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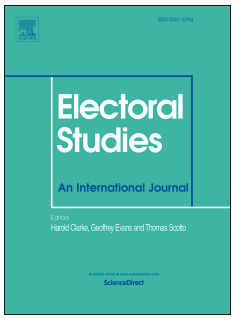

How does turnover affect turnout? Government alternation and voter participation in parliamentary democracies

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How Does Turnover Affect Turnout? Government Alternation and Voter Participation in Parliamentary Democracies[1]

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[1] Both authors have contributed equally; the order of authors' names reflects the principle of alternation.

Introduction

A crucial difference between political systems is the nature of government alternation (Mair 1997). Whenever a government changes there are two possible outcomes: In one variant, all parties in government become opposition parties and an entire new government is assembled ('wholesale alternation'). This system prevails in Scandinavian countries such as Sweden, many Central European countries (e.g. Hungary), but it also exists in many two-party systems such as the United Kingdom, where the dominance of two parties means that voters essentially have to choose between leaving the government in power and voting in the opposition. In wholesale alternation systems, the result tends to be immediately clear after an election: Either the governing parties/party will be able to form a government again, or the opposition bloc/party will do so.

In the other variant, when a government changes,[1] some parties may leave government, some parties may enter government and at least one party stays in government ('partial alternation'). This tends to be the case in countries like Germany, Finland and Estonia. During the French Fourth Republic and the Italian First Republic all changes in government were partial alternation. In such systems, the outcome of government formation talks cannot be predicted on the night of the elections, as many different coalitions can be formed. Authors like Bergman and Strøm (2011) propose that in systems with wholesale alternation the quality of democracy is higher, as voters have a clear choice between alternative governments, whereas in systems with partial alternation, the relationship between voting and the outcome of government formation is less clear, reducing the quality of democratic governance.

We know very little about to what extent this difference between party systems[2] affects how citizens engage with the political system. We argue in this paper that differences

[1] When it comes to elections, which lead to the same government forming after an election as existed prior to it, there is no alternation to observe, but simply 'non-change'. As we are interested in a feature of party systems, namely the patterns of government-building which exist in a polity, and non-change is essentially driven by electoral results, the cases where the government is re-elected do not influence our argument. Note that non-change can occur both in countries which predominantly feature partial alternation (e.g. Kok I & II and Lubbers I and II in the Netherlands), and in countries which a dominated by full alternation (e.g. Thatcher I, II, & III in the UK and Reinfeldt I & II in Sweden). We are interested in what happens when governments do change, not the frequency of their change.

[2] Throughout the text, we follow Sartori (1976, 43–44) and use the term 'party system' to refer to "the system of interactions resulting from inter-party competition", and in particular to the governmental party system (Bardi and Mair 2008, 159–60), at the heart of which there is the pattern of government-building in a system. While the

in norms and expectations about government formation can help explain differences in turnout. In wholesale alternation systems, elections directly matter for the outcome of government formation; voters have a clear and often competitive choice between teams of governors. In partial alternation systems, months-long formation talks can mean that the two main rivals of the elections can end up in government together or that a party (or parties), which was punished in the elections, nonetheless ends up in government. We seek to test whether the difference in clarity, competitiveness and accountability between systems with wholesale and partial alternation can help encourage voters to turn out on election day.

This is, however, only part of our argument: When the seat totals do not proportionally reflect the votes cast, wholesale alternation may actually weaken turnout. The reason for this is that, when it is possible for parties not supported by a majority of voters to win power, clear-cut victories are, from the perspective of many citizens, worse than those election outcomes which necessitate compromises between the parties in parliament. We thus aim to show the relevance of wholesale and partial alternation for turnout. This difference between political systems has been examined theoretically by some authors (Mair 1997, 2001), and some authors have used it to understand differences between the dynamics in political systems in case-based studies (Green-Pedersen 2002; Anthonsen and Lindvall 2009; Otjes and Rasmussen 2017; Meyer-Sahling and Veen 2012; Louwerse et al. 2017). However, no tests exist of its relevance for the quality of democracy in a large-N study.

It is not our claim that we offer a completely alternative theory of voter turnout. Rather we propose that within the existing literature, which focuses on phenomena such as electoral systems, closeness of the election and compulsory voting, wholesale and partial alternation forms a small but significant addition that can help to understand differences between systems that are very similar according to these criteria.

This article will have the following structure: First, we will further explore the concept of wholesale and partial alternation, discuss the existing knowledge on turnout, and link our ideas about alternation to this literature. Second, we discuss our data and modelling strategy. Third, we analyse the data on the relationship between patterns of government formation and turnout. In the final section we draw a number of conclusions concerning the effect of patterns of party competition on turnout, and sketches a research agenda concerning further examination between wholesale alternation and democratic quality.

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governmental party system is of course only part of what constitutes a party system, for ease of legibility, we use the term ‘party system’ throughout the text.

1 Wholesale and Partial Alternation

References to the difference between political systems that offer voters the opportunity to make a choice between 'alternative teams of governors' and systems that do not, date back to the 1970s (Rokkan 1970, 93). Similarly, Finer (1975, 31) draws a distinction has been drawn between systems characterized by "absolute and abrupt" alternations in government and systems where the parties of left or the right both need a party of the centre to form a coalition. Yet, this difference has not been the subject of much theorization (Mair 2008; Lundell 2011; Ieraci 2012). For those who are interested in comparative politics, however, this is a very relevant distinction. The extent to which the government changes composition is an important feature of a party system. What makes a party system more than simply a collection of parties is the way these interact when competing for government (Mair 1997; Sartori 1976, 39).

Wholesale and partial alternation refers to how government changes: wholesale alternation can be observed in two-party systems, common in Commonwealth systems like the United Kingdom or Malta. According to Sartori (1976, 165) wholesale alternation is the distinguishing mark of the mechanics of "twopartism". One can, however, also observe this in two-bloc systems like Norway and Sweden, where cabinets focused around the Social Democrats have alternated with cabinets of 'bourgeois' parties. A similar pattern of alternation between the two largest parties in the system has developed in countries that have more recently democratized, such as Spain and Hungary. A number of countries have only seen partial turnout or limited government turn-over, such as Latvia and Luxembourg. It was also a key characteristic in the dynamics of politics in some periods, such as the Italian First Republic and the French Fourth Republic, which contrast with the emphasis on wholesale alternation in the subsequent periods.

Government alternation is seen as an important indicator of democratic quality (Cheibub, Gandhi, and Vreeland 2009; Kaiser et al. 2002; Lundell 2011). Accountability for instance is closely linked to government alternation. If a system is characterized by wholesale alternation, voters have the ability to vote out their government (Mair 2008, 237), while in systems with partial alternation it is more difficult for citizens to force government change. Moreover, wholesale alternation systems are expected to be more responsive to election outcomes. Elections really matter for government formation, and at the end of election night it is clear which parties will be in government (Lundell 2011; Mair 2008). Wholesale alternation is also seen as a sign of more stable party system (Mair 1997; Casal Bértoa and Enyedi 2016).

All in all, the literature indicates that wholesale turnover is a sign of healthy democracy, in which voters have a clear choice between teams of governors, meaning that elections matter and voters can hold the government accountable.

In contrast, partial alternation is associated with far less positive traits. Partial alternation is traditionally associated with one party having an effective monopoly on power because it was always in government whether in coalition or alone. For example, the Italian *Democrazia Cristiana* (DC) was continuously in government between 1946 and 1994 in the Italian First Republic. It formed the 'pivotal' party and could form a governing majority with either the parties to the left of it, or the parties to its right. No government was conceivable without the DC. Such a pivotal party may block extremist parties from government; this combination of one party having a practical monopoly on government and another group of parties being excluded from government has been described as 'toxic' (Bergman and Strøm 2011, 20–21). The semi-permanent government party may become corrupt, while the permanent opposition parties may radicalize due to their frustration with the democratic process (Sartori 1976). Yet, a centrist pivotal party may also cause the parties of the left and right to moderate, a disciplining effect of desiring to govern with the centrist party. Even when this party has weakened, party competition may remain more centripetal in partial alternation systems (Green-Pedersen 2004). Moreover, there is a greater chance that in systems with partial alternation the party representing the median voter determines government formation (Strøm and Bergman 2011, 30–31). It is important to note that all these phenomena may co-variate with partial alternation but that we understand this concept specifically as a way in which governments change. There are systems with partial alternation where no party continually stays in government and partial alternation systems where a party stays in government for many years. There are systems with partial alternation where parties are clumped together in the centre and partial alternation systems where they are spread out over the left-right dimension.

