When the Median Legislator Matters: Redistribution and the Investiture Vote*

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Abstract

In this paper we establish the institutional conditions under which the median legislator is expected to be able to dictate redistribution in advanced parliamentary democracies. This is, we argue, under the requirement of an investiture vote. The absence of an investiture vote allows the government to operate autonomously with respect to the legislative, whereas an investiture vote makes the latter (and thus the median) more influential for policy-making. We run cabinet-based dynamic models for 21 OECD parliamentary democracies for the period 1948-2010 and find that there is a conditional effect of the preferences of the median legislator on redistribution. Where no investiture vote is needed, the fluctuations of redistribution are induced by the preferences of cabinet parties. Rather, under an investiture vote, it is the preferences of the median legislator party that appear to drive redistribution.

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1 Introduction

At the heart of parliamentary democracies there is the necessity of governments to have the confidence of the parliament. Policy-making in these systems, therefore, depend not only on the will of the members of the cabinet but also on the preferences of those in parliament. Huber (1996) call this a "confidence relationship" and argues that it is a two-way street where there are institutional prerrogatives that place limits on the parliament's ability to amend legislation and make it easier for cabinet members to shape the nature of policy outcomes over the preferences of the parliament. Examples of these institutional constraints include the government prerrogative of linking a particular policy to a vote of confidence on the survival of the government (Huber, 1996; Diermeier and Feddersen, 1998) or the requirement of no-confidence motions to be constructive, that is for the parliament to replace the Prime Minister it has to propose a alternative that is preferred by the majority.

In this paper we will look at one of the routes in this two-way street: an institutional arrangement that allows parliaments to exercise a greater control over the policies of the executive. In particular, we argue that the requirement of an investiture vote makes it more likely that policy-making reflects the preferences of the median legislative party. Some parliamentary democracies require governments to receive the explicit support of the majority of the parliament to start their term in office, while where the investiture requirement does not exist the government is assumed to have the tacit confidence of the parliament unless (until) a no-confidence vote is initiated. The investiture vote, we argue, will make the legislative median more influential on policy outcomes.

The preferences of the party containing the median legislator, which can —and often do— differ from those of government members, are expected to play a vital role in determining policy outputs (Laver and Schofield, 1990). Because the position of the median legislator is always majority-preferred to any other alternative, the median should push policy toward her ideal point. However, in the real world, the

degree to which the median legislator influences policy-making remains somewhat of a puzzle (Martin and Vanberg, 2014).[1] The main contribution of this paper is, therefore, to establish a condition under which we expect the median legislator in the left-right dimension to be able to shape redistribution, a policy that is fundamental to the left-right dimension of political competition. This is, we argue, under the requirement of an 'investiture vote'. The absence of an investiture vote allows the government to operate more autonomously with respect to the legislative, whereas an investiture vote makes the latter (and thus the median) more influential for policy-making.

Investiture rules are well recognized as a bargaining constraint on government formation and in particular on the type of government that can emerge. The absence of an investiture vote requirement is said to make the formation of minority governments more likely (e.g. Strøm, 1990; Martin and Stevenson, 2001), whereas its existence can lead to longer government durations (Warwick, 1994) and even to greater levels of legitimacy (Blais, Loewen and Ricard, 2007). In this paper we will look at another dependent variable that has been underexplored to date: policy formation. In fact, Cheibub, Martin and Rasch (2013) suggest that the investiture vote requirement may lead "arguably, to policies that are closer to the parliament's median voter". This is precisely the expectation this paper explores both theoretically and empirically by concentrating on redistribution policy.

The remainder of the paper is structured as follows. Next section develops our argument theoretically and derives the general hypothesis of our paper. Section 3 presents the database of 21 OECD countries for the period 1948-2010 the paper uses for the empirical tests, describes the operationalization of the variables, and

[1] Attempts to test empirically the so-called partisan model of politics —according to which the partisanship of policy-makers should affect policy outcomes— have provided "encouraging but sometimes mixed" findings (Bräuninger, 2005, 423). Amat and Falcó-Gimeno (2013) argue that this is in part because the bulk of these studies have concentrated on the government as the appropriate level in which partisanship has to be measured, overlooking the composition of the parliament. We argue here that the (partisan) preferences of the median party *in parliament* are going to be very relevant for policy-making conditional on certain institutional constraints.

specifies the statistical models whose results are discussed in section 4. Finally, the last section summarizes the main findings of the paper and suggests possible paths to develop future research on the topic as well as policy implications.

2 Theory

One of the basic principles of parliamentary democracies is that the executive, "in order to come or stay in power, must be *at least* tolerated by a legislative majority" (Cheibub, Martin and Rasch, 2013, 1). At the government formation stage, this fundamental characteristic can be expressed in two different ways. In some parliamentary democracies the confidence in the government is assumed to exist provided that no majority in parliament expresses otherwise. In others, one can say that the government has the confidence of the parliament only once the parliament has explicitly voted its support for it. These two institutional contexts within parliamentarism have been referred to negative and positive parliamentarism, respectively (Bergman, 1993).

The main difference between positive and negative parliamentarism refers to the investiture requirements of the executive, that is, the rules that govern how a particular government assumes office.[2] Where an investiture vote requirement exists, a majority of the parliament has to demonstrate its confidence in the proposed cabinet after an election trough a formal affirmative vote. In other words, incoming governments need to secure the explicit support of the parliament. By contrast, parties are able to assume office without the visible support of the chamber where the investiture requirement is absent (Cheibub, Martin and Rasch, 2013). Under such an insitutional context, "a government is formed out of inter-party bargaining or via formal designation by the head of state and assumed to have the confidence

[2]Positive and negative parliamentarism are wider concepts that are related to various institutions that govern the relationships between the executive and the legislative. In this paper, though, we just concentrate on one of these institutions, possibly the most paradigmatic of the concepts positive/negative parliamentarism: the investiture vote requirement.

of parliament until such time as a majority votes against it" (Shugart, 2006).

