

# The Hague meets AEX

A research on the effect of Dutch politics on the Amsterdam Exchange Index

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## Abstract

*I find that monthly excess returns of the AEX are 1.3 percent higher when left-wing political parties join the coalition in the Netherlands. These excess returns are not found when center-wing or right-wing political parties join the coalition, as the risk-adjusted returns are nullified by the negative effect of divided governments. In situations of divided governments the two Houses are controlled by opposing parties resulting in a stationary situation as the incumbent government has fewer degrees of freedom. The effect of divided governments on the monthly returns of the AEX varies between -0.9 percent and -3.2 percent, which is in all cases significant at a one percent level. Investor sentiment does not seem to have a clear effect on the returns of the AEX. Although left-wing politics clearly correlates with the monthly returns of the AEX, it does not seem to have predictive power. The presidential puzzle is also visible in the Netherlands, however it is not as strong as in the US.*

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## I. INTRODUCTION

Politics in the Netherlands can be rough sometimes. For example, Mr. Wilders, politician and party leader of the Partij Voor de Vrijheid (PVV), has been dragged into court for two times for the reason of discrimination and hate speeching. The first time was in 2011 and Mr. Wilders was acquitted by Amsterdam's court. The second lawsuit is taking place at this very moment and the outcome is still uncertain (Nu.nl, 2014).

Dutch politics is also known by the way compromises are made and by the way different political movements collaborate to make progress overall, in Dutch called: "polderen" (Encyclo.nl, 2016). Furthermore, Dutch politics differentiates from for example the United States as a multiparty parliamentary system is in place, which means that multiple political parties with different visions run for elections. At this moment, there are twelve political parties active in the Second Chamber in the Netherlands, which often means not one party has the majority but a coalition has to be formed to make decisions. This way of politics has an impact on the speed of decision making, but also on new regulations as multiple parties have to agree before it can be introduced, which means very extreme regulations will most likely not be introduced. VVD, PvdA, PVV, CDA, SP, GroenLinks, D66, and ChristenUnie are considered as the most influential Dutch parties. This is also visible when taking a closer look at the historical coalitions formed. When I consider the period January 1945 to February 2015 the political parties once joined a coalition are: VVD, PvdA, CDA, D66, ChristenUnie, and LPF. VVD is a right-wing and liberal party in the Netherlands, where PvdA is a left-wing and social democratic party. CDA is a center-right-wing and Christian democratic party, where ChristenUnie is Christian party as well, however, more conservative than CDA. ChristenUnie can be seen as a center-right-wing party. D66 is a center-left-wing party with a social liberalism ideology. LPF is a right-wing party, however, it is no longer present in Dutch parliament. LPF joins the elections for the Second Chamber in May 2002, this is just after the murder of the party leader Pim Fortuyn. After this presidential cycle, in 2006, LPF disappears from the scene.

By logical reasoning, certain political events could affect the stock market returns, as politics could also influence business activity or could provide uncertainty in the market. Dutch politics might therefore have an effect on the Amsterdam Exchange Index or the AEX. The AEX is known as the most important stock market index in the Netherlands, as the index paints a picture of developments of the 25 biggest stocks regarding their market capitalisation. The market capitalisation of a company is the total value of all stocks from that specific company according to the stock market.

Not only certain political events could have an effect on Dutch stock market. Nowadays, the relation between politics and returns on stock markets is an upcoming research subject. Politics can be defined broadly, however, in previous sentence what I mean with politics is which political parties govern or which political parties join the coalition. However, after every published paper more questions are raised and multiple questions are still left open at the moment. For example it is still unclear why excess returns on American stock markets appear when Democrats are in power, as this cannot be explained by multiple business cycle variables. In this master thesis I will contribute and expand to this relatively new research question, as I will find out whether the returns of the AEX are affected by the Dutch government in The Hague in an unexplainable way. First, I will find whether there is a similar effect of Dutch politics on Dutch stock market as found in the US and second, if there is such an effect, find an explanation for it. Maybe these excess returns are just a compensation for risk related to the government or the state of the business cycle, however, if this cannot explain the excess returns, then the explanation should probably be found in the effect of investors' behavior.

The paper is build up as follows: section II will delve into previous literature, hereafter, the data I use is discussed in section III. Section IV presents the methodology and section V will show and explain the results. Section VI concludes this thesis and gives advice for further research.

## II. LITERATURE REVIEW

In the next sections I provide an overview of the current stage of research regarding the presidential puzzle. Section A starts with explaining the Efficient Market Hypothesis, where section B will dive into anomalies. Section C explains the presidential puzzle and section D shows literature regarding investor sentiment. In section E, I explain the effect of the presidential cycle. Section F shows the state of Dutch specific literature and in section G, I explain my contribution to the relatively new research subject.

### A. The Efficient Market Hypothesis

According to the Efficient Market Hypothesis, the stock market correctly shows all relevant information to all participants. This Efficient Market Hypothesis furthermore states that it is impossible to make profits by trading on the available information, all information is simply incorporated in the stock price (Malkiel, 1991). Three versions of the Efficient Market Hypothesis are defined: (1) the weak form of the Efficient Market Hypothesis, which states that information available only consists of historical prices of the market, (2) the semi-strong form of the Efficient

Market Hypothesis, which states that the information is all the publicly available information, including the information regarding the historical prices, and (3) the strong form of the Efficient Market Hypothesis, which means the available information is all information known by anyone, whoever or wherever that person may be (Jensen, 1978). The Efficient Market Hypothesis therefore implies that above normal returns will most likely not be found when only relying on public information. However, there is also critique on the Efficient Market Hypothesis. A simple example, which I cite from Wang (1986): A finance professor is walking on a campus with a research assistant, who asks: "Professor, I see a twenty dollar bill on the sidewalk. Should I pick it up?" The professor replies: "No, of course not. If it were really there it would already have been picked up."

## B. Anomalies

In the dictionary an anomaly is defined as follows: a deviation from the common rule, type, arrangement, or form (www.dictionary.com, 2016). However, in economic literature it was first used to explain deviations from the Efficient Market Hypothesis and Capital Asset Pricing Model. Anomalies show the current status of finance research, as it shows excess returns in periods of time which cannot be explained by a certain risk or other business cycle variables (Frankfurter and McGoun, 2001). Multiple anomalies are visible in the market. For example the January effect. The average monthly returns of stocks in January are significantly higher than in one of the other months of the year. In the US 33 percent of yearly returns are obtained in January, where half of the returns of January came in the first five trading days. At first sight, the month of the year should not have an impact on the returns of the stock market, as companies should not perform worse or better during a specific month of the year. The explanation for this anomaly could indeed not be found in rational behavior. It appears that stocks with negative returns over the previous year benefit from tax-loss selling, and these stocks have even higher returns in January. In the Netherlands the January effect is even stronger, as the January return exceeds the average return for the rest of the year (Thaler, 1987). Another much debated anomaly is the Weekend Effect. The Weekend Effect shows significantly lower returns on the stock markets after the weekend, even though Mondays should not differ from Fridays. The explanation could be found in the correlation between the Friday and Monday returns. A negative return on Friday results in a negative return on Monday. Trading behavior of investors can partly explain the Weekend effect, as investors tend to sell stocks on Monday when there was a bad news event in the market on Friday (Abraham and Ikenberry, 1994). Brockman and Michayluk (1998) examined another anomaly in the stock market, namely the holiday effect. The stock market shows higher returns on the last trading day before

a holiday or a long weekend (Christmas for example). Investors can benefit from this anomaly by buying stocks in the days just before the last trading day and then sell on the final day before holiday. However, after these anomalies were researched and published, the anomalies tend to disappear. Several widely known anomalies already disappeared over time. The three anomalies I describe above diminished or disappeared completely. Increased awareness of the anomalies in the market will make investors trade on the anomalies and the more investors trade based on the anomalies, the less of the effect stays visible in the market. The possible profits will fade away and the market will get efficient and rational again (Marquering, Nisser, and Valla, 2006).

### C. The presidential puzzle

A relatively new research subject is called "the presidential puzzle". In the US the excess returns on the stock market are nine percent higher for the value-weighted and sixteen percent higher for the equal-weighted portfolio under Democratic presidencies than under Republican presidencies (Santa-Clara and Valkanov, 2003). From logical thinking, this should not be an anomaly, as politics could have an effect on the stock prices or on the decisions companies make. For example, the government is able to introduce a new regulation which makes it more interesting to invest company's money instead of keeping it as cash. This increased investments could improve future cash flows and therefore the company's value, which results in higher stock prices. However, after correcting for all kind of business cycle variables, the excess returns under Democratic presidencies are still significantly higher than under Republican presidencies. This raises the question whether there might be an anomaly in the market, as these excess returns still cannot be completely explained. Some difference is explained by lower interest rates and higher real stock returns, however not by business cycle variables such as dividend price ratio, the default and term spread, and the relative interest rate. It also appears that there is no significant difference between the riskiness of the stocks across different presidencies; therefore, these higher returns are not due to a risk premium.

### D. Investor sentiment

One other possible reason for the different excess returns in the stock market under different political parties is that left-wing individual investors are less inclined to invest in the stock market (Kaustia and Torstila, 2011), therefore it could be the case that excess returns increase when a left-wing party is in power, as more right-wing individual investor feel a left-wing coalition as a risk for which they want to be compensated.

Barberis, Shleifer, and Vishny (1998) develop a model for investor sentiment. The investor sentiment shows how investors perceive events and how they react to this. Investor sentiment shows the overreaction or underreaction of investors to certain events or news announcements. The news can be either good or bad. In period of underreaction the investors buy less than what would have been logical regarding that certain positive news announcement. In period of overreaction the investors buy more than what would have been expected regarding a certain positive news announcement and the other way around regarding bad news events. These moments of over- and underreaction to certain news is also visible in the Netherlands, for example 9/11, the returns became extremely negative for 2 weeks in a row, but hereafter returns rose again, also for weeks in a row. Apparently, the Dutch investors overestimated the effect of the news on the real stock prices.

Also Baker and Wurgler (2006) find that investor sentiment affects the stock returns. Brown and Cliff (2004) define sentiment as follows: sentiment represents the expectations of market participants relative to a norm: a bullish (bearish) investor expects returns to be above (below) average, whatever "average" may be. Furthermore, they show that sentiment does not only affect small stocks, but also medium and large stocks and that sentiment measures hardly predict future returns.

Expectations of investors differ over time. Bonaparte, Kumar, and Page (2012) find a relation between the political climate and the expectations towards financial markets. Investors become more optimistic and are willing to take more risk when the party of their preference is in power. Furthermore, investors perceive the market as more undervalued when the political party in the government is in line with their preferences. Investors are more likely to reallocate their portfolios when they have positive expectations about the government and therefore this could result in an increased returns regarding investors' portfolio.

In the US excess returns are found under Democratic presidencies. Regarding aforementioned research it could be that Democratic investors reallocate their portfolios as they perceive the stock market as undervalued and dare to take more risk as they are optimistic about the presidency. However, it could also be that Republicans want to be compensated for the presidency in power, as investors become less optimistic during Democratic presidencies. Therefore, the higher returns under Democratic presidencies could probably be explained by the sentiment of Democrats, as they have positive expectations and believe the stock market is undervalued at such periods, however, it could also be the other way around, that Republican investors become pessimistic and believe the stock market is more risky and want a compensation for this risk. When Dutch market would react in the same way as US market, then this would mean that the returns of the AEX are

increased when left-wing political parties are in power, probably due to the investor sentiment or to a compensation for increased risk. Bonaparte, Kumar, and Page (2012) examine whether the risk and reward perceptions of investors differ by their political preference and the existing political parties in the coalition. They find that more optimistic investors, due to the political climate, see the stock market as undervalued and these investors then assume risk plays a smaller role. For example: a Democrat investor perceives the market as less risky when the Democrats are in power and therefore expect the returns to be higher. Felton, Gibson and Sanbonmatsu (2003) also state that optimism might affect the preference for investment risk. Also according to Tennen and Affleck (1987) and Weinstein (1980, 1984) optimism leads to greater risk-taking behavior, because the positive feeling and expectations about the present and about the future years will result in less need to worry about the potentially negative effect resulting from a risky choice. These optimism among investors of which their political party of preference is in power which results in greater risk taking behavior does not automatically result in higher returns. Risky investments go along with more volatile returns. However, the probability that the investments result in excess returns is bigger than with a non-risk taking strategy.

Furthermore, optimistic investors are more likely to be influenced by the confirmation bias (Felton, Gibson, and Sanbonmatsu, 2003). The confirmation bias can be described as follows: searching for evidence of what you expect and do not look for something you do not expect to happen, or positive hypothesis testing (Busemeyer, Hastie, and Medin, 1995). Thus, Democrat investors under Democrat presidencies tend to be influenced by the optimism bias as these investors perceive the stock market as undervalued. Due to the optimism bias, investors are also influenced by the confirmation bias. Optimistic investors tend to search for confirmation instead of disproval. These two biases lead to greater risk taking behavior, which does not automatically mean that returns increase, however, this returns become more volatile and the probability that a risk-taking strategy results in increased returns is higher than by the use of a conservative strategy.

## E. Presidential cycle

Gärtner and Wellershoff (1995) demonstrate that the stock prices in the US follow the presidential cycle. The stock prices appear to fall in the first half of the presidency while the stock prices rise in the second half of the presidency. Kräussl, Lucas, Rijsbergen, van der Sluis, and Vrugt (2014) present that the annual excess return differ during the presidential cycle and excess returns are around ten percent higher during the last two years of this cycle. However, this pattern cannot be explained by various business cycle variables such as time-varying risk premia, differences in risk



levels, or by consumer and investor sentiment. By logical thinking the increased returns on the stock market in the second half of the presidency could be explained by the stable government. The government already made it through the first two years, and the probability that the government will make it to the next elections is increasing every day. Another reason could be that the government will start by introducing less popular regulations just after the elections and saves the popular regulations for a later moment in time. If political parties take into account the availability heuristic, it would be smart to introduce popular regulations in the second half of the presidential term. Tversky and Kahneman (1973) explore the availability heuristic. The availability heuristic is a judgment in people's mind based on direct examples in their memories. Furthermore, people tend to provide more weight to recent events than to more historical events. If people can easily recall the new regulations the political party introduced just before elections and people like that new regulations, then this will probably result in more votes during the upcoming elections. Political parties anticipate to the availability heuristic and take advantage of people's memories if this will result in more votes. Therefore, I will also take into account the presidential term, as it could be that the returns of the AEX are higher in the second half of the presidential cycle. Maybe also Dutch political parties take into account the availability heuristic when implementing new laws and regulations.

