UNIVERSIDADE CATÓLICA PORTUGUESA

Presidential Puzzle

The case of Portugal

Final Work presented to
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by

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Resumo

A economia e a política já se provaram temas essenciais na sociedade atual, dependentes e, acima de tudo, bons preditores uma da outra. Por esta razão, não só parece correto, mas também adequado e importante estudar a relação entre ciclos políticos e ciclos económicos e os efeitos de cada um deles.

A presente dissertação visa estudar, em particular, a relação da bolsa de valores e a orientação política dos decisores políticos em Portugal (primeiro-ministro e Presidente da República) fazendo assim uma correspondência adequada entre o que podem ser as expectativas e o interesse popular e a investigação académica sobre a relação entre o partido político em funções e a rendibilidade das ações.

Para esse fim, foram utilizadas regressões lineares (usando a técnica de estimação OLS) onde é analisada a significância da orientação política do primeiro-ministro português nos retornos (reais e em excesso) da bolsa Psi 20. Nesta regressão, consideraram-se algumas variáveis macroeconómicas que podem e são prováveis afetar o mercado das ações e as suas rentabilidades bem como fatores políticos que podem afetar a estabilidade e as decisões dos governantes.

Os resultados do modelo empírico sugerem que não existe nenhuma tendência favorável a nenhum dos partidos que têm vindo a revezar o poder em Portugal nos retornos reais e nos retornos em excesso. Apenas quando se desconsideram as taxas de juro Euribor a 3 meses negativas poderemos afirmar que a orientação política do primeiro-ministro tem influência nos retornos e que estes são ligeiramente maiores sob liderança do Partido Social democrata.

Palavras-chave: Ciclos políticos, ciclos económicos, orientação política, mercado de ações, retornos reais, retornos em excesso.

Número de palavras: 5911

Abstract

Economics and politics have already proven to be essential subjects in today's society, dependent and, above all, good predictors of each other. For this reason, it seems not only correct but also appropriate and important to study the relationship between political cycles and economic cycles and the effects of each.

This dissertation aims at studying, in particular, the relation of the stock market and the political orientation of the political decision makers in Portugal (Prime Minister and President of the Republic), thus making an appropriate correspondence between what may be popular interest and expectations and the academic research on the relation between the political party in office and stock returns.

To this end, linear regressions (using the OLS estimation technique) were used where the significance of the political orientation of the Portuguese Prime Minister on returns (real and excess) of the Psi 20 is analysed. In this regression, we considered some macroeconomic variables that may and are likely to affect the stock market and its returns as well as political factors that can affect the stability and decisions of the governing bodies.

The results of the empirical model suggest that there is no bias in real and excess returns, in support of any of the parties that have been taking turns in power in Portugal. Only when disregarding the negative 3-month Euribor interest rates can we state that the political orientation of the Prime Minister has an influence on returns and that these are slightly higher under the leadership of Partido Social Democrata.

Keywords: political cycles, business cycles, political orientation, stock market, real returns, excess returns.

Word count: 5911

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Introduction

The phenomenon of Presidential Puzzle has been documented by Santa Clara and Valkanov (2003) where they find, contrarily to what would be expected, that in the United States under democrat (left wing party) leaderships stock returns are higher. The question that imposes is that if this is true for other countries with other political features and stock markets. For instance, (Cahan et al., 2005) find the opposite for a similar two-party democracy: It is under National (right-leaning) party governments that real stock returns are higher in New Zealand.

In an international dimension provided in (Bohl & Gottschalk, 2006), the results are not supportive of the hypothesis that the political orientation of the government on a country has an influence on excess stock returns.

These and other studies lead to thinking and it is only reasonable to assume that the possibility of governments ideologies impacting stock returns in a statistically significant way is country specific, that is, this impact, if any, is likely to depend on the political system, conditions, and ideologies of the parties in lead of that country. As a matter of fact, the policies of a left(right)-leaning government in one country may differ from those of a left(right)-leaning government in another country making clear that the relationship between political orientation and stock returns is a complex subject of study and can be influenced by a wide range of factors.

In the following dissertation an empirical study is conducted in order to evaluate whether in Portugal being governed by a left-wing Party (Partido Socialista) or a right inclined party (Partido Social Democrata) has any impact on the stock market of the country.