The difference between wholesale and partial alternation has been used in case-based studies to explain differences between similar party systems: Green-Pedersen (2002) has used it to explain differences in welfare state reform; Anthonsen and Lindvall (2009) and Otjes and Rasmussen (2017) use it to explain why in some systems right-wing parties have better connections with trade unions than in others; Meyer-Sahling and Veen (2012) use it to explain civil service politicization; finally, Louwerse et al. (2017) use it to explain why in some parliaments the coalition-opposition divide is stronger than in others.

1.1 Explaining Turnout

In political science, the main drivers of turnout are well-established, to the extent that some authors speak of an 'embarrassment of riches' (Smets and Van Ham 2013). In the literature on turnout authors often differentiate between individual-level and aggregate level research (Geys 2006; Smets and Van Ham 2013). As we are looking at a feature of the party system, we will approach the literature from the aggregate perspective. At the core of the literature stands the idea of the rational voter (Downs 1957b). Citizens will only turn out to vote if they believe the chance that their vote matters times the utility of voting outweighs the cost of voting. This leads to a well-known paradox: If voters thought like this, very few would turn out to vote, yet in most democracies the majority of voters *do* turn out to vote.

While this theory fails to explain why voters turn out, it succeeds explaining when abstention occurs. Thus, the size of the electorate is a good predictor of turnout; the more voters there are, the lower turnout is. Within the rational choice approach to voting this is rational since if there are more people voting the chance that your vote matters declines (Geys 2006; Owen and Grofman 1984). Similarly, the closer an election is, that is, the smaller the gap between the two biggest parties, the greater the chance of any given vote mattering is, and the higher turnout is (Geys 2006; Matsusaka and Palda 1993). Tillman (2015) has proposed that pre-electoral coalitions (PECs) can boost turnout by creating clarity in multiparty systems without reducing proportionality. They offer voters a clear and predictable choice between different teams of governors in an election. The focus of Tillman's (2015) argument is on PECs, defined as "a collection of parties that do not compete independently in an election, either because they publically agreed to coordinate their campaigns, run joint candidates or joint lists, or enter government together following the election" (Golder 2006, 12). Such coalitions are found to boost turnout by more than 1.5 percentage points (Tillman 2015, 728–29).

The logic behind the effect of the electoral system on turnout is similar. In proportional representation (PR) systems, voters believe that their vote has a greater chance of mattering, making them more likely to turn out on election day (Geys 2006; Tillman 2015). Due to the lower disproportionality in PR systems (Ladner and Milner 1999), voters are less likely to believe that their vote will not influence the result because smaller parties are unlikely to win representation (Jackman 1987). Moreover, under PR systems the elections are likely to be more competitive compared to majoritarian systems (Blais and Carty 1990; Selb 2009; Tillman 2015, 727), with a lower chance of there being lopsided electoral districts

where votes are likely to be wasted. Following Blais and Dobrzynska (1998) and Tillman (2015) we expect that disproportionality only decreases turn-out in PR systems. Following Franklin (2004) and Tillman (2015), we expect that only in plurality systems closeness will increase turnout.

While so far, we have focused on the chance that one's vote matters, the cost side of the electoral calculus may also affect turnout. Under compulsory voting fines are put on non-voting. If these costs outweigh the costs of voting, voters are more likely to turn out (Geys 2006; Blais 2000). Other explanations of turnout instead follow the 'logic of appropriateness': one could for instance argue that 'voting may be habit-forming' (Geys 2006, 646) and therefore much like brushing your teeth one is socialized into it (Wuffle 1984; Dinas 2012).

1.2 Wholesale and Partial Alternation and Turnout

Having outlined the key factors that according to the literature influence turnout, the question becomes how this relates to wholesale and partial alternation. An important element here is how we conceptualise 'the chance that one's vote matters'. If a system has wholesale alternation, the link between the government that will be formed after the election and the votes cast will be clear: either the left bloc (or party) or the right bloc (or party) will win a majority. Often the race between those blocs or parties is competitive. Contrast this with systems of partial alternation, where unpredictable coalition formation talks make the link between voting and the final outcome of the vote (the new government) unclear. The probability that voters can make a reasonable estimate how their vote affects the government formation process is low; the link between voting and government formation is obscured (Geys 2006; Ladner and Milner 1999; Tillman 2015; Downs 1957a). This has often been seen as a weakness of PR systems. However, this should instead be understood as a weakness of partial alternation systems. In PR systems with wholesale alternation, voters may enjoy both the benefits of PR (in terms of low disproportionality) and those of plurality systems (competitive elections with a clear choice).

This is, however, only part of the story. In systems with high disproportionality, moving from partial to wholesale alternation may actually reduce turnout: High disproportionality indicates that votes are not treated equally. Most ideological divisions in the system are suppressed by the electoral system. If high disproportionality is combined with some form of partial alternation, coalitions may be more centrist as they bridge the existing blocs. Coalition need to be formed out of the parties competing, making it more likely that

different constituencies will be catered to. Moreover citizens may have the expectation that once their representatives are in parliament, they have a reasonable shot of getting in a coalition. If high disproportionality is combined with wholesale alternation, then, for a lot of voters, the elections will be between two blocs or parties they do not particularly care for, while whichever "third" party they do support is unlikely to enter government or even parliament. Voters are less likely to turn out if the elections are a clear choice between two options they dislike.

All in all, we expect that there is an interaction relationship between the difference between wholesale and partial alternation one the one hand and disproportionality on the other that predicts turnout:

1. *Low Disproportionality Hypothesis:* When disproportionality is low, systems that previously saw wholesale alternation are more likely to see higher turnout compared to systems that previously saw partial alternation.
2. High Disproportionality Hypothesis: When disproportionality is high, systems that previously saw wholesale alternation are more likely to see lower turnout compared to systems that previously saw partial alternation.

Essentially, one can think of there being a trade-off between a majoritarian and consensual logic (Lijphart 1999). In systems that enjoy all the benefits of consensus democracy in terms of representativeness, adding a little bit of majoritarianism (in the form of wholesale alternation) increases accountability, clarity and competitiveness. In majoritarian systems where a large share of votes are "wasted" (Anckar 1997), wholesale alternation reinforces the negative aspects of majoritarian systems. Here, partial alternation mitigates some of the problems by forcing parties of different political colours to work together.

This approach is similar to that of Tillman (2015) in that we propose that offering greater clarity concerning the link between electoral results and government formation may boost turnout. There are, however, a number of important differences. First, theoretically, as discussed above, we argue that when combined with a disproportional electoral system, wholesale alternation can actually reduce turnout. Second, methodologically, we look at a norm or expectation of government formation instead of an explicit commitment, that is, rather than focussing on the formalised predictability of PECs, our argument centres around the retrospective predictability provided by historical government formation. Therefore we are able to look beyond the cases where explicit PECs exist, allowing us to analyse a greater

number of elections. Finally, having a pre-electoral coalition and wholesale turn-over is not necessarily the same. One can imagine a situation where a group of opposition parties forms a pre-electoral coalition but is unable to win a majority and therefore they are forced to strike a coalition with some of the previous government parties (as happened in the Netherlands in 1972-1973). Or, much more common, a situation where without an explicit commitment to form a coalition beforehand, the opposition still forms a government after defeating the government in the elections.

