**Electoral competition and the party politics of public investments**

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**Abstract**

When do political parties propose long-term investments? In theory, electoral competitiveness should be a key variable explaining parties' investment priorities: parties can be less responsive to voters' short-term priorities and overcome time inconsistencies when they are more likely to win the next election. The article gathers party statements about investments in education, environmental protection and technology and infrastructure from the Comparative Manifesto Project and uses a novel measure of electoral competitiveness. We find a linear positive relationship between parties' probability of entering office and the proportion of manifestoes allocated to statements about technology and infrastructure. However, statements about education are highest at high levels of electoral competitiveness: in contrast to other types of investments, parties propose more investments in education as a moderation strategy to maximize votes. Statements about the environment are affected by parties' ideology on the left-right axis rather than by electoral competitiveness.

Keywords: electoral competition; party politics; manifestoes; public investment

## Introduction

Fighting climate change, building the infrastructure for tomorrow's economy or adapting public finances to the challenges of an aging society all involve making sacrifices in the present to build a more prosperous future. Short-sighted governments will generally refrain from imposing these costs on voters. Rather, they will deliver policies offering visible and immediate benefits, postponing long-term investments indefinitely (Jacobs, 2016). How can governments reverse this tendency and prioritize long-term investments?

This article studies two political impediments to the implementation of long-term investments: voters' own preferences for policies benefiting themselves in the short term and a time inconsistency problem deriving from the fragility of governments' long-term commitments. If a government implements an investment whose benefits unfold only in the future, it risks losing office before the benefits of the investment materialize, reducing its incentives to implement it. Parties, voters and interest groups face a time inconsistency problem since they cannot know if the next government will deliver the specific investment or instead choose to reallocate it towards other purposes. Under such uncertainty, it is difficult for political parties to reorient public policies towards long-term investments.

This argument assumes that voters are myopic and prefer policies whose benefits unfold in the short term (Achen & Bartels, 2017). Political parties fearing for their survival in office should be more attentive to voters' preferences than parties that are almost certain to win the next election (Hobolt & Klemmensen, 2008). Thus, electoral competitiveness should influence parties' decisions to propose long-term investments. Political parties in safe electoral situations should be encouraged to invest in the future because they are less vulnerable to short-run voter dissatisfaction and more likely to stay in office to reap the benefits of a long-term investment (Jacobs 2016).

Power-sharing institutions imposing constraints on executive power also influence parties' incentives to propose long-term investments as they limit time inconsistency problems. In a power-sharing political structure, the government in power today is more likely to maintain a role in future governments or to remain a veto player which diminishes the likelihood of policy reversals. This reassures the party in power at time $t$ and the groups it represents that they will get a share of the benefits of a future-oriented reform at time $t+x$. Hence, power-sharing institutions help to break political uncertainty about future investments by "locking in" commitments (Jacobs, 2016; Lindvall, 2017). Thus, parties can solve the time inconsistency problem either when political institutions share power between multiple actors or when electoral competitiveness is low.

Relatively few studies analyze the effect of electoral competition on parties' positions (Abou-Chadi & Orlowski, 2016). Using time series cross sectional analysis of panels of OECD countries, we study the effect of electoral competitiveness on political parties' investment priorities. Electoral competitiveness is measured as "office probability": the likelihood that a specific party enters the cabinet at the next election (Cronert & Nyman, 2019). Policy positions about investments are calculated as a proportion of party manifestoes dedicated to investments in technology and infrastructure, education and the environment, the three most future-oriented categories in the comparative manifesto project (CMP).

We integrate two research traditions that have evolved separately; the policy myopia and policy moderation hypotheses (Cronert & Nyman, 2020). The myopia hypothesis proposes that investments should be lowest when electoral competition is the most intense and highest when a party is almost certain to win or lose the next election (Seiferling 2019). In contrast, the moderation hypothesis suggests that parties use investments, which are valence issues, to moderate their platform in order to maximize votes when electoral competition is high (Abou-Chadi and Orlowski 2016).

Statements about technology and infrastructure face clear intertemporal trade-offs as they offer relatively few short-term benefits; we find that their proportion increases linearly with office probability. In contrast, statements about education are highest when electoral competition is the most intense, as they can be part of parties' moderation strategy to maximize votes in situations of fierce electoral competition. There is no relationship between office probability and statements about the environment. In contrast, they are associated with left-wing ideology as they necessitate a significant expansion of the state's degree of intervention in the economy (Farstad, 2018).

Another contribution of the article is to integrate electoral competitiveness to the study of power-sharing institutions, while most studies about the determinants of long-term investments focus on one or the other. We innovate by modelling an interaction model showing that electoral competitiveness has no effect on investments in a political system characterized by a high degree of political constraints on the executive. These power-sharing institutions help to "lock in" policy commitments, limiting parties' time inconsistency problems regardless of the degree of electoral competitiveness they face.

The article is divided in four sections. The first section discusses the concept of long-term investments and presents the theoretical perspective about the constraints against their implementation, while the second section considers measurement issues. The third section presents

the regression results, while the fourth section discusses the consequences of the findings for the prospects of long-term investments in advanced democracies.

## Theory.

### *Conceptualizing investments*

The notion of social investment is at the forefront of the "electoral turn" in comparative political economy (Beramendi, Häusermann, Kitschelt, & Kriesi, 2015). This perspective is interested in the policy coverage of social risks faced by different constituencies. Social investment, which includes education, childcare and active labour market policies, tends to cover new social risks, prevalent among women, the youth and labour market outsiders, while social consumption covers old social risks, like aging, illness and income losses and is preferred by male industrial workers. In the "electoral turn", preferences for investment and consumption are largely driven by material interests and parties are mere agents of the policy preferences of the constituencies they represent and aim to attract. The notion of investments' intertemporal trade-off is largely absent from this perspective.

In contrast, a temporal conception of investment highlights the importance of intertemporal trade-offs: investments involve discounting the present in order to boost capital accumulation in the future, whereas consumption generate immediate gains for voters. Funding an investment involves higher taxes or lower consumption in the present; a government prioritizing investments discounts present benefits for future gains (Jacobs, 2011; Lindvall, 2017; Wang, 2018). As such, the implementation of investments may be politically more challenging than the enactment of policies with clearer short-term benefits.

