

Who is Responsible?

The Effect of Clarity of Responsibility on Voter Turnout*

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Abstract

Does voters' ability to discern who is responsible for policy outcomes affect voter turnout? Although particular institutional arrangements which influence this ability—known as clarity of responsibility—appears to affect how voters form retrospective judgments, we are less informed about its role on voter turnout. In this article, we argue that voters tend to turnout less if they cannot discern who is responsible for policy outcomes because it hinders the process of retrospective evaluations, makes the electoral stakes less profound, and dampens the voters political efficacy. Using 396 elections in 34 democracies between 1960 and 2015, we find that lower clarity of responsibility is associated with lower voter turnout. Our study highlights the importance of clarity of responsibility as it enhances democratic accountability, not only by encouraging retrospective voting, but also by increasing political participation.

Introduction

Why does turnout vary over time and across countries? Voter turnout is the cornerstone of political participation. Understanding what affects voters' decisions to vote or not is necessary for understanding not only the democratic process but also for assessing the overall health of a democracy. Various institutions have been examined as main factors of the disparity of voter turnout. However, clarity of responsibility, which refers to political arrangements and structural institutions that make it easy (or hard) for voters to reward/sanction their elected officials for policy outcomes, has received little attention

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by students of voter turnout. This is surprising because clarity of responsibility has been established in the literature as essential for voters to form retrospective judgments of incumbents.

In a healthy democracy citizens have regular opportunities to keep a government in office, or bring the opposition to power, by casting a vote based on their understanding of politics. A key part of the above process, though, is to be able to get a grasp of on-going politics, as well as of the mechanics of the political system in place. The case of Switzerland is quite illustrative of what is at stake. Switzerland is a stable democracy with citizens highly interested in politics, but with famously low turnout rates in national elections. There have been multiple attempts in explaining this puzzle. Arguments range from a focus on the sharing of executive power between major parties, which lowers the decisiveness of the election (Franklin 2004), to the fact that Switzerland has the most complex set of electoral rules in the world, which makes it harder for citizens to express their will through their ballot (Blais 2014). We find that many of these arguments, while supported, can be reduced to the fact that the Swiss have a hard time pinpointing which political actor is responsible what policy decisions, and then finding a way to respond to that information through their vote.

While Switzerland presents an extreme case, we believe that clarity of responsibility can affect voter turnout across elections and countries. More specifically, we claim that low clarity of responsibility tends to reduce voter turnout in three different ways. First, it causes uncertainty over responsibility for policy outcomes and, therefore, insulates voters from using decision heuristics on the basis of reward-punishment mechanism. Thus, the cost of voting increases. Second, in an institutional setting as the clarity of responsibility becomes blurred, the collective act of voting loses its power of decisiveness towards a desired policy outcome which further dampens the incentives for individuals to turnout and vote. Third, low clarity of responsibility can make the 'basic mechanism of vertical democratic accountability fail' (Carlin et al. 2015: 441), which, we argue, would make

voters feel that politics are complicated and irrelevant (internal efficacy), and that their vote cannot make any difference (external efficacy).

We test the effect of clarity of responsibility on voter turnout rate in 369 elections from 34 democracies. We adopt Dassonneville and Lewis-Beck's (2017) approach in operationalizing clarity of responsibility into two types of cumulative measures: *Institutional Rules* and *Power Rules*. We find that turnout increases when voters are more informed about 'who is responsible' for policy outcomes due to greater clarity of responsibility. But it appears that only the dynamic measure, the *Power Rules*, affects turnout, while the static *Institutional Rules* does not have a similar influence.

This article contributes to the literatures on clarity of responsibility and voter turnout by enhancing our understanding of why and how accountability-improving institutions can influence voters' ability to monitor and sanction the performance of government, thereby creating incentives for them to cast a ballot. Moreover, it is intriguing that *Institutional Rules* does not affect turnout while *Power Rules* does. It implies that voters can easily get used to static institutional settings, and, thus, voting behavior becomes less responsive to long-lasting institutional arrangements. Conversely, voters are highly responsive to the dynamic institutional arrangements that occur as a result of the previous electoral contest.

In the next section, we discuss various political institutions affecting voter turnout. After that, we focus on conceptualizing clarity of responsibility as well as its key elements. In the fourth section, we develop our theory as to how clarity of responsibility influences the decision of whether or not go to the polls. Further on, we discuss data and methods, and we present the empirical results of Ordinary Least Square (OLS) regression with robust standard errors or Fixed Effects (FE). In the final section, we conclude by suggesting the implications of this study for analyzing the health of democracy.

Institutions affecting turnout

The effects of different institutional setups have been at the heart of the discussion on voter turnout. Jackman (1987) introduced the institutional argument and, according to him, voting is an activity that is systematically-driven by electoral laws and institutional arrangements that vary by country. A stable party system reduces information costs and increases turnout (Robbins and Hunter 2012). Party systems, though, are shaped by the electoral system.

There are several theoretical arguments about the effect of electoral systems on turnout, a debate not yet settled on the global level (Blais and Aarts 2006). Proponents of PR systems argue that higher proportionality increases the value of individual votes (Karp and Banducci 2008). Additionally, competitiveness among parties in the district level is often significantly higher than in majoritarian systems (Selb 2009; Cox et al. 2016). Therefore, turnout should be higher in parliamentary systems, because the contests are more competitive, and in presidential systems where the elections for the executive and the legislature are concurrent, because this reduces voters' costs in terms of fatigue (Stockermer and Calca 2012; Schakel and Danboy 2014). According to Stockermer's (2017) meta analysis, though, the empirical evidence on the effects of electoral systems on turnout is inconclusive.

Another point of contention has been the effect of the number of parties. There are two opposing and counterbalancing causal mechanisms at work. The first is that more and ideologically distinct parties allow a wider range of choices to the voter. This increases the chances they find a party they like and therefore, higher numbers of parties increase turnout (Cox 1999). On the other hand, more parties make coalition governments more likely, which reduces the decisiveness of the election and, thus, lead to decreased turnout (Powell 2000). Due to the inconclusiveness of the debate, Stockemer (2017) concludes that the number of parties does not have a standard effect on voter turnout. Taagepera

et al. (2013), though, combine the above causal mechanisms in their analysis and argue that both affect voter turnout. They find that turnout peaks when the effective number of parties reaches 3, and decreases when the effective number of parties increases further.

Compulsory voting laws have also been firmly associated with higher turnout (Louth and Hill 2005). They reduce inequalities in turnout, since the probability of punishment incentivizes voters of all social groups by increasing the costs of not voting (Gallego 2010). Also, they lead to an increase in the number of parties, as social groups that do not identify with the few mainstream parties are forced to express their political beliefs (Jensen and Spoon 2011). The debate becomes more nuanced when the existence and enforcement of penalties is taken into consideration. When penalties exist and are enforced, the effect exceeds 10% (Stockemer and Scruggs 2012). When this is not the case, the effect is halved (Stockemer 2017).

While the bulk of the literature on institutional and political contexts focuses on formal rules and structures, a more recent thread of the literature looks into less static forms of institutions. An example of this are the recent studies on corruption and voter turnout (Stockemer et al. 2013). The contending theories are that corruption either reinforces turnout due to the development of extensive patronage networks, or that it suppresses turnout by alienating voters from politics (Dahlberg and Solevid 2016).

Voter turnout has indeed been extensively studied. To the best of our knowledge, however, there have been no studies associating voter turnout with 'clarity of responsibility' theory. We believe that clarity of responsibility directly relates to voters' decision to turnout or not. In what follows, we add to the literature by exploring to what extent clarity of responsibility is important to voter turnout in advanced democracies.

The Concept of clarity of responsibility

While the concept of clarity of responsibility has not been studied in relation to voter turnout, during the past twenty five years it has been conceptualized in multiple ways in research projects on economic voting. In this section we provide a brief overview of the ways clarity of responsibility has been constructed in previous studies.

Powell and Whitten (1993) were the first to conceptualize clarity of responsibility as a cumulative index, which was made up of five (binary) components. These are coalition government, minority government, bicameralism, lack of voting cohesion in government and the existence of participatory committees. Subsequent studies adhered to the basic setup but experimented with expanding the index in various ways. Anderson (2000) included measures of the size of the governing party and the effective number of electoral parties, while Nadeau et al. (2002) also added the elements of ideological cohesion and the length of time the incumbent had held office. While adding components is the norm, the opposite approach has also been followed. For example, Bengtsson (2004) retained only the coalition component, minority government, the length of time in office and the effective number of parties.

Others only kept the indice building strategy and altered the operationalization components almost entirely. Hellwig and Samuels (2008) use components for their indice based on whether a country's system is presidential or not, whether there is cohabitation and whether the elections are concurrent or not. While the above projects build on the economic voting literature, Tavits (2007) is an example of successfully utilizing clarity of responsibility to explain something entirely different, namely the level of corruption. In her measures, Tavits includes majority status, incumbency duration, opposition influence and the effective number of electoral parties.

The first major change in strategy, though, comes with Hobolt et al. (2013), who operationalize clarity of responsibility as having two dimensions. They distinguish between

components of *Institutional Clarity* and *Government Clarity*. The first dimension comprises of the components that describe the formal laws and structures that shape politics. The components of this purely institutional dimension are strength of parliamentary committee, federalism, semi-presidentialism and bicameralism. The second dimension, government clarity, is less formal and captures how clarity of responsibility is influenced by the political setup formed within the aforementioned structures in the aftermath of each electoral contest. This dimension comprises of party dominance, coalition government, cohabitation and ideological cohesion. The clearest advantage of this by-dimensional approach is that it allows for a clear distinction between the static and dynamic components of clarity of responsibility. The components of *Institutional Clarity* tend to stay constant for each country. On the other hand, *Government Clarity* has the potential to change with each election. Therefore, this static-dynamic distinction allows for meaningful within-country differentiation.

