ERASMUS UNIVERSITY ROTTERDAM

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Do political connections matter?

A study on the impact of political connections on the firm value of Dutch publicly listed companies

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Abstract

Do politicians divert from standard policy in order to further the commercial interests of the people in their network? This study answers whether the loss of a political connection of Dutch listed companies results in an effect on firm value between 2010 and 2021. In order to study this, a dataset has been constructed identifying the board members of listed companies headquartered in the Netherlands and ascertaining their connections with politicians who have resigned throughout the period under review. Within this study, a political connection is identified through a shared educational background at the same educational institution. Through an event study analysis, and OLS-regressions ran on the constructed dataset, the abnormal return around the days of losing a political connection through resignation is found and refined using additional variables. This study shows that the loss of a political connection leads to a significant long-lasting decrease in firm value through abnormal returns surrounding the loss of a political connection. This effect is further analyzed, concluding that it is affected by the board- and firm-specific variables of sectorial categorization and network size of the firms' board member. The results of this study supplement the political finance literature with evidence of a significant value of political connections within the Dutch constitutional framework, allowing for further research to build upon these conclusions to further refine the literatures grasp on this topic. Additionally, the outcome of this research can be used to incite a discussion regarding the behavior of politicians resulting in this value.

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1. Introduction

Networking and related career skills are increasingly emphasized in university education and during various career paths. The increased attention for the added value of personal connections, and sharing a common history, is based on the notion that these will yield benefits throughout a person's lifetime through favors and implicit biases which influence behavior. This concept is, at first glance, mostly harmless since acquiring these connections is possible for everyone. Inherited connections and common backgrounds, however, may shift this balance in favor of certain groups or persons.

Whilst these 'normal' connections might seem mainly harmless, this may not be the case for political connections. Politicians are elected, or granted their place of power in another way, with the *raison d'être* to fulfill and serve the common good with their public policy instruments. The notion that having connections with elected officials and politicians in the public domain would help further someone's interest, therefore, is a more contested idea that is often associated with corruption and other illegal or unethical behavior.

Regardless of the aforementioned situation, there does seem to be a belief that politicians help their 'friends' achieve their personal and entrepreneurial goals. This help could, for example, take the form of impact on sector relevant policy making, advance information about future policy, being granted more government contracts and being more likely to receive state aid or subsidies. However, literature also suggests that certain negative effects might occur through a political connection, such as losing the autonomy over corporate decisions which might harm the connected politician.

If an interaction would exist, however, financial markets are a good proxy to study this concept. With the assumption of efficient financial markets, information regarding the impact of political connections would be integrated in the share price of publicly listed firms as they would predict future gain or loss for the company. Researching if this is the case will therefore give more insight into the added value of political connections.

The Netherlands is not often associated with corruption, as the country is listed as eighth of 180 researched nations for corruption prevalence (Transparency International, 2019). It is therefore interesting to see whether or not financial markets suggest a positive, or negative, effect of political connections of board members in publicly listed companies within this strong institutional setting. An important event which allows for the analysis of this concept is when a connected politician steps down, or suddenly dies, since this allows for a clear view of the impact of the loss of connection on the share price. Therefore, the **research question** of this thesis is:

"*To which extent does the loss of a political connection of board members impact the share price of Dutch publicly listed companies?"*

There has been previous research on the impact of political connections on firm value, which observes a complex variety of results with regards to this relationship for several different settings. However, this research has never been conducted for the Netherlands. In order to add to the current literature, this study will examine the Dutch setting for this effect and further improve the interpretative framework of these effects by including factors which might affect the impact of political connections on firm value. This research will also provide additional guidance within the analysis of country-specific variations in the effects of a political connection, now that only a minority of research focusses on nations with a strong institutional setting.

2. Hypothesis development

In order to answer the research question introduced in Section 1, it is important to define the core concepts included in the question. Sub-questions have been formulated in order to be able to compose a clear answer to the main research question.

Firstly, it is important to define a political connection and to determine which possible determinants for a political connection to include in this study. As previous authors have researched this topic for other situations and territories, this concept can be clarified in the theoretical framework based on the sub-question: "*What constitutes a meaningful political connection?*". This sub-question will be answered based on a literature study of previous works.

Secondly, this research will focus on which important players are possibly impactful in this relation, in order to further operationalize and demarcate this research. This is done by reviewing previous literature on this topic. Important players that will be considered are majority shareholders and board members on the corporate-executive side and members of parliament, members of government and heads of provincial governments. This analysis will be done based on the sub-question: "*Which players' political connections are possibly impactful for share value?*". This question will be answered based on a literature study and will be implemented in the data section through the available data.

Thirdly, this research will focus on whether there is a relationship between the existence of a political connection between the identified relevant players and the value of a company on the Dutch stock market. This will be based in the sub-question: "*Is there a significant positive relationship between political connections and the share price of a company?*". This sub-question will in part be answered using quantitative techniques to analyze the available data for the Dutch market in line with the Theoretical Framework, based on **Hypothesis I**: "*The existence of a political connection significantly increases the share price of a company in the Netherlands*". It is relevant to determine whether this effect is positive for the involved companies since there is no consensus in political finance literature about whether the effect of pollical connections is positive or negative for company value. As will be explained in the Theoretical Framework, earlier literature suggests that both effects could occur.

After establishing whether there is a significant positive influence of the existence of a political connection on the share price of a company in the Netherlands, it is important to establish if this effect changes depending on the characteristics of firms. Certain characteristics of firms and board members, such as the sector in which a firm operates or the network size of a board member can impact the way a political connection interacts with firm value. It could, for example, be the case that sectors which are heavily regulated benefit more from a political connection relative to other sectors, since the interference of the government in their operations is more significant. Furthermore, a board

member with a big residual network size might see less effect in their possibility to effectively manage their firm after losing a political connection than a board member with a small network size. In order to answer whether this is the case, sectorial categorization and network size of board members are introduced in the aforementioned quantitative techniques. This additional factor of this sub-question is included in order to cross-sectionally refine the effect found under Hypothesis I.

3. Theoretical framework

There has been previous research on the impact of political connections on firm value. This literature differs in their operational framework and their scope. Below, an overview is constructed of the important factors for this research, discussed in earlier literature. First, guidance is provided on which players and which connections can be relevant for a political connection to have an effect on a publicly listed company. Secondly, the different concrete modalities of effect from a political connection are discussed in addition to the classification of this effect as negative or positive for firm value. Lastly, factors affecting the effect found in previous literature are explored in order to sketch the framework of relevant factors for this research.

3.1 Relevant players and links for a political connection

Previous research into the effect of a political connection on different aspects of firms uses differing specifications of which positions and which connections can create a meaningful political connection. Based on the outcomes of this previous literature, the relevant concept of a political connection can be sketched for this research.

Faccio (2006) found that an effect of a political connection can be observed when a large shareholder or a corporate officer is elected as Prime Minister or member of parliament. Within this research, the effect of being elected as Prime Minister is found to be larger than the effect of becoming a member of parliament. Furthermore, large shareholders being elected to one of the aforementioned positions creates a bigger impact than corporate officers being elected.

The findings of Faccio (2006) are in line with the outcome of later research, which suggests that this connection exists between board members and politicians and that the significance of this connection increases when the connected politician obtains more power through elections (Goldman et al. 2008). This relationship between the seniority of the connected politician and the effects incurred from the connection is substantiated further in literature regarding distributive politics. An important example of this is the work of Roberts (1990), in which the death of American Senator Henry Jackson is used to establish that a more senior position in politics allows for the implementation of more favorable policies for your network. Additionally, Goldman et al. (2008) find that the extent of the effect observed from a political connection is consistent across the political spectrum, holding for both Republican and Democratic politicians in the United States.

