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A comparative study of the effects on investment of political uncertainty caused by Brexit and by national elections

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ABSTRACT

I analyse the difference in impact between national elections and Brexit on stock returns and corporate investment for 15 European countries. Stock prices and corporate investment rates are negatively related to political uncertainty. In my analysis, I find that on average the countries' stock prices reacted more negatively after Brexit than they do after elections, indicating the uncertainty increase associated with Brexit is significantly higher compared to the uncertainty associated with elections. I further document firms decreased their investment rate before Brexit, but do not change their investment rate before national. Firms tend to have higher investment rates in countries with presidential systems, more checks and balances and higher government spending ratios. Overall, my results show that uncertainty around Brexit is substantially higher than uncertainty around national elections. Uncertainty around rare political events can highly affect corporate investment policy and financial markets.

JEL Classification: G31; G38; G13

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1. Introduction

The behaviour of today's economic agents is highly affected by political uncertainty. Governments contribute to political uncertainty by changing fiscal, regulatory and monetary policy, which influences the behaviour of firms. Changes in national leadership or political events may especially add to political uncertainty by changing the government's policies. The effects of political uncertainty are especially relevant during recessions and important political events. Uncertainty during recessions may hinder the recovery for firms by inducing a delay of investment until the uncertainty related to future economic policy is resolved.

Earlier research conducted on political uncertainty provides evidence that it can lead to a decrease in corporate investment and depressed economic growth (Baker, Bloom, & Davis, 2016). More studies followed, finding a decrease in corporate investment during the recent global financial crisis as a consequence of increasing uncertainty about government policies. Not only is investment affected by uncertainty, but also financial markets. Brogaard and Detzel (2015) find higher uncertainty around government policy decisions leads to a decrease in market returns. Share prices are expected to increase once uncertainty is resolved.

One main recent political event that has led to quite a tremendous amount of political uncertainty was the United Kingdom's referendum vote to leave the European Union, announced on June 24^{th,} 2016, also commonly known as "Brexit". Brexit was unexpected by the majority of participants in the capital market and has had substantial consequences in the financial markets. Brexit resulted in large share price losses, especially for financial institutions. The share prices of Barclays and Deutsche Bank dropped by -17.7% and -13.9%, while stock prices of the German DAX fell by -6.8% and the Dow Jones by -3.4% (Bloomberg, 2016b). Not only stock prices of banks were affected by this sudden change in policy. A fall in share prices also followed for firms, due to the high levels of uncertainty regarding the future relationship between the United Kingdom and the European Union (Tielmann & Schiereck, 2016). Companies have to anticipate the future economic policy decisions of governments. They, therefore, had to make important changes in investment policy as a result of the drastic change in government policy of the United Kingdom. However, it is not only political events like "Brexit" that lead to an increase in political uncertainty. Uncertainty also increases in the periods around national elections. Earlier research on uncertainty around elections finds firms decreasing their investment expenditures by 4.8% during the year leading up to the election outcome, relative to non-election years (Julio & Jook, 2012).

While Brexit was seen as a political event with a tremendous impact on political uncertainty, no research has been done to analyse if the effect of this event is substantially different from any other political events in which uncertainty rises. In this paper, I will examine if there is a substantial difference between the effect of Brexit and the effect of national elections. To compare the impact of these two types of events, I will mainly focus on the effects on country index returns and firm investment behaviour. The decision to examine the difference between elections and the Brexit was made for two main reasons. First, both events are relevant for corporate decisions. Election outcomes and Brexit both have implications for industry, regulation, taxation, monetary and trade policy. Secondly, uncertainty about the outcomes of national elections and Brexit both have a significant impact on stock returns and investment behaviour. They provide therefore a useful way to investigate the effects of political uncertainty.

The effects of uncertainty on stock returns are examined by Pastor and Veronesi (2012). They document a negative effect around policy announcements on expected stock returns and show that this effect is more negative when there is more uncertainty about government policy. Larger uncertainty around government policy increases the risk associated with that policy and increases the effect that pushes stock prices down when the new policy is announced.

Political events affect investment behaviour if resulting uncertainty leads to a decrease in investment. When the likely outcome of a political event seems bad from a firm's perspective, the firm may delay investment. The firm wants to wait to invest until the political uncertainty around the political event is resolved. Evidence for this relationship has been provided by Brogaard and Dretzel (2015) and Bernanke (1983). They provide evidence that firms hold back on investment in periods of rising uncertainty. In times of rising uncertainty firms may become more cautious about taking on investment projects. Bernanke (1983) suggests that events with uncertain long-run implications can generate investment cycles by incentivising firms to withhold investment and wait for new information. He states that these investment cycles will be generated when the source of uncertainty periodically renews itself. This can be the case around national elections, as they increase uncertainty and can induce declines in investment spending. Rodrik (1991) provides a simple model to link policy uncertainty to the private investment response. He models especially the effects of policy reforms, including structural and microeconomic features. His research provides evidence of firms withholding investment and decreasing investment expenditures as a result of increased political uncertainty.

By examining the effect on stock returns and corporate investment for national elections between 2000 and 2016 and Brexit for 15 European countries, I will analyse the difference in impact on uncertainty between these two types of events. This paper is organised as follows. Sections 2 reviews the related literature and develops the hypotheses. Section 3 describes the data. Section 4 presents methodology and main results related to stock market reactions around Brexit and elections. Section 5 presents the results and methodology related to corporate investment. Section 6 concludes.

2. Literature review and hypothesis development

2.1. Political uncertainty and stock returns

First I will review the related literature on the effects of political uncertainty on stock returns. Pastor & Veronesi (2012) analyse how uncertainty in government policies affect stock prices. They develop a general equilibrium model in which firm profitability follows a stochastic process. The mean in this model is affected by government policy. The impact of the policy on the mean is assumed to be uncertain. On average, they document a fall in stock return at the announcement of a policy change. This fall in stock returns is associated with a discount rate effect. A policy change increases the discount rate because the impact of the new policy on profitability is uncertain. The negative effect on returns is larger when uncertainty about government policy is higher. Larger policy uncertainty is associated with higher risk and a higher discount rate effect on stock returns. They further prove that stock returns volatilities and correlations are also affected by changes in government policy. As uncertainty about government policy rises, the risk goes up and stock returns become more volatile and highly correlated among firms. Schiereck, Kiesel, and Kolaric (2016) analyse the stock reactions of banks around Brexit. They find a short-run drop in stock prices more pronounced for the Brexit announcement compared to Lehman's bankruptcy in 2008.

Considerable empirical evidence on elections has already indicated that they affect overall stock markets. Santa-Clara and Valkanov (2003) examine stock returns during US elections and find higher excess returns under Democratic presidencies that cannot be explained by business-cycle variables. Broader studies on elections find positive abnormal returns in the two weeks before national elections across 33 countries. The abnormal returns are especially positive for elections when the incumbent governments lose (Pantzalis, Stangeland, & Turtle, 2000).
Based on this previous literature, I hypothesise that the stock returns will be more negative around Brexit. In particular, a decrease in stock returns is expected for the United Kingdom after Brexit, as the future consequences of this policy change are highly uncertain.

2.2. Political uncertainty and corporate investment

According to existing investment theory, an optimising manager should take on an investment if the investment project has a positive net present value (NPV) and reject it if this NPV is negative. The theory becomes fuzzier when the presence of uncertainty and investment irreversibility is taken into account. A manager should now also consider at what point in time he takes on an investment project. The value of waiting to invest is affected by changes in the amount of uncertainty. To optimise the value of an investment, the manager has to decide whether to take on an investment early or delay it on order to gain additional information. This decision is a trade-off between extra returns from an early investment against the benefits gained by delaying an investment project.

