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Who Represents the Poor? Evidence from Swiss Direct Democracy

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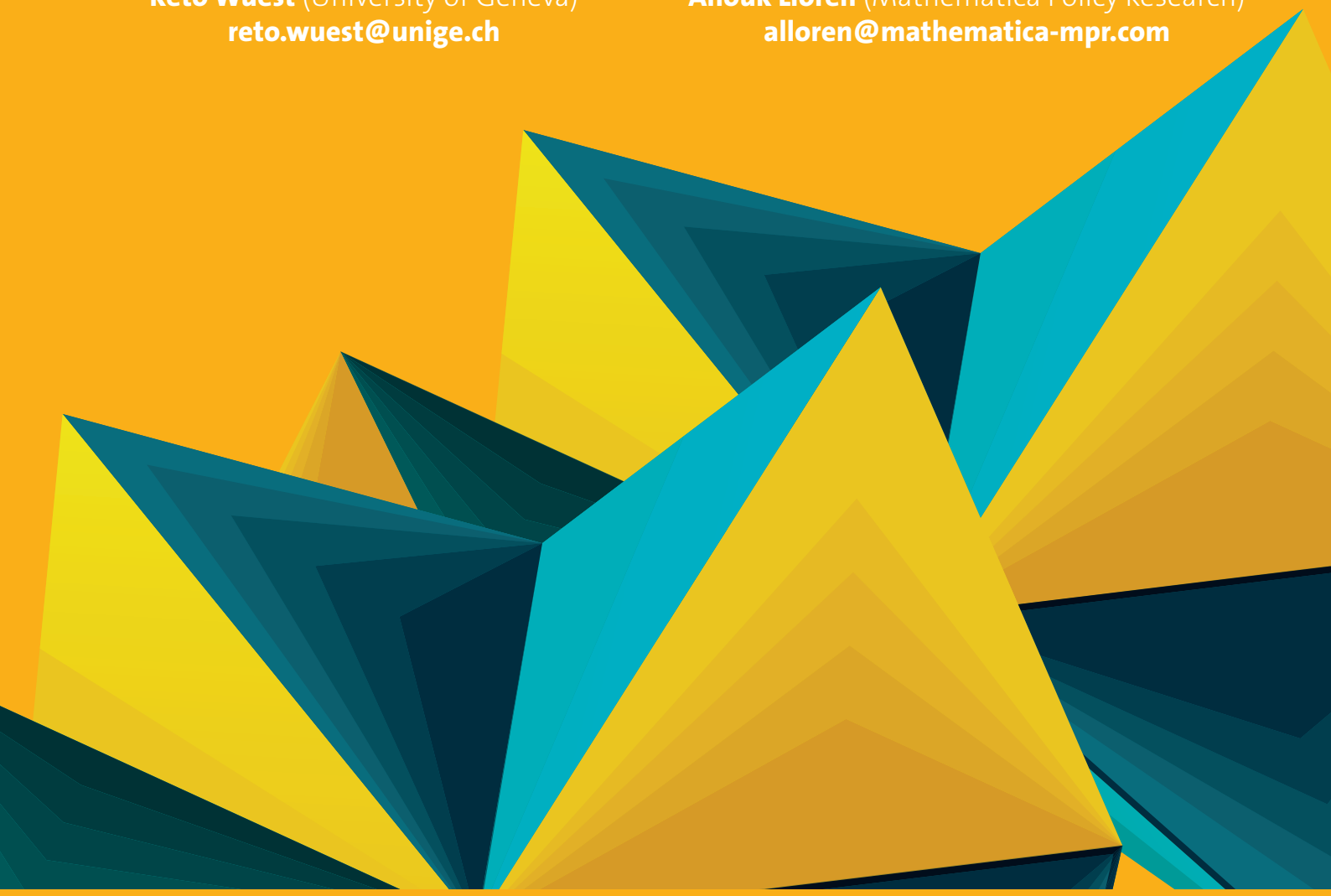

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ABSTRACT:

Analyses of the political representation of different income groups have been plagued by a number of problems. Most importantly, it has proved difficult to measure policy-makers' and citizens' preferences on identical scales and disentangle legislator responsiveness to different income groups from various other factors that may affect congruence between legislators and citizens. In this article, we address these issues by exploiting Swiss direct democratic procedures and combining a variety of data. Our analysis demonstrates that legislators are highly responsive to the more affluent, yet we also find important differences across parties. While members of center and right-wing parties appear largely unresponsive to the preferences of lower-income voters, we show that their left-wing counterparts are relatively more responsive to citizens of modest means. Our results therefore suggest that although representation is strongly skewed in favor of the affluent, poor citizens are not without any voice in parliament.