In chapter 1, a detailed literature review on previous international literature related to the relationship between economic and political cycles and the

Presidential Puzzle is presented as well as a theoretical framework on Portugal political system and history of governments formations.

The second chapter introduces the data and the econometric model used to test the hypothesis that the political orientation of the Portuguese government influences the stock returns on PSI (Portuguese stock Index- the main reference index of the Portuguese capital market). In this chapter, the data is described, explained and some statistics on them are presented for quick reference. Also, some notes about the econometric model and estimation procedure are given in order to help the reader understand the method and the motivation led to choosing it.

In chapter 3, a careful analysis and discussion is driven based on the results found in the study.

My final considerations and interpretations on the work topic, results and findings constitute the last section "Conclusion" of the present masters final Assigment.

Chapter 1
1. Literature Review

1.1 The Presidential Puzzle

(Pedro & Valkanov, 2003) is the work that this thesis is based on and they have found empirically that, in the USA, stock returns are higher under a Democratic presidency than under a Republican one (9 percent for the value weighted portfolio and 16 percent difference for the equal-weighted portfolio). To measure the correlation between returns and political variables they run the following regression:

$$r_{t+1} = \alpha + \beta\pi_t + \mu_{t+1}$$

where returns are denoted by r_{t+1} and the political variable by π_t. μ_{t+1} denotes the error term of the equation. The timing of the variables makes clear that the political variables are known at the start of the return period. They also conduct several tests concluding that these differences in returns are highly statistically significant.

In order to investigate these results and whether the difference in returns is due to a difference in expected returns or unexpected returns they followed 3 main different approaches: first they examine the relation between stock market returns and political variables using macro variables known to forecast the stock market as controls for business cycle fluctuations. They called this hypothesis the "proxy" explanation as the most natural explanation for the correlation between presidential-partisan variables and excess returns is based on a "proxy" effect

meaning that the presidential cycle might be merely proxying for variations in expected returns due to business cycle fluctuations since variations in returns have been previously associated with business cycles and business cycles fluctuations with political cycles. To test the proxy hypothesis, the authors augment the equation presented above as following:

$$r_{t+1} = \alpha + \beta\pi_t + yX_t + \mu_{t+1}$$

where X_t is a vector containing predetermined macroeconomic variables, associated with the business cycle and known to forecast the stock market: the log dividend yield (DPt), the term spread (TSPt), the default spread (DSPt), and the relative real risk-free interest rate (RRt). If political variables contain only information about returns that can be explained by business cycle fluctuations, then the coefficient β should equal zero.

In this method, they reach results even stronger than before, when they did not control macroeconomic variables and only considered the solo effect of the Presidency on returns. Surprisingly, after conditioning on X_t, the presidential partisan variables become even more significant indicating that the political variables have explanatory power for themselves. Following this strategy, the difference between Democratic and Republican presidencies is around 10 percent for the value-weighted portfolio and 20 percent for the equal-weighted. This difference is statistically significant and stable over different sample periods.

The second approach examines the hypothesis of the relationship between returns and the presidential-partisan cycle is concentrated around election dates and the authors found no significant evidence of stock price changes before, during or immediately after elections. What the authors claim to empirical study this hypothesis is that in case the difference in returns is due to a higher ex ante risk premium, a large movement in stock prices should be observed when the election winner uncertainty is resolved. As they did not observe this (to the

contrary, they find that the difference in returns grows gradually over the term of the presidency) we can say that the differences in returns were not anticipated by the market and were due to systematic surprises in economic policies.

Finally, in order to test the hypothesis that the higher realized returns under democratic presidencies might be a compensation for risk, the authors examine whether indeed risk is any higher under Democrats when comparing with Republican presidencies. They find that market volatility is actually higher under Republican presidents, contrary to the hypothesis, making it clear that a risk premium is not the justification. Moreover, an absolute monotonicity in the difference between size-decile portfolios under the two political regimes is observed.

Additionally, (Belo et al., 2013) indicate in their paper that the partisan return cycle is not only confined to small cap stocks, but also particularly evident for companies operating in industries with high exposure to government spending.