Jiang (2008) added to this framework that the origin of a political connection influences the effect that a connection has. This research suggests that a self-developed connection is associated with a positive effect and inherited connections are associated with a negative effect whilst both taken together led to insignificant results.

Further elaborating on the occurrence of self-developed connections, Cohen et al. (2008) study the impact of an educational connection between mutual fund managers and board members. Based on several classifications of an educational connection; having studied at the same educational institution, additionally, having the same degree, having attended the same educational institution at the same time, and doing that for the same degree, Cohen et al. (2008) find that all classifications constitute a meaningful connection for mutual fund directors. However, the closer the tie, the stronger the effect observed. Further research by Cohen et al. (2010) partly builds upon this to establishing that the first link, of having attended the same educational institution as senior management at firms, impacts the ability of sell-side equity analists to obtain confidential corporate intelligence.

Based on the above literature sketch important conclusions can be drawn for the framework of this research. Firstly, the first sub-question of this research can be answered now that Faccio (2006) and Goldman et al. (2008) show that a meaningful political connection can originate from politically engaged corporate officers and large shareholders, in which the political orientation of the politician does not influence the connection. Additionally, it follows that the more important the political office held, the stronger the effects of the connection are.

Furthermore, Jiang (2008) underlines the importance of observing the origin of a political connection, for the interpretation of the results. Elaborating on the origin of a political connection, Cohen et al. (2008) and Cohen et al. (2010) show that educational links in the form of having attended the same educational institution can create connections which result in preferential treatments.

Concluding on this section, and answering the second sub-question of this research, previous literature shows for this research that a political connection can be held by both board members and large shareholders with members of parliament and government executives such as Prime Ministers regardless of political orientation.

3.2 The impact of political connections on firm value

Previous research also touches extensively on the concrete consequences of having a political connection, and why and in what way this could influence firm value. In this section, literature is examined to determine the modalities through which the effect of a political connection is transferred onto a connected firm.

Previous literature illustrates a broad spectrum of possible positive consequences of a political connection. Firstly, Li et al. (2008) find that membership of the Chinese Communist Party allows firms to more easily obtain debt financing in the form of loans. Additionally, Claessens et al. (2008) find that this advantageous availability also exists in Brazil. Cleassens et al. build upon this by ascertaining that this preferential access to financing actually results in a higher percentage of bank financing in connected firms.

Secondly, for cases in which a firm finds itself in troubled waters, Duchin and Sosyura (2012)

find that politically connected firms are more likely to receive emergency funding and government investment. This investment underperforms other emergency funding under the same regulatory framework. In extreme situations of financial distress, Faccio et al. (2005) contribute that politically connected firms are more likely to be bailed out by the State, whilst also significantly underperforming in the years following the bailout.

Thirdly, Adhikari et al. (2006) find that politically connected firms enjoy lower effective tax rates within developing economies such as Malaysia.

Fourthly, Stigler (1971) find that certain firms enjoy regulatory benefits compared to their non-connected counterparts. This is supported by Bunkanwanicha and Wiwattanakantang (2008), determining that Thai firms of which the business owner ascends a political office benefit from favorable governmental regulation for the sector in which their business is active.

Fifthly, Schoenherr (2019) finds that, in the institutional setting of South-Korea, a political connection increases the amount of government contracts allocated to a firm, whilst these contracts are fulfilled in a significantly worse matter with higher costs.

However, besides the positive consequences of a political connection sketched above, several important strains of literature also point to the possibility of negative consequences resulting from a political connection. Primarily, Shleifer and Vishny (1994) show that public firms often employ a disproportionate amount of workers at above-market wages for the political benefit of the incumbent politician, who can proudly present low unemployment figures and satisfied constituents. This excess leads to excessive labor cost for these public firms in comparison to an efficient firm, which are not fully compensated by tax breaks or subsidies when politicians are in control. The aforementioned results in a loss of firm value.

Further literature on this topic branches out by applying this concept to private firms with a political connection. Bertrand et al. (2018) find that politically connected firms follow sub-par strategies relating to the creation of employment opportunities and project investment and divestment decisions in election years to support their connected politicians. The result found is even stronger in heavily contested territories. In their French dataset, Bertrand et al. additionally find that politically connected firms show significantly worse performance, which is not compensated by the granting of additional government contracts or subsidies. The authors interpret this difference in outcome compared to other literature based on the strong institutional framework in France (Bertrand et al.).

Concluding on the literature sketched above, previous research shows that the existence of a political connection can impact a firm through many different modalities, ranging from successful rent-seeking to sub-par corporate strategies to support connected politicians. Additionally, this shows that both positive and negative consequences can occur resulting from these political connections. The knowledge of these modalities helps interpret the results from this study, analyzing the effect in the Netherlands, being a stable democracy with strong institutions.

3.3 Important external factors for the outcome of related research

Previous literature presents several additional factors which might influence the effect a political connection has on a connected firm, further refining the subject. Fan et al. (2007) introduce two important factors in this regard: the extent of government intervention in the analyzed firm and the state of the legal system in a country, specifically regarding property rights. Both factors were found to impair the performance of partially-privatized firms in China through their political connection.

Additionally, Civilize et al. (2015) find that, in Thailand, the economic rents received by politically connected firms are influenced by the extent to which an industry is regulated by the government. Heavily regulated industries, such as the technology sector, saw greater abnormal returns due to their political connection. Furthermore, this study finds that the positive effect found is stronger when there is political ownership in the firm. Repeating the findings of Fisman (2001), Civilize et al. (2015) also assigns importance in this regard to the extent of corruption in a nation.

In addition to the findings of Civilize et al. (2015) and Fisman (2001), Bertrand et al. (2018), as described in Section 3.2, follow the same conclusion regarding the strong institutional framework of France; the low prevalence of corruption leads to a negative value of political connections.

Furthermore, insecurity about the future of the capacity of a certain political connection to provide rent-seeking opportunities to a firm, in the light of regime changes and new *de jure* institutions, can prevent firms to seek and find these positive rents (Acemoglu et al., 2017).

To conclude, the institutional framework of a country, the certainty of that framework, the amount of government intervention and the extent to which a sector is regulated significantly affect the effect of political connections on the value of firms. Based on these findings, additional relevant factors will be added to the quantitative analysis of this research, which will be used to more accurately interpret the effects found in this study.

4. Data

In this section, the data and variables gathered will be explained. Firstly, the sources and construction of the used dataset are discussed. After which, a further explanation of the dependent variable follows. Furthermore, the explanatory variables are explained and elaborated on.

The data used in this study is retrieved from multiple sources, of which the BoardEx and Compustat databases of the Wharton Research Data Services, Yahoo Finance and the Dutch Parliamentary Documentation Center are the most important.

4.1 Construction of the dataset, sources, and structure

In order to construct a relevant dataset for this study, multiple different data queries in the BoardEx database are combined. Based on the standardized identification numbers Boardex assigns to companies and directors, it is possible to cross-reference different datasets of the database. Through this method, a dataset has been constructed which includes all board members of publicly listed firms headquartered in The Netherlands between January 1 2010 and April 1 2021. The choice for board members as relevant actors on the business-side of this research is based on their capacity as decision- and strategy-making executives.

This dataset is expanded by including, for all board members for which this data was available in the database, their places of education. This often includes the specific dates on which they achieved their diploma and started their professional education. To further broaden the scope of explanatory variables and control variables, this dataset has also been broadened by including a personal detail of the directors; their network size. This variable shows the amount of connections a board member has within the BoardEx database through previous employment, previous education, or other activities, showing the size of a board members network.

Furthermore, a dataset has been constructed based on the information of the Dutch Parliamentary Documentation Centre on all Ministers and Secretaries of State which have stepped down under abnormal circumstances between January 1, 2010, and April 1, 2021. This research focuses on the abovementioned political actors based on their executive power to influence all government policies in their portfolio whereas members of Parliament bear less direct influence. The circumstances under which politicians resign that have been documented range from collective step downs which toppled the Cabinet to burn outs and political scandals of all kinds. Through this dataset, the relevant moments in time for the quantitative analysis on the impact of these resignations are identified. By studying these unique events, the abrupt implementation of the loss of a political connection into the financial markets can be examined clearly.