#### F. Dutch specific research

The presidential puzzle is not solved yet. This means that an explanation for the excess returns under Democratic presidencies is not found. However, most research regarding this subject is done on US stock market and corresponding politics, though it is clear that US politics differs from European politics or even more specifically Dutch politics. US parliament consists of two political movements and Dutch parliament is formed by twelve parties. I will find out whether the presidential puzzle is also visible outside the US, thus whether politics in the Netherlands has an effect on Dutch stock market and whether this effect is explainable by the business cycle or by investors' optimism and their risk taking behaviour. As the Democrats are considered to be left-wing, I expect to find excess returns on the AEX when left-wing parties are in power. Specifically, when PvdA is in power, as PvdA is considered to be the most influential left-wing party in the Netherlands. Santa-Clara and Valkanov (2003) state that the interest rates appear to be low under left-wing political parties in the US. This will result in an increasing demand for stocks as more people are entrancing the stock market to find returns for their savings. Furthermore, left-wing governments typically care more about social issues, while right-wing governments are

more concerned with stimulating the economy. Therefore, financial markets may be pessimistic under left-wing governments. The investors are not willing to invest when not compensated for this left-wing policy, which ensures that excess returns follow.

The only Dutch research about the subject contains results regarding the volatility during Dutch elections. Brunner (2009) examines the effect of elections and government formations in the Netherlands. He does so because the Netherlands have a multiparty parliamentary system and the uncertainty about who will govern continues even after the elections, because the coalition formation often takes a while. The paper finds evidence for reactions of the AEX in periods of political uncertainty in the Netherlands, this is examined by the increased volatility of the AEX. It also appears that volatility increases when left-wing parties participate in the governments, however the returns are not influenced.

It could be the case that the effect in the Netherlands differs from the effect in the US as I expect that research on other European countries will resemble more with the Netherlands than research on the US. Döpke and Pierdzioch (2006) test whether German politics shows similar effects on German stock market as the results found in the US. However, they only find weak evidence that politics has an impact on the stock market and they do not find that returns on German stock market incline to be higher under left-wing governments than under right-wing governments. The paper also finds no evidence for a term year cycle in German stock market.

Given the contradictory results in literature and the different political system in the US and the Netherlands, it might be the case I find different results than found by Santa-Clara and Valkanov (2003). Hence, it is interesting to examine the effect under Dutch system as well.

## G. My contribution to the presidential puzzle

It seems there is an effect caused by US politics on the US stock market. However, the explanation for the excess returns under Democrats is not found yet and it still delivers many questions. This effect or probably anomaly provides higher returns on the stock market when a left-wing party is in power. Santa-Clara and Valkanov (2003) are not able to explain the difference in excess returns under different political parties.

The first driving force which could possibly explain the higher returns is increased risk. This possibility becomes clear when one reads papers about the risk return tradeoff and asset pricing models. Ghysels, Santa-Clara, and Valkanov (2005) use the mixed data sampling approach and find that risk has a significantly and positive effect on returns in the stock market. This finding stays robust after different tests, including testing in different subsamples, and controlling for

variables associated with the business cycle. Lundblad (2007) tests the risk return trade off over the longer horizon and also Lundblad finds a positive relation between risk and returns on the stock market from the period 1836 till 2003. Thus, the returns on the stock market rise with an increase in risk.

The second driving force which could possibly explain the higher returns is the state of the business cycle. It could be that a left-wing party has a different policy, which will result in a different state of the business cycle and as a consequence has an impact on the stock returns. Therefore, it is possible that the political situation is only a proxy for the variations in the business cycle. The business cycle variables I test for are: credit spreads, relative interest rate and inflation. According to the risk return trade off models, the excess returns should be completely explained by risk. However, as previous research is not able to explain the higher returns by these variables I also add political and behavioral variables: midterm, divided governments, and investor sentiment. Santa-Clara and Valkanov (2003) find dividend price ratio, credit spreads, and relative interest rates do not have an effect on the excess returns. However, as Santa-Clara and Valkanov (2003) only consider the US stock market, it could still be the case that the former mentioned variables have some explaining power in the Netherlands. The midterm also could have an effect on the business cycle, because after some time elapses the policy of the coalition becomes clear and stable. Gärtner and Wellershoff (1995) demonstrate that the stock prices in the US follow the presidential cycle. The stock prices appear to fall in the first half of the presidency while the stock prices rise in the second half of the presidency, in my belief due to the stable government and introduction of popular regulations in the second half of the presidency.

Divided governments or a parliamentary gridlock refers to a problematic situation in the parliament when the two Houses are controlled by opposing parties and results in a stationary situation due to the fact that new laws will not pass both Houses. In the Netherlands these two Houses are called the First and the Second Chamber. The Second Chamber develops the new laws, where the First Chamber is only able to reject or accept the laws proposed by the Second Chamber. Under divided governments, the incumbent government has fewer degrees of freedom, because they need to negotiate more with the opposition. Next, I find out whether the effect of opposing Houses will result in less excess returns. This division will result in a stationary situation because new laws will not pass both Houses.

What also could influence the business cycle and the stock returns is the investor sentiment. When the party of the investors' preference is in power, he is more optimistic and is willing to take more risk and therefore will possibly result in higher returns. As previous papers do not explain away the higher returns, I control for investor sentiment in the analysis. I believe the explanation

of the higher returns under Democratic presidencies can be explained by investors' behavior.

To summarize, I will find out whether the presidential puzzle as found in the US is also available in the Netherlands. If so, I will find out whether the excess returns are explainable by business cycle, the political situation or the behavior of investors. To test this I use the following variables: credit spreads, relative interest rate, inflation, midterm, investor sentiment, and a divided governments variable.

### III. DATA

In this third section, I describe the data used in this paper. To find the effect of Dutch politics on Dutch stock market returns, thus to explain the possible anomaly, I form political variables. The first political variable is a dummy called 'CDA', this dummy has a value of one when the center-right-wing party CDA is in power. The CDA dummy also gets a value of one when the KVP, CHU, or ARP was in power, this because CDA originate from a merger in 1980 between those three parties. CDA is the party which collaborates most in coalitions. Since 1945 till 2015, 28 cabinets are appointed where CDA collaborate in 25 of those coalitions. The second political variable is a dummy called 'VVD', this dummy again has a value of one when the right-wing party VVD is in power. VVD collaborates in seventeen of 28 cabinets since 1945. Hereafter, I form the 'PvdA' dummy, this dummy gets a value of one when the left-wing party PvdA is in power. Since 1945 till 2015, PvdA joins fourteen coalitions. Then I form the dummies for D66, LPF and ChristenUnie. Those dummies again get a value of one when those political parties are in power. D66 joins five coalitions, whereas LPF, and ChristenUnie join only one. D66 is considered to be left-wing, LPF to be right-wing and ChristenUnie is considered to be center-right-wing in Dutch political spectrum. However, as the usage of one dummy for each political party will provide me with high correlation among some variables, and few degrees of freedom, which in term implies few significant results, I also form new political variables which I call: left dummy, center dummy, and right dummy. The left dummy gets a value of one when a left-wing party is in power. The parties I consider as left and once join a coalition are PvdA and D66. The center dummy gets a value of one when a party is in power which is in between left-wing and right-wing and I therefore consider these parties as center. I count CDA and ChristenUnie to the center-wing parties. LPF and VVD are right-wing parties and therefore, the right dummy gets a value of one when one of these parties is in power. Another political variable I form is the divided governments variable. The divided governments variable is a dummy which contains a value of one when the formation in the Second Chamber is not exactly the same as the formation in the First Chamber, because this

situation result in restrictions for the coalition in the Second Chamber.

The last political variable I form is the midterm dummy. This dummy gets a value of one when the government is in its second half of the political cycle.

To find the effect on Dutch stock market returns I collect the daily price index of the AEX. I use the AEX as a proxy for Dutch stock market as the AEX is composed of the 25 most active securities in the Netherlands (Brunner, 2009).

After analyzing the daily price index of the AEX, I calculate the monthly and weekly returns of the AEX by the following formula:

$$Return_t = \log \frac{Price_t}{Price_{t-1}} \quad (1)$$

The average of the AEX logarithmic weekly returns is equal to 0.070 percent. I calculate the logarithmic weekly returns by comparing the price of the opening on Monday and the close price on Friday. The standard deviation of the AEX logarithmic weekly returns is 0.012. The average of the AEX logarithmic monthly returns is equal to 0.212 percent. I calculate the logarithmic monthly returns by comparing the price on the first day of the month and the price of the last day of the month. The standard deviation of the AEX logarithmic monthly returns is equal to 0.025.

Hereafter, I form the business cycle and behavioral variables, namely: credit spreads, relative interest rate, inflation and investor sentiment. I form the business cycle variables because it is possible that a correlation between the political variables and business cycle variables exists. Therefore, it could be that the political situation of a country is just a proxy for the business cycle, then the political situation could merely be a proxy for the excess returns. As the returns of the AEX is always the dependent variable in the regressions explained in the next section, I form my dataset from January 1983 till February 2015. Credit spreads variable is tracked from 1980 till 2015 on a quarterly basis and is the three month average on Dutch market. This means the credit spreads variable has the same value for three months in a row. The average value of the variable from 1983 till 2015 is 1.075, where the standard deviation is 0.312. The relative interest rate variable is defined as the difference between the three month risk-free rate and its average over the past twelve months, which is noted from January 1979 till February 2015 on a quarterly basis. I take the Dutch interbank three month offered rate as the risk-free rate. After analyzing the interest rates, I calculate the relative interest rates by the following formula:

$$Relative\ interest\ rate = (risk\ free\ interest\ rate - average\ interest\ rate\ over\ the\ past\ twelve\ months) \quad (2)$$

The average of the relative interest rate from 1983 till 2015 is -0.141 percent, the standard deviation has a value of 0.854.

The inflation variable is the monthly consumer price index in the Netherlands from April 1960 till February 2015. For the period 1983 till 2015, the mean has a value of 86.67 and the standard deviation is 16.744.

I form the investor sentiment variable by taking Dutch economic sentiment indicator of the Directorate General for Economic and Financial Affairs. The sentiment variable notes on a monthly basis from 1985 till 2015. Where a value of 100 shows neutral investors, a value higher than 100 shows optimistic investors and a value lower than 100 shows pessimistic investors. The average is equal to 100.188 and the standard deviation to 9.288.

As I know the development of the AEX since 1983, and the returns of the AEX is my dependent variable in every regression explained in the methodology section, I form my dataset with information from 1983 till 2015.

#### IV. METHODOLOGY

To find the relation between the politics and the stock market, the first regression I perform is:

$$Returns_t = \alpha + \beta_1 * political\ dummy_t + \epsilon_t \quad (3)$$

This regression shows the effect of a political party on the returns of the AEX. The returns of the AEX today is the dependent variable.  $\alpha$  is the constant, which filters away the daily effects visible in the AEX.  $\beta_1$  shows the effect of the politics on the returns of the AEX, I expect to see significantly higher returns when the left-wing party PvdA is in power, this because of Santa-Clara and Valkanov's paper (2003). The political dummy gives a value of one when a specific political party is in power.  $\epsilon_t$  is the residual of the regression and shows the error term, which is the difference between the estimated value and the real value.

However, due to the earlier explained high correlation among some of the variables and few degrees of freedom, which will in term imply few significant results, I also use left dummy, center dummy and right dummy to form the following regression:

$$Returns_t = \alpha + \beta_1 * center\ dummy_t + \beta_2 * right\ dummy_t + \epsilon_t \quad (4)$$

The returns of the AEX is the dependent variable, where the independent variables are all dummies.  $\alpha$  shows the returns of the AEX when left-wing political parties join the coalition.  $\beta_1$  is the coefficient of the center-wing dummy and shows the difference in returns of the AEX when

center-wing political parties join the coalition instead of left-wing political parties.  $\beta_2$  shows the effect of right-wing parties in power on the returns of the AEX in comparison with the effect of left-wing political parties, and  $\epsilon_t$  is the residual. Again, I expect to find excess returns on the AEX when a left-wing party is in power, as I expect to find the same results as Santa-Clara and Valkanov's presidential puzzle (2003). However, the results could also differ as Dutch political system differs from US political system. In the Netherlands, we have a multiparty parliamentary system where in the US the citizens are only able to choose between two opposing parties. Thus, when opposing results will be found this could still be explainable by logical reasoning.

It could be the case that the effect of politics is only visible in a certain time period or stronger in a certain time period. As it could be that multiple events or changes in the market over time have an impact on the way investors trade. Therefore I perform the regression stated in equation four over different time periods. As a different sample I perform the regression on the period from 1983 to 1999 and from 1999 to 2015, this is an equal breakdown of the data. However, as both the tech-bubble and the financial crisis are in the second sample, I will correct for these economic downturns by two dummies.