The investment decision for a firm can be viewed as a portfolio of options and can be evaluated by using option pricing techniques. By using option pricing, the value of an investment will be affected by the volatility or uncertainty of the future price of the underlying asset. The literature on the use of option pricing for investment evaluation contains many predictions for how investment projects should be evaluated in the presence of uncertainty. McDonald and Siegel (1986) study the optimal timing of investment in an irreversible project. They try to explore the valuation of investment options and the importance of the value of waiting to invest. Their conclusion is that timing considerations are important in the presence of uncertainty. The optimal decision for a manager is to defer investment until the present value of the benefits from projects is double the investment costs. Ingersoll and Ross (1992) analyse the investment decision when taking into account the presence of interest rate uncertainty. They suggest that investment decisions should no longer be evaluated by the common NPV rule, especially not large-scale investments. The central theme of their work is that interest rate uncertainty has a significant effect on investment and delaying an investment may be optimal, because waiting may reduce uncertainty about future cash flows. Bernanke (1983) models the flow of information on cash flows to find the optimal delay policy. According to Bernanke, the “bad news” principle is the value increase of waiting to invest in the presence of a possible bad outcome. The value of a current investment will only be reduced if a bad outcome is possible.
His “bad news” principle is tested in research conducted by Julio and Yook (2012). They were the first to examine political uncertainty around national elections and its implications for investment at the firm level. Julio and Yook (2012) argue that if political uncertainty matters for firms, then the recurring nature of political uncertainty around elections should generate cycles in investment spending. Firms should delay investment when there is a national election with a possible bad outcome. Their results are consistent with this political uncertainty hypothesis.

They document an average decline of 4.8% in investment expenditures in the period leading up to a national election. Within countries, they find the temporary decline in investment expenditures is more pronounced for firms in politically sensitive industries. (As discussed below, these include tobacco products, pharmaceuticals, health care services, defence, petroleum and natural gas, telecommunications and transportation.) The investment reduction in the years preceding elections is followed by higher than average investment following the election outcomes. This result correlates to a decrease in uncertainty after elections.

Kelly, Pastor, and Veronesi (2016) analyse the effect of political uncertainty on pricing in the options market by focusing on the variation in uncertainty around national elections and global summits. Their findings indicate that political uncertainty is priced in the equity options market. Options whose lives span political events tend to be more expensive. The higher price for these options indicates that these options provide valuable protection against the risk associated with political events. They show that options are even more expensive in a weaker economy because of higher political uncertainty. Their results are consistent with earlier findings and indicate that during political events like national elections, the rise in uncertainty creates higher political risk for investors.

The bad news principle from Bernanke (1983) can also be applied to Brexit. As uncertainty increases around the UK referendum, firms will reduce investment with the probability of a bad outcome. The decision to leave the European Union was so unexpected that it led to considerable uncertainty rise after the announcement. Based on the research on corporate investment and uncertainty, I hypothesise that the decline in investment rates will be higher in the year of Brexit compared to the decline in investment rates around election years.
In particular, I expect the average effect of electoral uncertainty to be lower than the effect of uncertainty around Brexit. The effect on investment expenditures is expected to be larger when Brexit occurred, compared to the effect of national elections for two reasons: i) the outcome was highly unpredictable until the final day (ii) no member state has previously sought to leave the European Union, so the consequences cannot yet be assessed. Elections outcomes, however, are usually predictable and elections are held on a regular basis.

Julio and Yook (2012) show in their paper that decline in investment rates is larger in countries with fewer checks and balances, less stable governments and more government spending. Countries with fewer checks and balances are less constrained and therefore more likely to experience large policy changes following a change in government. Within countries, they find that the investment cycles are more pronounced for firms in sensitive industries.

This finding is consistent with Bernanke's bad news principle. According to this principle, the value of waiting will also vary across countries and from firm to firm. The magnitude of investment cycles may even vary across elections within countries, depending on the uncertainty of the potential outcomes. My second hypothesis is that the reduction in investment rates will be larger in countries that are less stable and have higher government spending.

For the variation from firm to firm, I hypothesise that the reduction in investment rates will be higher for sensitive industries. In particular, I especially expect the decline for sensitive industries to be higher for Brexit compared to election years. The expectation of a larger decline for Brexit is based on research by Schiereck and Tielmann (2016). They examined the effects of Brexit on the valuation of logistics companies by employing an event study on 107 logistics companies from continental EU and Great Britain. Their results indicate an overall negative value effect due to increasing uncertainty, with a significantly poorer performance for UK-based companies than logistics companies from Continental Europe. The increasing uncertainty will most likely also result in a decline in investment expenditures for this sensitive sector. Julio and Yook (2012) find that within countries the investment cycles are more pronounced for firms in sensitive industries. It will, therefore, be expected that firms in sensitive industries are more likely to experience a heavier decline in investment expenditures in periods with higher uncertainty.

3. Data sample

My analysis will focus on the effect of Brexit and national elections on stock returns and firms investment policy's for 15 countries of the European Union. The event date for Brexit will be set to Friday, 24 June 2016. On this day the national declaration of the result took place and it was announced that the United Kingdom will leave the European Union.

3.1. Election data

Election data consists of data from 64 national elections in 15 countries held between 2000 and 2016. Over the sample period, all 15 countries belonged to the EU, including the United Kingdom. The main source used to obtain the election data is the World Bank Database of Political Institutions. This database contains information about the electoral results, as well as measures of checks and balances and the tenure and stability of governments. It further contains data about electoral rules and the classification of the political systems. This database covers election data for about 180 countries over 40 years.

For each country, data has been obtained only about national elections associated with the selection of the chief executive with supreme executive power. Countries are divided into three political systems. Countries in which executive power is vested in the office of the president are identified as countries with a presidential system. Executive power vested in a cabinet or parliament with a prime minister or premier are identified as countries with a parliamentary system. The prime minister is the actual chief executive of the country, head of the cabinet and leader of the parliament. The outcome of legislative elections determines the appointment of the prime minister. Finally, countries with a system combined of a parliament and president are identified as a hybrid system. In these countries, executive power is divided between the parliament and president. In the dataset, France and Poland are identified as countries with a hybrid political system. For these countries, election data is used only from elections in which the leader with the most executive power is chosen. To identify only these elections, the framework of the hybrid system is examined to determine the government head with the most power over executive decisions. France is hereby specified as a country with a presidential system. For Poland, only parliamentary elections are selected.

Table 1 presents the dataset of the 15 countries with the classification of the political system and the number of elections for each country. The sample consists of 14 countries with legislative elections and 1 country with presidential elections.

INSERT TABLE 1 HERE

Table 1 further presents the timing of the elections for each country. The timing of elections is important for the interpretation of the results. The timing of elections may be endogenously connected to the performance of a country over time. Some governments may be dissolved before the full term of the government has expired. An election is then held earlier for the election of a new government. The timing of elections is divided between elections with fixed timing and elections with flexible timing. Countries with fixed elections are classified as elections with exogenous timing. Countries with presidential elections have fixed elections. Countries with flexible elections have a record of one or more early elections and are classified as elections with endogenous timing. 12 Countries are classified as countries with the flexible timing of elections and the remaining three countries have fixed elections. 15.63% of the elections are identified as elections with fixed timing.

Table 2 presents summary statistics for the election data sample. On average, elections are held every 3.91 years. The chief executive of a government has on average a term of 4.59 years. 43.75% of the elections in the data sample lead to a change in the head of the government. This can be a change in the ruling party or replacement of the chief executive.

INSERT TABLE 2 HERE

3.2. Country-specific data

Country-specific data is obtained from various sources. The main source for macroeconomic data for these countries is the World Development Indicators database from the World Bank. This database consists of the macroeconomic variables used in this research including GDP growth and government spending. Country index data is obtained from Datastream. The index data contains daily stock return observations for country stock indices of the 15 countries used in the data sample. The daily data is obtained over the period January 2000 till December 2016. Data on the rating of economic freedom is provided by the Heritage Foundation. Every year this institution provides the index of economic freedom in collaboration with the *Wall Street Journal*. The index analyses policy developments for 186 countries.

The countries are rated on 12 measures of economic freedom that evaluate the rule of law, government size, regulatory efficiency, and the openness of markets. This rating is therefore used to define the stability of countries. Data on the checks and balances measure is provided by the World Bank Database of Political institutions. This source provides annual country specific information on the checks and balances for each political system. Checks and balances refer to mechanisms to prevent the abuse of power and measures the number of veto players needed for the approval of a policy change. Different branches of a government controlled by the same party will result in a lower checks and balances measure relative to a government with different parties controlling different branches. In presidential systems, the checks and balances measure has a count of one for the president, increasing by one for each additional legislative body that is needed for the approval of a policy change. The measure for parliamentary systems has a count of one for the prime minister, and further measures the number of parties in the coalition of the ruling government. Table 2 provides summary statistics on the country variables.

3.3. Firm Data

Firm data is obtained from Compustat Global for the 15 European countries in the sample between 2000 and 2016. Compustat Global provides annual financial and market data of listed companies for over more than 80 countries, with an emphasis on non-American companies. The annual report data of this database starts in 1987. Table 1 in the appendix presents the total of firm-year observations by country. The total sample obtained from Compustat consists of 51,711 firm-year observations. Firm return data is obtained with Datastream from the Worldscope database. This database contains daily stock returns for the constituents of each country stock index. The daily stock returns are obtained over the period January 2000 till December 2016. Panel B of table 2 provides summary statistics on the firm characteristics.