This dataset has also been expanded, based on qualitative research, with previous educational experience of these high-ranking state officials. This data also often includes the dates on which they achieved their diploma and when they started their professional education. In the cases where the dataset of the Parliamentary Documentation Centre is not complete or available, this is supplemented through qualitative research in open sources.

Based on the combined datasets, political connections have been identified based on a shared educational background as discussed by Cohen et al. (2008) in their Framework 1, and Cohen et al. (2010). Through these connections, stock return data has been collected from Yahoo Finance for the relevant publicly listed companies for the days on which the Ministers or State Secretaries have stepped down. Furthermore, the dataset is enriched with the sector of the listed firms, based on the Industry Classification Benchmark (ICB) developed by FTSE Russell. In order to add a control variable for the regression-models, the return of the relevant national index for that day has also been added. This is constructed based on the average return of the Dutch *Amsterdam Exchange Index* (AEX), *Amsterdam Midkap Index* (AMX), and the *Amsterdam Small Cap Index* (AScX).

Below, Table 1 presents a list containing the sources of the data and variables gathered for this research, including their measurements.

Table 1

Measurement and Sources of Variables

Variable	Measurement	Retrieved from
Effective date (of board position)	Date	BoardEx
Network size of board member	Number of associated board members	BoardEx
Educational background of board member	Binary (Dummy per University)	BoardEx
CompanyID	Unique number	BoardEx
Date of resignation (politician)	Date	Parliamentary Documentation Centre
Educational background of politician	Binary value (dummy per educational institution)	Open sources: self reported background
Stock return	Percentage	Yahoo Finance
Index return	Percentage	Yahoo Finance
Index positive	Binary (1 for positive index, 0 for negative index)	Yahoo Finance
SectorID	Categorical value between 1-28	Boardex

4.2 Descriptive statistics

Based on the available data, I provide an overview of the relevant descriptive statistics in Table 2. For this overview, the non-numerical and categorial variables are not included as their descriptive statistics do not have further interpretative value.

Table 2

Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Stock return	620	.0032	.0222	-.0925	.1083
Index return	620	.0008	.0104	-.0122	.0232
Network size	615	995.2911	884.1141	19	6135
Index positive	291	.7010	.4586	0	1

Besides the variables which have been described in Table 2, some qualitative variables and background data will be elaborated on to further give context to this research. Firstly, it is important to note that the BoardEx database provides information on 3,358 board members of publicly listed firms with their headquarter in the Netherlands in the period under review. Of these 3,358 board members, a political connection with politicians who have stepped down during the term of these board members has been established for 760 individuals. However, for some of these connected board members, no public data was available regarding the historical stock returns of their company. This has led to 620 individuals for which this data was available. Important to note is that some of these individuals had more than one board position at the time the connected politician stepped down. Furthermore, it is important to note that certain resignation dates, and their accompanying Index return, repeat themselves throughout the data. The previous facts, combined with some missing variables in the BoardEx database, leads to the number of observations for the Network size and Index positive variables to differ.

Between January 1, 2010, and April 1, 2021, Dutch cabinets have seen the step down of 33 officials. This can be divided into 17 ministers and 16 Secretaries of State. It is important to note, however, that the resignation of 12 out of these 33 officials occurred on the same date, being February 23, 2010. On this date, all politicians of the Dutch *Partij van de Arbeid* (PvdA) resigned from the incumbent cabinet (*Balkenende IV*) due to dissension regarding the Dutch military mission in the Afghan province of Uruzgan. Of these 33 resigned officials, 52 relevant educational experiences have been identified. These backgrounds differ from secretarial education up until completed PhD's and MBA's at various educational institutions around the world, of which the greatest number of experiences, 41, are had in the Netherlands.

4.2.1 Dependent variable

The dependent variable of this study is Stock return. This allows to study whether the stock return of a company is higher, lower, or remains unimpacted at the moment a connected politician steps down. This data is gathered using Yahoo Finance for the day a connected politician has stepped down and is measured in percentage. Additionally, through Compustat, this data is accessed for the various event study windows. This data is relevant for this research since information regarding the disappearance of these relevant connections will immediately be processed in the stock price of these listed companies, in line with important financial literature (Fama, 1970). Below, Figure 1 shows the distribution of the abnormal returns of the companies in the dataset, being the Stock Return minus the, later introduced, relevant Index return. This data seems to be distributed normally. Furthermore, Figure 2 gives the boxplot distribution of the Stock returns, showing a distribution around zero, with outliers on each side.

Figure 1

Distribution Abnormal Returns

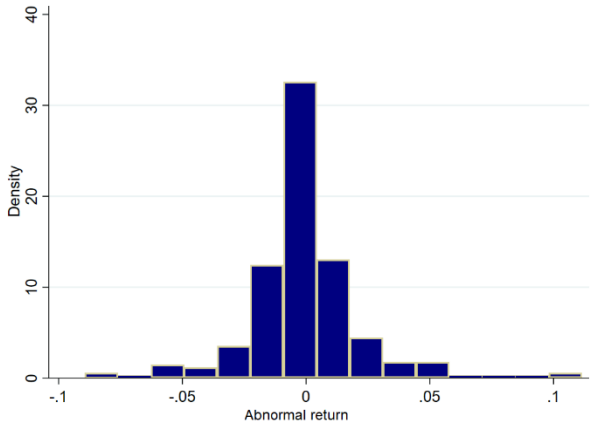
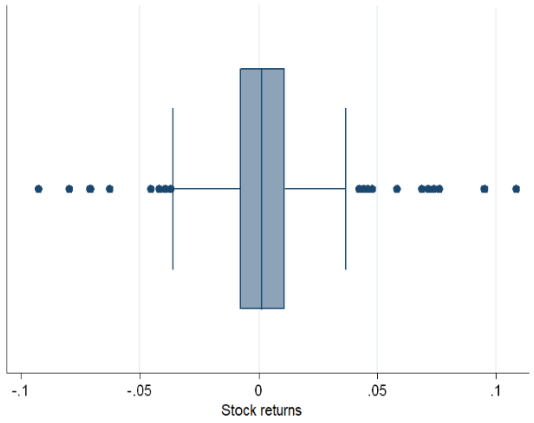


Figure 2

Boxplot Stock Return



4.2.2 Explanatory variables

In order to answer whether the stock return of a company was influenced by the resignation of their connected politician, or because of other reasons the market implemented into the stock price, a further analysis is needed. For this, the variable Index returns is used. Through this it can be analyzed whether a certain return was driven by factors impacting the relevant market as a whole, or by company specific information.

This variable follows a strange distribution, as illustrated in Figure 3. The distribution found in this variable does not, however, introduce a problem. This distribution is found because the data points are clustered on the dates on which the 33 politicians resigned. This leads to only a few data points being available, as this variable generates only one data point per unique step-down date. Since the

number of unique observations (22) is low for this variable, the lack of a normal distribution is not unexpected. Figure 4 gives a more explanatory view of the index returns in this study. This shows a center around zero with a deviation in the quartile distribution to the negative, and a further outlying maximum value in the positive.