The investiture vote requirement can be read from the point of view of the median legislative party. Applying Black's (1948) median voter theorem to bargaining between parties, it has been argued that the median legislative party should be in a strong position to influence the composition of the government and guide negotiations over policy (Laver and Schofield, 1990; Baron, 1991; Morelli, 1999). In the government formation stage, and given that its ideal policy beats any other alternative proposal, there is little reason for the legislative median to accept a government proposal whose intended policy is far from its ideal. However, we claim that the existence or absence of an investiture vote requirement will affect the costs of rejecting disliked proposals and therefore shape the extent to which policy outcomes will be more or less distant from the median party's ideal. We present a stylized version of this argument next.

For the median party, the utility derived from accepting the policy x^* attached to the proposed government is the same both under the presence of the investiture vote and under its absence,[3]

$$U_m = -|x^* - x_m| \tag{1}$$

where x_m is the ideal policy of the median party.

However, the utility the median party derives from rejecting the proposed government depends on whether or not the institutional context includes the investiture requirement. Under the existence of the investiture vote,

$$U_m = \delta\big(-|E(x^*) - x_m|\big) \tag{2}$$

where δ refers to the common discount factor associated to the the government formation process continues and goes to further rounds that will lead to an expected

[3]Later in this section we will explain what we consider this x^* to refer to and how we will empirically address it.

policy $E(x^*)$ over which there is an uncertainty captured by the expectation symbol.

However, where an investiture vote is not required, the median party can reject the proposed government (and hence the attached x^*) with the following utility,

$$U_m = \delta\big(- |E(x^*) - x_m| \big) - \Phi \tag{3}$$

where Φ refers to the cost associated with initiating a no-confidence vote. It is certainly true that, whether the investiture requirement exists or not, "all governments implicitly face an investiture vote whenever they first expose themselves to the possibility of a parliamentary no confidence vote" (Strøm, Budge and Laver, 1994, 311) and that "[u]ltimately, a parliamentary government may be removed from office any time a majority of legislators decides that this is what should happen. As a result, any incoming government must be able to survive a vote of no confidence and, hence, enjoy the support of a legislative majority even if it never has to explicitly demonstrate this through an actual vote." (Golder, Golder and Siegel, 2012, 430).

However, "when no investiture vote is required, the "burden of proof" shifts to the opposition. And some parties may find it acceptable tacitly to lend their weigh to a government that they could not openly support in an investiture vote." (Strøm, Budge and Laver, 1994, 311). That is, a sort of no-confidence vote takes place, so to speak, 'by default' wherever the investiture requirement exists. Where there is no investiture vote, the no-confidence has to be initiated by whoever dislikes the proposals or performance of the government, presumably at a cost. In other words, initiating a no-confidence vote is the only 'institutional' way to reject a government formation proposal where no investiture is required whereas under an investiture requirement the opportunity of rejecting simply happens with no additional initiation costs. The cost of initiation of this no-confidence vote to reject the government proposal x^* is captured by Φ.

Note that what makes the two institutional contexts different is in fact the cost a party has to pay if it wants to reject the government that has been proposed.

Clearly, whenever distance (1) gives the median party a greater utility than (2) —under investiture— or (3) —under no investiture—, then it will accept the proposed x^*. But what is relevant to our argument is that the cost of rejecting is bigger under no investiture (as long as $\Phi > 0$, which we assume).

Given that the median party ideal policy x_m is known to be majority-preferred to any other alternative x, then, arguably, the *expected* policy that it is going to be proposed and accepted *at some point* if the first proposal is rejected is going to be exactly x_m (that is, $E(x^*) = x_m$). Hence, $\delta\big(-|E(x^*) - x_m|\big) = 0$ which means that, under the presence of an investiture vote there is little reason for the median party to accept a policy x^* that is significantly different from x_m. However, interestingly, where the government is not required to face an explicit vote of investiture then the median party may accept the first proposed government provided that:

$$\Phi > |x^* - x_m| \tag{4}$$

Note that the situation that (4) describes is conceivable, only, under no investiture vote. Where the investiture requirement exists, it is less likely that the legislative median accepts a distant first policy proposal basically because a rejection would cause no cost besides the fact that there is uncertainty over the next x^* proposal. That is, $\Phi = 0$. As a consequence, where no investiture is required the policy that is finally accepted can be farther from the median party ideal policy x_m than under investiture vote institutional contexts. Therefore, the general hypothesis derived from this theory is the following:

General Hypothesis — All else equal, policy-making in parliamentary democracies will better reflect the preferred policies of the median legislator party under the requirement of an investiture vote than under its absence.

This general hypothesis implies that the median party is better able to advance

its policy preferences under an investiture vote. As said, the median party wants to minimize its disutility, that is, the distance $|x^* - x_m|$. We claim that this minimization is going to be easier (more difficult) where an investiture vote is (not) required. We expect this effect is going to express itself through two different mechanisms. First, the median can inlfuence the government composition process in terms of which parties form the government. Second, beyond the particular parties that eventually enter the cabinet, the median can also shape the policies the government agrees to pursue. Note that the coexistence of these two mechanisms amounts to saying that the x^* attached to a particular government is in fact a function of what is expected from a government given its composition (x^c) and what the government actually proposes during the formation process in terms of policy (x^p). We name these the *Government Composition Mechanism* and the *Policy Agreement Mechanism*, respectively, which we explain in greater detail next.