To find out whether these excess returns are because of changes in the business cycle, political influences or due to the optimism or pessimism of investors, I add all the control variables to the regression; these control variables will also correct for some possible risk factors:

$$\begin{aligned}
 \text{Returns}_t = & \alpha + \beta_1 * \text{political dummy}_t + \beta_2 * \text{divided governments}_t + \beta_3 * \text{midterm}_t \\
 & + \beta_4 * \text{political dummy}_t * \text{divided governments}_t + \beta_5 * \text{political dummy}_t * \text{midterm}_t \\
 & + \beta_6 * \text{sentiment index}_t + \beta_7 * \mathbf{X}_t + \epsilon_t
 \end{aligned} \tag{5}$$

The returns on the AEX again is the dependent variable, where the independent variables are formed by all the variables in the dataset.  $\alpha$  shows the constant in the regression, which shows the effect of the other two political wings than the one included in the regression.  $\beta_1$  shows the effect when the political dummy gets a value of one when the specific political wing is joining the coalition, the coefficient will show the difference in effect on the returns of the AEX compared to the other two political wings.  $\beta_2$  shows the effect on the returns of the AEX when the divided governments dummy gets a value of one.  $\beta_3$  shows the effect on the AEX when the coalition is in the second half of its cycle.  $\beta_4$  shows the effect of the interaction between the political dummy and First Chamber. When the parties in the coalition in the Second Chamber are different than

the ascendancy in the First Chamber this coefficient will get a value.  $\beta_5$  gets a value when the specific political wing is in the second half of its presidential cycle.  $\beta_6$  shows the effect of the investor sentiment on the returns of the AEX. I include the business cycle variables in the vector ( $X_t$ ), which are inflation, relative interest rate and the credit spread.  $\beta_7$  shows the effect of the vector on the returns of the AEX. Santa-Clara and Valkanov (2003) also consider dividend rate as a business cycle variable. However, as Dutch dividend rate is available since 2002, I would lose too many datapoints to include this variable as well.  $\epsilon_t$  is the residual.

As I stated before I expect to find excess returns on the AEX when the left-wing dummy gets a value of one, however I expect that this relationship tends to be weaker when the divided governments variable is playing a role at that moment in time. Nevertheless, I expect an even stronger effect when the second half of the presidential cycle is taking place, thus when the presidential cycle is over its midterm. Santa-Clara and Valkanov (2003) find that dividend yield, credit spreads, and relative interest rates do not influence the stock returns in US market. Also the effect of the interest rate on the stock market is an extensively examined subject. As higher interest rates will discourage companies to invest more in growth opportunities, it will result in dropping future cash flows. And dropping future cash flows go along with lower stock prices and therefore will result in a declining market. Thus, I expect to find a negative effect of the relative interest rate variable on the returns of the AEX. Feldstein (1980) discusses whether the inflation affects the stock prices. He finds that stock prices rise during times of higher inflation. Therefore, I expect to find a positive coefficient of the inflation variable, as higher returns are more likely achievable when the stock prices rise. For the credit spread variable I expect the coefficient to be positively related to the returns on the AEX. This is because Collin-Dufresne and Goldstein (2001) find that monthly credit spread changes are driven by the local supply and demand shocks. Therefore, I expect that when the supply and demand increases, also the demand on the stock market increases, which will have a positive effect on the achievable returns on the stock market. However, credit spread could also be seen as a proxy for risk, which could result in more extreme, positive and negative, returns on the stock market. Baker and Wurgler (2006) find that investor sentiment does affect the cross-section of the returns of the stock market. The paper of Baker and Wurgler predict that higher investor sentiment has larger effects on stocks which have bigger limit to arbitrage. According to Baker and Wurgler the stock earnings decrease when the sentiment is high. Therefore, I expect to find a negative effect of the sentiment index variable on the returns of the AEX.

As previously mentioned, regression five contains a Dutch investor sentiment index, namely Dutch economic sentiment indicator of the Directorate General for Economic and Financial Affairs.



This sentiment measure notes on a monthly basis from 1985 till 2015. However, publicly known is that European and therefore also Dutch stock market strongly reacts to the US stock market. Therefore, I test whether Dutch investor sentiment index is highly correlated with the US investor sentiment index. When this is not the case I could add the US sentiment index to the regression stated in equation five, as this sentiment index from Baker, Bloom, and Davis (2013) is available from January 1985, just like Dutch measure is. The index is called the Economic Policy Uncertainty index (EPU) and draws on the amount of references in the newspapers to political uncertainty and other indicators. Clear spikes are visible during presidential elections, after the Gulf wars, after the terrorist attacks on 9/11 etc., this is some evidence that the EPU index offers a good proxy for movements in policy-related uncertainty regarding the economy over time. When Dutch investor sentiment and US investor sentiment are highly correlated, Dutch investor sentiment is informative enough.

Hereafter, I examine whether these excess returns are explainable by more risk. I test for a higher exposure to risk by running an F-test on the volatility of the returns on the AEX when the left-wing parties are in power and when other center-wing and right-wing parties are in power. However, when I find different results as found in the US, which is very well possible due to the different political system, then I compare that specific political movement which is associated with the excess returns on the AEX to the other two political movements in the Netherlands.

In the end, I perform multiple robustness checks. The relation between the stock returns and politics is examined by the three dummy categories, namely left, center, and right dummy. However, American politics only has two parties. Therefore, to stay as close as possible to Santa-Clara and Valkanov (2003), I will form new dummies, center-left and center-right, and find out whether the results differ from the previous found results. As another robustness check, I test all the previously mentioned regressions on autocorrelation and heteroscedasticity (Andrews, 1991). Autocorrelation is a problem often visible in time series regressions and as I perform time series regressions, this is something I correct for. Heteroscedasticity is also a concern regarding regression analysis, as one of the assumptions using ordinary least squares is that the error term has a constant variance. It could be the case that this is not true, and therefore I correct for heteroscedasticity using the method of Newey-West. The method of Newey-West also corrects for the aforementioned autocorrelation. As a last addition, I also test whether the political wings could predict the returns of the AEX by also performing lagged regressions.

## V. RESULTS

To determine whether there is an anomaly in Dutch stock market caused by Dutch politics, I perform multiple regressions. First, I examine the effect of specific political parties in section A. In section B I form three political wings to examine the effect on the stock market. In section C different sub samples are taken into account. In section D I will find whether the higher returns on the stock market are explainable by business cycle, political or behavioral variables. In section E I consider the volatility in the market. In section F I determine the effect of a two-party parliamentary system and in section G I find out whether politics has predictive power.

### A. The effect of political parties

The first regressions, which show the effect of different political parties on the monthly returns of the AEX, are shown in Table 1.

**Table 1:** *This table shows the results of six regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is political party dummy. In the first regression the dummy gives a value of one when the left-wing PvdA is in power. In the second regression the dummy gives a value of one when the center-left-wing D66 is in power. In the third regression the dummy gives a value of one when center-right CDA is in power. In the fourth regression the dummy gives a value of one when the center-right-wing ChristenUnie is in power. In the fifth regression the dummy gives a value of one when the right-wing VVD is in power and in the sixth regression the dummy gives a value of one when the right-wing LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1) PvdA	(2) D66	(3) CDA	(4) CU	(5) VVD	(6) LPF
Constant	0.003	0.002	0.004*	0.003**	0.002	0.003**
Political party dummy	-0.001	0.001	-0.002	-0.007*	0.000	-0.019**
R-squared	0.000	0.000	0.002	0.008	0.000	0.016
Included observations	386	386	386	386	386	386

The dependent variable is the monthly returns of the AEX, where the independent variable is political party dummy. From the first regression, I find that PvdA does not have a positive effect on the monthly returns of the AEX. The coefficient is actually slightly negative. However, as the coefficient of PvdA dummy is not significant, there is no real effect on the monthly returns of the AEX. From the second regression, I find that also the coefficient of D66 dummy is not significant,

which means that the monthly returns of the AEX are not significantly higher or lower when D66 is in power. Also from the third regression, I do not find any significant effect on the monthly returns of the AEX when CDA is in power. When CU is part of the coalition, I find significantly less monthly returns on the AEX at a ten percent significance level. When CU is in power, the monthly returns are lowered by 0.7 percent. Looking at the data, I find that CU joins the coalition only once since 1983, namely from February 2007 to September 2010. From logical reasoning, I am in the opinion I am not able to define these results as an anomaly, as in this period in time a financial crisis hit the Netherlands. It is more likely that the monthly returns decreased because of negative sentiment in the market or because of increased risk. From the fifth regression, I find that the coefficient of VVD dummy does not show a clear positive or negative effect, also the effect is not significant. From the sixth regression, I find a negative effect on the monthly stock returns when LPF is in power. This effect is significant at a five percent level. When LPF joins the coalition, the monthly returns of the AEX decrease by 1.9 percent. As I explained earlier, in Dutch history LPF joins the coalition only once. On 6 May 2002, only nine days before the elections, LPF's party leader, Pim Fortuyn is murdered. This murder took place at the Media Park in Hilversum, where Pim Fortuyn was interviewed in a radio broadcast. After this murder, the Dutch were shocked, it even led to demonstrations and violence. 15 May 2002 the elections took place and LPF won. It could be the case that the significant lower monthly returns in this period of time could partly be explained by a lowered sentiment in the market.

As the weekly returns of the AEX vary more than on a monthly basis, I perform the same regressions as before but now on a weekly basis. The effect of the political party dummies on the weekly returns of the AEX are shown in Table 2.

**Table 2:** This table shows the results of six regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is political party dummy. In the first regression the dummy gives a value of one when the left-wing PvdA is in power. In the second regression the dummy gives a value of one when the center-left-wing D66 is in power. In the third regression the dummy gives a value of one when center-right CDA is in power. In the fourth regression the dummy gives a value of one when the center-right-wing ChristenUnie is in power. In the fifth regression the dummy gives a value of one when the right-wing VVD is in power and in the sixth regression the dummy gives a value of one when the right-wing LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.

	(1) PvdA	(2) D66	(3) CDA	(4) CU	(5) VVD	(6) LPF
Constant	0.002***	0.001***	0.000	0.001***	0.001**	0.001***
Political party dummy	-0.001**	-0.001	0.000	-0.002***	-0.000	-0.000
R-squared	0.003	0.001	0.000	0.005	0.000	0.000
Included observations	1678	1678	1678	1678	1678	1678

Again, I find no significant effects from CDA, VVD and D66. There is no effect between these political parties collaborating in the coalition and the weekly returns of the AEX. However, contrarily to the findings regarding the monthly returns, PvdA joining the coalition results in a negative and significant effect on the weekly returns of the AEX. When PvdA is in power, the weekly returns decrease by 0.1 percent. This is significant at a five percent level. I also find a negative effect on the weekly returns when CU is in power. When CU collaborates in the coalition, the weekly returns are lowered by 0.2 percent. This is significant at a one percent level. Furthermore, when diving into the weekly returns of the AEX, I do not find any significant effect by LPF. The difference in these findings could be explainable by slightly more noise in the data. When returns are measured weekly, temporary changes in the AEX-index have an impact too.

### A.I Robustness checks

As a robustness check, I correct the previous results on autocorrelation and heteroscedasticity. The results of these regressions can be found in table 3 and 4. Table 3 shows the results after correction by using the method of Newey-West for the monthly returns of the AEX and table 4 for the weekly returns of the AEX.

**Table 3:** This table shows the results of six regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is political party dummy. In the first regression the dummy gives a value of one when the left-wing PvdA is in power. In the second regression the dummy gives a value of one when the center-left-wing D66 is in power. In the third regression the dummy gives a value of one when center-right CDA is in power. In the fourth regression the dummy gives a value of one when the center-right-wing ChristenUnie is in power. In the fifth regression the dummy gives a value of one when the right-wing VVD is in power and in the sixth regression the dummy gives a value of one when the right-wing LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity by the Newey-West method.

	(1) PvdA	(2) D66	(3) CDA	(4) CU	(5) VVD	(6) LPF
Constant	0.003	0.002	0.004*	0.003**	0.002	0.003**
Political party dummy	-0.001	0.001	-0.002	-0.007*	0.000	-0.019***
R-squared	0.002	0.000	0.002	0.008	0.000	0.016
Included observations	386	386	386	386	386	386

**Table 4:** This table shows the results of six regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is political party dummy. In the first regression the dummy gives a value of one when the left-wing PvdA is in power. In the second regression the dummy gives a value of one when the center-left-wing D66 is in power. In the third regression the dummy gives a value of one when center-right CDA is in power. In the fourth regression the dummy gives a value of one when the center-right-wing ChristenUnie is in power. In the fifth regression the dummy gives a value of one when the right-wing VVD is in power and in the sixth regression the dummy gives a value of one when the right-wing LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity by the Newey-West method

	(1) PvdA	(2) D66	(3) CDA	(4) CU	(5) VVD	(6) LPF
Constant	0.002***	0.001***	0.000	0.001***	0.001**	0.001***
Political party dummy	-0.001**	-0.001	0.000	-0.002***	-0.000	-0.000
R-squared	0.003	0.001	0.000	0.005	0.000	0.000
Included observations	1678	1678	1678	1678	1678	1678

In table 3, I find that the negative effect of CU on the monthly returns of the AEX is not changed in significant level. The effect of LPF on the monthly returns of the AEX is even more significant than before. The effect is now significant at a one percent significance level. However, as I explained before, LPF joins the coalition only once, just after the murder of the party leader

and it would be logical if the lower returns on the stock market are due to a decreased sentiment in the Netherlands. In table 4, I find that the negative effects of PvdA and CU on the weekly returns of the AEX are of the same significance levels as before.

To summarize, without controlling for any other variables, it looks like LPF has a negative effect on the monthly stock returns in the Netherlands, while PvdA has a negative effect on the weekly stock returns in the Netherlands. I do not find any significant positive effects on the weekly and monthly returns of the AEX. At this first sight, it looks like the political effects in the Netherlands are opposite to the political effects in the US. However, as Dutch political system is a multiparty parliamentary system and US system is a two party system, I perform regressions in which I define the political party dummies in a different way.

## B. The effect of political wings

I now define the six aforementioned political parties into three political movements; left-wing, center-wing and right-wing. Table 5 shows the results of four regressions with the monthly returns of the AEX as dependent variable.