Figure 3

Distribution of Index Return

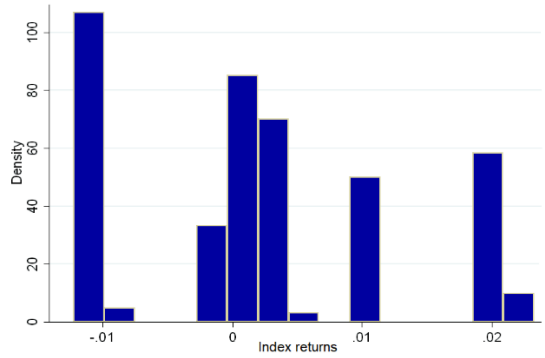
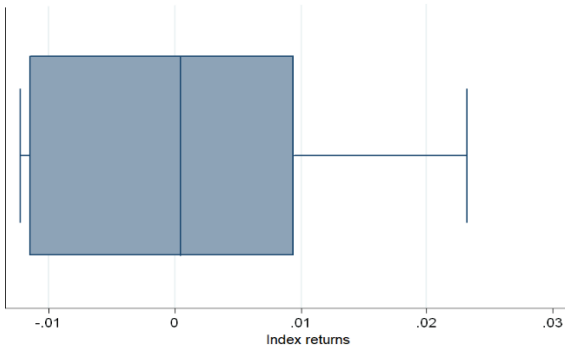


Figure 4

Boxplot of Index Return



Because of the non-descriptive nature of the other independent variables, Index Positive, and SectorID, no further descriptive statistics are presented. Due to the binary and categorical character of these variables, no further information will arise from these forms of analysis, in comparison with the information already provided in Table 2.

5. Methodology

In this section, the methodology of the quantitative analysis on which this research is built is explained. First, I explain the significance and methodology of the event study. Secondly, the choice for an Omitted Least Squares (OLS) regression model will be elaborated on. With regards to this model, multiple additions will be discussed and presented. Thirdly, and lastly, I elaborate on the Analysis of Variance (ANOVA) model used for a significance test on the difference of effect between varying network sizes and sectorial categorizations.

5.1 Event study

Primarily, in order to properly examine the way the stepping down of a connected politician influences firm value an event study is conducted. This analysis is conducted on several different windows surrounding the date of resignation of a connected politician stepping down. The researched windows will span from day 0 until day 3, day -3 until day 3, day -3 until day 6, day -3 until day 10 and ultimately day -10 until day 10. This way, it is possible to determine whether there is an effect on firm value following the loss of a political connection, how this effect is implemented in the firms' value on the financial markets, if there is an overreaction to this event, whether there is a leakage of information, and whether this effect results in a lasting abnormal return as opposed to a temporary one. All models will be compared and tested for significance, after which conclusions can be drawn on the existence of an effect and the distribution of the effect over time.

Through the use of the Compustat International Event Study engine, the Event Study will be executed. In this analysis, the Market Model is used to determine the normal market returns, independent of other news events. The Market Model estimates this normal return based on the historical relationship between market returns and individual stock returns. This analysis is conducted based on the following formula.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_i$$
$$In\ which\ E(\varepsilon_i = 0)\ and\ var(\varepsilon_i) = \sigma_{\varepsilon_i}^2$$

In this formula, R_{it} denotes the actual return of the companies under review, α_i is the unique part of the companies return, R_{mt} gives the actual market return in the given period, β_i is the factor with which market return is implemented into the return of the reviewed company and ε_i denotes the error term of the model.

The results from the above model will be presented, in line with earlier literature, in the form of cumulative abnormal returns (CAR), which measures the return of the companies under review in the study independent of the market returns' impact estimated by the Market Model for the analyzed

time period (Claessens et al., 2008; Faccio et al., 2006). The cumulative abnormal returns will be formulated using the following set of formulas:

$$E(R_{it}) = \alpha_i + \beta_i R_{mt}$$
$$AR_{it} = R_{it} - E(R_{it})$$
$$CAR_i = \Sigma AR_{it}$$

In which $E(R_{it})$ is the expected return of the companies in the dataset, R_{it} is the actual return of those companies, AR_{it} are the abnormal returns of those companies based on $E(R_{it})$ and R_{it} and R_{mt} is the actual market return in the given window.

5.1.1 Z-test for significance

The cumulative abnormal returns found by the event study are used to test whether the companies losing a political connection show a return significantly different from zero. This analysis will be executed for all windows under review in the event study analysis in order to substantiate the conclusions drawn on the basis of this study. In order to test for significance, a *Z*-test will be performed using the following formula:

$$z = \frac{(x_1 - x_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

5.2 Regression models: impact of additional factors on effect

Regression analysis can further specify factors impacting the possible effect found using the event study analysis. Relevant for this study is to determine whether the size of a board member's network impacts the effect of political connections on stock returns. It is possible that board members which are well embedded within the society of high-ranking corporate officials suffer less impact from the omittance of one specific political connection. This might be the case since the relative value of that political connection might be bigger for a board member with a small network.

Furthermore, it is relevant to determine whether a difference exists within this study in the effect of a political connection on stock returns based on the sector in which a company operates. This is relevant to assess now that it follows from literature that the sector in which a company is active may affect the specific advantages or disadvantages a company receives from being politically connected (Fan et al., 2017; Civilize et al., 2015). In this regard, it can for example be expected that firms operating within a heavily regulated sector obtain a greater advantage from a political connection due to the dependency such firms have on the central government.

5.2.1 OLS regression

In order to properly assess these questions, an OLS-regression model is applied to specify which factors impact the possible effect found in the event study. This model is constructed using the Stock return and Index return variable, supplemented by additional explanatory variables. Within this model, standard errors are clustered at sector level in order to obtain unbiased standard errors under possible heteroskedasticity. This, together with the variance inflation factors used in Section 6.1.2 in order to check for multicollinearity, allows for OLS to remain the best linear unbiased estimator. Moreover, this divides possible multiple observations per sector into clusters. This way the datapoints with the same SectorID can be clustered in the analysis. Using this OLS model, I provide estimates of the impact of sectorial categorization on the effect of a connected politicians resignation on the stock returns of a company. The formula for this model is not given in full due to the high number of categorical variables added to the model through the SectorID variable. Below, a shortened version of this regression model is presented.

$$y_i = \beta_0 + \beta_1 * Index\ Return + \beta_2 * Log(Network\ size) + \beta_3 * SectorID_i + \beta_4 * SectorID_{i+1} + \cdots + \beta_{n+2} * SectorID_n + \varepsilon_i$$

Here, y_i denotes the dependent variable (stock returns), whilst β_0 is the constant of the model, β_{1-n+2} are the coefficients of the independent variables, and ε_i is the regressions' error term.

In order to additionally control for a difference in effect between a negative index return and a positive index return on the individual stock return of the relevant companies, a binary variable is added into the second OLS-model. This enriched model is presented in the shortened formula below.

$$y_i = \beta_0 + \beta_1 * Index\ Return + \beta_2 * Log(Network\ size) + \beta_3 * Positive\ Index + \beta_4 * SectorID_i + \beta_5 * SectorID_{i+1} + \cdots + \beta_{n+3} * SectorID_n + \varepsilon_i$$

In this formula, y_i denotes the dependent variable (stock returns), whilst β_0 is the constant of the model, β_{1-n+3} are the coefficients of the independent variables, and ε_i is the regressions' error term.

5.2.2 Fixed effects model

Furthermore, a fixed effects approach will be used to better determine the impact of the variable network size on the researched effect. The fixed effects model elaborates on the standard OLS

regression, whilst allowing for an additional situation. In an OLS regression, the group mean is randomly sampled from the population. In contrast to this, a fixed effects model allows for the grouping of the means. For this analysis, using the fixed effects model allows for the differences in stock returns with index returns to be compared within the same group. This leads to a more concrete and pure analysis of the effect for specific companies.

Additionally, a fixed effects model also improves on the OLS regression analysis regarding possible omitted variables and the accompanying bias. For standard regression models, such as the OLS regression, controlling for unobserved omitted variables is not possible. These models can only account for observed omitted variables. The fixed effects model counteracts this by introducing the assumption that company-specific information can correlate with observed variables. Using this model thus allows for the existence of time-invariant unobserved dissimilarities between the listed companies included in this research. Examples of this might be differences based on how strong the corporate governance framework is for a company, based on how the ownership structure of a company is organized, or based on how the compensation of board members is designed.

