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Stock markets and presidential charisma: a further research on the democratic premium and election cycles

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Abstract

This paper discusses the presidential election cycle and the democratic premium American market anomalies. It tries to highlight the underlining mechanisms for these anomalies by making an analysis of charisma at the presidential level and how it can affect the type of leadership, whether it is transactional or transformational, and results achieved by the president. It has found that investment strategies that are based on charismatic presidents tend to outperform the ones that are based on the non-charismatic ones. A time series model was implemented in order to verify whether charisma had any significant effect in for explaining the variation of excess returns, most of the findings point towards insignificance of this variable.

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1. Introduction

The main purpose of this paper is to explain the Democratic premium and the Presidential cycle theory by the eyes of psychological research on leadership theory and charisma. As argued by Burns (1978) transformational leaders can significantly change their surrounds and have a lasting impact on its followers. For the presidents of the United States of America, these impacts not only the social-economic situation of its residents but also the American markets and the overall level of confidence of investors. It is expected that a more charismatic leader, consequently prone to be a transformational leader, will raise confidence and the performance of the economy, this in turn will increase market returns. According to Simonton's (Simonton, 1988), democrats, over 1927 until 2018, are on average more charismatic than republicans. This makes them more likely to be transformational leaders and successful in their term. Furthermore, this paper will extend the time frame covered by past researchers by also verifying whether both of the anomalies are present in the American market during 2001 until 2018, if the president charisma ratings has any sort of predictive value over excess returns over that time period , if returns are concentrated close in the months close to the presidential campaigns and if quantitative easing has a positive influence in excess returns.

America has had a major global influence over the last century, it is common belief that its president is one of the most powerful figures in the world. It is no surprise that the person in charge of the office can shape the direction that country and the rest of the world will go. By having such an influence, it is expected that major American political events will have a repercussion, both in the short and long term, in the stock markets. The American political scope is divided in a two party system, at one side there are the Republicans and at the other the Democrats. Generally, democrat candidates tend to prefer consistent welfare policies and are left winged, while republicans are more liberals towards the market, right winged and have conservative values, these views create a clear division about each party's policy goals and expected results on the economy.

The paper from Santa-Clara and Valkanov (2003) shows that returns in the American market differs according to the current president's party. It has found that periods where the president is a democrat tend to outperform significantly than when a republican is in power, this effect is known as the democratic premium. Three hypotheses on why this difference happens were tested, the first is that the returns are moved by macroeconomic factors, the second is that besides macroeconomics factors, unexpected events play a role and the third is that there is a risk factor involved the political party in power. After testing the hypothesis, the unexpected events deemed to be the likely explanation, but no clear conclusion on the underlying reasons was made. This specific difference in returns, however, seems to be an American specific anomaly, since it was found that in New Zealand the periods of highest returns were when the right winged party was in power (Cahan, Malone, Powell, & Choti, 2005). Currently, there is insufficient information on why returns differ accordingly to the parties in power and country. To try to answer that question, this thesis will test how the public image and charisma of the past presidents can affect stock returns. Besides the democratic premium, another well-known anomaly in the American stock market is the Theory of the Presidential Cycle, this theory shows that the returns associated to the second half of the president's term are higher than in the first half (Wong & McAleer, 2009). It will also be tested whether president charisma has any effects on how the returns are distributed throughout the half terms.

According to Simonton (1988, p. 931) there are specifics character traits that help to define a charismatic president. A charismatic president "finds dealing with the press challenging and enjoyable", he "enjoys the ceremonial aspects of the office", "is charismatic", "consciously refines his own public image", "has a flair for the dramatic", "conveys clear-cut, highly visible personality", is a "skilled and self-confident negotiator", "uses rhetoric effectively", is a "dynamo of energy and determination", is "characterized by others as a world figure", "keeps in contact with the American public and its moods", "has ability to maintain popularity", exhibits artistry in manipulation", and "views the presidency as a vehicle for self-expression", and is rarely "shy, awkward in public". Charismatic presidents tend to be transformational leaders (Bass, 1997), these are leaders that inspire and engage its followers to raise their levels of motivation and morality (Burns, 1978). The level of charisma can be a driving factor of market returns since a charismatic president can, not only positively affect the public

perception of the country's economy and its overall state, leading to investors be more optimistic and confident about the market, but also inspire the population to be more productive and efficient. An uncharismatic president, however, might lead to pessimism in the market and economy, and to a decrease in the country's output.

Taking in consideration both the political anomalies and the studies on charisma and leadership theory, the research question associated with the goals of this paper is "To what extent can charisma levels explain and predict the difference in returns derived from the democratic premium and the presidential cycle theory?".

The data used for this study will consist of the monthly returns from the Dow Jones Industrial Average and the returns from a market portfolio composed of the NYSE, AMEX, and NASDAQ exchanges from January from 1927 until December 2018; the affiliation of the U.S. presidents over this period; an indicator of whether the president is on the first or last half of its term and their perceived level charisma. The data for characteristics is based on the paper from Simonton (1988) and Mio et al. (2005), the presidents rated by these papers go until Bill Clinton, thus not including George W. Bush, Barack Obama and Donald Trump. To fill the gap in the data, I will rate the presidents charisma based on past papers analysis of the presidential-runs and their personalities. Returns will be regressed on macroeconomic variables, as the default spread between yields of BAA- and AAA-rated bonds, the term spread between the yield to maturity of a ten-year Treasury note and the three-month Treasury bill, the relative interest rate which is the standard deviation of a three-month Treasury bill rate from its one-year moving average, this thesis will also take into account the new forms of monetary policy being employed with focus on how quantitative easing may also have affect stock market returns. Besides macroeconomic factors, a dummy variable the level of charisma will be used. Political induced business cycles are also taken in account by verifying the difference in excess returns over the presidential term. It is taken into account that volatility in the market may be predominant in pre-elections periods and thus may be the underlying cause for these cycles, hence, this paper will also test whether the difference in returns is concentrated during November of the election year.

As evidenced by the results a charisma premium is present when comparing the returns between charismatic and non-charismatic presidents. However, one must pay attention on whether the charisma level given to each president was influenced by how successful his run in the office was. When trying to model excess returns with charisma and the macroeconomical variables there is a lack of evidence pointing towards significance in charisma. Regarding the presidential election term anomaly, it has been found that returns between charismatic and non-charismatic presidents are significantly different during the first half of the president term, however no significant difference in returns between each term was found when taking in consideration charisma levels. The regression employed to try explain excess returns found no significance in the joint variable charisma and time period.