**Table 5:** *This table shows the results of six regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is the left-wing, center-wing, and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy gives a value of one when VVD or LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.002	-0.001	0.001	-0.004	0.001	-0.002
Left dummy	-0.001				-0.000	0.001
Center dummy		0.004		0.004		0.005
Right dummy			0.002	0.003	0.001	
R-squared	0.000	0.004	0.000	0.006	0.001	0.005
Included observations	386	386	386	386	386	386

Regression 1 shows the effect of left-wing political parties on the monthly returns of the AEX in comparison with center and right-wing politics. I consider PvdA and D66 as left-wing political parties. Therefore, the left dummy will get a value of one when one of these political parties are active in the coalition. I find a negative effect when the left-wing parties are in power, however, this effect is not significant. Regression 2 shows the effect of center-wing political parties on the

monthly returns of the AEX compared to left and right-wing politics. I consider CDA and CU as center-wing political parties and the center-wing dummy gets a value of one when one of these parties joins the coalition. I find that the monthly returns of the AEX are positively affected by the center-wing parties. However, this effect is not significant. Regression 3 shows the effect of right-wing political parties on the monthly returns of the AEX in comparison with left and center-wing politics. I consider VVD and LPF as right-wing political parties and therefore the dummy gets a value of one when these political parties are in power. I find that right-wing political parties have a positive, but small effect on the monthly returns on the Dutch stock market. Furthermore, I find that this effect is not significant. Regression 4 shows the results when I incorporate the center-wing and right-wing dummies in one regression, which means the effect of left-wing dummy goes in the constant. From this regression, I find that center and right-wing parties have a positive effect on the monthly returns of the AEX compared to left-wing parties. However, the effects are not significant. Regression 5 shows the results when I incorporate left-wing dummy and right-wing dummies in the regression, the effect of center-wing dummy is now visible in the constant. Again I find that the effect of left-wing political parties on the monthly returns of the AEX is lower than the returns under center-wing political parties, this difference is however not significant. The effect of right-wing parties on the monthly returns of the AEX is higher than the effect of center-wing parties. However, this difference is again not significant. Regression 6 shows the results when left-wing and center-wing dummies are in the regression, while the right-wing dummy goes into the constant. Again, I find that the monthly returns under the different political wings do not differ significantly from one another.

Table 6 shows the results of the same regressions, however, now the dependent variable is the weekly returns of the AEX.

**Table 6:** This table shows the results of six regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is the left-wing, center-wing, and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy gives a value of one when VVD or LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.000	-0.000	0.002**	0.001	0.001	-0.001
Left dummy	0.001				0.000	0.001**
Center dummy		0.001		0.001		0.002**
Right dummy			-0.001	-0.001	-0.001	
R-squared	0.000	0.001	0.001	0.002	0.001	0.004
Included observations	1678	1678	1678	1678	1678	1678

Again, I do not find any significant results when separately regressing the left-wing, center-wing and right-wing parties. Regression 4 incorporates center-wing and right-wing dummies into the regression, which means left-wing dummy is visible in the constant and then I find that the effects of center-wing political parties and right-wing political parties on the weekly returns of the AEX do not differ significantly from periods that left-wing political parties join the coalition. In regression 5 the effect of the center dummy goes into the constant. I find that the effect of left-wing political parties and right-wing political parties on the weekly returns of the AEX do not significantly differ from the effect of center-wing political parties. In regression 6 the effect of the right dummy is incorporated in the constant, where the effect of left-wing and center-wing political parties are the independent variables. I find that the weekly returns of the AEX are significantly higher when left-wing political parties join the coalition than when right-wing political parties join the coalition. This difference in weekly returns is equal to 0.1 percent. Furthermore, I find that the weekly returns of the AEX are also higher when center-wing political parties join the coalition in comparison with right-wing political parties joining the coalition. The weekly returns of the AEX are 0.2 percent higher when center-wing political parties join the coalition. Thus, it looks like the weekly returns of the AEX are lower when right-wing political parties are in power.

### B.I Robustness checks

As a robustness check, I correct the previous results for autocorrelation and heteroscedasticity. The results of these regressions can be found in table 7 and 8. Table 7 shows the results after



correction by using the method of Newey-West for the monthly returns of the AEX and table 8 for the weekly returns of the AEX.

**Table 7:** This table shows the results of six regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is the left-wing, center-wing, and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy gives a value of one when VVD or LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity by the Newey-West method.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.002	-0.001	0.001	-0.004	0.001	-0.002
Left dummy	-0.001				-0.000	0.001
Center dummy		0.004		0.004		0.005
Right dummy			0.002	0.003	0.001	
R-squared	0.000	0.004	0.000	0.006	0.001	0.005
Included observations	386	386	386	386	386	386

**Table 8:** This table shows the results of six regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is the left-wing, center-wing, and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy gives a value of one when VVD or LPF is in power. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity by the Newey-West method.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.000	-0.000	0.002**	0.001	0.001	-0.001
Left dummy	0.001				0.000	0.001**
Center dummy		0.001		0.001		0.002**
Right dummy			-0.001	-0.001	-0.001	
R-squared	0.001	0.001	0.001	0.002	0.001	0.004
Included observations	1678	1678	1678	1678	1678	1678

For both table 7 and 8 I find that the correction for autocorrelation and heteroscedasticity does not have an effect on the significance levels of the coefficients. I still find no significant effects of the political wings on the monthly returns of the AEX. The weekly returns of the AEX are 0.1

percent higher when left-wing political parties join the coalition in comparison with right-wing political parties and 0.2 percent higher when center-wing political parties join the coalition in comparison with right-wing political parties. These results do not change by correcting by the method of Newey-West.

While I do not find any positive relation between the political parties and the returns on the Dutch stock market, I do find positive relations between the political wings and the returns on the Dutch stock market.

### C. Sample breakdown

Additionally, I form different samples. Initially, my data concerns the period January 1983 to February 2015. I break this period down in two halves, which means I have two samples. Regarding the monthly returns of the AEX one from January 1983 to February 1999 and one from March 1999 to February 2015 and regarding the weekly returns of the AEX one from week number one 1983 to week number four 1999 and one from week number five 1999 to week number nine 2015. Table 9 shows the results of multiple regressions regarding the period 1983 to 1999.

**Table 9:** This table shows the results of three regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is the left-wing and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The right dummy gives a value of one when VVD or LPF is in power. The center dummy is excluded because of perfect collinearity. These three regressions show the results of the first sample period from January 1983 to February 1999. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.

	(1)	(2)	(3)
Constant	0.006**	0.001	-0.006
Left dummy	-0.002		-0.001
Right dummy		0.006	0.007
R-squared	0.002	0.002	0.003
Included observations	193	193	193

Regression 1 shows that when PvdA or D66 is joining the coalition, thus when left-wing parties are in power, the monthly returns of the AEX are lowered. However, this effect is not significantly relevant. When I regress the center dummy on the monthly returns of the AEX, it does not provide me with results because of perfect collinearity. When taking a closer look at the data, this is due to the formation of the coalitions in the period 1983 to 1999. Center-wing political parties

participated in almost all the coalitions in this period and this results in too little variation in the dummy variable to provide reliable results. From 1983 to June 1994 center-wing political parties joined the coalition. From regression 2, I find that right-wing parties have a positive effect on the monthly returns of the AEX, however, this effect is not significant. Also regressing the center dummy and the right dummy on the monthly returns of the AEX, does not work out due to the same perfect collinearity problem as explained before. Center-wing political parties almost always joined the coalition in the first half of the sample, this results in perfect collinearity. Regression 3 shows the effect when left-wing and right-wing dummy are incorporated as independent variables, the effect of the center-wing dummy goes into the constant. I find that the effect of left-wing parties on the monthly returns of the AEX is more negative than the effect of center-wing political parties, although the effect is not significant. Furthermore, I find that right-wing political parties have a more positive effect on the monthly returns of the AEX than center-wing political parties. However, again this effect is not significant. Also, the regression regarding center-wing and left-wing dummies as independent variables results in perfect collinearity and is therefore left out of the table.

Table 10 shows the same regressions on the same sample period as in table 9, however, now the dependent variable is the weekly returns of the AEX.

**Table 10:** *This table shows the results of three regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is the left-wing and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The right dummy gives a value of one when VVD or LPF is in power. The center dummy is excluded because of perfect collinearity. These three regressions show the results of the first sample period from week number one in 1983 to week number four 1999. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)
Constant	0.001*	0.002***	0.000
Left dummy	0.001		0.001
Right dummy		-0.000	0.000
R-squared	0.003	0.002	0.003
Included observations	839	893	839

Again the regressions which include the center-wing dummy as an independent variable do not provide any results due to perfect collinearity. This is logical as the sample period is the same and center-wing political parties almost always joined the coalition in the period 1983 to 1999.

Regression 1 shows left-wing parties have a positive effect on the weekly returns of the AEX, more positive than the effect of center-wing and right-wing political parties. However, this effect is not significant. Regression 2 shows the effect of right-wing parties is less positive than the effect of left-wing and center-wing parties. However, this effect is not significantly relevant. Regression 3 shows that left-wing political parties have a more positive effect on the weekly returns of the AEX than the center-wing parties, although the effect is not significant. Furthermore, I find that the effect of the right-wing political parties is the same as the effect of center-wing political parties. However, again, this effect is not significant.

The second sample consists of data from March 1999 to February 2015. First, I test the same regressions as I did for the first sample. However, as both the tech-bubble and the financial crisis took place in the second sample, I will add dummies to exclude these economic downturns from the results. Table 11 shows the effect of the three political wings on the monthly returns of the AEX over the period 1999-2015.

**Table 11:** *This table shows the results of two regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is the left-wing and/or center-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy is excluded because of perfect collinearity. These two regressions show the results of the second sample period from February 1999 to February 2015. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)
Constant	-0.001	-0.001
Left dummy	-0.000	
Center dummy		0.000
R-squared	0.000	0.000
Included observations	193	193

Regression 1 shows that the monthly returns of the AEX do not differ significantly when left-wing political parties join the government in comparison with coalitions where center-wing or right-wing political parties participate regarding the period February 1999 to February 2015. The same effect is visible in regression 2. The monthly returns of the AEX over the second half of my sample do not differ significantly when center-wing political parties join the government or when left-wing and right-wing political parties join the government. The other regressions do not provide any results due to perfect collinearity. Right-wing political parties joined almost every

coalition in the period February 1999 to February 2015. Only in the period from February 2007 to September 2010 right-wing political parties did not join the coalition, which means that there is too little variation to show reliable results. In the regression where the right-wing political parties and center-wing political parties are regressed on the monthly returns of the AEX in the second half of the sample, the center-wing dummy shows enough variation to not suffer from perfect collinearity, however the right-wing dummy does not. Furthermore, center-wing political parties join the coalition in the 2007-2010 period, which results in one of the dummies always being equal to 1 in this sample. The same applies to the regression where left-wing and right-wing dummies are regressed on the monthly returns of the AEX as one of the dummies is always equal to 1. Left-wing political parties also join the coalition in the 2007-2010 period and right-wing political parties join in every other formed coalition in this sample. In the last regression left-wing and center-wing dummies are regressed on the monthly returns of the AEX over the period February 1999 to February 2015. Again the problem of perfect collinearity arises. When taking a closer look at the data I find that indeed the left-wing or center-wing dummy is always equal to 1 in this period. The left-wing dummy and center-wing dummy have a sufficient amount of variation on their own, however when incorporating them together, all the variation is gone.

Table 12 shows the same regressions as in table 11, however, now the dependent variable is the weekly returns of the AEX.

**Table 12:** *This table shows the results of two regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is the left-wing and/or center-wing dummy. The left dummy gives a value of one when PodA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy is excluded because of perfect collinearity. These two regressions show the results of the second sample period from week number five in 1999 to week number nine 2015. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)
Constant	0.000	-0.000
Left dummy	-0.000	
Center dummy		0.000
R-squared	0.000	0.000
Included observations	839	839

Regression 1 and 2 show similar results as the results in table 11 regarding the monthly returns of the AEX. It looks like the monthly returns of the AEX over the period February 1999 to February

2015 do not differ significantly when comparing left-wing coalitions to center-wing and right-wing coalitions and when comparing center-wing coalitions to left-wing and right-wing coalitions. Again, the other regressions do not provide any results because of perfect collinearity.

Initially, I planned to correct for the tech-bubble and the financial crisis by including an extra dummy into the regressions as these events both took place in the second half of my sample and the returns of the AEX might be influenced significantly. However, as this correction results in even less variation, correcting for these events results in even more perfect collinearity and therefore did not provide any results.

### C.I Robustness checks

I correct the results regarding the first half of the sample for autocorrelation and heteroscedasticity by using the Newey-West method. These robustness checks are visible in table 13 and 14.

**Table 13:** *This table shows the results of three regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is the left-wing and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The right dummy gives a value of one when VVD or LPF is in power. The center dummy is excluded because of perfect collinearity. These three regressions show the results of the first sample period from January 1983 to February 1999. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity with the Newey-West method.*

	(1)	(2)	(3)
Constant	0.006**	0.001	-0.006
Left dummy	-0.002		-0.001
Right dummy		0.006	0.007
R-squared	0.002	0.013	0.013
Included observations	193	193	193

**Table 14:** *This table shows the results of three regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is the left-wing and/or right-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The right dummy gives a value of one when VVD or LPF is in power. The center dummy is excluded because of perfect collinearity. These three regressions show the results of the first sample period from week number one in 1983 to week number four 1999. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity with the Newey-West method.*

	(1)	(2)	(3)
Constant	0.001*	0.002***	0.000
Left dummy	0.001		0.001
Right dummy		-0.000	0.000
R-squared	0.003	0.002	0.003
Included observations	839	893	839

Table 13 and 14 show the same results as table 9 and 10, which means that the results are robust. The significance of these coefficients do not change after the correction for autocorrelation and heteroscedasticity. Furthermore, I find that the R-squared of the regressions regarding the monthly returns of the AEX is increased by performing this correction.

Table 15 and 16 show the results regarding the second half of the sample, however now also corrected for autocorrelation and heteroscedasticity.