The fixed effects model is, however, less efficient in estimations compared to a random effects estimator such as OLS. The use of the fixed effects model, together with this accompanied disadvantage, is, however, justified for the assessment of the impact of network size on the researched effect since the use of the more specified fixed effects model will improve the quantitative analysis. For the analysis of the sectorial influence on the researched effect, the fixed effects model is incompatible due to the categorical variables added. The standard formula for a fixed effects model can be found below:

$$y_{it} = \beta_1 X_{it} + \alpha_i + v_{it} \; for \; t = 1, \dots, t \; and \; i = 1, \dots, n$$

In this model y_{it} denotes the dependent variable, α_i presents the fixed effects for the companies, β is the coefficient of the independent variable and v_{it} gives the error term of the model. Below, the two fixed effects models are presented.

Model 1: $$y_i = \alpha_i + \beta_0 + \beta_1 * Index\ Return + \beta_2 * Log(Network\ size) + \beta_3 * SectorID_i + \beta_4 * SectorID_{i+1} + \cdots + \beta_{n+2} * SectorID_n + v_i \; for \; i = 1, \dots, n$$

Model 2: $$y_i = \alpha_i + \beta_0 + \beta_1 * Index\ Return + \beta_2 * Positive\ Index + \beta_3 * Log(Network\ size) + + \beta_4 * SectorID_i + \beta_5 * SectorID_{i+1} + \cdots + \beta_{n+3} * SectorID_n + v_i \; for \; i = 1, \dots, n$$

Again, y_i denotes the dependent variable (stock returns), α_i presents the fixed effects for the different companies, β_0 is the constant of the model, β_{1-n+3} are the coefficients of the independent variables and v_i gives the error term of the model.

5.2.3 ANOVA: network size and sector

In order to further refine the impact of a political connections on the value of a company, it is important to additionally test whether the additional variables significantly differentiate the effect. In order to test whether this is the case, an Analysis of Variance (ANOVA)-analysis is executed. This ANOVA-analysis will separately determine if there is significant variation in the size of a board members network and the sectorial specification of a company, with respect to the effects found in the event study. The formula of the ANOVA-model is be presented below.

$$F = \frac{\frac{\Sigma_{i=1}^{k}\left(\frac{T_i^2}{n_i}\right) - \frac{G^2}{n}}{k-1}}{\frac{\Sigma_{i=1}^{k}\Sigma_{j=1}^{n_i} Y_{ij}^2 - \Sigma_{i=1}^{k}(\frac{T_i^2}{n_i})}{n-k}}$$

In this formula, *F* is the ratio of variance, the top half of the equation gives the Mean Square for Treatments (MST), the bottom half of the equation presents the Mean Square Error (MSE), *G* is the total amount of all observations, n_i is the number of observations within a specific group *i*, whilst *n* presents the total size of observations.

The network size of board members is divided into four quartiles in order to study the effect of this variable on the effects found in the event study. This division can be observed in Figure 5. Figure 6 presents a scatterplot with a fitted line through the relevant datapoints, showing only a marginal difference from being constant. This might be an indication that no significant effect will be found, however, nevertheless, Section 6.1.2 will present the definitive results of this ANOVA.

Figure 5

Boxplot of Network Size

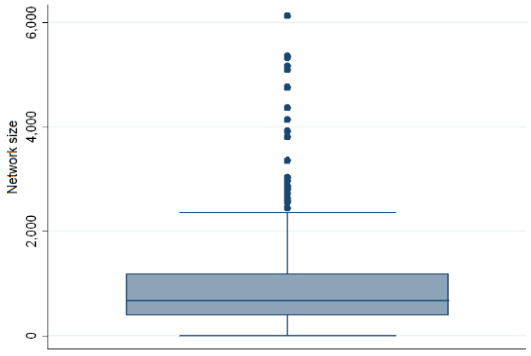
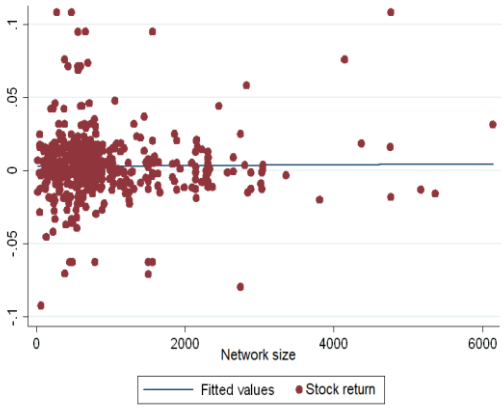


Figure 6

Scatterplot with Fitted Values of Network Size



The analysis of the impact of the sector in which a firm is active will be conducted based on the difference in cumulative abnormal returns between the sectors. Since the sectorial classification is a categorical variable, in which the actual value of the variable does not contain information *per se*, additional figures are not presented at this stage.

6. Results

In this section, the results of the quantitative analysis described in Section 5 will be presented. This will include an overview of the statistical results and the relevant interpretation of these results in order to properly analyze Hypothesis I set forth in Section 2 of this study. Furthermore, this hypothesis is tested based on the results of the study in order to conclude on the research questions put forth.

6.1 Hypothesis I

Hypothesis I states that "*The existence of a political connection significantly increases the share price of a company in the Netherlands*". In order to test this, an event study is run, further elaborated on to further refine the effect by an OLS-model and a fixed effects model. In this section, the results of these models are explained and applied in order to conclude upon Hypothesis I.

6.1.1 Event study

In order to analyze the way in which the loss of a political connection through resignation impacts firm value, an event study is run. Based on the outcome of this model a conclusion can be drawn on the distribution over time of the aforementioned effect, the size of this effect, and on the direction of this effect. In this regard, multiple analyses are conducted on differing windows. The broadest results of the event study, for the 10 days surrounding a connected politician stepping down, are illustrated below in Figure 7.

Figure 7

Event Study Mean and 95% Confidence Interval

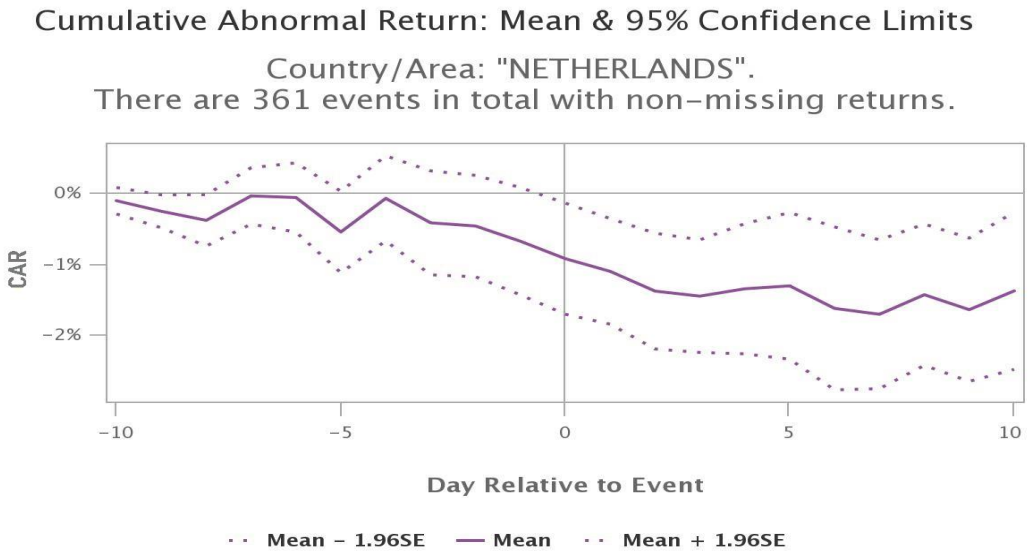


Figure 7 shows the cumulative abnormal return of the stock value of companies which endure a loss of a political connection compared to the market return for the period between 10 days before, and 10 days after the resignation of a connected politician. Included in the figure is the 95% confidence interval of this effect, depicted in the outer bounds of the figure. From this outcome we can conclude upon three important findings: the effect is lasting, can be observed before the event-date, and is negative.