The paper follows the following structure. Section 1 is the introduction, where the topic is initially introduced and the paper's goals and output are presented in a general manner. Section 2 discuss the relevant literature, the central research question and the relevant hypotheses associated with it. Section 3 describes the data used and the methodology employed to achieve the results. Section 4 contains the results derived from the data and methodology section, besides that it also includes robustness checks for the hypotheses. Section 5 summarizes the main findings of the study and section 6 finalizes the paper by discussing these findings, their limitations and suggests ideas for further improvement.

2. Theoretical framework

The goal of this section is to present an in-depth review of the relevant financial literature and discuss how this paper aims contribute to the political cycle puzzle and the democrat premium. The first subsection will introduce the main research question of the paper, while the following will cover the current relevant papers in finance and psychology and will discuss the hypotheses tested in the study.

Research question

The main objective of this paper is to study whether presidential charisma level can explain and predict the democratic premium and presidential election cycle theory anomalies. The research question derived from this goal is as follows:

To what extent can charisma levels explain and predict the difference in returns derived from the democratic premium and the presidential cycle theory?

Background information

Fama and French (1993) are one of the main advocates of the efficient market hypothesis and the risk-based approach to explain excess returns. Their theory assumes that the market is fully efficient, it updates itself instantly as new information becomes available and that stock returns are related to risk proxies. The proxies that are mostly used are market risk, company size and book-to-market ratio. These are mostly known for the Three Factor model. They demonstrate, respectively, how much the portfolio is exposed to the market, that the size of the firm has a significant impact in returns (the smaller the firm higher the risk) and that financially distressed firms (High-book-to-market ratio) tend to have bigger returns. This model is generally successful in predicting returns, however, it faces stiff criticism due to its inability in explaining some anomalies. The most researched and known anomalies are, calendar effects, price momentum, and over and under-reaction to events and news. Behavioral finance acts as the main critic to the lack of capacity of the traditionalists to explain these anomalies (Makiel, 2003).

Efficient markets should represent the current electoral expectations of which policies are being employed and what consequences they might bring, therefore the change of presidency can be a crucial moment for the stock market. If the newly elected president views and objectives are fundamentally different from its predecessor it is expected by the efficient market hypothesis that the markets will adjust accordingly to this new information. Hence, it is expected that when a president with more liberal views enters in power, the market will react more positively than when an interventionist is elected.

Herbst and Slinkman (1984) have found that the stock market follows a cycle that matches political swaps, these generally take four years and peak in November of the election year. However, the paper is cautious to establish a relationship of causality between the two components, since they might only be related because the electoral party expects that the new president will outperform the past ones, voters are optimistic about the future prospect that this person will bring to the country, or because that there are uncertainties on what the future policies might be. It also has been theorized that political cycles can induce business cycles. Politicians oversee the intertemporal welfare of the population, when making decisions such as the desired level of inflation and unemployment they need to consider the consequences of how the current levels may affect the future population. As seen by Nordhaus (n.d.), politicians adhere to policy patterns that highlight austerity measures in the beginning of their cycle moving towards expansionary policy around the shift of power. Even though this is a frequent practice it is likely to not be an efficient strategy in the long run.

The democratic premium and the theory of the presidential cycle
The American political system is mainly composed of two parties, these are the republicans and the democrats. The parties fundamentally differ in their views towards monetary and fiscal policies, the general welfare state and the role of the government in its population's life. Generally, democrats are in favor of welfare policies and are left winged, while republicans are more liberals towards the market, right winged and have conservative values. The country's powers are divided into the executive, judiciary and legislative sectors, I will focus exclusively on the executive sector for this study. The president of U.S. holds the executive power, which makes him the responsible for the governance of the country and for enforcing laws. Every four years there are national elections where new contenders for the

presidency try to be elected by the means of a general election. The people in power of this position have a big role in how the markets act, since their views will directly affect the receptiveness of the country for investments and can alter investor sentiment. Such a shift in power may signal good or bad news to the markets.

The democratic premium anomaly consists on the fact that when the American office is run by a democrat president, excess return in the stock markets are significantly higher. Excess returns are the difference between the index return over a three-month T-bill yield. The yearly difference is, on average, of 9% for a value-weighted and 16% for an equal-weighted portfolio. This difference is not explained by business-cycle variables and it does not appear to be concentrated in election periods. Also, the risk related to the party in power does not seem to be a relevant explanation for this difference since most of returns were derived from unexpected events (Santa-Clara & Valkanov, 2003). Bialkowski, Gottschalk and Wisniewski (n.d.) contradicts that returns are not concentrated in election periods since they find that despite the advancements in the methods of predicting the election outcomes, investors are still surprised by its outcome, causing an increase in levels of volatility around the election date. It is interesting to note that this anomaly was tested in 15 different countries, it has found, however, that it was only present in Denmark, Germany and the United States (Bohl & Gottschalk, 2006). This study, nonetheless, makes it clear that the classification between right and left-wing parties is not as explicit worldwide as in U.S., that the president is not always both head of state and government simultaneously, and that there are countries where the political party in power does not switch as frequently.

The first hypothesis regarding the democratic is whether charisma is a significant variable for explaining the variation in abnormal returns. The alternate hypothesis is that the coefficient for charisma achieved by the regression is significantly different from zero. While the null is that charisma is not a significant variable for explaining excess returns.

The second hypothesis for this anomaly is if charisma affects how excess returns are distributed throughout time. The alternate hypothesis is that charismatic presidents are, on average, associated with higher excess. While the null hypothesis is that the returns

associated with charismatic presidents and uncharismatic presidents are, on average, the same.

The Theory of the Presidential Cycle argues, similarly to the political business cycles, that market returns follow a four-year pattern coinciding to the election periods. A possible explanation for this cycle is that recently elected presidents will follow their agenda more promptly, by introducing new programs, regulations and taxes. As the election time approaches they will exercise less severe policies in order to gather more votes from myopic voters (Wong & McAleer, 2009). It has been found that the markets act more bearish on the first two years of the term while in the last two it is more bullish, no matter how long the president is currently serving (Booth & Booth, 2003). The effect appears regardless of the political affiliation of the president and of business conditions (Booth & Booth, 2003), however, is stronger in Democratic administrations (Huang, 1985). This anomaly was tested in 15 different countries and was only found to be, weakly significant in Austria, Canada and the Netherlands (Bohl & Gottschalk, 2006).

The first hypothesis related with the presidential election cycle anomaly is whether charisma levels augment the magnitude of this anomaly. The alternate hypothesis is that charismatic presidents will have a higher return in the second half of the term than in the first and that when compared with non-charismatic presidents their return will also be significantly larger in each half. The null hypothesis for this is that the returns from a charismatic president will not significantly differ from the ones from a non-charismatic president in any of the terms and that its return will not differ significantly between the first and second half of the presidential term.