Dassonneville and Lewis-Beck (2017) take the above blueprint and proceed to do some fine-tuning. They take advantage of the by-dimensional approach, but they only include components that “can be quantified in a consistent way and the coding process can be reliably replicated” (Dassonneville and Lewis-Beck 2017: 538). Therefore, in their static dimension of *Institutional Rules* they include the type of the electoral system, whether it is a unitary state, if there is dual executive, the existence of compulsory voting laws, and the longevity of democracy. In the dynamic dimension of *Power Rules* they include the status of the government as coalition or not, its status as majority or minority government, the effective number of parties, how open is the economy, and the duration the incumbent has held office. Table 1 presents a summary of the various elements that consists a cumulative variable of *Clarity of Responsibility* in the previous literature.

Clarity of responsibility and voter turnout

As discussed thoroughly in the previous section, numerous studies found evidence that clarity of responsibility affects the retrospective voting behavior by blurring the ability of voters to assign the responsibility of policy outcomes. We extend this argument to voter turnout, and we claim that clarity of responsibility is a key factor in explaining the disparity of voter turnout rate across elections and countries. Clarity of responsibility affects voter turnout by influencing three key factors: the cost of voting, electoral decisiveness, and political efficacy.

First, clarity of responsibility affects the cost of voting. Most of the theories that attempt to explain why some people turn out to vote while others do not, build on the idea that voting is a costly behavior for citizens (Aldrich 1993). Voting takes time and effort not only to register and go to the polling station (physical costs), but also to identify issues, gather information about the candidates and political parties, think or deliberate on said information (information costs).

Given that making a vote choice among several alternatives is costly, rational voters tend to use heuristics such as cognitive shortcuts (Popkin 1994). One such cognitive shortcut is retrospective voting (Downs 1957) (voting based on retrospective evaluations about the incumbent). Retrospective voting is considered one of the more powerful and frequently used tools for a typical voter, who uses a cognitive shortcut but wants to make a rational decision (Fiorina 1981). The underlying logic of this argument is straightforward. If voters perceive that the incumbent government is doing well, they vote for the incumbent, otherwise, against. In other words, a retrospective voting decision is made mainly by the voter's retrospective evaluation, which is "a cost-cutting element in a citizen's voting decision" (Fiorina 1981: 12). Using the simple cognitive shortcut of retrospective voting, voters do not need to make an effort to collect complex information.

Low clarity of responsibility hinders retrospective evaluations, as it makes it harder for voters to determine who is responsible for policy outcomes. If policy responsibility is attributed to multiple government actors, voters need to spend more time and effort on gathering information to find out who is responsible for what, which increases the cost of voting. The most common example is the case of a coalition government. When a government is composed of several political parties, it is unclear to the voters which of the coalition partners is responsible for each policy. In this sense, Lewis-Beck and Lockerbie (1989: 167) argue that “with more parties in power, there is less responsiveness ... to voter views on economic policy. Thus voters who are concerned over the course of the economy are less motivated to turn out in an attempt to punish (or reward) the government” (Lewis-Beck and Lockerbie 1989: 167).

Also, by using the Comparative Study of Electoral System (CSES) data, Brockington (2004) finds that a coalition government generates complex information of voting decision making, which decreases the turnout of the less-educated citizens. Similarly, when there is minority government, voters face difficulties in evaluating the incumbent government’s policy performance because the policy outcomes resulted from the political negotiation between the incumbent government and the majority opposition parties.

In short, low-clarity contexts insulate voters from holding politicians accountable and, hence, dampen the pursuit of casting a ballot at the poll by making the cost of voting high. In contrast, high-clarity conditions enable voters to discern those who are ultimately responsible with low information costs, as it is easy to find out who is in charge. Hence, high clarity of responsibility fosters the incentive of voters to turn out by decreasing the cost of voting.

Second, clarity of responsibility affects how decisive the election appears to be to the voters. According to rational choice theories of voter turnout, the decision to vote or not is conditional on the potential impact of the electoral outcome on policy. That is, a voter

is more likely to go to the polls as the probability of their vote affecting policy outcomes increases. The concept of decisiveness of an election, though, differs from that of competitiveness. While competitiveness refers to how close the leading parties or candidates project to be in terms of votes, decisiveness refers to how much changes in terms of policy due to the electoral result. Consequently, as an election is more decisive in the formation of a government capable of enacting and implementing policies, voters are more likely to turnout to vote.

However, low clarity-settings reduce the decisiveness of elections because they make unclear how one should vote to generate a desired government (Tilman 2008: 1297). For example, in coalition governments, “electoral outcomes are less decisive, because the final composition of the government depends on the deals that parties are willing (or unwilling) to make” (Blais 2006: 118). This means that voters have less power in the virtual choice of government in the presence of a coalition government (Downs 1957). This reduces the incentives to turnout because the decisiveness of the vote on electoral outcomes decreases. Thus, low clarity of responsibility reduces voter turnout by dampening the decisiveness of elections.

Third, clarity of responsibility might affect the political efficacy of voters. It is well known that voters who have a greater sense of political efficacy are more likely to turnout to vote (Campbell et al. 1960). Psychological theories (Campbell 1960; Wattenburg 2002) have explained voter turnout and political participation based on the attitudes and perceptions of each individual such as political interest, partisan attachment, and political efficacy. “Of all the attitudinal conditioners of political participation, the efficacious belief of individual voters is probably the most salient and most studied variable of political actions” (Ho et al. 2001: 1).

Political efficacy comprises of two different components, internal efficacy (the belief in one’s capability to understand and participate in politics) and external efficacy (the belief

in the responsiveness of political institutions to citizen involvement). Empirical studies found that both types of efficacy have a significant impact on voter turnout (Abramson and Aldrich 1982; Rosenstone and Hansen 1993; Harder and Krosnick 2008). In particular, people who have lower internal efficacy tend to find politics boring, complicated, and irrelevant, and those who have lower external efficacy feel their vote cannot make any difference in politics (Russell et al. 2002). In either case, voters do not have any reason to vote.

Low clarity of responsibility generates conditions that deteriorate both internal and external political efficacy. On the one hand, in low clarity conditions, citizens, especially those who have lower political sophistication, may feel that politics are hard to understand because the production of political outcomes are determined by complex processes and various actors. This situation decreases internal efficacy. On the other hand, when clarity of responsibility is low, voters may feel that they can hardly influence the formation of the cabinet that emerges after the election. This situation decreases external efficacy. For instance, Jackman (1987) and Jackman and Miller (1995) claim that coalition government, an important component of low clarity conditions, would hurt the efficacy of voters because voters feel that they do not have a decisive method with which to exert direct influence on governments. This logic also applies to other conditions such as minority government, unstable cabinet, federal state, and open economy that lower clarity of responsibility. This is because all of the above conditions increase the difficulty of understanding how policy outcomes are determined and make citizens feel that they are not able to exert any influence upon the policy making process.

Hypotheses

We provided the three reasons of how clarity of responsibility affects voter turnout. Low clarity of responsibility increases the information costs related to voting and decreases

the decisiveness of elections and political efficacy of voters, which drives turnout rates down. Based on this rationale, we expect that voter turnout under institutional contexts that create low clarity of responsibility will be lower than in a high clarity of responsibility environment. However, we would like to discuss two more points while formulating our hypotheses.

First, as discussed in a previous section, the level of clarity of responsibility is not decided by a single institutional factor, but by multiple components. Based on this literature, the various factors have a cumulative effect on clarity of responsibility. Although each factor might have a separate and independent effect on voter turnout, and on the ability of voters to discern who is in charge of policy outcomes, it is rational to expect that the effect is intensified when several factors of them occur simultaneously. For example, it is easier for voters to attribute responsibility for a policy when the government is formed by a single party, that holds the majority in a parliament with few parties. It would be harder if the same government did not hold the majority in parliament, and even more so if a large number of parties held seats in it. As a result, the effect of clarity of responsibility, which is conceptualized as a cumulative index, on voter turnout differs from the individual effects of the constituent factors. In this regard, we build our hypothesis to test the impact of clarity of responsibility on voter turnout, not the impact of each individual factor of clarity of responsibility.^[3]

Based on the above considerations and the three reasons of why low clarity of responsibility reduces voter turnout, we build our first hypothesis:

H1: As clarity of responsibility increases, voter turnout will be higher.

Second, clarity of responsibility varies both cross-nationally and within a country across elections. The difference in levels of clarity of responsibility among countries is one of the factors that lead to different levels of voter turnout across countries. Also, the level of clarity of responsibility within a country changes over time because some

conditions of clarity of responsibility such as a coalition, a minority, and/or cohabitation change according to the results of elections. Therefore, we need to differentiate the way that we approach cross-national and within country variations.

While cross-national variation tends to be more profound, we also believe that the same causal mechanisms will drive the relationship between clarity of responsibility and turnout within countries. For example, the informational costs of voting decrease when an electoral contest leads to a coalition government being replaced by a single party government, as well as when a minority government is replaced by a majority government. The clarity of responsibility will be higher during the new term and will have a different effect on turnout in the following election. Regarding the decisiveness of an election, that would increase if a single party government took the place of a coalition government after an election. Finally, political efficacy can change between elections if politics seem to become simpler, through changes like the ones described above. Therefore, it becomes apparent that clarity of responsibility can increase in the span of a single electoral contest. This means that voter turnout in the following election should be higher compared to the one that led to the aforementioned political changes and consequently to the increase in clarity of responsibility.

Thus, the levels of clarity of responsibility affect the levels of voter turnout across countries as well as the change of voter turnout within a country. We formulate a second hypothesis to express our expectations for the effects of within country variation of clarity of responsibility across elections:

H2: Increases or decreases in clarity of responsibility across elections will lead to voter turnout increasing or decreasing accordingly.

Data and methods

In order to test our hypotheses, we draw data on voter turnout from member countries of the Organization for Economic Co-operation and Development since the 1960s. This yields a data set of 369 elections from 34 countries, with an average 7 elections in each country. Appendix [A.1](#) presents a list of the countries and the time periods in the dataset.