Before elaborating more on the specific results of the event study, it is important to evaluate all event study windows. This evaluation is based on both the overall cumulative abnormal return resulting from the event study, and the results of a significance test regarding these outcomes. In order to assess whether the cumulative abnormal returns of the different event study windows yield a statistically significant result, a *z*-test is performed per window between all cumulative abnormal returns and market returns in the sample. This is done since, based on the construction of this event study model as introduced in Section 5.1, the expected return without the loss of a political connection is equal to the market return estimated by the Market Model. The executed *z*-test thus shows whether the abnormal returns are a significant deviation from the expected returns. Below, in Table 3, the results of the *z*-test are presented together with the cumulative abnormal returns in percentages within the given time windows.

Table 3

Z-test for Significance in Cumulative Abnormal Returns

Variable	CAR 0-3	CAR -3-3	CAR -3-6	CAR -3-10	CAR -10-10
P-value CAR < 0	.0113**	.0002***	.0011***	.0064***	.0059***
P-value CAR ≠ 0	.0227**	.0003***	.0023**	.0127**	.0117**
P-value CAR > 0	.9887	.9998	.9989	.9936	.9941
Average CAR	-.6962%	-1.0879%	-1.2166%	-1.0251%	-1.3080%

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$

Based on the above results, a few important conclusions can be substantiated. Firstly, the results of the event study show a very significant negative cumulative abnormal return in all windows surrounding the date of resignation of a connected politician. The window between 0 days and 3 days after the resignation, however, presents the lowest significance of all windows. Combining this with the very high significance of the results in the window between -3 and 3 days from the resignation, it can be concluded that there is an information leak regarding this event before day 0. This information leak results in an average premature cumulative abnormal return of -0.39%. This finding can be explained through the common reasonings behind the resignation of a politician. A good example from this dataset to elaborate on regarding this is the resignation of Jeanine Hennis-Plasschaert from her role as Minister of Defense in the Cabinet Rutte II on 3 October, 2017. Before her resignation, a

report was published tying the state of Dutch military defense equipment and organization to the death of two deployed Dutch soldiers following the premature detonation of a Dutch mortar-shell in Mali. Following this report, the political support for the Minister became thin in the days leading up to a debate with the Dutch Parliament (*Tweede Kamer*) regarding the matter. Hennis-Plasschaert resigned during that debate. In this anecdote two types of information leakage can possibly be observed. Firstly, the political turmoil in the days leading up to the debate in Parliament gave a strong indication that Hennis-Plasschaert's position was likely untenable. Secondly, as Hennis-Plasschaert possibly knew in advance that she would have to resign during the debate, information regarding this event might have leaked from her close circle to high profile contacts. The above indicates that a retrospective window is necessary for this event study to detect all abnormal returns due to information leakage.

The information in Table 3 leads me to further asses the results of the event study based on the window between -10 days and 10 days around the event. This window is chosen due to the highly significant difference from zero, combined with the highest cumulative abnormal return. This shows that some effect is still being implemented into the stock value of firms losing a political connection after, for example, 6 days after the event. Below, Table 4 presents the results from this window in percentages.

Table 4

Event Study Results (-10 – 10)

Day Relative to Event	Mean Abnormal Return	Mean Cumulative Total Return	Mean Cumulative Abnormal Return
-10	-.1134%	-.2711%	-.1134%
-9	-.1701%	-.3113%	-.2625%
-8	-.1280%	-1.0501%	-.3904%
-7	.3451%	-.9744%	-.0454%
-6	-.0224%	-1.3824%	-.0677%
-5	-.4867%	-2.0605%	-.5544%
-4	.4743%	-1.7575%	-.0801%
-3	-.3454%	-1.9128%	-.4255%
-2	-.0449%	-1.8773%	-.4704%
-1	-.2145%	-2.2964%	-.6849%
0	-.2459%	-2.2444%	-9309%
1	-.1795%	-2.1799%	-1.1104%
2	-.2781%	-2.0597%	-1.3886%
3	-.0710%	-1.5955%	-1.4596%
4	.1040%	-1.0152%	-1.3556%
5	.0629%	-1.1671%	-1.3151%

Day Relative to Event	Mean Abnormal Return	Mean Cumulative Total Return	Mean Cumulative Abnormal Return
6	-.3292%	-2.2284%	-1.6331%
7	-.1276%	-1.2245%	-1.7159%
8	.2761%	-1.1534%	-1.4397%
9	-.2116%	-1.2618%	-1.6513%
10	.3767%	-1.4143%	-1.3856%

Firstly, the results in Table 4 quantify how the observed effect from the event starts to materialize before the actual event. Up until day -3 we observe a fluctuation in effects, whilst after day -3 a downward trend is introduced lasting until day 3. After day 3 we observe slight fluctuations in abnormal returns again, with a maximum cumulative abnormal return on day 7, being -1.72%.

Secondly, it is important to note that the effects of the resignations in the dataset are lasting. No real recovery is observed in the data at hand, neither is there any overreaction which is reversed within these windows. This means that the loss of the political connection translates into a long-term alteration in the valuation of a connected company, which is implemented in a constant way.

Thirdly, the effect observed is strongly negative, materializing in an average cumulative abnormal return of almost -1.4% compared to the cumulative market return. Furthermore, the bounds of the 95% confidence interval move below zero at the date of the event, never recovering within the stated timeframe. This further illustrates the statistical significance of the observed effects.

The results in Table 3 and 4 illustrate that the cumulative abnormal returns found in the event study highly significantly differ from zero. To be more precise, it can be concluded that the returns found in this analysis are significantly lower than zero, implying that firms losing a political connection on average lose market value compared to the predicted return resulting from the Market Model. Based on this, conclusions can be drawn with regard to Hypothesis I. However, in order to fully answer the research questions at hand, additional tests will be conducted to cross sectionally refine these effects found in the event study.

6.1.2 Regression models

In order to further analyze the impact of the resignation of a political connection of a board member on the stock price of a company, OLS regressions and fixed effects models are run. In this chapter, I answer whether the effect found in the event study is altered by firm, and board member characteristics: sectorial categorization and network size.

It is important to note that the results of the models below do not suffer from heteroskedasticity through the implementation of clustered standard errors. Additionally, Variance

Inflation Factors (VIF) have been estimated in order to rule out multicollinearity within the independent variables of the regression-models. In accordance with Hair et al. (2006), multicollinearity does not result in problems with model estimation when VIF's are below 10. With VIF's between 1.06 and 4.03 for all models, multicollinearity can be ruled out.

6.1.2.1 Sectorial categorization

Firstly, as explained in Section 5.2.1, two OLS-regressions are run to analyze the impact of categorical variable SectorID on the effect of losing a political connection. The most relevant results of these regression models are illustrated in Table 5. Additionally, Table 6 presents the abnormal returns per sector to add additional interpretative value to the coefficients in Table 5. For readability, Table 5 is presented in full in Appendix 1 and Table 6 is presented in Appendix 2.