The second hypothesis tests how well charisma and term can explain excess returns in a linear model. The alternative hypothesis suggests that the joint variable charisma with which half of the presidential is taken in consideration is significant for explaining excess returns. The null hypothesis is that this variable does not have significance when explaining excess returns.

Charisma, leadership and personality traits

One of the most influential ideas in leadership theory is the transformational leadership and its distinction from transactional leadership. According to Burns (1978), transactional leadership is when someone takes the initiative of getting in contact with other parties for the sole purpose of exchanging value, this type of leadership is similar to a business agreement. The initiator may bring benefits to its group and is thus conceived as their leader. Transformational leadership, differently from transactional leadership, is when the group activator engages to its group in a way that it raises its motivations and well-being, ultimately creating something new (Tichy & Devanna, 1986). Examples of transformational leaders are Mahatma Gandhi and Nelson Mandela. Charismatic leadership is often associated with transformational leadership (Shamir, House, & Arthur, 1993), charismatic leaders show their goals in a way that appears that its followers will have an ideal future and must take risks in order to achieve this future. They also adopt an empowering behavior towards others, demonstrating his belief that the group will achieve its intended goals. Bass (1997) attributes the behavior of a transformational leader to four different traits, they are charismatic, can inspire and motivate others, they provide intellectual stimulation to its peers and demonstrate individual consideration for each of its followers. It is important to note that the three latter characteristics are often correlated to charisma itself (Lowe, Kroeck, & Sivasubramaniam, 1996) and thus should be considered a complement to it. Besides Bass, the papers from Bono and Judge (2004) and Lowe et al. (1996) make a quantitative analysis of personality traits and leadership skills, it is found that charisma and extraversion are highly correlated with transformational leadership and effectiveness. Simonton (1988) and Mio et al. (2005) created ratings to measure how charismatic the presidents are.

3. Data and Methodology

This section contains all the relevant information about the data and methodology used for this paper. For the data, how it was gathered, its descriptive statistics and what it means. For methodology, the relevant transformations and processes were used to achieve results.

Data

This study analyses monthly returns data from a market portfolio composed of the NYSE, AMEX, and NASDAQ exchanges, thus it clearly reflects the overall state of the American economy. The data for these returns ranges from 1927 to 2018. Besides that, the monthly risk-free rate from this time period is also available. In this study, 10 different portfolios based on company size were used to account for the effect of charisma on firms with diverse structures. The data used for the monthly returns, risk free rate, and for the portfolio composition can be found by looking at the Fama and French webpage available by the university of Dartmouth where they publish all of the data used in their studies,. Besides the data used by Fama and French, the Dow Jones Industrial Average, also from 1927 to 2018, will also be used to increase the robustness of the findings. The DJIA is a value weighted portfolio which is used because it is composed of the shares of the 30 largest and most important American companies. Due to a lack of continuity in the data, CRSP was used to retrieve the monthly returns from 1927 to 2007, for the years of 2008 to 2018 Datastream was used. The benchmark used to compute excess returns was the returns of 3-month treasury bills on the secondary market from 1934 until 2018, this data was retrieved from the Federal Reserve Economic Data database.

The charisma level of president Calvin Coolidge, 1923 to 1929, until Bill Clinton, 1993 to 2001, was retrieved from the papers of Simonton (1988) and Mio et al. (2005). Each of these presidents received their level based on how they fit the parameters previously established by Simonton. To cover the gap for the ratings of George W. Bush, Barack Obama and Donald Trump, an estimation based on the papers of Ahmadian, Azarshahi and Paulhus (2017), Bligh and Kohles (2009) and Immelman (n.d.) was made. Besides the charisma rankings, the political affiliation of each president was gathered based on historical data.

According to Immelman (2002), George W. Bush is engaging, energetic and optimistic and driven by a need of excitement and stimulation. He is also considered a risk taker, even though the projects he takes might be discontinued later on, has a salesperson personality which make others more likely to join him on his endeavors. Is affable and charming, making good first impressions, can read other people well and is willing to realize his own ambitions. He is cordial and seeks approval, being conflict-averse, extraverted and good at masking his disappointments and regrets. After the 2001 terrorist attacks George W. Bush raised to its people and consolidated his leadership. According to the authors, this profile makes him a charismatic leader, thus, a rating of 0.7 is attributed to him.

Bligh and Kohles (2009) discuss how Barack Obama was able to win the 2008 elections and how this made him be portrayed as a charismatic leader. According to them the factors that were relevant for his election were his charisma and its followers readiness in accepting a charismatic leader, this might due to the 2008 financial crisis and global uncertainty. Obama's speeches were an example of high quality speech intonation, timing, gestures and symbolism; the former president was also backed up by a central message which was big enough to attract many followers that had different standpoints. Besides his innate ability for public speaking, Obama also got a charisma boost due to the financial crisis. According to Madsen and Snow (1991) in times of a group crisis, groups will tend to rely on charismatic leaders as a coping mechanism. The innate charisma of Obama, together with the boost of the financial crisis gives him a rating of 1.4.

Donald Trump's charisma level was derived from Ahmadian et al. (2017) paper on his communication style. The authors highlight that Trump was the candidate for the presidential elections of 2016 with the highest level of grandiosity in his talks and informal use of the language between all the republican candidates. The paper also argues that the high level of use of twitter can explain part of his success in the elections. Based on these findings, the charisma level associated with Donald Trump is 1.0.

For the control variables, a dummy variable indicating whether quantitative easing was being implemented was retrieved from the U.S. Federal Reserve System announcements. The default spread between BAA and AAA corporate bonds during the entirety of the time period

was retrieved from Moody's. The term spread between T-bills and a 10 year treasury bond from 1978 was retrieved by the Federal Reserve Economic Data database, the relative interest rate was derived from this spread by calculating the deviation of its yield by the one year moving average rate. To account for the gaps in the data, the missing values for each variable were replaced by the variable's mean value.

Table 1 shows which presidents were considered for this study, their political affiliation and perceived level of charisma. A dummy variable was created indicating whether the president is charismatic or not was included in the table. This variable was made by rearranging the charisma level data from lowest to highest, finding the median point and attributing the charismatic tag to all presidents which lay above this point and uncharismatic to the ones below. The descriptive statistics of the level of charisma between parties is also included in the table.

Table 1: Charisma level and presidential characteristics

Table 1 shows the data of the U.S. presidents from 1926 until 2018. It has its names, political affiliation, their established charisma levels, a dummy variable indicating whether the president was charismatic or not, with 1 being charismatic and 0 not charismatic, and a categorical variable based on the quartiles of the distribution of the charisma levels, with 4 being the least charismatic and 1 the most.