The *Government Composition Mechanism* refers to which parties enter the government. Which parties assume office and their relative sizes provide good indication of the policies that one can expect the government will pursue. According to Martin and Vanberg (2014), this is in fact an intuitive expectation that serves as a foundational assumption for various studies, both theoretical and empirical, in the field of coalition politics and parliamentary government which equate the policy position of a government with the seat-weighted average of the positions of coalition parties.[4] From the point of view of the median party, if our theoretical argument is true, that implies that under an investiture vote the median party will be better able to reflect its own policy preferences on the *expected* policy of the government by influencing (i.e. accepting/rejecting) the 'who gets in' game.

The *Policy Agreement Mechanism* refers to something different. Although it is true that a particular government composition comes with an expected policy

[4]This is in fact the Gamson's law logic applied to policy formation, where "[a]ny participant will expect others to demand from a coalition a share of the payoff proportional to the amount of resources which they contribute to a coalition" (Gamson, 1961), where resources refer to seat share contribution and payoffs, in this case, would refer to preferred policies.

package, it is equally true that nothing prevents the government from pushing their policies in directions that somewhat depart from the exact convex combination of their preferences and sizes. In fact, the composition-expected policy package is just an approximation of what is reasonable to expect from a government given the parties that are in office (its likely policies). Nonetheless, precisely because it is (just) an approximation, the actual policy package that the government agrees to pursue might be different from the seat-weighted average of the policies preferred by cabinet parties. In relation to our theoretical argument, that means that, *holding government composition constant*, the median party will be able to influence policy by accepting/rejecting actual policy proposals during the government formation process (beyond the mere composition mechanism mentioned above). This ability, we have argued, is going to be stronger under the investiture requirement mainly because rejections are less costly than under no investiture vote. In other words, the legislative median will be better able to push the composition-expected policies further to its own ideal policies.

Empirically, we will test our general hypothesis in relation to the two above-mentioned mechanisms. First, we will run a general test on whether or not policies better respond to the median legislative party preferences under institutional contexts where the investiture vote is required than where it is not. Second, we will empirically delve into the *Government Composition Mechanism* by looking at the extent to which the presence of an investiture requirement increases the likelihood of governments whose composition (and hence expected policies x^c) is closer to the preferences of the median party. Third, we will test the extent to which the median party exerts an additional influence on governments' policies beyond what should be expected from its composition and whether or not the effect is stronger under an investiture vote, as it is expected from the *Policy Agreement Mechanism*.

The main contribution of this paper is, therefore, to establish an institutional condition —i.e. the investiture vote— under which we expect the median legislative

party in the left-right dimension to be able to shape policy. As it will be explained next, we are going to concentrate on redistribution, a policy that is quintessential, precisely, to the left-right dimension of political competition.

3 Data and Empirical Strategy

3.1 Data and Measures

Because our argument concerns the ability of the legislative median to influence redistribution through government composition and policy-making, we employ cabinet-based observations for 21 OECD parliamentary democracies. Therefore, the cabinet is our unit of analysis and the cabinet duration the time over which most of the variables are measured and averaged. The dependent variable, redistribution, is measured by the end of each cabinet period and all the independent variables that are time-varying are averaged over the years each cabinet lasted.

We used a half-a-year rule of thumb when merging cabinet-based data with other policy outcomes data. That is, if the cabinet is formed before June 30th the current year is coded as the cabinet starting year, whereas if the cabinet is formed afterwards the starting year is the next one. The 21 parliamentary democracies included in the analysis are the following: Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Slovak Republic, Spain, Sweden and the United Kingdom.

Regarding the dependent variable, we use the overall public social expenditures (OECD SOCX data), as a percentage of GDP, excluding spending targeted towards the elderly as an empirical proxy for redistribution. By doing that we closely follow important recent work by Lupu and Pontusson (2011) as well as Karabarbounis (2011), since both studies use the SOCX total public social spending measure as a proxy for redistribution. Importantly, though, we follow Lupu and Pontusson (2011)

and we subtract the spending directed towards the elderly (basically, pensions) to get rid of non-redistributive social spending. Thus, this measure mainly captures public expenditures on social policies such as health, family programmes, active labour market policies, unemployment, and housing.

Our key independent variable is a dummy variable that takes value 1 when the investiture vote requirement is hold. Specifically, the investiture dummy takes value 1 if a vote of confidence from the legislature has to be passed when the program of the government is established and 0 when this procedure is not applied. The dummy variable was originally coded by Lundell and Karvonen (2003) and employed by Persson, Roland and Tabellini (2003) or Persson et al. (2007).[5] However, the investiture vote dummy variable is time-invariant for all countries and therefore it poses a crucial challenge to our estimations. We circumvent this difficulty by making intensive use of a set of alternative specifications (fixed effects, differenced GMMs, ECMs) as detailed in the next section.

The two theoretical mechanisms discussed above imply that we need information regarding both the actual government composition (x^c) as well as the preferences of the median legislator party (x_m) across time (or cabinets) and within countries. First, in relation to the measurement of the government partisanship composition, we follow the standards in the literature and we calculate it by simply weighting the preferences of parties in government by their seat share contribution (e.g. Martin and Vanberg, 2014). This is how we compute empirically a proxy for the policy x^c attached to a given proposed government. Specifically, we employ the Comparative Manifesto Project (Budge et al., 2001; Klingemann et al., 2006; Volkens et al., 2013) data on electoral manifestos to gauge the preferences of each party on the left-right dimension.[6] Afterwards, we use the recent *ParlGov* dataset compiled by Döring

[5] Admittedly, there is an important controversy around which countries can be classified as having the investiture vote requirement and which cannot (see for instance Cheibub, Martin and Rasch, 2013). Nonetheless, we stick here to Lundell and Karvonen's (2003) original codification and we leave for future versions of this paper robustness checks on how our results respond to manipulations of this classification.

