for each country included in this analysis, suggesting that the distribution of the data is skewed to the right. In the presence of skewed data the median is preferred over the mean, hence the findings relating to the median will be of most interest. The second finding relates to the absolute approach, for the European countries with the highest GDP, the median CDS spread for the thirty biggest absolute changes is higher than the overall median CDS spread. This is most apparent for Ireland and Spain where the difference between the two medians is equal to approximately 33bp for both countries. It is important to note however that the size of the difference between the medians differs per country (See Appendix I). However, these findings still support the hypothesis that high CDS spreads and large changes in CDS spreads are correlated, or in other words, that the approach employed by Longstaff et al. (2011) is biased. The third finding relates to the percentage change approach that was introduced in this thesis. Unlike the previous approach, the percentage change approach finds that the difference between the median for the thirty biggest changes and the overall median is not far more varied across countries. That is to say, the difference between the medians is far more evenly distributed around zero. Out of all countries, the biggest difference between the two medians can be observed for Spain where the difference is equal to less than 4bp. In light of this it can be concluded that there is little to no evidence that points towards the existence of a bias that was found with the absolute approach. The fourth finding, and perhaps the most important finding, becomes apparent when comparing the results of the two approaches. For every single country bar one, the difference between the medians is lowest for the percentage change approach. The only country which seems to perform marginally better under the absolute approach is Poland. To add to the robustness of these results, the same tests were also performed for the mean instead of the median. The results based on the mean also conclude that the percentage change approach is preferential.

Base Model Results

Analysing all possible countries at once on the variables that were originally used by Longstaff et al. (2011) is done with the use of a fixed effects model which employs robust standard errors that are clustered by country. The model boasts an adjusted R-squared of 0.336, which is high in the context of how varied and large the used sample of countries is. The results are highly significant for the vast majority of the variables, all significant coefficients being significant at the 1% level. In total only four variables do not meet the significance criteria of 10%, namely the variable relating to; the exchange rate, the foreign currency reserves, the equity market, and the equity risk premium (See Appendix J). The worst offender of these four arguably relates to the foreign currency reserves. Not only does this variable fail to meet the significance level criteria of 10%, but the reported coefficient is also very small. To put it into perspective, ignoring significance, if ceteris paribus a sovereign's foreign currency reserves would double compared to the previous month, the sovereign's CDS spread would only be expected to increase by 0.9% compared to the previous month.

The second results that are presented intend to give more clarity to the results that were reported above in addition to being more accepting to the fact that each country is unique. By regressing the same variables as before on each country separately, a model is formed that embraces the uniqueness of each country. The local variables show that for the majority of countries the local factors have a significant effect on a sovereign's credit risk as expressed by their CDS spread (See Appendix K). The driving force behind the significance of the local variables is the variable for the local stock market return. This variable shows very strong significance for more than half of the applicable countries, eleven of these being significant at the 1% level, three at the 5% level, and six at only the 10% level. In addition to the significance it can also be observed that the coefficient for this variable has a negative sign for almost every single country, all significant coefficients, bar that of Israel, also being negative in sign. These findings align with those of Longstaff et al. (2011) who also find significant and negative coefficients for their local stock market variable return. The negative coefficient shows that a strengthening of the local stock market leads to a decrease in the perceived sovereign risk of that country. This makes sense because when a country's stock market improves it also means that this country's economy has strengthened. The interpretation of Portugal's coefficient of -0.855 is that if, ceteris paribus, the local stock market return increases by 10% relative to the previous month, the sovereign CDS spread of Portugal will decrease by 8.55% relative to the previous month. The percentage change in the local currency exchange rate does not have as strong of an effect as the local stock market. For more than two-thirds of the country's the exchange rate coefficient is negative in sign, meanwhile, all seven significant coefficients are negative in sign. Of the significant coefficients, four are at the 1% level, two at the 5% level, and one at the 10% level. Therefore, it can be seen that there is a negative relationship between changes in the currency exchange rate and changes in a sovereigns CDS spreads. In other words, depreciation of the currency increases the CDS spread. The interpretation of Brazil’s coefficient of -1.296 is that if, ceteris paribus, the domestic currency appreciates by 10% relative to the USD, the sovereign CDS spread of Brazil will decrease by 12.96% relative to the previous month. An interesting observation is that this variable is insignificant for every single eurozone country, one could hypothesise that this is due to the fact that not one country has full ownership of the Euro. Therefore, the changes in the value of the Euro cannot be traced back to the actions of one specific country. The last of the local variables represents the percentual change in the foreign currency reserve where around two-thirds of the coefficients are positive in sign. This ratio between positive and negative sign is also somewhat present within the five significant coefficients, three of which being positive in sign. The significance of these five coefficients is spread between multiple levels. Only one is significant at the 1% level, two at the 5% level and the remaining two at the 10% level. The effect of the changes differs strongly for each country, this means that changes in the foreign currency reserves are interpreted very differently for different countries. The interpretation of a coefficient of 1 for this variable is that if, ceteris paribus, a country increases their foreign currency reserves by 10% relative to the holdings they had the month prior, the sovereign CDS spread for this country will increase by 10% relative to the month prior.

The global financial market variables are split up similarly in strength. The investment-grade market is the variable with the strongest results, the sign of this variable is negative for every single country, regardless of significance level (See Appendix K). In regards to the significance, 22 out of the 34 countries, for which a significant model could be built, has a significant coefficient for this variable, twelve of which at the 1% level, seven at the 5% level, and three at the 10% level. In addition to the sign of the coefficients, the coefficients themselves are also very similar between the different countries, the median and mean both being equal to -0.016 for the significant coefficients. The meaning of these coefficients is essentially that good performance of the global investment grade market is reflected as good news for the sovereign credit spreads. The speculative market, also known as the high-yield market, has less strong results. In total seven coefficients are significant, all belonging to countries in Europe, out of these seven coefficients, two are significant at the 1% level, three at the 5% level, and two at the 10% level. The vast majority of the coefficients is positive in sign, the positive sign is even more apparent when looking exclusively at the significant coefficients, all of which being positive in sign. The absolute scale of the significant coefficients is similar to those found for the investment-grade market, the median being equal to 0.013 while the mean is equal to around 0.016. The presence of positive coefficients is surprising as it implies that good news for the speculative market is bad news for the sovereign credit spreads. These results differ from those by

Longstaff et al. (2011). To begin with, they find the strongest results for the high-yield market variable rather than the investment-grade market variable. In addition to the significance, they also find that the coefficient for the investment-grade market variable tends to be positive in sign rather than unanimously negative. One potential explanation could be that they did not use the S&P 500® Corporate Bond Index while another could be that the market simply evolved over time. However, the key takeaway that is present in both results is that the global financial market cannot be ignored even when including the local financial market.

The remaining two global financial market variables represent the excess return on the U.S. stock market and the changes in the treasury yields, both being of similar strength. The first of these finds significant results for nine of the countries, all but two having a negative sign. However, one of these is Iceland for which no significant model could be built. Out of the remaining eight significant coefficients, five are significant at the 1% level, one at the 5% level, and two at the 10% level. The predominantly negative sign of the significant excess return of the U.S. stock market coefficient also means that, ceteris paribus, an increase here leads to a decrease in the sovereign CDS spread, or in other words, reduces the perceived risk. Just like Longstaff et al. (2011) it can be seen that even after taking the local stock market into account, the global stock market still plays an important role. The coefficients for the change in the treasury yields looks like one would expect. The majority of the coefficients is positive in sign, meaning that, ceteris paribus, an increase to the treasury yields increases the perceived risk of sovereign bonds. This is expected because fundamental economic theory demonstrates that higher yield is linked to higher risk. Additionally, the higher the yield, the higher the expenses to maintain the bond for a country. However, the significance of these coefficients is rather lacklustre, only eight coefficients reach a significance level of at least 10%, three of which reach the 1% level, four others the 5% level, and the remaining two only the 10% level. An interesting side note to these results relates to where most of the countries with significant coefficients are located. Seven of the eight countries share similar longitudes, to help visualise this, seven of these eight countries belonged to the Eastern Bloc during the Cold War (Kulik, 2022). Additionally, six of these countries were located on the east side of the Iron Curtain.

The global risk premia variables demonstrate how these factors also have a role to play in explaining the changes in the sovereign CDS spreads. The volatility risk premium proxy is the strongest of the two variables in this category. Eleven countries find significant results, however, Iceland will be excluded due to low significance in the model. Out of the remaining ten significant coefficients two are significant at the 1% level, five at the 5% level, and three at the 10% level. The sign of these coefficients is almost unanimously negative, especially when exclusively looking at the significant coefficients. Just like the other variable, the equity premium proxy is also predominantly negative in sign but fails to match the other variable in strength. While the volatility risk premium proxy had seven significant coefficients, the equity premium proxy only has five significant coefficients. Of these five coefficients three are positive in sign, additionally, only one is significant at the 1% level, two at the 5% level, and the remaining two at the 10% level. These results demonstrate how the global risk premium variables play an important role in uncovering the movements of sovereign credit spreads but do not play a leading role.

Unlike the global risk premium variables, the investment flow variables do play a leading role in explaining the movements of sovereign credit spreads. Both the bond flow and the equity flow variables demonstrate strong significance for a wide range of countries. For starters, the bond flow variable has a significant coefficient for eighteen of the countries, fifteen at the 1% level, two at the 5% level, and the last remaining one at the 10% level. The sign of these coefficients is almost unanimously negative, with only three insignificant coefficients having a positive sign. Meanwhile, the equity flow variable has a significant coefficient for 21 of the countries, nine at the 1% level, seven at the 5% level, and five at the 10% level. Unlike the bond flow variable all bar one coefficient is positive with the only positive coefficient being insignificant. The number of coefficients that are significant at either the 1% level or 5% level demonstrate the importance of these variables. An additional takeaway from these coefficients are the coefficients themselves. The consistently large coefficients for both the global bond flow and global equity flow variables demonstrate how these flows explain a relatively large portion of the movements of sovereign credit spreads. It is important to note that these flow variables do not present the change in flow relative to the previous month, instead these variables simply present the net flows as a percentage of the total net assets.

The last type of variables that remain are the regional and global sovereign CDS spreads, especially the regional variable presents very significant results. These results demonstrate that sovereign spreads are strongly intertwined with each other, even after taking all the previously mentioned variables into consideration. Rather than simply showcasing for how many countries this region variable is significant, one gets a better understanding when the opposite is presented. In total there are only seven countries for which this variable fails to meet the minimum significance level of 10%. In other words, this variable is significant for 80% of the tested countries. In total 22 countries have a coefficient for this variable that is significant at the 1% level, with an additional four countries having a coefficient that is significant at the 5% level. After further inspection of the results, it becomes apparent that there is a considerably disparity in the coefficients among the countries, even when only looking at the countries for which this variable is significant. While the mean coefficient, including every single coefficient for all significant models, is equal to approximately 0.73, the median is only equal to approximately 0.62. The gap between the mean and median grows largest when only the significant coefficients of countries in Europe are included. The mean coefficient now increases to approximately 0.90 while the median only increases to approximately 0.75, revealing a positively skewed distribution. Whether one uses the mean or median, it cannot be denied that there is a very strong relationship between a country and its regional peers when investigating movements in sovereign credit spreads. The global sovereign CDS spreads variable fails to reproduce the success of its regional sibling, however, it still proves itself as an important factor. For a dozen countries the variable returns a significant coefficient, four of these being significant at the 1% level, two at the 5% level, and the remaining six at the 10% level. The sign of the coefficients is positive for the majority of the countries, even more so for the significant coefficients where there are only two countries that have a negative sign.

The last points of interest relate to the R^2 values for the regressions (See Appendix K). Firstly the adjusted R^2 values are analysed, these values show that the regressions explain a surprisingly high percentage of the variation in the percentage changes of sovereign credit spreads just as they did for Longstaff et al. (2011). The mean adjusted R^2 is equal to around 47.3 percent for the significant models and 48.5 percent when the insignificant models are included, with the median value slightly edging out the mean with a value of 49.5 percent and 51.4 percent respectively. To put this into perspective, Longstaff et al. (2011) find a mean adjusted R^2 of 46 percent and a median adjusted R^2 of 52 percent. These value mean that around half of the variation in the percentage changes of sovereign credit spreads are explained by the included variables. Meanwhile, the adjusted R^2 values are spread pretty wide with the lowest and highest adjusted R^2 for significant models being equal to 2.6 percent and 78.7 percent respectively. In total only five countries have an adjusted R^2 for the significant models that does not reach at least the 20 percent mark, while fifteen countries have one that exceeds the 60 percent mark. Both this as the difference between the mean and median show that these values are negatively skewed and that the median is more appropriate.

Secondly, the local ratio is analysed which shows how much of the unadjusted R^2 is derived from the three local variables. This ratio is created by first regressing with only the three local variables, taking the R^2 from this regression and then dividing it by the R^2 from the regression that includes all variables. One important side note is that the local ratio variable will have a tendency to exaggerate the portion of the variance that is explained by the local variables due to the fact that the local variables are not uncorrelated with the other explanatory variables. As such, not too much weight should be put on this ratio, it should instead be used to sketch a rough picture of the role of local variables. The mean and median for the local ratio are equal to 36.9 percent and 30.3 percent respectively for the significant models, showing that the local ratio is positively skewed. The interpretation of this is that, on average, the contribution of the local variables equals less than a third of the regressions total explanatory power. Thus adding to the library of research that demonstrate how beyond border factors play a larger role in explaining sovereign credit spread movements than within border factors. The results presented in this section demonstrate that the related findings by Longstaff et al. (2011) have not only stood the test of time but also apply to a different selection of countries. Most telling of this are the findings relating to the R^2 values of the regressions as they are close to identical between this thesis and their paper.

Election Model Results

The aspect of elections are taken care of in multiple ways. This section is split up into multiple parts to accommodate the different aspects. The first aspect relates to the U.S. presidential elections and how they affect other countries. The second aspect that is treated is the election itself on a within-border basis. This aspect takes priority because one would expect that the most influential election for a country is its own election. An important point that should be raised is that not all variables relating to local elections can be used at all distances. While elections are reoccurring events, there is not an abundance of them. That is to say, it is irresponsible to analyse an event with more variables than there are observations for this event. This is why the smaller factors such as incumbency can only be factored into the equation when there is enough data available. As a result, smaller factors such as incumbency will only be included in models which include at least three different countries. The third aspect that is analysed is related to the two groups that were mentioned in the previous paragraph; the financial hub countries and the GIIPS countries. The effect of elections within these countries is hypothesised to also influence countries outside of these groups. Due to the fact that each country could be influenced by elections in these countries, it is possible to include the ideology factor on every level. A fourth aspect is also included, this aspect relates to using the DID methodology to also analyse the effects of national parliamentary elections.

U.S. Presidential Elections

The results regarding the third aspect will be presented first as this aspect will provide a good base line to compare the other results to. Out of the 34 countries for which valid models can be built, eleven countries show evidence of being influenced by the U.S. Presidential elections (See Appendix L). Each of these eleven countries has a positive coefficient for the variable representing these elections. Furthermore, the results are significant at the 1% level for nine of these countries, the remaining two countries, Lithuania and Sweden, are significant at the 5% and 10% level respectively. However, the main point of interest is the scale of the significant coefficients. The average coefficient for the eleven countries sits at 0.154, or in other words, the U.S. presidential elections explain, ceteris paribus, an average increase of approximately 15% in the sovereign's CDS spreads relative to the month prior to the election. For the sake of transparency, using the median instead of the mean returns similar results, with the median coefficient being equal to 0.140. Furthermore, the mean and median grow only larger when the minimum significance criteria is raised, equalling 0.173 and 0.186 respectively at the 1% significance level.

The next step is to apply this analysis again but from further away, this is done by using the clusters that were created previously. The global cluster based analysis presents significant results for three of the nine clusters that have a valid model (See Appendix M), a ratio that resembles the one which was found in the previous paragraph. Just as before, these three clusters unanimously report positive coefficients. Cluster 1 reports the strongest results, their coefficient for this variable is both the biggest at 0.144 but also the most significant, easily reaching the 1% level. Additionally, out of the three cluster models, it has the highest adjusted R^2 at 0.671. Both Cluster 3 and 7 report a coefficient that is significant at the 10% level, this coefficient being equal to 0.090 and 0.023 respectively. However, Cluster 3 does outperform Cluster 7 by having an adjusted R^2 of 0.486 rather than 0.291. The results based on the European clusters are essentially identical, indicating that it is primarily the European countries that are influenced by these elections (See Appendix N). This is not surprising, the three clusters with significant results are composed almost entirely out of European countries (See Appendix F). This is reaffirmed when all European countries are analysed at once, the coefficient reported for this variable by this model being equal to 0.070 while being significant at the 1% level (See Appendix O).

National Elections

The results for the national elections tell a story far more complex than the U.S. Presidential elections did. While the frequency of significant results is mostly the same, the sign of these coefficients is not. Analysing the national elections on the individual country level first presents the overall effect of an election for any given country. Out of the 34 countries for which valid models can be built, ten countries show significant evidence of being influenced by their own elections. Of these ten countries four show evidence which is significant at the 1% level, five present evidence which is significant at the 5% level and one country presents evidence which is significant at the 10% level. The remaining 24 countries fail to produce significant evidence. Surprisingly the sign of these coefficients is split evenly between positive and negative, indicating that the reception to national elections is far more complex to predict, especially when using a small sample. What can be noticed is that, of the five coefficients that are the largest in absolute scale, four are negative. Thus the general effect leans towards a decrease rather than being truly neutral. Due to the fact that there are an equal number of positive and negative coefficients it wouldn’t be very informative to name the median value as this value would lie incredibly close to zero. Instead the absolute values are taken, this way the scale can at least be observed. The mean and median absolute scale of the coefficients is equal to 0.089 and 0.079 respectively, showing that even in the most favourable setting, the general impact of national elections is smaller than those of the U.S. Presidential elections. The ‘true’ mean, that takes the sign of the coefficients into account, is substantially smaller at -0.017 as a result of the even split between positive and negative coefficients. The country with the biggest absolute coefficient is the U.K. which has a coefficient of -0.140. Ceteris paribus, a parliamentary election in the U.K. decreases the U.K.’s sovereign CDS spread by approximately 14% relative to the month prior.

Looking at multiple countries at the same time makes it possible to analyse the elections in more detail. In other words, including more countries in the models makes it possible to analyse aspects such as ideology, incumbency and whether the election was too close to call. At least three countries have to be looked at simultaneously to analyse each of these three factors, this decision was made to improve the robustness of the results. The ideology factor is the jewel in the crown of these factors as it is one of the first ever implementations of political ideology in the economic literature. As was described previously, this variable is not a simple dummy variable which indicates whether a country has a left or right leaning government, instead every single party is given a score ranging between -100 and (+)100.

Seven of the ten global clusters can be used to test for the ideology factor and incumbency factor, meanwhile only four clusters can be used for the too close to call factor. Meanwhile, only four of the seven European clusters can be used for the ideology factor and incumbency factor while only three clusters can be used for the too close to call factor. The world based cluster results are discussed first for the ideology factor. However, the results for this variable are rather disappointing, out of the seven clusters only Cluster 6 provides significant results for this variable at the 5% level (See Appendix M). The other six clusters fail to present any evidence of a significant effect which reaches the 10% significance level or better. Additionally, the coefficient that are found, regardless of significance, are of a very small scale. The biggest absolute coefficient being that of Cluster 6 which is equal to 0.003. The sign of all coefficients, regardless of significance level, is evenly split between positive and negative. It should be noted however that this variable is not a dummy variable and can take values ranging from -100 to (+)100. Thus, if the most extremely right leaning party, in other words a party which scores the maximum score of 100 for this variable, would win the election in this cluster, the model would predict, ceteris paribus, an increase in that country’s sovereign CDS spread of approximately 30% relative to the month prior. Meanwhile, the expected effect of an extremely left party winning would be equal to a decrease of approximately 30% relative to the month prior. However, these values are not as straightforward as one might expect. The mean for the ideology variable for this cluster is equal to -11.154, meaning that the general winning party in this cluster has a left leaning ideology. Ceteris paribus, a decrease of approximately 3.3% in the sovereign CDS spread can be attributed to the ideology of the winning party when the average party wins.

Limiting the scope of the analysis to Europe leads to different results. Out of the four applicable European clusters only Cluster 5 finds significant results at the 5% level for the ideology variable (See Appendix N**)**. The results of the other three clusters all fail to produce results that are significant at the 10% significance level or better. Three of these four clusters find coefficients with a negative sign, which is a big departure from the even split which was found for the global clusters. The coefficient for the ideology factor is equal to -0.001 for Cluster 5, interestingly enough, all four clusters find a coefficient that is equal to either -0.001 or (+)0.001. The findings by Cluster 5 arguably hold more weight than those found in the global section. For starters, the European Cluster 5 includes more countries than global Cluster 6, thus, Cluster 6 contains far more elections to analyse. The most important point is revealed in the summary statistics for both clusters, the average ideology for Cluster 6 is almost perfectly neutral (See Appendix P**)**. Additionally, Cluster 6 has a far more balanced maximum and minimum value for the ideology variable, reaffirming the idea that Cluster 6 has a far more accurate representation of the real world. The interpretation of this coefficient is that when, ceteris paribus, an extremely right party wins a parliamentary election in one of the countries in the cluster, a decrease in that country's sovereign CDS spread of approximately 10% can be attributed to the ideology of the winning party. Likewise, this would be equal to an increase of approximately 10% for an extremely left party. Analysing all European countries at the same time reaffirms the findings from European Cluster 6 finding the same coefficient of -0.001 for the ideology variable (See Appendix O). The main takeaway from these results is that the market considers left leaning politics as something that hurts a government's ability to repay its debts in Europe. Likewise, the market has more confidence in a government's ability to repay its debts when a right leaning party wins the election. The ground-breaking aspect is that the existence of significant results demonstrates that the market truly and consistently treats the ideology of a party on a continuous scale rather than a binary one.

The results regarding the incumbency factor are far less consistent, out of the seven global clusters, Cluster 3 and 6 find significant results. Both these clusters find results that are significant at the 10% level, the remaining clusters fail to produce results that meet this significance level (See Appendix M). The inconsistency is rooted in the sign of the two coefficients. Cluster 6, which consists out of countries from three different regions, finds a coefficient that is equal to 0.132. Ceteris paribus, a parliamentary election where the winning party is the incumbent increases the sovereign CDS spread of the country by approximately 13,2%, thus increasing perceived risk. Meanwhile, Cluster 3, which consists out of three countries that all belong to the GIIPS countries, finds a coefficient that is equal to -0.063. Ceteris paribus, a parliamentary election where the winning party is the incumbent decreases the sovereign CDS spread of the country by approximately 6,3%, thus decreasing perceived risk. Limiting the scope of the analysis to exclusively European countries partially removes the contractionary results. The results for Cluster 3 remain unchanged as expected as this cluster already consisted entirely out of European countries (See Appendix N). Meanwhile, the European Cluster 4, which is made up of the two European countries that were found in the global Cluster 6, falls below the minimum requirement of three countries. The countries that make up Cluster 3 all belong to the group of GIIPS countries, analysing all GIIPS countries at the same time shows that the incumbency factor loses its significance (See Appendix O). In other words, the results found do not apply to the GIIPS countries as a whole. Analysing all European countries at the same time leads to equally less promising results, especially when those results are compared to the results from analysing all countries in the sample at the same time. The results for all of Europe show that the incumbency factor no longer explains a significant effect, or at least, the effect is not the same for every European country. However, analysing all countries at the same time does report a significant coefficient, additionally this coefficient is positive in sign and equal to 0.054. In other words, ceteris paribus, when a parliamentary election is won by the incumbent party, the country's sovereign CDS spread increases by 5.4%. A possible interpretation of these results is that the incumbency factor is more than likely a more prominent and consistent factor in countries that are located outside of Europe. The contradictory nature of the results however require future research to test whether this hypothesis holds true.

The results regarding the too close to call factor are far less cloudy than those for the incumbency factor. Analysing the global clusters shows that three out of the four clusters, for which a valid model could be built that includes this factor, find both significant and positive results. These clusters in question are Cluster 2, 6 and 7 while Cluster 1 fails to find significant results, nonetheless, the coefficient reported by Cluster 1 is still positive and similar in scale to the other three. Cluster 7 has the smallest coefficient with a value of 0.052, Cluster 2 sits in the middle with a coefficient of 0.075 while Cluster 6 has the biggest coefficient at 0.194. These coefficients are significant at the 1% level for Cluster 2, at the 5% level for Cluster 6 and at the 10% level for Cluster 7. The interpretation of these coefficients is that, ceteris paribus, a parliamentary election where the winner and runner up were only separated by a small margin increases the sovereign CDS spread of the country by approximately 5.2%, 7.5% and 19,4% for Cluster 7, 2 and 6 respectively. Limiting the scope to exclusively European countries results in only Cluster 2 having significant results. Opening the scope by analysing all of Europe or all countries in general leads to familiar results. The results for all of Europe being equal to a coefficient of 0.051 while the results for all countries regardless of region being equal to 0.053, both coefficients being significant at the 10% level. The interpretation of these results is that, ceteris paribus, a parliamentary election where the winner and runner up were only separated by a small margin increases the sovereign CDS spread of the country by approximately 5% more than if the election was not close.

Financial Hubs and GIIPS

The preceding results have shown that elections, both national and international, matter in addition to characteristics like ideology. This is where the hypothesised groups are introduced into the equation. The financial hub countries are first addressed, for starters, analysing whether national elections have an effect for these countries as a whole will show whether these countries react similarly to national elections. The results for this indicate that these countries do respond similarly as is indicated by the significant coefficient for this variable. Additionally, the coefficient is rather large at a value of -0.090. The interpretation being that, ceteris paribus, a parliamentary election in a financial hub country decreases the CDS spread by approximately 9% relative to the month prior. The other national factors related to elections fail to reach the significance level of 10% or better. However, what is interesting is the fact that the ideology factor does matter for the other financial hub countries. To clarify, the ideology of the winning party in one country has an influence on the sovereign CDS spread of the other financial hub countries. The coefficient for this variable is equal to 0.006 and is significant at the 10% level. The interpretation being that, ceteris paribus, the ideology of the winning party in a financial hub country increases the sovereign CDS spread of the other financial hub countries by 0.6% for each point that the ideology rating is above zero. The opposite applies to the left ideology where it decreases by 0.6% for each point the ideology rating is below zero. Interestingly, this is one of the biggest absolute coefficients for the ideology variable out of all models. The value for the ideology variable across the financial hub countries lies close to neutral with a mean value of approximately -2 (See Appendix P). In other words the effect of the average election that can be attributed to the ideology factor is equal to only a 1.2% decrease.

The GIIPS countries are analysed in an identical way, unlike the financial hub countries, there does not seem to be a significant within border effect to national elections. Neither the election itself nor the factors related to it, return significant results. However, similarly to how the elections in one financial hub country influenced the other financial hub countries, elections in one of the GIIPS countries also influence the other GIIPS countries. Unlike the financial hub countries the results here are far stronger. Both the election itself and the ideology factor seem to have a significant effect. For starters the coefficient for the GIIPS elections is equal to -0.044 which is significant at the 5% level. In other words, ceteris paribus, an election in one of the GIIPS countries decreases the sovereign CDS spread of the other GIIPS countries by approximately 4.4% before ideology is taken into account. Thus the effect of a party with a truly neutral ideology winning the election in one GIIPS country, decreases the sovereign CDS spread of the other GIIPS countries by approximately 4.4%. In regards to this truly neutral ideology, the average ideology for the GIIPS elections is left leaning and equal to approximately -13.4 (See Appendix P). The coefficient for this ideology factor is significant at the 1% level and equal to -0.005. Combining these two findings, ceteris paribus, the effect of the average party winning the election in one of the GIIPS countries, increases the sovereign CDS spread of the other GIIPS countries by approximately 2.3%.

The true interesting point of categorising these elections in two groups is that they can also be included in all other models. The financial hub elections do not seem to have a significant effect on Europe as a whole, nor on the world in general. Analysing the global clusters indicates that only Cluster 2 and 7 find results that are significant at the 10% level. However, the relation of the reactions to these elections is almost perfectly inverse between the clusters. Cluster 2 finding negative coefficients for both ideology and elections in general, while Cluster 7 finds positive coefficients of almost identical scale. Scaling back the clusters to only including European countries leads to Cluster 2 being the only cluster with significant results. The coefficient being equal to 0.026 for elections in general and 0.002 for the ideology factor. The first being significant at the 10% level while the latter is significant at the 1% level. Analysing the effect of financial hub elections on all countries individually indicates that in total thirteen countries seem to be significantly influenced by these elections in one way or another. Eight of which are influenced by at least the election in general, before taking ideology into account, the average effect being equal to only -0.575% while the median effect is equal to -4.25%. Interestingly enough, half of these countries are located outside of Europe, which partially explains the different results between the global and European clusters. The ideology factor produces significant coefficients for eleven countries, the vast majority of which have a positive sign. Four of these countries are based outside of Europe, which considering the pool of countries in the data, is still a lot. Both the average and median coefficient are almost identical, both essentially being equal to 0.003.