**Table 15:** *This table shows the results of two regressions. The dependent variable is the monthly returns of the AEX, where the independent variable is the left-wing and/or center-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy is excluded because of perfect collinearity. These two regressions show the results of the second sample period from February 1999 to February 2015. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity with the Newey-West method.*

	(1)	(2)
Constant	-0.001	-0.001
Left dummy	-0.000	
Center dummy		0.000
R-squared	0.000	0.000
Included observations	193	193

**Table 16:** *This table shows the results of two regressions. The dependent variable is the weekly returns of the AEX, where the independent variable is the left-wing and/or center-wing dummy. The left dummy gives a value of one when PvdA or D66 is in power. The center dummy gives a value of one when CDA or ChristenUnie is in power. The right dummy is excluded because of perfect collinearity. These two regressions show the results of the second sample period from week number five in 1999 to week number nine 2015. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent. The results are corrected for autocorrelation and heteroscedasticity with the Newey-West method.*

	(1)	(2)
Constant	0.000	-0.000
Left dummy	-0.000	
Center dummy		0.000
R-squared	0.000	0.000
Included observations	839	839

Table 15 and 16 show the same results as table 11 and 12, which means the results are robust. Correcting for autocorrelation and heteroscedasticity does not result in different significance levels than before.

To summarize my results so far, when analyzing the effect of political parties on the monthly and weekly returns of the AEX, I find that LPF has a negative effect on the monthly stock returns, while PvdA has a negative effect on the weekly stock returns in the Netherlands. After this first analysis, it looks like the political effects on the stock market are completely opposite than the effects in the US, as in the US a positive relation is found. However, after I define the Dutch political parties as left-wing, center-wing or right-wing parties I find in general more positive effects on the Dutch stock market. This switch could be explained by the multiparty parliamentary system in the Netherlands and a two party system in the US. When I define the Dutch political variables as the three wings, it is more similar to the US political system than before. When a left-wing party is in power the weekly returns of the AEX are 0.1 percent higher than when a right-wing coalition was in place and when a center-wing party is in power the weekly returns of the AEX are 0.2 percent higher than the returns under a right-wing government. It furthermore looks like the effect does not differ over different time periods. However, due to few variation in the formation of the coalitions over time I cannot be completely sure about this finding.



#### D. Correcting for the business cycle

How could I explain these higher returns? A possible reason could be that left-wing and center-wing political parties improve business climate and therefore companies are able to increase their value more easily. It could also be that these higher returns can be explained by increased risk when left-wing and/or center-wing parties are joining the coalition. Another possible explanation might be that investors become more optimistic and therefore believe the market is undervalued.

Table 17 shows whether the higher returns when left-wing political parties are joining the coalition are explainable by business cycle, political or behavioral variables.

**Table 17:** *This table shows the results of six regressions. The dependent variable is the monthly returns of the AEX, where the independent variables consists of left dummy, divided governments, midterm, interaction divided governments, interaction midterm, sentiment, inflation, interest rate and credit spread. The left dummy gives a value of one when PvdA or D66 is in power. The interaction divided governments shows the interaction between left dummy and divided governments variable, where the interaction midterm shows the interaction between left dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2, 3, 4 and 5 are not corrected for autocorrelation and heteroscedasticity, where regression 6 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.002	0.005	0.008	0.016	0.094***	0.094**
Left dummy	-0.001	-0.001	-0.005	-0.007	0.013*	0.013*
Divided governments		-0.005	-0.007	-0.008	-0.009	-0.009***
Midterm		0.005*	0.002	0.002	0.002	0.002
Interaction divided governments			0.002	0.000	-0.023*	-0.023***
Interaction midterm			0.005	0.009	0.003	0.003
Sentiment				-0.000	-0.000	-0.000
Inflation					-0.000***	-0.000***
Interest Rate					0.002	0.002
Credit spread					-0.023***	-0.023***
R-squared	0.000	0.000	0.000	0.000	0.088	0.088
Included observations	386	386	386	386	386	386

The first regression shows the effect of left-wing political parties on the monthly returns of the AEX. I find that the monthly returns of the AEX are lower when left-wing political parties are in

power instead of right-wing or center-wing political parties. However, this effect is not significant and the R-squared is low, which means I am not able to give too much value to this finding. Regression 2 also includes all the political variables. The divided governments situation does indeed lower the monthly returns, however the effect is not significant. The effect of the midterm is significant at a ten percent level. When a presidency is in its second half, monthly returns of the AEX increase by 0.5 percent. This increase in the monthly returns of the AEX in the second half of the presidency could be explained by a stable government. Coalitions are often ended before their four year period is over, when a coalition gets to its second half it means the government is stable as they already made it halfway. Furthermore, it is also widely known that after elections, coalitions will start with the introduction of the most unpopular regulations, whereas it ends with more popular regulations. This as these more popular regulations will be more easily recallable at the upcoming elections, the availability heuristic of Tversky and Kahneman (1973) could be visible. Regression 3 also adds the interaction variables. The addition of these interaction variables causes all the variables to be insignificant now. Also the aforementioned significant effect of the midterm variable disappears. In regression 4, I also add the Dutch sentiment variable. Apparently, Dutch sentiment does not affect the monthly returns of the AEX. Regression 5 also shows the effect of the business cycle, as it could be that the political party in power and their policies is only a proxy for the business cycle. It is notable that the R-squared is finally increasing, which means the regression shows more valid results than the regressions before, although the value is still low. What also stands out immediately is the positive and significant effect of left-wing political parties on the monthly returns of the AEX. When there is a left-wing political party in the coalition, the monthly returns of the AEX are 1.3 percent higher than when center-wing or right-wing political parties are joining the coalition. The effect of left-wing politics on the stock market appears to be positive and significant at a ten percent level. The effect of a divided governments situation is still negative, however, not significant. Also presidencies in the second half of their term still have a positive effect on the monthly returns of the AEX, while the effect of the variable is not significant anymore. The interaction divided governments variable shows that when left-wing political parties join the coalition while a divided governments situation appears, the monthly returns of the AEX are lowered by 2.3 percent. This finding is significant at a ten percent level. Furthermore, the interaction variable regarding the midterm of a presidency shows again a positive effect on the monthly returns of the AEX. However, the effect is still not significant. The effect of Dutch sentiment on the monthly returns of the AEX is still equal to zero and not significant, also when all business cycle variables are included, Dutch sentiment does not influence the returns of the AEX. The effect of inflation on the monthly returns of the AEX is negative and highly significant at

a one percent level, however, the effect is small. Interest rates are positively related to the monthly returns of the AEX, however, this relation is not significant. The credit spread has a negative effect on the monthly returns of the AEX. When the credit spread increases by a value of one, then the returns of the AEX decrease by 2.3 percent. This effect is highly significant. It is notable that although I take into account all the aforementioned business cycle variables, the left-wing dummy still has a clear effect on the monthly returns of the AEX. The returns of the AEX are 1.3 percent higher when a left-wing party joins the coalition than when center-wing or right-wing parties join the coalition. This effect is significant at a ten percent level. The effect of left-wing politics on the Dutch stock market cannot be explained by business cycle variables. Regression 6 shows the same regression as shown in regression 5, however, now I correct the regression for heteroscedasticity and autocorrelation by the use of the method of Newey-West. I find that the effect of a divided governments situation now becomes highly significant. Thus, when other political-wings than left-wing are joining the First Chamber, while left-wing parties join the Second Chamber, then this means a 0.9 percent decrease in the monthly returns of the AEX. The significance levels of all the other variables in comparison with regression 5 do not change. The increase in returns when left-wing parties join the coalition is still not explainable. As an addition and to clarify the higher returns I perform a Wald-Test on regression 6, where I test whether the coefficient of the left dummy is equal to the coefficient of the divided governments variable. If these coefficients do not differ significantly then this would mean the excess returns can be explained by the divided governments variable completely. However, I find the F-statistic equal to 7.0, which means the two coefficient differ significantly and a divided governments situation cannot completely explain the higher returns on the AEX when left-wing political parties join the coalition.

Table 18 shows whether the higher returns when center-wing political parties are joining the coalition are explainable by business cycle, political or behavioral variables.

**Table 18:** This table shows the results of six regressions. The dependent variable is the monthly returns of the AEX, where the independent variables consists of center dummy, divided governments, midterm, interaction divided governments, interaction midterm, sentiment, inflation, interest rate and credit spread. The center dummy gives a value of one when CDA or ChristenUnie is in power. The interaction divided governments shows the interaction between center dummy and divided governments variable, where the interaction midterm shows the interaction between center dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2, 3, 4 and 5 are not corrected for autocorrelation and heteroscedasticity, where regression 6 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.001	0.004	0.003	0.012	0.071***	0.071***
Center dummy	0.004	0.007*	0.006	0.008	-0.012	-0.012
Divided governments		-0.010**	-0.012**	-0.012**	-0.032***	-0.032***
Midterm		0.005*	0.013**	0.012**	0.001	0.001
Interaction divided governments			0.006	0.003	0.025**	0.025**
Interaction midterm			-0.010	0.008	0.004	0.004
Sentiment				-0.000	-0.000	-0.000
Inflation					-0.000	-0.000
Interest Rate					0.000	0.000
Credit spread					-0.025***	-0.025***
R-squared	0.004	0.021	0.025	0.033	0.024	0.024
Included observations	386	386	386	386	386	386

Regression 1 shows the effect of center-wing politics on the monthly returns of the AEX. At first sight, it looks like center-wing politics does have a positive effect on the monthly returns, however, this effect does not seem to be significant. Also here the R-squared is low, which means I cannot give too much value to this regression. The R-squared of regression 2 is improved already by adding all political variables into the regression. The effect of center-wing parties appears to be significant now. When center-wing political parties join the coalition, the monthly returns of the AEX are 0.7 percent higher in comparison with left-wing or right-wing coalitions. Furthermore, I find that a situation of divided governments again has a negative and significant effect on the monthly returns of the AEX. The returns decrease by 1 percent due to the divided governments. When the political cycle is over its midterm the returns of the AEX increase by 0.5 percent, which is significant at a ten percent level. Regression 3 shows that the effect of

center-wing politics decreases when the interaction variables are also taken into account. What also points out immediately is the positive effect of the interaction divided governments and the negative effect of the interaction midterm variables. This is opposite than expected. Apparently, the effect of a divided governments situation is positive when a center-wing political party joins the coalition in the Second Chamber. By logical thinking I would say this is due to the less extreme ideas of center-wing parties. I would say it is easier for a left-wing politician to agree with center-wing ideas than with right-wing ideas, just like I can imagine that it would be easier for a right-wing politician to agree with center-wing ideas than with left-wing ideas. A situation of divided governments will therefore be less of a disadvantage for the middle of the political spectrum. Why the effect of the second half of the presidency on the monthly stock returns seems negative for the center-wing politics seems more unclear. The most logical reason would be that center-wing political parties introduce less popular regulations in their second half and therefore do consider less behavioral economics theories in their policy before upcoming elections. There could of course also be another explanation for this finding, however, extra research is needed to be sure. In regression 4, Dutch sentiment is also taken into account. The effect of center-wing politics is still not significant, while the divided governments and midterm variable show significant effects. The situation of divided governments will result in 1.2 percent decrease in the monthly returns of the AEX and the second half of the presidential cycle results in a 1.2 percent increase in the monthly returns of the AEX. The effect of the interaction divided governments variable is still opposite than expected, and the previous mentioned explanation still seems logical. The effect of the interaction midterm variable is now positive, which is as expected. Dutch sentiment does not seem to have an effect on the monthly returns of the AEX. The coefficient is negative, but also too small to be visible, and therefore not significant. In regression 5, I also add the business cycle variables. The monthly returns of the AEX are 1.2 percent lower under center-wing politics than under left-wing and right-wing politics. This effect is not significant, however, it is clear that the addition of business cycle variables explain the former positive effect of center-wing politics. A divided governments situation has a strong and negative effect on the monthly returns of the AEX as the returns will decrease by 3.2 percent. This effect is highly significant. The second half of the presidential cycle has a positive influence on the monthly returns, however, this effect is small and not significant. The interaction divided governments variable again shows that the divided governments situation is less of a problem when center-wing political parties join the coalition, as the monthly returns of the AEX are increased by 2.5 percent. The effect of the interaction midterm variable is positive, however, not significant. Dutch sentiment, inflation and interest rates do not seem to have a clear effect on the monthly returns of the AEX. The effects are small and

not significant. The credit spread variable, by contrast, has a strong explainable value. When the credit spread increases, then the monthly returns of the AEX decrease by 2.5 percent. Regression 6 is corrected for autocorrelation and heteroscedasticity, this correction does not influence the findings and the results seem to be robust. Apparently, the positive effect of center-wing politics can be explained by a situation of divided governments and an increased credit spread. There is no anomaly in the Dutch market regarding center-wing politics and monthly stock returns.

Table 19 shows the same regressions as table 17 and 18, however, now for right-wing coalitions.

**Table 19:** *This table shows the results of six regressions. The dependent variable is the monthly returns of the AEX, where the independent variables consists of right dummy, divided governments, midterm, interaction divided governments, interaction midterm, sentiment, inflation, interest rate and credit spread. The right dummy gives a value of one when VVD or LPF is in power. The interaction divided governments shows the interaction between right dummy and divided governments variable, where the interaction midterm shows the interaction between right dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2, 3, 4 and 5 are not corrected for autocorrelation and heteroscedasticity, where regression 6 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.001	0.004	0.003	0.007	0.078***	0.078***
Right dummy	0.002	0.003	0.002	-0.000	0.006	0.006
Divided governments		-0.005	-0.005	-0.007	-0.021***	-0.021***
Midterm		0.005*	0.008	0.008	0.006	0.006
Interaction divided governments			NA	NA	NA	NA
Interaction midterm			-0.004	-0.002	-0.002	-0.002
Sentiment				-0.000	-0.000	-0.000
Inflation					-0.000***	-0.000**
Interest Rate					0.001	0.001
Credit spread					-0.018***	-0.018***
R-squared	0.000	0.011	0.025	0.019	0.068	0.068
Included observations	386	386	386	386	386	386

Regression 1 shows that right-wing coalitions have a positive effect on the monthly returns of the AEX, however, this effect is not significant. Furthermore, I again have a low R-squared which means I cannot give too much value to this finding. Regression 2 incorporates all political variables.