[6] We rely on the *rile* dimension provided by the CMP data to capture parties' preferences along

and Manow (2012) to weight government parties' preferences according to their seat shares.

Second, to identify and compute the left-right position of the median legislator party in every legislature we employ the following procedure. In the first place, we make use again of the CMP data on preferences along the left-right dimension and the *ParlGov* seat share measures to identify the median party (the one that, after ordering parties from left to right, beats the 50% seat share threshold). Second, we simply take the preference along the left-right dimension of the party identified as the median to fill in our main independent variable of interest: the left-right position of the median legislative party. We employ the CMP data because it is only dataset available with enough cross-time variation to identify the median party along many legislatures and across countries.

Note that both the government composition variable and the position of the legislative median are measured in a scale that ranges theoretically between -100 and +100. Empirically, the cabinet composition variable ranges between -61.4 and 61.1, with an average value equal to -3.79 and a median equal to -4.48. On the other hand, the position of the median legislative party on the left-right scale ranges empirically between -42.90 and 50 with an average value equal to -2.83 and a median equal to -4.16. Thus, the two variables have similar median values but on average the cabinets are more left-leaning. This result is possibly driven by the fact that cabinets in PR countries tend to be to the left of the median legislator, as highlighted by Iversen and Soskice (2006). In fact, the average value for the government composition variable is -6.64 in countries with proportional electoral systems.

3.2 Empirical Strategy

We estimate dynamic TSCS models by using cabinet-based observations as the level of analysis. We proceed in three sequential steps. First, we estimate reduced-form

the left-right dimension.

models in which we investigate whether or not the fluctuations of redistribution are more induced by the preferences of the median legislative party where an investiture votes exists relative to where it is absent. Afterwards, we test the two mechanisms discussed in the theoretical section, namely, the government composition and the policy agreement mechanisms.

Step 1: Reduced-Form Models

First, we estimate fixed effects reduced-form models to explore the ability of the legislative median to influence redistribution in parliamentary democracies. On one hand, the models include a set of time-varying controls $\mathrm{X}_{k,i,t-1}^{\mathrm{CabAv}}$: *GDP growth*, *Unemployment*, *Turnout*, *Population over 65* and the *Economic Globalization Index*. All the controls are averaged over the cabinet duration. On the other hand, the fixed effects models include country-specific effects, α_i, as well as year-specific effects, δ_t. The former accounts for time-invariant omitted variables, whereas the latter controls for year-specific common shocks. Finally, $u_{i,t}$ is a country-specific and time-varying idiosyncratic error.

This fixed effects specification is standard in the literature and very close to the empirical specifications of Karabarbounis (2011) and Lupu and Pontusson (2011):

$$\mathrm{RED}_{i,t} = \gamma \mathrm{MedianLR}_{i,t-1} + \sum \beta_k \mathrm{X}_{k,i,t-1}^{\mathrm{CabAv}} + \alpha_i + \delta_t + u_{i,t} \tag{5}$$

Second, we also use a differenced GMM specification using the Arellano and Bond (1991) method. Interestingly, the GMM specification enables the introduction of the lagged dependent variable $\mathrm{RED}_{i,t-1}$, which we do not include in the fixed effects specifications because of the relatively small T and therefore the likely Nickell bias. We employ the second lag as an instrument for $\Delta\mathrm{RED}_{i,t-1}$. Reduced-form GMM models are useful to get rid of country-specfic effects and reduce the amount of potential bias in dynamic specifications when the time-variation is limited (Keele, 2009). This is precisely our case given the relatively low number of

cabinet-observations for each country —note that average T ranges between 8 and 10 depending on which controls are included.

Step 2: Empirical Test for the Government Composition Mechanism

As a second step, we explore the relationship between the median legislator and government composition across cabinets. In other words, we investigate the degree to which the relationship between a change in the position of the median legislator ($\Delta\text{MedianLR}_{i,t}$) and a change in the government composition ($\Delta\text{GovLR}_{i,t}$) is close to a *one-to-one* correspondence . At an extreme, if the median legislator is able to dictate perfectly who is in government then we should expect an elasticity equal to 1. However, as argued before, the relationship is not perfect, and we exped it to be even more imperfect in countries without an investiture vote.

We test this mechanism in two different ways. First, we exploit the full sample of parliamentary democracies and introduce an interaction term between the investiture dummy and the change in the median legisaltor ($\Delta\text{MedianLR}_{i,t}$). Note that in the equation (6) below the paramater φ represents the estimated elasticity in countries without an invesiture vote and $\varphi + \lambda$ the elasticity in countries with investiture vote. We expect the elasticity to be significantly higher under an investiture vote and hence $\lambda > 0$. The investiture vote dummy precludes the inclusion of country-specific effects but we control for cabinet-specific effects, θ_{Cab}, and year effects, δ_t. Also, to control for a possible mean-reversion process we include the lagged value of the dependent variable. Note that since no other controls are included the number of available cabinet-based observations is higher than in the rest of the analysis.

$$\begin{aligned}\Delta\text{GovLR}_{i,t} =& \phi\Delta\text{GovLR}_{i,t-1} + \varphi\Delta\text{MedianLR}_{i,t} + \eta\text{Invest}_i + \\ &+ \lambda\Delta\text{MedianLR}_{i,t} * \text{Invest}_i + \theta_{\text{Cab}} + \delta_t + u_{i,t}\end{aligned} \tag{6}$$

Second, we also test the government composition mechanism by sub-sampling.