Name	Political affiliation	Charisma level	Charisma dummy
Calvin Coolidge	Republican	-1,90	0
Herbert Hoover	Republican	-0,60	0
Franklin D. Roosevelt	Democrat	2,50	1
Harry S. Truman	Democrat	0,00	0
Dwight D. Eisenhower	Republican	0,60	1
John F. Kennedy	Democrat	1,30	1
Lyndon B. Johnson	Democrat	1,50	1
Richard Nixon	Republican	0,30	0
Gerald Ford	Republican	-0,10	0
Jimmy Carter	Democrat	-0,40	0
Ronald Reagan	Republican	1,20	1
George H. W. Bush	Republican	-0,70	0
Bill Clinton	Democrat	0,50	0
George W. Bush	Republican	0,70	1
Barack Obama	Democrat	1,40	1
Donald Trump	Republican	1,00	1

As seen in the table, democrats are on average more charismatic than republicans. They have an average charisma rating of 0.97, while republicans have -0.06. The most charismatic democrat president was Franklin D. Roosevelt, with a rating of 2.50; while the most charismatic republican president was Ronald Reagan, with a rating of 1.20. The least charismatic democrat president was Jimmy Carter, with a rating of -0.40; while the least charismatic republican president was Calvin Coolidge, with a rating of -0.90.

Table 2 shows the descriptive statistics of the excess and real monthly returns of the American market accordingly to the president's party, these are the mean and standard deviation and total number of observations. In order to make a bigger distinction between this data, the dummy on charisma was also taken into account showing how returns differ if the president is charismatic in general and on its party itself.

Table 2: Descriptive statistics, Democratic Premium

Table 2 shows the descriptive statistics of the monthly returns from 1927 until 2018. It encompasses excess and real returns, these are the returns compared to the 1-month T-bill yield and the returns compared to the monthly inflation respectively. Besides that, there is also data on how these returns differ according to political affiliation, charisma level and the charisma level given a political affiliation.

Traits	Number of observations	Excess Returns				Real Returns			
		Mean monthly excess return	Std. Dev.	Minimum	Maximum	Mean monthly real return	Std. Dev.	Minimum	Maximum
Charismatic	648	0,80%	5,00%	-23,82%	38,85%	0,81%	5,00%	-23,83%	38,95%
Not charismatic	456	0,42%	5,80%	-29,13%	37,06%	0,49%	5,83%	-28,44%	37,83%
Democrat	575	1,06%	5,02%	-23,82%	38,85%	0,96%	5,05%	-23,83%	38,95%
Democrat and charismatic	337	1,14%	5,56%	-23,82%	38,85%	1,04%	5,57%	-23,83%	38,95%
Democrat and not charismatic	238	0,94%	4,13%	-16,08%	9,59%	0,84%	4,23%	-15,77%	9,72%
Republican	529	0,20%	5,65%	-29,13%	37,06%	0,38%	5,66%	-28,44%	37,83%
Republican and charismatic	311	0,44%	4,29%	-23,24%	12,47%	0,57%	4,30%	-22,90%	12,26%
Republican and not charismatic	218	-0,14%	7,16%	-29,13%	37,06%	0,10%	7,17%	-28,44%	37,83%
Total	1104	0,65%	5,35%	-29,13%	38,85%	0,68%	5,36%	-28,44%	38,95%

As seen in the table, there seems to a difference of 0.38% in monthly excess returns between charismatic and uncharismatic presidents. Most of the difference seems to rely on the political affiliation of the president. However, when looking at the mean returns within parties it is interesting to note that even though, for democrats, the monthly difference in returns is 0.20% per month for the republicans this difference can get to 0.30%. A charismatic Democrat president when compared with a charismatic republican has 0.70% more monthly excess returns. While a non-charismatic democrat has a difference of 1.08% when compared with a similar republican. When considering real returns, charisma also seems to play a factor, having a 0.32% difference in monthly returns for charismatic presidents, 0.20% within democrats and 0.47% within republicans. When comparing a charismatic democrat with a charismatic republican there is a difference of 0.47% monthly real returns. When the comparison is with the non-charismatic parts this difference gets to 0.74%.

Table 3 demonstrate the monthly return descriptive statistics of the presidential political cycle.

Table 3: Descriptive statistics, Presidential Political Cycle

Table 3 shows the mean monthly returns of the first and second half of the presidential term. Both excess and real returns are taken in consideration and the level of presidential charisma is included as a subgroup to both the first and the second half.

Terms	Number of observations	Excess Returns				Real Returns			
		Mean monthly excess return	Std. Dev.	Minimum	Maximum	Mean monthly real return	Std. Dev.	Minimum	Maximum
First half	553	0,57%	5,46%	-23,82%	38,85%	0,57%	5,53%	-23,83%	38,95%
Charismatic	336	0,82%	5,54%	-23,82%	38,85%	0,82%	5,59%	-23,83%	38,95%
Not charismatic	217	0,18%	5,31%	-20,12%	16,10%	0,17%	5,41%	-19,66%	15,62%
Second half	551	0,73%	5,23%	-29,13%	37,06%	0,79%	5,19%	-28,44%	37,83%
Charismatic	312	0,79%	4,35%	-23,24%	16,88%	0,80%	4,29%	-22,90%	14,72%
Not charismatic	239	0,65%	6,21%	-29,13%	37,06%	0,78%	6,17%	-28,44%	37,83%

The anomaly can be easily seen by comparing the monthly returns of the second half of the term against the first, there is a difference of 0.25% in both excess and in real returns. If charisma is also taken in consideration, the excess returns when a charismatic president is in power in the second half is on average 0.03% smaller when compared with a charismatic figure in the first term and 0.61% larger than a non-charismatic person in the first half. For real returns, when a charismatic president is in power in the second half is on average 0.02% smaller when compared with a charismatic figure in the first term and 0.63% larger than a non-charismatic person in the first half.

Methodology

To answer the hypotheses derived from the main research question and past literature the following methodology is applied.

To try to answer whether charisma is significant when explaining the variation in excess returns a linear regression based on time series models will be used in each of the 10 size portfolios and in the average market portfolio. There are some points which need to be

addressed in order to successfully run this model. Since the data being used is a time-series, it is important to check for certain characteristics of the data, these are whether it is stationary and its level of autocorrelation and partial autocorrelation. A strictly stationary process is a process where the distribution of its values remains the same no matter which time frame is considered, for this thesis a more relaxed assumption of stationarity will be used, this is whether the series has constant mean, variance and auto covariance structure over time. If the series is not stationary, the models may lead us to spurious relationships. Autocorrelation, as the name suggests, is the level of correlation of a term with its predecessors, partial autocorrelation measures the correlation of an observation in the past with the current, after taking in account all the intermediate observations. The means to test for stationarity is through the Dickey-Fuller test, autocorrelation can be verified through the Ljung-Box Q test. In case the data is non-stationary, the current data will be de-trended. Depending on the level of autocorrelation and partial autocorrelation I will employ an autoregressive moving average model to achieve a better model. After the regression is performed, tests on heteroskedacity and on auto-correlated error terms will be employed. Heteroskedacity is when the variance of the residuals of a regression is not constant, while auto correlation of error terms indicates that these are correlated with their past values and may fit in an autoregressive model. A White test will be used to test for heteroskedacity, if its null hypothesis is reject robust standard errors will be included in the model. Breusch-Godfrey test tests for correlated error terms, if they are found to be present in the regression, Newey-West standard errors will be employed. After this procedure is done, the information criteria tests AIC and BIC will be employed to compare and measure which model better explain the proposed relationships.