Different types of investments are characterized by distinct degrees of intertemporal trade-offs. Social investments in education offer clear benefits to defined constituencies such as students, teachers and parents and are appealing to educated middle-class voters (Garritzmann, Busemeyer, & Neimanns, 2018). Investments technology and infrastructure offer fewer short-term benefits and their positive impact takes time to unfold. Even if infrastructure investments can be used during a recession to boost the economy, governments cannot quickly implement a large-scale infrastructure project, which reduces its short-term appeal. While infrastructure investments can reward geographically targeted constituents, they offer visible and short-term benefits mostly to constituencies living close to the physical investment project. Moreover, social investments resemble a private good with clear benefits

for individuals, while investments in technology and infrastructure are similar to public goods with diffuse, long-term benefits. This is reflected in the relative popularity of education and infrastructure investments: while the retrenchment of education investments lowers public support for the government, retrenchment of infrastructure investments do not (Hübscher, Sattler, & Wagner, 2020). Finally, environmental protection is also a long-term investment, but it involves an even clearer cost imposition in the short term than the two other types of investments (Finnegan 2019).

*Intertemporal trade-offs and political uncertainty: the impediments to investments.*

Two factors make it particularly difficult to overcome intertemporal trade-offs for democratically elected policymakers: voters' own preferences for policies offering immediate rewards and a time inconsistency problem deriving from the fragility of governments' long-term commitments (Jacobs, 2016; Lindvall, 2017).

Voters' short-termism and politicians' willingness to respond to voters' preferences are the first impediment to long-term investments. Citizens have poor information about policies, tend to be impatient and prefer immediate rewards to long-term gains (Achen & Bartels, 2017; Wang, 2018). Thus, long-term investments are not the average voter's preferred policy since they involve the imposition of short-term costs (via higher taxes and/or lower spending in the present) (Jacobs & Matthews, 2012; Wang, 2018). For example, voters are signalling their own short-sightedness to governments as they reward immediate relief after a catastrophe rather than investment in preparedness to future shocks (Healy & Malhotra, 2009). Reflecting what they perceive as voters' short-termism, governments often engage in political budget cycles, lowering taxes and increasing visible public transfers before an election, to the detriment of long-term investments (Philips, 2016).

For a long time, political scientists have proposed that the degree of electoral competitiveness should moderate governments' incentives to engage in political budget cycles or to prioritize the short term (Tufte, 1978). Governments facing hotly contested elections tend to implement vote-seeking strategies (Abou-Chadi & Immergut, 2019) and are more likely to prioritize short-term policies to please impatient voters (Franzese, 2013). Indeed, governments' responsiveness to voters is higher in more competitive settings (Powell, 2000). Assuming that citizens are myopic, the more a government must be responsive to voters, the more it will prioritize policies beneficial in the short term. If governing parties enjoy a large lead in the polls, they are less likely to lose the next election and are

thus less vulnerable to voter dissatisfaction. Hence, incumbent governments with good electoral prospects should be more likely to invest in the future (Jacobs, 2016).

In contrast to the electoral turn in comparative political economy, we assume that parties aren't simply office-seeking and directly responsive to voters, they are also policy-seeking and should have better information about policy consequences than voters (Wenzelburger & Zohlnhöfer, 2020). They are thus more likely than voters to prefer long-term investments which benefit society as a whole and contribute to future growth. The degree of electoral competitiveness should moderate how much parties can focus on policy rather than vote-seeking objectives.

The relationship between electoral competition and investments can take three forms, depending on how parties are expected to perceive their own incentives: it can follow a U-shaped, an inverted U-shaped or a linear relationship. A theoretical perspective based on voters' myopia implies a U-shaped relationship between electoral competitiveness and investments. Governments' incentives to respond to myopic voters are highest when electoral competition is strongest. As such, investments should be higher when a government is very likely to win or to lose the next election, while they would be lower when the probability of victory of the incumbent government approaches 50%. Seiferling (2019) finds that governments facing very competitive elections tend to produce higher budget deficits, while deficits are lower for governments that are very likely to win or lose the next election.

This U-shaped relationship between electoral competition and investments should hold if voters' myopia is the only factor motivating parties to implement long-term investments. However, time inconsistency problems also impede investments: even if a government has the courage to extract resources from constituents to invest in a long-term policy, it might lose office and the next government could divert the investment to other purposes. For example, if a government introduces a new tax today to pay for an investment whose benefits unfold beyond the current electoral term, voters may punish this government for the new tax and throw it out of office. The next party in office will benefit from the outcome of the investment, without incurring its costs. Thus, unless a government is convinced that it will reap the benefits of a long-term investment, it maintains a relatively short time horizon (Besley & Coate, 1998). Moreover, to implement a long-term investment, a government needs to credibly commit to voters and to interest groups: they must believe that the sacrifices they make in the present will be paid off by the returns of the investment (Jacobs, 2011).

Weak electoral competitiveness creates situations of electoral safety, as governments are more likely to stay in power and can commit more easily to deliver long-term policies to voters. Thus, electoral safety contributes to a credible commitment mechanism and should favour long-term

investments. In contrast to the myopia hypothesis suggesting that parties are forward-thinking if they are very likely to win or lose elections, the lack of credible commitment involves that parties should propose fewer investments when they are likely to lose the next election. This perspective based on credible commitment mechanisms suggests a linear relationship between electoral competitiveness and investments: the more a party is likely to win an election, the more it should propose investments. Hobolt and Klemmensen (2008) find support for this argument as they show an inverse linear relationship between governments' popularity and their likelihood to seek to please voters. Finnegan (2019) finds that gasoline taxation, a proxy for investments in environmental policies, is higher when politicians are insulated from voter punishment.

Another research tradition emphasizes how electoral competitiveness produces policy moderation rather than policy myopia (Abou-Chadi and Orlowski 2016; Abou-Chadi and Immergut 2019; Cronert and Nyman 2020). It assumes that when parties know they will win the next election, they can put more emphasis on the preferred policies of their party activists, whereas they moderate their positions to maximize votes when elections are very competitive. Abou-Chadi and Orlowski (2016) find that electoral competitiveness produces policy moderation in large parties' manifestoes, while Cronert and Nyman (2020) find that electoral competition leads to more moderate budget statements. In party systems characterized by issue competition (Green-Pedersen 2007), moderation should not only be reflected by a move towards the center from left and right parties, but also by an emphasis on valence issues, such as long-term investments.