2 Data and model operationalization

The key dependent variable we study in this paper is turnout, understood as the number of votes cast as a share of the number of eligible voters. We draw this data from the ParlGov data base (Döring and Manow 2016). Our dataset covers all democratic elections between 1961 and 2016 in advanced industrial democracies with parliamentary and semi-presidential systems in Europe, the Middle East, and around the Pacific Ocean: it covers 36 countries.[3]

Our theoretical mechanism concerns an interaction between the electoral system and the party system. The idea is that there is an interaction relationship between the level of disproportionality and the extent to which there is wholesale alternation. Disproportionality is measured using Gallagher's (1991) least-squares formula (included in the ParlGov database). We look at the disproportionality in the preceding election. To examine the effect of wholesale alternation we look at whether the last change in the partisan composition government was wholesale (assigned value one) or not (assigned value zero).[4] In using such a dichotomous approach we follow Enyedi and Casal Bértoa (2011). We establish this based on the ParlGov dataset (Döring and Manow 2016).[5]

[3] Australia, Austria, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom. For countries that transitioned to democracy in the period under study, we only include elections after which a country has remained democratic until 2016. We exclude fully presidential systems like the US and Cyprus, because here the relationship between turn-out for parliamentary elections and government formation is weakened. Please see table A.1 in the appendix for a full list of elections covered.

[4] As this variable is coded based on the last *change* in government, a government being re-elected does not influence the coding of this variable.

[5] There is little, if any, correlation between the share of wholesale alternations and the year of the election (Pearson's r = 0.14). It is thus not the case that this variable merely picks up on the secular decline in turn-out many countries have seen. Moreover the population variable (which is constantly increasing over time) should capture any time trend to a large degree.

There are a number of different ways to measure the level of partial or wholesale alternation, and as Casal Bértoa and Enyedi (2016, 268) note, the late Peter Mair, who did a lot of empirical and theoretical work on this distinction, "kept changing measures". To more fully examine these different conceptualisations, we include two alternative operationalisations. First, following Ieraci (2012) we look at a measure that takes into account the share of seats occupied by government parties that changed after an election, which Ieraci (2012) dubs the 'Government Turn-over Index'. To illustrate, the FDP (with 67 seats) entered the German government with the CDU/CSU (with 242 seats) in following the 1961 election. With the CDU/CSU already in power, the change in government composition was smaller than when the CDU/CSU was joined the SPD in government in following the 2005 election (when they held 226 seats and 222 seats respectively). The GTI was 0.21 in 1961 and 0.50 in 2005. This measure still has a maximum of one (wholesale alternation), but has a more nuanced measure of partial alternation, which now can take any number between almost zero and almost one.

Second, we analyse the Average Wholesale Alternation, which is the share of wholesale alternations after elections in the decade before any given election. Note that the N in our analyses when using this variable is lower, as it only takes a non-missing value if the government has changed in the previous ten years. These variables make slightly different assumptions about what citizens remember: The dichotomous measure of wholesale and partial alternation assumes that citizens only remember the last change in government when considering whether to vote or not. The GTI assumes that citizens evaluate larger and smaller changes in government differently. Average Wholesale Alternation assumes that citizens are able to remember changes in government over the last ten years and when these have not been consistent in being either wholesale or partial alternation, we assume that voters' reaction is going to be a mix of their reaction to wholesale and partial alternation.

We control for a number of features that we know from the literature influence turnout. Focussing on the variables which Geys' rich meta-study (2006) found to significantly and consistently influence turnout, we firstly include logged population size, as the more voters there are, the less likely voters will turn out: the larger number of voters, the smaller the chance that any individual vote will matter for the outcome. We draw this data from the World Bank database,[6] available between 1960 and 2016. Second, we include a measure of economic growth based on the same data (available between 1961 and 2016). Third, we

[6] https://data.worldbank.org/

include closeness, that is, the difference between the largest and the second largest party in the previous election. The closer the election is, the more likely that voters will turn out because that increases the chance that their vote will actually matter. This data is drawn from the ParlGov dataset. Fourth, we include whether the elections were held under compulsory voting, which can have a substantially large effect on turnout (Franklin 1999); information on this was drawn from the IDEA voter turnout database.[7] We also look at the electoral system, by including two binary variables: One indicates whether a country uses a proportional representation (PR) electoral system (yes = 1; no=0), while the other indicates the presence of a plurality electoral system (yes = 1; no=0). Note that it is possible for both of these variables to be equal to 1 at the same time; for example, this is the case in Germany. This is drawn from Tillman (2015), with additions from Bormann and Golder (2013). Following Elgie and Fauvelle-Aymar (2012) we also include a measure of semi-presidentialism in our analysis.[8] We expect that stronger presidencies reduce turn-out. We use Siaroff's (2003) scale of presidential power. Note that this study specifically does not cover countries with fully executive presidencies and therefore does not cover Cyprus and the United States.

We also include a number of control variables based on Tillman (2015). First, we include the effective number of electoral parties in the previous election; given the lack of clear results in Geys (2006) we do not have an explicit expectation about the direction of this relationship. We also include different operationalisations of the notion of pre-electoral coalitions, all drawn from Tillman (2015): Whether at least one of these coalitions is present (one if it is; else zero); the vote share these PECs obtained in the previous election; and whether, in total, PECs got more than 20% of the vote. As a result of missing variables our analyses span the period 1970-2015 for the 22 countries included in Tillman (2015), covering 249 elections.[9] The analyses without the variables related to PECs cover the period 1960-2015 for all countries in ParlGov, with 401 elections in total. Here the limiting factor is data on population size and economic growth, which is only available from the 1960s onwards. Table 1 provides descriptive statistics of the key variables.

[Table 1 about here]

[7] https://www.idea.int/data-tools/data/voter-turnout

[8] We thank one of the anonymous reviewers for this suggestion.

[9] The Tillman data set has data for Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden and the United Kingdom.

We run two kinds of statistical models. Firstly, we run multilevel regressions with random effects at the country level. As a robustness check we run a fixed-effects regression (as done in Tillman 2015). This second method treats the values of each variable as deviations from the country mean. The coefficients express the extent to which each of the independent variables explains these deviations. This means that this method focuses on within-country differences, between-country differences being captured by the country fixed effects.

3 Results

Table 2 shows multilevel regressions. In the Appendix Table A.3 to A.5 show multilevel regressions with different set-ups. Table A.2 (also in the Appendix) shows the fixed effects regressions. The models in A.3 use the share of the occurrences of alternation after elections that were wholesale alternation in the last decade as a robustness test for the measure that we use in the rest of the analyses (whether the last government alternation after elections was wholesale alternation). Table A.4 looks at the share of seats that are new to government as a share of all government seats. Table A.5 include an interaction between wholesale alternation and the effective number of parties. Model 1 in the main text and models 7, 13 and 19 in the appendix show models without the interaction between wholesale alternation and disproportionality, but include controls for population size, the electoral system, closeness and compulsory voting. Model 2 in the main text and models 8, 14 and 20 in the Appendix add the interaction between wholesale alternation and disproportionality. Model 3 in the main text and models 9, 15, 21 and 25 in the Appendix add the effective number of political parties. Model 4 in the main text and models 10, 16, 22 and 26 in the Appendix add the variable for Pre-Electoral Coalitions, Model 5 in the main text and models 11, 17, 23 and 27 in the Appendix add the votes of the PECs; and finally Model 6 in the main text and models 12, 18, 24 and 28 in the Appendix add whether PECs received more than 20% of the vote. Note that the number of observations is 37% smaller in the models including the PEC-related variables, due to the lower number of elections for which PEC data is available.

Without the interaction (Model 1, 7, 13 and 19) wholesale alternation does not have a significant positive effect on turnout. In model 19, using the GTI, the effect is actually significant and negative: wholesale alternation measured in that way is associated with lower turn-out.

Our key mechanism is the interaction between wholesale alternation and the disproportionality of elections, which is included in all other models. Every model supports the presence of such an interaction mechanism. In each case there is a negative, strong and significant interaction term. In every model the turn-out is lower in systems with strong disproportionality and wholesale alternation compared to systems with low disproportionality and wholesale alternation. [10]

[Table 2 about here]

In order to more clearly illustrate the effects, we have plotted the marginal effect of the interaction between wholesale alternation and disproportionality in Model 2, as shown in Figure 1. The results for the other models are similar (as can be seen in Figure A.1 in the appendix). Figure 1 shows that firstly, that at very low levels of disproportionality, turnout is higher in systems that have wholesale alternation (by around three percentage points if there is no disproportionality). Secondly, turn-out declines sharply as disproportionality increases. Once disproportionality reaches five per cent, wholesale alternation is associated with a negative effect on turnout. At the maximum level of disproportionality (25%), turnout is 20 percentage points lower in systems with wholesale alternation compared to systems with partial alternation. Every additional model with control variables in Table 2 supports this strong, significant negative effect of disproportionality on turn-out, all but one additional model with control variables in Table 2 supports the smaller, but still significant, positive effect of a proportional election outcome on turnout. In Model 3 (the model with the effective number of parties but without other controls), the effect is of comparable size but no longer significant.