Outcome variable

Our dependent variable is *Voter Turnout*. There has been substantial disagreement on how to measure turnout. On the one hand, scholars measure the percentage of Registered Voters (REG) that go to the polls (Powell 1986; Blais and Dobrzynska 1998; Franklin 2004; Kuenzi and Lambright 2007, Dettrey and Schwindt-Bayer 2009). On the other hand, turnout has been measured as the proportion of the Voting-Age Population (VAP) that turns out to vote (Powell 1986; Jackman 1987; Gray and Caul 2000; Fornos et al. 2004; Endersby and Kriekhaus 2008; Dettrey and Schwindt-Bayer 2009). Each measurement has limitations. For instance, the registration-based measure has narrow variation because it is based on the group of people that is already predisposed to turn out and cast a ballot. The age-based measure might cause problems for cross-national comparability due to the exclusion of some group in the voting-age population in some countries (Blais et al. 2001)^[4]. To avoid overstating results that are biased due to either measurement errors or comparability issues, we present models with both variables^[5]. We obtain both measures (REG and VAP) of turnout from the Voter Turnout Database of Institute for democracy and Electoral Assistance (IDEA)^[6]

Explanatory variables

In this study we adopt a slightly altered version of the indices by Dassonneville and Lewis-Beck (2017) because the measurement is comprehensive and fits *content validity* well. We believe that the elements of the variable reflect the concept of clarity of responsibility in a solid way, and the feature of each element is theoretically-defined, so that it measures what it purports to be measuring.

More importantly, following recent developments in the literature (Hobolt et al. 2013, Dassonneville and Lewis-Beck 2017), we do not comprehend clarity of responsibility as a unidimensional concept. Instead, we find that a two-dimensional setup, such as *Institutional Rules* and *Power Rules* in Dassonneville and Lewis-Beck (2017), better captures the concept in question. Organizing the indice in two dimensions allows for greater versatility and theoretical precision. While clarity of responsibility is a single theoretical concept, not all of its components share the same major characteristics.

The *Institutional Rules* in our measure consist of four out of the original five components. We keep the electoral system component, to account for differences between majoritarian and mixed or proportional electoral systems. We expect that majoritarian electoral systems, which tend to lead to one-party governments, will increase clarity of responsibility (Powell 2000). We include the distinction between federal and unitary states, as significant division of power is expected to lower clarity of responsibility (Cutler 2004; 2008). Also, we include the distinction between parliamentary systems and presidential or semi-presidential systems (Hellwig and Samuels 2008), where we expect that presidential systems will heighten clarity of responsibility, while the existence of dual-executive in semi-presidential systems will lower clarity of responsibility. The final institutional indicator we use is the longevity of democracy, since repeated democratic processes generate a learning effect (Lewis-Beck and Stegmaier 2009).

The only way we ‘alter’ the original variable is by removing the *Compulsory Voting* from the list based on the two reasons. First, we believe that it is not an essential element in capturing the concept of clarity of responsibility. The exclusion of inessential elements also increases the measure’s content validity (Kellstedt and Whitten 2013). Second, we believe that *Compulsory Voting* has a direct and immediate effect on our outcome variable, not through the channel of *Clarity of Responsibility*, so decide to include it as a part of rival explanations.

The second cumulative variable is *Power Rules*, which we include as proposed by Dassonneville and Lewis-Beck (2017). First, the difference between coalition and single-party governments is consistently understood as important in regards to clarity of responsibility (Powell 2000). Second, we include the indicator dividing majority and minority governments. Given that the first type has more freedom to pursue policies, majority governments will increase clarity of responsibility. Third, we include an indicator of the effective number of parties, whose effect is contested in the literature. The existence of available alternatives is important. A more fragmented party system may make it more difficult for the electorate to identify a clear alternative to the governing parties (Anderson 2000). On the other hand, it may increase the chances that voters find a party they like (Cox 1999). The fourth indicator relates to the openness of the economy, with the expectation that in more globalized economies responsibility will be less clear due to limited policy space to maneuver (Duch and Stevenson 2010; Hellwig and Samuels 2007). Finally, we include a measure of the length of time the incumbent has been in office, as more time in power will increase the voters’ understanding of who to hold responsible. The sources of information are in Appendix A.

When constructing the two cumulative indices, Dassonneville and Lewis-Beck (2017) weighted each element equally to avoid favoring one over the others. To do this, they make all measures dichotomous by using the median value as a cut-off point for continuous variables such as ENEP (for a detailed analysis, see Dassonneville and Lewis-Beck

2017: 543). This is in line with the conventional strategy proposed by Powell and Whitten (1993) and is still adhered to by Hobolt et al. (2013). This yields the cumulative variable of *Institutional Rules* ranging from 0 to 4^[7], and *Power Rules* variable ranging from 0 to 5 in that higher value denotes high level of *Clarity of Responsibility*.

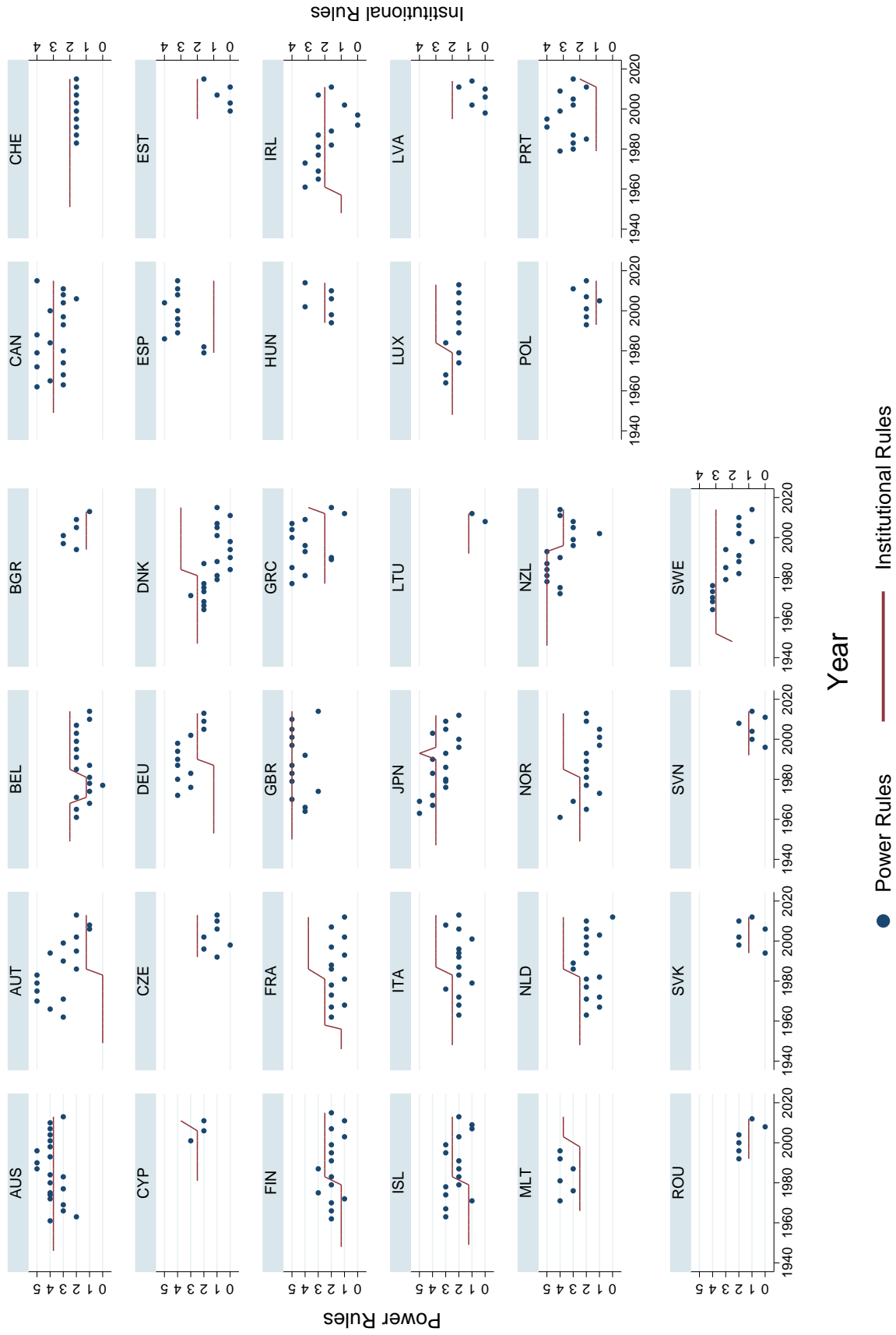
Figure 1 presents the variations in the clarity of responsibility indices, *Power Rules* and *Institutional Rules* across the elections and countries in our sample since the 1940s. The dot represents *Power Rules*, and the solid line represents *Institutional Rules*. The y-axis on the left side of the figure is the range of *Power Rules*, and that of right hand side of the figure is the range of *Institutional Rules*. One noticeable point is that the index of *Power Rules* fluctuates across elections in most of the countries (except Switzerland), whereas the index of *Institutional Rules* changes much less across elections.^[8] For that matter, Dassonneville and Lewis-Beck (2017) identify the *Institutional Rules* as ‘fairly stable’ or ‘fixed’ and the *Power Rules* as a ‘dynamic’ indicator formed by actors’ behavior.

This cumulative measure has two merits. First, the cumulative measure of various elements “allows errors to cancel out and permits the signal itself to become more visible” (Dassonneville and Lewis-Beck 2017: 538), and thus, “theoretically, the impact of the various components should be cumulative” (Nadeau et al. 2002: 411). Additionally, scholars have predominantly used a dichotomous measure of *Clarity of Responsibility*. As such, *low clarity of responsibility* receives a value of 0, and *high clarity of responsibility* receives a value of 1 (with a few exceptions: Hobolt et al. 2013; Dassonneville and Lewis-Beck 2017). Yet, with this binary measure, empirical analysis suffers from little variation in the main independent variable, inducing weak statistical power.