Although this is true for the USA, in other countries, it is under more right-wing parties that stock returns are higher and are expected to be higher by the investors. As a matter of example, (Cahan et al., 2005) examine in their paper whether the presidential puzzle is also present in New Zealand, which is quite different from the USA as it is one of the smallest two-party democracies with active freely functioning financial markets. The results of their study indicate that real New Zealand stock market returns are actually lower when the Labour (left-leaning) party is in office than under National (right-leaning) party governments. This conclusion is a clear contrast to the evidence found in the USA making it clear that the "presidential puzzle" does not transfer directly to other countries with two similar party democracies. (Booth & Booth, 2003) confirm previous findings that stock returns in the US exhibit a presidential cycle pattern, i.e. returns are significantly higher in the last 2 years than in the first 2 years of the presidential term. The authors attempt to examine if this presidential cycle

pattern can be explained away by the traditional business cycle proxies, namely the term spread (TERM), dividend yield (D/P), and default spread (DEF). They find that the presidential cycle has explanatory power beyond business conditions proxies showing to be important in explaining stock returns.

Also, (Bohl & Gottschalk, 2006) provide further studies to the subject of the presidential cycle effect by examining the question of whether the nexus between the stock returns and political variables holds beyond the United States. Particularly, they broaden the evidence available in (Pedro & Valkanov, 2003) and (Booth & Booth, 2003) to an international dimension and they examine the hypothesis of a democratic premium and a presidential cycle effect for 15 stock markets (USA, Canada, Australia, New Zealand, Japan, Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Sweden and UK) and two important features we should have in mind are:

1. Most countries in the sample do not operate under a presidential system (like the US) but under parliamentary or semi presidential systems where there are 2 important figures: the Prime Minister (or Premier) as the head of the government and a President (or Monarch) as the head of state.
2. The classification of governments as left or right-wing, in some countries, is not a straightforward and unambiguous question as it is in the USA.

The empirical results of these paper are very interesting: in what relates the democratic premium for the 15 countries individually and the panel (using excess stock returns) the coefficients of the political variable show themselves as statistically insignificant at the 10% level for 12 of the 15 countries considered; only Denmark, Germany and the US show a left wing premium making it possible to say that, in an international dimension, the finding of a left wing premium is an exception and not a rule. This fact means that the results found

are not supportive of the hypothesis that the political orientation of the government on a country has an influence on excess stock returns.

By regressing the second equation (where the authors study the direct link between stock markets and government cycles rather than the political orientation of the government) the majority of findings is not supportive of a presidential cycle effect in excess returns for 11 countries (out of the 15) the presidential cycle is not statistically significant. With the exception of Austria, Canada and the Netherlands, where the authors find some evidence of stock returns being higher in the second half of the government term, similar to the findings on the democrat premium there is no international evidence of a presidential effect in excess stock returns. In fact, Sweden, contrary to all other countries, exhibits significantly higher excess stock returns in the first half of the presidential term. Also, the results of the panel regressions confirm that the presidential cycle does not have the expected theoretical sign and is statistically insignificant.

(Bialkowski et al., 2007) use a sample of 24 OECD (Organisation for Economic Co-operation and Development) to investigate the influence of political orientation of the executive agent on local stock market fluctuations where the type of election they focus on depends on the type of political system the country operates in (presidential or parliamentary). After analysing 173 governments and presidencies they reach the conclusion that there are no statistically significant partisan differences in returns, regardless of whether the whole incumbencies or only election periods are considered. This study confirms that political preferences of stock market investors are likely to depend on the country-specific environments and simple generalizations fail to capture and understand the complexity of political effects on returns.

(Sy & al Zaman, 2011) study the presidential puzzle in a different but also interesting perspective where they test whether the return differential is

explained by risk using conditional versions of the CAPM (capital asset pricing model) and the three-factor pricing model (TFPM) in which the risk is allowed to vary across presidential cycles. This particular study brings two important contributions to the literature and understanding the phenomenon of presidential puzzle. First, they find that the systematic risk varies significantly across political cycles and for all but the largest sizes portfolio: Democratic presidencies are associated with a significantly higher market risk. After that, the authors investigate the hypothesis that the presidential premium is driven by exposures to the market, size and value factors. In the authors' test, the value effect does not appear to have considerable explanatory power for the presidential premium making them conclude that exposure to the value factor does not explain the phenomenon of stock returns being higher under democratic presidencies. The most interesting result of this study is the disappearance of the monotonically decreasing presidential premium with firm size when the condition TFPM is used. (Sy & al Zaman, 2011) show that the size factor (small minus big- SMB) is related to both the presidential cycle and the political environment and whenever republicans are in power SMB is, on average, negative although statistically insignificant whereas when democrats control simultaneously the White House, the House of Representatives and the Senate SMB is reliably and consistently positive. The increased default risk for small businesses when democrats hold the presidency explains the positive size factor.