[Figure 1 about here]

The fixed effects regressions (Table A.2 in the Appendix) support the conclusions from the multilevel model. In these models, there is both a large negative effect of

[10] One might expect that the positive effect of wholesale alternation on turn-out for low levels of disproportionality may be because of a regional effect for the Nordic countries. When running the models without the Nordic countries, we still find the interaction effect.

disproportionality on turn-out and a small positive effect of proportionality on turn-out. The marginal effect plots in Figure A.1, which all support the same conclusion. Using the two alternative measures of wholesale alternation (the ten year average and the ratio variable GTI) leads to similar but slightly weaker results. The basic pattern is still present under every specification: an increasingly negative effect of the level of wholesale alternation on turnout for higher levels of disproportionality (as can be seen in Figure A.1 in the appendix). However, the small positive effect on wholesale alternation on turn-out is no longer significant. Both the measures are more granular, as they differentiate between systems with only wholesale alternation, only partial alternation and some mix (for the ten year average) or between systems with wholesale alternation and elections after which larger or smaller parties joined existing governments. If the actual underlying mechanism is whether the previous election led to wholesale alternation or not, these measures thus introduce measurement error into the model, leading to non-significant results at low levels of disproportionality. In table A.5 (in the Appendix) we include an interaction between wholesale alternation and the effective number of parties. Figure A.2 (in the Appendix) shows that this never has a significant effect on turn-out. In each of these models, however, there still is a strong negative effect of wholesale alternation on turn-out in systems with high disproportionality. In these models, however, the positive effect of wholesale alternation on turn-out is no longer significant.

Nonetheless, these models all support the conclusion that moving from partial to wholesale alternation in systems with high disproportionality reduces turn-out. Two patterns underlie this effect. On the one hand, there are countries that moved from a system of partial alternation to a system of wholesale alternation, such as France. During periods, where the last government change after an election was partial alternation, turn-out was 17 points higher than in the period where wholesale alternation was the norm. As the expectations of partial alternation under disproportionality are replaced by wholesale alternation under disproportionality, turn-out drops. On the other hand there are countries that traditionally have partial alternation, but which sometimes also have very high levels of disproportionality. The high levels of turn-out that are associated with these systems persist despite the disproportionality of their electoral system. The case in point here is Iceland, which due to its small assembly size can sometimes have a rather disproportional outcome, such as in 1950s, but still has turnout above 90%.

These results show that wholesale alternation reduces turnout when the electoral system is disproportional: In those systems, the competition for power is mainly between two

large parties, which can win government power while only winning a plurality of the vote. For those who have political views that do not easily align with either of these two parties, voting is likely to be unsatisfactory. Partial alternation in such systems indicates that smaller parties have been included in the government, which benefits those voters whose views do not neatly fit with those of the two main parties.

Furthermore, these results show that, as we expected, the combination of wholesale alternation and low disproportionality provides ideal conditions for maximising turnout. This effect is, however, relatively small and it is only significant under specific circumstances. The benefits of wholesale alternation, even in systems with low disproportionality, should not be over-stated.

Many of our control variables conform to the expectations as well: a higher population is associated with lower turnout: a decrease of about 40 percentage points in Model 1 between the smallest and the largest country. Economic growth is associated with higher levels of turn-out: between the country with the lowest and the highest growth turn-out increases by 6 percentage points. Compulsory voting increases turnout by more than 10 percentage points. PECs in different set-ups also raise turnout by between 0.95 and 2.49 percentage points. Those findings are in line with Tillman (2015). Note that PECs can be present in systems with partial alternation, and that wholesale alternation can occur without PECs; the two patterns coexist. Also note that our findings are robust to the inclusion of various operationalisations of PECs, indicating that alternation influences turnout in a different way to PECs. In these models, a higher effective number of political parties is also associated with lower turnout, estimated to be 7 percentage points lower in the country with the most fractionalized party system, compared to the country with the least fractionalized party system. The interaction for disproportionality and PR or closeness and plurality voting are not significant. Finally, in most models there is no significant effect of semi-presidentialism on turn-out.

4 Conclusion

The central idea in this article is that party system dynamics affect the level of turnout in a political system. Disproportionality combined with wholesale alternation is detrimental to turnout. Systems with the highest level of disproportionality, like Canada and the United Kingdom, are multiparty systems at the electoral level but two-party systems when it comes to government formation. Those who prefer the policies of, say, the New Democratic Party in Canada do not have a strong incentive to turn-out: The government will almost certainly

either be formed by the Liberal Party or the Conservative Party. A majority of voters will be dissatisfied by the result of elections, dampening enthusiasm to vote in the future. However, when the last election led to partial alternation in systems with high disproportionality, voters did turn out in higher numbers: it was more likely that voters of small parties that did end up in parliament would be able to see their representatives in government.

In addition to this negative effect of wholesale alternation under high disproportionality, there is a small positive effect of wholesale alternation under low disproportionality. The addition of wholesale alternation may boost turn-out because it adds clarity, competitiveness and accountability. These systems combine the best of PR systems, namely that votes are not wasted, with the best of plurality systems, namely competitive elections with a clear choice. We found that the addition of wholesale alternation boosts turnout by 2% in the most proportional electoral systems, but only under specific specifications. Our results align with those of Tillman (2015), who found a similar effect of clarity of choice on turn-out in his study of Pre-Electoral Coalitions. Both approaches yield significant results when combined in a single model. Yet, the negative effect of wholesale alternation on turnout in the most disproportional system is almost ten times stronger than the positive effect in the least disproportional systems.

These results are relevant for those who are interested in turnout and those who are interested in party systems. For those who are interested in turnout, the results show that the way in which party system dynamics affect turnout, differs from system to system. Party system dynamics are often incorporated into models of turnout through the idea of "closeness", the difference between the two largest parties. That logic, however, only applies to two-party systems with wholesale alternation: The party that wins the election forms the next government. In countries with partial alternation, being the largest party does not give one a monopoly on cabinet formation. Out of the smorgasbord of options, cabinets without the largest party are also possible (Martin and Stevenson 2001, 2010). In systems with two-bloc systems, the relevant measure of closeness is not the difference between the two largest parties but rather the difference between the two blocs. All in all, this paper shows that party system dynamics may directly influence turnout.

For students of party systems, the difference between wholesale and partial alternation has been on the radar for a while, but only on the margins. This article took the first steps to show the relevance of government alternation for the quality of democracy, understood as the level of popular engagement (Mair 2013; Lijphart 1999) or more theoretically the dimension of inclusiveness (Dahl 1956, 1971). Increasing clarity, competition and accountability in

electoral outcomes does not necessarily stem the declining levels of turnout observed by some (Mair 2013). Rather, we found that where the advantages of clarity were combined with proportionality, turnout is slightly higher. The combination of wholesale alternation and disproportionality was shown to be most negative for turnout because these are situations where there is an effective duopoly on power. This, we propose, undermines the incentive to vote for those voters who do not identify with those two parties of power.

Future research should examine the link between wholesale and partial alternation on the one hand and democratic quality on the other in greater detail, in particular at the voter level. For one, research may want to examine how satisfaction with democracy and feelings of efficacy are affected by this difference in party systems. Do citizens in bloc systems feel more satisfied with their democracy when governments can be held accountable? Is the combination of PR and wholesale alternation the best of both worlds for democratic satisfaction because of its combination of clarity, choice and accountability on the one hand and representation on the other?