The elections in GIIPS countries seem to produce rather interesting results, when viewed from medium to far away, or in other words through regions or clusters, the results are far more significant than the financial hub elections. It appears that unlike the financial hub countries, it is both the election in general and the ideology of the winning party within the GIIPS countries which influences the other GIIPS countries. The coefficient for this election in general being significant at the 5% level and equal to -0.044 while the ideology factor is significant at the 1% level and equal to -0.005. While the election in general does not prove to have significant effect on the financial hub group, all of Europe nor global scale, the ideology factors does. Out of these three models, the financial hub countries seem to be influenced the most as it has the biggest coefficient. This coefficient is equal to -0.004, the coefficient for the global model is equal to -0.001 and both are significant at the 10% level. The results for Europe as a whole sits in between these two with a coefficient of -0.002 which is significant at the 5% level. The cluster based models, as was mentioned, perform better for the GIIPS variables than for the financial hub variables. The global cluster models return significant coefficients for three clusters in total versus two for the financial hub elections. Cluster 1 and 3 find significant results for both the general election variable and the ideology variable, the significance does differ between clusters. Cluster 2 only finds a significant coefficient for the ideology factor which reaches a significance level of 5% and is equal to -0.004. The ideology factor for Cluster 1 and 3 has a coefficient which is also negative in sign and equal to -0.003 and -0.006 respectively. The first of which being significant at the 5% level while the latter is significant at the 1% level. The coefficient for the general election variable for Cluster 1 and 3 is equal to -0.042 and -0.047. The former being significant at the 1% level while the latter is significant at the still respectable 10% level. Limiting the clusters to including only European countries increases the number of clusters that find significant results. However, this is not surprising, Cluster 1, 2 and 3 already consist fully out of European countries. European Cluster 4, which consists out the European countries of global Cluster 6, now also finds a significant result for the general election variable. The coefficient for this variable is equal to 0.069 and is significant at the 10% level. The same general interpretation still holds for these results.

Analysing the effect of these elections on the individual country level produces some surprising results, in total ten countries are significantly influenced by them. However, only three countries seem to be effected by the general election itself, namely: Croatia, France and Ireland. The coefficients being 0.056, -0.081 and -0.076 respectively, all being significant at the 5% level. The ideology factor produces more significant results as has been the general theme in the results, in total ten countries are significantly influenced by this factor. The average coefficient being equal to -0.0035 while the median coefficient is equal to -0.0023. Of these ten, only Croatia, who finds a coefficient of 0.004, finds a coefficient which is significant at the 1% level. Four of the remaining nine countries find a coefficient that is significant at the 5% level while the remaining five countries find a coefficient that is significant at the 10% level. Interestingly enough, four of the five GIIPS countries find significant results for this ideology factor, only Greece, whose model is among the weakest of all countries, fails to present a significant results for this variable. On the other hand, of the three financial hub countries, only France seems to be significantly influenced by the elections in GIIPS countries. France being influenced by both the general election and the ideology of the party that wins this election. Additionally, of all countries that produce significant results for these elections, 80% are located in Europe.

Difference-in-Difference Approach

The DID model is a unique approach to trying to understand the influence elections might have on sovereign credit spreads. Describing the results for each country separately would cover an unreasonable amount of pages while also taking up an unreasonable amount of the reader's time. Instead the results for the DID models are split up by placing them on a figurative tree which branches out to cover all outcomes, leading to each branch representing a certain type of result. The most interesting main branch is that for the results derived from the strongest models. Only the models that pass every single 'validity test' with flying colours are placed along this branch. This branch branches down into two smaller branches; those with significant results and those with insignificant results. In addition to this main branch there are two others; one for models that enter the grey area of the 'validity tests' and one stump for models that simply fail at least one of these tests. The grey area branch is split up in the same way as the first described branch. As the name implies, the results belonging to the branch of questionable models should be taken with a grain of salt. While these models pass the formal statistical tests, they start to show cracks under the pressure of the visual inspection. Some may only slightly deviate from the parallel trend while others may strongly deviate from it. This means that while the overall trend is parallel, the month to month trend is not, or at least not always. While these results could still be considered as robust enough, they simply do not meet up to the expectations that were set by the strongest models. Interpreting the results of these models at face value is therefore strongly discouraged as they are inferior to those from the strongest models.

Standard Difference-in-Difference Results. The branch of results that are the strongest will be presented first, this branch consists out of thirteen elections in total. Every single one of these results passes each of the three tests; the parallel-trends test, the granger causality test, and to improve robustness, a visual inspection. In order to pass the first two tests it is vital that neither test results are significant at the 5% level. Meanwhile, a model can only pass the visual inspection if the control and treatment group look mostly parallel (See Appendix G). Out of these thirteen elections, four to five can be considered as significant at the 10% level (See Table 2). The results for the 2021 Dutch election is one of these five elections and is technically not significant at the 10% level, however, its p-value of approximately 11% lies so close to the 10% level that it is misleading to not include it with the other four models. The remaining four models all relate to a different country; Austria, Belgium, Ireland, and Portugal. What is interesting about the results for these five models is that they essentially tell the same story. In each case they demonstrate that the country's CDS spread increased, relative to the control group, after the election. However, the scale of the increases is not consistent between the five models which could potentially be related to the fact that the scale of movements in CDS spreads is generally strongly related to scale of the CDS spread itself (See Appendix I). In addition to this it is also important to note that the scale of the CDS spreads differs between the five models, thus it is not appropriate to simply report the mean or median value and move on to the other results. The average treatment effect on the treated is equal to around a 33% increase relative to the CDS spread prior to the election. The reported coefficients being expressed in bp. These coefficients being significant for Austria, Ireland and Belgium at the 10% level and for Portugal at the 1% level. The insignificant results mostly mirror the positive sign that was found for the significant results. Out of these eight elections six have a positive coefficient (See Table 3). The only issue is that the coefficients for these elections can't be trusted due to their insignificant nature, thus they don't provide evidence of an effect. However, the same applies in inverse, insignificant results do not mean there is no effect, it simply means the results themselves do not back up the claim that there is an effect.

Table 2

Results From the Strongest Standard DID Model for the Elections With Significant Results

Country	Year	Coefficient	P>|t|	CDS Spread Before Election
Austria	09-2013	20.151	0.059	30.60 bp
Belgium	05-2014	6.794	0.054	42.11 bp
Ireland	02-2016	10.801	0.054	40.59 bp
Netherlands	03-2021	0.882	0.112	7.09 bp
Portugal	01-2022	9.391	0.009	22.61 bp

Note. The coefficient is expressed in bp and not a percentage.

Table 3

Results From the Strongest Standard DID Model for the Elections With Insignificant Results

Country	Year	Coefficient	P>|t|	CDS Spread Before Election
Austria	10-2017	-0.880	0.559	15.89 bp
Austria	09-2019	8.417	0.431	9.76 bp
Belgium	05-2019	0.402	0.898	16.70 bp
France	06-2017	12.334	0.571	19.54 bp
France	06-2022	0.065	0.858	10.00 bp
Germany	09-2013	28.149	0.195	28.96 bp
Italy	03-2018	50.378	0.152	67.03 bp
United Kingdom	05-2015	-1.152	0.772	20.51 bp

Note. The coefficient is expressed in bp and not a percentage.

The branch of results that are more questionable appear to lack significance in general with only a single election on this branch having a coefficient that meets the significance level of 10% (See Table 4). The election in question is the 2020 Irish election which has a coefficient that is equal to approximately negative 3.03 and is significant at the 5% significance level. The interpretation of this coefficient is that the sovereign CDS spread decreased by approximately 3bp more than expected after the election. There are five additional elections on this branch that all fail to meet the required 10% significance level (See Table 5). These elections are spread evenly between positive and negative sign, with three negative and two positive coefficients. As was mentioned ahead of presenting the DID model results, the questionable branch of results, while passing the two statistical tests for validity, strays into the grey area for the visual inspection of the parallel trend assumption. The results on this branch are therefore less robust than those on the previous branch. All in all, the results for this branch are rather inconclusive as a result of low significance. It’s doubtful whether this is truly problematic in the grand scheme of things, at the end of the day these models are objectively inferior to those on the strong branch. Thus the results of these models lack the power to disprove any of the results on the strong branch.

Table 4

Result From the Questionable Standard DID Model for the Election With a Significant Result

Country	Year	Coefficient	P>|t|	CDS Spread Before Election
Ireland	02-2020	-3.030	0.042	17.92 bp

Note. The coefficient is expressed in bp and not a percentage.

Table 5

Results From the Questionable Standard DID Model for the Elections With Insignificant Results

Country	Year	Coefficient	P>|t|	CDS Spread Before Election
Germany	09-2017	8.669	0.169	10.61 bp
Germany	09-2021	-0.653	0.432	7.83 bp
Netherlands	03-2017	3.805	0.514	26.47 bp
Spain	12-2015	-32.577	0.401	74.79 bp
United Kingdom	06-2017	-1.239	0.791	22.68 bp

Note. The coefficient is expressed in bp and not a percentage.

The elections that remain are the elections for which no significant model could be built. There are two main causes that can lead to an election be categorized on this branch. The first main cause is a lack of available control countries. This can be caused by two factors, the most fundamental being a lack of countries to which a country is correlated. The other factor requires that none of the control group countries are effected by an election of their own. In other words, the election for the treatment group is the only election that can take place. When less than two countries meet these two requirements, it is simply not possible to assemble a control group. The other main cause is related to the quality of the pool of available control countries. Only models that fail to reject both the statistical parallel-trend test and the granger-causality test at the 5% significance level can be considered. Successful rejection of even one of these two tests automatically rules out that combination of control group countries from being used. If not a single composition of the control group fails to reject both statistical tests it is not possible to analyse that election with a DID model with the data at hand. In addition to these two main causes there is an additional factor which can lead to an election being categorized on this branch. A number of elections in the data set are rather unfortunately timed. That is to say, they take place so closely to the earliest observation or an earlier election that there is not enough pre-treatment data to create a DID model. In total sixteen elections are placed on this branch, covering eight countries (See Table 6).

Table 6

List of Elections Without a Strong Standard DID Model

Country	Date
Greece	01-2015
Greece	09-2015
Greece	07-2019
Italy	02-2013
Poland	10-2015
Poland	10-2019
Portugal	10-2015
Portugal	10-2019
Spain	06-2016
Spain	04-2019
Spain	11-2019
Sweden	09-2014
Sweden	09-2018
United Kingdom	12-2019
United States	11-2016
United States	11-2020

Note. Here 'Date' is expressed as 'Month-Year'.

Alternative Difference-in-Difference Results. While the main DID model results have been presented, there is also an alternative model. However, this model is experimental in nature and lacks a library of academic papers in which this approach has been used. Thus the results from this approach should not be taken at face value, instead they should be interpreted as speculative. The approach in question aims to circumvent the issue of scale when comparing CDS spreads.

The results for the strongest models are similar but not identical to the results from the main DID model. These models pass all statistical tests, in addition to passing the visual parallel trend inspection (See Appendix H). While not all significant results are positive in sign, the vast majority of the significant results is still positive (See Table 7). The absolute scale of the coefficients has slightly decreased towards around 30%, relative to right before the election. In comparison, the absolute scale of the coefficients for the main model was slightly higher with an average movement of 33% (See Table 2). Another change compared to the strong models of the main model is that the number of significant results has increased with this experimental model from five to nine. Additionally, a bigger proportion of the models can now be placed on the strongest branch. In total twenty elections pass all validity tests, the nine elections with significant results now cover eight different countries in total. Four of these elections have results that are significant at the 5% level; the 2014 Belgium election, the 2022 French election, the 2020 Irish election and the 2014 Portuguese election. It should be mentioned however that the results for the 2022 French election are based on only one (1) month. This is due to the fact that the 2022 French election took place during the last observed month in the dataset. Therefore, the results for this election cannot be interpreted as the long-term effect and instead only the short-term effect. The other five elections are significant at the 10% level; the 2013 Austrian election, the 2017 German election, the 2018 Italian election and both the 2017 and 2021 Dutch elections. Meanwhile, the eleven insignificant coefficients are almost evenly split between positive and negative with there being only one more positive coefficient than negative ones (See Table 8).

Table 7

Results From the Strongest Alternative DID Model for the Elections With Significant Results

Country	Year	Coefficient	P>|t|	CDS Spread Before Election	CDS Spread on 01-2013
Austria	09-2013	20.858	0.092	30.60 bp	45.34 bp
Belgium	05-2014	15.839	0.020	42.11 bp	74.88 bp
France	06-2022	-2.980	0.030	10.00 bp	84.92 bp
Germany	09-2017	-3.771	0.085	10.61 bp	41.58 bp
Ireland	02-2020	-3.030	0.042	17.92 bp	190.99 bp
Italy	03-2018	17.208	0.084	67.03 bp	246.41 bp
Netherlands	03-2017	7.740	0.077	26.47 bp	50.87 bp
Netherlands	03-2021	4.287	0.051	7.09 bp	50.87 bp
Portugal	10-2015	14.217	0.033	163.90 bp	382.58 bp

Note. The coefficient is expressed as a percentage relative to the CDS spread on January 2013.

Table 8

Results From the Strongest Alternative DID Model for the Elections With Insignificant Results

Country	Year	Coefficient	P>|t|	CDS Spread Before Election	CDS Spread on 01-2013
Austria	10-2017	2.401	0.874	15.89 bp	45.34 bp
Austria	09-2019	4.682	0.456	9.76 bp	45.34 bp
Belgium	05-2019	1.476	0.493	16.70 bp	74.88 bp
France	06-2017	-0.301	0.977	19.54 bp	84.92 bp
Ireland	02-2016	-8.030	0.390	40.59 bp	190.99 bp
Portugal	10-2019	0.621	0.888	28.70 bp	382.58 bp
Portugal	01-2022	-3.195	0.191	22.61 bp	382.58 bp
Spain	12-2015	-15.875	0.321	74.79 bp	264.31 bp
Spain	04-2019	-2.400	0.524	43.94 bp	264.31 bp
United Kingdom	05-2015	1.494	0.823	20.51 bp	50.77 bp
United Kingdom	06-2017	8.692	0.133	22.68 bp	50.77 bp

Note. The coefficient is expressed as a percentage relative to the CDS spread on January 2013.

The branch of questionable results is much smaller than it was for the main model. In total there are only four elections on the branch of questionable results, the 2019 British is the only one of these election that is significant at the 5% level (See Table 9). The coefficient for this election is equal to approximately -12.27, or in other words, 12.27% of the sovereign's CDS spread at January 2013, thus, equal to a decrease of 36.82% relative to the CDS spread right before the election. The interpretation being that the treatment group saw a decrease, of the size described above, relative to the predicted value had there been no election. The remaining three elections fail to meet the 10% significance level (See Table 10). Similar to what was discovered in the main model it can be seen that there is a clear distinction between the overall sign for the 'strong' models and for the 'questionable' models. While the 'strong' models have a predominantly positive sign, the more questionable models have a negative sign.

Table 9

Result From the Questionable Alternative DID Model for the Election With a Significant Result

Country	Year	Coefficient	P>|t|	CDS Spread Before Election	CDS Spread on 01-2013
United Kingdom	12-2019	-12.271	0.029	16.92 bp	50.77 bp

Note. The coefficient is expressed as a percentage relative to the CDS spread on January 2013.

Table 10

Results From the Questionable Alternative DID Model for the Elections With Insignificant Results

Country	Year	Coefficient	P>|t|	CDS Spread Before Election	CDS Spread on 01-2013
Germany	09-2013	-6.446	0.576	28.96 bp	41.58 bp
Germany	09-2021	-2.020	0.220	7.83 bp	41.58 bp
Sweden	09-2014	8.339	0.127	13.81 bp	19.15 bp

Note. The coefficient is expressed as a percentage relative to the CDS spread on January 2013.

The remaining elections are those for which it was not possible to build a valid DID model, the reasons that were given for this branch in the main model also apply here. However, a big difference between then and now is that the number of elections on this branch has decreased from sixteen to only eleven (See Table 11). Of these eleven, nine are guaranteed to be placed on this branch as they lack enough valid control countries to make any DID model, or take place too close to either the earliest data point or an earlier election. Therefore, removing these nine elections from the total gives a far better idea of how big this difference really is. The difference can be explained by the fact that the fundamental differences in scale between CDS spreads have mostly been removed, essentially resulting in a situation where all movements in the CDS spreads are now corrected for scale.

Table 11

List of Elections Without a Strong Alternative DID Model

Country	Year
Greece	01-2015
Greece	09-2015
Greece	07-2019
Italy	02-2013
Poland	10-2015
Poland	10-2019
Spain	06-2016
Spain	11-2019
Sweden	09-2018
United States	11-2016
United States	11-2020

Note. Here ‘Date’ is expressed as ‘Month-Year’.

The interpretation of the above results, both those on the strong branch and those on the questionable branch, is that there is strong evidence that elections do in fact have an effect on a sovereign’s CDS spreads. This effect strongly leans towards an increase in the sovereign CDS spread. Sovereign CDS spreads essentially quantify the level of risk that is associated with a sovereign, thus, the increase that was found translates to an increase to the perceived risk. The uncertainty that is introduced during and after an election leads to higher levels of perceived risk, which lines up with the hypothesised reaction that elections have a monetary impact.

Conclusion

This thesis has succeeded in answering all the questions it posed. For starters, it has been demonstrated that there is no valid reason to question the validity of the results reported by Longstaff et al. (2011). This thesis has shown that their results and conclusions still apply, even when tested on completely different data. This statement is based on a number of things, most telling is the similarities between the generalized interpretation of the variables. That is to say, in almost all cases the average sign of the coefficients matches those of their models. Even modifying the data to look at percentual changes has not prevented this from happening. Therefore, it can be ascertained that not only do the findings of Longstaff et al. (2011) hold true to this date, but they also apply when the relative size of the changes is taken into account.

When it comes to the world of elections, it has been proven that there is a legitimate reason to question whether elections could play a role in explaining sovereign CDS spread movements. By analysing the effects of the U.S. presidential elections on each country’s sovereign CDS spread, it has not only been demonstrated that elections in general can strongly influence a country's sovereign CDS spread, but that even a foreign election can influence a country. While not all countries are significantly affected by the U.S. presidential elections, around two-thirds of the countries in the data are, all of which seeing increased sovereign CDS spreads during those months. The scale of this effect should also be mentioned, ceteris paribus, the average effect for these countries being a 15% increase to the sovereign CDS spreads of the country, relative to the month prior.

Further exploring the role national parliamentary elections might have in explaining a country's sovereign CDS spreads leads to multiple interesting findings. Firstly, when analysing on the individual country level, the average response to elections varies strongly between countries. More than a quarter of the countries for which a valid model could be formed return significant results for this factor. Half of these countries presenting a negative effect with the other half presenting a positive effect as a result of national parliamentary elections. These results highlight the subjectivity of elections. Analysing multiple countries at the same time makes it possible to analyse additional factors related to the elections and test this subjectivity. The results of the cluster based analysis are telling. The average reaction to the national parliamentary election itself being positive in terms of actually reducing the sovereign CDS spread of the country. The Ideology of the winning party does not seem to matter as much as the other factors. However, factors such as the election being close has the opposite effect, leading to an increase that is bigger in scale. When it comes down to the effect of incumbency, they are very subjective just as the effect of elections in general. While one cluster of countries reacts positively, the other cluster responds negatively.

Analysing either all European countries or all countries at the same time presents more generalized findings. Both models showcasing that, ceteris paribus, the general reaction to a parliamentary election, that was not close, where the incumbent did not win, and where the party that won had a perfectly neutral ideology, leads to a decrease in the country's sovereign CDS spread relative to the month prior. Additionally, when analysing all European countries it can be seen that the ideology of the party does in fact matter, the more left the ideology of the winning party, the more the sovereign CDS spread of that country will increase relative to the month prior. Thus, showcasing that the market prefers right leaning governments when it comes down to their money. Both incumbency and close elections have a similar effect, ceteris paribus, both these factors lead to increases in the sovereign CDS spread of the country relative to the month prior. These findings prove that national parliamentary elections, and even the factors related to them, can in fact influence the sovereign CDS spread of a country.

The elections of financial hub countries and GIIPS countries influence other countries, regardless of model specification. These variables, which are related to these elections, produce some of the strongest results of all election factors. The models show that financial hub elections mainly influence specific countries rather than an entire group of countries. It was also discovered that the other financial hub countries are strongly influenced by the ideology factor of the other financial hub elections. The more left the ideology of the winning party, the more the CDS spread will decrease if all other factors remain the same. The financial hub elections are the only elections that consistently lead to decreases in sovereign CDS spread of other countries when, ceteris paribus, a left party wins the election. The GIIPS elections have the opposite effect where the ideology of the winning party has extremely strong results for generalized groups. This includes groups such as the other GIIPS countries, the financial hub countries, but even Europe as a whole. Additionally, the election itself is far less important than the ideology of the winning party. In almost all cases, the sovereign CDS spread increases when, ceteris paribus, a left party wins a parliamentary election in a GIIPS country. Thus proving that these elections influence the other countries in its respective group, but also the countries outside of its group. Especially the response to the GIIPS ideology is telling, where Europe as a whole is affected by what type of party wins the parliamentary GIIPS elections.

The final point of research relates to the DID methodology, and whether elections still have a significant effect on CDS spreads when analysed with this approach. It was shown that it is specific elections rather than all elections for a given country that are influential. The DID models show that the long-term effects of national parliamentary elections is an increase in the sovereign CDS spreads for that country of up to 20% relative to before the election. Sovereign CDS spreads essentially quantify the level of risk that is associated with a sovereign, thus, the increase that was found translates to an increase to the perceived risk. The uncertainty that is introduced during and after an election leads to higher levels of perceived risk, which lines up with the hypothesised reaction to elections. Furthermore, the scale of the reaction to elections is rather ground breaking, existing literature claims that beyond border factors are far more relevant when trying to explain the sovereign CDS spread. However, the results here prove that this is a very narrow-minded view as elections themselves can be seen to correspond to huge increases in a sovereign’s CDS spread.

The answers to these questions can be combined to answer the main research question. All results point towards parliamentary elections having the power to influence not only the own country’s sovereign CDS spread, but the elections of certain countries are even proven to influence that of other countries. The U.S. presidential elections having some of the biggest effects of all elections on many European countries, showcasing that even elections on the other side of the Atlantic Ocean can be important. Furthermore, the importance of the variables relating to ideology, incumbency and whether the election was close, demonstrate that the voters in an election do in fact hold the power to influence the market reaction. By generally voting on parties with a right-leaning ideology, the population can reduce the perceived credit risk of elections, the more right the party, the bigger the decrease. Additionally, if the population decides to overwhelmingly vote for one specific party, they can also reduce the perceived credit risk of elections. Most interesting, is that the population of countries such as the GIIPS countries can even influence how other countries are affected by their elections. These results all come together to prove that the population of a country holds far more power in influencing the effects of elections on the sovereign credit risk of a country than has ever been hypothesised. In other words, the population of a country truly can choose to elect sovereign credit risk.

The implications of this thesis is that it has been proven that future research should at the very least consider including election based variables in their work. While elections are not frequent, they could severely influence results if the main point of research coincides with an election. Additionally, it has been shown that future research could be done to potentially predict the sovereign CDS market, opening the door to making investments based on the expected outcome of elections. Furthermore, citizens that prioritise their financial portfolio above everything else can use the results in this thesis to make a more informed choice regarding their vote in parliamentary elections.

Future research could analyse additional types of elections, but an angle that might be more interesting relates to expanding up on the ideology factors. For example, it would be interesting to see how the ideology factor would change if the relative ideology would be examined. In other words, how does the ideology of the parties differ from the party currently in power. Additional research could also include reproducing the used approach with a dataset that better represents each region rather than being strongly biased towards Europe. Future research could also use the found results to create a qualitative analysis on only a couple of countries. This research would be better suited to including all the intricacies of elections. Future research could also investigate whether elections influence other factors such as the local stock market.

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Appendix A.

Countries Analysed by DID

This appendix contains a table in which all the countries that have been analysed are listed. The countries have been sorted by region to provide a clearer picture of the distribution. Additionally, the countries are listed in alphabetical order.

	Asia	Europe	Latin America	Middle East	North America	Southern Africa
Countries in Region	Cyprus	Austria	Argentina	Israel	U.S.A.	South Africa
	South Korea	Belgium	Brazil	South Africa		
		Bulgaria	Chile	Turkey		
		Croatia	Mexico			
		Czechia	Uruguay			
		Denmark				
		Estonia				
		Finland				
		France				
		Germany				
		Greece				
		Hungary				
		Iceland				
		Ireland				
		Italy				
		Latvia				
		Lithuania				
		Netherlands				
		Norway				
		Poland				
		Portugal				
		Romania				
		Serbia				
		Slovakia				
		Slovenia				
		Spain				
		Sweden				
		Ukraine				
		U.K.				

Appendix B.

RILE Topics as Defined by Budge (2013)

This appendix presents a table covering all the topics on which the ideology variable is based. The table is split up into two sections; right and left. The topics under the 'Right' header are topics for which parties gain a right-ideology point when mentioned in their manifesto. The same applies to those under the 'Left' header, where these topics gain the party a left-ideology point. Additionally, 'Positive' and 'Negative' are additional requirements necessary to score the point, e.g., only when the military is mentioned in a positive light, such as increasing the military budget, will a party earn a right-ideology point. The 'Code' header is mentioned to ease potential reproduction as these codes are used for each respective topic in the Manifesto Project Database (Lehmann, Burst, Matthieß, Regel, Volkens, Weßels, & Zehnter, 2022).

Right		Left	
Code	Topic	Code	Topic
Per104	Military: Positive	Per105	Military: Negative
Per201	Freedom and Human Rights	Per103	Anti-imperialism
Per203	Constitutionalism: Positive	Per106	Peace
Per305	Political Authority	Per107	Internationalism: Positive
Per401	Free Market Economy	Per202	Democracy
Per402	Economic Incentives	Per403	Market Regulation
Per407	Protectionism: Negative	Per406	Protectionism: Positive
Per414	Economic Orthodoxy	Per404	Economic Planning
Per505	Welfare State Limitation	Per504	Welfare State Expansion
Per601	National Way of Life: Positive	Per412	Controlled Economy
Per603	Traditional Morality: Positive	Per413	Nationalisation
Per605	Law and Order	Per506	Education Expansion
Per606	Civic Mindedness: Positive	Per701	Labour Groups: Positive

Note. Adapted from "The standard right-left scale," by I. Budge, 2013, Manuscrito no publicado. Universidad de Essex, Reino Unido.

Appendix C.

Pairwise Correlation Matrix

This appendix reports the pairwise correlation matrix for the different countries based on the percentual change in the sovereign CDS spreads. The reported coefficients are correlations.