With an interesting perspective, (Wisniewski, 2016) in his paper raises the question of reverse causality, that is, if stock markets are able to affect political outcomes. Since it has been long recognized that people's voting behaviour is influenced by past economic performance (Fair, 1996) it is only reasonable to assume that the parties would be able to take credit for stock market booms and also be blamed for crashes in the market. For example, (Döpke & Pierdzioch, 2006) document in their paper that is indeed the case in Germany where the

government popularity seems to be driven by excess stock returns. Naturally, voters may not only assess politicians by looking at past economic events and market performance but may also reflect on the future consequences of their actions as recognised by (Mackuen et al., 1992) and (Erikson et al., 2000). It appears that investors' gains and expectations about their returns are closely linked to an incumbent's popularity and likelihood of a re-election. However, most of the existing models fail to recognize the possibility of a bi-directional feedback loop between politics and stock prices. This topic may be an interest topic to explore in future research about the relationship between stock markets and political decision-makers.

(Pástor & Veronesi, 2020) have presented a theoretical justification for the puzzle. They develop a model of political cycles and time-varying risk aversion in which they argue that the return gap is not explained by what presidents do when they are elected (as it would be tempting to think when we think about the economic policies the parties defend) but rather by when they are elected. They reach an interesting conclusion that may be very useful to "solve" the presidential puzzle: When risk aversion is high, voters are more likely to elect a democratic President because they demand more social insurance and high compensation for risk (which they earn in the form of higher average returns) whereas, when risk aversion is low, a Republican president is more likely to be elected as the voters wish to take more business risk. Historical data of presidential elections in the US confirms this phenomenon. To strengthen this electoral pattern, (Wright, 2012) shows that, from a voting perspective, Democrats benefit from unemployment even when they are in control.

1.2. Portugal Political System

Regarding the Portuguese political system, Portugal is a semi-presidential regime meaning the power is balanced between the Prime Minister (Head of the Government), President and the Assembly. However, a growing power of the prime-minister due to the reorganization of the executive and the governmentalization of parties (Neto & Lobo, 2009) has been identified leading to a decrease on the President's power who maintains important features such as the legislative veto power, the power to refer legislation to the Constitutional Court and the power to dismiss the Assembly and the government, in exceptional circumstances to "ensure the regular function of the democracy".

According to the Portuguese Constitution, the President of the Republic is elected by universal, direct and secret suffrage of Portuguese citizens registered as voters in the national territory for a term of 5 years and can be re-elected for one term. In Portugal's Presidential elections, the candidate who obtains more than half of the validly expressed votes gets elected, blank votes not being considered as such. If none of the candidates obtains this number in the first round of voting, there will be a second round, in which only the two candidates with the most votes will run.

The Assembly of the Republic is currently composed of 230 Members. The Members are elected by lists presented by parties, or coalitions of parties, in each electoral circle[1] for terms of 4 years, this period corresponding to a Legislature. The Prime Minister is appointed by the President by considering the legislative election results for the Assembly and after hearing the parties and the number of terms a Prime Minister can be appointed has no restrictions.

[1] One circle for each administrative district on the Continent, one circle for each of the Autonomous Regions, one circle covering the entire territory of the European countries and other countries.

As what concerns the governments of Portugal history, two parties have dominated the formation of Governments: Partido Socialista (PS), a member of the group of the Progressive Alliance of Socialists and Democrats in the European Parliament and Partido Social Democrata (PSD), a member of the European People's Party. Also, CDS-PP (member of the European People's Party) has played an important role in governments in Portugal as they had in charge several ministers through coalitions with PSD.

In the period of January 1999- December 2022 (sample object), the left-wing party (PS) has dominated the government formations having governed 201 months (out of 288) of the last 24 years.

In terms of history, the presidency of Portugal has been relatively balanced between left wing and right-wing inclined presidents, but lately right-wing inclined president have been more often in power. From January 1999 until December 2022, 203 observations belong to a right-wing President and only 85 months of left-wing Presidency are observed in the data.