4. Effect of Brexit and election uncertainty on stock returns

4.1. Event study methodology

The first step in analysing the difference in uncertainty between elections and Brexit is analysing the effects of these events on stock returns. Previous research on stock market reactions during political events provides evidence of increasing stock volatility and decreasing market returns associated with higher uncertainty (Pastor & Veronesi, 2012). Once the uncertainty is resolved around a political event, stock prices should increase. For Brexit, the same is expected, but researchers predict that uncertainty around Brexit is likely to remain high and stock prices are expected to decrease until it becomes clear what the future relationship between the United Kingdom and the European Union will be (Brogaard & Detzel, 2015). However, no research has been done to analyse the difference in stock market reactions around Brexit and elections. I will therefore first analyse the stock market reactions during election periods and Brexit. My analysis for Brexit will focus on the day after the UK referendum. The national declaration of the result on Friday, June 24^{th,} 2016 will be set as the event date. The analysis for the elections will focus on the day of the elections, the event date for each country. The sample of my analysis includes firm return data from the Worldscope database for 15 countries, all members of the European Union, including the United Kingdom. The methodology used to examine the stock market reactions is based on the standard market model event study, introduced by Brown and Warner(1985).

I use a simplified approach to construct the expected returns for each firm using a regression of the return for firm stock *i* on a constant and the return of a benchmark index. The benchmark index is the country index provided by the Worldscope database.

$$R_{i,t} = \alpha + \beta Rm_t + \varepsilon_{i,t}$$

The expected return (ER) for stock *i* on any day t during the event window could then be calculated as the constant α(value) plus the beta(value) estimate from this regression multiplied by the actual return of the benchmark market index on day t. The sample period used to calculate the expected returns is an 180 day estimation period. This estimation period begins -210 days before the event date and stops -30 days before the event date.

$$ER_{i,t} = \alpha(est) + \beta(est)Rm_t$$

The next step is to isolate the effect of the events from the effect of the change of the return caused by the change in the value of the market index. This is done by calculating the cumulative abnormal return over the event window. An 11-day event window is chosen for this study, beginning from day -5 to +5. Cumulative abnormal return for each stock is calculated as follows:

$$CAR_{i,[t1,t2]} = \sum_{t=t1}^{t2} (R_{i,t} - ER_{i,t})$$

$CAR_{i,[t1,t2]}$ is the cumulative abnormal adjusted abnormal return for stock *i* over the event window. R_{it} represents the day t return on stock *i* and $ER_{i,t}$ is the expected return for the stock on day t. In order to test for the persistence of the impact of the event during the event window and to compare the election group and the Brexit group abnormal returns, the average CAR must be calculated. The average CAR in the event window is given by:

$$ACAR_{i,[t1,t2]} = \frac{1}{N} \sum_{i=1}^{N} CAR_{i,[t1,t2]}$$

The average CAR is calculated over multiple event windows for the election dates and Brexit date for a sample of N firms for each country. The t-statistic used to test the persistence of the events during the event window is given by:

$$t = \frac{ACAR_t^{t+n}}{\hat{s}(ACAR_t^{t+n})}$$

where $\hat{s}(ACAR_t^{t+n})$ is the estimated standard error of the cumulative abnormal returns across the sample.

4.2. Event study results

An overview of the ACAR results of the event study is presented in table 3. The figures 1 to 3 illustrate the stock market reactions and significant differences in market reactions between elections and Brexit. In the five-day event window before elections or Brexit, only four countries report significant negative ACARs. Belgium, Denmark, and the United Kingdom report significant positive returns before Brexit and only Poland reports on average significant positive stock returns before national elections. These results are also illustrated in the figures; for both events the lines are not substantially different from zero before the event dates.

INSERT TABLE 3 HERE

An interesting finding in the table is the positive stock returns of the United Kingdom before Brexit but negative returns before elections. This result is also illustrated in figures 1 and 2 and may indicate that the uncertainty before Brexit was lower compared to the uncertainty before elections in the United Kingdom. The lack of significant stock returns in the five-day event window before both type events indicates effects of uncertainty on stock returns is not significantly high.
Figure 1 further illustrates a significant decline in stocks of the United Kingdom after Brexit. This decline in stock returns is substantially larger than the reaction of other European countries. Figure 2 shows that stocks of the United Kingdom react on average more positively after elections compared to the European countries. The results suggest that the average effect of uncertainty after Brexit is substantially larger compared to the effect of electoral uncertainty for the United Kingdom, resulting in highly negative returns after Brexit.

Overall, the figures show a significant difference between stock market reactions to elections and those to Brexit in the days after the events. Countries react relatively more negatively after Brexit, around -1,80%, compared to the stock market reactions after elections, around -0.25%. The ACAR over the 11-day event window for elections is relatively lower for European countries compared to the ACAR of the UK. On average, election uncertainty significantly affects stock returns for European countries, but the magnitude of this effect is lower relative to the effect of uncertainty around Brexit.