	Austria	Belgium	France	Germany	Ireland	Italy	Netherlands	Poland
Austria	1							
Belgium	0.8413*	1						
France	0.8206*	0.9108*	1					
Germany	0.8078*	0.8233*	0.8116*	1				
Ireland	0.7716*	0.8440*	0.8573*	0.8185*	1			
Italy	0.3071*	0.3678*	0.4729*	0.3499*	0.5396*	1		
Netherlands	0.7053*	0.7272*	0.6815*	0.7892*	0.7382*	0.2770*	1	
Poland	0.3005*	0.2764*	0.2528*	0.1444	0.3207*	0.2486*	0.1522	1
Spain	0.6332*	0.7250*	0.7892*	0.6553*	0.7756*	0.6633*	0.5043*	0.3595*
Sweden	0.7390*	0.7175*	0.7408*	0.7241*	0.6892*	0.4433*	0.6638*	0.3890*
U.K.	0.7153*	0.7430*	0.7140*	0.7693*	0.7799*	0.4447*	0.6872*	0.2555*
U.S.A	0.3519*	0.3259*	0.3618*	0.2659*	0.3171*	0.1431	0.3325*	0.1479
Argentina	0.0704	0.0641	0.0478	0.0220	0.1494	0.0920	0.0842	0.0633
Brazil	0.4885*	0.4495*	0.5224*	0.5181*	0.4508*	0.3665*	0.3060*	0.2419*
Bulgaria	0.3096*	0.2887*	0.2367*	0.2456*	0.2386*	0.1693*	0.2595*	0.3622*
Chile	0.3991*	0.3428*	0.4398*	0.3993*	0.3385*	0.2972*	0.2413*	0.2680*
Croatia	0.6010*	0.5540*	0.5253*	0.4676*	0.5538*	0.2274*	0.3528*	0.5704*
Cyprus	0.2266*	0.2667*	0.2692*	0.2952*	0.3667*	0.1821*	0.3159*	0.0607
Czechia	0.2836*	0.2390*	0.2182*	0.2774*	0.2907*	0.137	0.1859*	0.3965*
Denmark	0.7652*	0.7846*	0.6898*	0.8386*	0.7451*	0.2681*	0.7732*	0.2135*
Estonia	-0.2603*	-0.2598*	-0.2469*	-0.1625*	-0.2095*	-0.0738	-0.1591*	0.1265
Finland	0.6384*	0.6772*	0.5759*	0.6170*	0.5753*	0.2644*	0.5354*	0.1775*
Greece	0.2159*	0.1594*	0.1335	0.2523*	0.2494*	0.2802*	0.1751*	0.0794
Hungary	0.5955*	0.5834*	0.5412*	0.5234*	0.5391*	0.2247*	0.4649*	0.3895*
Iceland	0.2083*	0.1042	0.0946	0.108	0.0854	0.0239	0.1037	0.1044
Israel	0.5384*	0.5724*	0.5595*	0.5072*	0.5195*	0.3064*	0.3936*	0.3028*
Latvia	0.4181*	0.4222*	0.4269*	0.4013*	0.4573*	0.2980*	0.3232*	0.4285*
Lithuania	0.3236*	0.3288*	0.3353*	0.3046*	0.3525*	0.2237*	0.2587*	0.4085*
Mexico	0.5801*	0.5455*	0.6392*	0.5657*	0.5504*	0.3759*	0.3857*	0.2880*
Norway	0.6770*	0.6532*	0.6252*	0.6649*	0.5936*	0.2040*	0.6915*	0.2583*
Portugal	0.5959*	0.6845*	0.7369*	0.6522*	0.7724*	0.7085*	0.5550*	0.3458*
Romania	0.2961*	0.2885*	0.2920*	0.2444*	0.2702*	0.2864*	0.2141*	0.4194*
Serbia	0.0639	0.1055	0.0479	0.0495	0.1294	0.0332	0.0577	0.2745*
Slovakia	0.5534*	0.4982*	0.5085*	0.4846*	0.5298*	0.2529*	0.3704*	0.3845*
Slovenia	0.2467*	0.2593*	0.2372*	0.2205*	0.3655*	0.2606*	0.2322*	0.3146*
S. Africa	0.5300*	0.4906*	0.5326*	0.5339*	0.4659*	0.2599*	0.3645*	0.2671*
S. Korea	0.2484*	0.1961*	0.2439*	0.2492*	0.2583*	0.2816*	0.1505	0.3786*
Turkey	0.3232*	0.2830*	0.3066*	0.3244*	0.3449*	0.4566*	0.2412*	0.2005*
Ukraine	0.3914*	0.2678*	0.2683*	0.1997*	0.2485*	0.0931	0.1914*	0.4945*
Uruguay	0.2227*	0.2185*	0.2640*	0.2973*	0.2215*	0.1936*	0.1339	0.2066*

* *$p<0.10$*

Appendix C Continued

	Spain	Sweden	U.K.	U.S.A.	Argentina	Brazil	Bulgaria	Chile
Spain	1							
Sweden	0.6679*	1						
U.K.	0.6278*	0.7010*	1					
U.S.A	0.3219*	0.3410*	0.2768*	1				
Argentina	0.0611	0.0754	0.0345	0.0903	1			
Brazil	0.5700*	0.4809*	0.4308*	0.2067*	0.1439	1		
Bulgaria	0.2692*	0.3277*	0.2436*	0.1058	-0.0261	0.2973*	1	
Chile	0.4812*	0.4487*	0.3309*	0.1899*	0.1455	0.7161*	0.1838*	1
Croatia	0.5297*	0.5057*	0.4104*	0.2237*	0.0783	0.5830*	0.5046*	0.4810*
Cyprus	0.2441*	0.2082*	0.3388*	0.1986*	0.0473	0.0550	0.0456	0.0077
Czechia	0.2391*	0.2319*	0.2323*	0.0868	0.0656	0.3747*	0.3302*	0.3354*
Denmark	0.5347*	0.7282*	0.7361*	0.2917*	0.0267	0.3268*	0.2793*	0.2583*
Estonia	-0.2069*	-0.2209*	-0.2115*	-0.1342	0.0036	-0.0066	-0.0581	0.0249
Finland	0.5352*	0.6618*	0.5559*	0.3287*	0.0570	0.3276*	0.2718*	0.2391*
Greece	0.2017*	0.1468	0.2886*	0.1244	0.0666	0.2837*	0.1291	0.2101*
Hungary	0.4921*	0.5405*	0.4915*	0.2549*	0.0411	0.4427*	0.5768*	0.3015*
Iceland	0.0952	0.1472	0.0944	0.0835	0.0415	0.0243	0.1200	0.0649
Israel	0.5117*	0.4614*	0.4831*	0.2256*	-0.0370	0.6124*	0.2208*	0.5091*
Latvia	0.4006*	0.3746*	0.4241*	0.1910*	0.0411	0.3679*	0.5118*	0.2670*
Lithuania	0.3155*	0.3195*	0.3208*	0.1507	0.0662	0.3131*	0.4278*	0.1972*
Mexico	0.6669*	0.5823*	0.5318*	0.3098*	0.0785	0.7903*	0.2542*	0.8100*
Norway	0.4510*	0.7331*	0.6444*	0.3692*	0.0131	0.3293*	0.3233*	0.2702*
Portugal	0.8540*	0.6491*	0.6171*	0.3243*	0.0943	0.4964*	0.2690*	0.4261*
Romania	0.3400*	0.3869*	0.2089*	0.1572*	0.1089	0.2014*	0.3083*	0.2300*
Serbia	0.1427	0.1112	0.0600	0.1995*	0.0464	0.0662	0.1747*	0.0560
Slovakia	0.5011*	0.4692*	0.4275*	0.3053*	-0.0049	0.5286*	0.4043*	0.4218*
Slovenia	0.2710*	0.2608*	0.2217*	0.1621*	0.1338	0.2748*	0.2217*	0.1692*
S. Africa	0.5625*	0.5118*	0.4854*	0.2290*	0.1775*	0.8363*	0.2253*	0.7596*
S. Korea	0.3763*	0.3736*	0.2825*	0.1301	0.2274*	0.4599*	0.0716	0.5670*
Turkey	0.4359*	0.3889*	0.3145*	0.1335	0.2262*	0.6711*	0.2398*	0.4883*
Ukraine	0.2500*	0.3208*	0.2629*	0.1773*	0.0402	0.2519*	0.2139*	0.2089*
Uruguay	0.3617*	0.1396	0.1415	0.1358	-0.0560	0.5433*	0.2014*	0.3134*

* *p<0.10*

Appendix C Continued

	Croatia	Cyprus	Czechia	Denmark	Estonia	Finland	Greece	Hungary	Iceland	Israel	Latvia	Lithuania	Mexico
Croatia	1												
Cyprus	0.1039	1											
Czechia	0.5368*	0.0447	1										
Denmark	0.4008*	0.2894*	0.2668*	1									
Estonia	-0.0273	-0.1602*	0.1440	-0.1649*	1								
Finland	0.4041*	0.2128*	0.1817*	0.6779*	-0.3913*	1							
Greece	0.1738*	-0.0834	0.0489	0.2262*	-0.0160	0.1540	1						
Hungary	0.6310*	0.2564*	0.4420*	0.5030*	-0.1746*	0.5315*	0.0413	1					
Iceland	0.1646*	0.0089	0.1508	0.1057	-0.0246	0.1255	0.0355	0.0684	1				
Israel	0.5724*	0.0036	0.3820*	0.3828*	-0.0741	0.4477*	0.1565*	0.5053*	0.1028	1			
Latvia	0.5481*	0.1547	0.5264*	0.3526*	0.1361	0.2808*	-0.0364	0.6346*	0.1436	0.4225*	1		
Lithuania	0.4576*	0.0811	0.4760*	0.2825*	0.1737*	0.2025*	-0.0545	0.6000*	0.1413	0.3806*	0.7627*	1	
Mexico	0.5686*	0.1082	0.3226*	0.4398*	-0.0480	0.3997*	0.2853*	0.4540*	0.0352	0.6064*	0.3390*	0.2822*	1
Norway	0.3839*	0.2951*	0.1777*	0.7666*	-0.1950*	0.5552*	0.1724*	0.4778*	0.1416	0.3583*	0.2792*	0.2643*	0.4198*
Portugal	0.4908*	0.2617*	0.1472	0.5500*	-0.1426	0.5385*	0.2745*	0.4506*	0.0843	0.5598*	0.3712*	0.2836*	0.5693*
Romania	0.4051*	0.0468	0.2325*	0.2636*	-0.0055	0.3409*	0.1499	0.4633*	0.0955	0.2004*	0.2477*	0.3180*	0.2948*
Serbia	0.2089*	0.0094	0.1297	0.0221	-0.0007	0.3139*	0.0170	0.3540*	0.1391	0.2627*	0.2236*	0.3711*	0.0659
Slovakia	0.6015*	0.1192	0.5989*	0.3982*	0.0038	0.3769*	0.0653	0.5776*	0.1432	0.4927*	0.5617*	0.4752*	0.5050*
Slovenia	0.4952*	0.2414*	0.5558*	0.2678*	0.1591*	0.1936*	0.0102	0.4964*	0.0101	0.3321*	0.5172*	0.4329*	0.2250*
S. Africa	0.5701*	0.1039	0.3055*	0.4004*	-0.0769	0.3672*	0.2604*	0.4376*	0.0639	0.6030*	0.2993*	0.2478*	0.8524*
S. Korea	0.3216*	0.2114*	0.2311*	0.2596*	0.0374	0.2273*	0.2179*	0.2313*	0.0142	0.1725*	0.1299	0.2118*	0.5504*
Turkey	0.3739*	0.0492	0.2759*	0.2781*	-0.0709	0.3099*	0.3564*	0.2798*	0.1087	0.3846*	0.2229*	0.2327*	0.4933*
Ukraine	0.4625*	0.0508	0.1909*	0.2305*	-0.1152	0.1758*	0.2173*	0.3680*	0.0531	0.2050*	0.1909*	0.1274	0.3646*
Uruguay	0.3578*	-0.0276	0.3674*	0.1239	0.0500	0.1348	0.2284*	0.2844*	0.0395	0.2527*	0.1874*	0.2324*	0.4485*

** p<0.10*

Appendix C Continued

	Norway	Portugal	Romania	Serbia	Slovakia	Slovenia	S. Africa	S. Korea	Turkey	Ukraine	Uruguay
Norway	1										
Portugal	0.4671*	1									
Romania	0.3491*	0.3921*	1								
Serbia	0.0426	0.2057*	0.3357*	1							
Slovakia	0.3781*	0.4201*	0.2974*	0.1685*	1						
Slovenia	0.2134*	0.2407*	0.2057*	0.1819*	0.4744*	1					
S. Africa	0.3965*	0.4686*	0.2753*	0.0670	0.4896*	0.2261*	1				
S. Korea	0.2722*	0.3049*	0.3120*	0.2319*	0.1675*	0.1174	0.5477*	1			
Turkey	0.2775*	0.4779*	0.2497*	0.1402	0.3656*	0.1907*	0.5927*	0.4221*	1		
Ukraine	0.2417*	0.2569*	0.3272*	0.0676	0.2649*	0.0846	0.3162*	0.2229*	0.1769*	1	
Uruguay	0.1540	0.2647*	0.4645*	0.0650	0.3700*	0.2142*	0.4144*	0.2652*	0.2965*	0.1791*	1

* $p<0.10$

Appendix D.

Principal Component Analysis Figures

This appendix consists of the figures related to the first three principal components of the performed PCA. These figures show how strongly the monthly percentual change in sovereign CDS spread is related to the respective principal component for each country. These results are obtained from the standard PCA and are not rotated.

Figure D1

The Relation Between the First Principal Components and the Monthly Percentual Change in Sovereign CDS Spreads for Each Country

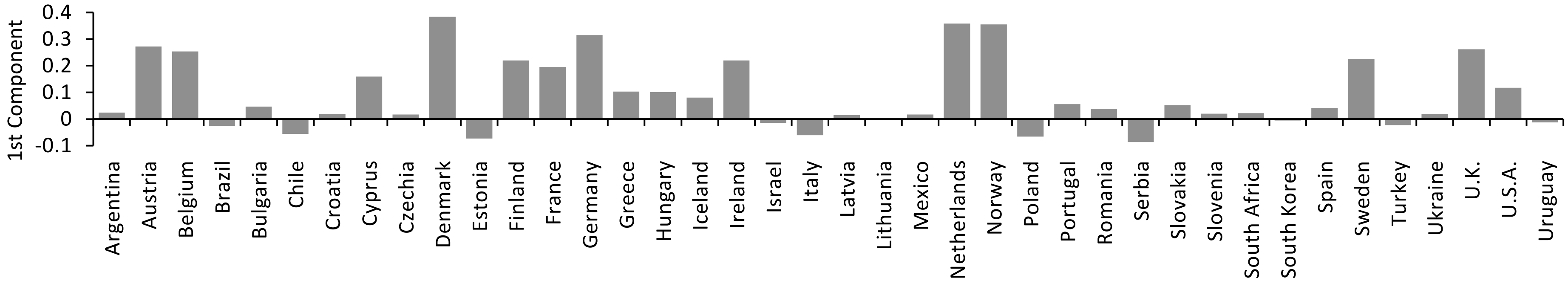


Figure D2

The Relation Between the Second Principal Components and the Monthly Percentual Change in Sovereign CDS Spreads for Each Country.

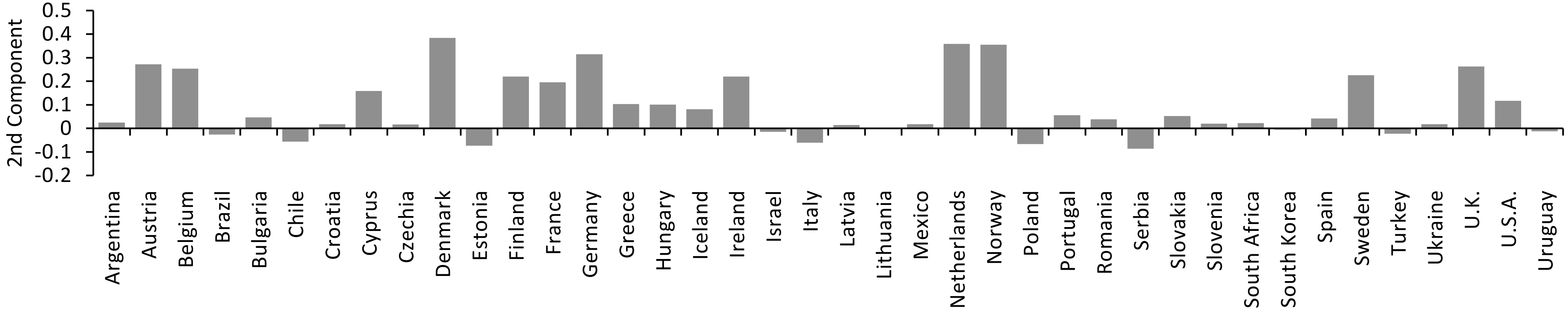
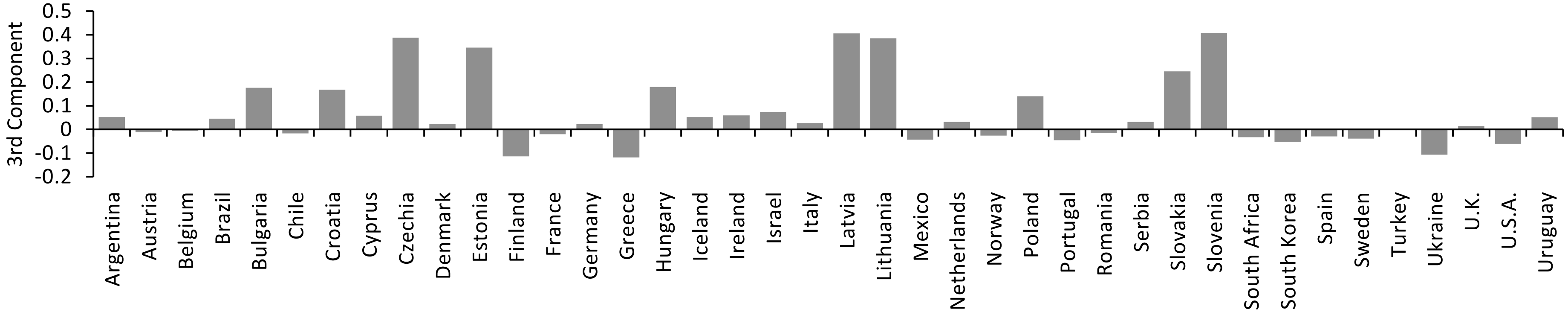


Figure D3

The Relation Between the Third Principal Components and the Monthly Percentual Change in Sovereign CDS Spreads for Each Country.



Appendix E.

Principal Component Analysis Equamax Rotation

This appendix reports the summarized version of the PCA after it has been rotated using the equamax rotation. Only the countries which had a coefficient of 0.300 or greater for any of the components are included in this table to improve interpretability.

Country	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Comp. 5	Comp. 6	Comp. 7	Comp. 8	Comp. 9
Argentina								0.5938	
Brazil		0.3942							
Chile		0.4337							
Cyprus									-0.4906
Czechia			0.3874						
Denmark	0.3837								
Estonia			0.3460			-0.3196			
Finland						0.3378			
Germany	0.3147								
Greece							0.3829		0.3953
Iceland									0.5491
Israel		0.3029							
Italy				0.6402					
Latvia			0.4061						
Lithuania			0.3849						
Mexico		0.3850							
Netherlands	0.3580								
Norway	0.3552								
Poland					0.5355				
Portugal				0.4337					
Romania							0.4501		
Serbia						0.6401			
Slovenia			0.4070						
S. Africa		0.4165							
S. Korea								0.4525	
Spain				0.3637					
Ukraine					0.6562				
Uruguay							0.6136		

Appendix F.

Countries by Cluster

This appendix presents the clusters that were formed by the cluster analyses. The first table reports the clusters that were formed when only the European countries were included in the analyses. The second table reports the clusters that were formed when all forty countries were used in the analyses. It should be noted that these were independent analyses, overlap in the results is purely coincidental. It should be noted that the countries are allocated to the clusters regardless of whether significant models can be built for these countries. Inclusion of a country in this list does not automatically mean they were used in the respective cluster-based models.

Table F1

Summary Table for the Allocation of Countries to the Clusters for European Countries Only

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Countries in Cluster	Austria	Denmark	Italy	Poland	Bulgaria	Greece	Ukraine
	Belgium	Finland	Portugal	Romania	Croatia		
	France	Netherlands	Spain		Czechia		
	Germany	Norway			Estonia		
	Ireland	Sweden			Hungary		
	U.K.				Iceland		
					Latvia		
					Lithuania		
					Serbia		
					Slovakia		
					Slovenia		
Number of Countries in Cluster	6	5	3	2	11	1	1

Table F2

Summary Table for the Allocation of Countries to the Clusters for All Countries

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	Cluster 9	Cluster 10
Countries in Cluster	Austria Belgium France Germany Ireland U.K.	Denmark Finland Netherlands Norway Sweden	Italy Portugal Spain	Brazil Chile Mexico South Africa	Turkey	Poland Romania South Korea Uruguay	Bulgaria Croatia Cyprus Czechia Estonia Hungary Iceland Israel Latvia Lithuania Serbia Slovakia Slovenia U.S.A.	Greece	Argentina	Ukraine
Number of Countries in Cluster	6	5	3	4	1	4	14	1	1	1

Appendix G.

Standard DID Model Graphs

This appendix consists out of all the graphs from the standard DID model used to verify the visual parallel trend assumption. The left figure always represents the observed means graph, this graph presents the unmodified means of both the control group and the treatment group. The right figure always represents a visual representation of the linear-trends model on which the results of the DID model are based. The vertical axis is represents the CDS spread while the horizontal axis represents the time in months. The figures will be presented on the next page onwards due to size.

Figure G1

DID Model Graph for the German Parliamentary Election of September 2013.

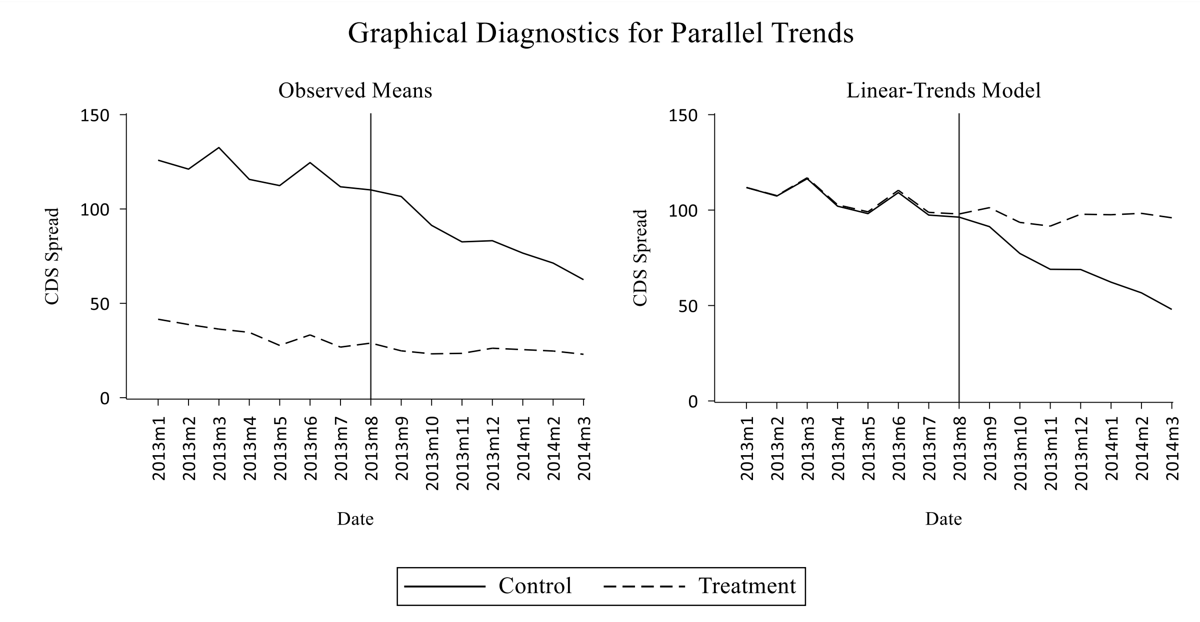


Figure G2

DID Model Graph for the German Parliamentary Election of September 2017.

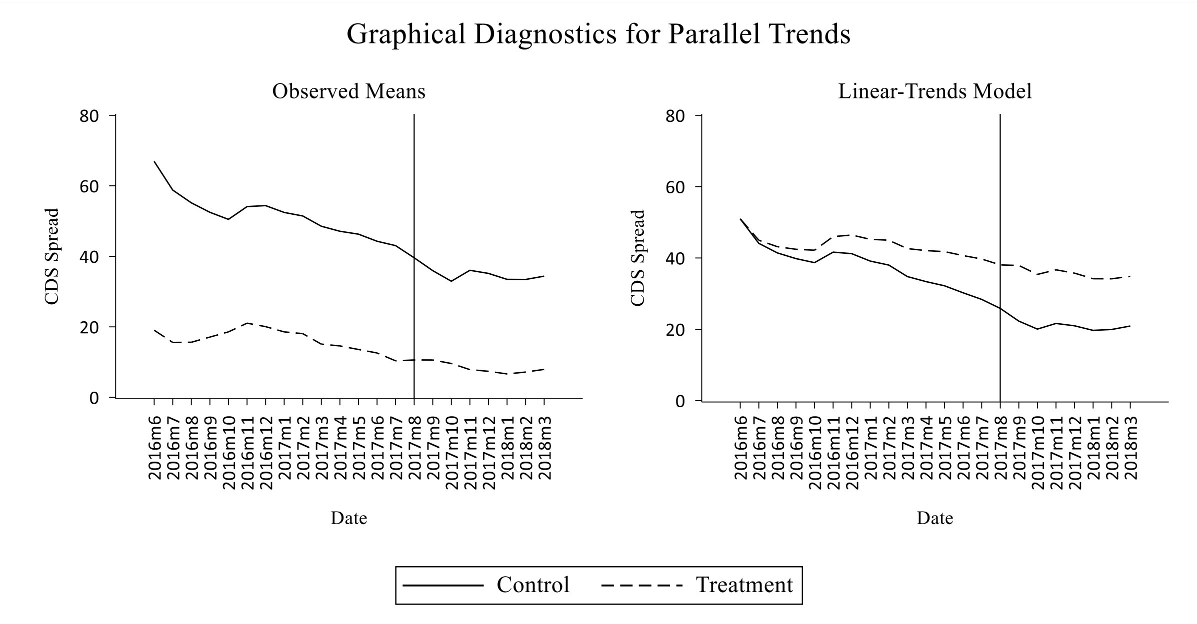


Figure G3

DID Model Graph for the German Parliamentary Election of September 2021.

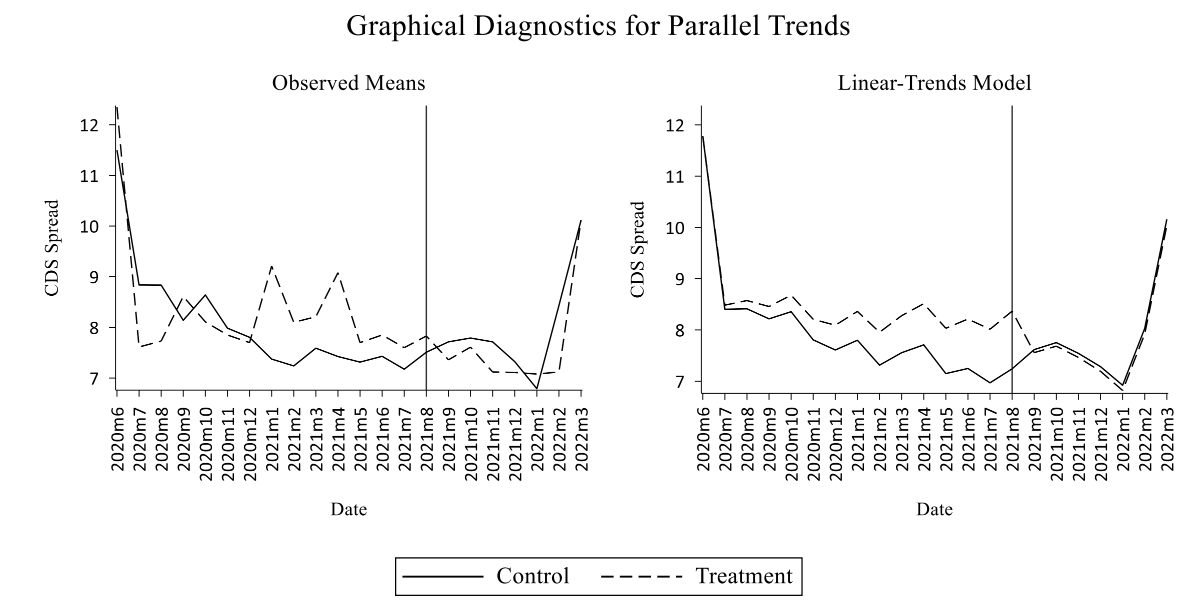


Figure G3

DID Model Graph for the German Parliamentary Election of September 2021.

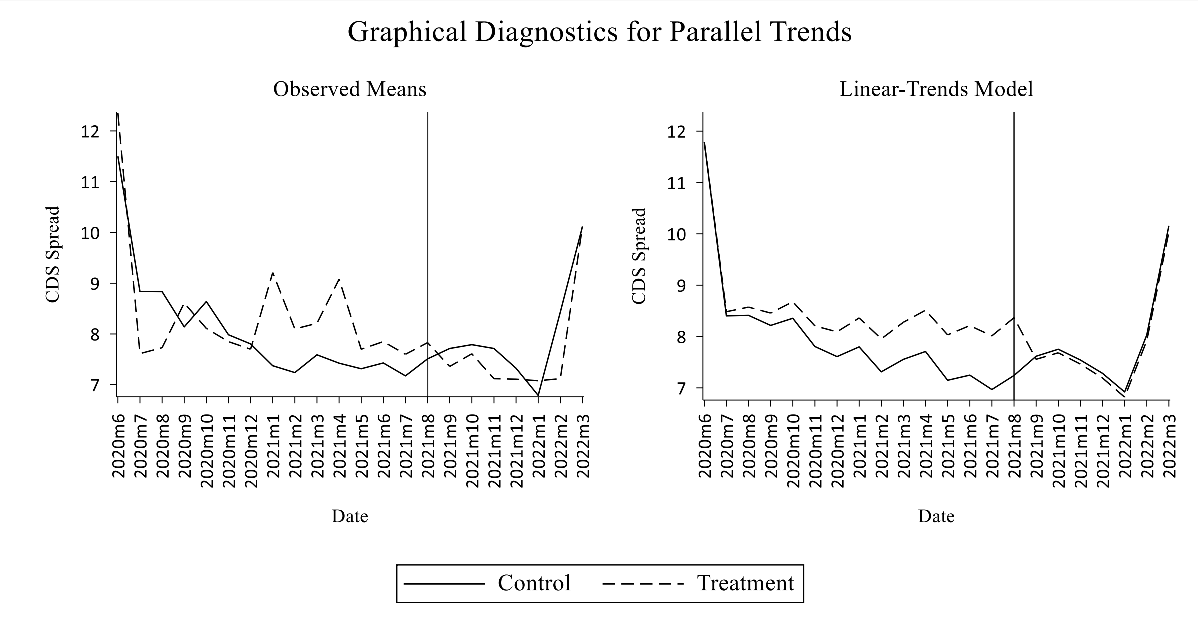


Figure G4

DID Model Graph for the Austrian Parliamentary Election of September 2013.