Moreover, research may want to examine how wholesale and partial alternation shape elite and party behaviour: Does the presence of pivotal parties that are inevitably necessary for government formation, increase government corruption? And does wholesale alternation in this way provide a way to prevent political monopolization? Does being blocked from power radicalize permanent opposition parties? And what does that mean for systems with alternation between two parties or those where government formation is determined by partial alternation between a limited numbers of parties? Is negative campaigning and adversarial behaviour in parliament less prevalent in systems with partial alternation because in the free-for-all of the following coalition formation process any combination of parties is possible? And what does this difference mean for policy-making? Is the combination of multiparty systems with partial alternation the worst of both worlds because the hand of the government is neither strong nor steady (Finer 1975; Lijphart 1999, 257)?

In sum, there is a large number of ways in which wholesale and partial alternation can be expected to influence the functioning and success of democratic regimes. While this paper represents a first step in exploring this in a robust, large-N comparative manner, the findings presented here indicate that this distinction is a crucial addition to our understanding of voter turnout, and may also be so for multiple other aspects of democratic rule.

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Tables and Figures

Table 1: Descriptive statistics

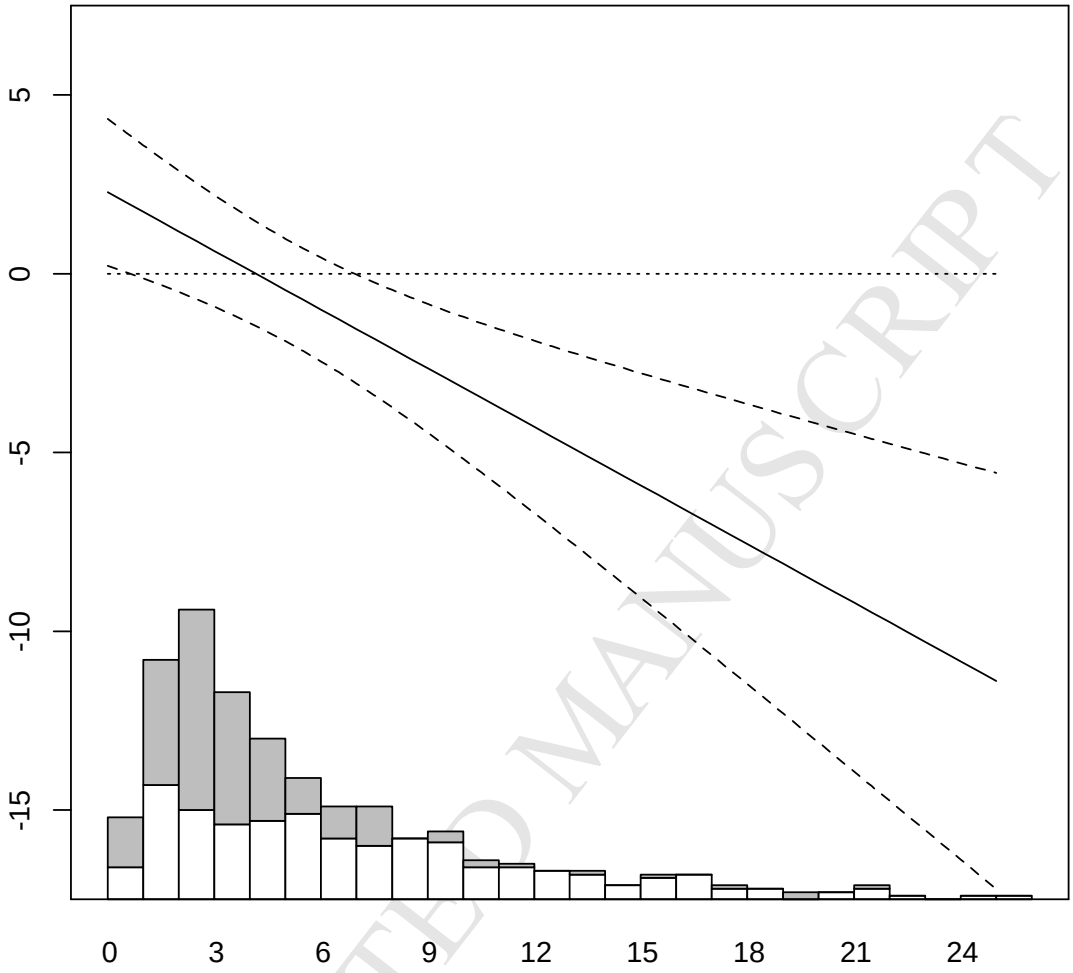
Variable	Mean	Median	Min.	Max.	S.D.	N
Turn out	78.01	79.33	39.20	97.53	12.80	581
Population	16.00	16.00	12.13	18.67	1.48	477
Economic Growth	3.10	3.24	-8.77	17.02	3.22	440
Wholesale Alternation	0.56	-	0.00	1.00	-	471
Disproportionality	5.77	4.07	0.33	27.05	4.79	547
Proportional Representation	0.81	-	0.00	1.00	-	588
Effective Number of Political Parties	4.29	3.90	1.92	13.82	1.64	547
Closeness	9.92	7.6	0.00	59.1	8.76	549
Plurality	0.17	-	0.00	1.00	-	587
Compulsory Voting	0.17	-	0.00	1.00	-	869
PEC	0.52	-	0.00	1.00	-	264
Vote in PEC	21.65	0.00	0.00	100	-	264
PEC > 20%	0.36	-	0.00	1.00	-	264
Semi-presidentialism	1.86	0.00	0.00	7.00	1.86	594
Average Wholesale Alternation in last 10 years	0.57	1.00	0.00	1.00	0.47	368
GTI	0.72	1.00	0.00	1.00	0.35	471

Table 2: Multilevel Regression Models for Turn-out

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	168.11***	164.79***	155.84***	149.43***	148.29***	149.31***
	(20.46)	(20.29)	(19.53)	(17.52)	(17.54)	(17.53)
Population	-5.97***	-5.97***	-5.21***	-4.38***	-4.36***	-4.38***
	(1.27)	(1.26)	(1.22)	(1.08)	(1.08)	(1.08)
Economic Growth	0.27***	0.25***	0.23**	0.22**	0.21*	0.20*
	(0.10)	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)
Semi-Presidentialism	0.89	0.88	0.77	0.78	0.67	0.75
	(0.63)	(0.62)	(0.61)	(0.56)	(0.56)	(0.55)
Wholesale Alternation	-0.56	2.27*	1.92	2.81**	2.57**	2.52**
	(0.88)	(1.25)	(1.26)	(1.26)	(1.25)	(1.24)
Disproportionality	-0.18	0.38	0.41*	0.93***	0.93***	0.92***
	(0.16)	(0.23)	(0.23)	(0.28)	(0.28)	(0.28)
Wholesale Alternation * Disproportionality		-0.55***	-0.56***	-0.94***	-0.90***	-0.91***
		(0.17)	(0.17)	(0.21)	(0.21)	(0.21)
Proportional Representation	-3.36	-2.34	-2.56	-2.10	-1.77	-2.28
	(2.97)	(2.95)	(2.93)	(3.07)	(3.06)	(3.04)
Proportional Representation * Disproportionality	-0.01	-0.15	-0.11	-0.24	-0.24	-0.23
	(0.20)	(0.21)	(0.21)	(0.24)	(0.24)	(0.24)
Effective Number of Political Parties			-0.56**	-1.18***	-1.12***	-1.15***
			(0.25)	(0.33)	(0.32)	(0.32)
Plurality	0.53	2.30	1.94	2.25	2.68	2.59
	(2.70)	(2.72)	(2.72)	(2.72)	(2.71)	(2.70)
Closeness	0.03	0.05	0.02	0.02	0.06	0.05
	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
Closeness * Plurality	-0.06	-0.10	-0.07	-0.08	-0.12	-0.12
	(0.13)	(0.13)	(0.13)	(0.14)	(0.14)	(0.13)
Compulsory Voting	12.62***	13.36***	13.30***	12.56***	13.58***	13.26***
	(2.61)	(2.59)	(2.56)	(2.99)	(3.01)	(2.98)
Pre-Electoral Coalition				1.59**		
				(0.75)		
Vote in PEC					0.04***	
					(0.01)	
PEC > 20%						2.43***
						(0.75)
N	401	401	401	249	249	249
N Countries	36	36	36	22	22	22
Log likelihood	-1312.18	-1307.25	-1304.84	-750.54	-748.49	-747.65
Wald Chi^2	81.73***	93.86***	98.49***	101.28***	107.27***	109.78***
Random Effects	192.03	188.83	166.04	64.58	64.80	65.05
	(63.21)	(61.20)	(52.74)	(26.20)	(26.15)	(26.08)
Residual	27.79	27.09	27.07	17.46	17.17	17.01
	(2.15)	(2.09)	(2.08)	(1.70)	(1.66)	(1.65)
ICC	0.87	0.87	0.86	0.79	0.79	0.79
	(0.04)	(0.04)	(0.04)	(0.07)	(0.07)	(0.07)