Control variables

To account for other rival explanations, we include various political and socioeconomic control variables based on previous studies. With regards to political variables, we in-

Figure 1: Variation in Power Rules and Institutional Rules across Countries



clude *Compulsory Voting*. In decades of scholarship, it has been established that turnout is higher when voters are required by law to go to the polls (Powell 1986; Jackman 1987; Lijphart 1997; Franklin 1999; Gray and Caul 2000; Fornos et al. 2004). This is operationalized as a dichotomous variable, coded 1 if a country compels citizens to vote by law, and otherwise 0. Based on the recent discussion about the varying effect size (Stockemer 2017), we also account for the degree of the sanctions and the rigidity of the rules within compulsory voting systems for a robustness purpose. The information on compulsory voting is based on the IDEA dataset.

We also include level of *Democracy*, and expect that more democratic countries would have higher turnout because political rights respect and civil liberties would encourage citizens to express various views and participate in political activities including turning out to vote (Fornos et al. 2004). We use Polity IV variable, which ranges from -10 (strongly autocratic) to $+10$ (strongly democratic) (Marshall et al. 2014).

In addition, we account for *Election Competitiveness*, following the plausible expectation that citizens tend to turn out more in competitive elections because the marginal effect of any additional vote on the outcome is going to be larger the closer the race is (Powell 1986; Franklin 2004). *Election Competitiveness* is operationalized as the absolute value of the percentage point difference in seat share between all governing parties and the opposition^[9] (Franklin 2004; Hobolt and Klemmensen 2006). We obtain the data on seat shares of parties from Armington et al. (2015). As the higher value of *Election Competition* denotes big difference in the seat shares between the governing parties and the opposition parties, it represents a less competitive election. So, we expect to see a negative sign for this variable.

Additionally, there are four socioeconomic factors accounted for in our models: level of economic development, economic performance, education and population (Cancela and Geys 2016). We use *GDP* (per capita logged) as the measure of economic develop-

ment, expecting that overall wealth and development will contribute to higher turnout because sufficient resources can lower the costs of voting (Powell 1986; Jackman 1987; Cray and Caul 2000; Dettrey and Shwindt-Bayer 2009). We obtained the information on GDP per capita from the Maddison Project (Bolt and Zanden 2014). In terms of the role of economic performance on turnout, it is hard to draw a clear expectation from the extant literature. Scholars argue that economic downturn will increase turnout because citizens are more willing to redress grievances (Fornos et al. 2004; Cray and Caul 2000), however, voters become more apathetic toward the political system during rosy economic conditions (Dettrey and Schwindt-Bayer 2009). For the *GDP Growth* variable, we use yearly GDP growth rates from the Conference Board (2014). We also account for the effect of education on political participation. Not only education will increase a sense of ‘civic duty’, but more importantly it will reduce the cost of voting for the citizens in terms of acquiring and weighing information in order to arrive at a vote choice (Hobolt and Klemmensen 2006). We use government spending on education (as % of GDP), and obtain the data from UNESCO Institute for Statistic.

Finally, we add *Population* variable to control for the size of a country. Based on Blais (2000), we predict that turnout will be higher in smaller countries because one single vote in a small state is seen as having a higher probability of being decisive, inducing a larger effect in electoral outcome (Geys 2006; Blais 2000). We collect data on the size of *Population* (in 1000’s and logged) from Gleditsch (2002). All these socioeconomic factors are lagged for a year. The summary statistics of the variables included in our analysis appear in Appendix A.2.

Model specifications

The dataset is both cross-section and time-series and the unit of analysis is country-election-year. The panels are unbalanced with uneven gaps in the time-series, which

violate the assumptions of pooled time-series analysis. More specifically, due to many more panels ($N = 34$ in simple models and $N = 29$ in full models) than time points (up to 22 in simple and 13 elections in full models), we are concerned with heteroskedasticity and serial correlation across panels. Furthermore, the issues of autocorrelation over time require particular attention.

In order to account for these issues, we test our first hypothesis (H1), which states that high *levels* of clarity of responsibility will be associated with a high *level* of voter turnout cross-nationally, with the use of Fixed Effects (FE). Our second hypothesis, though, cannot be tested in the same way. Our theory includes a dynamic component which implies that *change* in turnout will be affected by the varying *level* of clarity of responsibility. In particular, the *level* of clarity of responsibility within a country tends to change over time (at least for *Power Rules* index, see Figure 1), we expect an increase or decrease in the *level* of clarity of responsibility will make turnout increase or decrease accordingly across elections within countries (H2). To capture this dynamic component we follow Endersby and Krieckhaus (2008) and use Ordinary Least Square (OLS) regression with robust standard errors clustering around panels, and we include a lagged dependent variable (LDV) to render the model dynamic and to account for first order autocorrelation.

Furthermore, the inclusion of LDV has a strong methodological ground in that the past turnout rates matter for the current rates of turnout. So models of turnout excluding LDV would yield biased results, notably inflating the size of coefficient due to omitted-variable bias. Indeed, when the theory expects dynamic process, scholars have found that model with LDV provides estimates that are superior to the other models (Beck and Katz 1995; Keele and Kelley 2006).

Results and analysis

Clarity of Responsibility does affect voter turnout, but while *Power Rules* appears to have an effect on turnout, *Institutional Rules* does not. Table 2 presents the results of OLS regressions. Model 1, 3, and 5 explain variation in the percentage of the voting age population (VAP) that goes to the polls, and Model 2, 4, and 6 explain variation in the percentage of registered voters who turn out (REG). The first four models (Model 1 – 4) include LDVs rendering the models dynamic to see if high level of clarity of responsibility *increases* voter turnout rates across elections. The static models do not include LDVs, focusing on the association between the level of clarity of responsibility and the *level* of voter turnout. To address the omitted-variable-bias concern, we use Fixed Effects (FE) estimation in Model 5 and 6.^[10] In Model 1 and 2, we ran the analysis without control variables to utilize as many observations as possible (leading up to 369 elections from 34 democracies) from our dataset, and the remaining models control for the rival explanations.

In both Model 1 and 2 in Table 2, the *Power Rules* appears to increase turnout whereas the *Institution Rules* does not. One point increase in *Power Rules* yields about .815% increase in VAP and 0.7% in REG. Although controlling for the rival explanations in Model 3 and 4 causes a dramatic drop in sample size (about 40 %) compared to the two naive models (Model 1 and 2), it does not change the impact of clarity of responsibility on turnout. Similar to the results from Model 1 and 2, the *Power Rules* has a statistically significant positive relationship with turnout, while the *Institutional Rules* remains statistically insignificant. Both the size of the coefficients and the standard error of the *Power Rules* in Model 3 and 4 are similar, suggesting that the role of *Power Rules* is robust to both measures of turnout and providing supportive evidence for our dynamic hypothesis in that an increase in the level of clarity of responsibility (*Power Rule*) leads to a corresponding and similarly directing change in voter turnout.

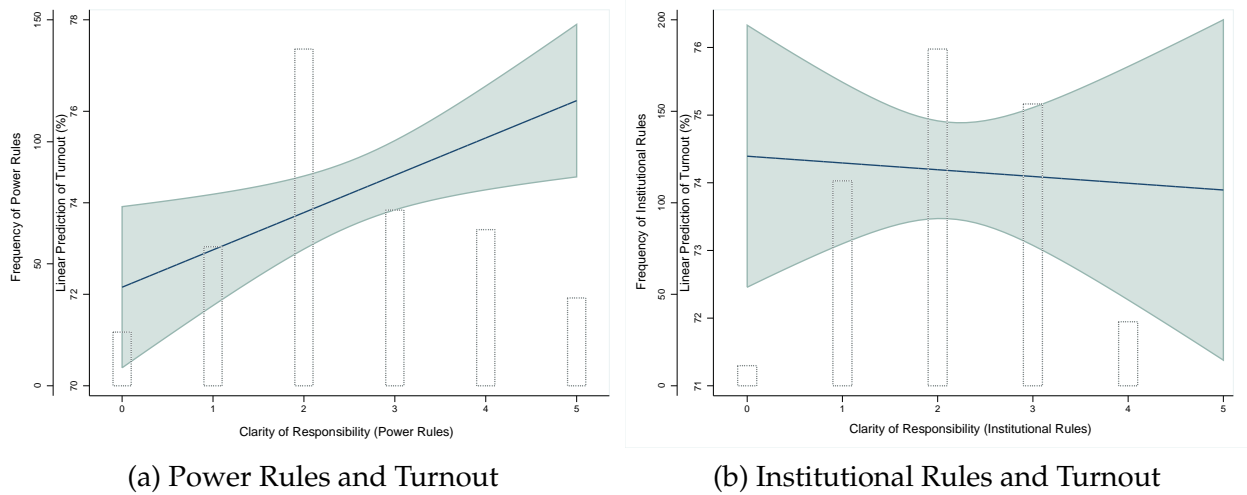
Table 2: Effect of Clarity of Responsibility on Turnout (OLS)