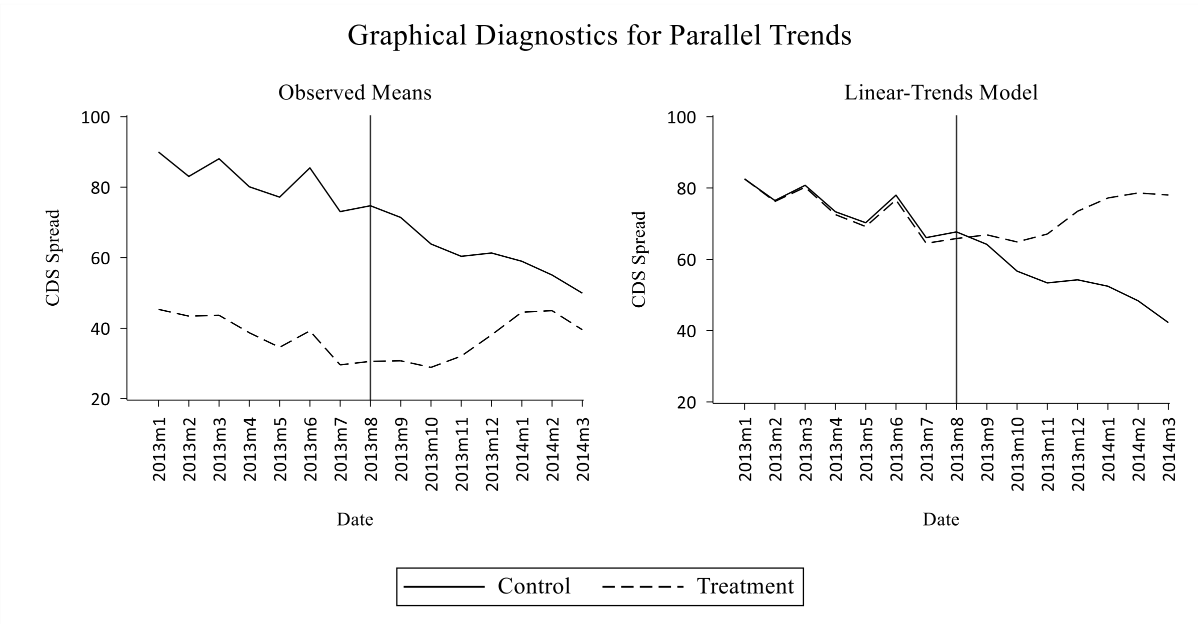


Figure G5

DID Model Graph for the Austrian Parliamentary Election of October 2017.

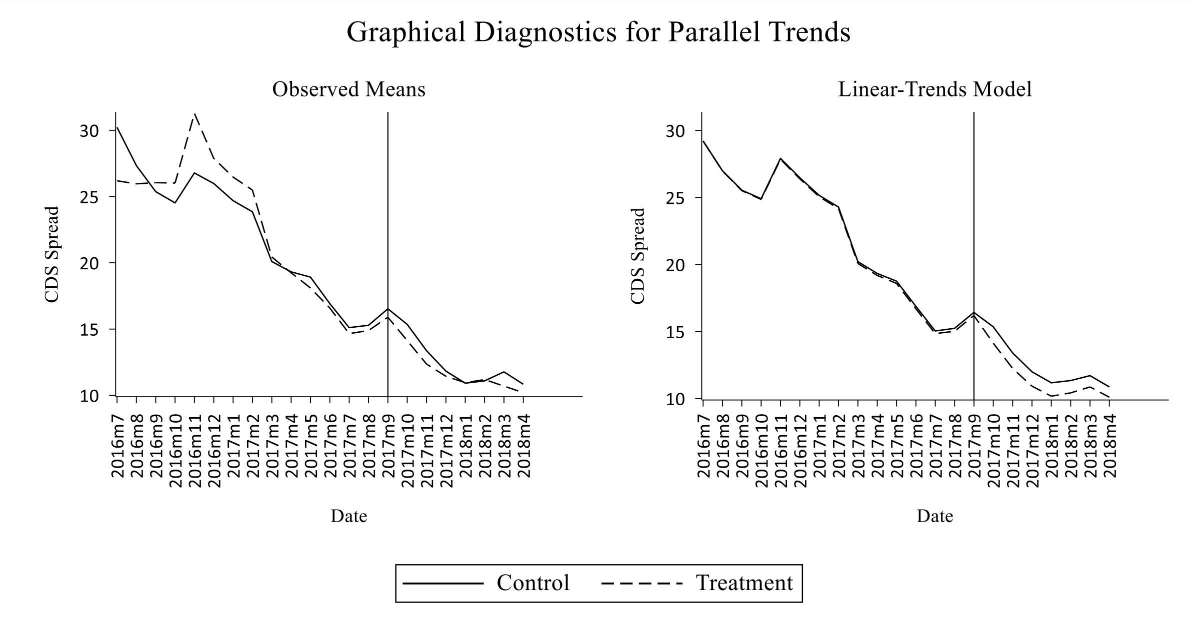


Figure G6

DID Model Graph for the Austrian Parliamentary Election of September 2019.

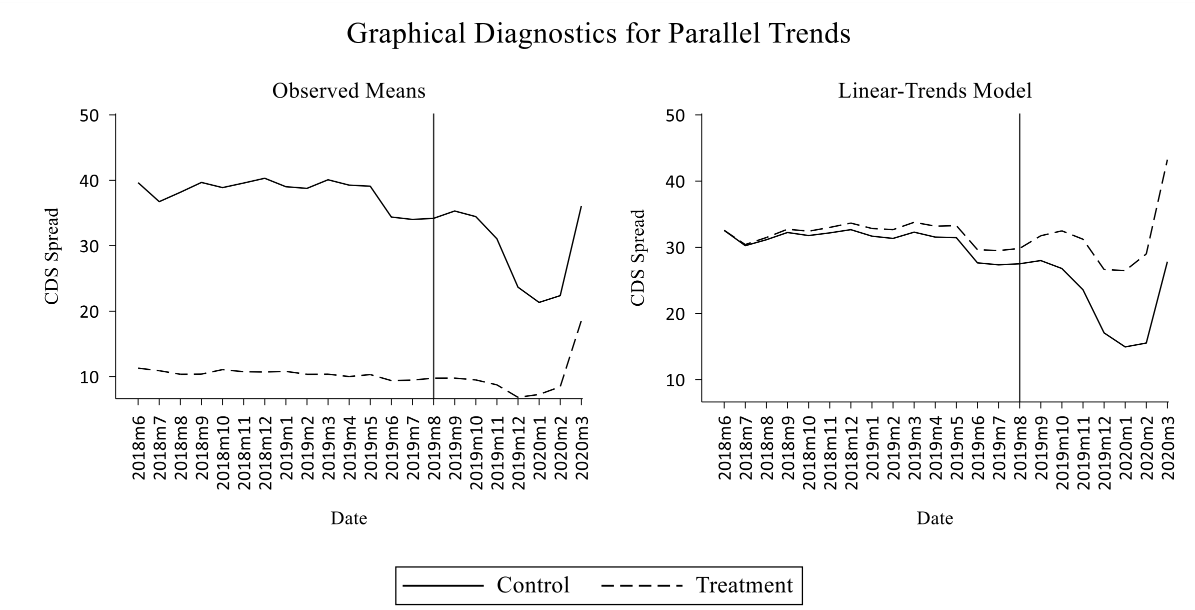


Figure G7

DID Model Graph for the Belgium Parliamentary Election of May 2014.

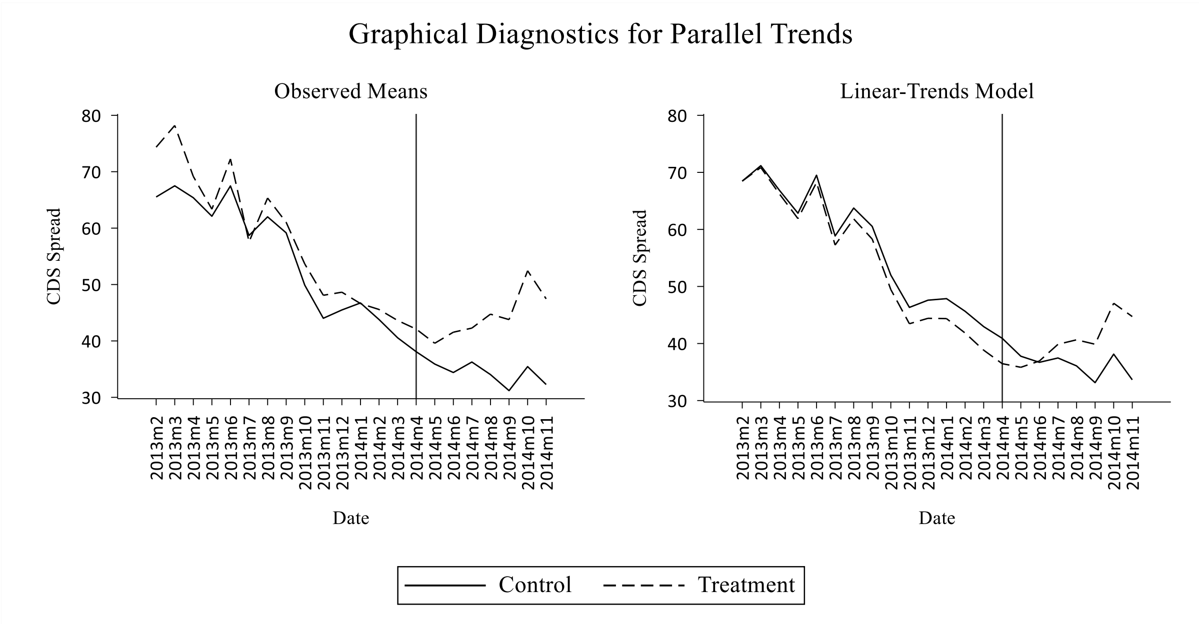


Figure G8

DID Model Graph for the Belgium Parliamentary Election of May 2019.

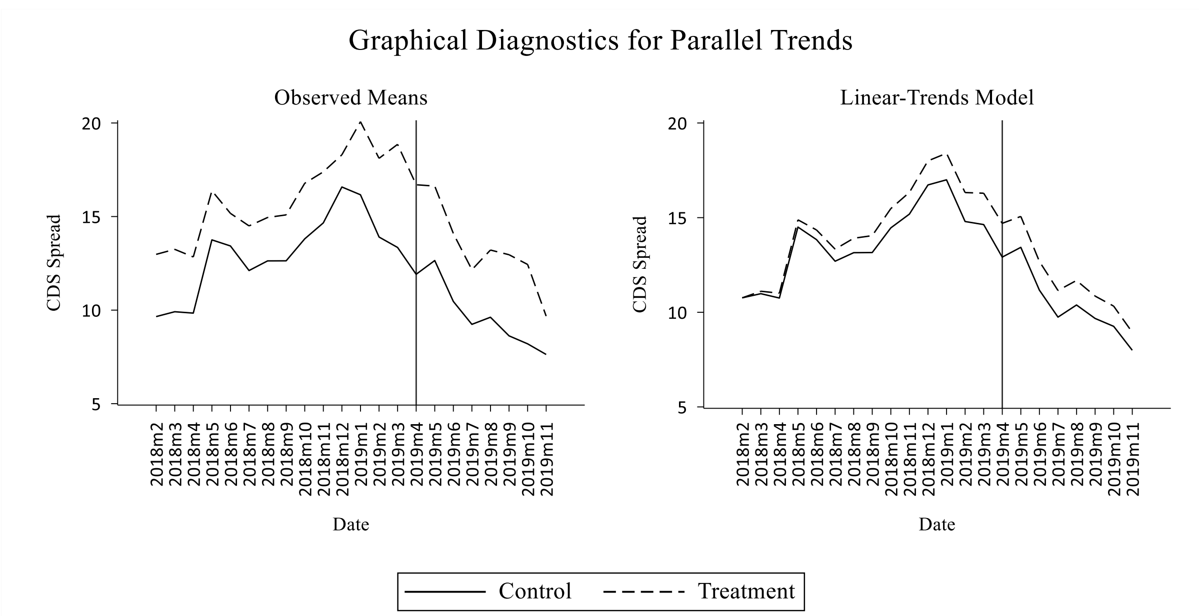


Figure G9

DID Model Graph for the French Parliamentary Election of June 2017.

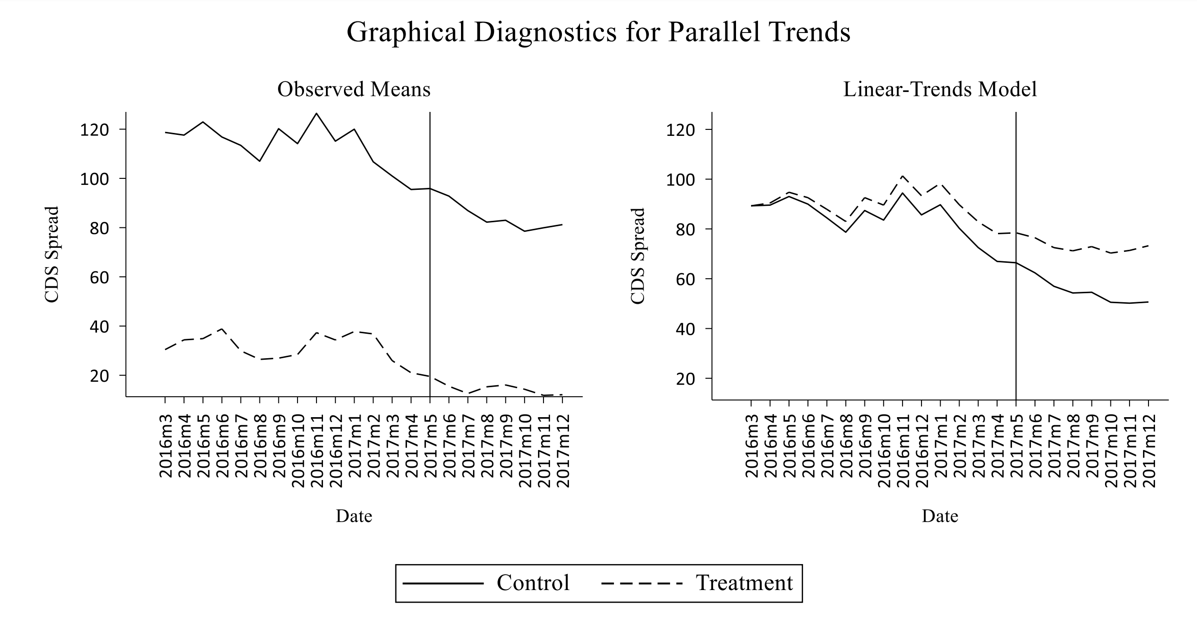


Figure G10

DID Model Graph for the French Parliamentary Election of June 2022.

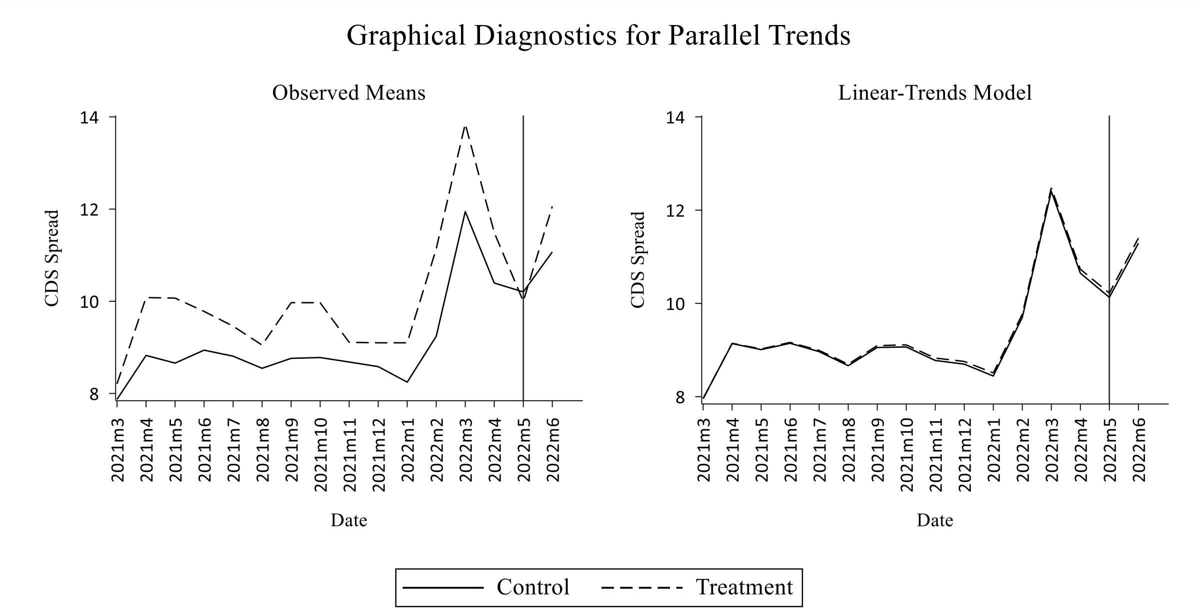


Figure G11

DID Model Graph for the Irish Parliamentary Election of February 2016.

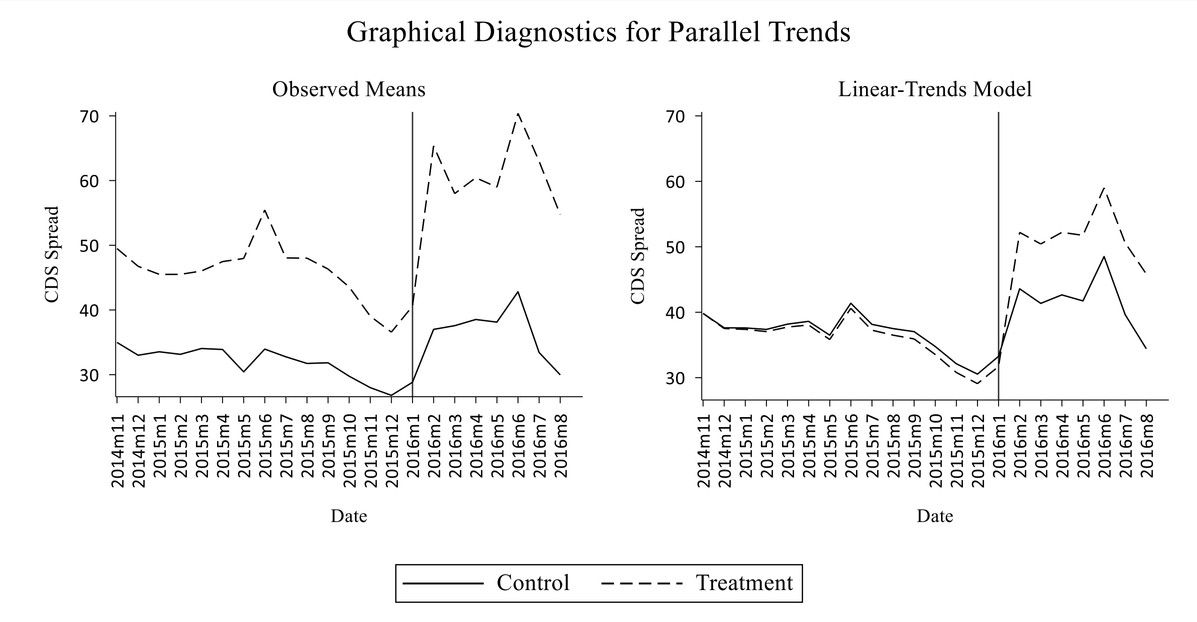


Figure G12

DID Model Graph for the Irish Parliamentary Election of February 2020.

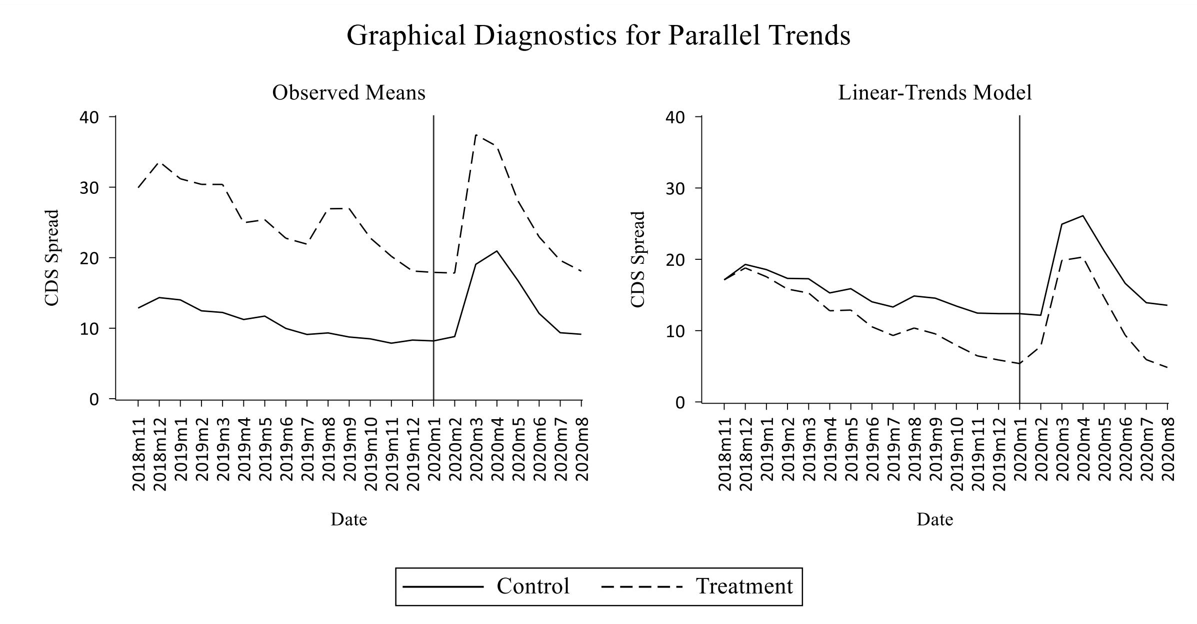


Figure G13

DID Model Graph for the Italian Parliamentary Election of March 2018.

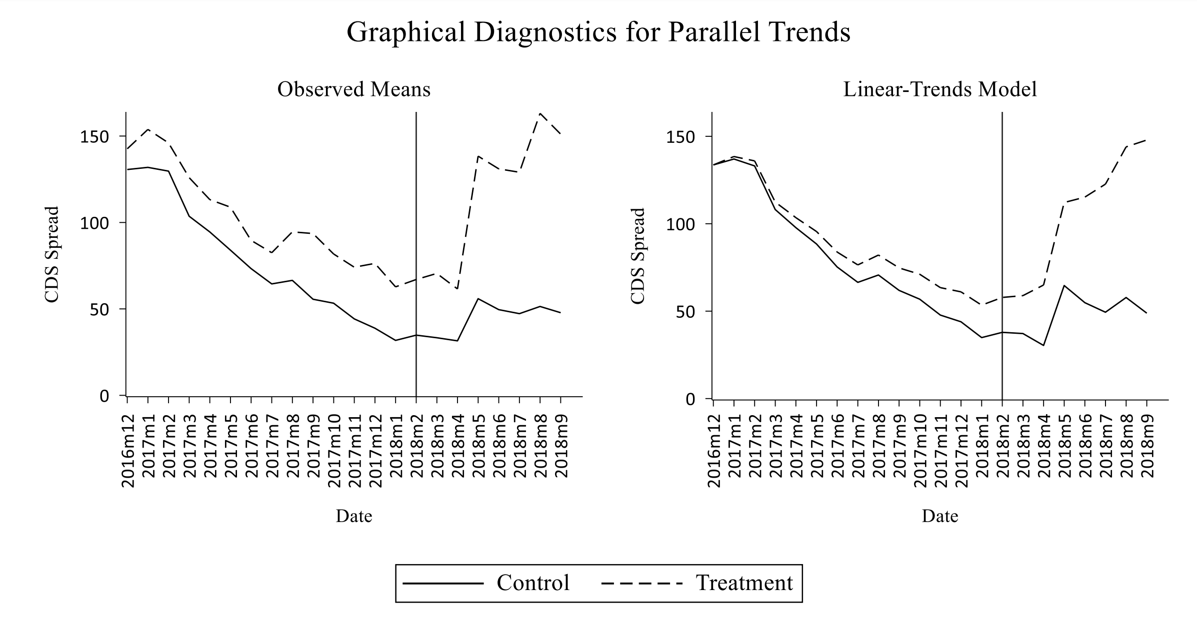


Figure G14

DID Model Graph for the Dutch Parliamentary Election of March 2017.

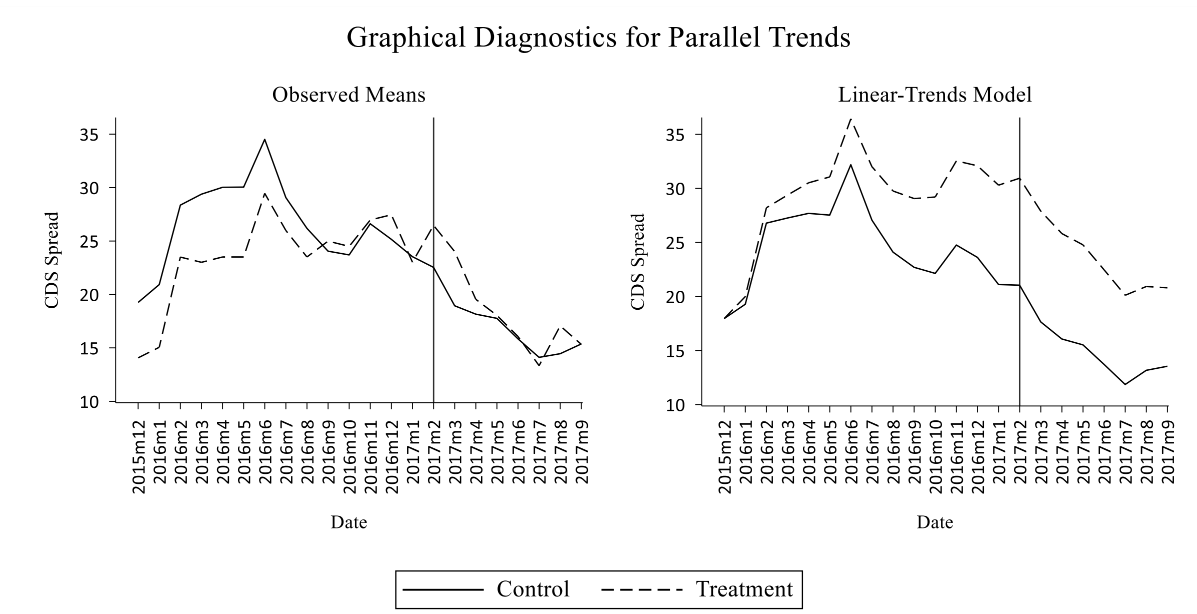


Figure G15

DID Model Graph for the Dutch Parliamentary Election of March 2021.