Of the investments studied in this article, only education can serve a policy moderation goal, as it is the only popular valence issue. Investments in education and those in technology and infrastructure are valence issues: everybody agrees with better education or infrastructure and they represent growth strategies aiming to please a large proportion of voters (Kraft, 2018). However, the issue of the environment is more contentious. Climate change mitigation policies involve a direct imposition of costs on businesses and citizens and a significant increase in the state's intervention in the economy (Finnegan 2019). Farstad (2018) finds that manifesto statements about climate change are driven by parties' left-wing ideology and are not made salient by mainstream parties, suggesting that they do not represent valence issues. Their inclusion in party statements is more likely to please party activists than to be a vote maximization strategy to attract average voters.

Statements about technology and infrastructures are not an optimal vote maximization strategy as they offer relatively very few short-term benefits to a large proportion of voters. Rather,

they are a quintessential long-term investment characterized by intertemporal trade-offs and commitment issues that should be linearly affected by electoral competitiveness.

In contrast, statements about education are part of a social investment strategy pleasing several different constituents that parties of both the left and the right want to attract (Garritzman et al. 2018). Abou-Chadi and Immergut (2019) show that when they face strong electoral competition, left parties moderate their policy positions and attract new clienteles by implementing more social investments.

In brief, as part of a moderation strategy, education statements should be highest at mid-levels of office probability (when electoral competition is highest). In contrast, technology and infrastructure statements should be influenced by voters' short-termism and by time inconsistencies, suggesting a linear relationship with office probability. Finally, statements about the environment should be influenced by ideology rather than office probability. I thus propose the following hypotheses:

H1a. *There is a linear positive relationship between a party's office probability and its statements about technology and infrastructure.*

*H1b: There is an inverted U-shaped relationship between a party's office probability and its statements about education.*

*H1c. Statements about the environment are influenced by parties' left-right ideology.*

Electoral competition is not the only factor limiting time inconsistency problems. By reducing the likelihood of policy reversals, power-sharing institutions, such as institutional constraints on the executive, can also solve the time inconsistency problem. The government in power today is more likely to maintain a role in government in the future or to remain a veto player in a power-sharing political structure (Lijphart, 2012). This reassures the party in power today and the groups it represents that they are likely to get a share of the benefits of a future-oriented reform (Lindvall, 2017). The diffusion of power inherent to power-sharing institutions between multiple actors implicated in the policy process involves a more incremental pattern of policy making. It favours the implementation of new investments by breaking political uncertainty about future investments by "locking in" policy commitments (Lindvall, 2017).

This argument can be related to Lijphart's (2012) consensus model of democracy: it forces parties to learn to negotiate and it enhances policy stability by increasing the likelihood of reaching enduring compromises (Lijphart, 2012). In contrast, in systems concentrating power, parties constantly change their policy platforms to attract voters, which creates a discontinuity between

governments (Martin, 2015). Uncertainty concerning other parties' behaviour if they win elections decreases governments' incentives to pursue long-term strategies (Martin, 2015).

Thus, a party can "lock in" commitments and solve the time inconsistency problem either by being likely to win the next election, or if the political system shares power between multiple actors. We should thus expect a conditional effect of power-sharing on investment proposals: power-sharing institutions should dampen the effect of electoral safety on investments because they offer an alternative way to solve the time inconsistency problem. Electoral safety should thus have a stronger effect on investments in power-concentrating institutions.

*H2. Power-sharing institutions dampen the effect of electoral competitiveness on long-term investments.*

**Measurement and Modelling**

This study focuses on the propositions of long-term investments made by political parties in their manifestoes. There are several reasons for analyzing manifesto statements rather than policy choices choice. Firstly, there are very few adequate measures of investments available for a long period of time. Investments in gross fixed capital formation expressed as a proportion of GDP (Breunig & Busemeyer, 2012) and budget balance (Franzese 2013; Seiferling 2019) are the main measures of long-term investments used in the literature. The former is plagued by issues of between-country comparability since the inclusion of gross fixed capital formation in other policy categories depends on accounting choices. On the other hand, deficit reduction may not necessarily be a long-term investment, if for example, a balanced budget is achieved at the expanse of a significant reduction of long-term investments. In contrast, manifestoes represent clear statements of parties' intentions to propose more or less investments.

Secondly, manifestoes are well suited to analyze the impact of electoral competition on investments since both are measured at election periods. To our knowledge, no measure of electoral competition is available between elections. Thus, if we were to analyze how policy choices are affected by electoral competition, we would be forced to make arbitrary modelling decisions: should the degree of electoral competition of the previous election matter for a government's policy decisions at mid-mandate or should we assume that governments can foresee the degree of electoral competition they will face at the next election? Thirdly, with an analysis of party manifestoes, we can significantly

increase the number of cases and compare multiple parties competing at the same election with different probabilities of winning it.

The main drawback of the analysis of manifestoes is that unlike policy trade-offs, manifestoes do not impose direct costs on voters. Still, manifestoes also involve trade-offs at the party-level as they force them to make particular issues salient to the detriment of others that will be receiving less attention. In party systems in which issue competition rather the policy positioning becomes political competition's central concern (Green-Pedersen, 2007), parties that focus on future-oriented policy issues may lose votes to parties offering more tangible propositions to voters.

Consequently, this study uses parties' investment priorities in their manifestoes as a dependent variable, based on the Comparative Manifesto Project (CMP). The CMP codes parties' manifesto statements during an election into "quasi sentences" and assigns each of them to one of 56 categories. Parties are more likely to distinguish themselves on the salience they attribute to investments rather than on their position about them, since no party is against any of the investments we study. Thus, the dependent variable is constructed to take advantage of what the CMP does best: identifying the relative emphasis that parties put on different issues and providing a comparable measure of the salience of an issue (Gemenis, 2013).

We use three categories of the CMP to construct an additive investment priorities index reflecting the percentage of the statements of each party manifesto. It includes positive statements on technology and infrastructure (per 411), about environmental protection (per 411) and positive statements on education (per506), from which we subtract the (very rare) negative statements on education (per 507)[1]. We combine these three measures into an additive index, but we also analyze them separately since the three types of investments differ on their degree of intertemporal trade-off, their attractiveness to voters and because environment is not a valence issue.