	Dynamic Model				Static Model	
	Model 1 VAP	Model 2 REG	Model 3 VAP	Model 4 REG	Model 5 VAP	Model 6 REG
LDV (VAP)	0.860*** (0.047)		0.905*** (0.071)			
LDV (REG)		0.906*** (0.030)		0.871*** (0.034)		
Institutional Rules	-0.281 (0.420)	0.248 (0.364)	-0.030 (0.409)	-0.067 (0.355)	-0.572 (1.204)	0.946 (1.088)
Power Rules	0.815** (0.368)	0.700*** (0.284)	0.849** (0.348)	0.872** (0.359)	1.434*** (0.409)	1.052** (0.493)
Compulsory Voting			3.792** (1.973)	3.871*** (1.494)	- -	- -
Democracy _{t-1}			-1.185 (1.010)	-0.176 (0.870)	-2.054 (1.806)	-2.303 (1.562)
Election Competition			-0.032 (0.027)	-0.044*** (0.018)	0.010 (0.031)	0.018 (0.037)
GDP Growth _{t-1}			0.082 (0.180)	-0.023 (0.148)	0.108 (0.176)	0.174 (0.132)
GDP (per capita, log) _{t-1}			3.113 (2.182)	3.194** (1.182)	-11.070*** (3.306)	-11.908*** (2.942)
Education Spending _{t-1}			0.066 (0.359)	0.749** (0.313)	0.308 (0.710)	0.153 (0.780)
Population (log)			-0.786 (0.403)	-0.369 (0.350)	-4.801 (2.134)	2.171 (1.973)
Constant	7.783*** (3.201)	3.810* (2.583)	-8.190 (19.228)	-22.581* (12.050)	231.8*** (76.36)	184.7*** (63.25)
Fixed Effects	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
R ² within	0.315	0.415	0.366	0.309	0.384	0.397
R ² between	0.970	0.981	0.967	0.979	0.021	0.095
Countries	34	34	29	29	29	29
Elections	361	369	196	198	205	209

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 2: Predicted Values of Voter Turnout (95% CIs)



Our results are consistent in the static models (Model 5 and 6) with Fixed Effects. While the *Institutional Rules* does not reach a conventional significance level, the *Power Rules* appears to have a statistically significant and positive relationship with turnout across all models. This validates our hypothesis (H1) in that high level of clarity of responsibility (*Power Rule*) leads to a high level of turnout. For further examination, we test the impact of each indicator of both *Institutional* and *Power Rules* separately. The results of these analyses are presented in Appendix A.3 and A.4.^[11]

The difference between *Power Rules* and *Institutional Rules* is obvious in Figure 2. Sub-figure (a) is based on *Power Rules* and (b) is based on *Institutional Rules*. The outer y-axis and the bar graph present the distribution of *Power Rules* and *Institutional Rules*. The inner y-axis and solid line present the linear predicted values of turnout (%) based on post-estimation of the Model 4. The shaded area shows the 95% confidence intervals. There is strong positive association between turnout and *Power Rules* in sub-figure (a). Holding other variables constant at their mean or median, the expected value of turnout is about 72% at the minimum value of *Power Rules*. The expected value of turnout reaches around 76% at the maximum value of *Power Rules*. However, there is weak, albeit negative, association between turnout and *Institutional Rules* in sub-figure (b).

Indeed, *Power Rules* makes the responsibility of incumbent performance clearer so that voters can make retrospective evaluations on policy outcomes. When voters become more able to make a quick and easy vote choice to hold the government accountable, the cost of casting a ballot decreases, voting becomes more decisive, and voters feel higher political efficacy. As a result, the turnout increases. However, voters do not respond to formal institutional arrangements such as *Institutional Rules* when they decide to turnout or not. This finding is in line with Hobolt et al. (2013), albeit their dependent variable is incumbents' vote share, in that "It is the clarity of the incumbent government, its cohesion, which matters more to voters' ability to hold government to account rather than formal institutional divisions of power" (Hobolt et al. 2013: 180).

For further investigation, we also test statistical relationship between clarity of responsibility and political efficacy, which is the base of our third causal mechanism. If our theory is correct, we should observe that political efficacy is indeed lower in lower clarity contexts. Inspired by Hobolt et al. (2013), we use individual-level data from the 2009 European Election Study (EES) (Van Egmond et al. 2010). For a robustness purpose we also included EES 2014 in our analysis.^[12] We created mean scores of *Political Efficacy* across different values of clarity of responsibility. Figure A.1 in Appendix presents the relationship between mean scores of efficacy across clarity of responsibility. Surprisingly, *Political Efficacy* is positively related with *Institutional Rules*, but we get a null finding in regards to *Power Rules*. These results imply that political efficacy is indeed lower in low clarity contexts measured with institutional rules, but it is not affected by power rules. Given that there are a number ways to measure political efficacy (i.g. Zuniga et al. (2017) propose eleven survey questions), our analysis is useful but has serious limitations, since we relied on only one available survey question.

Regarding the control variables, *Compulsory Voting* has a statistically positive impact on turnout. Compulsory voting laws increase turnout by about 3.7% among the voting age population, and 3.8% among registered voters in Model 3 and 4 in Table 2. To account

for differences in the degree of the sanctions and the rigidity of the rules within compulsory voting systems, we also ran the analysis using a more elaborate operationalization of compulsory voting, and find that strongly enforced compulsory voting laws increase turnout (*see* Table A.6 of the Appendix for a complete set of results).^[13]

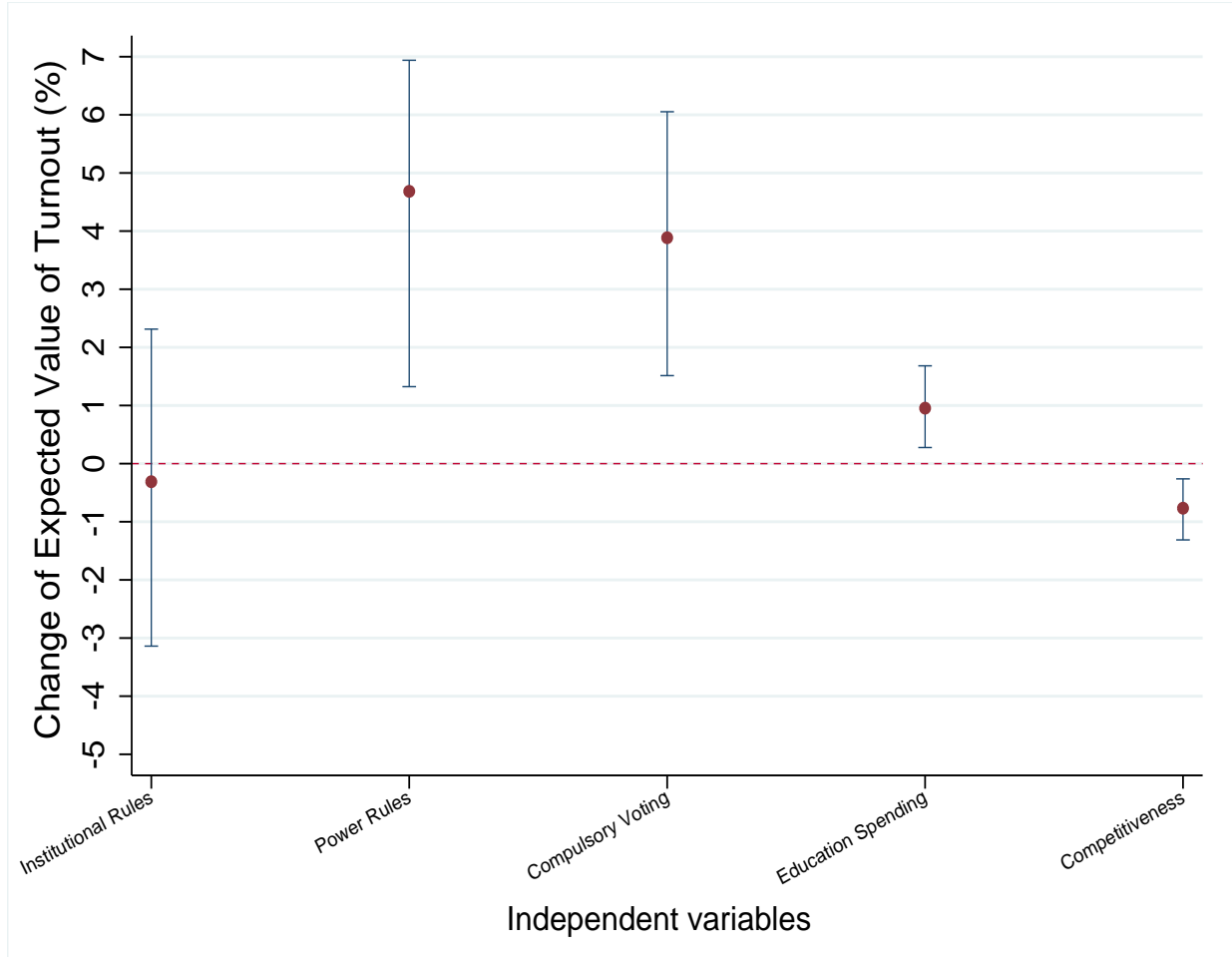
The coefficient of the level of democratic freedom in an election does not reach levels of statistical significance across both measures of turnout. The measure for election competitiveness has a negative relationship with turnout, which is statistically significant only in Model 4. Because higher values of *Electoral Competition* denotes bigger gaps in seat share between governing and opposition parties (which represents less competitive races), we expected a negative association. In other words, turnout tends to increase when the electoral race is competitive.

The measure of economic performance is not statistically significant, and the signs are indecisive across all models in Table. Given the theoretical contradiction on the role of economy in turnout (Radcliff 1992), this null finding is in line with what most studies have reported (i.e. Blais and Dobrzynska 1998; Blais 2000; Fornos et al. 2004; Dettrey and Schwindt-Bayer 2009).

Surprisingly, the level of economic development, measured as *GDP per capita*, appears to have mixed effects across different models. In the dynamic models (Model 3 and 4), our finding is similar to Dettrey and Schwindt-Bayer's (2009), in that it is statistically significant when turnout is measured as percentage of registered voters, but insignificant when turnout is measured as the percentage of voting age population. However, the static analysis (Model 5 and 6) yield statistically significant negative effects of economic development. Given that these models are static, we conclude that voter turnout is lower in more economically developed countries, which is in line with the findings of Gray and Caul (2000). Spending on education is partially supported only in Model 4, suggesting that the results of education spending on turnout is not robust across the rest of the

models. Finally, the size of the country operationalized by its population does not affect turnout rates.