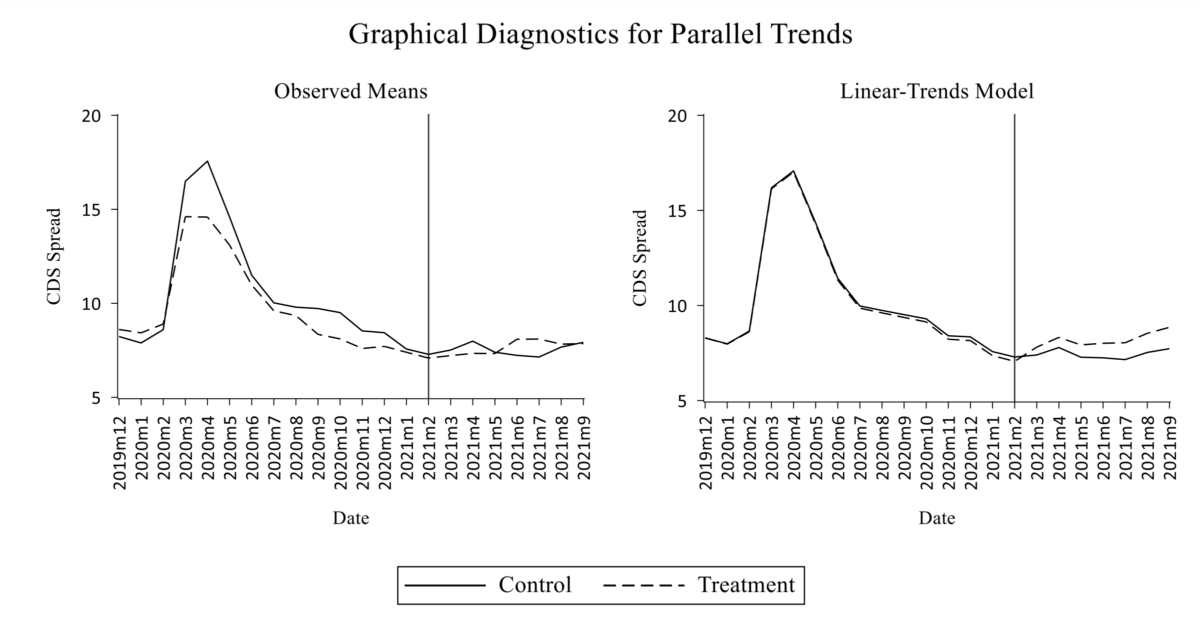


Figure G16

DID Model Graph for the Spanish Parliamentary Election of December 2015.

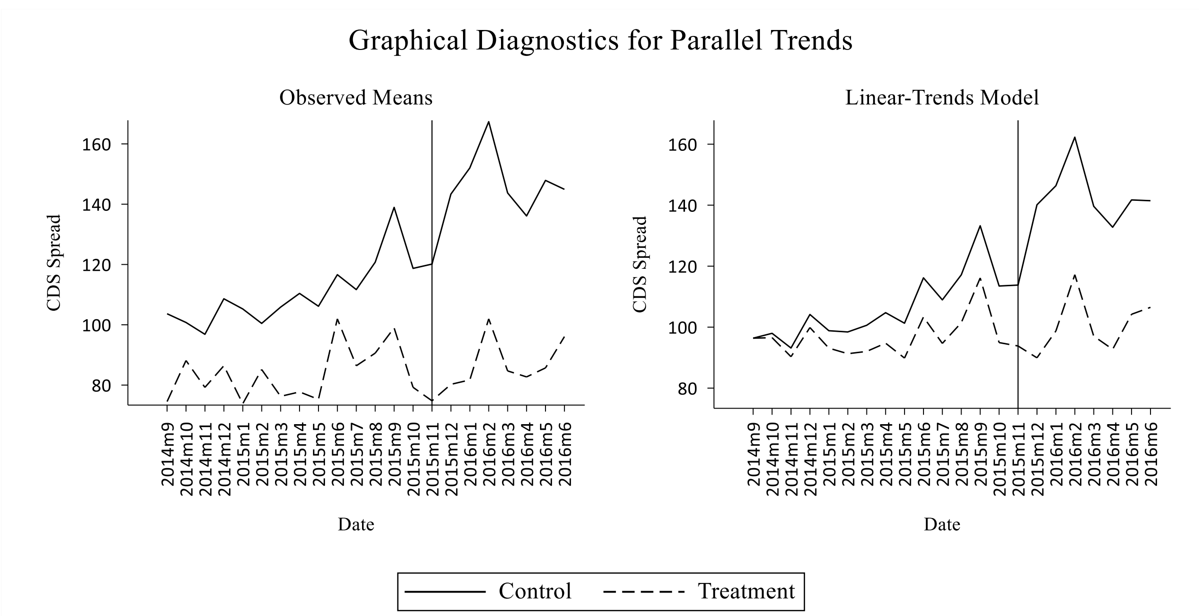


Figure G17

DID Model Graph for the British Parliamentary Election of May 2015.

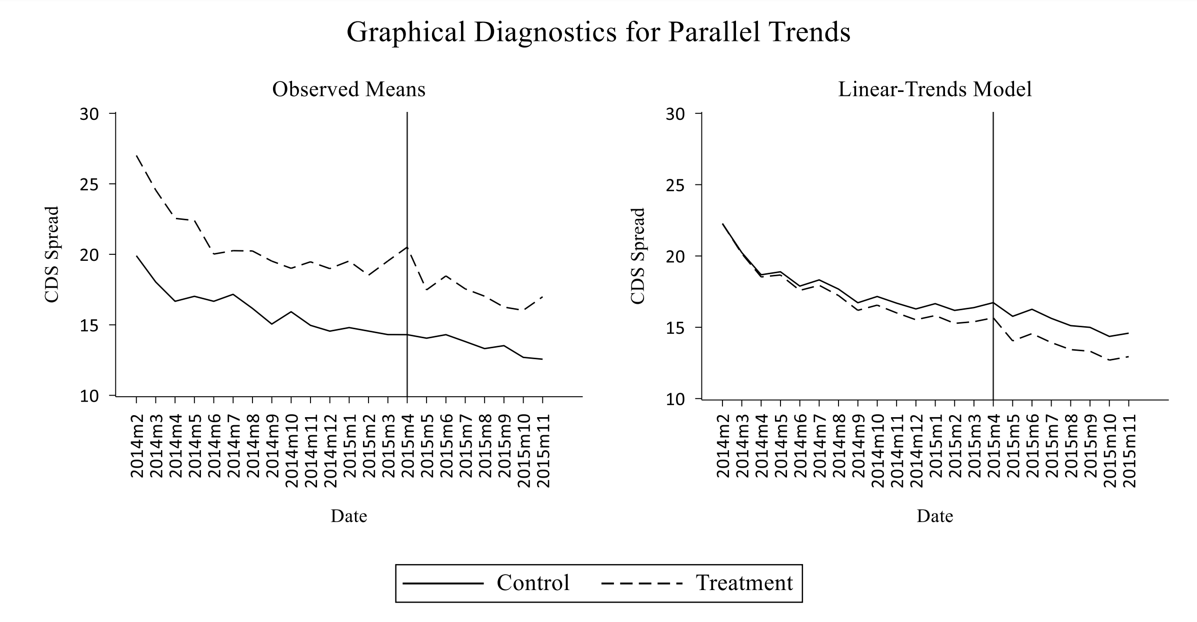


Figure G18

DID Model Graph for the British Parliamentary Election of June 2017.

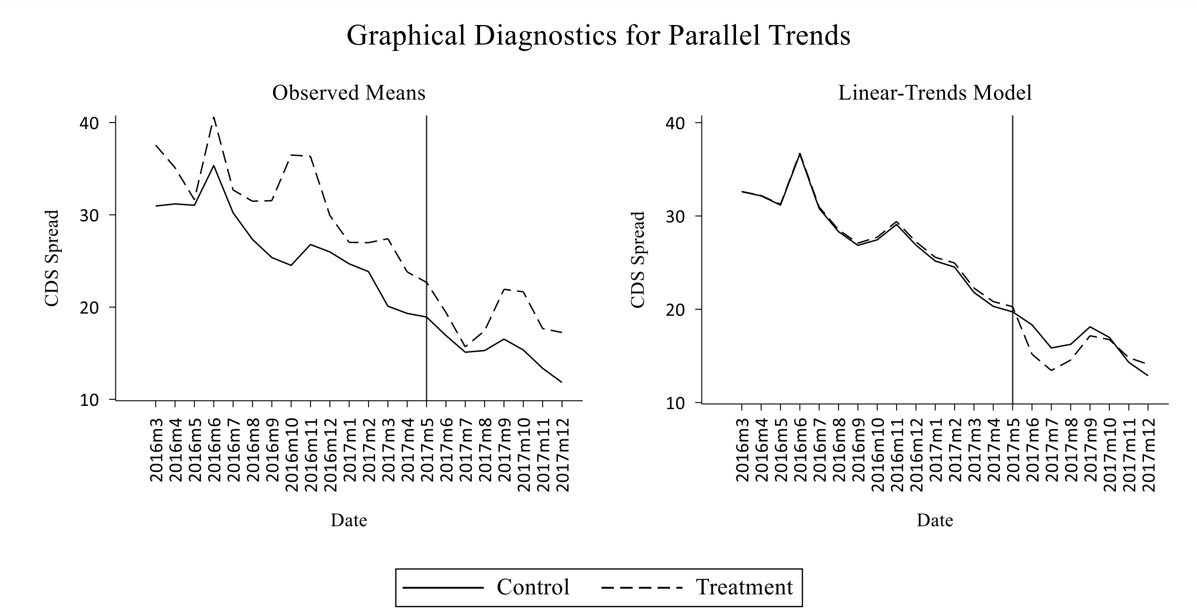


Figure G19

DID Model Graph for the British Parliamentary Election of December 2019.

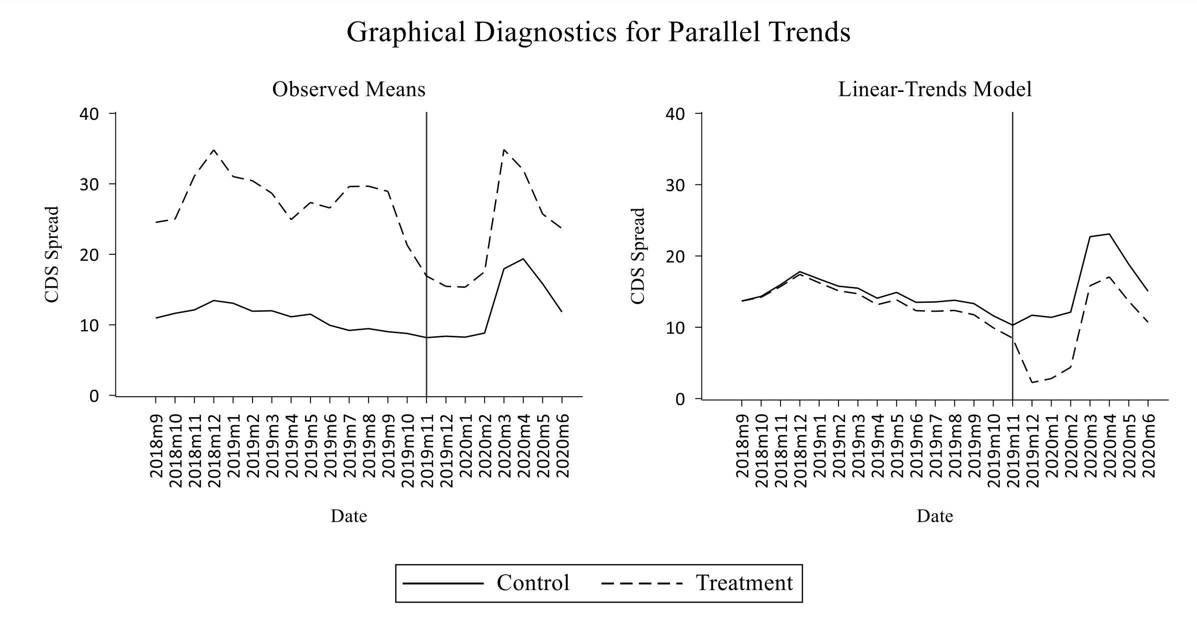


Figure G20

DID Model Graph for the Swedish Parliamentary Election of September 2018.

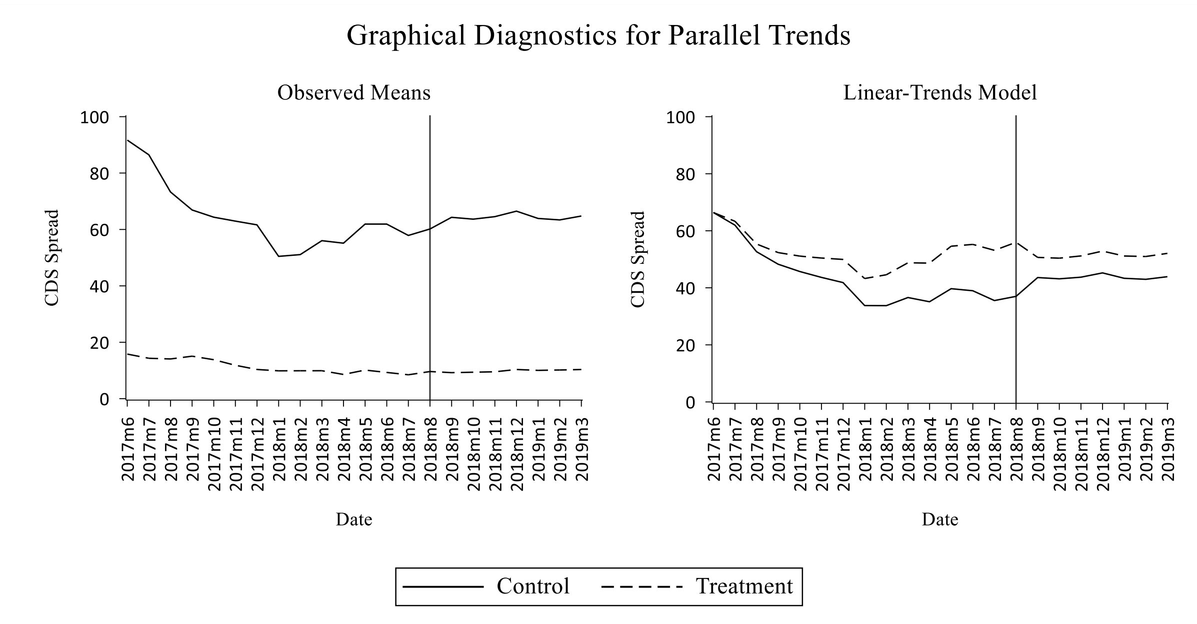


Figure G21

DID Model Graph for the Portuguese Parliamentary Election of October 2019.

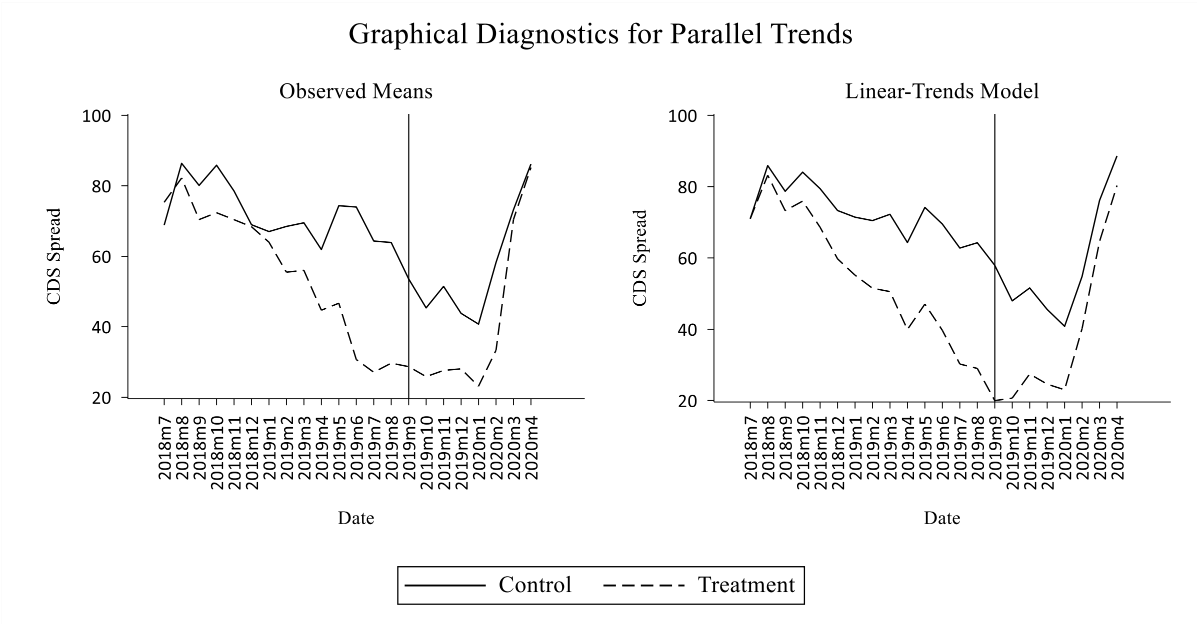
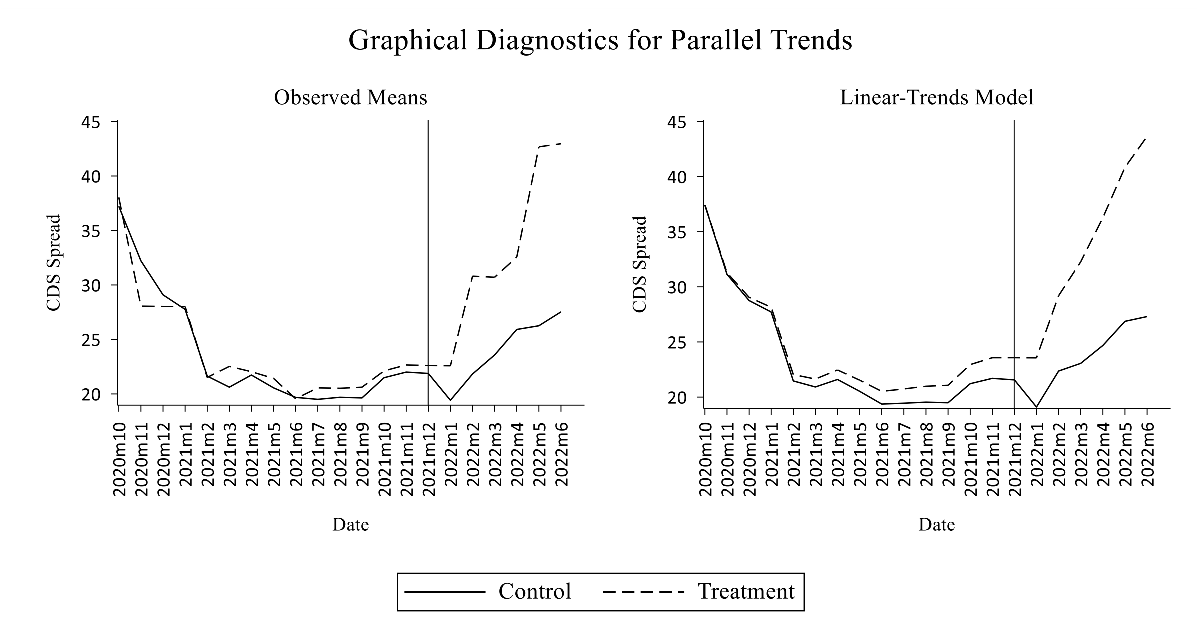


Figure G22

DID Model Graph for the Portuguese Parliamentary Election of September 2022.



Appendix H.
Alternative DID Model Graphs

This appendix consists out of all the graphs from the alternative DID model used to verify the visual parallel trend assumption. The left figure always represents the observed means graph, this graph presents the unmodified means of both the control group and the treatment group. The right figure always represents a visual representation of the linear-trends model on which the results of the DID model are based. The vertical axis represents the alternative CDS spread as described in the data section. The horizontal axis represents the time in months. The figures will be presented on the next page onwards due to size.

Figure H1

DID Model Graph for the German Parliamentary Election of September 2013.

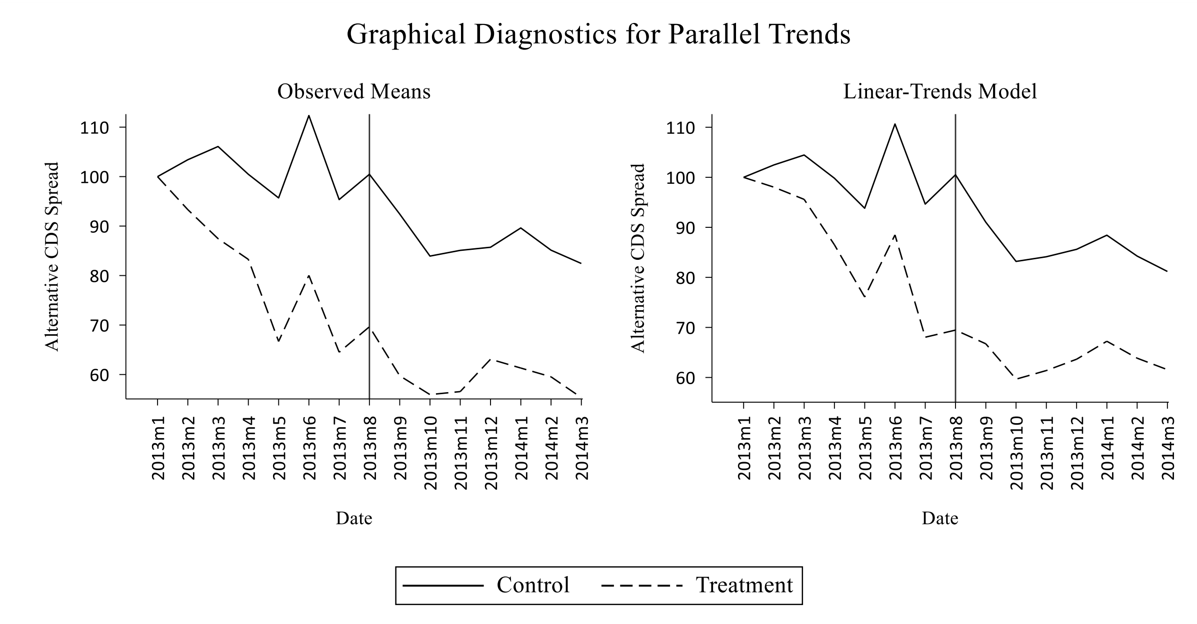


Figure H2

DID Model Graph for the German Parliamentary Election of September 2017.

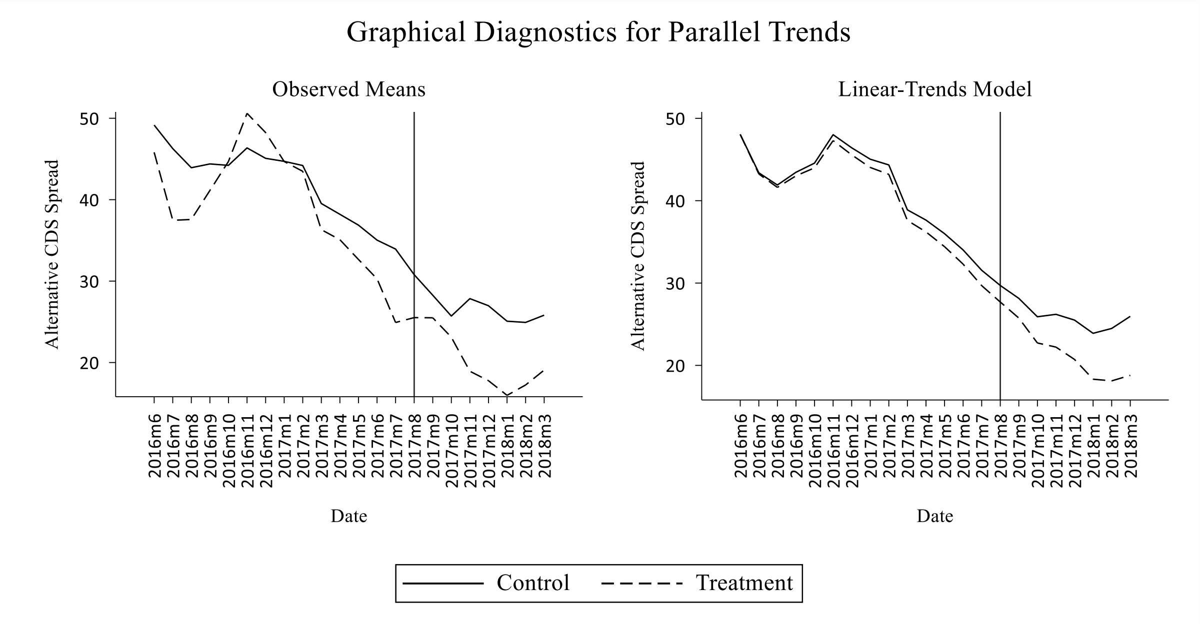


Figure H3

DID Model Graph for the German Parliamentary Election of September 2021.

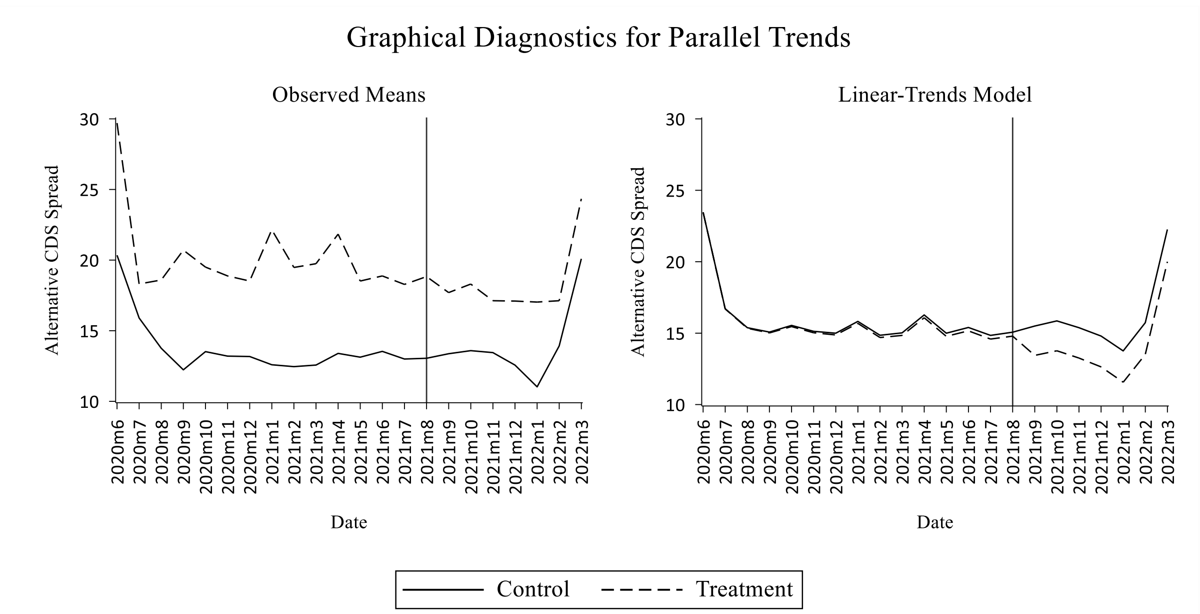


Figure H4

DID Model Graph for the Austrian Parliamentary Election of September 2013.

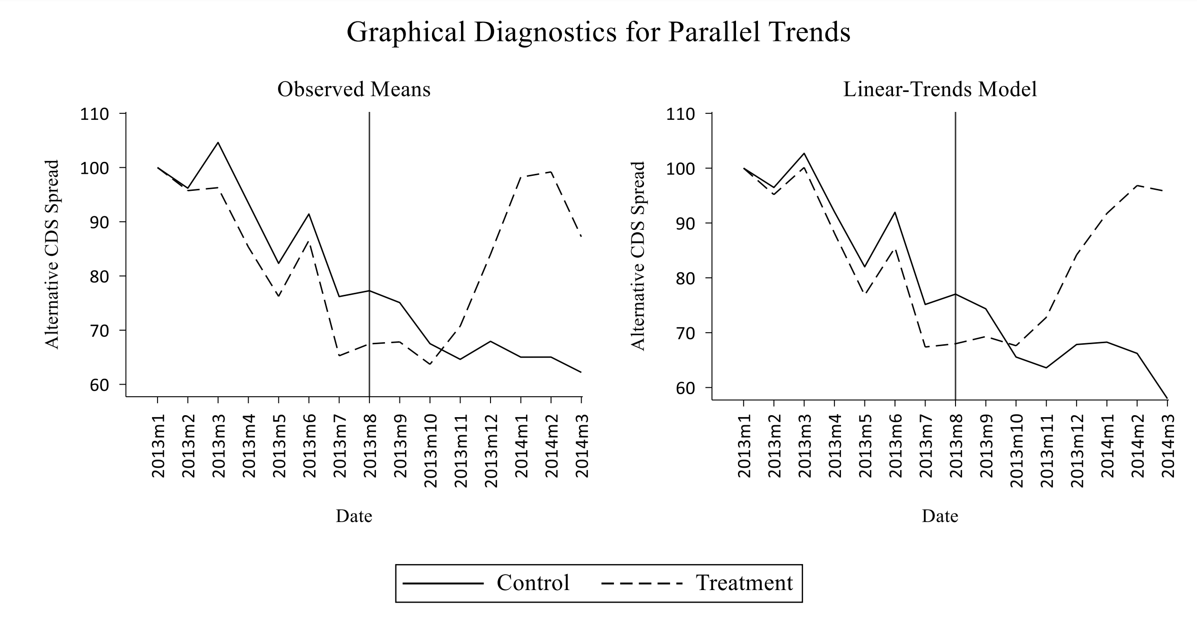


Figure H5

DID Model Graph for the Austrian Parliamentary Election of October 2017.