Since political and business cycles seem to be strongly correlated to each other it is necessary to make a distinction between them. By doing that it is possible to infer the extent that party in power really influences market returns. This distinction is made by proxying economic variables that are already known to be correlated with market returns and economic state, the majority is already used by Santa-Clara and Valkanov (2003). The default spread between yields of BAA- and AAA-rated bonds (Fama & French, 1989) is used, the default spread is a good indicator of economic activity as it has higher returns when the economy is weaker and vice versa. The third is the term spread between the yield to maturity of a 10-year Treasury

note and the three-month Treasury bill (McLean, 1999), a declining total yield signals a potential downturn in the economy. Even though this measure failed to predict the recent recessions such as the 1990-1991 it still holds as a valuable parameter in the estimation of where the national economy is heading to, due to its simplicity and high success rate. The fourth variable is the relative interest rate, as it is strongly correlated to stock returns (Campbell, n.d.). It was also shown that monetary policy can affect stock returns (Thorbecke, 1997), expansionary policies, or shocks, cause an increase in, both ex-ante and ex-post, returns while austerity will lead to a decrease in returns. The focus of monetary policy, however, significantly changed after the 2008 crisis, from low and targeted level of inflation, achieved by short-term interest rate, to financial stability and prevention of asset bubbles (Joyce, Miles, Scott, & Vayanos, 2012). It is of interest to verify whether this change in posture has any consequences for the treated anomalies and if periods where quantitative easing is being implemented are associated with abnormal returns.

The model used to test the hypothesis of whether charisma is a significant variable when explaining the variation in abnormal returns is as follows:

$$Excess\ returns_t = Ch + TS + DS + MI + Cons + Error_t$$

With "Excess returns" representing the estimative of monthly returns minus the current 1 month treasury bill yield, "Ch" the charisma dummy, "TS" the term spread, "DS" the default spread, "MI" the monthly inflation and "Cons" the constant term.

The model used to test the hypothesis of whether charisma affects how excess returns are distributed throughout the presidential term is as follows:

$$Excess\ returns_t = ChT + TS + DS + MI + RI + Cons + Error_t$$

With "Excess returns" representing the estimative of monthly returns minus the current 1 month treasury bill yield, "ChT" is a joint categorical joint variable which indicates the level of charisma of the president and which half of their term they are currently in, "TS" the term

spread, "DS" the default spread, "MI" the monthly inflation, "RI" the relative interest rate and "Cons" the constant term.

Besides the regressions, long term event study methodology will also be employed to verify whether there is a significant difference between the sum of excess returns derived from different investment strategies with the buy-and-hold excess returns from the market portfolio over the relevant time period and within themselves. This difference is known as the cumulative abnormal return. A student test will be the test employed to verify whether the difference between the two strategies is significantly higher than 0.

$$Cumulative\ abnormal\ return = \sum_{T=1}^{1104} \ln\left(\frac{P_t}{P_{t-1}}\right) - \sum_{T=1}^{1104} \ln\left(\frac{P_t^*}{P_{t-1}^*}\right)$$

P_t is the price of the index of interest at time T, P_{t-1} is the price of the index of interest at time T minus 1. P_t^* is the price of the benchmark (strategy) of comparison at time T, P_{t-1}^* is the price of the benchmark of comparison at time T minus 1. The equation above calculates the difference of cumulative returns between the desired strategy and a benchmark. Since all the return information is based on the logarithmic difference of prices, the cumulative returns work as a summation of each monthly return and thus do not need to be compounded.

There are 6 different strategies that will be employed, these are going long in the market when a charismatic president is power, if else, the position will be closed and the yield from the risk-free 1 month T-bill will be used (1); going long in the market when a non-charismatic president is in power, if else, the position will be closed and the yield from the risk-free 1 month T-bill will be used (2); going long when a charismatic president is in power and he is on the second half of his term, if else, the position will be closed and the yield from the risk-free 1 month T-bill will be used (3); going long when a non-charismatic president is in power and he is on the second half of his term, if else, the position will be closed and the yield from the risk-free 1 month T-bill will be used (4); going long when a charismatic president is in power and he is on the first half of his term, if else, the yield from the risk-free 1 month T-bill will be used (5) and going long when a non-charismatic president is in power and he is on the first

half of his term, if else, the position will be closed and the yield from the risk-free 1 month T-bill will be used (6). As mentioned, all of the strategies will be compared with the buy-and-hold excess returns derived from the market portfolio, besides that strategy 1 will be compared with strategy 2, strategy 3 with strategy 4, strategy 5 with strategy 6, strategy 3 with strategy 5 and strategy 4 with strategy 6.

4. Results

Charisma, returns and volatility

Graph 1: Mean yearly excess returns per president

The graph bellow shows the mean yearly excess return under each presidents term. The color light grey designates the non-charismatic presidents, while the dark grey designates the charismatic ones.
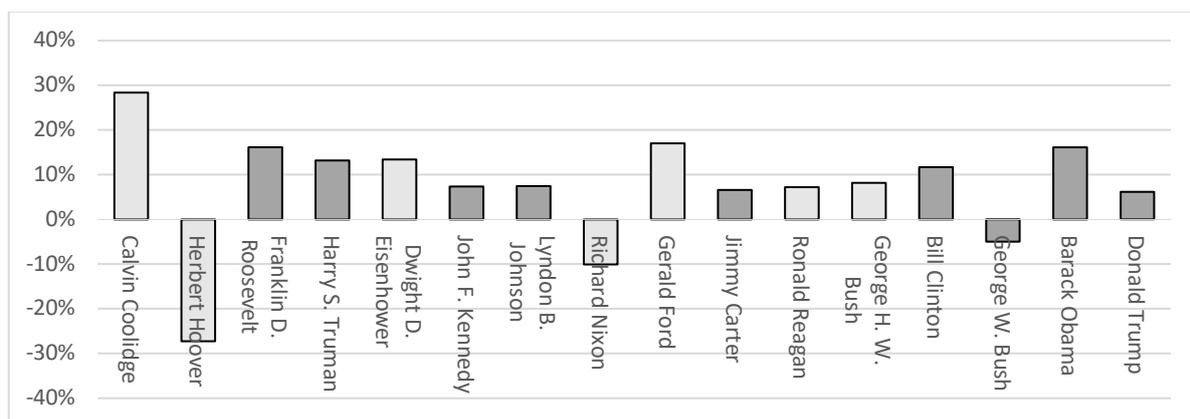
As seen in graph 1, less charismatics presidents tend to have lower yearly excess returns than the average and have a higher volatility in returns than charismatic presidents. The mean yearly excess returns for the non-charismatic presidents are 5.75% and the standard deviation associated with these returns is 17.22%. For the charismatic presidents the average yearly excess return is 7.33% and the standard deviation for these returns is 7.14%. If all the presidents are considered, disregarding charisma levels, the mean yearly excess return is 6.49% and these returns deviate on average 12.74%. It is interesting to note that the mean returns from the charismatic presidents periods tend to be larger than for non-charismatic presidents and also present a lower volatility than those. It is important to note, however, that the returns associated with president Calvin Coolidge and Herbert Hoover are deeply affected by external factors. Calvin Coolidge was president throughout the Roaring 20's while