Traditionally, researchers have used vote shares at the previous election to gauge electoral competitiveness, but this measure cannot adequately compare between party systems with differing vote-seat elasticity and number of parties. To measure electoral competitiveness at the party level, we use the measure of the probability of entering office of each party in OECD countries developed by Axel Cronert and Pär Nyman (2019). Their measure includes pre-electoral uncertainty (based on previous vote shares and on vote intention polls) and post-electoral uncertainty, which reflects the likelihood that a party succeeds in post-electoral bargaining, based on parties' coalition and

[1] The description of each statements and the calculation of the measures are provided in the online appendix.

incumbency history. The variable ranges from 0 (no probability of entering office) to 0.996 (certain to enter office).

Regarding the measurement of power-sharing institutions, we are interested in how institutions limit the likelihood of policy reversals and help to lock in policy commitments. The political constraint index developed by Witold Henisz is a pertinent measure of the extent to which a change in the preferences in one political actor can lead to a change in government policy. Henisz composes an index based on the number of independent branches of government with a veto power over policy changes, the presence of effective bicameralism, party alignments across government (whether or not the same party or coalition controls different branches) and the fractionalization of each branch of government. The data is available from the Quality of Government dataset. We interact the political constraints index with electoral competitiveness, expecting that electoral competitiveness exerts a stronger effect when political constraints are low.

We control for party-level and country-level variables that may influence both office probability and investment priorities. We calculate two measures of parties' ideology, one on the state/market dimension and the other on social values dimensions. Following common practice (Mölder, 2016), both indicators are constructed by subtracting the sum of the left-wing categories from the sum of the right-wing categories, in order to create an index ranging from -1 to 1, positive values being more left-wing. Extreme values on both dimensions may influence office probability. We control for traditional state-market positions, as we would expect that interventionist parties propose more investments regardless of the degree of electoral competitiveness they face (Boix, 1998). The state/market dimension uses categories such as welfare state expansion (limitation), free enterprise, economic incentives, market regulations and views on labour groups. We control for the social value dimension since parties attracting younger and more educated voters, who have more liberal social values, may propose more investments (Beramendi et al., 2015). The social value dimension is based on categories such as support for political authority, a traditional way of life, multiculturalism, and law and order.

In models including environmental protection as a dependent variable, we also control for a dummy coded 1 when the manifesto is issued by a Green party, since Green parties own the issue and have lower office probability (Spoon, Hobolt, & De Vries, 2014). To capture measurement errors in the coding of manifestos, we control for the share of uncoded sentences and for the length of the manifesto which tends to influence the range of topics addressed (Gemenis 2013).

In additional robustness checks presented in the appendix (table A3), we control for incumbency and mainstream party status, as Kraft (2018) propose that these parties propose more investments. We don't include them in the main analysis because they are multicollinear with office probability, but they allow us to rule out that the effect of office probability only reflects incumbency or mainstream party status. The results are similar when controlling for incumbency or mainstream party status.

At the country level, we control for economic conditions (GDP growth and unemployment rates) to capture business cycles, which may influence office probability and manifestoes' content. Moreover, since demand for public investment increases as economies become more globalized and service-oriented (Iversen & Soskice, 2019), we control for deindustrialization (measured as the share of manufacturing employment in total civilian employment) and trade openness to capture the level of globalization. Research has shown that public investments are particularly constrained by fiscal pressures (Breunig and Busemeyer 2012). Hence, we control for government debt and deficits as measures of fiscal pressures, which may also influence office probability. Finally, we control for electoral disproportionality: in majoritarian systems, parties have more incentives to provide geographically targeted investments in infrastructure (Breunig and Busemeyer 2012) and their office probability is more volatile (Kayser & Lindstädt, 2015). Summary statistics and references of all the variables are reported in the appendix (table A1).

There are 28 OECD countries in the dataset[2]. The party-level time series differ considerably; some are ranging from 1951 to 2017 and others are only appearing in the 1990s. The dataset is thus unbalanced and has a relatively short time series since units are observed only at each election. The sample size is relatively large (N=1688).

Theoretically, we expect a contemporaneous effect between the probability of winning an election and investment priorities. We include a lagged dependent variable since party manifestoes take previous policy positions as a starting point (Wenzelburger and Zohlnhöfer 2020) and are thus characterized by serial correlations. We cluster the error term by parties to correct for heteroscedasticity and serial correlation (Angrist & Pischke, 2008). The unit of analysis of all the

[2] These countries include all countries that are both available in the Cronert/Nyman and the CMP datasets. It includes Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

equations is party/election. Our main hypothesis assuming a linear relationship between office probability and investment statements is tested with equation 1:

$$Y_{it} = \alpha 0 + \beta 1 Y_{it-1} + \beta 2 X_{it} + controls_{it} + \psi_i + \tau + \varepsilon_{it} (1)$$

Where Y is a measure of investment priorities in a party manifesto, X is a measure of office probability observed at each election $t$ for party $i, \psi_i$ is a country dummy and $\tau$ is a year dummy. The control variables can be both at the party and the country level.

However, since a model using a lagged dependent variable and country fixed effects may produce a Nickell bias when T is small (Plümper, Manow, & Tröger, 2005), we also present models without lagged dependent variables in the appendix (table A4). As another robustness check presented in the appendix (table A5), we include party fixed effects rather than country fixed effects but remove lagged dependent variables since their inclusion along party fixed effects catches too much of the variance[3].