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

Figure 1: Marginal effect of wholesale alternation and disproportionality on turnout



Based on Model 2 with 90% confidence interval

Appendix

Table A.1: Elections included

Country	Elections included
Australia	1961 1963 1966 1969 1972 1974 1975 1977 1980 1983 1984 1987 1990 1993 1996 1998 2001 2004 2007 2010 2013 2016
Austria	1971 1975 1979 1983 1986 1990 1994 1995 1999 2002 2006 2008 2013
Belgium	1961 1965 1968 1971 1974 1977 1978 1981 1985 1987 1991 1995 1999 2003 2007 2010 2014
Bulgaria	1997 2001 2005 2009 2013 2014
Canada	1962 1963 1965 1968 1972 1974 1979 1980 1984 1988 1993 1997 2000 2004 2006 2008 2011 2015
Croatia	2007 2011 2015 2016
Czech Republic	2002 2006 2010 2013
Denmark	1964 1966 1968 1971 1973 1975 1977 1979 1981 1984 1987 1988 1990 1994 1998 2001 2005 2007 2011 2015
Estonia	1999 2003 2007 2011 2015
Finland	1962 1966 1970 1972 1975 1979 1983 1987 1991 1995 1999 2003 2007 2011 2015
France	1962 1967 1968 1973 1978 1981 1986 1988 1993 1997 2002 2007 2012
Germany	1972 1976 1980 1983 1987 1990 1994 1998 2002 2005 2009 2013
Greece	1985 1989 1993 1996 2000 2004 2007 2009 2012 2015
Hungary	1998 2002 2006 2010 2014
Iceland	1963 1967 1971 1974 1978 1979 1983 1987 1991 1995 1999 2003 2007 2009 2013 2016
Ireland	1973 1977 1981 1982 1987 1989 1992 1997 2002 2007 2011 2016
Israel	1961 1965 1969 1973 1977 1981 1984 1988 1992 1996 1999 2003 2006 2009 2013 2015
Italy	1963 1968 1972 1976 1979 1983 1987 1992 1994 1996 2001 2006 2008 2013
Japan	1963 1967 1969 1972 1976 1979 1980 1983 1986 1990 1993 1996 2000 2003 2005 2009 2012 2014
Latvia	1998 2002 2006 2010 2011 2014
Lithuania	1996 2000 2004 2008 2012 2016
Luxembourg	1964 1968 1974 1979 1984 1989 1994 1999 2004 2009 2013
Malta	1976 1981 1987 1992 1996 1998 2003 2008 2013
Netherlands	1963 1967 1971 1972 1977 1981 1982 1986 1989 1994 1998 2002 2003 2006 2010 2012
New Zealand	1978 1981 1984 1987 1990 1993 1996 1999 2002 2005 2008 2011 2014
Norway	1965 1969 1973 1977 1981 1985 1989 1993 1997 2001 2005 2009 2013
Poland	1993 1997 2001 2005 2007 2011 2015
Portugal	1979 1980 1983 1985 1987 1991 1995 1999 2002 2005 2009 2011 2015
Romania	1996 2000 2004 2008 2012 2016
Slovakia	1998 2002 2006 2010 2012 2016
Slovenia	1996 2000 2004 2008 2011 2014
Spain	1986 1989 1993 1996 2000 2004 2008 2011 2015 2016
Sweden	1979 1982 1985 1988 1991 1994 1998 2002 2006 2010 2014
Switzerland	1983 1987 1991 1995 1999 2003 2007 2011
Turkey	1995 1999 2002 2007 2011 2015 2015
United Kingdom	1964 1966 1970 1974 1979 1983 1987 1992 1997 2001 2005 2010 2015

Table A.2: Fixed Effects Regression Models for Turn-out

Variable	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Constant	308.59***	300.27***	293.59***	380.46***	370.26***	367.37***
	(34.12)	(33.91)	(34.94)	(49.30)	(49.42)	(49.36)
Population	-14.60***	-14.27***	-13.78***	-18.79***	-18.18***	-17.97***
	(2.13)	(2.11)	(2.20)	(3.09)	(3.09)	(3.09)
Economic Growth	0.16	0.15	0.14	0.15	0.14	0.14
	(0.10)	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)
Semi-Presidentialism	1.80**	1.80**	1.80**	1.35**	1.25*	1.31**
	(0.72)	(0.71)	(0.71)	(0.66)	(0.66)	(0.65)
Wholesale	-0.45	2.11*	1.99	2.68**	2.58**	2.54**
Alternation	(0.88)	(1.25)	(1.26)	(1.26)	(1.25)	(1.25)
Disproportionality	-0.16	0.34	0.36	0.95***	0.94***	0.94***
	(0.16)	(0.24)	(0.24)	(0.28)	(0.28)	(0.28)
Wholesale Alternation * Disproportionality		-0.49***	-0.50***	-0.93***	-0.91***	-0.92***
		(0.17)	(0.17)	(0.21)	(0.21)	(0.21)
Proportional Representation	-1.16	-0.40	-0.54	-1.00	-1.33	-1.70
	(3.10)	(3.09)	(3.09)	(3.78)	(3.76)	(3.76)
Proportional Representation * Disproportionality	0.03	-0.10	-0.08	-0.23	-0.21	-0.21
	(0.21)	(0.21)	(0.21)	(0.25)	(0.25)	(0.25)
Effective Number of Political Parties			-0.21	-0.56	-0.54	-0.58
			(0.26)	(0.35)	(0.35)	(0.35)
Plurality	-1.67	0.02	-0.10	0.56	0.86	0.85
	(2.77)	(2.81)	(2.81)	(2.90)	(2.89)	(2.88)
Closeness	-0.01	0.01	-0.00	-0.02	0.00	-0.00
	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
Closeness * Plurality	0.04	0.00	0.01	0.03	0.00	0.00
	(0.13)	(0.13)	(0.13)	(0.14)	(0.14)	(0.14)
Compulsory Voting	9.77***	10.60***	10.62***	11.03**	12.63***	12.41***
	(2.83)	(2.82)	(2.82)	(4.31)	(4.41)	(4.32)
Pre-Electoral Coalition				0.95		
				(0.75)		
Vote in PEC					0.03**	
					(0.01)	
PEC > 20%						1.73**
						(0.77)
N	401	401	401	249	249	249
N Countries	36	36	36	22	22	22
F	9.82***	9.86***	9.14***	9.24***	9.52***	9.64***
R-squared With	0.23	0.25	0.25	0.38	0.38	0.39
R-squared Between	0.02	0.02	0.02	0.18	0.19	0.19
R-squared Overall	0.05	0.05	0.06	0.15	0.16	0.16
Rho	0.96	0.95	0.95	0.98	0.98	0.98

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

Table A.3: Multilevel Regression Models for Turn-out with Average Wholesale Alternation in last 10 years