The effect of right-wing coalitions is still positive, but not significant. A divided governments situation under a right-wing coalition provides the monthly returns of the AEX with negative results, although this negative relation is not significant. What is significant at a ten percent level is the effect of coalitions in the second half of their term. The monthly returns of the AEX will increase by 0.5 percent when the coalition is over its midterm, which is as expected. I add the interaction variables to the regression in regression 3. The interaction divided governments variable does not give any results, which is due to the amount of divided governments situations when right-wing political parties joined the coalition. There always was a situation of divided governments when right-wing political parties joined the coalition, which results in this variable not providing any value. The interaction midterm variable shows that the monthly returns of the AEX decrease when right-wing parties join the coalition. This finding is against my expectations. In regression 4 Dutch sentiment is taken into account. The effect of right-wing politics on the monthly stock returns of the AEX is now nullified. Furthermore, the situation of divided governments still results in a negative effect on the stock returns and the second half of the presidential cycle in a positive effect. Although the interaction midterm variable is negative. The effect of the aforementioned variables is not significant. Also the effect of Dutch sentiment on the monthly returns of the AEX is not significant as the effect is so small it is not visible in the coefficient. Regression 5 also adds the business cycle variables into the regression. Although the effect of right-wing politics on the monthly stock returns is positive, it is not significant. This means that there is no right-wing anomaly visible in the Dutch stock market. Although, I do not find a right-wing anomaly, I do find a strong and significant divided governments effect on the monthly returns of the AEX. A divided governments situation will decrease the returns on the Dutch stock market by 2.1 percent. Furthermore, when the presidency is in its second half, the returns of the AEX increase, however, not significantly. The interaction midterm variable provides on the other hand a negative effect on the monthly returns of the AEX. Dutch sentiment does not seem to have an effect on the Dutch stock market. The coefficient is almost equal to zero and not significant. The coefficient of inflation is almost equal to zero too, however this effect is highly significant. The interest rate variable is also not of real influence, as it is insignificant and relatively small. The effect of the credit spread variable on the monthly returns of the AEX is however highly significant. When the credit spread increases by 1, then the monthly returns of the AEX decrease by 1.8 percent. Regression 6 is corrected for heteroscedasticity and autocorrelation by the method of Newey-West. The results do not really differ from regression 5, only the significance level of the inflation variable is slightly decreased. Apparently, there is no anomaly in the Dutch stock market regarding right-wing politics. To summarize, when taking a closer look at the monthly stock returns during left-wing,

center-wing and right-wing coalitions, I find that only the positive relation between left-wing political parties and the monthly returns of the AEX holds after correcting for different political, behavioral and business cycle variables. There is an anomaly in Dutch market regarding left-wing coalitions and monthly returns of the AEX.

Table 20 shows the weekly returns of the AEX during left-wing coalitions where business cycle, political and behavioral variables are included.

**Table 20:** *This table shows the results of six regressions. The dependent variable is the weekly returns of the AEX, where the independent variables consists of left dummy, divided governments, midterm, interaction divided governments, interactiondivided governments midterm, sentiment, inflation, interest rate and credit spread. The left dummy gives a value of one when PvdA or D66 is in power. The interaction divided governments shows the interaction between left dummy and divided governments variable, where the interaction midterm shows the interaction between left dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2, 3, 4 and 5 are not corrected for autocorrelation and heteroscedasticity, where regression 6 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.000	0.001	0.002	0.004	0.023***	0.023***
Left dummy	0.001	0.001	-0.000	-0.001	0.002	0.002
Divided governments		-0.001	-0.001	-0.001	-0.002	-0.002**
Midterm		0.000	-0.000	-0.000	0.001	0.001
Interaction divided governments			0.000	0.000	-0.004	-0.004*
Interaction midterm			0.002	0.002*	0.001	0.001
Sentiment				-0.000	-0.000**	-0.000*
Inflation					-0.000***	-0.000***
Interest Rate					0.001	0.001
Credit spread					-0.004***	-0.004***
R-squared	0.001	0.001	0.003	0.004	0.016	0.016
Included observations	1678	1678	1678	1678	1678	1678

Regression 1 shows the effect of left-wing political parties on the weekly returns of the AEX. I find that the weekly returns of the AEX are somewhat higher than when center-wing or right-wing political parties are joining the coalition. However, this effect is not significant and the R-squared is low, therefore, I cannot give too much value to this result. Regression 2 again shows that the



weekly returns of the AEX are slightly higher under left-wing coalitions than under center-wing or right-wing coalitions. Furthermore, a situation of divided governments decreases the weekly returns of the AEX, where the effect of coalitions in their second half is equal to zero. All the previous explained coefficients are however not significant and also the R-squared did not increase by the addition of the political variables. It looks like the political effects diminish when taking into account the weekly returns of the AEX instead of the monthly returns. An explanation could be that there is more noise in the weekly returns than in the monthly returns, which could affect my findings. In regression 3 I also add the interaction variables. Also these variables do not have significant impact on the weekly stock returns in the Netherlands. Regression 4 shows all the political variables, all the interaction variables and the Dutch sentiment index. The addition of the sentiment variable results in a negative left-dummy coefficient, although still not significant. What also changes by the addition of the sentiment variable is the significance of the interaction midterm variable. It appears that when left-wing political parties join the coalition and the coalition is over its midterm, then the weekly returns of the AEX increase by 0.2 percent, which is significant at a ten percent level. An explanation for this finding could be the stable government, as the government is already in power for two years, the probability that this coalition will also govern in the following two years will only increase as they already become this far in their term. It could also be that left-wing political parties introduce more popular regulations in their second half as the elections are arriving. It could therefore be that left-wing political parties take into account the availability heuristic of Tversky and Kahneman (1973). Furthermore, I find that Dutch sentiment index does not have effect on the weekly stock returns in the Netherlands. In regression 5 I also add the business cycle variables. This addition leads to a positive relation between the left-wing political parties and the weekly returns of the AEX. However, the effect of left-wing political parties on the weekly returns of the AEX is not significant. The effect of a divided governments situation stays negative, although not significant. The effect of the midterm variable becomes positive, which means that the weekly returns of the AEX increase slightly when the government is in its second half. The effect of the interaction divided governments variable, thus a situation where left-wing political parties join the coalition, while the majority of the First Chamber join center-wing or right-wing political parties, is negative. This situation has a negative effect on the weekly returns of the AEX. The interaction midterm variable has a positive effect on the weekly returns of the AEX. When left-wing political parties join the government and the government is over its mid term, then the weekly returns of the AEX increase, however, this effect is not significant. The effect of Dutch sentiment is significant at a five percent level. The effect is negative, however, also too small to be visible in the coefficient. The same applies to the effect

of inflation, the effect is significant at a one percent level, however the effect is too small to be visible in the coefficient. Interest rates affects the weekly returns of the AEX in a positive way, although the effect is not significant. The credit spread, however, has a negative effect on the weekly returns of the AEX. When the credit spread increases by 1 percent, then this results in a 0.4 percent increase of the weekly returns of the AEX. This effect is significant at a one percent level. Regression 6 shows the same regression as regression 5, however, now I correct for autocorrelation and heteroscedasticity. I find that the effect of the divided governments and interaction divided governments variables become significant. The effect of the other variables on the weekly returns of the AEX stay more or less the same. Thus, the effect of left-wing political parties on the weekly returns of the AEX is positive, however, not significant. This finding differs from the effect of left-wing political parties on the monthly returns of the AEX. The effect of left-wing politics on the weekly returns of Dutch stock market can be explained by business cycle variables. There is no anomaly in the market regarding left-wing political parties in combination with weekly returns of the AEX.

Table 21 shows whether the higher weekly returns when center-wing political parties join the coalition are explainable by business cycle variables, political variables or investor sentiment.

**Table 21:** This table shows the results of six regressions. The dependent variable is the weekly returns of the AEX, where the independent variables consists of center dummy, divided governments, midterm, interaction divided governments, interaction midterm, sentiment, inflation, interest rate and credit spread. The center dummy gives a value of one when CDA or ChristenUnie is in power. The interaction divided governments shows the interaction between center dummy and divided governments variable, where the interaction midterm shows the interaction between center dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2, 3, 4 and 5 are not corrected for autocorrelation and heteroscedasticity, where regression 6 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.000	0.001	0.001	0.005	0.020***	0.020***
Center dummy	0.001	0.002**	0.001	0.001	-0.002	-0.002
Divided governments		-0.002**	-0.003**	-0.003**	-0.006***	-0.006***
Midterm		0.000	0.003**	0.002*	0.001	0.001
Interaction divided governments			0.002	0.002	0.004**	0.004**
Interaction midterm			-0.003**	-0.003*	-0.001	-0.001
Sentiment				-0.000	-0.000*	-0.000*
Inflation					-0.000	-0.000
Interest Rate					0.001	0.001
Credit spread					-0.004***	-0.004**
R-squared	0.001	0.004	0.007	0.008	0.017	0.017
Included observations	1678	1678	1678	1678	1678	1678

The first regression shows that the weekly returns of the AEX are slightly higher when center-wing political parties are joining the coalition in comparison with left-wing and right-wing political parties. In regression 2, I add the political variables. I find that center-wing political parties have a more positive effect on the weekly returns of the AEX than left-wing and right-wing political parties. When center-wing political parties join the coalition, the weekly returns of the AEX are 0.2 percent higher, which is significant at a five percent level. A divided governments situation has a negative effect on the weekly returns of the AEX. The weekly returns will then decrease by 0.2 percent which is significant at a five percent level. The effect of the midterm variable is equal to zero and not significant. In regression 3, I find that that the positive and significant effect of center-wing political parties on the weekly returns of the AEX are lowered by the addition of the interaction variables. This means the excess returns of the AEX under center-wing political

parties can be explained by a divided governments situation, by the effect of the midterm and by these variables combined with the center-wing political parties. There is no anomaly in Dutch market regarding center-wing political parties and the weekly returns of the AEX. A divided governments situation results in 0.3 percent lowered returns of the AEX, which is significant at a five percent level. When the government is in its second half, then this results in a 0.3 percent increase of the weekly returns of the AEX, which is also significant at a five percent level. It is notable that when a divided governments situation appears while center-wing political parties join the government this will result in higher weekly returns of the AEX. This positive relation, although it is not significant, I also find regarding the monthly returns of the AEX. Apparently, a divided governments situation does not have the same effect for every political wing in the government. By logical thinking I believe this positive relation is explainable by the probability opposing parties agree with center-wing parties instead of left-wing or right-wing parties. The next notable finding is that the weekly returns of the AEX are negatively influenced by center-wing parties in their second half of their term cycle. I expect to find increasing returns in the second half as the government already showed it is stable in the first half and will most likely be stable in the second half as well. Furthermore, most political parties introduce more popular regulations when the elections are arriving, as recent memories are recallable more easily than historical memories (Tversky and Kahneman, 1973). It looks like this is not the case for center-wing political parties as the weekly-returns of the AEX decrease by 0.3 percent, which is significant at a five percent level. Regressions 4 shows whether the Dutch investor sentiment also has some explaining power in the weekly returns of the AEX. The coefficient of the investor sentiment variable is almost equal to zero and furthermore not significant. This means the effect of over- or underreaction of investors in the Netherlands are not visible in the weekly returns of the AEX. The other variables react more or less the same as in regression 3. In regression 5, I also add the business cycle variables. The effect of center-wing political parties on the weekly returns of the AEX are even decreased further, to a negative level. However, this effect is not significant. I find that the effect of a divided governments situation even becomes more negative. When a situation of divided governments appears, the weekly returns of the AEX will decrease by 0.6 percent. This effect is significant at a one percent level. The positive effect of the midterm variable is however, not significant anymore. The effect of the interaction divided governments variable becomes significant at a five percent level. When center-wing political parties join the government, while left-wing and/or right-wing political parties are in the majority in the First Chamber, then this results in a 0.4 percent increase in the weekly returns of the AEX. The effect of the interaction midterm variable is still negative, but not significant anymore. The effect of the investor sentiment variable is again slightly negative,

however, now this variable is also significant at a ten percent level. From the business cycle variables, I find that only the effect of the credit spread variable is highly significant. The credit spread variable can also be seen as a proxy for risk and I find that this results in a negative effect on the weekly returns of the AEX. In regression 6, I correct for autocorrelation and heteroscedasticity. I find that this correction does not really influence my findings. As an addition and to clarify my results I perform a Wald test on the coefficients of regression 6. I test whether the coefficient of the divided governments variable is equal to the coefficient of the interaction divided governments variable. I find the F-statistic equals 6.0, which means the coefficients differ significantly. Thus, at first sight it looks like center-wing political parties positively and significantly affect the weekly returns of the AEX. However, it looks like these higher returns can be explained by a situation of divided governments.

Table 22 shows the same regressions, however, now regarding right-wing political parties in combination with the weekly returns of the AEX.