Equation 2 presents a quadratic equation to model the U-shaped or inverted U-shaped relationships proposed by the myopia and moderation arguments:

$$Y_{it} = \alpha 0 + \beta 1 Y_{it-1} + \beta 2 X_{it} + \beta 3 X^2{}_{it} + controls_{it} + \psi_i + \tau + \varepsilon_{it} \quad (2)$$

The third model we present is a mixed effect model. We estimate equation 3, which is a cross classified hierarchical model with random intercepts for governments, countries and years (Garritzmann & Seng, 2019):

$$Y_{ict} = \beta 0 + \beta 1 Y_{ict-1} + \beta 2 V_{ict} + \beta 3 W_{ct} + \beta 4 X_{ict} + \beta 5 Z_{ct} + \beta 6 X_{ict} Z_{ct} + \tau + \omega_i 00 + \omega 0_c 0 + \omega 00_t + \varepsilon_{igct} \quad (3)$$

Where $Y_{ict}$ is the dependent variable, V is a vector of party-level variables, W is a vector of country-level variables, X is office probability at the party level and Z is power-sharing institutions at the country-level, $\omega_i 00$ is the party-level error term, $\omega 0 c 0$ is the country-level error term, $\omega 00 t$ is the

[3] It is worth noting that the impact of office probability on technology and infrastructure statements is still significant (at the p=0.1 level) even with both party fixed effect and lagged dependent variables.

time-level error term, $\varepsilon_{igct}$ is the idiosyncratic error and $\tau$ is time dummy. The estimation is done via restricted maximum likelihood (REML) to avoid biased confidence intervals in a small sample (Garritzmann & Seng, 2019).

**Results**

Table 1 presents the results of models predicting investment priorities. Models 1, 4, 7 and 10 use only party-level controls, while models 2, 5, 8 and 11 add country-level controls. Models 3, 6, 9 and 12 present quadratic relations with office probability and its square, based on equation 2. Model 1 reveals that office probability has a positive effect on the measure combining the three investment categories, but the effect is not robust to the inclusion of country-level controls (model 2), as controlling for deficits and deindustrialization dampen the effect of office probability. The effect of office probability on the three categories index of investment priorities (models 1 to 3) is driven mostly by statements about technology and infrastructure. Office probability exerts a significant positive effect on statements about technology and infrastructure in models 4 and 5 (with and without country-level controls).

As shown in the appendix, this result is robust to controlling for incumbency status, to the inclusion of party fixed effects and to removing the lagged dependent variable. Models are also robust to the exclusion of extreme values on the dependent variable and to the use of a jackknife technique removing one country at a time. One could be concerned with reverse causality affecting these results: changes to investment statements may affect office probability if voters react to manifestoes. To assess this issue, I run a Granger reverse causality model (Sargent, 1976) by running a regression model using the dependent variable at time t-1 to predict the independent variable at time t. None of the models shown in the appendix (table A6) reveal that any of the investments measure at T-1 influence office probability.

Models 10 and 11 show that office probability has a negative effect on statements about the environment, but the results are not robust to controlling for incumbency status or to including party fixed effects, as shown in the appendix. To explore this relationship, an interaction model presented in the appendix (figure A2) reveal that office probability decreases the proportion of investments only among non-right-wing parties, suggesting small left-wing parties are those most likely to propose high proportions of statements about the environment, while non-right-wing parties propose fewer statements on the environment as they become more mainstream and have higher office probability. Unsurprisingly, left-wing parties tend to propose more investments in the three categories combined,

but the effect is driven by statements about the environment, confirming Farstad (2018) findings. We can thus reject the null of hypothesis 1c.

**Table 1. Models predicting investments, including country and years fixed effects.**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Investment | | | Technology and infrastructure | | | Education | | | Environment | |
| Lagged dependent variable | 0.334*** | 0.277*** | 0.275*** | 0.265*** | 0.139*** | 0.129*** | 0.218*** | 0.122*** | 0.112*** | 0.515*** | 0.448*** | 0.446*** |
| | (0.0413) | (0.0504) | (0.0512) | (0.0371) | (0.0453) | (0.0438) | (0.0387) | (0.0400) | (0.0399) | (0.0570) | (0.0974) | (0.0967) |
| Office probability | 1.499** | 0.694 | 7.932* | 2.529*** | 2.490*** | 9.061*** | 0.211 | -0.0766 | 6.532*** | -0.635** | -0.914** | -3.033 |
| | (0.765) | (0.851) | (4.444) | (0.418) | (0.452) | (2.296) | (0.360) | (0.465) | (1.678) | (0.273) | (0.367) | (2.805) |
| Office probability$^2$ | | | -7.696* | | | -6.999*** | | | -7.069*** | | | 2.250 |
| | | | (4.341) | | | (2.460) | | | (1.803) | | | (2.922) |
| State-market | 2.026*** | 2.747*** | 2.931*** | 0.298 | 0.545* | 0.694** | 0.426* | 0.283 | 0.435 | 1.040*** | 1.605*** | 1.555*** |
| | (0.481) | (0.589) | (0.590) | (0.260) | (0.297) | (0.305) | (0.226) | (0.309) | (0.307) | (0.175) | (0.290) | (0.293) |
| Social values | 0.620* | 1.089** | 1.098*** | 0.532** | 0.681*** | 0.694*** | 0.0655 | 0.0802 | 0.0904 | 0.0888 | 0.308 | 0.304 |
| | (0.373) | (0.426) | (0.425) | (0.224) | (0.238) | (0.240) | (0.196) | (0.258) | (0.253) | (0.180) | (0.284) | (0.284) |
| Green party | -2.057*** | -2.815*** | -2.560*** | | | | | | | -0.735** | -0.919** | -0.998** |
| | (0.742) | (0.933) | (0.970) | | | | | | | (0.325) | (0.421) | (0.430) |
| Total length | 0.000529* | 0.000563* | 0.000505 | 0.000555*** | 0.000872*** | 0.000822*** | 4.02e-05 | 1.25e-05 | -3.94e-05 | 5.93e-05 | -0.000112 | -9.57e-05 |
| | (0.000303) | (0.000325) | (0.000320) | (0.000181) | (0.000190) | (0.000194) | (0.000134) | (0.000149) | (0.000152) | (0.000185) | (0.000247) | (0.000244) |
| Uncoded sentences | -0.114*** | -0.089*** | -0.088*** | -0.0475*** | -0.0360** | -0.0347** | -0.046*** | -0.0288** | -0.0278** | -0.032*** | -0.0305 | -0.0310 |
| | (0.0213) | (0.0331) | (0.0327) | (0.0110) | (0.0174) | (0.0171) | (0.00936) | (0.0133) | (0.0133) | (0.0110) | (0.0197) | (0.0198) |
| Deficit | | -0.171* | -0.172* | | -0.133*** | -0.134*** | | 0.0165 | 0.0158 | | -0.0868 | -0.0866 |
| | | (0.0934) | (0.0931) | | (0.0482) | (0.0486) | | (0.0436) | (0.0427) | | (0.0664) | (0.0664) |
| Disproportionality | | -0.0478 | -0.0346 | | -0.114 | -0.102 | | -0.143** | -0.131** | | 0.179** | 0.175** |
| | | (0.117) | (0.117) | | (0.0695) | (0.0686) | | (0.0621) | (0.0637) | | (0.0813) | (0.0818) |
| Deindustrialisation | | 28.01*** | 27.01*** | | 19.34*** | 18.57*** | | 6.045 | 5.057 | | 1.701 | 2.048 |
| | | (8.496) | (8.483) | | (5.377) | (5.333) | | (3.887) | (3.953) | | (6.132) | (6.178) |
| GDP growth | | 0.180 | 0.177 | | -0.0196 | -0.0223 | | 0.249*** | 0.246*** | | -0.0655 | -0.0651 |
| | | (0.146) | (0.147) | | (0.0804) | (0.0801) | | (0.0725) | (0.0729) | | (0.111) | (0.111) |
| Public debt | | 0.0157 | 0.0152 | | 0.00912 | 0.00869 | | 0.00354 | 0.00279 | | 0.00280 | 0.00290 |
| | | (0.0144) | (0.0142) | | (0.00927) | (0.00894) | | (0.00660) | (0.00674) | | (0.00748) | (0.00748) |
| Unemployment | | -0.0731 | -0.0798 | | 0.0494 | 0.0439 | | 0.0447 | 0.0396 | | -0.195 | -0.192 |
| | | (0.158) | (0.158) | | (0.0665) | (0.0659) | | (0.0683) | (0.0691) | | (0.120) | (0.120) |
| Trade openness | | -0.0312 | -0.0269 | | -0.00777 | -0.00417 | | -0.0119 | -0.00820 | | -0.0156 | -0.0168 |
| | | (0.0214) | (0.0214) | | (0.0132) | (0.0129) | | (0.0101) | (0.0103) | | (0.0127) | (0.0124) |
| Constant | 6.751*** | 3.487 | 3.902 | 0.963 | -3.255 | -2.954 | 2.586** | 1.149 | 1.587 | 2.821*** | 4.442 | 4.325 |
| | (1.443) | (6.037) | (6.009) | (0.677) | (4.075) | (4.013) | (1.044) | (2.444) | (2.483) | (0.654) | (3.573) | (3.630) |
| Observations | 1,338 | 1,049 | 1,049 | 1,338 | 1,048 | 1,048 | 1,338 | 1,049 | 1,049 | 1,338 | 1,048 | 1,048 |
| Number of parties | 200 | 178 | 178 | 200 | 178 | 178 | 200 | 178 | 178 | 200 | 178 | 178 |