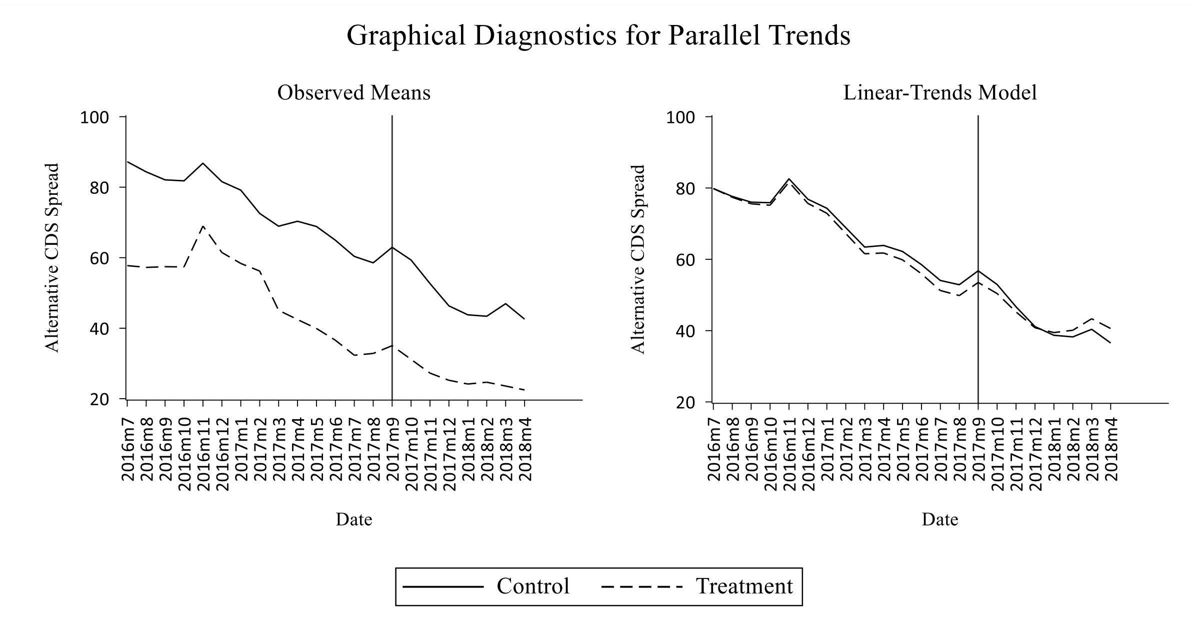


Figure H6

DID Model Graph for the Austrian Parliamentary Election of September 2019.

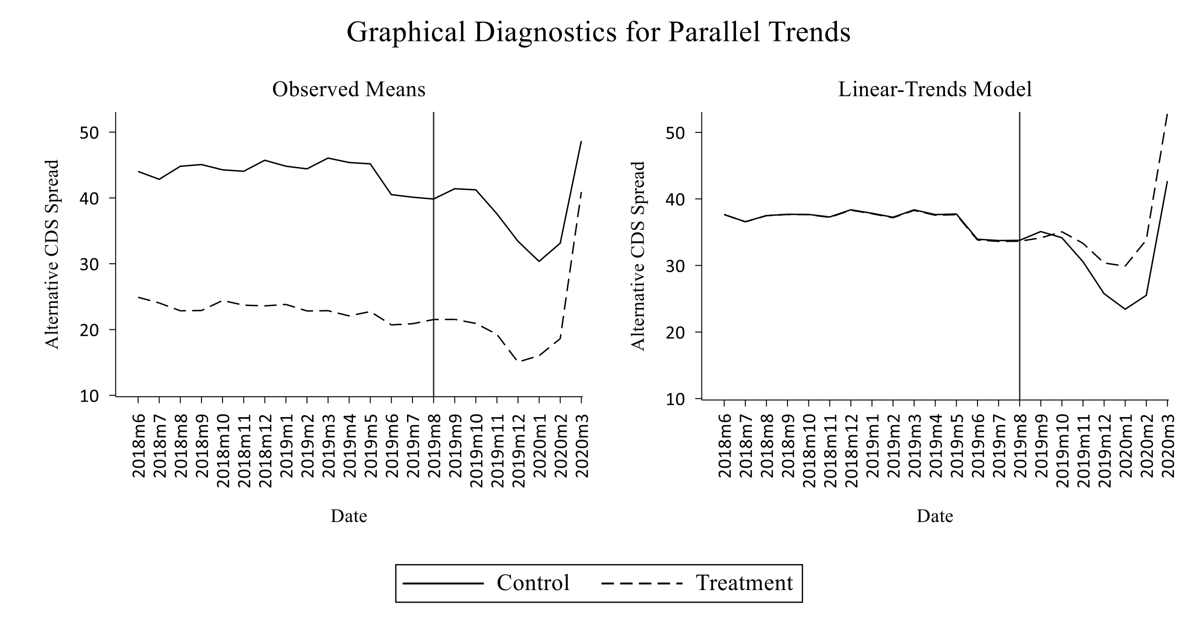


Figure H7

DID Model Graph for the Belgium Parliamentary Election of May 2014.

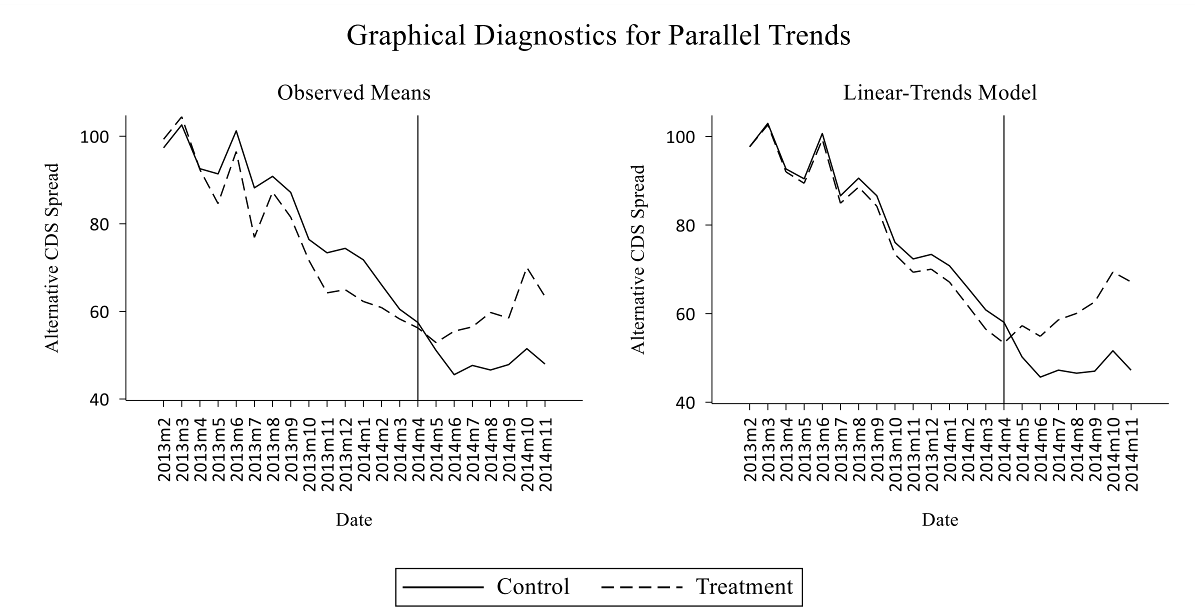


Figure H8

DID Model Graph for the Belgium Parliamentary Election of May 2019.

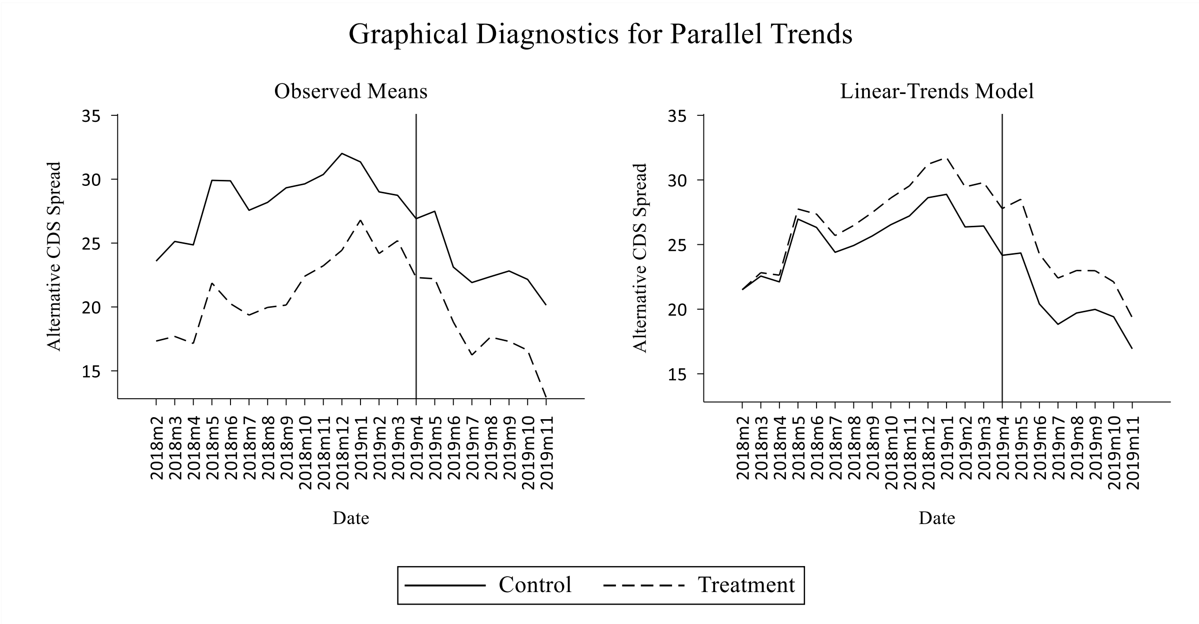


Figure H9

DID Model Graph for the French Parliamentary Election of June 2017.

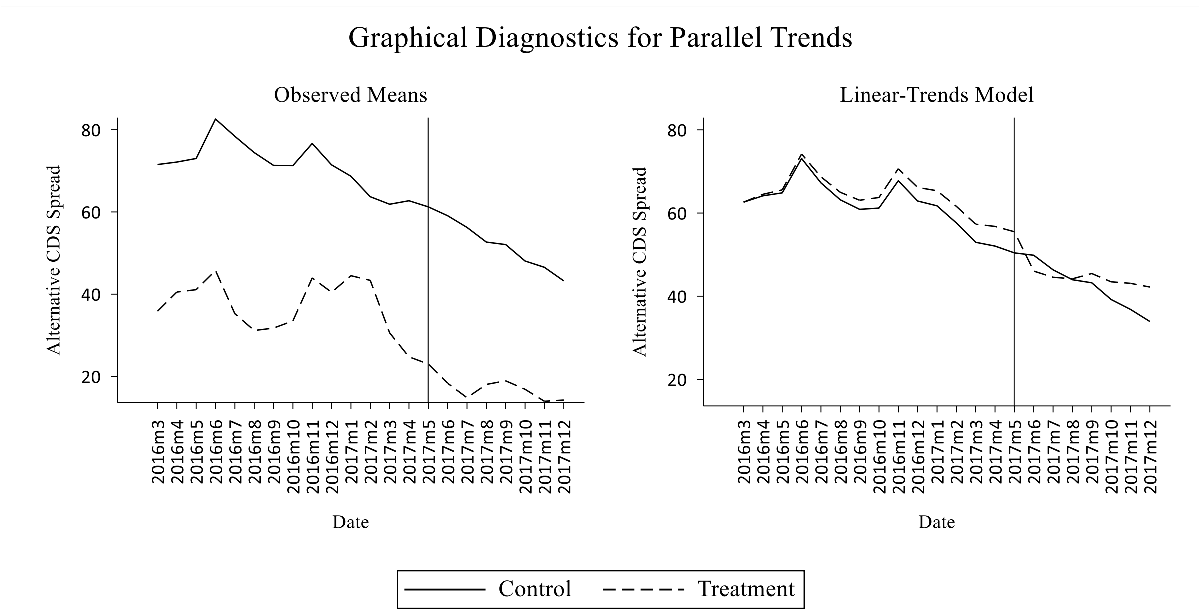


Figure H10

DID Model Graph for the French Parliamentary Election of June 2022.

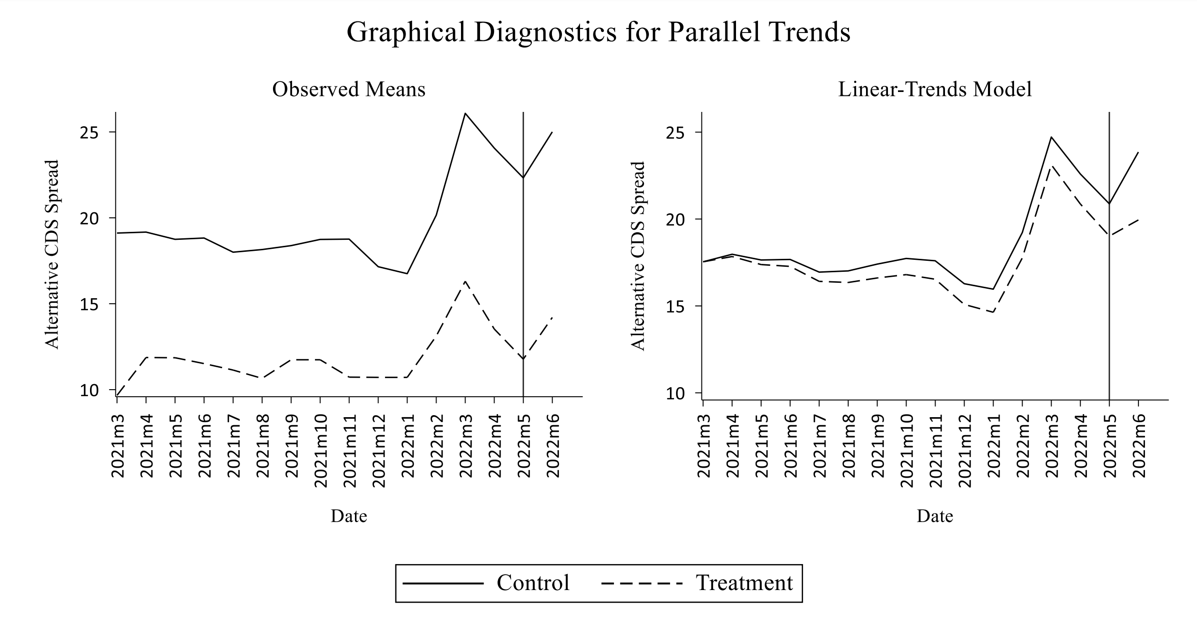


Figure H11

DID Model Graph for the Irish Parliamentary Election of February 2016.

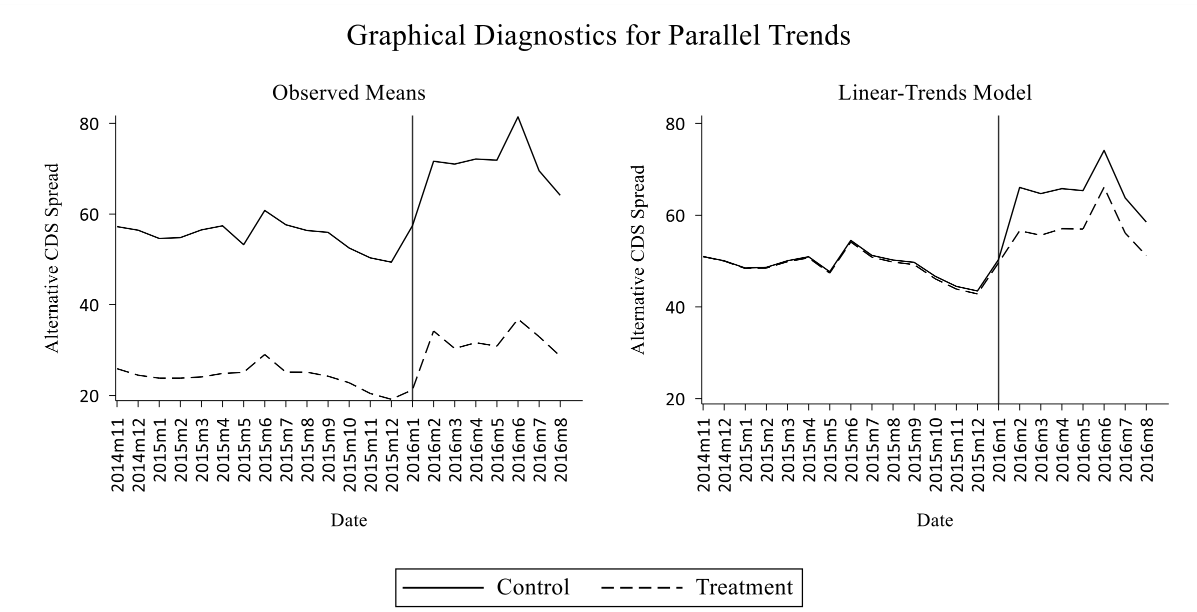


Figure H12

DID Model Graph for the Irish Parliamentary Election of February 2020.

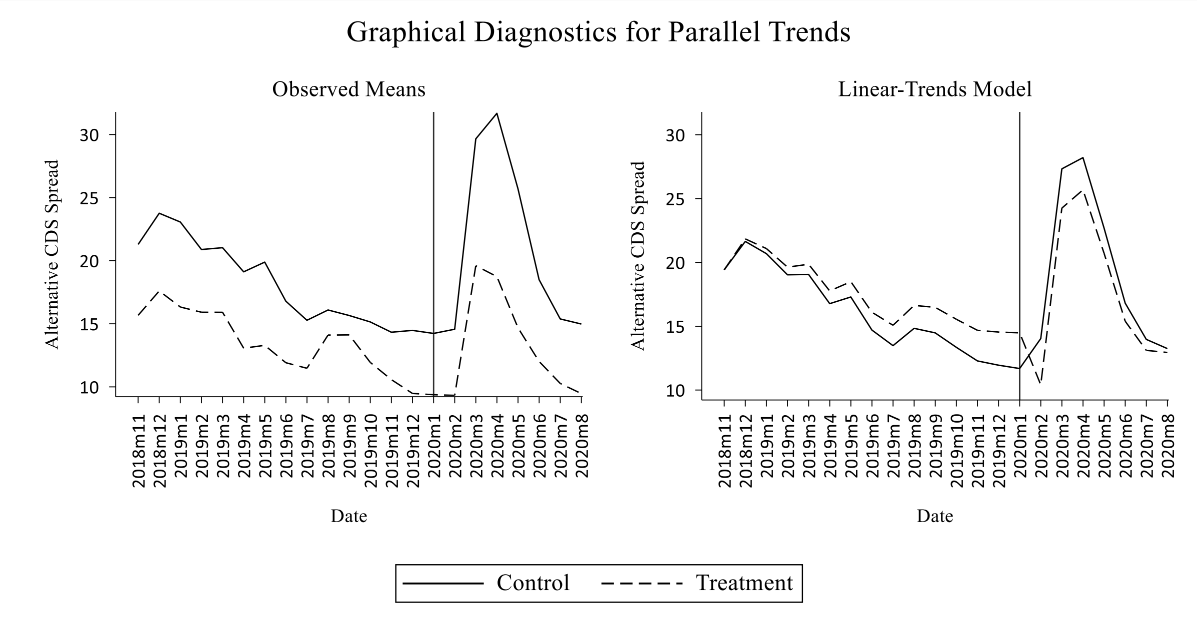


Figure H13

DID Model Graph for the Italian Parliamentary Election of March 2018.

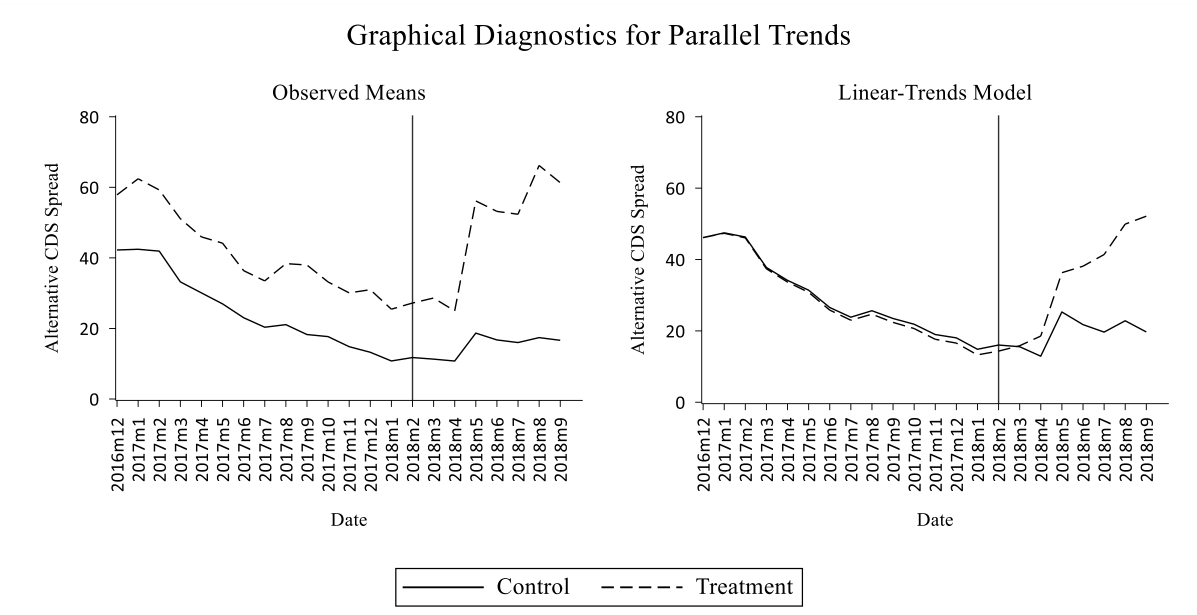


Figure H14

DID Model Graph for the Dutch Parliamentary Election of March 2017.

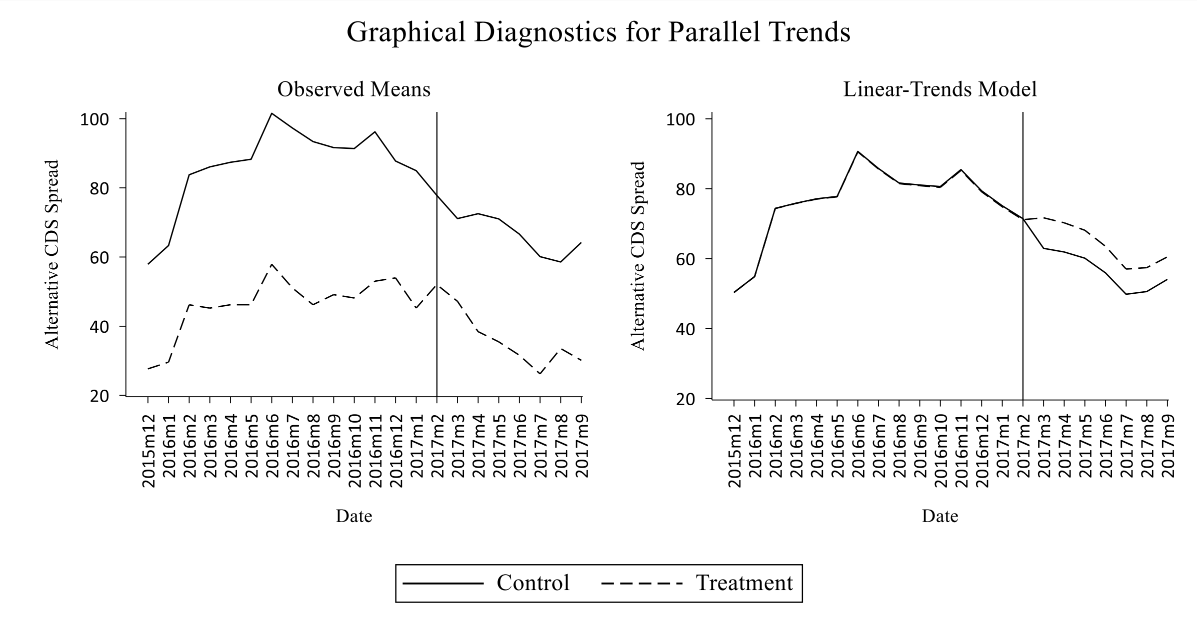


Figure H15

DID Model Graph for the Dutch Parliamentary Election of March 2021.

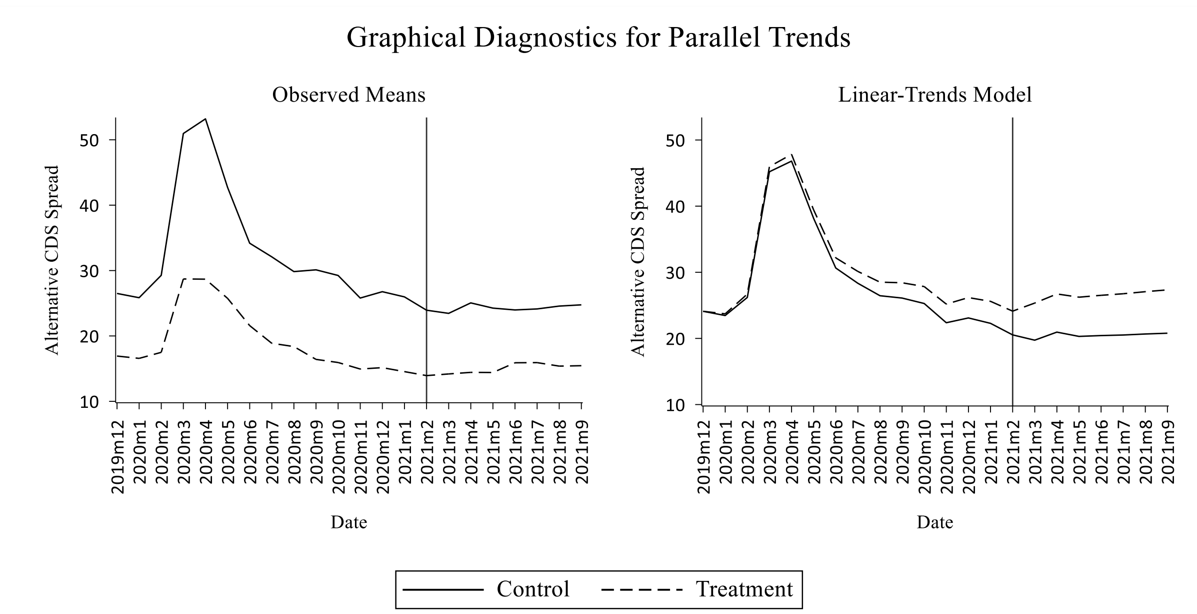


Figure H16

DID Model Graph for the Spanish Parliamentary Election of December 2015.

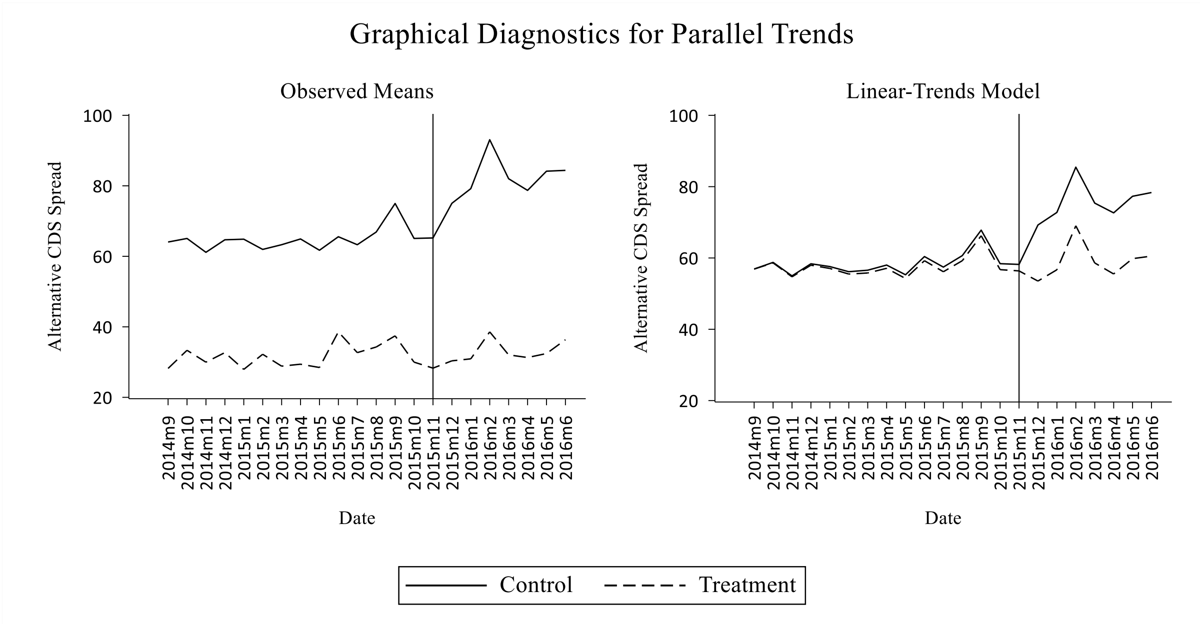


Figure H17

DID Model Graph for the Spanish Parliamentary Election of April 2019.