Herbert Hoover term was placed in the great depression. If we disregard these points in the data the volatility associated with non-charismatic presidents is significantly reduced and returns approach the ones from charismatic presidents.

Modelling charisma as an explanatory variable for excess returns

Table 4: Regression output, charismatic premium

The regressions shown below models how monthly excess returns are affected by the term spread, default spread, monthly inflation and whether the president is charismatic or not. There are 11 different regressions, excess returns market indicates the regression for the overall market while the excess returns deciles model excess returns from different portfolios based on company size. The companies selected for each portfolio increase in size as the decile gets bigger.

Models/Variables	Charisma	Term spread	Default Spread	Monthly inflation	Constant	R2
	0.003	0.016	-0.003	-0.045	-0.002	
Excess returns market	(0.004)	(0.201)	(0.572)	(0.370)	(0.006)	0.001
	0.007	0.202	0.756	0.632	-0.018*	
Excess returns size 1	(0.007)	(0.272)	(0.943)	(0.950)	(0.010)	0.005
	0.008	0.058	0.618	0.303	-0.013	
Excess returns size 2	(0.006)	(0.284)	(0.848)	(0.696)	(0.009)	0.005
	0.007	0.054	0.567	0.22	-0.012	
Excess returns size 3	(0.005)	(0.254)	(0.940)	(0.583)	(0.009)	-
	0.006	0.108	0.595	0.164	-0.012	
Excess returns size 4	(0.005)	(0.245)	(0.858)	(0.535)	(0.008)	-
	0.006	0.103	0.369	0.031	-0.01	
Excess returns size 5	(0.005)	(0.249)	(0.730)	(0.527)	(0.008)	0.004
	0.006	0.124	0.445	0.015	-0.011	
Excess returns size 6	(0.004)	(0.236)	(0.745)	(0.497)	(0.008)	0.005
	0.005	0.062	0.304	0.146	-0.008	
Excess returns size 7	(0.004)	(0.226)	(0.633)	(0.449)	(0.007)	0.003
	0.004	0.075	0.317	-0.032	-0.007	
Excess returns size 8	(0.004)	(0.225)	(0.667)	(0.428)	(0.007)	0.003
	0.004	0.006	0.09	0.055	-0.004	
Excess returns size 9	(0.004)	(0.206)	(0.649)	(0.418)	(0.007)	0.001
	0.003	-0.054	-0.127	-0.102	0.001	
Excess returns size 10	(0.003)	(0.196)	(0.541)	(0.341)	(0.006)	0.001

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The results given by the multivariate regression do not indicate that charisma is a significant variable when explaining excess returns for most of the portfolios tested. The only exception of these findings happens in the portfolio of decile 1, where the smallest firms make up the portfolio. For this model, it is found, with a 10% significance level, that the constant term is associated with, on average, a reduction of 1.80% in the monthly excess returns of given portfolio. It is also interesting to note that in all models charisma has a more positive effect in the excess returns than the constant, non-charismatic. Even though the coefficients the coefficients are not significant, this difference between returns in charismatic and non-

charismatic presidents seem to indicate that charismatic presidents may as well be associated with higher returns than non-charismatic ones.

Table 5: Regression output, election cycle

The regressions shown below models how monthly excess returns are affected by the term spread, default spread, monthly inflation, relative interest rate, whether the president is charismatic or not and which half of the term the president is currently in. The variables CS, UF and US mean respectively, Charismatic second half, non-charismatic first half and non-charismatic second half. There are 11 different regressions, excess returns market indicates the regression for the overall market while the excess returns deciles model excess returns from different portfolios based on company size. The companies selected for each portfolio increase in size as the decile gets bigger.

Models/Variables	CS	UF	US	Term spread	Default spread	Monthly inflation	Relative interest rate	Constant	R2
Excess returns market	-0,001 (0.004)	-0,006 (0.005)	-0,002 (0.005)	0,033 (0.210)	-0,027 (0.579)	-0,032 (0.367)	0,121 (0.335)	0,002 (0.007)	0,002
Excess returns size 1	0,001 (0.008)	-0,01 (0.008)	-0,003 (0.009)	0,164 (0.273)	0,697 (0.953)	0,662 (0.956)	-0,182 (0.450)	-0,01 (0.011)	0,006
Excess returns size 2	0,001 (0.007)	-0,01 (0.007)	-0,005 (0.008)	0,023 (0.288)	0,572 (0.858)	0,325 (0.700)	-0,175 (0.457)	-0,005 (0.010)	0,005
Excess returns size 3	0,001 (0.006)	-0,009 (0.007)	-0,005 (0.007)	0,044 (0.266)	0,537 (0.843)	0,239 (0.594)	-0,021 (0.441)	-0,005 (0.010)	0,005
Excess returns size 4	0,001 (0.005)	-0,007 (0.006)	-0,004 (0.007)	0,089 (0.258)	0,567 (0.772)	0,18 (0.546)	-0,086 (0.431)	-0,006 (0.009)	0,005
Excess returns size 5	0 (0.005)	-0,007 (0.006)	-0,005 (0.006)	0,09 (0.255)	0,348 (0.739)	0,043 (0.526)	-0,058 (0.419)	-0,003 (0.009)	0,004
Excess returns size 6	0,001 (0.005)	-0,007 (0.006)	-0,004 (0.006)	0,115 (0.244)	0,422 (0.753)	0,03 (0.496)	-0,028 (0.397)	-0,005 (0.009)	0,005
Excess returns size 7	-0,001 (0.005)	-0,008 (0.006)	-0,003 (0.006)	0,083 (0.232)	0,268 (0.641)	0,162 (0.448)	0,138 (0.377)	-0,002 (0.008)	0,003
Excess returns size 8	-0,002 (0.004)	-0,008 (0.005)	-0,003 (0.006)	0,103 (0.232)	0,275 (0.674)	-0,019 (0.425)	0,16 (0.386)	-0,002 (0.008)	0,004
Excess returns size 9	-0,002 (0.004)	-0,007 (0.005)	-0,003 (0.006)	0,033 (0.211)	0,065 (0.657)	0,063 (0.416)	0,156 (0.353)	0,001 (0.008)	0,002
Excess returns size 10	0 (0.004)	-0,005 (0.005)	-0,001 (0.005)	-0,025 (0.205)	-0,14 (0.547)	-0,091 (0.339)	0,192 (0.322)	0,004 (0.007)	0,002