Figure 3: Changes in Expected Value of Turnout (95% CIs)



Note: The simulation is based on Model 4 in Table 2. Holding all other variables at their mean, the value of independent variables changes as follow: *Institutional Rules*, *Power Rules* (*min* → *max*), *Compulsory Voting* (0 → 1), *Education Spending* and *Election Competitiveness* (*p25* → *p75*). High value in *Election Competition* denotes a bigger difference in seat shares between government and opposition parties, indicating a less competitive election.

In order to show the substantive effect of our key independent variable along with some important control variables, we present the quantity of interest by using the Clarify simulation technique (King, Tomz, and Wittenberg 2000). The simulation is based on Model 4 in Table 2. Figure 3 shows the first difference of expected values of voter turnout. The Y-axis is the changes of expected values of turnout as percentage and the X-axis rep-

resent the five key independent variables used in the simulation (i.e. *Institutional Rules*, *Power Rules*, *Compulsory Voting*, *Education Spending* and *Election Competitiveness*). The vertical line for each independent variable is 95% confidence intervals and the dot represents the point estimate of the first difference value in turnout. The clarity of responsibility measured as *Power Rules* increase voter turnout and this effect is statistically significant as the confidence intervals do not cross the zero line in the middle of the figure. More specifically, once we change the value of *Power Rules* from 0 to 5 holding all other variables at their mean, we would expect an increase in turnout rate about 4.7%. However, the 95% confidence intervals of the *Institutional Rules* include *zero*, so increasing its value from 0 to 4 does not affect turnout rates. The simulation results are consistent with the OLS results in Table 2. Overall, it is confirmed that voters are less impeded in their attempt to discover ‘who is responsible’ for policy outcomes by the static institutional arrangements; and thus, the institutional rules do not affect voters’ decision calculi, which determines whether a voter goes to the poll or not.

Compulsory voting laws appear to increase turnout rates by about 4%, holding all other variables at their mean. Indeed, the ‘law’ has power to enforce people to turn out. When we change the value of *Education Spending* from 25 percentile to 75 percentile, it boosts the turnout by 1%, which implies that education helps people to engage in political activities including voting. As expected, when the election race becomes less competitive (for instance, changes its value from 25 to 75 percentile), it decreases turnout by about 0.9%. All of these effects are statistically different from *zero* because the 95% confidences intervals of the *Compulsory Voting*, *Education Spending*, and *Election Competitiveness* do not cross the *zero* line.

Discussion

Comparative studies of voter turnout have examined how a variety of institutional contexts such as electoral systems, party systems, and government structures affect voter turnout across countries. Although clarity of responsibility is widely considered as an important institutional context (Powell and Whitten 1993; Tillman 2008; Dassonneville and Lewis-Beck 2017), it has, until recently, been largely neglected in voter turnout literature.

This article takes a first step toward depicting how voters' ability to discern 'who is responsible' for policy outcomes affects their decision on whether to vote or abstain. The concept of clarity of responsibility suggests a coherent theoretical framework and permits an unambiguous prediction in that low clarity of responsibility tends to increase abstention. We have provided three theoretical explanations for this outcome. First, high clarity of responsibility reduces the cost of voting by making retrospective voting more straightforward. Second, high clarity increases the decisiveness of the election, as voters can expect specific policy changes based on the election outcome. Third, high clarity helps voters have a greater sense of political efficacy. All in all, for these reasons, high-clarity contexts increase voter turnout.

Using time-series cross-sectional data from 34 OECD countries from the 1960s, we found that in general while *Power Rules* (the cumulative measure of single-party government, majority government, limited number of parties, closed economy, and stable cabinet) has a significant positive effect on turnout, *Institutional Rules* (the cumulative measure of majoritarian electoral system, unitary state, no dual executive, and stable democracy) does not. However, the individual-level analysis (using EES 2009 and 2014) on political efficacy portrays different results. Political efficacy appears to have a positive association with *Institutional Rules*, but not with *Power Rules*.

At the aggregate level, the puzzle of why institutional rules do not matter while power rules affect electoral behavior can be further explained. On the one hand, the formal laws and institutions pertaining elections in each country tend to remain fixed across many electoral contests. Due to their longevity, voters are able to socialize into the *Institutional Rules* of their country. Through time they develop appropriate heuristics that allow them to minimize information costs about the electoral process regardless of institutional structure. Similar heuristics allow voters to discern probable changes in terms of policy regardless of institutional structure.

On the other hand, the characteristics of the government formed after an election have a high likelihood of changing in each electoral contest. They form the dynamic component of clarity of responsibility (*Power Rules*). As they change much more frequently than their counterpart, voters are not socialized within the context of a particular set of *Power Rules* and, therefore, cannot develop heuristics as in the case of the *Institutional Rules*. So, the dynamic component of clarity of responsibility affects the level of voter turnout by influencing the cost of voting, electoral decisiveness and political efficacy.

However, the role of clarity of responsibility on political efficacy should be further investigated. While our theory is partially supported, our naive test is based on limited data (only two elections and 9 countries), a weak proxy of political efficacy, and limited variation in the key independent variable, our finding is rather inconclusive. An individual level research design, with a more nuanced measure of political efficacy, and over a longer period of time will be necessary in order to reach more conclusive results.

The findings of this article contribute to our understanding of institutions and voting behavior in two ways. First, although the existing literature has informed us that clarity of responsibility conditions voters' ability to hold political leaders accountable for policy performance, it had not considered abstention as a viable option. Our finding fills this gap, presenting that clarity of responsibility affects not only vote choice but also the lev-

els of voter turnout. As phrased by Silva and Whitten , “[C]larity of responsibility has the potential to travel beyond economic voting. What other important policy dynamics might be influenced by variations in clarity?” (2017: 89) Our research is one example that pushes the research of clarity of responsibility beyond the reward-punishment mechanism of voting, thereby enlarging the scope of debate about the consequences of clarity of responsibility on political participation.

Second, our research contributes to our understanding of the two different attributes of clarity of responsibility. The static institutional components of clarity of responsibility such as electoral systems, form of government (e.g., unitary state or dual executives), and levels of democracy do not affect turnout. However, the dynamic components of clarity of responsibility like minority government, coalition government, the number of parties, cabinet formation, and economic openness that often changes over time have statistically and substantively meaningful effects on electoral turnout. This result is in line with the findings of Hobolt et al. (2013) and Dassonneville and Lewis-Beck (2017), although their dependent variable is vote choice. This implies that future studies should take careful steps in theorizing and testing the role of clarity of responsibility on various political phenomena by taking the two different kinds of characteristic of the variable into account.

Studies of voting behavior should pay explicit attention to whether they are accounting for voter turnout in high-clarity or low-clarity of responsibility contexts. Though a few research papers have examined the effects of divided government (Carlin and Love 2013) or coalition government (Jackman and Miller 1995; Tilman 2015), our study uncovers that disparity of turnout across advanced democracies is explained, in part, by static and dynamic factors specific in the context of clarity of responsibility. Therefore, future research on turnout should take clarity of responsibility into account.

Notes

1. Effective number of electoral parties
2. The way they named the elements is based on things that are expected to increase *clarity of responsibility*, so that they use 'unitary state' rather than 'Federalism' although they are essentially the same.
3. For the robustness purpose, we test the impact of each indicator of this cumulative index and offer the empirical results in Appendix A.3 and A.4. See Note 9 for a detail explanation.
4. For a review on turnout measurement, see Appendix A in Geys (2006).
5. The correlation in the two measures of dependent variable is high, the Pearson correlation coefficient is 0.84 ($p < .0001$), indicating that they are very similar, though not identical, measures of turnout.
6. website: <http://www.idea.int>
7. Dassonneville and Lewis-Beck's measure runs from 0 to 5 because their *Institutional Rules* is the summative index from five elements.
8. Indeed, Australia, Belgium, Canada, Switzerland, Czech Republic, Estonia, Spain, Great Britain, Hungary, Lithuania, Latvia, Poland, Romania, Slovakia, and Slovenia have not experienced any change in their *Institutional Rules* measure.
9. Previous studies have used a measure of difference in vote share between the two largest parties (i.e. Blais and Dobrzynska 1998; Kostadinova 2003). In fact, Hobolt and Klemmensen (2006) point two potential drawbacks of using the two first parties' vote-share. For a detailed analysis, see the footnote #10 in page 13 in their unpublished manuscript. Although we follow Hobolt and Klemmensen's suggestion, we also run our models by using the difference in vote share between the two largest parties for a robustness check. This test verifies that our results are robust across all models. *Institutional Rules* does not affect turnout rates, but there is a positive and statistically significant association between *Power Rules* and voter turnout. The results of this additional test are in Table A.5 in the Appendix.
10. The FE models drop the time-invariant variables such as *Compulsory Voting* from the model.
11. None of the indicators of *Institutional Rules* has reached a conventional level of statistical significance when we use VAP as a dependent variable (A.3). In the case of REG, majoritarian electoral systems and no dual executive appear to increase voter turnout (A.4). This second finding follows our theoretical expectations as both the existence of a majoritarian system (Hellwig and Samuels 2008) and the lack of a dual executive (Dassonneville and Lewis-Beck 2017) increase clarity of responsibility. On the other hand, existing literature on voter turnout seems to portray them as institutions with opposite effects. Upon closer examination of this literature, it became apparent that the two institutions have not been included in the same models. Specifically, scholars have predominantly included the electoral system (majoritarian/proportional) rather than the regime type (presidential/parliamentarism). Following this trend, the large meta-analyses on this literature do not discuss regime type (Geys 2006; Cancela and Geys 2016; Stockemer 2017). A possible explanation for this is the high correlation of parliamentarism with proportional representation and presidentialism with majoritarian electoral systems. Given our results, though, as well as the growing skepticism about the robustness of the effects of PR on turnout (Smith 2018), we believe that considering the electoral systems and regime type as having separate effects would be a step forward in understanding voter turnout. With regard to individual indicators of *Power Rules*, three variables (majority government, limited number of parties and stable cabinet) affect VAP-turnout (A.3), while only two (majority government and limited number of parties) appear to affect REG-turnout (A.4).
12. To measure political efficacy, we used "The national parliament takes into consideration the concerns of ordinary citizen" guided by Blais (2014) and Zuniga et al. (2017). Blais (2014) measures *external efficacy* by using the question "How much do you believe the federal government cares about what people like you think?". Similarly, Zuniga, Diehl and Ardevol-Abreu (2017) measure *government political efficacy* using a question of "my government makes decisions based on what citizens want."