Robust standard errors in parentheses

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

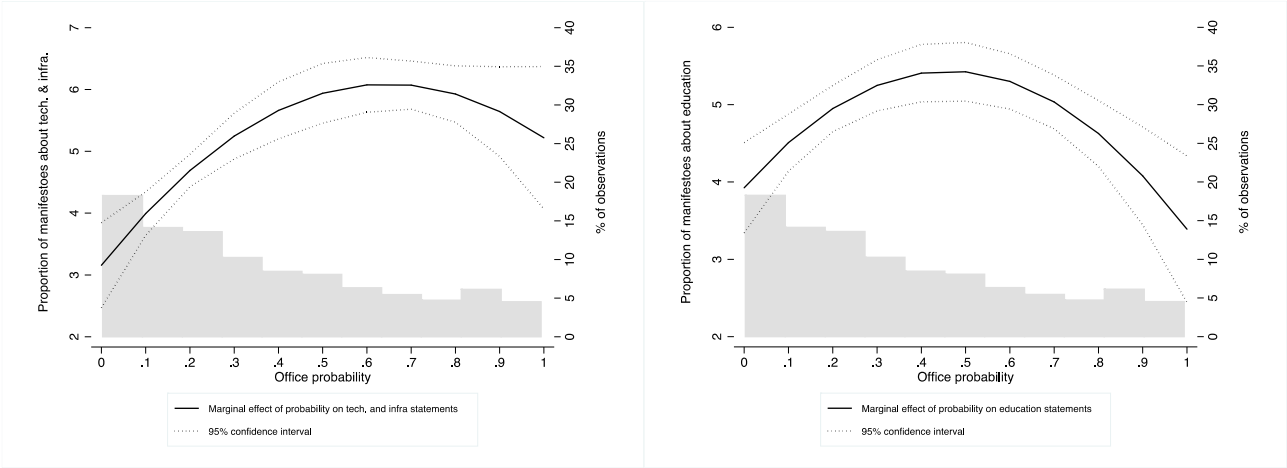
Office probability does not produce a significant linear effect on education statements, although model 9 reveals a quadratic effect (to be discussed below). These results suggest that office probability has a linear and significant effect only on technology and infrastructure, as predicted by hypothesis 1a, and a quadratic effect on both education and technology and infrastructure. In the appendix (figure A1), we show that the marginal effect of office probability on technology and infrastructure statements is significantly larger than any other variables.

Figure 1 presents the quadratic relationships between office probability, technology and infrastructure (left plot, based on model 6) and education (right plot, based on model 9), while the quadratic effect is not significant for the environment. As argued above, if the politics of investments is about electoral competitiveness forcing governments to be responsive to myopic voters, we should observe a U-shaped relationship in which investments are lowest when electoral competitiveness peaks (closer to a 50-50 probability of entering office). In contrast, if the relationship is based on policy moderation, we should expect higher investments when electoral competitiveness is highest. However, hypothesis 1a postulates a linear relationship since higher office probability should also limit time inconsistency problems.

The right figure shows that statements about education are highest when parties are facing the most severe degree of electoral competitiveness and lowest at high and low electoral competitiveness. This supports the moderation hypothesis (1b): statements about investments in education are useful vote seeking strategies in situations of competitive elections. In contrast, the left figure shows that the relationship between office probability and technology and infrastructure statements is almost linear, confirming hypothesis 1a, with more statements about technology and infrastructure when office probability is high and fewer statements at low office probability, with the highest level being reached at about one standard deviation above the mean of office probability (0.65). The large confidence intervals at high office probability reflect the small number of cases as there are fewer than 10% of observations above 0.8. The different relationships between the two figures can possibly be explained because technology and infrastructure are policies characterized by stronger intertemporal trade-offs as they offer fewer benefits in the short term to key voters than education. Figure 1 goes against the argument based on voters' myopia assuming that electoral competitiveness exerts a U-shaped effect on investments.