This enables the inclusion of country-specific fixed effects α_i that can account for omitted variables (e.g. other fixed institutional characteristics that may also affect the government formation process). That is, we hold constant the rest of the constitution in a given country. The fixed effects models also control for cabinet-specific effects and year-specific effects. In this case, we expect the estimated coefficient φ in the sample of investiture vote countries to be higher than the estimated one in the sample of countries where an investiture vote is not required.

Step 3: Empirical Test for the Policy Agreement Mechanism

According to our argument, the legislative median should be able to pull redistributive outcomes further to its ideal preferences even holding government composition constant. To test this mechanism we construct a new variable $\text{Diff}_{i,t}$ which measures the difference between the position of the median legislative party median ($\text{MedianLR}_{i,t}$) and the position of the government as told by its composition ($\text{GovLR}_{i,t}$) during a given cabinet time-period. If the median legislator is further to the right (left) than the government then the $\text{Diff}_{i,t}$ variable takes positive (negative) values. Afterwards, we proceed again in a twofold manner.

We first run Error Correction Models (ECM) in which all countries are included. Note that since the Invest_i variable is time-invariant, we cannot include country-specific effects but we add year-specific trends. The main parameter of interest will be the estimated coefficient for the interaction term $\Delta\text{Diff}_{i,t} * \text{Invest}_i$, which tells us if the difference between the median legislator and the government composition further explains the dynamics of redistribution. If the policy agreement mechanism is in place, this difference should have explanatory power where the investiture vote is required but not otherwise. In other words, we expect $\nu < 0$ in the following equation:

$$\begin{aligned}\Delta \text{RED}_{i,t} =& \phi \text{RED}_{i,t-1} + \gamma_1 \Delta \text{GovLR}_{i,t} + \gamma_2 \text{GovLR}_{i,t-1} + \\ & \sigma_1 \Delta \text{Diff}_{i,t} + \sigma_2 \text{Diff}_{i,t-1} + \eta \text{Invest}_i + \nu \Delta \text{Diff}_{i,t} * \text{Invest}_i + \\ & \sum \beta_{k1} \Delta X_{k,i,t}^{\text{CabAv}} + \sum \beta_{k2} X_{k,i,t-1}^{\text{CabAv}} + \delta_t + u_{i,t}\end{aligned} \tag{7}$$

For robustness purposes, we also test the policy agreement mechanism with fixed effects models looking at investiture countries only. We do so to exploit the advantage of FE models that include both country-specific effects and year-effects: robustness to time-unvarying omitted variables and common time shocks. Therefore, the parameter of interest here is directly the estimated coefficient of the $\text{Diff}_{i,t}$ variable, for which we expect a negative coefficient.

4 Results

Table 1 presents the first empirical resultsof the reduced-form models. Columns (1) and (2) provide the first set of estimations when all the parliamentary democracies for which we have data are included (21 countries when the lagged dependent variable is not included in the fixed effects models and 19 when the difference GMM estimations are estimated). Perhaps surprisingly, the position of the median legislator is only moderately associated with redistribution in the FE model of Column (1). Note that the coefficient for $\text{MedianLR}_{i,t-1}$ is significant only at the 10% level. One could have easily expected a much stronger relationship. The results are more robust, though, in the specification in Column (2), with a coefficient significant at the 5% level.

However, the results look damatically different when we break the sample according to the requirement of an investiture vote in Columns (3)-(6). None of the coefficients for the $\text{MedianLR}_{i,t-1}$ variable is significant in Columns (3) and (4), whereas they are strongly significant and in the expected negative direction

in Columns (5) and (6). Therefore, the dynamics of redistributive spending seem to fluctuate around the preferences of the median legislative party only in countries with an investiture vote requirement. Interestingly, not only the relationship is more robust with the sub-sample of investiture vote countries but also the magnitudes of the effects are higher. This is a remarkable preliminary result that motivates the subsequent analysis. Also, note that the inclusion of the lagged dependent variable in the GMM especifications does not change the results.

Regarding the control variables, *GDP growth* is strongly associated with countercyclical redistribution in all specifications (1)-(6). This is an expected result coherent with previous literature (Galí and Perotti, 2003; Karabarbounis, 2011). Also as expected, the *Unemployment*variable is positively associated with greater redistribution in the fixed effects models in columns (1), (3) and (6) —most likely due to the increase of unemployment compensations. By contrast, and perhaps surprisingly, the *Turnout* variable is not significant in any of the models. Consistently with Karabarbounis (2011), the share of the elderly population is associated with redistribution in Column (2). Finally, the *Economic Globalization Index* is positively associated with greater redistribution only when the whole sample is used in Column (1). This result is consistent with Garrett (1998) and, most recently, the results by Lupu and Pontusson (2011).

Table 5 in the Appendix includes a battery of robustness checks in relation to the baseline models. Specifically, the specifications add two main controls: *Proportionality* and *Inequality*. Arguably, both controls could explain self-selection of a more left-leaning legislative median in both no-investiture and investiture countries. Moreover, both controls are positively correlated with the existence of a legislative investiture vote. The inclusion of the two additional controls, however, does not affect the main results. Again, the estimated coefficient for the $\text{MedianLR}_{i,t-1}$ is never significant in the sample of countries without an investiture vote and instead is highly significant in countries with it.