Chapter 2
2. Method

In order to evaluate the existence of the Presidential Puzzle in Portugal, the econometric model presented below in this dissertation was developed. The objective is to study the explained variable, the Psi20 stock market returns, as a function of the political orientation of the prime minister in office (explained variable) and, at the same time, control a set of economic and political factors that are likely to affect the returns: the term spread, the homologous growth rate of the Gross Domestic Product, the euro short term rate, a variable that contemplates the existence of the cohabitation of the political orientations of the prime minister and the president of the republic and finally, a variable that indicates whether there is a parliamentary majority of the political force in government or not.

The sample of this study contains 288 observations from January 1999 until December 2022 (24 complete years) across 201 months of socialist leadership and 87 months of PSD governments and for the purpose of conclusions, the following statistical regression was run:

$$(1)\ r_t = \beta_0 + \beta_1 PartyinPower_t + \beta_2 TermSpread_t + \beta_3 GDPVar_t + \beta_4 strEonia_t + \beta_5 ParliamentMajority_t + \beta_6 CohabitationPMPR_t + \varepsilon_t$$

Where r_t denotes the returns (excess and real) on time t and $PartyinPower_t$ $TermSpread_t$, $GDPVar_t$, $strEonia_t$, $ParliamentMajority_t$ and $CohabitationPMPR_t$ are the political and control variables described in the next chapter. Under the null hypothesis, that political cycles have no effect on stock returns and the political variable contains only information about returns that can be explained by business cycle fluctuations and political factors H_0 is given by $\beta_1=0$.

2.1 Data

For clarity and simplicity, the data incorporated in the econometric study is categorized into 3 subcategories: A) Financial Variables, B) Political Variable and C) Control variables and table 1, 2 and 3 display summary statistics on them for reference.

A) Financial Variables

The financial variables were the returns for the PSI 20 stock market obtained from trading economics, the inflation obtained from BPstat (the official statistics portal of Banco de Portugal), and the 3-month Euribor rate, considered to be the most important reference rates in the European money market and obtained from Euribor-rates.eu.

To improve the accuracy of our model the log of the returns, the log of inflation and the log of the Euribor3month rate are used making it possible to base the study on real and excess returns. The real returns are obtained by subtracting the log of inflation to the log of returns whereas the excess returns are calculated by taking the difference between the log of returns and the log of the 3-month Euribor Rate.

Since Returns, Inflation and the 3-month Euribor rate may assume negative values, we couldn't just take the logs of these values. So in order to base the study in logarithmic forms, both the log of returns and inflation are computed via the ratio of prices by the formula: log (Pt/Pt-1) = log P(t)- Log (Pt-1). For inflation, the monthly Consumer Price Index for all items for Portugal obtained from FRED economic data is used.

In the case of the 3 month Euribor rate we followed 2 approaches:

1. Take the log directly and proceed the study with missing values whenever the 3-month Euribor rate was negative. In this procedure we lose 87 observations.

2. Add a constant value to the Euribor rate prior to apply the log. This technique seeks to turns all the observed data into positive values making that the log(Eur3month) = log (Eur3month + a). I made a = 0,005720001 so that min(Y+a) would be a very small positive number and ended up with min(Y+a) = 0,000000001.

B) Political Variable

The political variable is defined as $DPartyinPower_t$ in the model and constitutes a dummy variable that assumes the value 1 if PS is in office at time t and 0 otherwise (PSD is in charge in that moment). This choice is obviously motivated by the fact the Portugal has always been governed by one of these two parties and the arguing that policies and ideologies regarding corporate and personal income, taxation, government spending and social benefits are different under PS and PSD administrations. The information about the prime-minister in office and his political orientation were collected from the República Portuguesa website.

C) Control variables

The control variables used to control the business cycle fluctuations and political factors in the model were:

- The term spread calculated by the difference between the 10 and 2 years government bonds yield and obtained from BPstat.
- The growth rate same period previous year of the Gross Domestic Product in Portugal, Quarterly, Seasonally Adjusted obtained from FRED Economic Data
- The euro short term rate (previously called EONIA) and considered to be the risk-free rate for the euro area acquired from BPstat.
- A dummy variable regarding information about the cohabitation of the political orientations of the Prime Minister and the President of the Republic

that takes the value 1 whenever the Prime Minister and the President in power share the same political orientation (right or left) and 0 otherwise

- A dummy variable holding information about the form of the Portuguese parliament at time t. This variable takes the value 1 if there is a parliament majority of a single party or coalition of parties and 0 otherwise.