**Table 22:** This table shows the results of six regressions. The dependent variable is the weekly returns of the AEX, where the independent variables consists of right dummy, divided governments, midterm, interaction divided governments, interaction midterm, sentiment, inflation, interest rate and credit spread. The right dummy gives a value of one when VVD or LPF is in power. The interaction divided governments shows the interaction between right dummy and divided governments variable, where the interaction midterm shows the interaction between right dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2, 3, 4 and 5 are not corrected for autocorrelation and heteroscedasticity, where regression 6 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.002**	0.003**	0.003**	0.005*	0.021***	0.021***
Right dummy	-0.001	-0.001*	-0.001	-0.002*	0.000	0.000
Divided governments		-0.001	-0.001	-0.002*	-0.004***	-0.004***
Midterm		0.000	0.001	0.001	0.000	0.000
Interaction divided governments			NA	NA	NA	NA
Interaction midterm			-0.000	-0.000	-0.000	-0.000
Sentiment				-0.000	-0.000*	-0.000*
Inflation					-0.000***	-0.000***
Interest Rate					0.001	0.001
Credit spread					-0.003***	-0.003**
R-squared	0.001	0.003	0.003	0.005	0.013	0.013
Included observations	1678	1678	1678	1678	1678	1678

Regression 1 shows the effect of right-wing political parties in comparison with left-wing and center-wing political parties on the weekly returns of the AEX. It looks like the weekly returns of the AEX are lower under right-wing coalitions than under left-wing and center-wing coalitions. However, the effect is not significant and the R-squared is low. This means I cannot give too much value to this finding. In regression 2, I add the political variables. I now find that the effect of right-wing political parties on the weekly returns of the AEX is lower than under left-wing or center-wing political parties. This effect is significant at a ten percent level. Furthermore, I find that a divided governments situation results in a 0.1 percent decrease in the weekly returns of the AEX, although this effect is not significant. The midterm does not affect the weekly returns of the AEX. In regression 3, I also add the interaction variables. However, as there was always a situation of divided governments when right-wing political parties joined the coalition, this variable does

not provide any value. Furthermore, I find that the effect of right-wing political parties on the weekly returns of the AEX is not significant anymore. Also the coefficients of the other variables are small and not significant. In regression 4, I also add the sentiment variable. This addition leads to an even more negative effect of right-wing political parties on the weekly returns of the AEX. This effect is significant at a one percent level. Also the divided governments situation lowers the weekly returns of the AEX by 0.2 percent. The effect of the divided governments variable is significant at a ten percent level. The effect of the midterm variable is slightly positive, however, not significant. The effect of the interaction midterm variable and Dutch investor sentiment on the weekly returns are both almost equal to zero and not significant. Apparently, the weekly stock market returns do not increase when right-wing coalitions are in the second half of their term. It looks like right-wing political parties do not introduce more popular regulations when the elections are arriving. Also Dutch investor sentiment does not seem to play a role. It looks like investors do not over- or undervalue the news events in Dutch market. In regression 5, I also add business cycle variables. I find that the effect of right-wing political parties on the weekly returns of the AEX is now completely nullified. The earlier found negative relation is explainable by the state of the business cycle. The effect of a divided governments situation is strong, it leads to a 0.4 decrease in the weekly returns of the AEX, which is significant at a one percent level. The midterm and interaction midterm variables do not have an impact on the weekly stock returns. The effect of Dutch investor sentiment is significant at a ten percent level, however, the coefficient is too small to be visible in three digits. The effect of inflation and credit spread is highly significant, although the effect of inflation is small. The credit spread variable leads to a strong decrease in the weekly returns of the AEX. The effect of interest rates are not significant. In regression 6 I correct for autocorrelation and heteroscedasticity. This does not affect the interpretation of the results. To conclude, at first it seems right-wing political parties have a negative impact on the weekly returns of the AEX. However, when I take into account the effects of the business cycle this negative relation is completely nullified. There is no anomaly in the market regarding right-wing political parties in combination with weekly returns of the AEX.

#### **D.I Investor sentiment**

In the previous regressions, I find Dutch investor sentiment is only significant when regressing this variable on the weekly returns of the AEX. Moreover, the coefficient is small. It seems like the effect of Dutch economic sentiment indicator of the Directorate General of Economic and Financial Affairs on the stock market is not that strong. European stock markets often react to US stock markets. The US Economic Policy Uncertainty Index from Baker, Bloom and Davis (2013) appears

to be negatively correlated with Dutch sentiment index. Furthermore, the correlation between the two sentiment indices is weak (-0.383). It could be the case the monthly and weekly returns of the AEX could be explained by American investor sentiment instead of Dutch investor sentiment. Therefore, I perform the previous regressions again, however, now with US investor sentiment as one of the explanatory variables.

Table 23 shows the results of three regressions regarding left-wing political parties and the monthly returns of the AEX, where regression 3 is corrected for autocorrelation and heteroscedasticity.

**Table 23:** *This table shows the results of three regressions. The dependent variable is the monthly returns of the AEX, where the independent variables consists of left dummy, divided governments, midterm, interaction divided governments, interaction midterm, US investor sentiment, inflation, interest rate and credit spread. The left dummy gives a value of one when PvdA or D66 is in power. The interaction divided governments shows the interaction between left dummy and divided governments variable, where the interaction midterm shows the interaction between left dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1 and 2 are not corrected for autocorrelation and heteroscedasticity, where regression 3 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)
Constant	0.020**	0.048***	0.048***
Left dummy	0.007	0.016	0.016*
Divided governments	-0.002	-0.004	-0.004
Midterm	0.003	0.003	0.003
Interaction divided governments	-0.008	-0.018	-0.018
Interaction midterm	0.005	0.002	0.002
US sentiment	-0.000***	-0.000***	-0.000***
Inflation		-0.000	-0.000
Interest Rate		-0.002	-0.002
Credit spread		-0.013**	-0.013
R-squared	0.103	0.123	0.123
Included observations	362	362	362

In regression 1, I add the US investor sentiment variable. What stands out immediately, is that also US sentiment's coefficient is small. The coefficient is significant at a one percent level,



however the impact is negligible. Furthermore, I find in regression 3 that left-wing political parties still have a significant effect on the monthly returns of the AEX. The monthly returns increase by 1.6 percent when left-wing political parties join the coalition. Therefore, I am able to say that also investor sentiment in the US is not able to explain the higher returns when left-wing political parties join the coalition. US investor sentiment has some explanatory value, however, it is too small to explain the excess returns under left-wing coalitions completely.

Table 24 shows the results of three regressions regarding monthly returns of AEX in combination with the center-wing political parties.

**Table 24:** *This table shows the results of three regressions. The dependent variable is the monthly returns of the AEX, where the independent variables consists of center dummy, divided governments, midterm, interaction divided governments, interaction midterm, US investor sentiment, inflation, interest rate and credit spread. The center dummy gives a value of one when CDA or ChristenUnie is in power. The interaction divided governments shows the interaction between center dummy and divided governments variable, where the interaction midterm shows the interaction between center dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1 and 2 are not corrected for autocorrelation and heteroscedasticity, where regression 3 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)
Constant	0.027***	0.062***	0.062***
Center dummy	-0.007	-0.017	-0.017
Divided governments	-0.009*	-0.022***	-0.022**
Midterm	0.008	0.001	0.001
Interaction divided governments	0.007	0.018	0.018
Interaction midterm	-0.004	0.004	0.004
US sentiment	-0.000***	-0.000***	-0.000***
Inflation		-0.000	-0.000
Interest Rate		-0.002	-0.002*
Credit spread		-0.015***	-0.015*
R-squared	0.102	0.124	0.124
Included observations	362	362	362

From regression 1, I find that US investor sentiment has a significant effect on the monthly returns of the AEX. It is even significant at a one percent level. However, again the coefficient is

very small, which means that the effect on the Dutch stock returns is negligible. Furthermore, I find in regression 2 and 3 that the effect of the center-wing political parties is in accordance with previous found results: negative coefficient, but no significant effect. This means the before found higher returns when center-wing political parties join the coalition are explainable by the interaction variables and the US investor sentiment variable does not affect this finding.

Table 25 shows the results of three regressions with the monthly returns of the AEX as dependent variable.

**Table 25:** *This table shows the results of three regressions. The dependent variable is the monthly returns of the AEX, where the independent variables consists of right dummy, divided governments, midterm, interaction divided governments, interaction midterm, US investor sentiment, inflation, interest rate and credit spread. The right dummy gives a value of one when VVD or LPF is in power. The interaction divided governments shows the interaction between right dummy and divided governments variable, where the interaction midterm shows the interaction between right dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1 and 2 are not corrected for autocorrelation and heteroscedasticity, where regression 3 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)
Constant	0.026***	0.052***	0.052***
Right dummy	-0.000	0.001	0.001
Divided governments	-0.008**	-0.016***	-0.016**
Midterm	0.005	0.007	0.007
Interaction divided governments	NA	NA	NA
Interaction midterm	0.001	-0.004	-0.004
US sentiment	-0.000***	-0.000***	-0.000***
Inflation		-0.000	-0.000
Interest Rate		-0.003	-0.003*
Credit spread		-0.010**	-0.010*
R-squared	0.099	0.118	0.118
Included observations	362	362	362

Again, I find a high significance level regarding the coefficient of US investor sentiment. However, again the coefficient is small. The effect of right-wing political parties is in all three regressions similar as when I include Dutch investor sentiment in the regressions. The coefficient

is somewhat smaller in regression 2 and 3, however, the significance level is the same. Therefore, I am able to conclude that US investor sentiment does explain the monthly returns in a better way than Dutch investor sentiment. When right-wing political parties join the government, the monthly returns of the AEX are not higher than when right-wing political parties would not join the government. There is no anomaly visible regarding right-wing politics.

Table 26 shows the same regressions, however, now regarding left-wing politics and the weekly returns of the AEX.

**Table 26:** *This table shows the results of three regressions. The dependent variable is the weekly returns of the AEX, where the independent variables consists of left dummy, divided governments, midterm, interaction divided governments, interaction midterm, US investor sentiment, inflation, interest rate and credit spread. The left dummy gives a value of one when PvdA or D66 is in power. The interaction divided governments shows the interaction between left dummy and divided governments variable, where the interaction midterm shows the interaction between left dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1 and 2 are not corrected for autocorrelation and heteroscedasticity, where regression 3 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)
Constant	0.004*	0.011***	0.011***
Left dummy	0.002	0.003	0.003*
Divided governments	-0.000	-0.001	-0.001
Midterm	-0.000	-0.000	-0.000
Interaction divided governments	-0.001	-0.004	-0.004*
Interaction midterm	0.001	0.001	0.001
US sentiment	-0.000***	-0.000***	-0.000***
Inflation		-0.000**	-0.000**
Interest Rate		-0.000	-0.000
Credit spread		-0.002	-0.002
R-squared	0.014	0.018	0.018
Included observations	1574	1574	1574

The US sentiment variable is again highly significant, however again the coefficient is small and therefore, the impact of the US investor sentiment on the weekly returns of the AEX is small. It is notable that the coefficient of the left-wing political parties is significant at a ten percent level after a correction for autocorrelation and heteroscedasticity, while it was not significant in

combination with Dutch investor sentiment. This means that Dutch investor sentiment explains more of the weekly returns of the AEX while left-wing political parties join the coalition then US investor sentiment index.

Table 27 shows the results of three regressions regarding the weekly returns of the AEX in combination with the center-wing political parties in the coalition.

**Table 27:** *This table shows the results of three regressions. The dependent variable is the weekly returns of the AEX, where the independent variables consists of center dummy, divided governments, midterm, interaction divided governments, interaction midterm, US investor sentiment, inflation, interest rate and credit spread. The center dummy gives a value of one when CDA or ChristenUnie is in power. The interaction divided governments shows the interaction between center dummy and divided governments variable, where the interaction midterm shows the interaction between center dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1 and 2 are not corrected for autocorrelation and heteroscedasticity, where regression 3 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1)	(2)	(3)
Constant	0.005***	0.014***	0.014***
Center dummy	-0.001	-0.004	-0.004**
Divided governments	-0.003**	-0.005***	-0.005**
Midterm	0.002	0.001	0.001
Interaction divided governments	0.003	0.004	0.004*
Interaction midterm	-0.002	-0.001	-0.001
US sentiment	-0.000***	0.000***	0.000*
Inflation		-0.000**	-0.000**
Interest Rate		-0.000	-0.000
Credit spread		-0.002*	-0.002
R-squared	0.014	0.018	0.018
Included observations	1574	1574	1574

Again, I find a significant US sentiment index, and again I find that the effect of the US sentiment on the weekly returns of the AEX is small. At first sight, the effect of center-wing political parties on the weekly returns of the AEX seem more or less the same when I correct for US investor sentiment instead of Dutch investor sentiment. However, regression three shows a significant coefficient for the center dummy, while this variable is not significant regarding

Dutch investor sentiment. In table 27 it looks like there is an anomaly regarding center-wing political parties and the weekly returns of the AEX, however, the significant coefficient of center dummy in regression 3 would not be significant anymore when Dutch investor sentiment would be incorporated in the regression. This means US investor sentiment is not better in explaining the weekly returns of the AEX. Dutch investor sentiment appears to be an explanatory variable which turns the center dummy into not significant values.

Table 28 shows the results regarding the weekly returns of the AEX in combination with right-wing political parties and US investor sentiment.

**Table 28:** *This table shows the results of three regressions. The dependent variable is the weekly returns of the AEX, where the independent variables consists of right dummy, divided governments, midterm, interaction divided governments, interaction midterm, US investor sentiment, inflation, interest rate and credit spread. The right dummy gives a value of one when VVD or LPF is in power. The interaction divided governments shows the interaction between right dummy and divided governments variable, where the interaction midterm shows the interaction between right dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1 and 2 are not corrected for autocorrelation and heteroscedasticity, where regression 3 is by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* stars a significance of one percent.*

	(1)	(2)	(3)
Constant	0.006***	0.012***	0.012***
Right dummy	-0.002*	-0.001	-0.001
Divided governments	-0.002**	-0.003***	-0.003***
Midterm	0.000	0.001	0.001
Interaction divided governments	NA	NA	NA
Interaction midterm	0.001	-0.000	-0.000
US sentiment	-0.000***	-0.000***	-0.000**
Inflation		-0.000	-0.000
Interest Rate		-0.004	-0.004
Credit spread		-0.002*	-0.002
R-squared	0.014	0.017	0.017
Included observations	1574	1574	1574

In contradiction with previous regressions regarding weekly returns of the AEX in combination with right-wing political parties joining the coalition, I find a highly significant effect of US investor

sentiment on the weekly returns of the AEX. The coefficient however, is the same and almost equal to zero. The different investor sentiments do not really influence the effect of right-wing politics on the weekly returns of the AEX. When I incorporate Dutch investor sentiment variable in the regression I find that the effect of right-wing politics is completely nullified. Regarding US investor sentiment this is not the case, but it is close. Therefore, I am able to conclude that Dutch investor sentiment is a better explanatory variable for weekly returns of the AEX than US investor sentiment.

To summarize my findings so far: left-wing political parties joining the coalition go hand in hand with higher monthly returns on the Dutch stock market. The monthly returns increase by 1.3 percent, which is significant at a ten percent level. These excess returns are not explainable by multiple business cycle variables or the Dutch and US investor sentiment indices. Everything points into the direction of a new anomaly in Dutch stock market when left-wing political parties join the coalition. I do not find these excess returns when center-wing or right-wing parties join the coalition. The political parties do have an effect on the stock returns, however, these effects are explainable by the business cycle, other political variables and the investor sentiment. I also do not find excess returns regarding the weekly stock returns.