Table 1: Median Legislator Party and Redistribution (by Investiture Vote)

	All		No Investiture		Investiture	
	FE	GMM	FE	GMM	FE	GMM
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Redistribution}_{t-1}$		0.228		0.337		0.638***
		(0.176)		(0.220)		(0.208)
Median LR	-0.015*	-0.036**	-0.003	-0.011	-0.038**	-0.045**
	(0.008)	(0.015)	(0.011)	(0.015)	(0.015)	(0.023)
Growth	-0.270***	-0.186*	-0.244**	-0.363**	-0.345***	-0.121
	(0.072)	(0.112)	(0.106)	(0.166)	(0.123)	(0.124)
Unemployment	0.224***	-0.002	0.473***	0.101	0.223**	-0.052
	(0.055)	(0.077)	(0.106)	(0.195)	(0.089)	(0.091)
Turnout	0.035	-0.017	0.052	0.052	-0.095	-0.060
	(0.037)	(0.067)	(0.047)	(0.100)	(0.089)	(0.078)
Population > 65	-0.087	0.723***	-0.188	0.432	-0.011	0.260
	(0.116)	(0.259)	(0.156)	(0.491)	(0.281)	(0.375)
Globalization	0.054**	-0.075	0.050	-0.013	0.069	-0.019
	(0.027)	(0.055)	(0.041)	(0.101)	(0.050)	(0.073)
Constant	5.229		5.228		14.879*	
	(3.924)		(4.837)		(8.148)	
Country FE	YES	NO	YES	NO	YES	NO
Year FE	YES	NO	YES	NO	YES	NO
Observations	186	146	108	84	78	62
R^2 (within)	0.474		0.610		0.623	
Number of Countries	21	19	12	12	9	7

Standard errors in parentheses

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

Once the baseline results are established with the reduced-form models, we start unpacking the mechanisms that mediate the ability of the median legislative party to determine redistribution policies. Table 2 provides a set of empirical tests for the *government composition mechanism*. As argued before, we expect a much closer *one-to-one* correspondence between the positions of the median legislative party and of the government where an investiture requirement exists. In other words, the median party should be better able to influence government composition.

First, models in columns (1) and (2) estimate the elasticity between the government composition and the position of the median legislator using the full sample of parliamentary democracies. As expected, the elasticity is significantly higher when an investiture vote is required. That is, the estimated elasticity is equal to 0.7 in countries without an investiture vote and 0.871 (0.7+0.171) in countries with this institutional requirement. Recall that models (1) and (2) in Table 2 do not include country fixed effects but do include year and cabinet-specific effects. But importantly, model in column (1) employs the full set of cabinet-based observations and model in column (2) employs only the set of new cabinets formed when the parliament changes —that is, under new elections. The results are basically the same.

Second, we re-estimate the elasticities by sub-sampling among countries with an investiture vote and countries without it in columns (3)-(6). Our observations here are new cabinets when there is a parliamentary change. The results are very similar: estimated elasticities of 0.743 (0.623) without an investiture vote *versus* 0.970 (0.892) with it depending on the inclusion of the mean-reversion control, which reasonably lowers the estimated elasticities in both cases. Note also that the R^2 for the explained variation within country-variation in the fixed effects models is higher in the investiture vote subsample.

To illustrate the results in Table 2, Figure 1 plots the estimated elasticity of the the government composition ($\Delta \text{GovLR}_{i,t}$) with respect to a change in the position of

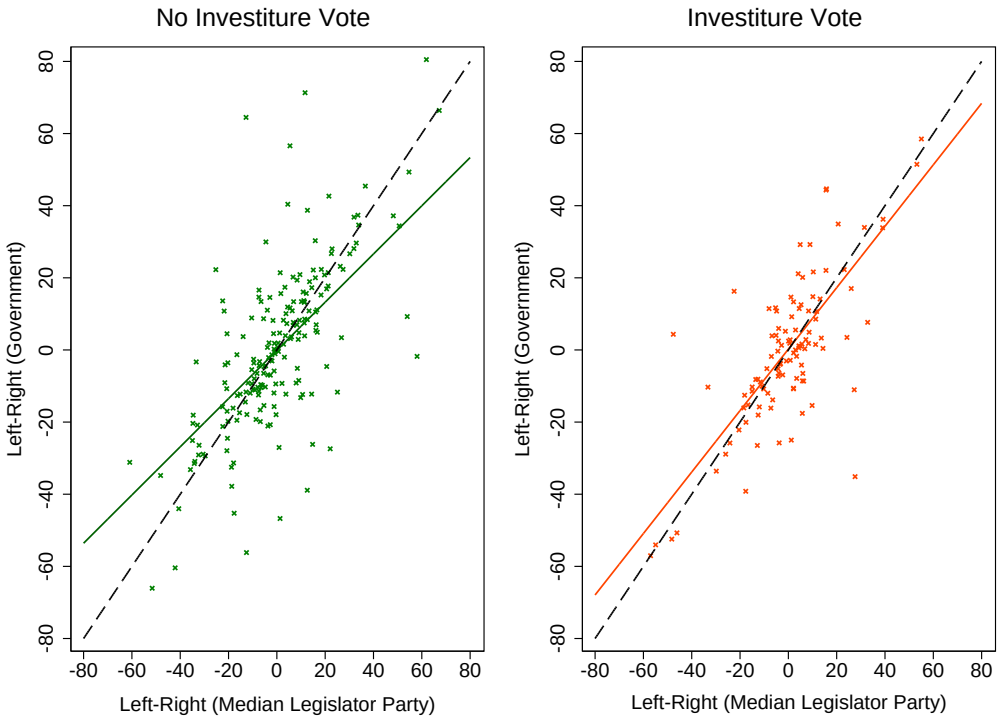
Table 2: Government Partisanship and Median Legislator Party (by Investiture Vote)