The first three are macroeconomic variables proven to be associated with the business cycle and known to forecast the stock market so their inclusion in the model is uncontroversial and indisputable to reach precise results about the effect of the political orientation of the government in the stock market returns.

The last two indicator variables are political factors that we found important to be considered when studying the subject given that both, the fact the 2 figures of the state share the same political orientations and the existence of parliamentary majority, may have an influence on political stability and political decisions. It is worth noting that Portugal operates under a unique semi-presidential regime where power is balanced between the prime-minister (head of the government),president and the assembly. Thus, we considered it essential to account for all of these features in our model.

Table 4 provides an overview of the history of governments formations in Portugal within the data and its corresponding party affiliations and figure 1 shows the average of returns for each government term between January 1993 and December 2022. Both the maximum and minimum average return in the data range belong to a socialist government.

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Return	-0,0826%	-0,0550%	0,0533	-20,8200%	18,2400%
Inflation	2,0236%	2,1000%	0,0188	-1,7000%	10,1000%
GDPVar	1,1111%	1,5285%	0,0386	-17,7803%	17,0287%
EURIBOR3m	1,5062%	1,0360%	0,0178	-0,5720%	5,2910%
TERMSpread	1,4663%	1,5700%	0,0126	-5,8200%	4,0000%
strEonia	1,3045%	0,4896%	0,0171	-0,5850%	5,0642%

Table 1. Summary Statistics on numerical variables

Parliament Majority	Frequency	%
0	88	30.56
1	200	69.44
Cohabitation PM/PR	**Frequency**	**%**
0	184	63.89
1	104	36.11

Table 2. Frequency table on the indicator variables

Returns by Party in Power				
DPartyinPower	**Mean**	**Median**	**Minimum**	**Maximum**
PS	-0,0627%	0,1200%	-20,8200%	18,2400%
PSD	-0,1284%	-0,2100%	-16,5600%	11,2400%

Table 3. Returns by Party in Power

Government	Period of government	Prime Minister	Party Affiliation
XIII	Nov 1995 - Oct 1999	António Guterres	PS
XIV	Nov 1999- May 2002	António Guterres	PS
XV	June 2002- July 2004	Durão Barroso	PSD + PP
XVI	Aug 2004- March 2005	Santana Lopes	PSD + PP
XVII	April 2005-Oct 2009	José Sócrates	PS
XVIII	Nov 2009- June 2011	José Sócrates	PS
XIX	July 2011-Oct 2015	Pedro Passos Coelho	PSD + CDS PP
XX	Nov 2015	Pedro Passos Coelho	PSD + CDS PP
XXI	Dec 2015- Oct 2019	António Costa	PS
XXII	Nov 2019- Jan 2022	António Costa	PS
XXIII	Fev 2022- YYYY	António Costa	PS