## E. Volatility

Although this correction for different business cycle variables already partly corrects for volatility or risk in the market, I perform one final risk-check for the excess monthly returns when left-wing political parties join the coalition. This, to make sure these excess monthly stock returns, which I already cautiously pointed out as a possible anomaly are not due to volatility in the market.

Table 29 shows the standard deviation of the monthly returns of the AEX during different political movements from 1983 till 2015.

**Table 29:** *This table shows the standard deviation of the monthly returns of the AEX during different periods. The first column shows the standard deviation of all the monthly returns of the AEX from 1983 till 2015. The second column shows the standard deviation of the monthly returns of the AEX while left-wing political parties join the coalition. I consider PvdA and D66 as left-wing political parties. The third column shows the standard deviation of the monthly returns of the AEX while center-wing political parties join the coalition. I consider CDA and ChristenUnie as center-wing political parties. The fourth column shows the standard deviation of the monthly returns of the AEX while right-wing political parties join the coalition. I consider VVD and LPF as right-wing political parties.*

	Complete period	Left-wing	Center-wing	Right-wing
Standard deviation	0.025	0.027	0.025	0.025

It stands out that the standard deviation is somewhat higher when left-wing political parties join the coalition. The standard deviation is then equal to 0.027, while under other coalitions the standard deviation of the monthly returns of the AEX are equal to 0.025. When taking a closer look at the Kurtosis and Jarque-Bera of the monthly returns while left-wing, center-wing and right-wing political parties join the coalition, I find that none of the distributions is normally distributed. I find that they are all somewhat skewed to the left. Therefore, a F-test is no appropriate measure to find the differences in the standard deviation, instead I use Levene's Test for equality of variances.

Table 30 shows the results of Levene's Test for equality of variances.

**Table 30:** *This table shows the results of Levene's Test for equality of variances, where the equality of variances of the monthly returns of the AEX under left-wing, center-wing and right-wing political parties is determined. I consider PvdA and D66 as left-wing political parties, CDA and ChristenUnie as center-wing political parties and VVD and LPF as right-wing political parties. The sample shows data from 1983 till 2015.*

	Value	Probability
Levene	0.451	0.717

From the results of the Levene's Test I find that the higher monthly returns of the AEX when left-wing political parties join the coalition are not explainable by more variance in the monthly returns. Therefore, excess returns under left-wing coalitions are not a compensation for more volatile markets. To summarize my results so far, I find higher monthly returns of the AEX when left-wing political parties join the coalition. These higher returns are robust and cannot be explained by different business cycle variables, Dutch and US sentiment or more volatile markets during these coalitions. I find the same presidential anomaly as in the US available in the

Netherlands, although the excess returns are lower than found in the US.

#### F. The effect of a two-party parliamentary system

A possible explanation for the less extreme excess returns in the Netherlands could be that the US have a two-party parliamentary system, while I now focus on three political wings in the Netherlands. For this reason, and as a last robustness check, I redefine the left-wing, center-wing and right-wing political movements into center-left-wing and center-right-wing. I still consider PvdA and D66 as left-wing political parties, now called: center-left-wing political parties. However, the center-right-wing political parties are: CDA, ChristenUnie, VVD and LPF. Before, I gathered CDA and ChristenUnie under center-wing political parties, however they are both more orientated on the right-wing than on the left-wing. A closer look on the data tells that from the start of my dataset in 1983, there always was a certain center-right-wing political party joining the coalition. Contrary, center-left-wing political parties did not always join the coalition since 1983.

As the data for the center-left-wing political parties does not differ from the left-wing political parties, I do not perform corresponding regressions again. The results will not differ in comparison with the left-wing dummy. The regressions regarding center-right-wing political parties joining the coalition do not result in reliable results due to perfect collinearity. There is not enough variation as the center-right-wing dummy is always equal to 1. This problem of perfect collinearity also bothered the regressions regarding the different samples. Due to not that much variation in Dutch politics I am not able to make equally strong conclusions about my findings as when there would be more variation in the government over time.

#### G. Predicting future returns

I find a clear correlation between the left-wing politics joining the coalition and the returns of the AEX. This raises the question whether politics could also have predictive power on the future returns of the AEX. To test this I lag all the independent variables by one period, which is either equal to one month or to one week. For the regressions regarding the monthly returns of the AEX, I find out whether the independent variables of last month are able to explain today's monthly returns of the AEX. For the regressions regarding the weekly returns of the AEX, I find out whether the independent variables of last week are able to explain today's weekly returns of the AEX.

Table 31 shows the results regarding the monthly returns of the AEX.



**Table 31:** This table shows the results of three regressions. The dependent variable is the monthly returns of the AEX, where the independent variables consists of political dummy, divided governments, midterm, interaction divided governments, interaction midterm, investor sentiment, inflation, interest rate and credit spread. All the variables are lagged by one period, which is equal to one month. The left dummy gives a value of one when PodA or D66 is in power, the center dummy gives a value of one when CDA or ChristenUnie is in power and the right dummy gives a value of one when VVD or LPF is in power. The interaction divided governments shows the interaction between political dummy and divided governments variable, where the interaction midterm shows the interaction between political dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2 and 3 are corrected for autocorrelation and heteroscedasticity by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.

	(1) Left-wing	(2) Center-wing	(3) Right-wing
Constant	0.051**	0.037	0.039
Political wing dummy <sub>(t-1)</sub>	0.005	-0.003	0.003
Divided governments <sub>(t-1)</sub>	-0.007	-0.021**	-0.015***
Midterm <sub>(t-1)</sub>	-0.002	0.011	0.010
Interaction divided governments <sub>(t-1)</sub>	-0.014*	0.014	NA
Interaction midterm <sub>(t-1)</sub>	0.011**	-0.009	-0.008
Sentiment <sub>(t-1)</sub>	-0.000	-0.000	-0.000
Inflation <sub>(t-1)</sub>	-0.000***	-0.000	-0.000*
Interest Rate <sub>(t-1)</sub>	-0.001	-0.002	-0.003
Credit spread <sub>(t-1)</sub>	-0.008	-0.008	-0.007*
R-squared	0.050	0.043	0.035
Included observations	386	386	386

What points out when looking at regression 1 is that the effect of left-wing political parties in the coalition at t-1 on the monthly return of the AEX is not significant, while the effect of left-wing political parties joining the coalition on the monthly returns of the AEX was significant. This finding implies that although the left dummy correlates with the monthly returns of the AEX, it does not have predictive power. Also the effect of the other lagged variables in the regression is smaller in comparison with regression 6 in Table 17. The same applies to regression 2 regarding the center-wing political parties and regression 3 regarding the right-wing political parties. The effect of the divided governments variable is still very significant, however, the coefficients of the other variables are lowered and less significant in comparison with the not lagged variables. It

seems there is no predictive power of the political wings on the monthly returns of the AEX.

Table 32 shows the same regressions, however, now the dependent variable is the weekly returns of the AEX and the independent variables are lagged by one week.

**Table 32:** *This table shows the results of three regressions. The dependent variable is the weekly returns of the AEX, where the independent variables consists of political dummy, divided governments, midterm, interaction divided governments, interaction midterm, investor sentiment, inflation, interest rate and credit spread. All the variables are lagged by one period, which is equal to one week. The left dummy gives a value of one when PodA or D66 is in power, the center dummy gives a value of one when CDA or ChristenUnie is in power and the right dummy gives a value of one when VVD or LPF is in power. The interaction divided governments shows the interaction between political dummy and divided governments variable, where the interaction midterm shows the interaction between political dummy and the midterm variable. The regressions include the period 1983 to 2015. Regression 1, 2 and 3 are corrected for autocorrelation and heteroscedasticity by the Newey-West method. Where \* shows a significance of ten percent, \*\* a significance of five percent and \*\*\* a significance of one percent.*

	(1) Left-wing	(2) Center-wing	(3) Right-wing
Constant	0.025***	0.021***	0.023***
Political wing dummy <sub>(t-1)</sub>	0.001	-0.001	0.000
Divided governments <sub>(t-1)</sub>	-0.002**	-0.005***	-0.004***
Midterm <sub>(t-1)</sub>	-0.001	0.002	-0.000
Interaction divided governments <sub>(t-1)</sub>	-0.003	0.003	NA
Interaction midterm <sub>(t-1)</sub>	0.001	-0.002	-0.000
Sentiment <sub>(t-1)</sub>	-0.000**	-0.000**	-0.000**
Inflation <sub>(t-1)</sub>	-0.000***	0.000	-0.000***
Interest Rate <sub>(t-1)</sub>	0.001	0.001	0.001
Credit spread <sub>(t-1)</sub>	-0.003*	-0.003	-0.003*
R-squared	0.016	0.016	0.013
Included observations	1678	1678	1678

In previous regressions I already found that all the political wings do not significantly correlate with the weekly returns of the AEX. The effect is completely explained by the political, behavioral and business cycle variables. However, it could still be the case that the political wings do have predictive power regarding the weekly returns of the AEX. Regression 1, 2 and 3 all show that this does not seem to be the case. The effect of the lagged divided governments, lagged sentiment, lagged inflation and lagged credit spread are significant and it therefore seems these variables

have predictive power on the weekly returns of the AEX.

## VI. CONCLUSION

In this section I conclude my thesis. Section A summarizes my findings, where after I conclude. In section B, I examine the limitations of my research and I conclude in section C by providing my ideas for further research.

### A. Summary and concluding remarks

When considering the political parties on its own I find lowered monthly returns of the AEX when ChristenUnie or LPF join the coalition. However, both parties joined the coalition only once in Dutch history. The former only during the financial crisis and the latter just after the murder of their party leader Pim Fortuyn. Sloley from logical thinking, I am able to conclude that although these results are significant it is not due to the presidential puzzle. Furthermore, I find lowered weekly returns of the AEX when PvdA or ChristenUnie joins the coalition. As said, the ChristenUnie only joins the coalition during the financial crisis, which means I will not value this result too much. When PvdA joins the coalition the weekly returns of the AEX are lowered by 0.1 percent. Without correcting for any business cycle, political or behavioral variables it looks like the effects of Dutch politics are opposite to the political effects in the US. I believe this is due to the Dutch multiparty parliamentary system.

Regressing the political wings on the monthly and weekly returns of the AEX, indeed shows a positive relation. However, I only find a significant positive effect when comparing left-wing politics and center-wing politics with right-wing politics. I find that the weekly returns of the AEX are 0.1 percent higher when left-wing political parties join the coalition in comparison when right-wing political parties and 0.2 percent higher when center-wing political parties join the coalition in comparison to right-wing political parties.

For center-wing and right-wing politics I find that excess returns are completely nullified because of divided governments situations and the effect of the credit spread variable. Therefore, I am able to conclude that the presidential puzzle is not visible in the Netherlands when center-wing political parties join the coalition. This is different when left-wing political parties join the coalition. I find that the monthly returns of the AEX are 1.3 percent higher when left-wing political parties join the coalition. The effect of left-wing political parties even becomes stronger and clearer when correcting for multiple variables. I find that the interaction divided governments variable lowers the monthly returns of the AEX by 2.3 percent. The same applies for the credit spread variable.

Investor sentiment does not seem to affect the monthly and weekly returns of the AEX. Also US investor sentiment is not able to explain the excess monthly returns when left-wing political parties join the coalition.

Although, the credit spread variable already corrects for risk in the market, I perform a final risk check for the excess monthly returns of the AEX when left-wing political parties join the coalition. This, to make sure the excess monthly returns which I already cautiously pointed out as a possible anomaly are not due to volatility in the market. I find that the volatility does not differ significantly during left-wing, center-wing or right-wing parties in the coalition.

Furthermore, I find that although left-wing political parties correlate and affects the monthly returns of the AEX in a positive way, the political wings do not seem to have predictive power.

To conclude, the presidential puzzle is also visible in the Netherlands. The excess returns on the Dutch stock market when left-wing political parties join the coalition are not completely explainable by business cycle, political or behavioral variables. It therefore looks like Santa-Clara en Valkanov indeed found a new anomaly, which shows excess returns when left-wing politics joins the government. This anomaly is also visible in the Netherlands but the excess returns are not as extreme as seen in the US.

## B. Limitations

The main limitation of my research is the problem of perfect collinearity. When examining whether I find the same effect when I break down my sample and when redefining the political wings into center-left-wing and center-right-wing instead of left-wing, center-wing and right-wing I find that some political wings joined the coalition for many consecutive years. As a result of this problem, I am not able to examine whether the found anomaly is stronger in earlier years or the other way around. It could even be the case that the anomaly is not visible anymore at this moment in time, however, due to perfect collinearity I am not able to disprove or confirm this. Also, I am not able to create a look-a-like system of the US parliamentary system, therefore I do not know whether the excess returns would be stronger in such situation or whether the presidential puzzle is just weaker in the Netherlands than in the US.

Another limitation of my research is the fact that I did not incorporate the dividend price ratio as explanatory variable into my model, while Santa-Clara and Valkanov do so. As the Dutch dividend price ratio was only available from 2002 onwards, I would lose too many data points. Therefore, I decided to not take this variable into account.

### C. Further research

For further research it would be helpful to have a larger sample period. This will resolve some of the perfect collinearity problem. A larger sample period will also make it possible to include the dividend price ratio in the model. Furthermore, the effect of Democrats on the US stock market returns is only corrected for business cycle variables. I included not only business cycle variables, but also political and behavioral variables. It would be useful to find out whether the effect of the Democrats on the returns of the US stock market could be explained more by incorporating the political and behavioral variables, as the political variables show effects on the Dutch stock market returns which are highly significant. Moreover, the same research could be conducted in other countries to find out when the anomaly occurs. In addition, I believe that elections could also have some explanatory power as these periods provide more risk and volatility in the market.

Another idea for further research is to take a closer look at every coalition in Dutch history and find out whether their overall policy was more left-wing, center-wing or right-wing. Now, I only determined the effect of a political wing joining the coalition on the returns of the AEX and it could be the case that the results are stronger when the effect of the coalition as a whole on the returns of the AEX is considered. Thus, to explain the anomaly when left-wing political parties join the coalition completely many further research is needed.

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