Figure 1: Stock market reactions to Brexit

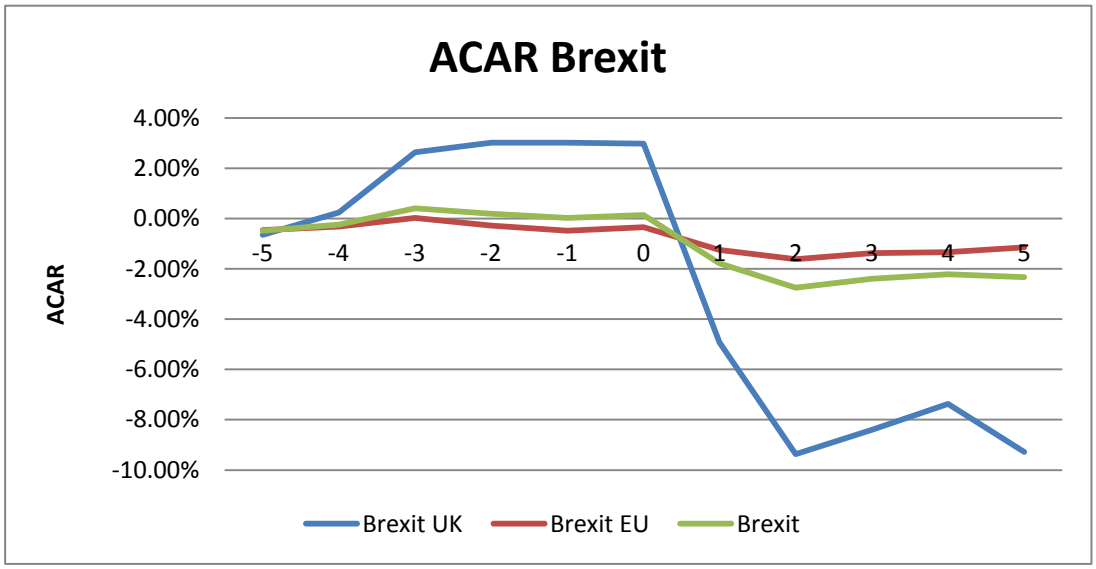


Figure 2: Stock market reactions to elections

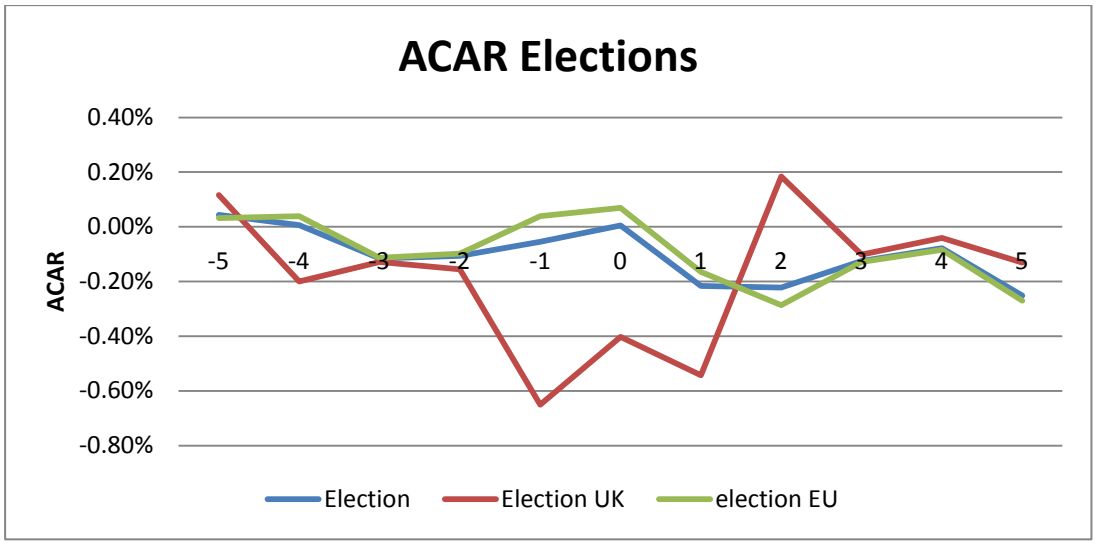
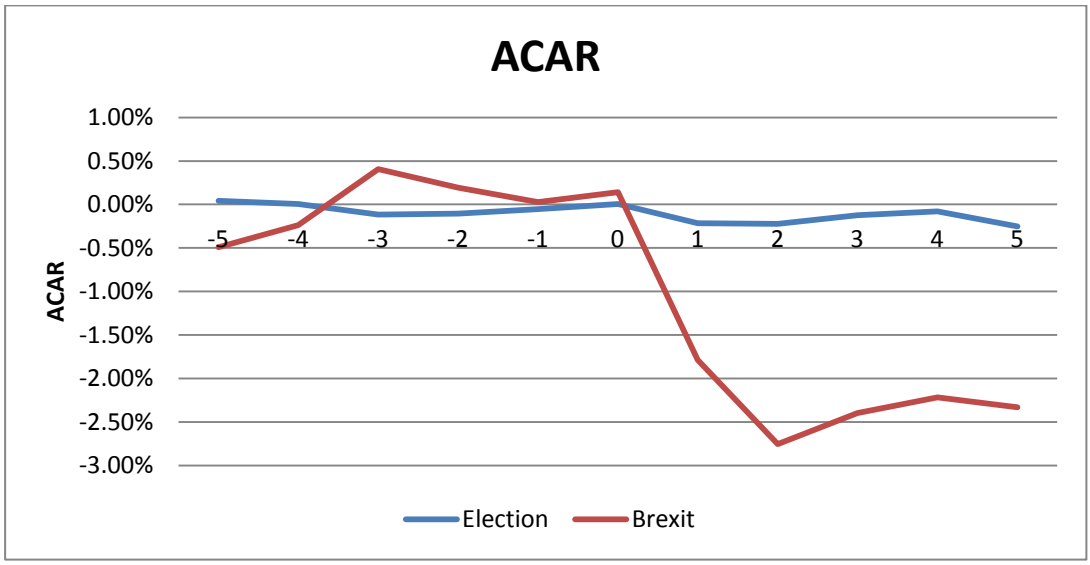


Figure 3: Overall stock market reaction to elections and Brexit



5. Effect of Brexit and elections on corporate investment

5.1. Investment effect methodology

To investigate if the uncertainty around Brexit has led to a reaction in corporate investment that is substantially different from the effect of elections, I will use the same multivariate regression used by Julio and Yook (2012). My baseline regression is similar to the regressions used to test the Q theory of investment, because these types of regressions have a solid foundation with good empirical support compared to other investment regression models. The following baseline regression is used to test the effect of national elections and Brexit on corporate investment:

$$I_{ij,t} = \beta_i + \beta_1 ElectionDummy_j + \beta_2 BrexitDummy_j + \beta_3 Q_{i,t-1} + \beta_4 CF_{ij,t-1} + \beta_5 \%\Delta GDP_{j,t-1} + a_i + \varepsilon_{i,t}$$

Where *i* indexes the firm and *j* indexes the country, *t* indexes the time index. The dependent variable used in the regression is investment. Investment is defined as capital expenditures divided by total assets at the beginning of the fiscal year for each firm. The firm control variables, Q, and cash flow are measured at the beginning of the fiscal year for each firm. The country variable GDP growth is measured as the percentage change in a nation's gross domestic product in the year prior to the investment decision. a_i captures firm-fixed effects in the regression. Year-fixed effects are not included in the specification, as these effects will absorb the explanatory power of the Brexit dummy. Standard errors are clustered by country and year for all regressions.

The explanatory variables of interest in the regression are the election dummy and the Brexit dummy. To capture the effect of election uncertainty on investment, the election dummy is given a value of one if an election falls in the period 60 days prior to the fiscal year end in year *t,* or no more than 274 days after fiscal year end of year *t*. If an election falls outside this period the election dummy takes on a value of zero. By using this specification for the election dummy, the coefficient will mainly capture the change in investment in the period around national elections. The Brexit dummy will take on a value of one if Brexit falls in the period [-60,+274] of the fiscal-year end in the year 2016. The coefficient will capture the effect of Brexit on investment in the period leading up to Brexit and after Brexit.

Control variables are added to the regression to control for other changes in firm characteristics and economic conditions. The first control variable used as an indirect measure for the incentive to invest is the Tobin's Q measure, this measure is defined as the ratio of the market value of assets to the book value of assets. The second firm control variable is the cash flow variable, defined as earnings before interest and taxes minus taxes and interest expense plus depreciation and amortization.

Cash flow is added to the regression because earlier research shows that financial constraints have a significant effect on investment and cash flows increase the explanatory power for future profitability in regressions where Tobin's Q fails to ((Alti, 2003), (Erickson & Whited, 2006)). The firm characteristics are winsorized at the 1st and 99th percentiles throughout the analysis. The last control variable added to the regression is the lagged value of GDP growth. This macroeconomic control variable is added to capture the effects of country-specific economic conditions on firm investment.

Table 4: The effect of Brexit and national elections on corporate investment

This table presents the estimates from the baseline investment regression :

$$I_{ij,t} = \beta_i + \beta_1 ElectionDummy_j + \beta_2 BrexitDummy_j + \beta_3 Q_{i,t-1} + \beta_4 CF_{ij,t-1} + \beta_5 \%\Delta GDP_{j,t-1} + a_i + \varepsilon_{i,t}$$

Where *i* indexes the firm, *j* indexes the country and *t* denotes the year. The dependent variable is investment (CAPEX/AT) and is regressed on an election year indicator and a Brexit indicator. The sample period used is from 2000 till 2016.

The firm characteristic control variables added to the regression are the lagged value of Tobin's Q and cash flow. $\%\Delta GDP_{j,t-1}$ is added to the regression in specification 5 and 6 to capture the effect of country specific economic conditions on investment. The election dummy and Brexit dummy are given a value of one if an election or Brexit falls in the period 60 days prior to the fiscal year end in year t or no more than 274 days after fiscal year end of year t. Firm fixed effects are added for specifications 2 till 5. Standard errors, clustered at the country and year level, are reported in brackets. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Dependant variable:	**Investment (CAPEX/AT)**				
	(1)	(2)	(3)	(4)	(5)
Election Dummy	-0.0009	-0.0008	-0.0001	0.0000	0.0008
	[0.0004]**	[0.0004]	[0.0004]	[0.0004]	[0.0004]*
Brexit Dummy	-0.0105	-0.0102	-0.0096	-0.0096	-0.0108
	[0.0016]***	[0.0009]***	[0.0004]	[0.0009]***	[0.0009]***
Q			0.0048	0.0048	0.0042
			[0.0004]***	[0.0004]***	[0.0004]***
Cash Flow				0.0233	0.0211
				[0.0032]***	[0.0031]***
GDP Growth					0.0018
					[0.0001]***
Constant	0.0488	0.0486	0.0386	0.0379	0.0360
	[0.0005]***	[0.0001]***	[0.0006]***	[0.0006]***	[0.0006]***
N	51,711	51,711	43,212	43,212	43,212
R-squared	0.001	0.528	0.557	0.559	0.565
Fixed Effects	No	Firm	Firm	Firm	Firm

Table 5 reports the results for the baseline regression. The first column presents the results of the regression of investment on the election dummy and Brexit dummy alone. The next column adds firm-fixed effects to the regression. In the last three columns the control variables Q, cash flow, and GDP growth are added to control for firm characteristics and general economic conditions. The control variables Q, cash flow and GDP growth are all significantly positively related to investment. The Brexit dummy has for all specifications a significant negative effect on investment.