Table 5

Results of OLS Regression Model 1 & 2

Variable	OLS Regression Model 1	OLS Regression Model 2
SectorID		
1 (Engineering & Machinery)	Omitted	Omitted
2 (Banks)	.0050 (.0015)***	.0054 (.0014)***
3 (Leisure Goods)	-.0002 (.0026)	-.0003 (.0025)
4 (Life assurance)	.0167 (.0014)***	.0172 (.0013)***
5 (Chemicals)	.0008 (.0010)	.0008 (.0010)
6 (Telecommunication systems)	.0095 (.0010)***	.0098 (.0010)***
7 (Steel & Other Metals)	-.0136 (.0012)***	-.0132 (.0011)***
8 (Food Producers & Processors)	-.0055 (.0015)***	-.0056 (.0015)***
9 (Construction & Building Materials)	-.0019 (.0011)	-.0018 (.0011)
10 (Pharmaceuticals & Biotechnology)	-.0105 (.0006)***	-.0092 (.0012)***
11 (Information Technology Hardware)	-.0003 (.0019)	-.0007 (.0022)
12 (Insurance)	.0017 (.0008)**	.0019 (.0007)***
13 (Software & Computing Services)	-.0001 (.0018)	-.0001 (.0018)
14 (Real Estate)	.0026 (.0010)***	.0029 (.0008)***
15 (General Retailers)	-.0036 (.0015)**	-.0034 (.0014)**
16 (Business Services)	.0011 (.0008)	.0014 (.0007)**
17 (Oil & Gas)	.0009 (.0013)	.0009 (.0013)
18 (Electronic & Electrical Equipment)	-.0022 (.0012)*	-.0020 (.0011)*
19 (Specialty & Other Finance)	-.0035 (.0004)***	-.0033 (.0000)***

Variable	OLS Regression Model 1	OLS Regression Model 2
SectorID		
20 (Renewable Energy)	-.0676 (.0042)***	-.0667 (.0038)***
21 (Health)	-.0077 (.0001)***	-.0073 (.0005)***
22 (Beverages)	-.0038 (.0010)***	-.0032 (.0008)***
23 (Consumer Services)	.0025 (.0036)	.0038 (.0029)
24 (Food & Drug Retailers)	.0001 (.0017)	.0005 (.0015)
25 (Diversified Industrials)	.0044 (.0019)**	.0048 (.0018)**
26 (Transport)	-.0044 (.0013)***	-.0041 (.0013)***
27 (Media & Entertainment)	.0144 (.0016)***	.0145 (.0015)***
R-Squared	.1619	.1658

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$

Clustered standard errors by SectorID, standard deviation between parentheses

Firstly, it is important to note that both OLS regression models have a moderately low *R*-squared of respectively 0.1619 and 0.1658. This can be interpreted as that 16.19% and 16.58% of the actual influence of factors on the stock returns on the day a connected politician steps down are included in this model. However, the models do in fact show statistically significant relationships between the sectorial categorization of a firm and abnormal return incurred on the day a political connection is lost. Based on the results in Table 5, OLS regression 2 seems to be superior in explanatory value to OLS regression 1 due to the addition of a relevant explanatory variable in the form of the binary Index positive variable.

In order to properly examine the results presented regarding the influence of the sector in which a company is active, it is important to note that all of the regression coefficients are to be interpreted relative to the Engineering & Machinery (E&M) sector. This is the case since one datapoint within a categorical variable must be dropped to prevent perfect multicollinearity between the predictors. This sector is chosen for omittance since it approximates the average effect found in this analysis as presented in Table 6, facilitating a clear interpretation of the results. Keeping the above in mind, we observe that the quantitative analysis uncovers a substantial difference in the impact of a resigning politician per sector. Setting aside significance, a difference of 8.39 percentage points in effect is observed between the highest coefficient and the lowest coefficient per sector in OLS regression 2.

Both models find that a majority of sectorial classifications significantly influence the effect on the stock returns of listed companies losing their political connection through the resignation of an official, compared to the E&M sector. Within this group, a division can be made between positive and negative sectorial influence on the effect found in the event study.

On the one hand, OLS regression 2 shows a large negative sectorial influence compared to the

E&M sector on the effect found in the event study for sectors such as Steel & Other Metals, Pharmaceuticals & Biotechnology, Renewable Energy and Health. These negative effects may be explained by the heavy regulations and government intervention these sectors face, operating within sectors related to health and environmental protection. This high influence of, sometimes *ad hoc*, regulation on these sectors can give additional value to political connections since they can result in more favorable policy, or advance information about intervention allowing for early adaptation.

On the other hand, it is important to note that there are several sectors with a significantly positive influence compared to the E&M sector, such as the Life Assurance, Telecommunication and Media & Entertainment sectors. The effect found for the Life Insurance sector can be interpreted as the loss of a dampening effect on price increases and job availability within this politically sensitive sector, as explained in the Theoretical Framework of this research. The Telecommunication sector's effect might be explained through the same concept as the Life Insurance sector. However, this sector is also highly impacted through government regulation, which can serve as a contraindication of positive results from the loss of a political connections. Within this variable, however, the scales tip in favor of the positive effect. Within the Media & Entertainment sector, it can be argued that this is found through the fact that this industry can be bound not to make, or distribute, certain products based on their political connections, losing out on viable business opportunities.

However, it is also important to note that not all results presented in Table 5 and 6 are easily interpreted based on earlier literature. Exemplary for this is the Banking sector, for which the variable Banks returns a positive sectorial impact on the effect the resignation of a connected politician has on firm value. This is contrary to the notion that banks are highly regulated and scrutinized companies which could benefit greatly from a political connection. This is further underlined by the return of the Specialty & Other Finance variable which does show the significantly negative results one would predict based on earlier literature.

In order to further substantiate the significance of the difference in effect found by introducing this additional factor into the analysis, an ANOVA is run to establish the significance of the fluctuation in cumulative abnormal returns between sectors in the -10 day until 10 day event study window. The results of this model can be found below, in Table 7.

Table 7

ANOVA on SectorID and Cumulative Abnormal Returns

Type of Variance	Sum of Squares	Mean Squares
Between group variance	.4152**	.0158**
Within group variance	3.0854	.0092
Total variance	3.5007	.0097

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$

The results in the table above show that a there is a strongly significant difference in the effect of a connected politician stepping down between different sectors in which a company is active. This further substantiates the findings of the OLS regression models that different sectors react in a different manner to the effect studied in the event study.

Based on the results presented above, it can be concluded that the negative effect found in the event study can be significantly refined through the addition of the sector in which a company operates, in line with the findings of Civilize et al. (2015). This further refines the results found in Section 6.1.1 and substantiates the conclusions to be drawn later in this section.

6.1.2.2 Network size

Furthermore, the influence of the network size of a board member on the effect found in the event study is analyzed through a fixed effects model. Below, in Table 8, the results of these models are presented.

Table 8

Results of Fixed Effects Model 1 & 2

Variable	Fixed Effects Model 1	Fixed Effects Model 2
Index return	.4904 (.2159)**	.3599 (.3506)
Log of Network Size	.0030 (.0019)	.0031 (.0018)*
Index positive	-	.0038 (.0049)
Sectors	Omitted	Omitted
Constant	-.0178 (.0121)	-.0207 (.0125)

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$

Clustered standard errors by CompanyID, standard deviation between parentheses

The results in the table above show that a there is only a slightly significant influence of the size of a board member's network on the effect observed in the event study in fixed effects model 2. However, the effect that is found is positive. Due to the logarithmic form of the Network Size variable, the result can be interpreted as follows: an increase of 1 percent in the network size of a politically connected board member positively increases the abnormal returns observed when the political connection is lost with 0.000031 units. This can be interpreted as abnormal returns being 0.0031 percentage points higher.

In order to further determine whether the size of a board member's network impacts the effect found in the event study, another ANOVA is run on the Network Size variable and abnormal returns. The quartiles of the network size introduced in Section 5.2.3 are constructed to determine the possible difference, this results in four groups: small network (0-470), medium-small network (471-692),

medium-large network (693-1244) and large network (more than 1245). The results of the ANOVA are presented in Table 9.