Variable	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
Constant	211.68***	207.41***	186.19***	153.75***	153.41***	153.12***
	(22.52)	(22.36)	(21.23)	(19.12)	(19.22)	(19.08)
Population	-8.66***	-8.61***	-6.97***	-4.81***	-4.79***	-4.78***
	(1.39)	(1.38)	(1.33)	(1.17)	(1.18)	(1.17)
Economic Growth	0.24***	0.23**	0.20**	0.24**	0.25**	0.23**
	(0.09)	(0.09)	(0.09)	(0.11)	(0.11)	(0.11)
Semi-Presidentialism	1.61**	1.59**	1.44**	0.80	0.81	0.83
	(0.63)	(0.62)	(0.60)	(0.59)	(0.59)	(0.59)
Average Wholesale Alternation in last 10 years	-0.60	1.81	1.02	2.28	2.01	1.99
	(0.96)	(1.35)	(1.36)	(1.51)	(1.50)	(1.49)
Disproportionality	-0.23	0.28	0.29	1.14***	1.10***	1.09***
	(0.16)	(0.26)	(0.26)	(0.37)	(0.37)	(0.37)
Average Wholesale Alternation in last 10 years * Disproportionality		-0.47**	-0.45**	-0.91***	-0.87***	-0.85***
		(0.19)	(0.19)	(0.28)	(0.28)	(0.28)
Proportional Representation	-6.86**	-5.31*	-5.48*	-0.32	-0.33	-0.45
	(2.93)	(2.97)	(2.93)	(3.44)	(3.45)	(3.41)
Proportional Representation * Disproportionality	0.33	0.14	0.19	-0.30	-0.29	-0.28
	(0.21)	(0.22)	(0.22)	(0.28)	(0.28)	(0.28)
Effective Number of Political Parties			-0.90***	-1.08***	-1.04***	-1.07***
			(0.25)	(0.31)	(0.31)	(0.30)
Plurality	-0.60	1.07	0.75	2.14	2.39	2.49
	(2.62)	(2.68)	(2.65)	(2.88)	(2.89)	(2.86)
Closeness	0.03	0.05	0.01	0.05	0.07	0.07
	(0.04)	(0.04)	(0.05)	(0.06)	(0.06)	(0.06)
Closeness * Plurality	-0.02	-0.06	-0.03	-0.22	-0.24	-0.26*
	(0.13)	(0.13)	(0.13)	(0.15)	(0.16)	(0.15)
Compulsory Voting	13.33***	13.72***	13.56***	10.19***	10.54***	10.70***
	(2.43)	(2.41)	(2.37)	(3.20)	(3.26)	(3.20)
Pre-Electoral Coalition				1.31*		
				(0.72)		
Vote in PEC					0.02	
					(0.01)	
PEC > 20%						1.89**
						(0.77)
N	326	326	326	208	208	208
N Countries	35	35	35	22	22	22
Log likelihood	-1035.47	-1032.39	-1026.39	-616.37	-616.67	-614.99
Wald Chi^2	111.14***	119.38***	131.16***	88.28***	87.50***	92.38***
Random Effects	291.13	284.77	229.56	80.17	80.83	80.05
	(97.78)	(94.74)	(73.85)	(31.15)	(31.40)	(30.77)
Residual	20.11	19.74	19.44	14.48	14.52	14.27
	(1.76)	(1.72)	(1.68)	(1.55)	(1.56)	(1.53)
ICC	0.94	0.94	0.92	0.85	0.85	0.85
	(0.02)	(0.02)	(0.03)	(0.05)	(0.05)	(0.05)

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

Table A.4: Multilevel Regression Models for Turn-out with GTI

Variable	Model 19	Model 20	Model 21	Model 22	Model 23	Model 24
Constant	168.07***	166.71***	158.26***	151.37***	150.04***	151.18***
	(20.26)	(20.18)	(19.48)	(17.48)	(17.48)	(17.47)
Population	-5.87***	-6.12***	-5.40***	-4.47***	-4.45***	-4.48***
	(1.26)	(1.25)	(1.22)	(1.07)	(1.07)	(1.07)
Economic Growth	0.26***	0.25***	0.24**	0.23**	0.21**	0.20*
	(0.10)	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)
Semi-Presidentialism	0.85	0.90	0.80	0.76	0.65	0.73
	(0.62)	(0.61)	(0.60)	(0.56)	(0.56)	(0.55)
GTI	-2.73**	1.90	1.73	2.21	2.07	1.99
	(1.19)	(1.66)	(1.66)	(1.60)	(1.58)	(1.57)
Disproportionality	-0.14	0.81***	0.83***	1.01***	1.01***	1.01***
	(0.16)	(0.29)	(0.29)	(0.31)	(0.30)	(0.30)
GTI * Disproportionality		-0.92***	-0.93***	-1.01***	-0.98***	-0.99***
		(0.24)	(0.23)	(0.24)	(0.24)	(0.24)
Proportional Representation	-3.35	-2.25	-2.44	-2.49	-2.09	-2.59
	(2.95)	(2.91)	(2.89)	(3.07)	(3.05)	(3.03)
Proportional Representation * Disproportionality	-0.00	-0.16	-0.13	-0.19	-0.19	-0.18
	(0.20)	(0.20)	(0.20)	(0.24)	(0.24)	(0.23)
Effective Number of Political Parties			-0.53**	-1.16***	-1.10***	-1.13***
			(0.24)	(0.32)	(0.32)	(0.32)
Plurality	1.15	3.09	2.64	2.30	2.76	2.72
	(2.69)	(2.69)	(2.69)	(2.73)	(2.71)	(2.70)
Closeness	0.03	0.03	0.00	0.02	0.05	0.04
	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
Closeness * Plurality	-0.06	-0.10	-0.07	-0.07	-0.11	-0.11
	(0.13)	(0.13)	(0.13)	(0.14)	(0.14)	(0.13)
Compulsory Voting	11.70***	13.00***	13.00***	12.37***	13.46***	13.19***
	(2.62)	(2.60)	(2.58)	(2.98)	(3.01)	(2.97)
Pre-Electoral Coalition				1.53**		
				(0.75)		
Vote in PEC					0.04***	
					(0.01)	
PEC > 20%						2.49***
						(0.75)
N	401	401	401	249	249	249
N Countries	36	36	36	22	22	22
Log likelihood	-1309.78	-1302.33	-1300.05	-750.52	-748.28	-747.18
Wald Chi^2	87.37	106.52***	110.88***	101.17***	107.73***	111.00***
Random Effects	187.27	189.07	167.36	63.57	63.70	64.01
	(60.67)	(60.92)	(52.98)	(25.82)	(25.70)	(25.64)
Residual	27.49	26.36	26.35	17.49	17.14	16.97
	(2.12)	(2.03)	(2.02)	(1.69)	(1.66)	(1.64)
ICC	0.87	0.88	0.86	0.78	0.79	0.79
	(0.04)	(0.04)	(0.04)	(0.07)	(0.07)	(0.07)