Table 4. Governments of Portugal and party affiliations

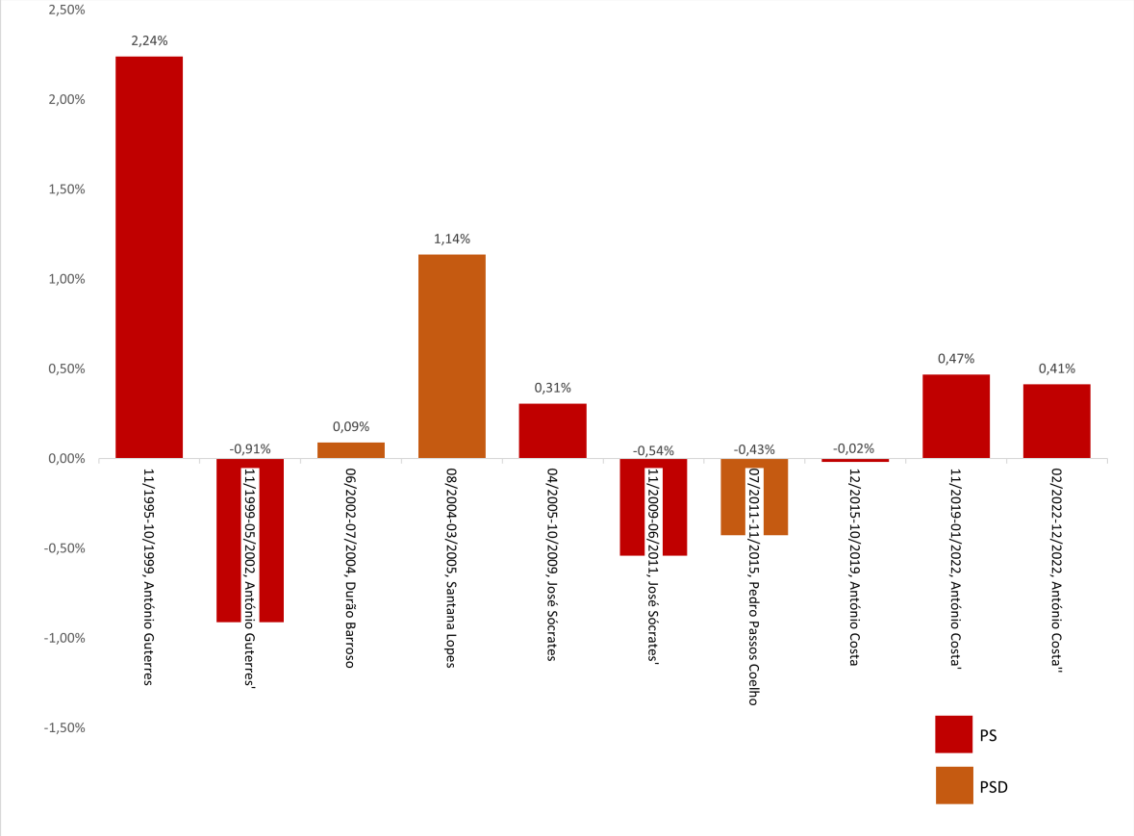

Figure 1. Average Returns per term of Portuguese Government

3. Results

Table 5 displays the results for the coefficients and p-values, in parenthesis, of the independent variable PartyinPower$_t$. The final results of the statistical regression are presented in Table A1, which can be found in the appendices section.

		PartyinPower				
		Term Spread	**GDP Variation**	**Euro Short Term Rate**	**D Majority Parliament**	**D CohabitationPMPR**
		x	x	x	x	x
Real Returns	Observations	288				
				-0,0035606		
				(0,695)		
	R-squared	0,0058				
Excess Returns Using transformation of the Euribor rate	Observations	288				
				0,0696231		
				(0,688)		
	R-squared	0,6415				
Excess Returns Using Missing Values	Observations	201				
				-0,2526296		
				(0,006)		
	R-squared	0,8421				

Table 5. Coefficients and p-values of the Dummy PartyinPower

Based on the results presented in table 5, we can conclude there is no statistical evidence on the political orientation of the government of Portugal having an influence in real and excess returns. In both cases, real returns and excess returns using the transformation of the Euribor rate explained before, the explained indicator variable has no statistical significance.

Only in the case where the negative 3-month Euribor rates are disregarded we find that, on average, under PSD government excess returns are 0,25 % higher than under PS governments holding all the variables constant.

In fact, we obtain quite interesting and intriguing results for the regressions, which are somewhat challenging to interpret. For instance, when examining real returns, the only variable that seems to have explanatory power to explain the returns is the term spread. However, in excess returns using the logarithmic

transformation we observe statistical significance for all variables other than the Party in Power. When excluding negative Euribor rate values from the excess returns analysis, we observe statistical significance for all variables and, except for the euro short term rate, a positive correlation between the explanatory and explained variables.

4. Discussion

Considering the outcome of the analysis and regression we cannot state that the Presidential Puzzle is a reality in Portugal undoubtedly, given that we only found statistical significant evidence on excess returns using the missing values strategy.

Therefore, we can state that the stock returns of the Portuguese stock Index are explained by other factors than the political orientation of the prime-minister and we cannot establish a clear and statistically valid relation between them. In fact, in the case of the excess returns using the log transformation of the Euribor rate we find that the returns are explained by all the other variables used in the study except for the political orientation of the prime-minister and in the analysis conducted for real returns only the term spread is statistically significant.