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As seen in the regression from table 5 there is a lack of significance for the explaining variables in all of the portfolios tested. This means that there that charisma and term is not a relevant joint variable for explaining excess returns.

Investment strategies based charisma and presidential term

Table 6: Regression output, charismatic premium

Table 6 compares the aggregate performance, from 1927 to 2018, of 6 strategies with buying and holding the market. The returns are present as the monthly average return from each strategy. A t-test was made in order to verify whether the returns derived from these strategies are significantly larger than the mean market return.

Strategies	Strategy mean return	Market mean return	Difference	P-value
Strategy 1	0,62%	0,65%	-0,03%	0.5940
Strategy 2	0,30%	0,65%	-0,35%	0.9985
Strategy 3	0,44%	0,65%	-0,21%	0.9234
Strategy 4	0,34%	0,65%	-0,31%	0.9876
Strategy 5	0,46%	0,65%	-0,19%	0.9257
Strategy 6	0,23%	0,65%	-0,41%	0.9977

As seen in the table 6 no proposed strategy could outperform buying and holding the market. This might be due to some limitations of this strategy, which is that the time taken to reposition the portfolios used is too long. Since the main condition for the strategy is the level of presidential charisma and this level is constant throughout all the presidential term the portfolio is only repositioned when there is a shift in power. This fails to take in consideration many other events which have an impact in the American economy and the market returns.

Table 7: Regression output, charismatic premium

Table 7 compares the monthly average excess return between the related strategies. A t-test is performed in order to verify if the monthly mean return derived from strategy *i* is significantly larger than the monthly mean return from strategy *j*.

Strategy *i* vs *j*	Mean return *i*	Mean return *j*	Difference (*i-j*)	P-value
Strategy 1 vs 2	0,62%	0,30%	0,32%	0,0242
Strategy 3 vs 4	0,44%	0,34%	0,10%	0,1889
Strategy 5 vs 6	0,46%	0,23%	0,22%	0,0296
Strategy 3 vs 5	0,44%	0,46%	-0,02%	0,5567
Strategy 4 vs 6	0,44%	0,46%	-0,02%	0,1736

As seen on the table there are only two strategies that outperform each other. Strategy 1, going long when the president is charismatic, otherwise closing the position and receiving a risk-free rate going long when not charismatic, gives a significantly higher monthly mean

excess return than strategy 2, going long when the president is not charismatic, otherwise closing the position and receiving a risk-free rate going long when charismatic. The table also indicates that strategy 5, going long when a charismatic president is in power and he is on the first half of his term, if else, using the yield from the risk-free 1 month T-bill, also significantly outperforms strategy 6, going long when a charismatic president is in power and he is on the first half of his term, if else, using the yield from the risk-free 1 month T-bill. It is interesting to note that strategy 3 does not outperform strategy 4, this could indicate that charisma is more important for the market during the first half of the presidential term. Since strategy 3 and 5 and strategy 4 and 6 are not significantly different, excess returns, when controlling for charisma, do not significantly differ between the halves of the presidential term.

Robustness checks

In order to verify whether the results found are consistent and truthful some robustness checks were implemented. The first robustness check is to observe whether the democratic premium and the presidential election cycle are still present during the 2001 until 2018. This timeframe is when the charisma of the presidents was not available and thus these ratings had to be determined.

Table 8: Mean monthly returns per party, 2001-2018

Table 8 compares the mean monthly excess returns between each party, Republicans and Democrats and presents whether the difference between the mean return from a democrat with the mean return from a republican is significantly higher than 0.

	Mean return Democrat	Mean return Republican	Difference	P-value
	1,36%	-0,24%	1,60%	0,0029
Observations	98	119		

Table 8 demonstrates that the democratic premium is still present during this period. Democrats tend to have on average 1.36% excess returns per month, while republicans have on average -0.24% excess returns in a month. A t-test was performed and the mean excess return from a democratic president is found to be significantly higher than from a republican.

Table 9: Mean monthly returns per half term, 2001-2018

Table 9 compares the mean monthly excess returns between each half of the presidential term and presents whether the difference between the mean excess return from the second half of the term and the mean excess return of the first half of the is significantly higher than 0.

	Mean return second half of term	Mean return first half of term	Difference	P-value
	0,30%	0,64%	-0,33%	0,7146
Observations	98	119		

Table 9 demonstrates that the presidential election cycle premium is not present during this time period. The mean excess return for the second half of the presidential term is 0.3%, while for the first term is 0.64%. A t-test was performed and it indicated that both mean excess returns are not significantly different from each other.

Two other models, based on the original market model, were ran to verify if there is a concentration of returns during the election month, November, and if the implementation of Quantitative Easing had any explicative power in the excess returns. An F-test was implemented to verify whether the addition of these variables improve significantly the original model.

Table 10: Regression output, robustness check for concentration and monetary policy

The regressions shown below models how monthly excess returns are affected by the term spread, default spread, monthly inflation, relative interest rate and whether the president is charismatic or not. The regression named Quantitative Easing adds an additional dummy variable which account for the periods where the policy was being implemented. The regression named Concentration of returns adds an additional dummy variable which account for the month of elections. An F-test was also performed to verify whether these regressions add any significative value for the model.

Variables/Models	Quantitative easing	Concentration of returns
Charisma	0 .003 (0.004)	0 .003 (0.004)
Term spread	-0 .008 (0.217)	0 .032 (0.211)
Default Spread	-0 .001 (0.581)	0 .006 (0.579)
Monthly inflation	-0 .039 (0.370)	-0 .033 (0.371)
Relative interest rate	0 .101 (0.337)	0 .105 (0.334)
Quantitative easing	0 .006 (0.008)	-
Election period	-	0 .005 (0.011)
Constant	-0 .002 (0.007)	-0 .003 (0.006)
P for F-test	0.1519	0.3843
R-squared	0.002	0.001

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 10 shows that both models for quantitative easing and concentration of returns do not present any significant variables. The main variables of interest, Quantitative easing and Election period, are not significant in their respective models. Besides that, the F-test indicates that the original constrained model and these other two are not significantly different.