The decrease in investment for Brexit ranges between 0.0108 and 0.0096. This result is consistent with the "bad news" principle: firms decrease investment rates around Brexit in anticipation of a possible bad outcome. High uncertainty around Brexit increases the value of the option to wait, leading firms to decrease their investment rates. The results in column 5 show a positive coefficient for national elections, but this effect is insignificant. This result indicates electoral uncertainty has no effect on investment rates, contradicting the findings of Julio and Yook (2012). The results from the full baseline regression indicate high uncertainty around Brexit impacted investment rates, but uncertainty around national election does not lead to substantially different reactions in investment rates.

5.2. Cross-country differences

In this section, I will deepen my analysis by examining variation in the degree of uncertainty across countries and time. To examine the difference across countries, I will split up the countries by political system, the degree of checks and balances, a measure of economic freedom and the size of government spending relative to the country's GDP.

For the first variation, the sample will compare countries with presidential systems with countries with parliamentary systems. Presidential systems have different cost and benefits compared to parliamentary systems. These costs and benefits are directly related to the degree of political uncertainty during elections and Brexit. The benefits of presidential systems are greater checks and balances that make it harder to pass new laws and thereby reduce uncertainty. Presidential systems will, therefore, anticipate Brexit differently than parliamentary systems. Parliamentary systems have a lower checks and balances measure. Firms in parliamentary systems have to anticipate larger policy swings. Investment cycles of firms are likely to be of a higher magnitude for parliamentary systems during elections and Brexit.

For the second variation, the checks and balances measure is added for each country to account for differences in political uncertainty. As noted above, the checks and balances measure is a mechanism to prevent the abuse of power, and measures the number of veto players needed for the approval of a policy change. This measure rates the government's independence from these veto players, based on electoral rules, political competitiveness and the relationship between parties. Different branches of a government controlled by the same party will result in a lower checks and balances measure relative to a government with different parties controlling different branches. A higher checks and balances measure provides stronger stability of the government. During the time of a turnover in power during elections, the change in actual policy will be reduced.

Around Brexit, countries with higher checks and balances will have less uncertainty about change in actual policy. Firms in countries with higher checks and balances measures are therefore likely to be less sensitive to investment cycles during elections. Countries that are more stable and have more economic freedom are likely to be less sensitive both to election outcomes and to Brexit. The ideals of economic freedom are characterised by healthier societies, cleaner environments, greater per capita wealth, democracy and human development. Firms with higher economic freedom have higher stability and are less sensitive to reduction in investment rates during elections and Brexit than firms in countries that are less stable. The rating for economic freedom is obtained from the Index of Economic Freedom provided by The Heritage Foundation. The measure includes time-variation, as it is adjusted every year. A country's overall score is calculated by averaging twelve economic freedoms, with equal weight being given to each.

For the last specification, I will examine the variation in the size of the government spending relative to the country's GDP. This measure will account for the size of government spending relative to the size of spending of the overall economy. The degree of government spending is important during elections and Brexit because governments with a large stake in GDP are likely to be more sensitive during periods with uncertainty.

The following baseline regression is used to examine the degree of variation in uncertainty across countries:

$$I_{ij,t} = \beta_i + \beta_1 ElectionD_j + \beta_2 BrexitD_j + \beta_3 ElectionD \times X_{jt} + \beta_4 BrexitD_j \times X_{jt} + \beta_5 X_{jt} + \beta_6 Q_{i,t-1} + \beta_7 CF_{ij,t-1} + \beta_8 \%\Delta GDP_{j,t-1} + a_i + \varepsilon_{i,t}$$

In this regression X_{jt} is the country characteristic used to specify the variation across countries. For the baseline regression, an interaction term with the election dummy and Brexit dummy is added to account for the differences in the election and Brexit investment cycle among the different levels of the X_{jt} variable.

Table 5: Cross-country regressions

This table presents the estimates from the following investment regression :

$$I_{ij,t} = \beta_i + \beta_1 ElectionD_j + \beta_2 BrexitD_j + \beta_3 ElectionD \times X_{jt} + \beta_4 BrexitD_j \times X_{jt} + \beta_5 X_{jt} + \beta_6 Q_{i,t-1} + \beta_7 CF_{ij,t-1} + \beta_8 \%\Delta GDP_{j,t-1} + a_i + \varepsilon_{i,t}$$

Where *i* indexes the firm, *j* indexes the country and *t* denotes the year. The dependent variable is investment (CAPEX/AT).The sample period used is from 2000 till 2016. X_{jt} is the country characteristic variables added to the regression. This variable is interacted with the dummy variables. A presidential system is a dummy variable, which takes the value equal to one if the country has a political system classified as presidential, and zero if parliamentary. The checks and balances variable measures the number of veto players in a specific country. The economic freedom rating is a measure for the amount of government interference and stability in a country. Government spending is the ratio of government spending to GDP in a given year. Standard errors, clustered at the country and year level, are reported in brackets. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

		Country Characteristic			
Dependent variable:	Investment (CAPEX/AT)	Presidential System	Checks and balances	Economic Freedom	Government Spending
		(1)	(2)	(3)	(4)
Election Dummy		0.0003	-0.0031	0.0098	0.0004
		[0.0005]	[0.0020]	[0.0049]*	[0.0035]
Brexit Dummy		-0.0134	-0.0234	-0.0012	-0.0399
		[0.0010]***	[0.0050]***	[0.0103]	[0.0070]***
Country Characteristic* Election Dummy		0.0027	0.0009	-0.0001	0.0005
		[0.0012]**	[0.0005]*	[0.0001]**	[0.0002]***
Country Characteristic* Brexit Dummy		0.0061	0.0030	-0.0001	0.0014
		[0.0026]***	[0.0010]***	[0.0001]	[0.0003]***
Country Characteristic		-0.0004	-0.0045	-0.0006	-0.0036
		[0.0013]	[0.0005]***	[0.0001]***	[0.0003]***
Constant		0.0361	0.0550	0.0819	0.1134
		[0.0007]***	[0.0021]***	[0.0074]***	[0.0074]***
N		43,182	43,207	43,212	43,212
R-squared		0.204	0.567	0.565	0.568
Fixed Effects		Industry	Firm	Firm	Firm

In table 5 the results are reported for the cross-country regressions. The first column reports the results by comparing the differences between countries based on their political systems. For the political system variable, a presidential dummy is used. The presidential dummy is equal to one for the countries with a presidential system and zero for those with parliamentary systems. While only France is considered as a country with a presidential system, still some interesting findings can be extracted from the results. The β of the interaction term for the Brexit dummy, presidential x Brexit, has a significant positive influence on investment rates. This result indicates that firms in countries with presidential systems are less sensitive to the investment reduction around Brexit. The stronger protection and stability associated with presidential systems reduce the uncertainty around Brexit. For elections, the interaction term is also significant, indicating investment rates are higher during presidential elections relative to parliamentary elections. This result contradicts previous research, indicating differences in political systems *do* matter for elections.

The disadvantage of the political system variable is that it does not vary over time. A variable that does vary over time and can be associated with the political system specific for each country is the checks and balances measure. The second column reports the results for the checks and balances measure. The interaction term between the checks variable and the election dummy is positive but statistically insignificant. Apparently, the type of political system matters more for elections than the number of veto players. The interaction term for Brexit with the checks and balances measure is positive and significant, indicating firms in countries with stronger checks and balances experience less of an impact on investment policy in the period around Brexit.

The third column of table 5 reports the results for the economic freedom measure. The economic freedom variable interacts with both dummies. Only for elections, the interaction term is significant and has a negative coefficient. This result indicates elections lead to a reduction in investment rates for countries with more economic freedom. It is interesting that the Brexit dummy becomes insignificant when the economic freedom measure is added to the regression. This finding may indicate that the economic freedom measure is a better indicator of the effect of uncertainty.

The fourth and last column presents the results for the interaction with the government spending variable. The interaction term for both dummies is positive and significant. This result is surprising since it is expected that there is more at stake in countries with larger government spending. The results do not support this view. Firms experience less of a reduction in investment rates in countries with larger governments around both events.

5.3. Election Timing

The following section will examine if countries that are different in terms of election timing react differently to the uncertainty around Brexit and elections. The effect of election timing can create a significant bias on the results for the election dummy. Julio and Yook (2012) find some evidence of governments timing elections if GDP growth is high in election years. The timing of elections is also important for the reaction of firms to Brexit. Firms in countries with fixed timing may anticipate Brexit differently because these firms are used to knowing the date of an election early on. Table 6 reports the results for the two different subsamples.