Table 9

ANOVA on Network size and Stock return

Network Size	Mean Stock Return	Standard Deviation Stock Return
0 - 470	-.0033	.0220
471-692	.0060	.0236
693-1244	.0020	.0165
> 1245	.0047	.0286
Type of variance	**Sum of Squares**	**Mean Squares**
Between group variance	.0034*	.0011*
Within group variance	.1324	.0005
Total variance	.1358	.0005

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$

The results in Table 9 show that there is a slightly significant difference in the mean Stock returns between the network size-groups constructed. It follows from this ANOVA that the small network size-group underperforms on the day a political connection is lost, with a stock return of -0.33%. This further builds on the results from the fixed effects models, implying that a higher network size leads to a less negative effect of losing a political connection.

However, when combing the results of Table 8 and 9, the only conclusion that can be drawn is that there is a slightly significant difference in Stock returns between network size groups. This effect is positive, meaning that the negative effect of losing a political connection found in the event study is counteracted by a bigger network for the connected board member. Based on this conclusion, the results found in the event study are thus further refined.

6.1.3 Conclusion on Hypothesis I

Based on the analysis conducted in this section, Hypothesis I, can be answered affirmatively. The existence of a political connection does significantly increase the firm value of Dutch publicly listed companies. The effect of losing a political connection starts several days before the announcement of the resignation and is persistent in the period after the resignation. Furthermore, the effect is influenced by additional factors such as network size and the sector a company operates in.

7. Conclusion and discussion

Based on the results presented in this research, it is possible to confidently answer the research question posed: "*To which extent does the loss of a political connection of board members impact the share price of Dutch publicly listed companies?"*. Through combining the quantitative analysis with literature research, it can be concluded that the loss of a political connection of a board member in a Dutch publicly listed company significantly decreases the share price of that firm, affirmatively answering Hypothesis I. This effect is a long-lasting effect, which ascertains that the loss of a political connection sustainably decreases the value of a firm in the Netherlands. This result is contrary to Bertrand et al. (2018) for a country with a strong institutional framework. Furthermore, this research allows to conclude that internal characteristics of boards and firms significantly influence this relationship. The negative effect of losing a political connection is enlarged in sectors which are under high regulatory pressure and dampened, or even reversed, in sectors which can suffer from extensive government intervention, in line with the findings of Civilize et al. (2015). Furthermore, it can be concluded that the negative effect found is counteracted to a certain extent when the board member losing a political connection has a sizable professional network to fall back on.

However, a lot more can be done in order to further refine the results found in this research. Further research could focus more rigorously on the effect of external factors related to the institutional framework of different stable democracies in order to ascertain whether additional country specific factors impact the effect of a political connection on firm value. Furthermore, within the Dutch framework, a broader spectrum of political connections can be examined with regard to the included corporate and political officers. It can be helpful for understanding the effect observed in this research to include, for example, large shareholders, regional heads of government and members of parliament to the dataset. Lastly, one can introduce additional value to the interpretation of the results found in this study by quantitatively, and qualitatively, research the modalities through which Dutch companies gain firm value by being politically connected. This can serve to further refine the effects found in this study, compared to previous literature regarding other countries.

Besides the scientific value of this research, it can additionally serve to incite societal discourse regarding the ability of board members of publicly listed firms to successfully apply rent-seeking behavior to further their commercial interests out of expediency, through a shared educational background with an elected politician. It can be helpful to acknowledge the existence of this phenomena in the Netherlands, in order to allow democratic processes to unfold regarding the desirability of this behavior of politicians serving the common good.

Additionally, practical value can be derived from these findings with regards to the evaluation of the current worth of a politically connected board member for a listed company. Both corporate governance policy and investment decisions can be improved by these findings.

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Appendix 1

Table 5

Results of OLS Regression Model 1 & 2

Variable	OLS Regression Model 1	OLS Regression Model 2
Index return	.5309 (.2032)**	.3576 (.3617)
Log of Network Size	.0028 (.0020)	.0029 (.0020)
Index positive	-	.0050 (.0057)
Constant	-.01701 (.0129)	-.0210 (.0130)
SectorID		
1 (Engineering & Machinery)	Omitted	Omitted
2 (Banks)	.0050 (.0015)***	.0054 (.0014)***
3 (Leisure Goods)	-.0002 (.0026)	-.0003 (.0025)
4 (Life assurance)	.0167 (.0014)***	.0172 (.0013)***
5 (Chemicals)	.0008 (.0010)	.0008 (.0010)
6 (Telecommunication systems)	.0095 (.0010)***	.0098 (.0010)***
7 (Steel & Other Metals)	-.0136 (.0012)***	-.0132 (.0011)***
8 (Food Producers & Processors)	-.0055 (.0015)***	-.0056 (.0015)***
9 (Construction & Building Materials)	-.0019 (.0011)	-.0018 (.0011)
10 (Pharmaceuticals & Biotechnology)	-.0105 (.0006)***	-.0092 (.0012)***
11 (Information Technology Hardware)	-.0003 (.0019)	-.0007 (.0022)
12 (Insurance)	.0017 (.0008)**	.0019 (.0007)***
13 (Software & Computing Services)	-.0001 (.0018)	-.0001 (.0018)
14 (Real Estate)	.0026 (.0010)***	.0029 (.0008)***
15 (General Retailers)	-.0036 (.0015)**	-.0034 (.0014)**
16 (Business Services)	.0011 (.0008)	.0014 (.0007)**
17 (Oil & Gas)	.0009 (.0013)	.0009 (.0013)
18 (Electronic & Electrical Equipment)	-.0022 (.0012)*	-.0020 (.0011)*
19 (Specialty & Other Finance)	-.0035 (.0004)***	-.0033 (.0000)***
20 (Renewable Energy)	-.0676 (.0042)***	-.0667 (.0038)***
21 (Health)	-.0077 (.0001)***	-.0073 (.0005)***
22 (Beverages)	-.0038 (.0010)***	-.0032 (.0008)***
23 (Consumer Services)	.0025 (.0036)	.0038 (.0029)
24 (Food & Drug Retailers)	.0001 (.0017)	.0005 (.0015)
25 (Diversified Industrials)	.0044 (.0019)**	.0048 (.0018)**

Variable	OLS Regression Model 1	OLS Regression Model 2
SectorID		
26 (Transport)	-.0044 (.0013)***	-.0041 (.0013)***
27 (Media & Entertainment)	.0144 (.0016)***	.0145 (.0015)***
R-Squared	.1619	.1658

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$

Clustered standard errors by SectorID, standard deviation between parentheses

Appendix 2

Table 6

Abnormal Return per Sector

SectorID	Mean Abnormal Return on Day 0
1 (Engineering & Machinery)	-.2574%
2 (Banks)	.6246%
3 (Leisure Goods)	-.7238%
4 (Life assurance)	1.7606%
5 (Chemicals)	.0856%
6 (Telecommunication systems)	.9706%
7 (Steel & Other Metals)	-1.5737%
8 (Food Producers & Processors)	-.3924%
9 (Construction & Building Materials)	-.1564%
10 (Pharmaceuticals & Biotechnology)	-1.2081%
11 (Information Technology Hardware)	.2087%
12 (Insurance)	.0890%
13 (Software & Computing Services)	-.0746%
14 (Real Estate)	.1617%
15 (General Retailers)	-.2111%
16 (Business Services)	.0000%
17 (Oil & Gas)	.1923%
18 (Electronic & Electrical Equipment)	-.4076%
19 (Specialty & Other Finance)	-.4862%
20 (Renewable Energy)	-5.8730%
21 (Health)	-.9986%
22 (Beverages)	-.3740%
23 (Consumer Services)	.8570%
24 (Food & Drug Retailers)	.1944%
25 (Diversified Industrials)	.5653%
26 (Transport)	-.4891%
27 (Media & Entertainment)	1.6004%