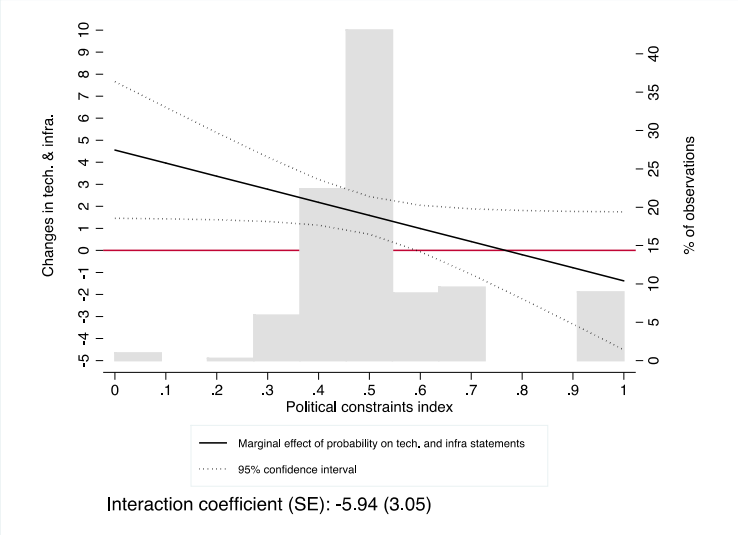
Descriptive statistics presented in the appendix (table A2) confirm that statements about technology and infrastructure increase linearly with office probability, while those about education are highest at mid-levels of electoral competition. Statements about the environment are highest at low levels of office probability, possibly because they are favoured by small left and Green parties.

**Figure 1. Quadratic regressions based on models 6 and 9.**




Based on equation 3, figure 2 presents the effects of office probability on investments, conditional on power-sharing institutions. We restrict the analysis of conditional models to statements about technology and infrastructure since they are the only ones that are linearly predicted by office probability (the table of the interaction models is presented in the appendix A7). The coefficient on the interaction is significant at p=0.052 and shows that the positive effect of electoral competitiveness on technology and infrastructure statements decreases as political constraints on the executive increase. Electoral competitiveness has a significant positive effect on investments when political constraints are below 0.58, which is for almost 80% of observations. The effect of electoral competitiveness is insignificant for the 20% of the sample with the highest degree of political constraints.

**Figure 2. Effect of office probability on technology and infrastructure statements, conditional on political constraints, mixed effect model.**



## Discussion and Conclusion

This study represents one of the first large N quantitative analyses of the effects of electoral competitiveness on parties' capacity to prioritize future-oriented investments. It contributes to the literature on the politics of long-term investments (Jacobs 2011; 2016). The distinction between different types of investment, the investigation of different functional forms of the relationship between office probability and investments (H1) based on two distinct research traditions (myopia vs. moderation hypothesis), as well as the modelling of a conditional effect (H2), are this article's innovations relative to Kraft (2018) study on the determinants of investments in party manifestoes.

We demonstrate that a party's likelihood of entering office is the best predictor of the prioritization of investments in infrastructure and technology in its electoral manifesto. The relationship between office probability and investment is linear, allowing us to reject the null of hypothesis 1a. However, this relationship is conditional on power-sharing institutions: political systems with a strong political constraints on the executive limit parties' time inconsistency problem regardless of the degree of electoral competitiveness they face.

Interestingly, investments in education and in environmental protection are not significantly affected by electoral competitiveness in linear models. Investments in education follow an inverted U-shaped relationship with electoral competitiveness: parties propose more education statements when elections are particularly competitive. This suggests that the politics of education is not dictated by inter-temporal trade-offs and voters' myopia. In contrast, parties use education investments to attract voters, and are more encouraged to do so when elections are very competitive than when they already know their fate at the next election. Thus, the relationship between electoral competition and statements about education confirm the moderation hypothesis (1b). Interestingly, while Abou-Chadi and Immergut (2019) showed that the left moderates its positions with social investments, our results suggest that putting the emphasis on education can also be used by any party to attract voters when elections are very competitive.

These results suggest that analysts must distinguish between different types of investments. In some cases, short-term electoral considerations may increase governments' likelihood of proposing policies producing benefits in the long term. We might find such a different relationship between electoral competitiveness and types of investments because the intertemporal trade-offs of investments in education are less acute than investments in infrastructure and technology, since the former provide immediate benefits to influential constituencies such as parents and teachers. The effect of office probability is linear and significant when a policy is characterized by a strong degree of intertemporal trade-off, like for infrastructure and technology investments.

The article has also analyzed the effect of electoral competitiveness on statements about the environment, which are not affected by office probability but are rather determined by parties' ideology on the state-market axis. Green parties' ownership of the issue of environmental protection can help to explain why a party's office probability does not affect the proportion of manifesto statements it allocates to the environment. Non-green parties cannot credibly commit to be the most likely party to deliver investments in environmental protection, even if they have a high probability of victory, further reducing their incentives to promise more investments in environmental protection. Moreover, mainstream parties tend to be slow to make the environment salient, leaving the issue to more peripheral parties (Farstad 2018).

Our study suffers from two main limitations. Further research should analyze whether the conditional relationship we find for investment priorities expressed in manifestoes also influence policy choices, as manifesto pledges do not necessarily translate to policy choices (Mansergh & Thomson, 2007). Moreover, we cannot completely rule out reverse causality with the observational data at hand as it remains possible that successful parties are more likely to propose long-term investments. One solution would be to analyze in depth cases where parties' office probability changes exogenously.