The first column presents the results for the subsample of countries with fixed elections. An interesting finding emerges from this column. The election dummy is of a higher magnitude and significant compared to the overall sample. During election years in countries with fixed elections, firms do not reduce their investment, but increase it. Specification 2 of table 6 reports the results for countries with flexible elections. In countries in which early elections are possible, the election dummy is insignificant. The timing of elections for these countries does not affect the investment rates of firms. For both subsamples, the Brexit dummy remains significant and of similar magnitude. This suggests that for both subsamples the timing of elections does not result in a different reaction on Brexit.

Table 6: Election timing

This table presents the estimates from the baseline investment regression :

$$I_{ij,t} = \beta_i + \beta_1 ElectionDummy_j + \beta_2 BrexitDummy_j + \beta_3 Q_{i,t-1} + \beta_4 CF_{ij,t-1} + \beta_5 \%\Delta GDP_{j,t-1} + a_i + \varepsilon_{i,t}$$

Where *i* indexes the firm, *j* indexes the country and *t* denotes the year. The dependent variable is investment (CAPEX/AT) and is regressed on an election year indicator and a Brexit indicator. The sample period used is from 2000 till 2016. The first column presents the results for the sample of countries with fixed elections. The last column presents the results for the sample of countries with flexible options, they have the option of calling an election early. Standard errors, clustered at the country and year level, are reported in brackets. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

		Election Timing	
Dependent variable:	Investment (CAPEX/AT)	Fixed	Flexible
		(1)	(2)
Election Dummy		0.0044	-0.0005
		[0.0008]***	[0.0005]
Brexit Dummy		-0.0092	-0.0115
		[0.0018]***	[0.0010]***
Q		0.0039	0.0043
		[0.0008]***	[0.0004]***
Cash Flow		0.0179	0.0225
		[0.0065]***	[0.0035]***
GDP Growth		0.0018	0.0018
		[0.0002]***	[0.0001]***
Constant		0.0330	0.0372
		[0.0013]***	[0.0007]***
N		12,113	31,099
R-squared		0.597	0.552
Fixed Effects		Firm	Firm

5.4. Additional Tests and Robustness

In this section, additional tests are employed to check the robustness of the results. For the first test (Table 7: Effect of Brexit and elections on investment), I examine the variation across firms. Firms are likely to vary based on their sensitivity to the outcomes of political events. Based on the findings of Herron, Lavin, Cram, and Silver (1999) it is possible to classify industries as being politically sensitive or not. The following industries are classified as having a high sensitivity to political events: tobacco products, pharmaceuticals, health care services, defence, petroleum and natural gas, telecommunications and transportation. For these industries, a dummy is created and set to one if a firm belongs to a politically sensitive industry. Specification one of table 7 presents the results for the inclusion of the politically sensitive dummy. The coefficient of the interaction effect with elections is insignificant, indicating that in election years firms belonging to the more sensitive industries are not more affected by the uncertainty around elections. The interaction term with the Brexit dummy, however, is negative and highly significant. As predicted, firms in politically sensitive industries are more sensitive to the uncertainty in the period around Brexit

For the second test (Figure 4: Policy Uncertainty Index Europe), I investigate if the policy uncertainty index of Baker and Bloom (2016) provides a more useful tool in assessing the impact of policy uncertainty around elections and Brexit on investment. Gulen & Ion (2015) find that in developed, politically stable countries such as the United States, elections only account for of a small portion of the time-series variation in policy uncertainty. The main variable used in specification 2 is the policy uncertainty measure from Baker, Bloom, and Davis (2006). The Economic Policy Uncertainty (EPU) index for Europe variable is calculated as the count of search results from two newspapers per country. The papers included are from France, Germany, Spain, Italy and the United Kingdom. The search results count the number of articles containing the terms uncertain or uncertainty, either in economic or more policy-relevant terms. The total number of policy uncertainty articles is then normalised with respect to the total number of articles in that newspaper for each month in order to control for the changing volume of news over time. To match the two different datasets of the monthly policy uncertainty index and the yearly firm observations, I take an equally weighted average of the 12 months in a given fiscal year. For each firm in a given fiscal year *t* the policy index is calculated as follows:

$$EPU_t = \frac{\sum_{m=1}^{12} EPU_m}{12}$$

Where EPU_m is the policy index value given by Baker, Bloom, and Davis in month *m*. The results in column 2 report an EPU variable that is highly significant and negative. Both event dummies are insignificant in this specification, indicating that the EPU variable may be more useful to assess the uncertainty around elections and Brexit. Figure 4 (below) shows that especially in the year 2016 when Brexit occurred, policy uncertainty for Europe was significantly higher compared to previous years. In the final column, I report the results of the investment regression by omitting the United Kingdom from the total sample. The United Kingdom accounts for almost 30% of the observations in the total sample and the referendum for Brexit was specific for the UK. In this way, the results may be mainly driven by the observations from the UK. Column 3 indicates the results remain unchanged for the Brexit dummy. However, the election dummy is significant when the UK is omitted from the sample. Firms in the other countries of the sample increase their investment rates in election years.

Table 7: Effect of Brexit and elections on investment

This table presents various results from the estimates of the baseline investment regression :

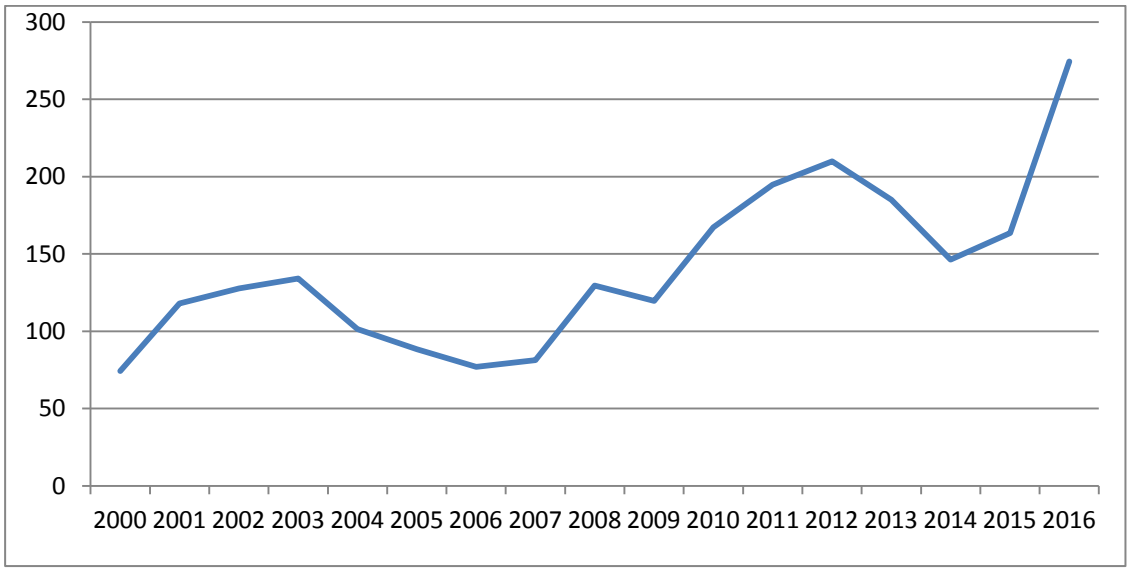
$$I_{ij,t} = \beta_i + \beta_1 ElectionDummy_j + \beta_2 BrexitDummy_j + \beta_3 Q_{i,t-1} + \beta_4 CF_{ij,t-1} + \beta_5 \%\Delta GDP_{j,t-1} + a_i + \varepsilon_{i,t}$$

Where *i* indexes the firm, *j* indexes the country and *t* denotes the year. The dependent variable is investment (CAPEX/AT) and is regressed on an election year indicator and a Brexit indicator. The sample period used is from 2000 till 2016. The first column presents the results of the regression including a dummy variable for sensitive industries. The dummy is set to one if a firm belongs to a politically sensitive industry. The industries classified as politically sensitive are: tobacco products, pharmaceuticals, defence, health care services, petroleum and natural gas, telecommunications and transportation. The second column includes a variable for the European policy uncertainty index constructed by Baker, Bloom, and Davis (2016). The third column reports the results by omitting the country with the largest firm-year observations in the sample. Standard errors, clustered at the country and year level, are reported in brackets. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Dependent variable:	**Investment (CAPEX/AT)**	**Sensitive Industries**	**EPU**	**UK Omitted**
Election Dummy		0.0006	0.0001	0.0011
		[0.0004]	[0.0004]	[0.0004]**
Brexit Dummy		-0.0101	-0.0018	-0.0106
		[0.0010]***	[0.0012]	[0.0010]***
Election Dummy*Sensitive Industries		-0.0004		
		[0.0018]		
Brexit Dummy* Sensitive Industries		-0.0148		
		[0.0035]***		
Sensitive		0.0248		
		[0.0023]***		
EPU			-0.0002	
			[0.0001]***	
Constant		0.0344	0.0481	0.0360
		[0.0007]***	[0.0013]***	[0.0008]***
N		43,212	43,212	31,132
R-squared		0.687	0.0493	0.538
Fixed Effects		Firm	Firm	Firm

Figure 4: Policy Uncertainty Index Europe

This figure presents the policy uncertainty index for European countries. The sample period is from 2000 to 2016. The index was created by Baker, Bloom, and Davis (2016) and is a measure of political uncertainty. The index is calculated as the count of search results from two newspapers per country. The papers included are from France, Germany, Spain, Italy and the United Kingdom. The figure shows a sharp rise in uncertainty in the year 2016, the year of the Brexit announcement, compared to earlier years.