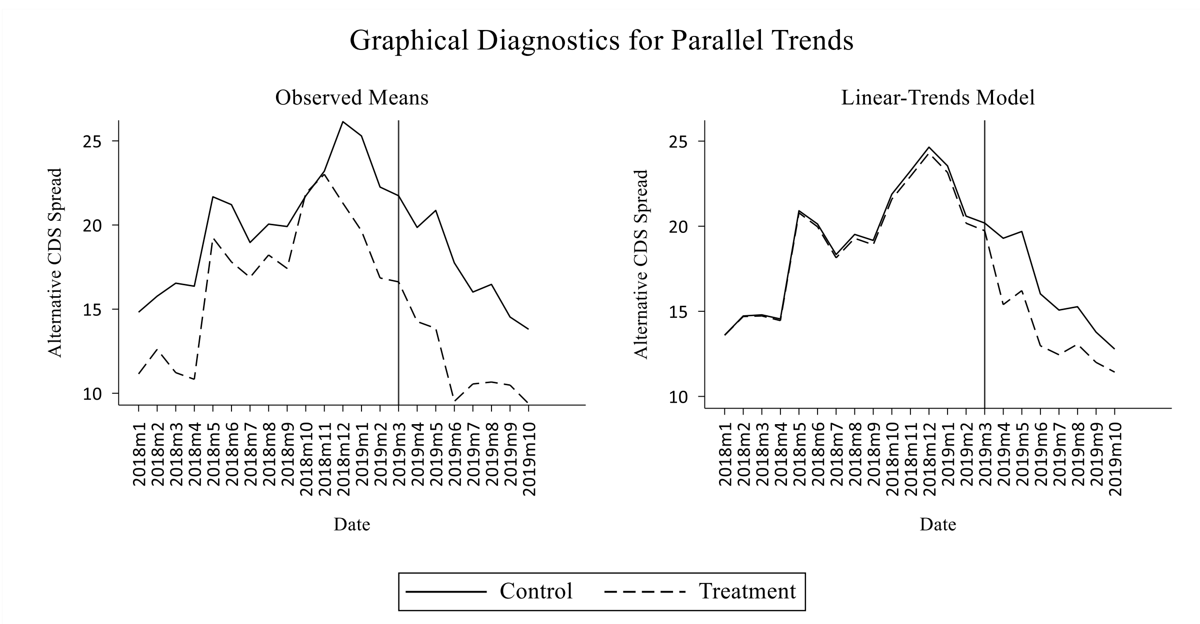


Figure H18

DID Model Graph for the British Parliamentary Election of May 2015.

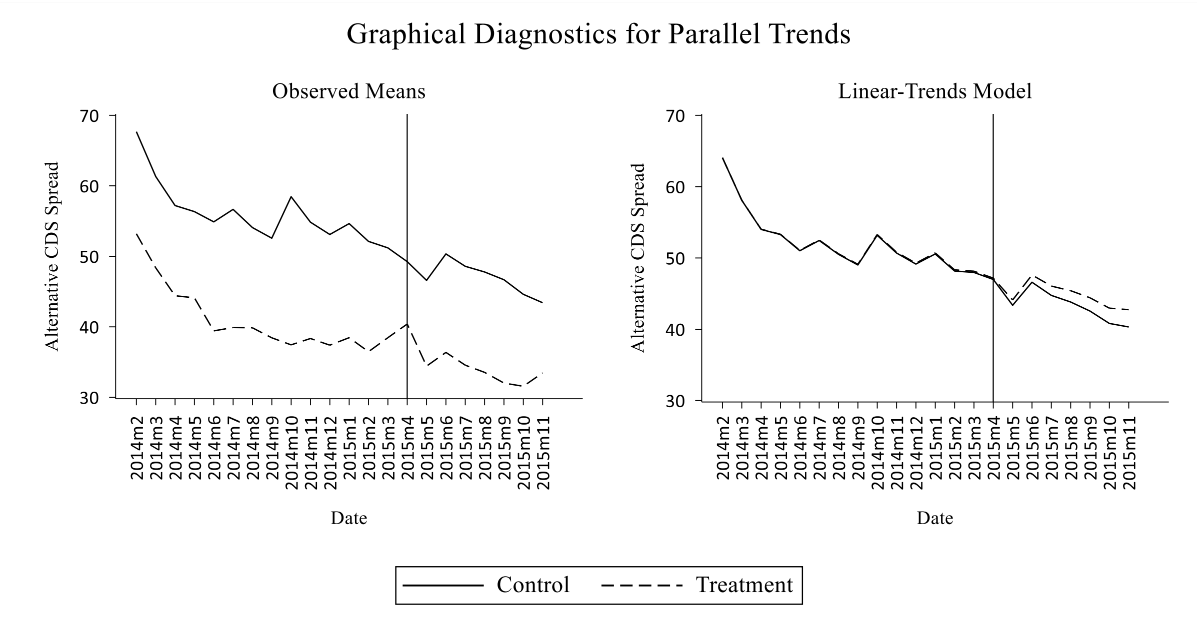


Figure H19

DID Model Graph for the British Parliamentary Election of June 2017.

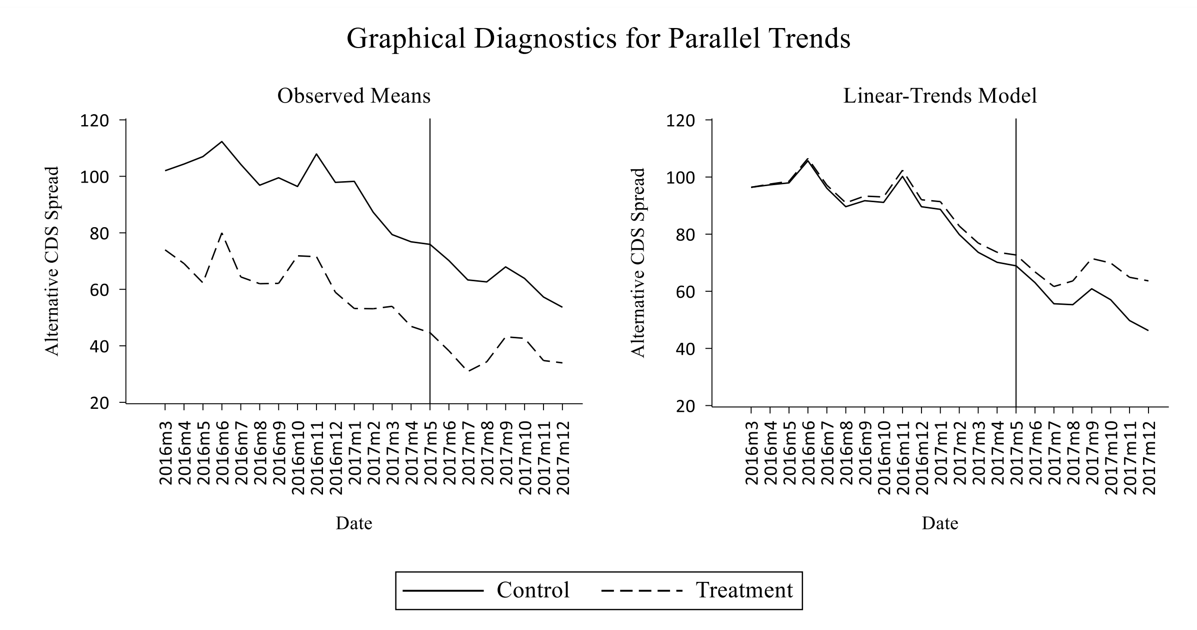


Figure H20

DID Model Graph for the British Parliamentary Election of December 2019.

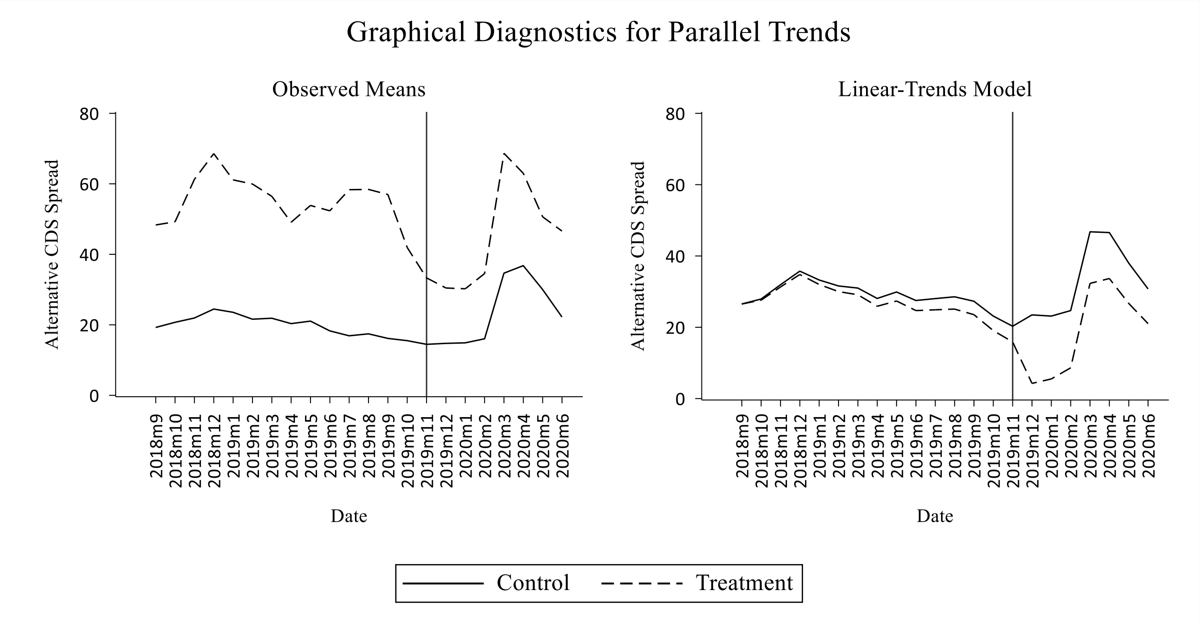


Figure H22

DID Model Graph for the Swedish Parliamentary Election of September 2014.

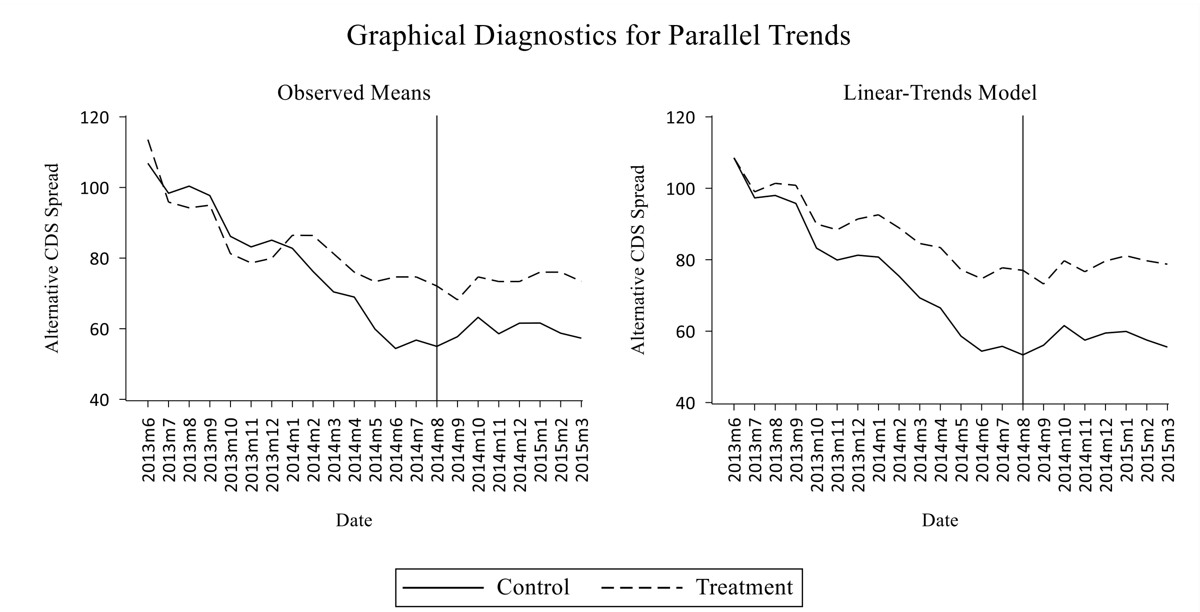


Figure H23

DID Model Graph for the Portuguese Parliamentary Election of October 2015.

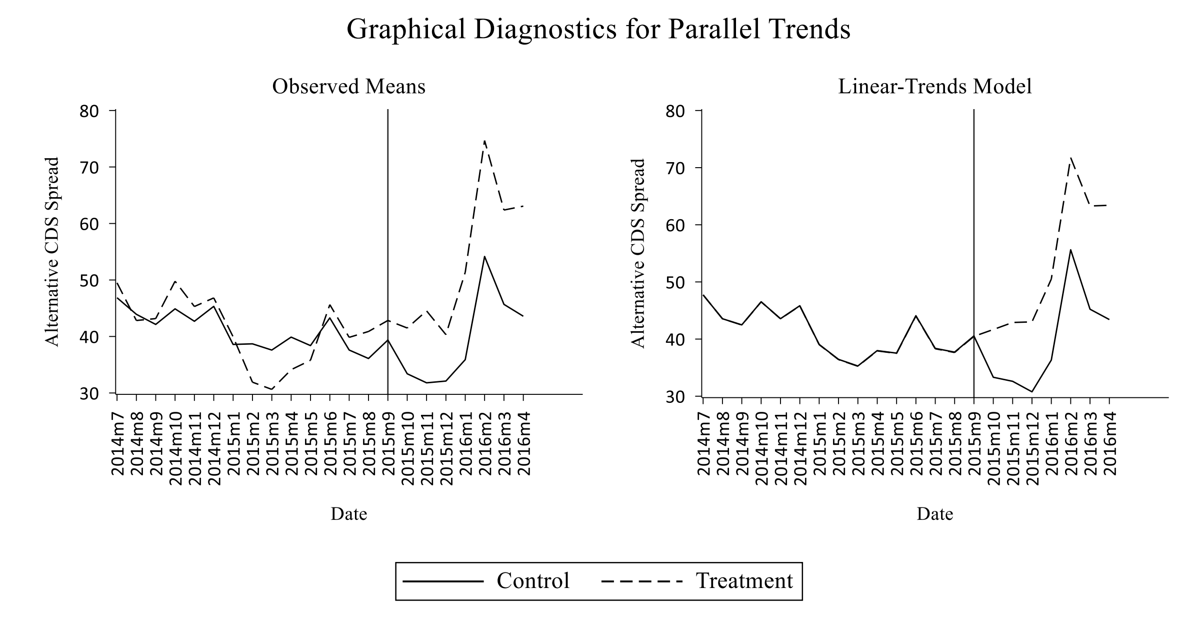


Figure H24

DID Model Graph for the Portuguese Parliamentary Election of October 2019.

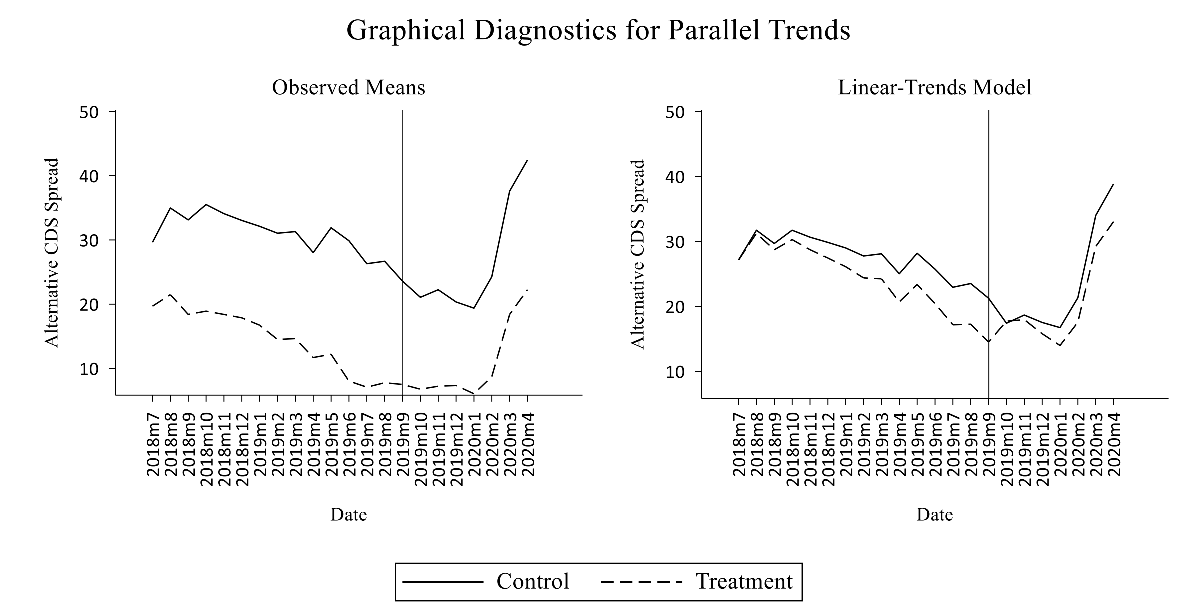
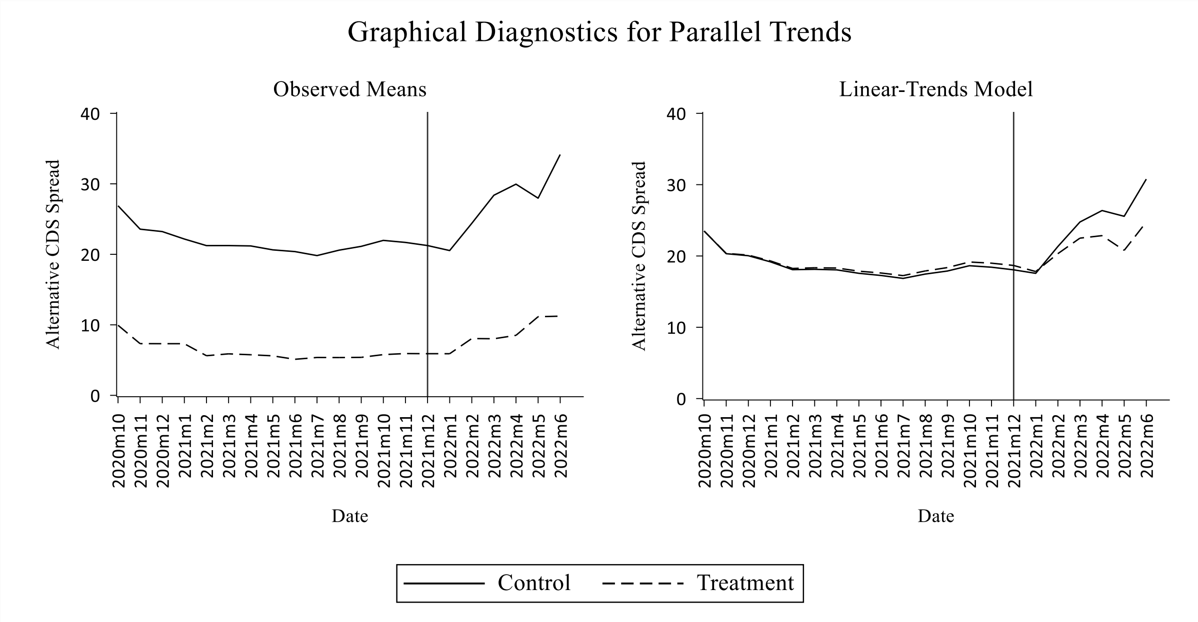


Figure H25

DID Model Graph for the Portuguese Parliamentary Election of September 2022.



Appendix I.

Percentual Change Method

This appendix presents the table with evidence as to why the percentual change method is preferred. Here ‘All Obs.’ represents the median and mean of the respective country’s sovereign CDS spread. The ‘Top 30 Obs.’ represents the median value of the sovereign CDS spread for the thirty biggest month-on-month changes. For the absolute method this means the thirty biggest month-on-month changes, ignoring sign. The median and mean for this approach are the median and mean for the day prior to these thirty big changes. The percentage approach does the exact same thing bar one, it looks at the changes in the context of what the spread was prior to the change. This is why it is called the percentage approach as it expresses the change as a percentage of the previous month’s CDS spread. The ‘Difference‘ sections showcase the result when the median and mean from all observations, the first column, are subtracted from those from the top 30 approach. The closer these medians and means are to zero, the less biased and thus the better.

Countries	All Obs.		Absolute: Top 30 Obs.		Percentage: Top 30 Obs.		Difference: Absolute vs All		Difference: Percentage vs All	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Germany	12.08	14.30	20.05	21.09	12.46	14.81	7.97	6.79	0.38	0.52
Austria	15.89	19.09	28.52	28.23	16.95	19.98	12.63	9.14	1.06	0.89
Belgium	20.07	27.68	41.85	42.02	19.46	27.37	21.79	14.33	-0.61	-0.31
France	21.03	27.22	35.86	40.83	19.59	24.98	14.83	13.62	-1.44	-2.24
Ireland	31.19	46.75	64.17	86.01	29.21	46.38	32.98	39.26	-1.97	-0.37
Italy	110.37	116.89	131.88	151.93	109.61	119.37	21.50	35.04	-0.77	2.47
Netherlands	14.07	18.67	27.84	31.99	15.70	19.06	13.77	13.32	1.63	0.39
Spain	56.30	73.88	89.02	118.07	60.28	76.30	32.72	44.19	3.99	2.41
U.K.	21.04	22.85	28.04	28.98	20.84	22.06	7.00	6.12	-0.20	-0.79
Poland	66.50	67.64	66.53	69.08	64.54	67.99	0.03	1.44	-1.96	0.36
Sweden	13.10	13.23	15.57	16.03	13.07	13.99	2.47	2.79	-0.03	0.75

Appendix J.

Base Regression Model by World and Europe

This appendix presents the results for the base regression model, referring to the model which exclusively uses the variables that are the equivalent of those used by Longstaff et al. (2011). These models use cluster robust standard errors, clustered by country. The dependent variable for this model is the percentage change in the sovereign CDS spread. This means that a coefficient of 0.100 represents 10%.

	World	Europe
LSM	-0.667***	-0.643***
Exchg	-0.349	0.168
FCR	0.009	0.008
Mrkt	-0.239	-0.001
Trsy	0.031***	0.035***
IG	-0.016***	-0.016***
HY	0.006***	0.007***
Equ	-0.006	-0.010*
Vol	-0.161***	-0.216***
Bond	-2.631***	-3.242***
Stock	6.012***	6.531***
Reg	0.445***	0.931***
Globe	0.146***	0.038
Constant	-0.052***	-0.064***
Local Ratio	0.548	0.373
Adj. R^2	0.336	0.331
F	36.14	18.72
Prob > F	0.000	0.000

**** p<0.01, ** p<0.05, * p<0.10*

Appendix K.

Base Regression Model by Individual Country

In this appendix the linear regression results are presented for the base regression model on an individual country level. These models use robust standard errors. Blank coefficients represent cases where the country in question did not have data for this variable. The dependent variable is the percentage change in the sovereign CDS spread of the country. This means that a coefficient of 0.100 represents 10%.

	Argentina	Austria	Belgium	Brazil	Bulgaria	Chile	Croatia	Cyprus	Czech	Denmark
LSM	-0.995*	-0.586***	-1.016***	-0.551**	-0.186	-0.317	-0.369**		-0.244***	-0.243
Exchg	-2.535	-0.150	-0.202	-1.296***	-0.760	-1.808***	-0.365	-0.452	0.031	0.001
FCR	-1.330	0.079	1.067*	-1.217	0.246	1.092***	-0.057	0.012	0.040	0.091
Mrkt	-2.984	0.260	0.874	-0.522	-0.263	-2.076***	-0.152	-0.282	0.056	-0.325
Trsy	-0.329	0.063	-0.010	0.075	0.108*	0.068	0.047*	0.009	0.067**	0.019
IG	0.006	-0.022***	-0.016*	-0.016***	-0.004	-0.016**	-0.015***	-0.009	-0.002	-0.017***
HY	0.019	0.010**	0.013**	0.003	0.005	0.003	0.004	0.004	0.001	0.008*
Equ	0.084	-0.014	-0.014	-0.005	0.001	0.001	-0.010	0.002	-0.002	-0.001
Vol	-0.721	-0.046	-0.666**	-0.113	-0.114	0.040	-0.154	-0.275	-0.004	-0.200
Bond	6.271	-5.462***	-8.002***	-0.674	-1.015	-0.446	-1.069*	0.167	-0.429	-4.046***
Stock	-7.662	11.927***	10.700***	5.326**	1.471	4.891*	3.265**	-0.256	-0.335	9.388***
Reg	-0.357	1.459***	1.725***	0.089	0.583***	0.138	0.549***	0.127	0.187***	1.072***
Globe	-0.417	-0.004	-0.048	0.656***	-0.064	0.217	0.128	0.126	0.116***	-0.178*
Constant	-0.213	-0.103**	-0.131**	0.001	-0.053	0.008	-0.036	-0.049	-0.019	-0.068
Local Ratio	0.898	0.333	0.216	0.867	0.289	0.657	0.309	0.136	0.302	0.094
Adj. R^2	0.325	0.684	0.720	0.727	0.166	0.659	0.469	-0.005	0.225	0.565
F	0.99	7.34	5.40	23.06	2.54	16.36	6.54	1.17	2.43	13.60
Prob > F	0.468	0.000	0.000	0.000	0.005	0.000	0.000	0.319	0.007	0.000

*** $p<0.01$, ** $p<0.05$, * $p<0.10$

Appendix K Continued

	Estonia	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Israel	Italy
LSM	0.046	-0.570*	-1.777***	-1.335***	-0.048	-0.070		-0.735***	0.251*	-1.642***
Exchg	0.069	-0.281	0.171	-0.238	-0.979	-0.657**	0.064	-0.683	-0.769*	-0.142
FCR	0.035	-0.006	-0.110	0.358	0.011	0.334**	0.058	0.001	-0.060	1.233
Mrkt	0.300	-0.745	1.365*	0.335	-0.194	-1.053***	-0.280*	0.527	-0.849**	1.989*
Trsy	-0.002	-0.011	-0.021	0.027	-0.027	0.175***	-0.021	-0.020	0.037	-0.039
IG	0.003	-0.017***	-0.017**	-0.021**	-0.013	-0.018***	-0.002	-0.020***	-0.009**	-0.004
HY	-0.004	0.021***	0.012*	0.007	-0.001	0.013***	0.002	0.005	0.002	-0.004
Equ	-0.018*	0.047*	-0.023	0.011	-0.022	0.029**	0.007	-0.024	0.011	-0.054**
Vol	0.273**	-0.491**	-0.695**	-0.500**	0.492	-0.638***	0.001	-0.369	-0.021	0.366
Bond	0.417	-5.820***	-6.554***	-6.098***	-0.839	-2.414***	0.075	-5.188***	-1.970**	-1.045
Stock	-1.585	9.371***	6.802**	7.754**	7.516	5.154***	0.795	8.840***	3.914**	5.684*
Reg	-0.106	0.661***	1.693***	1.336***	0.259	0.881***	0.150	1.504***	0.135**	0.724**
Globe	0.082	-0.058	0.136	-0.011	0.180	0.005	-0.007	0.047	0.363*	0.221
Constant	0.031	-0.215***	-0.107	-0.048	-0.011	-0.115**	-0.024	-0.042	-0.013	0.016
Local Ratio	0.101	0.189	0.366	0.373	0.360	0.232	0.017	0.261	0.215	0.673
Adj. R^2	0.074	0.496	0.670	0.624	0.026	0.606	-0.053	0.716	0.363	0.365
F	1.37	6.71	4.50	6.46	1.76	20.73	1.01	27.27	3.27	3.25
Prob > F	0.191	0.000	0.000	0.000	0.061	0.000	0.446	0.000	0.000	0.000