Still, this study provides a rare empirical test of the theory contending that electoral competition may influence parties' capacity to propose long-term investments. While electoral competitiveness is crucial for a functioning democracy and can certainly lead to several positive outcomes, such as a greater responsiveness to voters' preferences, this study suggests that some degree of electoral safety is beneficial for long-term investments. However, our results suggest that the politics of investments is more about credible commitments between parties and voters than about limiting governments' responsiveness to voters' myopic preferences. This suggests that the future prospects of long-term investments may depend on a stable party system. Indeed, one could argue that a stable party system, within which political parties aim to maintain their reputation as competent future-oriented managers of the economy and can perceive themselves to be in office in the future, will favour the adoption of long-term policies. Hence, the destabilization of advanced democracies' party systems might reduce parties' incentives to propose long-term investments, as it diminishes the probability that a party will stay in office in the future.

**References**

Abou-Chadi, T., & Orlowski, M. (2016). Moderate as necessary: the role of electoral competitiveness and party size in explaining parties' policy shifts. *The Journal of Politics, 78*(3), 868-881.

Abou-Chadi, T., & Immergut, E. M. (2019). Recalibrating social protection: Electoral competition and the new partisan politics of the welfare state. *European Journal of Political Research, 58*(2), 697-719.

Achen, C. H., & Bartels, L. M. (2017). *Democracy for realists: Why elections do not produce responsive government* (Vol. 4): Princeton University Press.

Angrist, J. D., & Pischke, J.-S. (2008). *Mostly harmless econometrics: An empiricist's companion*: Princeton university press.
Beramendi, P., Häusermann, S., Kitschelt, H., & Kriesi, H. (2015). *The politics of advanced capitalism*: Cambridge University Press.
Besley, T., & Coate, S. (1998). Sources of inefficiency in a representative democracy: a dynamic analysis. *American Economic Review*, 139-156.
Boix, C. (1998). *Political parties, growth and equality: Conservative and social democratic economic strategies in the world economy*: Cambridge University Press.
Breunig, C., & Busemeyer, M. R. (2012). Fiscal austerity and the trade-off between public investment and social spending. *Journal of European public policy, 19*(6), 921-938.
Cronert, A., & Nyman, P. (2019). A general approach to measuring electoral competitiveness for parties and governments. *Political Analysis*.
Cronert, A., & Nyman, P. (2020). Electoral Opportunism: Disentangling Myopia and Moderation. *Paper presented at the Council for European Studies online conference*.
Farstad, F. M. (2018). What explains variation in parties' climate change salience? *Party politics, 24*(6), 698-707.
Finnegan, J. J. (2019). Changing prices in a changing climate: electoral competitiveness and fossil fuel taxation. *Working paper*.
Franzese, R. J. (2013). Comparative Democratic Budgeteering: An Empirical Model of Policymakers' Context-Conditional Incentives &. *Unpublished manuscript*.
Garritzmann, J. L., Busemeyer, M. R., & Neimanns, E. (2018). Public demand for social investment: new supporting coalitions for welfare state reform in Western Europe? *Journal of European public policy, 25*(6), 844-861.
Garritzmann, J. L., & Seng, K. (2019). Party effects on total and disaggregated welfare spending: A mixed-effects approach. *European Journal of Political Research*.
Gemenis, K. (2013). What to Do (and Not to Do) with the C omparative M anifestos P roject Data. *Political Studies, 61*, 3-23.
Green-Pedersen, C. (2007). The growing importance of issue competition: The changing nature of party competition in Western Europe. *Political Studies, 55*(3), 607-628.
Healy, A., & Malhotra, N. (2009). Myopic voters and natural disaster policy. *American Political Science Review, 103*(3), 387-406.
Hobolt, S., & Klemmensen, R. (2008). Government responsiveness and political competition in comparative perspective. *Comparative political studies, 41*(3), 309-337.
Hübscher, E., Sattler, T., & Wagner, M. (2020). Voter Responses to Fiscal Austerity. *British Journal of Political Science, Advance access*, 1-10.
Iversen, T., & Soskice, D. (2019). *Democracy and prosperity: Reinventing capitalism through a turbulent century*: Princeton University Press.
Jacobs, A. M. (2011). *Governing for the long term: Democracy and the politics of investment*: Cambridge University Press.
Jacobs, A. M. (2016). Policy making for the long term in advanced democracies. *Annual Review of Political Science, 19*, 433-454.
Jacobs, A. M., & Matthews, J. S. (2012). Why do citizens discount the future? Public opinion and the timing of policy consequences. *British Journal of Political Science, 42*(4), 903-935.
Kayser, M. A., & Lindstädt, R. (2015). A cross-national measure of electoral competitiveness. *Political Analysis, 23*(2), 242-253.
Kraft, J. (2018). Political parties and public investments: a comparative analysis of 22 Western democracies. *West European Politics, 41*(1), 128-146.
Lijphart, A. (2012). *Patterns of democracy: Government forms and performance in thirty-six countries*: Yale University Press.
Lindvall, J. (2017). *Reform capacity*: Oxford University Press.

Mansergh, L., & Thomson, R. (2007). Election pledges, party competition, and policymaking. *Comparative Politics*, 311-329.
Martin, C. J. (2015). Negotiating political agreements. *Political Negotiation: A Handbook*, 7-33.
Mölder, M. (2016). The validity of the RILE left–right index as a measure of party policy. *Party politics, 22*(1), 37-48.
Philips, A. Q. (2016). Seeing the forest through the trees: a meta-analysis of political budget cycles. *Public Choice, 168*(3-4), 313-341.
Plümper, T., Manow, P., & Tröger, V. (2005). Pooled data analysis in the comparative political economy of the welfare state: A note on methodology and theory. *European Journal of Political Research, 44*(2), 327-354.
Powell, G. B. (2000). *Elections as instruments of democracy: Majoritarian and proportional visions*: Yale University Press.
Sargent, T. J. (1976). A classical macroeconometric model for the United States. *Journal of Political Economy, 84*(2), 207-237.
Seiferling, M. (2019). Fiscal deficits and executive planning horizons. *Political Science Research and Methods*, 1-15.
Spoon, J. J., Hobolt, S. B., & De Vries, C. E. (2014). Going green: Explaining issue competition on the environment. *European Journal of Political Research, 53*(2), 363-380.
Tufte, E. R. (1978). *Political control of the economy*: Princeton University Press.
Wang, A. (2018). *Intertemporal Choice and Democracy*. PhD dissertation. Duke University,
Wenzelburger, G., & Zohlnhöfer, R. (2020). Bringing agency back into the study of partisan politics: A note on recent developments in the literature on party politics. *Party politics*, 1-11.