The findings of the conducted study suggest that we cannot draw a conclusive match between Portuguese voters' popular expectations regarding which party is more favourable for stock market investing and academic research. It is highly likely that the impact of the political orientation of a government on stock returns is country-specific and the phenomenon of the "presidential puzzle" does not transfer directly to other countries. However, it is important to note that our study does have some limitations. There is a possibility that the differences between political parties are spurious, and the small number of governments included in the analysis may not be sufficient to produce statistically significant results. As a matter of fact, within the dataset, PSD has always governed under financial distress/emergency. This may potentially impact the findings and results of the investigation into the relationship between politics and economics in Portugal.

Besides, as stated by (Pedro & Valkanov, 2003) the mechanism through which political variables may impact stock returns are still not absolutely disclosure.

Our assumption is that if this impact exists, it is likely to be produced via fiscal and regulatory policies. Nevertheless, there is limited research conducted on the effect of fiscal and regulatory policies on the stock market.

In Portugal, parties cannot and should not take the credit or blame for higher or lower real and excess returns. Only if the economy shows positive values for the 3-month Euribor rate, the Social Democratic Party could use this as an advantage to gain electoral relevance and argue to investors that they would increase their returns if they formed the government. However, in the big picture, and taking into account the results obtained, this would be too bold of an argument considering the political and economic characteristics of the country.

Conclusion

My main motivation to work on the topic of the relationship between political and economic cycles in Portugal was both, my interest and passion about economics and politics and the intention to advance research in the political economics field in Portugal.

To do so, besides the detailed literature review on the Presidential Puzzle and the relationship between political and economic cycles presented in Chapter 1, an empirical study was conducted in chapter 2 where the econometric model and data are described and explained. In the model, we test the hypothesis that the political orientation of the Portuguese government influences the stock returns on PSI controlling for macroeconomic variables and political factors.

Transporting the international information such as the Presidential Puzzle evidenced in the United States and other studies and trying to apply it and convert it so it could fit the Portugal's specific political and economic features was challenging but imperative since the hypothesis of the governments ideologies impacting stock returns in a statistically significant way is country specific was established in previous international literature.

The study is conducted across 288 monthly observations from January 1999 until December 2022 (24 complete years) in which 201 months belong to a socialist leadership and 87 months of right-leaning governments. The results of the study make clear that we cannot establish a proper link between the real and excess returns and political orientation of the head of the Portuguese government. With the exception of the strategy where we do not consider the 3 month Euribor rates negative values for the excess returns calculation, the political orientation of the Prime Minister of Portugal does not affect the stock market performance of the country.

Further interesting studies to link the political and economic cycles may include to study the potential reverse causality between the Portuguese stock market and the political outcomes. Are the parties able to take credit and be blamed for stock market booms and crashes in Portugal?

Additionally, studies regarding political cycles and time-varying risk aversion of the electors, would significantly enhance the field of political economics in Portugal shedding light on potential patterns similar to the United States and other countries.

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Appendices

Variables	Real Returns	Excess Returns Using transformation of the Euribor rate	Excess Returns Using Missing Values
DPartyinPower1	-0,0036	0,0696	-0,2526***
	(0,0091)	(0,1732)	(0,0902)
TERMSpread	-0,5365**	-12,5985**	13,8462***
	(0,2699)	(5,1611)	(2,5266)
Euro Short Term Rate	0,1987	-79,2788***	-57,5970***
	(0,2040)	(3,8999)	(2,7007)
GDP Variation	0,0024	9,3030***	7,5085***
	(0,0870)	(1,6629)	(1,6806)
CohabitationPMPR	0,0017	-0,4609***	0,5431***
	(0,0077)	(0,1482)	(0,0715)
ParliamentMajority	-0,0024	-0,7705***	0,3002***
	(0,0083)	(0,1580)	(0,0948)
Constant	0,0094	6,3610***	4,8164***
	(0,0132)	(0,2525)	(0,1462)
Number of observations	288	288	201
R-squared	0,0265	0,6490	0,8468

The table presents the standard errors in parentheses and the asterisks denote the p-value. (*** denotes p<0.01, ** denotes p<0.05, and * denotes p<0.1).

TableA 1. Regression Results