The fourth robustness check was to verify whether charisma was a significant variable for explaining returns in other markets. In order to this, the same methodology employed for the modelling of the American market was used on the Dow Jones Industrial Average.

Table 11: Regression output, robustness check for the Dow Jones Industrial Average

The regressions shown below models how monthly excess returns are affected by the term spread, default spread, monthly inflation, relative interest rate and whether the president is charismatic or not. This regression considers the Dow Jones Industrial Average as a measure of robustness of the results.

Variables/Models	Dow Jones Industrial Average
Charisma	0.005 (0.004)
Term spread	-0.057 (0.199)
Default Spread	-0.689 (0.486)
Monthly inflation	-0.096 (0.356)
Relative interest rate	0.179 (0.324)
Constant	0.006 (0.006)
R-squared	0.010

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

As seen on the table 11 the Dow Jones Industrial Average, as well as the American market and its deciles portfolios does not have charisma as a significant variable for explaining excess returns.

The fifth robustness check performed was to verify whether if the charisma ratings were used, instead of the dummy variable, there would be any significance on their coefficient when explaining excess returns. As seen in appendix (table 12), charisma as a rating, thus continuous, is not a significant variable when explaining excess returns.

The last robustness check was to verify whether charisma had any effect on real returns, which are the monthly returns minus the monthly rate of inflation. The monthly inflation term is omitted from this regression due to it being part of the calculation of real returns. As seen in appendix table (13), charisma is not significant for the estimation of real returns.

5. Summary results

As evidenced by the models ran in this paper, the regressions for excess returns showed that both charisma and the joint variable charisma with term are not significant explanatory variables. Meaning that charisma might not the best explanation of the democratic premium and the presidential election cycle. For the 10% smallest companies, however, not being charismatic has an effect, on average, of a 1.80% decrease in the monthly excess returns, within a 90% confidence level. Due to the very poor fit of the models with the real data presented, the predictive power of the models is very low. As previously evidenced by Santa-Clara & Valkanov (2003) the democratic premium was present regardless of the control variables, in this paper it was also found that the control variables used are not significant for explaining excess returns.

The investment strategies ran when compared with buying and holding the market are either not significantly different from the it or underperform it. One of the reasons that this problem might arise is due to the fact that since the position can only be changed when there is a significant change in the presidential level of charisma. Since charisma levels are treated as a constant throughout the whole presidential term the position taken by the portfolio manager can only change when there is a shift in power.

When comparing the performance of between some of the strategies it was shown that there is a difference in abnormal returns from charismatic to non-charismatic presidents. Excess returns are significantly higher when the president is charismatic. The tests also show that going long in charismatic presidents in the first half of the presidential term retrieves a significantly higher return than going long on a non-charismatic president during his first half of the term. It is interesting to note that when comparing the returns from the second half of the presidential term between charismatic and non-charismatic there is no significant difference between them. This might indicate that charisma plays a bigger role in the economy during first half of the presidential term.

The robustness checks indicate that that there is a democratic premium during 2001-2018 but that there is not a term premium during the same time period. They also point that charisma is not a relevant variable for explaining real returns of the market and excess returns of the Dow Jones Industrial Average. It is found that charisma, both in its binary or continuous form is insignificant for explaining excess returns. The extended models, each taking in consideration the implementation of quantitative easing and a seasonality effect during the election month are not a better alternative than the original ones, according to a F-test.

6. Discussion and limitations

The main goal of this paper is to try to understand to what extent the democratic premium and the presidential election cycle anomalies can be explained with insights about charisma and leadership theory. It has found that charisma is not a relevant variable for explaining stock returns, however it seems that strategies that emphasize in charismatic presidents outperform the ones with emphasis on non-charismatic presidents. This could be traced back to the democratic premium, since the presidents which are more charismatic, tend to be democrats on average. As both charisma and the political party are correlated, it is difficult to interpret what is the cause of these abnormal returns, since there might be some reverse causality between these two factors. The joint variable charisma and term status is not a relevant variable for explaining excess returns. When taking in account possible investment strategies, it has been found that returns are significantly different in the first term when comparing charismatic with non-charismatic leaders. This might arise since in the second term the presidents will try to exercise less severe policies and boost the economy to enhance its odds of winning the next elections. Since in the first half of the term presidents need to follow their agenda more strictly, charisma might play a role as a signal to the market. The robustness checks performed also indicate that charisma is not a relevant explanatory variable in the Dow Jones Industrial average and that quantitative easing and election months do not affect excess returns.

Even though this paper failed to find that charisma is an underlying factor for explaining market excess returns, there are still many other implementations that could be used in order to develop better insights and increase the effectiveness of the models implemented. For

both models and investments strategies, another variable could be used to either replace or serve as a proxy to charisma. Since charisma is a categorical variable that can only switch every new election, it might not be the best variable for a dynamic model and an investment strategy. A good proxy for charisma which varies more frequently over time might be the historical approval rating of the presidents. The variation of charisma level within each party might also be an interesting topic to look at, if charisma the charisma level varies within the parties we can observe how the returns also change within those parties over time and if there is any significant difference between republicans and democrats. It is important to note that the charisma ratings attributed from 2001 until 2018, even though backed up by research, might be affected by representativeness bias. It is important to note that for the investment strategies and their underlying reasoning make sense, the charisma level must be defined prior to the presidential term, otherwise results might be biased.

7. Appendix

Table 12: Regression output, robustness check, charisma as a continuous variable

The regression shown below models how monthly excess returns are affected by the term spread, default spread, monthly inflation, relative interest rate and charisma level. This regression treats charisma as a continuous variable instead of a binary variable.

Variables/Models	Charisma as a continuous variable
Charisma level	0.002 (0.002)
Term spread	0.040 (0.212)
Default spread	-0.050 (0.598)
Monthly inflation	-0.093 (0.357)
Relative interest rate	0.061 (0.341)
Constant	-0.002 (0.006)
Observations	1,104
R-squared	0.002

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 13: Regression output, robustness check, Real returns regression

The regressions shown below models how monthly real returns are affected by the term spread, default spread, relative interest rate and whether the president is charismatic or not. The monthly inflation term is omitted from this equation due to it being part of the calculation of real returns.

Variables/Models	Real returns
Term spread	-0.037 (0.211)
Default spread	0.157 (0.570)
Relative interest rate	0.073 (0.335)
Charisma	0.003 (0.004)
Constant	-0.003 (0.006)
Observations	1,104
R-squared	0.001

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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