For my final analysis, I will examine the behaviour of firms with respect to their cash holdings around national elections and Brexit. Earlier literature on national frictions argues that investment and financing decisions are not independent. Julio and Yook (2012) find firms cutting back on investment and increasing their cash holdings during election years. Gulen (2015) examines the financing decisions of firms from the US in periods of high uncertainty and finds a significant positive relationship between policy uncertainty and cash holdings. In periods of high uncertainty, it is profitable for firms to postpone some of their investments until uncertainty has been resolved to some degree. The following regression is used to examine the effect of uncertainty around elections and Brexit on cash holdings:

$$Cash_{ijt} = \beta_0 + \beta_1 ElectionD_{jt} + \beta_2 BrexitD_{jt} + \beta_3 Q_{i,t-1} + \beta_4 CF_{ij,t-1} + \beta_5 \%\Delta GDP_{j,t-1} + \beta_6 Size_{ij,t-1} + \beta_7 Lev_{ij,t-1} + \beta_8 I_{ij,t} + \beta_9 Div_{ij,t} + a_i + \varepsilon_{ji,t}$$

The cash holdings specification incorporates additional control variables, including firm size (log of total assets), leverage (book value of debt) and an indicator variable for if a firm pays dividends or not. The indicator variable for dividends, $Div_{ij,t}$, takes a value equal to one if a firm pays out dividend in year t and zero otherwise. Firm fixed effects are also added to the specification. Table 8 reports the results for the cash holdings regression. The results suggest that elections do not influence the cash holdings of firms. This finding is consistent with the results in the previous regressions. If elections do not influence investment, than it is expected that cash holdings will not change due to the occurrence of an election. The Brexit dummy is significant and positive, indicating firms did increase their cash holdings around Brexit. The increase in cash holdings is of a higher magnitude than the decrease in investment rate. Political uncertainty around Brexit leads firms to increase their cash holdings.

Table 8: Cash holdings regression

This table presents the estimates from the investment regression :

$$Cash_{ijt} = \beta_0 + \beta_1 ElectionD_{jt} + \beta_2 BrexitD_{jt} + \beta_3 Q_{i,t-1} + \beta_4 CF_{ij,t-1} + \beta_5 \%\Delta GDP_{j,t-1} + \beta_6 Size_{ij,t-1} + \beta_7 Lev_{ij,t-1} + \beta_8 I_{ij,t} + \beta_9 Div_{ij,t} + a_i + \varepsilon_{ji,t}$$

Where *i* indexes the firm, *j* indexes the country and *t* denotes the year. The dependent variable is cash holdings (Cash). The added variables to the cash regression include firm size (log of total assets), leverage (book leverage normalized by total assets), investment rates, dividend and firm fixed effects. $Div_{ij,t}$ is an indicator variable that takes the value of one if a firm pays dividend in fiscal year t and zero otherwise. The sample period used is from 2000 till 2016.
Standard errors, clustered at the country and year level, are reported in brackets. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Dependent variable:	**Cash holdings**
Election Dummy	0.0016
	[0.0012]
Brexit Dummy	0.0168
	[0.0032]***
Tobin Q	0.0276
	[0.0014]***
Cash flow	0.0869
	[0.0143]**
GDP	-0.0016
	[0.0003]***
Size	-0.0418
	[0.0023]***
Leverage	-0.2038
	[0.0074]***
Investment	-0.1411
	[0.0216]***
Dividend	-0.0034
	[0.0025]
Constant	0.1861
	[0.0048]***
N	43,212
R-squared	0.209
Fixed Effects	Firm

6. Conclusion

In this paper, I analysed the difference in impact between national elections and Brexit on stock returns and corporate investment for 15 European countries. Earlier research on political events suggests stock prices decline and corporate investment rates decrease as a result of increasing political uncertainty. According to Pastor and Veronesi (2012), increases in uncertainty associated with changes in government policy lead to higher risks and decreasing stock returns. In my analysis, I find a significant difference in stock market reactions to elections and to Brexit respectively, in the days after the event dates. On average the countries' stock prices reacted more negatively after Brexit than they do after elections, indicating the uncertainty increase associated with Brexit is significantly higher compared to the uncertainty associated with elections.
To further analyse the difference in uncertainty between elections and Brexit, I examined the impact on corporate investment of both events. According to Bernanke (1983), firms hold back on investment when there is a chance of a possible bad outcome. My analysis shows firms decreased their investment rate before Brexit, but do not change their investment rate before national elections. On average, corporate investment decreased by -0.0108 in the period leading up to Brexit for the sample of 15 European countries. A possible explanation for this substantial effect is the high uncertainty of the possible outcome before Brexit. The insignificant effect of elections indicates election uncertainty is substantially lower or does not impact corporate investment policy.

I also examined the variation in effects across countries for both events. I expected the decline in corporate investment to be larger in countries that are less stable and in countries with larger government spending relative to their GDP. The results only support the first expectation. For both events, I find firms tend to have higher investment rates in countries with presidential systems, more checks and balances and higher government spending ratios. Investment rates are only lower in election years for countries with higher rates of economic freedom. It is interesting to note that the Brexit dummy is insignificant when the economic freedom variable is added to the regression. This indicates that the economic freedom variable may be more suitable as a measure for political uncertainty during this period.
For the variation from firm to firm, I find the reduction in investment to be larger for sensitive industries around Brexit. Around national elections, no significant effect is found for the sensitive industries. Julio and Yook (2012), however, do find a larger reduction in investment for sensitive industries. A possible explanation for this is that the sample used in this research mainly consists of politically stable countries.

Additional regressions used as robustness checks indicate that results change when the economic policy uncertainty variable, from Baker and Boom (2016), or the United Kingdom is omitted from the sample. In line with the finding by Gulen and Ion (2015), I find that the economic policy uncertainty measure provides a more useful tool in assessing the impact of uncertainty around elections and Brexit. Election variable is positive and significant for the sample without the United Kingdom, indicating the effect of elections on investment is on average positive for the remaining European countries.

Overall, my results show that uncertainty around Brexit is substantially higher than uncertainty around national elections. Uncertainty around rare political events can highly affect corporate investment policy and financial markets. This finding indicates the importance of detailed and granular measures for political uncertainty in assessing the impact of uncertainty around political events.

References

Alti, A. (2003). How Sensitive Is Investment to Cash Flow When Financing Is Frictionless? *The Journal of Finance, 58*, 707-722.

Baker, S., Bloom, N., & Davis, S. (2016). Measuring Economic Policy Uncertainty. *NBER Working Paper*.

Bernanke, B. (1983). Irreversibility, Uncertainty and Cyclical Investment. *Quarterly Journal of Economics*, 85-106.

Bloomberg. (2016b). *Brexit is a Lehman Moment for European Banks.*

Boutchkova, M., Doshi, H., Durnev, A., & Molchanov, A. (2012). Precarious politics and return volatility. *Review of Financial Studies*, 1111-1154.

Brogaard, J., & Detzel, A. (2015). The asset-pricing implications of government policy uncertainty. *Management Science, 61(1)* , 3-18.

Brown, S., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of financial economics,14(1)* , 3-31.

Erickson, T., & Whited, T. (2006). On the Accuracy of Different Measures of q. *Financial Management, 35* , 5-33.

Gulen, H., & Ion, M. (2015). Policy uncertainty and corporate investment. *The Review of Financial Studies, 29(3)* , 523-564.