	All		No Investiture		Investiture	
	All Cab.	New Cab.	New Cab.		New Cab.	
	(1)	(2)	(3)	(4)	(5)	(6)
Government LR Δ_{t-1}	-0.182***	-0.239***		-0.259*		-0.348*
	(0.065)	(0.086)		(0.120)		(0.179)
Median LR Δ	0.700***	0.668***	0.743***	0.623***	0.970***	0.892***
	(0.052)	(0.058)	(0.054)	(0.070)	(0.087)	(0.057)
Investiture	0.427	0.337				
	(0.627)	(1.587)				
Median LR Δ X Investiture	0.171**	0.184**				
	(0.080)	(0.084)				
Constant	15.707	21.482	-31.998***	-3.177	3.799	40.031***
	(12.255)	(17.787)	(4.067)	(3.787)	(13.144)	(4.944)
Country FE	NO	NO	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Cab. Cons. FE	YES	YES	YES	YES	YES	YES
Observations	418	290	197	188	108	102
R^2 (within)	0.633	0.717	0.710	0.727	0.946	0.960
Number of Countries	21	21	12	12	9	9

Standard errors in parentheses

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

Figure 1: Correspondence between Median and Government



the median legislator ($\Delta\text{MedianLR}_{i,t}$) in countries with and without an investiture vote. The plots are drawn using the estimated coefficients in column (2) of Table 2 and the differences are striking. In the left-panel we see that the correspondance between the median party and government composition is positive and significant but more noisy than the one in the right-panel, where the correspondance is closer to the 45° line. Thus, the median legislator seems able to dictate government characteristics much strongly under an investiture vote. The set of results in Table 2 together with this graphical illustration provide strong evidence in support of our first mechanism.

However, the median legislator can affect the redistributive outcomes not only by influencing who is in government but also by affecting the policies that a given government agrees to implement. Table 3 provides an empirical test of the *policy agreement mechanism*. Specifically, it provides a first test by using the full sample and employing Error Correction Models (ECMs). As explained before, if this

mechanism is at work then the difference between the median and the government should have explanatory power under the requirement of an investiture vote. This is precisely what we observe in all specifications in columns (1)-(6) in Table 3. The interaction term between the investiture vote dummy and the $\text{Diff}_{i,t}$ variable is always negative and significant at the 5 or 1% levels.

As expected, the increment for the government composition varaible ($\Delta\text{GovLR}_{i,t}$) is negatively associated with redistribution in all specifications in columns (1) to (6) except in model (5). That is, right-wing leaning governments are associated with a decline in redistributive spending. But the estimated negative coefficient for the interaction term implies that, holding government composition constant, the median legislative party is better able to pull redistributive spending to its ideal preferences when an investiture vote is required. In fact, it is striking to see that the estimated coefficient for the interaction term is always higher in magnitude than the coefficient for the government composition variable. Models in columns (3)-(4) add the *Proportionality* control and models (5)-(6) the *Inequality* one. The results remain essentially unaltered.

Finally, Table 4 provides a second test for the *policy agreement mechanism* this time using the sample of investiture-vote countries and exploiting only within-country variation. The results in Table 4, though, are consistent and extend the previous results in Table 3. Most importantly, the ability of the legislative median to pull policy to its ideal preferences *ceteris paribus* the government composition is confirmed. The estimated coefficient for the $\text{Diff}_{i,t}$ variable is significant at 1 or 5% level in all the specifications. It is also remarkable that, again, the magnitude of the effect is always higher for the $\text{Diff}_{i,t}$ variable than for the government composition ($\text{GovLR}_{i,t}$). Note that *Proportionality* and *Inequality* are included sequentially in order to avoid a large drop of available cabinet-based observations and nonetheless the results do not change.

Table 3: ECM Models Difference Median-Government

	All Countries					
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Redistribution}_{t-1}$	-0.169***		-0.165***		-0.259***	
	(0.050)		(0.054)		(0.059)	
Government LR Δ	-0.020***	-0.022***	-0.021**	-0.022**	-0.012	-0.019**
	(0.008)	(0.008)	(0.010)	(0.010)	(0.008)	(0.008)
$\text{Government LR}_{t-1}$	-0.011	-0.007	-0.006	-0.001	-0.010	-0.009
	(0.009)	(0.008)	(0.009)	(0.009)	(0.008)	(0.008)
Difference Median-Gov. Δ	-0.012	-0.015	-0.005	-0.002	-0.003	-0.009
	(0.014)	(0.014)	(0.015)	(0.016)	(0.013)	(0.014)
Investiture	-0.104	0.138	-0.034	0.149	-0.137	-0.075
	(0.347)	(0.273)	(0.320)	(0.318)	(0.334)	(0.295)
Difference M-G Δ X Investiture	-0.035**	-0.039**	-0.039***	-0.046***	-0.044***	-0.045***
	(0.015)	(0.017)	(0.015)	(0.016)	(0.014)	(0.017)
$\text{Difference Median-Gov.}_{t-1}$	-0.022	-0.016	-0.010	-0.003	-0.025	-0.015
	(0.017)	(0.015)	(0.017)	(0.017)	(0.016)	(0.016)
Constant	-2.254	-0.440	-2.468	-0.059	1.772	-1.641
	(1.709)	(1.314)	(1.670)	(1.489)	(2.530)	(2.181)
Standard Controls	YES	YES	YES	YES	YES	YES
Elect. Proportionality	NO	NO	YES	YES	NO	NO
Inequality	NO	NO	NO	NO	YES	YES
Country FE	NO	NO	NO	NO	NO	NO
Year FE	YES	YES	YES	YES	YES	YES
Observations	164	164	141	141	159	159
R^2 (within)	0.470	0.430	0.554	0.503	0.503	0.442
Number of Countries	19	19	16	16	19	19