*** *p<0.01*, ** *p<0.05*, * *p<0.10*

Appendix K Continued

	Latvia	Lithuania	Mexico	Netherlands	Norway	Poland	Portugal	Romania	Serbia	Slovakia
LSM		-0.221	-0.566*	-1.119***	-0.310	-0.372	-0.855***	0.198	0.056	
Exchg	-0.126	0.068	-1.867***	-0.145	0.251	0.207	0.254	-1.175**	-0.421	-0.318
FCR	-0.077*	0.016	0.701	-0.027	-0.187	0.274	0.042	0.115	0.145	0.004
Mrkt	0.002	-0.676	-1.908***	0.829	-0.204	0.790	0.057	-0.343	-0.170	-0.059
Trsy	0.119***	0.094**	0.093	-0.045	0.011	0.057	-0.046	0.117**	-0.056	0.039
IG	-0.005	-0.006	-0.016***	-0.016***	-0.009**	-0.008	-0.035***	-0.022	-0.001	-0.009***
HY	0.000	0.003	0.006	0.004	0.003	0.004	0.009	0.009	0.004	0.002
Equ	-0.016	0.017	0.008	-0.007	0.002	-0.055	-0.034*	-0.009	0.006	-0.008
Vol	-0.228*	-0.242*	-0.083	-0.406***	-0.134	0.007	-0.051	-0.038	0.022	-0.033
Bond	-0.643	0.313	-0.317	-2.686***	-3.078***	-1.373	-4.785***	-1.780	-0.409	-1.026**
Stock	0.405	0.361	2.923	4.235*	4.946***	2.420	12.859***	3.733	-2.598	1.879
Reg	0.655***	0.618***	0.068	0.768***	0.549***	0.714**	1.359***	0.538**	0.037	0.392***
Globe	0.036	0.052	0.663***	-0.129	-0.120*	0.019	0.114	0.149	-0.090	0.086
Constant	0.008	-0.020	-0.024	-0.025	-0.015	-0.045	-0.069	-0.075	-0.059	-0.011
Local Ratio	0.046	0.177	0.807	0.310	0.263	0.304	0.236	0.143	0.078	0.093
Adj. R^2	0.368	0.303	0.778	0.494	0.480	0.237	0.611	0.216	-0.112	0.349
F	4.45	3.94	22.87	12.10	15.77	1.58	37.76	2.76	1.66	6.16
Prob > F	0.000	0.000	0.000	0.000	0.000	0.103	0.000	0.002	0.111	0.000

*** $p<0.01$, ** $p<0.05$, * $p<0.10$

Appendix K Continued

	Slovenia	S. Africa	S. Korea	Spain	Sweden	Turkey	Ukraine	U.K.	U.S.A.	Uruguay
LSM	-0.235	-0.211	0.180	-1.137***	-0.392*	-1.130***	-1.625*	-0.951**	-3.454	
Exchg	-0.347	-1.711***	-0.448	0.009	-0.166	-0.402	0.300	-0.894	4.290	-0.103
FCR	0.033	0.110	-3.463**	0.195	-0.163	-0.324	1.283	0.473	-0.020	0.058
Mrkt	0.356	-1.150***	-1.846***	1.050	0.063	-0.453	-0.990	0.256	3.268	-0.279
Trsy	0.041	0.044	-0.017	0.053	0.008	-0.019	0.068	0.023	-0.024	0.120**
IG	-0.011*	-0.015***	-0.006	-0.017**	-0.010**	-0.007	-0.025	-0.012*	-0.006	-0.015
HY	-0.001	0.002	0.004	0.007	0.002	0.004	0.037**	0.001	0.006	-0.001
Equ	-0.015	0.002	0.004	-0.055***	-0.010	0.003	-0.029	-0.017	0.003	-0.009
Vol	-0.171	-0.134	0.332*	-0.389	0.027	0.101	-0.255	-0.518**	-0.112	0.205
Bond	0.544	-0.487	0.626	-5.219***	-3.842***	-0.543	-3.625	-4.026***	-2.794***	-1.545
Stock	1.093	3.667	3.771	6.642*	5.057***	5.447**	14.141*	5.092**	1.811	6.013
Reg	0.439***	0.320***	0.122	1.265***	0.824***	0.128	1.777**	1.260***		0.136
Globe	0.165*	0.331**	0.291*	0.325*	-0.033	0.520***	-0.019	-0.167	0.216	0.640**
Constant	0.020	0.010	-0.028	-0.066	-0.011	-0.028	-0.364**	0.006	-0.062	0.034
Local Ratio	0.195	0.770	0.575	0.465	0.304	0.915	0.686	0.501	0.280	0.043
Adj. R^2	0.130	0.787	0.431	0.605	0.638	0.692	0.308	0.624	0.096	0.088
F	1.74	25.44	9.21	8.69	19.58	12.76	4.33	19.29	7.36	3.46
Prob > F	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

**** p<0.01, ** p<0.05, * p<0.10*

Appendix L.

Election Regression Model by Individual Country

This appendix reports the results regarding the linear regression models including the election variables on the individual country basis. These models use robust standard errors. Blank coefficients represent cases where the country in question did not have data for this variable. The dependent variable is the percentage change in the sovereign CDS spread of the country. This means that a coefficient of 0.100 represents 10%. Due to the size of these tables they will be presented on the next page.

Appendix L Continued

	Argentina	Austria	Belgium	Brazil	Bulgaria	Chile	Croatia	Cyprus	Czechia	Denmark
LSM	-1.023*	-0.729***	-0.995***	-0.516**	-0.201	-0.293	-0.448***	-0.277***	-0.340	-1.354***
Exchg	-2.554	0.163	-0.165	-1.373***	-0.682	-1.656***	-0.164	-0.455	0.082	0.005
FCR	-1.309	0.081	1.293**	-1.370	0.306	1.171***	-0.048	0.005	0.057	0.076
Mrkt	-3.574	0.146	0.500	-0.621	-0.272	-2.137***	-0.311	-0.244	0.008	-0.157
Trsy	-0.338	0.051	-0.028	0.070	0.112*	0.068	0.040	0.012	0.065**	0.021
IG	0.003	-0.021***	-0.017*	-0.015**	-0.003	-0.014**	-0.014***	-0.010	-0.002	-0.018***
HY	0.020	0.011**	0.013**	0.003	0.005	0.002	0.004	0.005	0.001	0.009**
Equ	0.091	-0.013	-0.011	-0.003	0.003	0.000	-0.003	-0.001	0.000	-0.004
Vol	-0.533	0.002	-0.596**	-0.156	-0.144	0.023	-0.119	-0.314	0.029	-0.238
Bond	6.321	-5.278***	-7.884***	-0.450	-1.075	-0.503	-1.041*	0.267	-0.447	-4.123***
Stock	-6.312	12.514***	11.602***	5.036**	1.237	4.695*	3.280**	-0.274	-0.273	9.212***
Election	0.170	0.038	-0.029	-0.090***	0.031	0.053	-0.035	0.006	0.018	-0.032
ElectionFin	-0.163	-0.019	-0.009	-0.038	0.009	-0.056*	-0.066*	0.044	-0.031**	0.045**
IdeologyFin	0.009	-0.001	0.004	0.001	-0.002	-0.007***	-0.006**	0.003*	-0.001	0.004***
ElectionGIIPS	-0.160	-0.019	-0.041	0.037	0.042	-0.017	0.056**	-0.009	-0.008	-0.026
IdeologyGIIPS	0.002	-0.002	-0.001	0.003	-0.001	-0.004	0.004***	-0.003*	0.001	-0.004
ElectionUS	0.015	0.235***	0.215***	-0.004	0.031	0.095	0.069***	0.034	0.012	-0.031
Reg	-0.415	1.419***	1.733***	0.081	0.577***	0.152	0.581***	0.132	0.212***	1.066***
Globe	-0.321	-0.034	-0.092	0.699***	-0.056	0.199	0.107	0.124	0.105**	-0.167*
Constant	-0.194	-0.115**	-0.135**	-0.009	-0.069	0.012	-0.038	-0.062	-0.014	-0.080
R^2	0.419	0.732	0.770	0.773	0.293	0.727	0.632	0.134	0.357	0.632
Adj. R^2	0.300	0.678	0.723	0.727	0.148	0.671	0.557	-0.032	0.225	0.557
F	1.08	12.16	7.23	34.53	8.31	32.88	6.05	1.028	2.26	13.85
Prob > F	0.383	0.000	0.000	0.000	0.000	0.000	0.000	0.437	0.005	0.000

**** p<0.01, ** p<0.05, * p<0.10*

Appendix L Continued

	Estonia	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Israel	Italy
LSM	0.054	-0.595	-2.162***	-1.354***	-0.039	-0.039		-0.792***	0.244	-1.746***
Exchg	0.040	-0.298	0.524	-0.179	-1.128	-0.751**	0.068	-0.829*	-0.786*	0.026
FCR	0.044	0.010	-0.150	0.345	0.018	0.421**	0.048	0.000	0.087	1.448
Mrkt	0.210	-0.778	1.233*	0.378	-0.174	-1.189***	-0.286	0.728	-0.884**	1.999*
Trsy	-0.014	-0.003	-0.041	0.033	-0.033	0.182***	-0.022	-0.009	0.040	-0.040
IG	0.004	-0.018***	-0.017**	-0.021***	-0.011	-0.019***	-0.002	-0.018***	-0.007*	-0.002
HY	-0.005*	0.022***	0.012*	0.009	0.000	0.014***	0.002	0.006	0.002	-0.003
Equ	-0.014	0.046*	-0.022	0.005	-0.021	0.031**	0.007	-0.026*	0.011	-0.058**
Vol	0.327***	-0.496**	-0.673**	-0.562**	0.490	-0.629***	0.006	-0.544**	0.040	0.367
Bond	0.384	-5.813***	-6.217***	-6.077***	-0.995	-2.357***	0.044	-5.053***	-1.948**	-1.145
Stock	-1.296	9.369***	7.174**	8.133**	7.135	5.395***	0.865	6.978***	3.945**	5.823*
Election	-0.019	-0.012	-0.119**	0.006	-0.091	-0.034	0.010	0.201	0.068**	-0.003
ElectionFin	-0.031	-0.014	0.052	-0.001	-0.026	-0.007	-0.001	-0.017	-0.054**	-0.026
IdeologyFin	-0.002	0.006*	0.003	0.022***	-0.002	0.004**	0.000	0.001	-0.002	-0.002
ElectionGIIPS	-0.002	-0.026	-0.081**	-0.040	0.000	0.032	-0.012	-0.076**	-0.008	-0.067
IdeologyGIIPS	0.003*	-0.003	-0.005*	-0.008	-0.004	0.001	-0.001	-0.004**	0.001	-0.008**
ElectionUS	0.007	0.003	0.325***	0.114***	0.006	0.016	0.024*	-0.025	0.022	0.186***
Reg	-0.070	0.652***	1.662***	1.294***	0.219	0.879***	0.151	1.481***	0.122*	0.623*
Globe	0.062	-0.061	0.095	0.008	0.185	0.014	-0.009	0.047	0.352*	0.204
Constant	0.048	-0.229***	-0.113	-0.069	-0.014	-0.136***	-0.023	-0.044	-0.007	0.008
R^2	0.277	0.567	0.744	0.691	0.154	0.658	0.071	0.768	0.465	0.466
Adj. R^2	0.119	0.478	0.691	0.628	-0.019	0.589	-0.107	0.719	0.356	0.355
F	1.06	5.61	10.29	16.70	1.70	14.66	0.79	20.21	4.53	3.42
Prob > F	0.403	0.000	0.000	0.000	0.049	0.000	0.703	0.000	0.000	0.000

*** *p<0.01*, ** *p<0.05*, * *p<0.10*

Appendix L Continued

	Latvia	Lithuania	Mexico	Netherlands	Norway	Poland	Portugal	Romania	Serbia	Slovakia
LSM		-0.155	-0.573*	-1.185***	-0.307	-0.346	-0.837***	0.138	0.015	
Exchg	-0.066	0.024	-1.952***	-0.048	0.235	0.221	0.256	-1.024	-0.372	-0.400*
FCR	-0.076*	0.017*	1.003	-0.034	-0.251	0.307	0.048	0.038	0.244	0.004*
Mrkt	-0.111	-0.752*	-2.044***	0.990	-0.084	0.765	0.132	-0.339	-0.251	-0.044
Trsy	0.113**	0.086**	0.088	-0.039	0.009	0.058	-0.025	0.122**	-0.030	0.032
IG	-0.005	-0.006	-0.017***	-0.015***	-0.010**	-0.007	-0.035***	-0.023	0.003	-0.009**
HY	0.001	0.003	0.006	0.004	0.003	0.006	0.010	0.010	0.001	0.001
Equ	-0.014	0.017	0.013	-0.013	-0.002	-0.050	-0.038*	-0.009	0.009	-0.009
Vol	-0.190	-0.241	-0.083	-0.420***	-0.186	-0.015	-0.093	-0.074	0.168	-0.018
Bond	-0.628	0.315	-0.058	-2.799***	-2.968***	-1.415	-4.878***	-1.513	-0.978	-0.841
Stock	0.852	0.613	2.923	4.077**	4.808***	2.226	12.463***	4.068	-2.319	1.755
Election	0.031		0.068***	0.061**	0.015	-0.092	-0.045	0.066*	0.017	0.046
ElectionFin	0.011	0.019	0.032	0.004	0.071	-0.023	-0.025	0.006	-0.073	0.025
IdeologyFin	0.001	-0.001	0.003**	0.001	0.002	-0.003	0.002	0.001	-0.003	-0.001
ElectionGIIPS	0.006	-0.008	0.028	-0.022	0.002	0.104	-0.018	0.037	-0.062	-0.019
IdeologyGIIPS	0.000	0.000	0.004*	-0.006	-0.002	0.004	-0.005**	0.001	-0.001	0.000
ElectionUS	0.078***	0.076**	-0.001	0.039	0.010	0.021	-0.019	0.016	0.021	0.014
Reg	0.647***	0.637***	0.071	0.739***	0.534***	0.722**	1.393***	0.509*	-0.001	0.416***
Globe	0.038	0.046	0.668***	-0.130	-0.094	0.036	0.112	0.170	-0.083	0.083
Constant	-0.003	-0.020	-0.032	-0.035	-0.024	-0.070	-0.085	-0.092	-0.022	-0.003
R^2	0.446	0.406	0.813	0.577	0.577	0.382	0.668	0.315	0.317	0.452
Adj. R^2	0.340	0.292	0.774	0.491	0.490	0.256	0.599	0.175	-0.076	0.347
F	4.81	4.82	30.93	9.40	20.89	4.19	30.52	4.20	.	6.16
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.479	0.000

*** *p<0.01*, ** *p<0.05*, * *p<0.10*

Appendix L Continued

	Slovenia	S. Africa	S. Korea	Spain	Sweden	Turkey	Ukraine	U.K.	U.S.A.	Uruguay
LSM	-0.223	-0.223	0.084	-1.213***	-0.507**	-1.134***	-1.550*	-0.882*	0.882	
Exchg	-0.363	-1.721***	-0.122	0.151	-0.153	-0.391	0.221	-1.103**	-0.111	-0.139
FCR	0.036	0.100	-3.625**	0.306	-0.046	-0.336	1.313	0.576*	0.014	0.125
Mrkt	0.393	-1.092***	-2.253***	0.969	0.108	-0.415	-0.941	0.027	-0.595	-0.191
Trsy	0.036	0.045	-0.040	0.054	0.010	-0.013	0.066	0.024	-0.022	0.120*
IG	-0.011*	-0.015***	-0.005	-0.017*	-0.010**	-0.007	-0.024	-0.013*	-0.005	-0.013
HY	-0.002	0.002	0.006	0.008	0.003	0.004	0.043**	0.003	-0.001	0.000
Equ	-0.016	0.001	0.012	-0.058***	-0.010	0.003	-0.023	-0.012	-0.009	-0.005
Vol	-0.161	-0.160	0.391**	-0.371	0.009	0.109	-0.409	-0.451**	-0.089	0.157
Bond	0.485	-0.451	0.749	-5.213***	-3.838***	-0.637	-3.435	-3.966***	-2.495***	-1.742
Stock	1.120	3.414	4.544*	6.812*	4.795***	5.360**	13.328*	5.789**	1.572	4.953
Election	0.028	-0.023	0.096**	-0.005	-0.044**	-0.021	-0.146	-0.140***	0.087	-0.135***
ElectionFin	-0.020	0.007	-0.011	-0.021	0.043**	-0.017	0.035	0.107	0.129*	-0.056*
IdeologyFin	-0.002	0.000	0.002	0.003	0.003*	-0.001	0.003	0.011***	-0.013***	-0.002
ElectionGIIPS	-0.014	0.007	0.012	-0.051	0.000	0.007	0.244	0.004	-0.005	0.040
IdeologyGIIPS	0.001	-0.001	0.001	-0.006**	-0.003*	-0.001	0.005	0.001	0.001	0.002
ElectionUS	-0.013	-0.025	0.194***	0.140***	0.066*	-0.025	-0.026	0.047	0.000	-0.121
Reg	0.485***	0.324***	0.136	1.248***	0.815***	0.127	1.814**	1.249***		0.139
Globe	0.146	0.337*	0.228	0.309*	-0.019	0.537***	0.042	-0.184	0.329**	0.691**
Constant	0.035	0.006	-0.060	-0.081	-0.029	-0.029	-0.466**	-0.012	0.008	0.031
R^2	0.251	0.814	0.536	0.659	0.700	0.730	0.415	0.697	0.391	0.235
Adj. R^2	0.098	0.777	0.441	0.589	0.638	0.675	0.295	0.635	0.283	0.089
F	1.32	25.26	8.71	6.75	14.19	16.25	2.70	15.75	11.87	4.93
Prob > F	0.191	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000

*** $p<0.01$, ** $p<0.05$, * $p<0.10$

Appendix M.

Election Regression Model by World Cluster

This appendix reports the world cluster based results for the linear regression models, with the inclusion of the election variables. Blank coefficients represent cases where the country in question did not have data for this variable. The dependent variable is the percentage change in the sovereign CDS spread of the country. This means that a coefficient of 0.100 represents 10%. In these tables 'C#' represents Cluster #.

	C1	C2	C3	C4	C5
LSM	-0.823***	-0.405***	-1.112***	-0.379***	-1.134***
Exchg	-0.439**	-0.014	0.124	-1.702***	-0.391
FCR	0.001	0.028	0.093	0.528**	-0.336
Mrkt	0.297	-0.199	0.894*	-1.459***	-0.415
Trsy	0.000	0.010	-0.012	0.071**	-0.013
IG	-0.019***	-0.015***	-0.019***	-0.016***	-0.007
HY	0.008***	0.009***	0.006	0.004	0.004
Equ	-0.016**	0.005	-0.052***	0.002	0.003
Vol	-0.426***	-0.277***	-0.015	-0.090	0.109
Bond	-5.898***	-3.867***	-3.894***	-0.718	-0.637
Stock	9.366***	6.745***	8.482***	4.393***	5.360**
Election	-0.094**	-0.075*	0.064**	0.011	-0.021
Ideology	-0.001	-0.001	0.001	-0.001	
TCTC	0.080	0.075***			
Incumbent	0.092	0.049	-0.063*	-0.052	
ElectionFin	0.007	0.026*	-0.021	-0.014	-0.017
IdeologyFin	0.003	0.002***	0.002	-0.001	-0.001
ElectionGIIPS	-0.042***	-0.012	-0.047*	0.011	0.007
IdeologyGIIPS	-0.003**	-0.004**	-0.006***	0.000	-0.001
ElectionUS	0.144***	0.025	0.090*	0.018	-0.025
Reg	1.466***	0.756***	1.116***	0.116	0.127
Globe	-0.025	-0.092**	0.209**	0.505***	0.537***
Constant	-0.069***	-0.082***	-0.055	-0.008	-0.029
Observations	676	564	335	452	113
R^2	0.681	0.542	0.518	0.731	0.730
Adj. R^2	0.671	0.524	0.486	0.718	0.675
F	21.37	18.39	9.16	36.47	16.25
Prob > F	0.000	0.000	0.000	0.000	0.000

**** p<0.01, ** p<0.05, * p<0.10*

Appendix M Continued

	C6	C7	C8	C9	C10
LSM	-0.055	-0.128*	-0.039		-1.550*
Exchg	-0.436	-0.443***	-1.128		0.221
FCR	-0.041	0.056	0.018		1.313
Mrkt	-0.695	-0.366***	-0.174		-0.941
Trsy	0.055	0.075***	-0.033		0.066
IG	-0.013**	-0.009***	-0.011		-0.024
HY	0.007*	0.004**	0.000		0.043**
Equ	-0.014	0.006	-0.021		-0.023
Vol	0.116	-0.177**	0.490		-0.409
Bond	-0.781	-1.095**	-0.995		-3.435
Stock	3.697***	2.526***	7.135		13.328*
Election	-0.061	0.015	-0.091		-0.146
Ideology	0.003**	0.000			
TCTC	0.194**	0.052*			
Incumbent	0.132*	-0.028			
ElectionFin	-0.010	-0.025**	-0.026		0.035
IdeologyFin	0.001	-0.002*	-0.002		0.003
ElectionGIIPS	0.055	0.016	0.000		0.244
IdeologyGIIPS	0.002	0.001	-0.004		0.005
ElectionUS	0.069	0.023*	0.006		-0.026
Reg	0.329***	0.380***	0.219		1.814**
Globe	0.165*	0.094**	0.185		0.042
Constant	-0.074	-0.042**	-0.014		-0.466**
Observations	339	678	113	N/A	113
R^2	0.286	0.315	0.154	N/A	0.415
Adj. R^2	0.236	0.291	-0.019	N/A	0.295
F	7.45	6.50	1.70	N/A	2.70
Prob > F	0.000	0.000	0.049	N/A	0.001

*** *p<0.01*, ** *p<0.05*, * *p<0.10*

Note. Cluster 9 exists solely out of a country which fails to produce a valid regression, therefore it has been dropped for the purpose of this table.

Appendix N.

Election Regression Model by European Cluster

This appendix reports the European cluster based results for the linear regression models, with the inclusion of the election variables. Blank coefficients represent cases where the country in question did not have data for this variable. The dependent variable is the percentage change in the sovereign CDS spread of the country. This means that a coefficient of 0.100 represents 10%. In these tables 'C#' represents Cluster #.

	C1	C2	C3	C6	C7	C8	C10
LSM	-0.823***	-0.405***	-1.112***	-0.042	-0.177**	-0.039	-1.550*
Exchg	-0.439**	-0.014	0.124	-0.429	-0.383**	-1.128	0.221
FCR	0.001	0.028	0.093	0.039	0.054	0.018	1.313
Mrkt	0.297	-0.199	0.894*	0.056	-0.277*	-0.174	-0.941
Trsy	0.000	0.010	-0.012	0.091**	0.085***	-0.033	0.066
IG	-0.019***	-0.015***	-0.019***	-0.015*	-0.010***	-0.011	-0.024
HY	0.008***	0.009***	0.006	0.008	0.005**	0.000	0.043**
Equ	-0.016**	0.005	-0.052***	-0.026	0.003	-0.021	-0.023
Vol	-0.426***	-0.277***	-0.015	0.031	-0.221***	0.490	-0.409
Bond	-5.898***	-3.867***	-3.894***	-1.483*	-0.898*	-0.995	-3.435
Stock	9.366***	6.745***	8.482***	3.140*	2.179***	7.135	13.328*
Election	-0.094**	-0.075*	0.064**	0.004	0.007	-0.091	-0.146
Ideology	-0.001	-0.001	0.001		-0.001**		
TCTC	0.080	0.075***			-0.001		
Incumbent	0.092	0.049	-0.063*		0.001		
ElectionFin	0.007	0.026*	-0.021	-0.010	-0.020	-0.026	0.035
IdeologyFin	0.003	0.002***	0.002	0.000	-0.002	-0.002	0.003
ElectionGIIPS	-0.042***	-0.012	-0.047*	0.069*	0.019	0.000	0.244
IdeologyGIIPS	-0.003**	-0.004**	-0.006***	0.002	0.001	-0.004	0.005
ElectionUS	0.144***	0.025	0.090*	0.014	0.027*	0.006	-0.026
Reg	1.466***	0.756***	1.116***	0.617***	0.537***	0.219	1.814**
Globe	-0.025	-0.092**	0.209**	0.103	0.064*	0.185	0.042
Constant	-0.069***	-0.082***	-0.055	-0.081	-0.043**	-0.014	-0.466**
Observations	676	564	335	226	565	113	113
R^2	0.681	0.542	0.518	0.298	0.327	0.154	0.415
Adj. R^2	0.671	0.524	0.486	0.233	0.300	-0.019	0.295
F	21.37	18.39	9.16	2.73	5.83	1.70	2.70
Prob > F	0.000	0.000	0.000	0.000	0.000	0.049	0.001

**** p<0.01, ** p<0.05, * p<0.10*

Appendix O.
Election Regression Model by Group

This appendix reports the results regarding the linear regression models including the election variables for all countries, for all European countries, for financial hub countries and for GIIPS countries. The first two models use cluster robust standard errors, clustered by country. The other two models use conventional robust standard errors. Blank coefficients represent cases where the country in question did not have data for this variable. The dependent variable is the percentage change in the sovereign CDS spread of the country. This means that a coefficient of 0.100 represents 10%. Here ‘Fin Hub’ refers to the financial hub countries.

	World	Europe	Fin Hub	GIIPS
LSM	-0.677***	-0.661***	-1.329***	-0.472**
Exchg	-0.289	0.246	-0.344	-0.562
FCR	0.010	0.008	-0.004	0.003**
Mrkt	-0.276*	-0.027	0.490	0.469
Trsy	0.030***	0.034**	-0.002	-0.004
IG	-0.015***	-0.016***	-0.018***	-0.019***
HY	0.007***	0.009***	0.008**	0.004
Equ	-0.007	-0.012**	-0.011	-0.043***
Vol	-0.151***	-0.213***	-0.585***	0.000
Bond	-2.689***	-3.301***	-5.489***	-3.672***
Stock	6.197***	6.699***	7.222***	8.640***
Election	-0.057**	-0.065**	-0.090**	-0.066
Ideology	0.000	-0.001*	0.000	-0.001
TCTC	0.056*	0.059**	0.022	0.146
Incumbent	0.058**	0.057*	0.041	0.062
ElectionFin	-0.002	0.001	0.046	-0.023
IdeologyFin	0.001	0.001	0.006*	0.000
ElectionGIIPS	-0.001	0.003	-0.040	-0.044**
IdeologyGIIPS	-0.001*	-0.002**	-0.004*	-0.005***
ElectionUS	0.061***	0.070***	0.150***	0.048
Reg	0.446***	0.933***	1.382***	0.987***
Globe	0.139***	0.030	-0.027	0.172**
Constant	-0.065***	-0.081***	-0.059	-0.034
Adj. R^2	0.337	0.335	0.645	0.394
F	33.74***	230.50***	10.59***	7.55***
Prob > F	0.000	0.000	0.000	0.000

**** p<0.01, ** p<0.05, * p<0.10*

Appendix P.

Summary Statistics for Ideology

This appendix presents the summary statistics for the ideology factor by cluster and by group. These groups are all countries, also referred to as world or global, all European countries, all financial hub countries and all GIIPS countries. Here the 'Obs.' shows how many elections took place in this cluster during the sample period. The summary statistics are reported in three separate tables for the world clusters, the European clusters and the groups.

Table P1

Summary Statistics for the Ideology Factor for the World Clusters

Cluster	Obs.	Mean	Std. Dev.	Min.	Max.
1	15	-4.055	13.612	-38.483	10.161
2	10	-15.766	17.995	-52.495	10.953
3	9	-10.303	11.293	-29.267	0.605
4	9	-2.558	22.343	-31.926	42.466
5	3	-7.318	0.509	-7.793	-6.780
6	8	-11.154	19.653	-42.508	11.179
7	42	2.887	20.780	-37.811	91.892
8	3	-21.319	20.876	-41.722	0.000
9	3	-28.318	6.057	-32.366	-21.354
10	2	13.049	23.330	-3.448	29.545

Table P2

Summary Statistics for the Ideology Factor for the European Clusters

Cluster	Obs.	Mean	Std. Dev.	Min.	Max.
1	15	-4.055	13.612	-38.483	10.161
2	10	-15.766	17.995	-52.495	10.953
3	9	-10.303	11.293	-29.267	0.605
4	4	1.047	13.595	-17.805	11.179
5	32	0.344	15.438	-37.811	48.655
6	3	-21.319	20.876	-41.722	0.000
7	2	13.049	23.330	-3.448	29.545

Table P3

Summary Statistics for the Ideology Factor for the Different Groups

Group	Obs.	Mean	Std. Dev.	Min.	Max.
Global	104	-4.298	19.672	-52.495	91.892
Europe	75	-4.451	16.358	-52.495	48.655
GIIPS	14	-13.379	12.977	-41.722	0.605
Fin Hub	8	-2.165	9.512	-24.673	6.214