Herron, M. C., Lavin, J., Cram, D., & Silver, J. (1999). Measurement of Political Effects in the United States Economy: A Study of the 1992 Presidential Election. *Economics and Politics Vol. 11* , 51-81.

Herron, M., Lavin, J., Cram, D., & Silver, J. (1999). Measurement of Political Effects in the United States Economy: A Study of The 1992 Presidential Election. *Economics and Politics Vol. 11* , 51-81.

Ingersoll, J., & Ross, S. (1992). Waiting to Invest: Investment and Uncertainty. *Journal of Business*, 1-29.

Julio, & Jook. (2012). Political Uncertainty and Corporate Investment Cycles. *JF* .

KELLY, B. P. (2016). The Price of Political Uncertainty: Theory and Evidence from the Option Market. *The Journal of Finance, 71* , 2417-2480.

McDonald, R., & Siegel, D. (1986). The Value of Waiting to invest. *Quarterly Journal of Economics*, 707-728.

Pantzalis, C., Stangeland, D. A., & Turtle, H. J. (2000). Political elections and the resolution of uncertainty: the international evidence. *Journal of banking & finance, 24(10)*, 1575-1604.

Pastor, L., & Veronesi, P. (2012). Uncertainty about government policy and stock prices. *The Journal of Finance, 67(4)*, 1219-1264.

Rodinova, Z. (2016, December 30). Why the FTSE 100 reaching record high despite Brexit is not necessarily good news. *Independent* .

Rodrik, D. (1991). Policy uncertainty and private investment in developing countries. *Journal of Development Economics, 36(2)*, 229-242.

Schiereck, D., Kiesel, F., & Kolaric, S. (2016). Brexit: (Not) another Lehman moment for banks? *Finance Research Letters*, 291-297.

Tielmann, A., & Schiereck, D. (2016). Arising borders and the value of logistic companies: Evidence from the Brexit Referendum in Great Britain. *Finance Research Letters*.

Appendix

Table 1: Political Systems and Election Timing

This table presents the basis of the political systems, election timing and the total number of elections for each of the 15 countries. The total number of observations indicates the total number of firm-year observations for each country. The classification of the political system depends on the government head that holds most of the executive power. Countries classified as presidential are countries with a president as the chief of state and head of the government. A country is considered parliamentary when the prime minister is chief of state and head of the government. Election timing classifies whether or not election timing is flexible. The sample period is between 2000 and 2016.

Country	Number of Observations	Basis of Political system	Election Timing	Number of Elections
Austria	0,878	Parliamentary	Flexible	4
Belgium	1,125	Parliamentary	Flexible	4
Czech Republic	0,144	Parliamentary	Flexible	5
Denmark	1,477	Parliamentary	Flexible	5
Finland	1,767	Parliamentary	Flexible	4
France	7,852	Hybrid (Presidential)	Fixed	3
Germany	8,055	Parliamentary	Flexible	4
Greece	2,408	Parliamentary	Flexible	6
Ireland	0,538	Parliamentary	Flexible	3
Netherlands	1,685	Parliamentary	Flexible	5
Norway	2,111	Parliamentary	Fixed	3
Poland	3,758	Hybrid (Parliamentary)	Flexible	5
Portugal	0,624	Parliamentary	Flexible	5
Sweden	4,477	Parliamentary	Fixed	4
United Kingdom	14,814	Parliamentary	Flexible	4

Table 2: Summary statistics Election Characteristics

This table presents the summary statistics for elections in 15 countries held between 2000 and 2016. The political orientation of the government is defined by the orientation of the government head towards economic policy. Election timing indicates if elections can be held earlier than the fixed election dates. Elections held earlier than the regular fixed election dates are considered as flexible elections.

			Mean	Median	Std. Dev.
Election Frequency			3.91	4.00	0.85
Length of Term government head			4.59	4.00	2.12
Type of Elections					
	Legislative		95.31%		
	Presidential		4.92%		
Change of Ruling Party			43.75%		
Election Timing					
	Fixed		15.63%		
	Flexible		84.38%		
Checks and Balances			4.45	4.00	1.08
Economic Freedom rating			70.35	70.60	6.70
Government spending/GDP			21.12%	20.48%	2.81%

Firm Characteristic	N	Mean	Median	Std. Dev
Investment	51711	0.0482	0.0312	0.0548
Tobin's Q	51711	1.6523	1.2205	1.4603
Cash Flow	51711	0.0206	0.0538	0.1578
Size	51711	5.381	5.1684	2.2532
Leverage	51711	0.2161	0.1876	0.1880
Cash holding	51711	0.1259	0.07083	0.1621

Table 3: Five-day event window before event

This table presents the average cumulative abnormal return (ACAR) of 15 countries for Brexit and national elections. The ACARS are estimated over a five-day event window prior to the event. The sample period used extends from January 2000 through December 2016. Daily abnormal returns for the firms are calculated by using the market model method with an 180 days estimation period. For each country, the benchmark index is the country's main index. A t – test is used to test for statistical significance of the ACARS for each country. ***,**, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Country	Event type	N	ACAR [-5,-1]	t-statistic	ACAR [+1,+5]	t-statistic	ACAR [-5,+5]	t-statistic
Austria	Election	52	0.59%	1.09	0.02%	0.0376	0.33%	0.3366
	Brexit	13	-0.11%	-0.1349	-1.32%	-0.9129	-1.57%	-1.1102
Belgium	Election	52	-0.08%	-0.1766	0.99%	3.2963***	1.06%	1.7101*
	Brexit	13	3.10%	2.8928**	-4.71%	-2.7512**	-0.20%	-0.1881
Czech Republic	Election	25	-0.27%	-0.3859	-4.61%	-3.4596***	-4.43%	-2.3548**
	Brexit	5	1.04%	0.5043	-0.93%	-0.9147	0.63%	0.4721
Denmark	Election	80	-1.02%	-1.5016	-1.02%	-1.8855***	-1.54%	-1.8076*
	Brexit	18	1.03%	1.7923*	-1.15%	-1.4463	0.45%	0.4094
Finland	Election	366	-0.37%	-1.4183	0.16%	0.6420	-1.73%	-4.0749***
	Brexit	24	-0.98%	-2.6901***	-0.14%	-0.3458	-1.09%	-2.3124**
France	Election	102	-0.99%	-3.4717***	-0.49%	-1.7972*	-1.55%	-3.8476***
	Brexit	34	-0.40%	-1.0296	-2.19%	-1.8686*	-2.43%	-2.3474**
Germany	Election	104	-0.91%	-3.1014***	-0.74%	-1.8779*	-1.56%	-2.6400**
	Brexit	26	-1.13%	-2.4745**	-0.75%	-0.6200	0.61%	0.5570
Greece	Election	242	0.40%	0.9745	0.51%	1.1347	1.14%	1.7997*
	Brexit	41	-0.99%	-1.1561	-1.45%	-1.0855	-3.03%	-1.5178
Ireland	Election	69	-1.79%	-3.3615***	-0.36%	-0.6427	-1.62%	-2.2352**
	Brexit	24	0.47%	0.2401	-4.87%	-1.6784	-0.33%	-0.3670**
Netherlands	Election	100	0.09%	0.2893	-0.38%	-1.1848	-0.31%	-0.6793
	Brexit	20	-1.29%	-1.9838*	-2.05%	-1.2298	-3.41%	-2.1609**
Norway	Election	36	-1.09%	-1.5625	-0.62%	-0.9607	-2.26%	-2.3145**
	Brexit	12	-1.97%	-1.9262*	-0.97%	-0.7983	-2.36%	-1.1992
Poland	Election	504	1.26%	4.4511***	-0.48%	-1.525	-0.31%	-1.0182
	Brexit	101	-0.54%	-0.9943	1.13%	2.7617***	0.60%	0.9809
Portugal	Election	60	-0.56%	0.9861	0.04%	0.1024	-0.19%	-0.2510
	Brexit	12	-1.82%	-0.6916	-0.87%	-0.4435	-2.52%	-1.6777
Sweden	Election	112	-0.66%	-1.2793	-3.02%	-5.7845***	-3.31%	-5.0234*
	Brexit	28	-0.78%	-1.6278	-1.35%	-1.5770	-0.59%	-0.5989
United Kingdom	Election	300	-0.65%	-2.4015**	0.27%	0.8481	0.31%	1.1617
	Brexit	75	2.98%	7.5364***	-1.23%	-8.600***	-9.36%	-8.1544***