Standard errors in parentheses

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

Table 4: FE and GMM Models Difference Median to Government (only Investiture)

	Investiture Countries					
		FE			GMM	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Redistribution}_{t-1}$				0.666***	0.577***	0.510***
				(0.208)	(0.212)	(0.158)
Government LR	-0.035**	-0.060**	-0.022**	-0.032	-0.040*	-0.040*
	(0.014)	(0.025)	(0.009)	(0.026)	(0.021)	(0.021)
Difference Median-Gov.	-0.085***	-0.104***	-0.064***	-0.051**	-0.101***	-0.058***
	(0.026)	(0.033)	(0.017)	(0.023)	(0.028)	(0.018)
Growth	-0.337***	-0.341**	-0.141	-0.103	-0.168	-0.271***
	(0.117)	(0.137)	(0.084)	(0.124)	(0.122)	(0.102)
Unemployment	0.185**	0.245**	0.098*	-0.096	-0.083	-0.033
	(0.086)	(0.115)	(0.057)	(0.099)	(0.081)	(0.080)
Turnout	-0.110	-0.090	-0.028	-0.074	-0.145*	0.022
	(0.085)	(0.115)	(0.055)	(0.079)	(0.075)	(0.071)
Population > 65	0.059	-0.016	0.097	0.249	-0.067	0.551*
	(0.269)	(0.331)	(0.171)	(0.373)	(0.438)	(0.298)
Globalization	0.055	0.083	0.087***	-0.028	0.023	-0.026
	(0.048)	(0.057)	(0.030)	(0.074)	(0.085)	(0.059)
Elect. Proportionality		0.196			1.466	
		(3.548)			(2.420)	
Inequality			0.081			-0.206
			(0.110)			(0.126)
Constant	17.184**	14.764	6.377			
	(7.811)	(9.169)	(5.250)			
Country FE	YES	YES	YES	NO	NO	NO
Year FE	YES	YES	YES	NO	NO	NO
Observations	78	64	74	62	52	59
R^2 (within)	0.670	0.688	0.786			
Number of Countries	9	6	9	7	6	7

Standard errors in parentheses

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

5 Concluding Remarks

Let us conclude by very briefly considering the policy-implications of the findings discussed here. Sweden will reinforce the investiture vote requirement after the 2014 elections. The modification of the investiture vote procedure has been debated since the 90s, when it was proposed as part of the reform package to produce better governance and policy-outcomes. The crisis in the 90s made the need to introduce reforms acute and, interestingly, the justification for the proposal of a more stringent investiture vote was the desire to empower the government and stabilize its functioning.

According to our findings, a strict investiture vote procedure will bind the Swedish government to the median legislative party and, at the same time, will make the median party better able to pull the policy-outcomes toward its preferences. This is consistent with the idea that a moderate median party, with greater control over the government composition and its policies, should be more capable to stabilize policy-making.

Nonetheless, the findings presented here also suggest that the balance of power between the government and the legislative with respect to their ability to influence policy-making is likely to tilt in favour of the latter with the introduction of an investiture vote. Therefore, an stricter investiture vote requirement is may generate a centrist bias where the political preferences of the median party in parliament, not the government's, are reinforced.

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Appendix

Table 5: Robustness GMM Models

	No Investiture			Investiture		
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Redistribution}_{t-1}$	0.152	0.304	0.076	0.525**	0.481***	0.436***
	(0.240)	(0.236)	(0.263)	(0.214)	(0.162)	(0.160)
Median LR	0.002	-0.017	-0.008	-0.047**	-0.054***	-0.059***
	(0.017)	(0.020)	(0.022)	(0.021)	(0.018)	(0.017)
Growth	-0.353**	-0.354**	-0.365**	-0.173	-0.295***	-0.356***
	(0.172)	(0.169)	(0.174)	(0.123)	(0.104)	(0.105)
Unemployment	0.285	0.097	0.276	-0.036	0.002	0.014
	(0.235)	(0.197)	(0.236)	(0.080)	(0.076)	(0.068)
Turnout	0.030	0.060	0.022	-0.092	0.037	-0.009
	(0.085)	(0.103)	(0.086)	(0.073)	(0.073)	(0.065)
Population > 65	-0.259	0.526	-0.219	-0.055	0.572*	0.282
	(0.447)	(0.545)	(0.452)	(0.443)	(0.310)	(0.382)
Globalization	0.064	-0.004	0.074	0.032	-0.019	0.029
	(0.090)	(0.104)	(0.092)	(0.086)	(0.061)	(0.074)
Elect. Proportionality	4.800		4.785	1.704		0.422
	(3.958)		(3.971)	(2.449)		(2.056)
Inequality		-0.169	-0.267		-0.200	-0.244**
		(0.413)	(0.373)		(0.131)	(0.116)
Country FE	NO	NO	NO	NO	NO	NO
Year FE	NO	NO	NO	NO	NO	NO
Observations	74	84	74	52	59	49
Number of Countries	10	12	10	6	7	6

Standard errors in parentheses

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