13. For this analysis we only use the subsample of cases in which compulsory voting laws are in effect. This variable was acquired from V-Dem, and the cases are coded 1 for no sanctions, 2 for light sanctions, and 3 for heavy sanctions. The analysis reveals that heavier sanctions lead to significant increases in voter turnout. This relationship is robust in Model 1, Model 2, and Model 4. The results are consistent with Dettrey and Schwindt-Bayer (2009).

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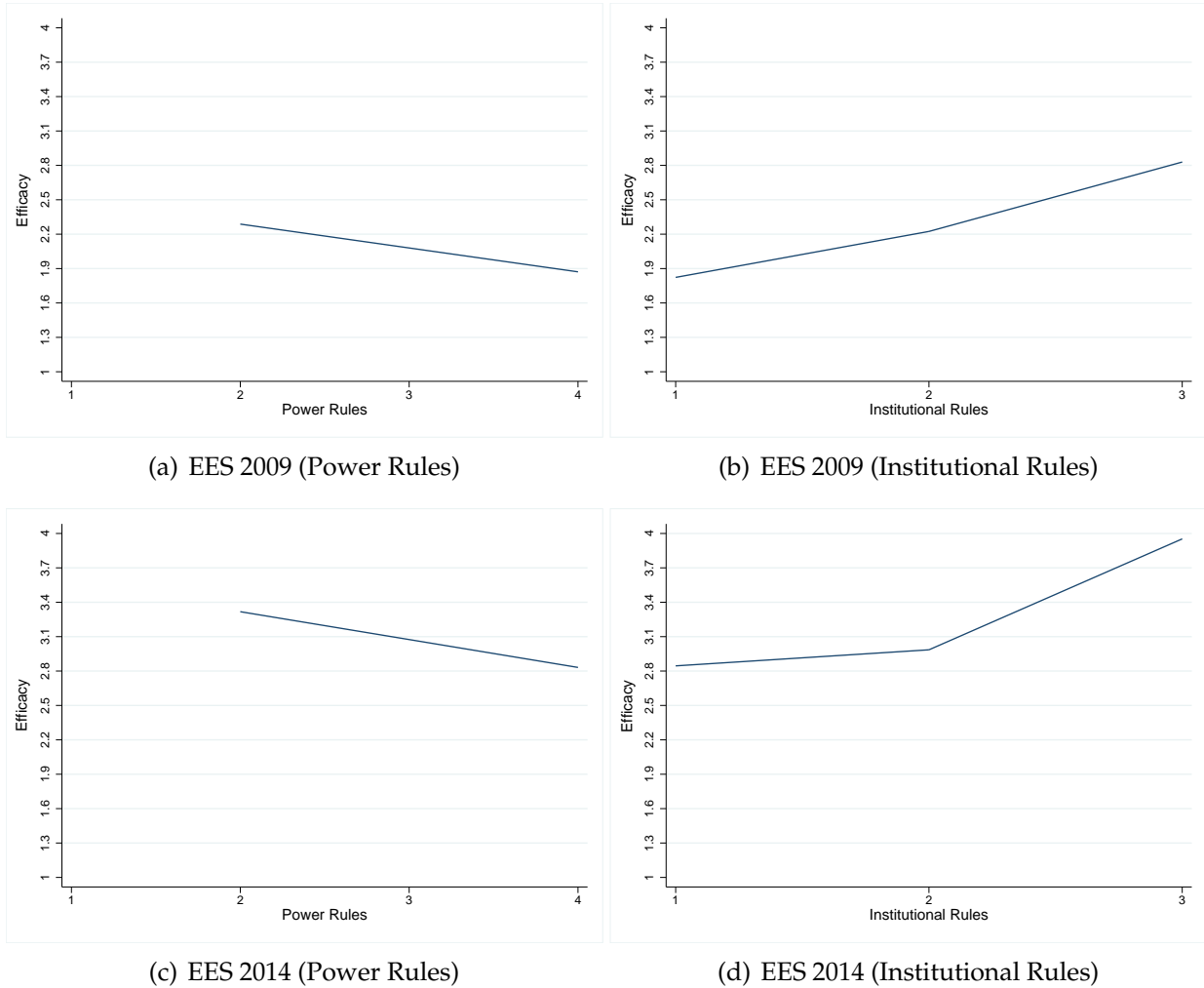
A Appendix

Source of Information on Power Rules and Institutional Rules

Information on democratic electoral systems comes from Bormann and Golder (2013), and is coded as either majoritarian system or proportional/mixed electoral system. Bormann and Golder's (2013) dataset also contains information on dual executives (i.e. a semi-presidential system). Dassonneville and Lewis-Beck (2017) code countries with no federal systems as *unitary states*, using information on federal states from the Forum of Federations. The information on *stable democracy*, which has been calculated as the age of democracy, is obtained from the Polity IV dataset.

Dassonneville and Lewis-Beck (2017) obtained information on each of the elements from various objective data sources as well. Data on *single-party government*, *majority government*, and *stable cabinet* is provided by ParlGOV (Döring and Manow 2012). The *stable cabinet* is measured as the length of time the government has been in office (expressed in years). Gallagher's dataset (2015) is the source of information on effective number of parties (ENEP). Following Fernández-Albertos (2006), *closed economy* is measured as the sum of a country's exports and imports (expressed as % of GDP and obtained from the World Bank's dataset).

Figure A.1 Average Political Efficacy and Clarity of Responsibility



Note: The x -axis presents clarity of responsibility measured as *Power Rules* and *Institutional Rules*, and the y -axis is the mean scores of *Political Efficacy*. The *Political Efficacy* is measured by a question, “The national parliament takes into consideration the concerns of ordinary citizens (Q44)” in EES 2009 and 2014. The difference in mean scores of *Political Efficacy* across different values of *Institutional Rules* is about 1.05 (2.85 – 1.80) in 2009 and 1.13 (3.95 – 2.82) in 2014. Given the fact that the standard deviation of *Political Efficacy* is about 1.22 in 2009 and 0.88 in 2014, the changes in them according to *Institutional Rules* are substantial. The t -test reveals that the mean score of *Political Efficacy* is statistically different from each other across *Institutional Rules* ($t = 3.142, p < 0.001$) in the 2009 sample, and the result is robust in the 2014 sample. However, changes in *Political Efficacy* across *Power Rules* are rather small (i.e., 0.38 in 2009 and 0.50 in 2014), and the t -test shows that the difference is not statistically significant ($t = 0.169$).

Table A.1: Countries and Elections included in the analysis

Country	1961	1963	1966	1969	1972	1974	1975	1977	1980	1983	1984	1987	1990	1993	1996	1998	2001	2004	2007	2010	2013
Australia	1962	1966	1970	1971	1975	1979	1983	1986	1990	1994	1995	1999	2002	2006	2008	2013					
Austria	1961	1965	1968	1971	1974	1977	1978	1981	1985	1987	1991	1995	1999	2003	2007	2010	2014				
Belgium	1997	2001	2009																		
Bulgaria	1962	1963	1965	1968	1972	1974	1979	1980	1984	1988	1993	1997	2000	2004	2006	2008	2011	2015			
Canada	1996	1998	2002	2006	2010	2013															
Czech Republic	2001	2006	2011																		
Cyprus	1964	1966	1968	1971	1973	1975	1977	1979	1981	1984	1987	1988	1990	1994	1998	2001	2005	2007	2011	2015	
Denmark	1999	2003	2007	2011	2015																
Estonia	1962	1966	1970	1972	1975	1979	1983	1987	1991	1995	1999	2003	2007	2011	2015						
Finland	1962	1967	1968	1973	1978	1981	1986	1988	1993	1997	2002	2007	2012								
France	1972	1976	1980	1983	1987	1990	1998	2002	2005	2009	2013										
Germany	1981	1985	1990	1992	1996	2000	2004	2007	2009												
Greece	1998	2002	2006	2010	2014																
Hungary	1963	1967	1971	1974	1978	1979	1983	1987	1991	1995	1999	2003	2007	2009							
Iceland	1961	1965	1969	1973	1977	1981	1987	1989	1992	1997	2002	2007	2011								
Ireland	1963	1968	1972	1976	1979	1983	1987	1992	1994	1996	2001	2006	2008								
Italy	1963	1967	1969	1972	1976	1979	1980	1983	1986	1990	1993	1996	2000	2003	2005	2009	2012				
Japan	1998	2002	2006	2010	2011	1024															
Latvia																					
Lithuania	2008																				
Luxembourg	1964	1968	1974	1979	1984	1989	1994	1999	2004	2009	2013										
Malta	1971	1976	1981	1987	1992	1996															
Netherlands	1963	1967	1971	1972	1977	1981	1982	1986	1989	1994	1998	2002	2003	2006	2010	2012					
New Zealand	1972	1975	1978	1981	1984	1987	1990	1993	1996	1999	2002	2005	2008	2011	2014						
Norway	1961	1965	1969	1973	1977	1981	1985	1989	1993	1997	2001	2005	2009	2013							
Norway	1997	2001	2005	2007	2011	2015															
Poland	1980	1983	1985	1987	1991	1995	1999	2002	2005	2009	2011	2015									
Portugal	1996	2000	2004	2008																	
Romania	1998	2002	2006	2010	2012																
Slovakia	1996	2000	2004	2008	2011	2014															
Slovenia	1982	1989	1993	1996	2000	2004	2008	2011	2015												
Spain	1964	1968	1970	1973	1976	1979	1982	1985	1988	1991	1994	1998	2002	2006	2010						
Sweden	1983	1987	1991	1995	1999	2003	2007	2011	2015												
Switzerland	1964	1966	1970	1979	1983	1987	1992	1997	2001	2005	2010	2014									
United Kingdom	1964	1966	1970	1979	1983	1987	1992	1997	2001	2005	2010	2014									

Note: Years expressed in bold appear in both naive (Model 1 & 2) and full model (Model 3 & 4). Years without a bold expression appear only in native model.