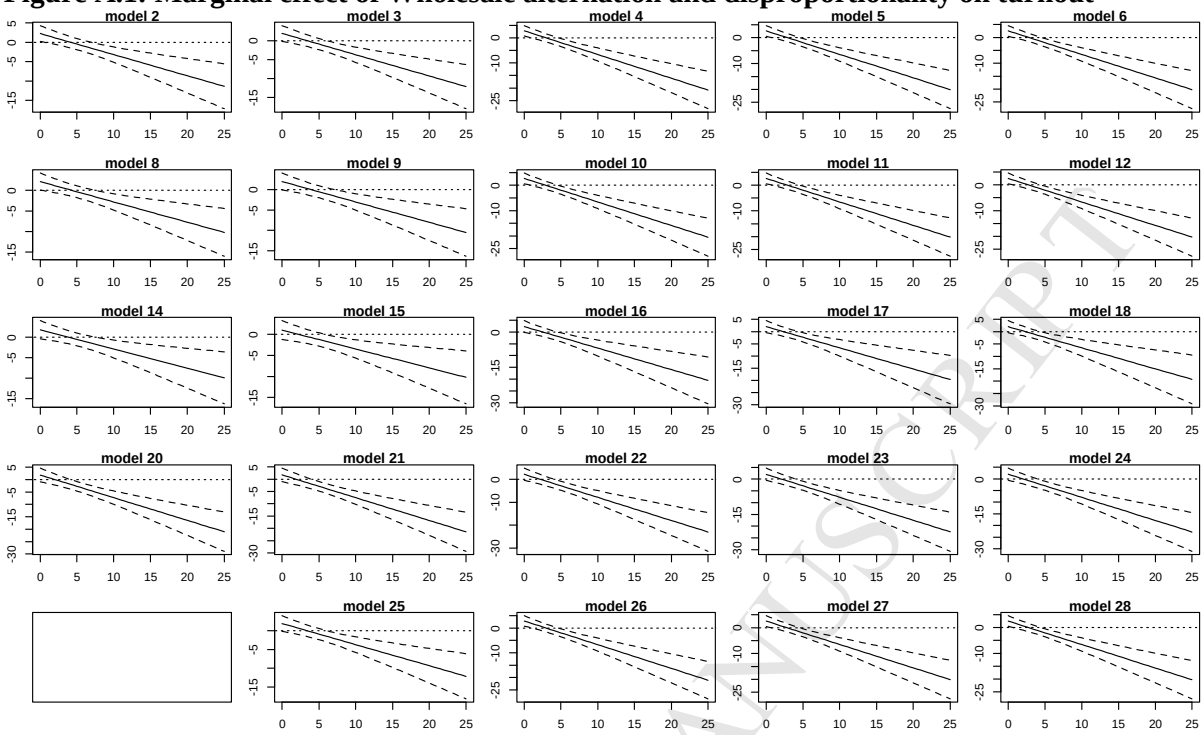
* p<0.1, ** p<0.05, *** p<0.01

Table A.5: Additional models for Turn-out

Variable	Model 25	Model 26	Model 27	Model 28
Constant	155.87***	150.34***	148.38***	149.54***
	(19.56)	(17.67)	(17.69)	(17.67)
Population	-5.21***	-4.40***	-4.37***	-4.39***
	(1.22)	(1.08)	(1.08)	(1.08)
Economic Growth	0.23**	0.22**	0.21*	0.20*
	(0.10)	(0.11)	(0.11)	(0.11)
Semi-Presidentialism	0.77	0.78	0.67	0.75
	(0.61)	(0.56)	(0.56)	(0.55)
Wholesale	1.87	1.95	2.51	2.32
Alternation	(2.25)	(2.57)	(2.56)	(2.54)
Disproportionality	0.41*	0.94***	0.93***	0.92***
	(0.24)	(0.28)	(0.28)	(0.28)
Wholesale	-0.56***	-0.96***	-0.91***	-0.91***
Alternation *	(0.18)	(0.21)	(0.21)	(0.21)
Disproportionality				
Proportional	-2.56	-2.33	-1.79	-2.34
Representation	(2.94)	(3.13)	(3.13)	(3.10)
Proportional	-0.11	-0.23	-0.24	-0.23
Representation *	(0.21)	(0.24)	(0.24)	(0.24)
Disproportionality				
Effective Number of	-0.57*	-1.28***	-1.12***	-1.18***
Political Parties	(0.30)	(0.41)	(0.41)	(0.41)
Wholesale	0.01	0.21	0.02	0.05
Alternation *	(0.44)	(0.55)	(0.55)	(0.55)
Effective Number of				
Political Parties				
Plurality	1.94	2.34	2.68	2.61
	(2.74)	(2.73)	(2.72)	(2.71)
Closeness	0.02	0.02	0.06	0.05
	(0.05)	(0.06)	(0.06)	(0.06)
Closeness * Plurality	-0.07	-0.08	-0.12	-0.12
	(0.13)	(0.14)	(0.14)	(0.13)
Compulsory Voting	13.29***	12.70***	13.59***	13.29***
	(2.56)	(3.01)	(3.03)	(3.00)
Pre-Electoral		1.60**		
Coalition		(0.75)		
Vote in PEC			0.04***	
			(0.01)	
PEC > 20%				2.42***
				(0.75)
N	401	249	249	249
N Countries	36	22	22	22
Log likelihood	-1304.84	-750.46	-748.49	-747.65
Wald Chi^2	98.49***	101.51***	107.27***	109.81***
Random Effects	1.66	64.76	64.83	65.12
	(52.74)	(26.29)	(26.18)	(26.13)
Residual	27.07	17.45	17.14	17.01
	(2.08)	(1.69)	(1.66)	(1.65)
ICC	0.86	0.79	0.79	0.79
	(0.04)	(0.07)	(0.07)	(0.07)

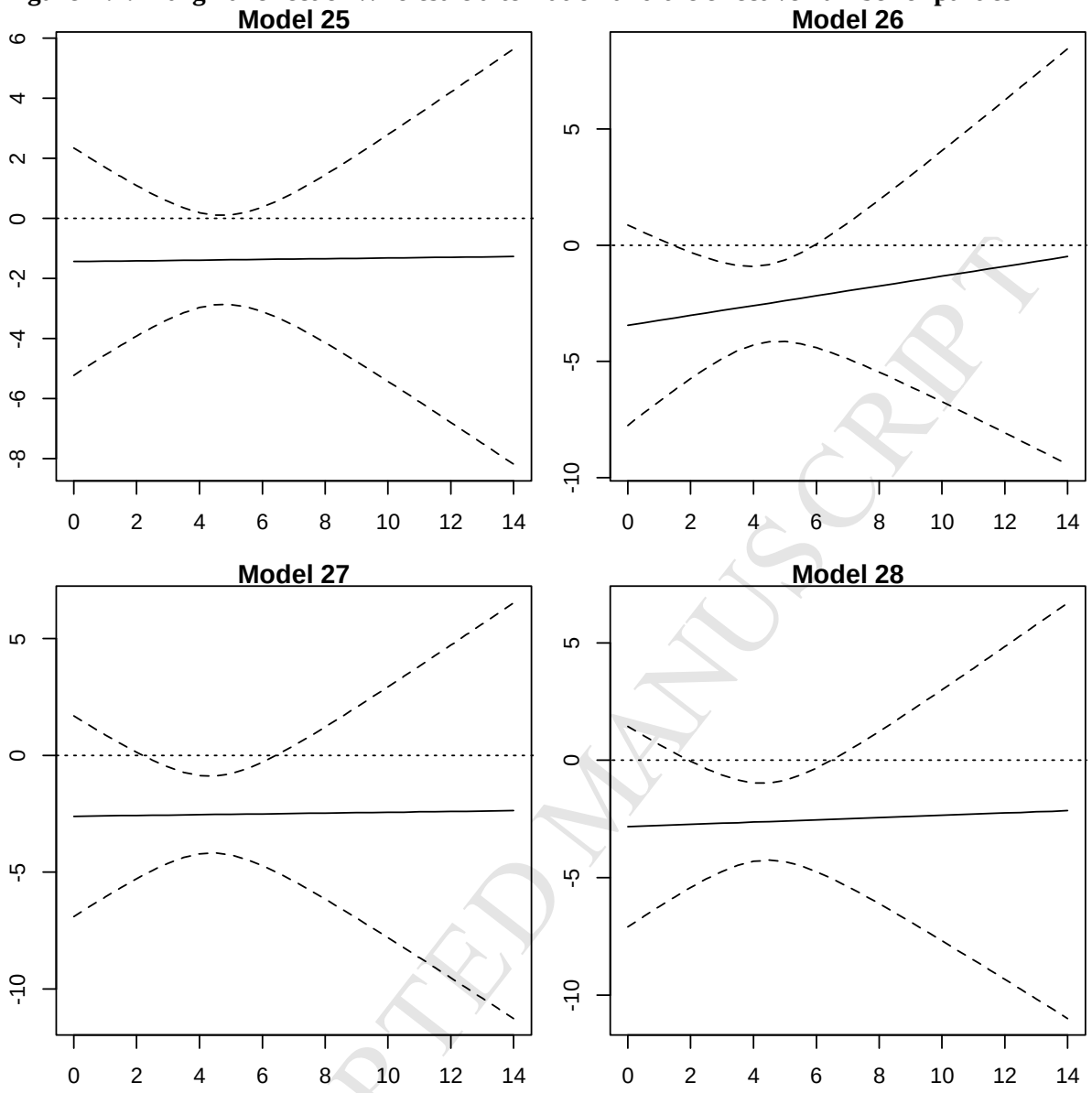
* p<0.1, ** p<0.05, *** p<0.01

Figure A.1: Marginal effect of Wholesale alternation and disproportionality on turnout



With 90% confidence interval. There is model in the last row in the first column, because those are all models without the effective number of political parties and the last row are the models with the interaction between the effective number of political parties and wholesale alternation.

Figure A.2: Marginal effect of Wholesale alternation and the effective number of parties



With 90% confidence interval.