Table A.2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Turnout (VAP)	74.799	13.782	14.28	99.570	369
Turnout (REG)	78.763	13.085	32.4	98.2	369
Institutional Rules	2.181	0.936	0	4	369
Power Rules	2.532	1.33	0	5	369
Compulsory Voting	0.086	0.281	0	1	209
Democracy (Polity IV)	9.722	0.679	6	10	209
Election Competitiveness	17.646	17.078	0	100	209
GDP Growth	2.609	3.144	-17.73	9.8	209
GDP (per capita, logged)	9.568	0.398	8.184	10.256	209
Education Spending (% GDP)	5.125	1.203	1.442	8.617	209
Population (logged)	9.354	1.083	7.201	11.748	209

Table A.3: Effect of Clarity of Responsibility on Turnout (VAP) (Disaggregate)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Majoritarian System	2.985 (1.915)								
Unitary State		-4.038 (6.683)							
No Dual Executive			8.444 (6.524)						
Stable Democracy				-0.092 (0.058)					
Single-Party Gov't					-0.571 (1.314)				
Majority Gov't						2.740** (1.301)			
Limited Number of Parties							28.19*** (10.21)		
Stable Cabinet								0.529* (0.312)	
Closed Economy									57.58 (149.8)
Compulsory Voting	22.37*** (6.344)	20.29*** (7.462)	20.22*** (6.937)	24.60*** (6.616)	23.53*** (6.555)	22.56*** (6.053)	23.57*** (6.853)	23.81*** (6.756)	23.28*** (6.896)
Democracy	-1.077 (1.482)	-1.022 (1.491)	-1.033 (1.547)	-1.070 (1.491)	-0.976 (1.477)	-1.246 (1.502)	-1.535 (1.391)	-1.105 (1.513)	-1.081 (1.475)
Election Competition	0.003 (0.031)	0.002 (0.031)	0.003 (0.032)	0.003 (0.030)	0.001 (0.031)	-0.001 (0.032)	0.023 (0.029)	0.001 (0.031)	0.003 (0.031)
GDP Growth	0.053 (0.195)	0.053 (0.195)	0.059 (0.196)	0.034 (0.195)	0.053 (0.193)	0.076 (0.196)	0.093 (0.195)	0.034 (0.192)	0.075 (0.195)
GDP (per capita, log)	-12.25*** (1.595)	-12.73*** (1.527)	-12.88*** (1.510)	-9.144*** (2.934)	-13.02*** (1.630)	-12.57*** (1.530)	-11.33*** (1.579)	-13.21*** (1.513)	-12.18*** (1.939)
Education Spending	0.230 (0.528)	0.227 (0.541)	0.197 (0.534)	0.343 (0.541)	0.214 (0.538)	0.360 (0.539)	0.266 (0.505)	0.236 (0.537)	0.239 (0.539)
Population (log)	-0.325 (2.267)	-0.454 (2.408)	-0.459 (2.328)	0.526 (2.306)	-0.082 (2.323)	-0.057 (2.291)	-0.207 (2.186)	-0.057 (2.287)	-0.448 (2.491)
Constant	193.8*** (25.64)	202.7*** (28.56)	196.2*** (26.15)	160.5*** (33.13)	198.7*** (25.94)	194.0*** (25.86)	181.4*** (25.57)	199.9*** (25.94)	193.7*** (29.73)
N	207	207	207	207	207	207	207	207	205

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Effect of Clarity of Responsibility on Turnout (REG) (Disaggregate)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Majoritarian System	4.25** (1.865)								
Unitary State		-6.585 (5.369)							
No Dual Executive			12.15** (4.853)						
Stable Democracy				-0.013 (0.05)					
Single Party Gov't					-0.004 (1.183)				
Majority Gov't						2.074** (1.024)			
Limited Number of Parties							39.95*** (8.861)		
Stable Cabinet								0.195 (0.306)	
Closed Economy									42.53 (134.489)
Compulsory Voting	27.48*** (3.617)	23.85*** (5.178)	24.39*** (4.024)	29.18*** (3.782)	29.01*** (3.722)	28.23*** (3.473)	29.08*** (4.162)	29.14*** (3.824)	28.95*** (4.132)
Democracy	-1.698 (1.301)	-1.659 (1.312)	-1.677 (1.431)	-1.588 (1.3)	-1.572 (1.298)	-1.632 (1.297)	-2.352* (1.222)	-1.597 (1.304)	-1.702 (1.298)
Election Competition	0.015 (0.034)	0.012 (0.034)	0.014 (0.035)	0.014 (0.034)	0.014 (0.034)	0.01 (0.034)	0.042 (0.030)	0.013 (0.034)	0.014 (0.033)
GDP Growth	0.094 (0.141)	0.095 (0.142)	0.106 (0.14)	0.093 (0.143)	0.096 (0.143)	0.112 (0.144)	0.151 (0.149)	0.089 (0.144)	0.119 (0.139)
GDP (per capita, log)	-9.564*** (1.653)	-10.26*** (1.561)	-10.54*** (1.558)	-9.674*** (2.615)	-10.16*** (1.722)	-10.04*** (1.598)	-7.906*** (1.553)	-10.40*** (1.599)	-9.887*** (1.829)
Education Spending	0.265 (0.549)	0.269 (0.576)	0.203 (0.557)	0.280 (0.58)	0.265 (0.574)	0.388 (0.582)	0.333 (0.511)	0.271 (0.574)	0.250 (0.563)
Population (log)	-0.463 (1.841)	-0.607 (1.911)	-0.564 (1.781)	0.019 (1.829)	-0.057 (1.833)	-0.082 (1.777)	-0.426 (1.652)	-0.037 (1.827)	-0.249 (2.029)
Constant	177.2*** (20.266)	190.8*** (22.806)	180.9*** (21.362)	173.9*** (26.896)	178.6*** (20.360)	176.5*** (20.085)	157.6*** (19.209)	180.5*** (20.450)	178.3*** (23.472)
N	211	211	211	211	211	211	211	211	209

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Effect of Clarity of Responsibility on Turnout (using difference in vote share between the two largest parties for *Election Competition*)

	Model 1 VAP	Model 2 REG	Model 3 VAP	Model 4 REG
LDV (VAP)	0.917*** (0.072)			
LDV (REG)		0.858*** (0.047)		
Institutional Rules	0.015 (0.443)	0.136 (0.351)	0.834 (1.098)	2.318 (1.325)
Power Rules	0.873** (0.386)	1.089** (0.458)	2.034*** (0.476)	1.992*** (0.586)
Compulsory Voting	3.180* (1.904)	3.936** (1.684)	21.71*** (5.314)	27.65*** (3.695)
Democracy _{t-1}	-1.547 (1.149)	-0.364 (1.213)	-0.913 (1.768)	-1.971 (1.666)
Election Competition	-0.017 (0.059)	-0.019 (0.062)	-0.075 (0.061)	-0.053 (0.062)
GDP Growth _{t-1}	0.099 (0.182)	0.006 (0.155)	0.139 (0.201)	0.185 (0.143)
GDP (per capita, log) _{t-1}	4.194* (2.337)	3.226** (1.273)	-11.21*** (2.163)	-9.188*** (2.710)
Education Spending _{t-1}	-0.034 (0.392)	0.816** (0.355)	0.439 (0.770)	0.450 (0.887)
Population (log)	-0.747 (0.531)	-0.577 (0.537)	-1.052 (2.135)	-1.596 (2.094)
Constant	-16.14 (20.01)	-20.16 (13.59)	183.0*** (29.46)	177.8*** (31.36)
Countries	28	28	28	28
Elections	169	170	177	178

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: Effect of Clarity of Responsibility on Turnout (using the degree of the rigidity of the rules within *Compulsory Voting* system)

	Model 1 VAP	Model 2 REG	Model 3 VAP	Model 4 REG
LDV (VAP)	0.897*** (0.075)			
LDV (REG)		0.858*** (0.034)		
Institutional Rules	0.195 (0.442)	0.188 (0.295)	1.016 (0.979)	3.103** (1.275)
Power Rules	0.706* (0.371)	0.679* (0.350)	1.559*** (0.429)	1.135** (0.542)
Compulsory Voting	1.961** (0.973)	2.236*** (0.726)	5.103 (3.462)	9.871*** (3.202)
Democracy _{t-1}	-1.014 (1.164)	0.206 (1.044)	-0.989 (1.775)	-1.217 (1.578)
Election Competition	-0.042 (0.028)	-0.054*** (0.017)	0.012 (0.034)	0.017 (0.041)
GDP Growth _{t-1}	0.088 (0.182)	-0.037 (0.146)	0.108 (0.186)	0.148 (0.140)
GDP (per capita, log) _{t-1}	2.987 (2.317)	2.769** (1.152)	-11.21*** (1.799)	-9.895*** (2.359)
Education Spending _{t-1}	0.139 (0.363)	0.846*** (0.299)	0.587 (0.729)	0.625 (0.816)
Population (log)	-0.619 (0.445)	-0.327 (0.413)	-0.353 (2.159)	-0.772 (2.034)
Constant	-9.989 (19.59)	-22.21** (11.14)	176.8*** (27.40)	168.4*** (26.77)
Countries	28	28	28	28
Elections	187	189	196	200

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$