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While global income inequality appears to have stabilized since the middle of the 20th century (e.g., Bourguignon and Morrisson 2002; Van Zanden et al. 2011; Milanovic 2011) or at times even declined in that period (Sala-i-Martin 2006), many states have been facing substantial increases in domestic income inequality over the last few decades. Within-country inequality, however, has not followed a uniform pattern across countries and some evidence suggests that it is especially the middle- and high-income economies which have experienced rising inequality (Jaumotte, Lall and Papageorgiou 2013, 278f.).[1]

Whereas the stabilization (or decrease) of world inequality may be explained by the slowdown of economic growth in advanced industrialized economies and the improved growth performance in East and South Asia, the recent surge in domestic income inequality is more puzzling. How can we explain that so many advanced industrial countries with democratic forms of government have experienced increased economic inequality? After all, as Bonica et al. (2013, 103) point out, the "new inequalities have primarily benefited the top 1 percent and even the top .01 percent" and "these groups seem sufficiently small that economic inequality could be held in check by political equality in the form of 'one person, one vote.'"

Indeed, the idea that all citizens should have equal voice in the democratic process is central to most normative theories of democracy (Dahl 1956, 1971; Beitz 1989). Moreover, canonical political economy models of redistribution suggest that inequality should be (at least partially) self-correcting in democratic systems. The model proposed by Meltzer and Richard (1981), for instance, shows that under universal franchise and majority rule, increased inequality (in the form of a higher mean income relative to the income of the median voter) leads the median voter to demand more redistribution, up to the point where the benefit of redistribution is outweighed by the efficiency cost of

[1]For an overview of the development of income and earnings inequality in OECD countries, see Gottschalk and Smeeding (2000), Atkinson (2008) and OECD (2008, 2011). For Switzerland, on which we focus in this article, see also Peters (2010).

taxation.

For countries with proportional representation (PR), Austen-Smith (2000) finds that (under some conditions) such systems tend to adopt higher redistributive tax rates than two-party majoritarian systems. A similar conclusion is reached by Iversen and Soskice (2006), who propose a model based on the idea that the electoral system shapes the partisan composition of government coalitions. Their model implies that in multiparty PR systems, a rise in inequality increases the incentives of the center and left to form a coalition to tax the rich, resulting in greater redistribution (Iversen 2007).

These models of redistribution thus suggest that politics can influence economic outcomes and growing inequality is not just an inevitable economic trend. However, they are based on two crucial assumptions. The models assume, first, that there is full participation (i.e., all agents vote) and, second, that government is equally responsive to the preferences of all constituents. If these assumptions do not hold, democratic institutions might fail to counterbalance rising inequality (see also Bonica et al. 2013). Consequently, in order to understand why so many democracies have experienced increased economic inequality, much recent research has examined if and when government is more responsive to the preferences of higher-income citizens and whether this can be accounted for by the lower level of political participation found among poor citizens.

The empirical evidence, however, has been mixed. On the one hand, there are a number of studies demonstrating that legislators and policy outcomes are more responsive to the preferences of the affluent (e.g., Gilens 2005, 2012; Bartels 2008; Ellis 2012; Hayes 2012; Rigby and Wright 2013).[2] Yet other analyses have cast doubt on these findings: broadly speaking, such research on differential responsiveness is complicated

[2]Moreover, while there is abundant evidence that low-income citizens are less likely to turn out to vote (e.g., Verba, Schlozman and Brady 1995; Rosenstone and Hansen 2003; Solt 2008; Soss and Jacobs 2009; Schlozman, Verba and Brady 2012), some authors have shown that higher turnout rates among more affluent citizens explain little of the disparity in representation, which they have found to exist between high- and low-income citizens (e.g., Bartels 2008; Ellis 2012).

by three problems. First, several authors argue that low- and high-income citizens have preferences that are very similar with regard to many policy issues, leaving little room for unequal representation[3] (Soroka and Wlezien 2008, 2010; Ura and Ellis 2008; Erikson and Bhatti 2011). Second, common measures for policy-makers' and citizens' preferences are typically not available (Achen 1977, 1978; Matsusaka 2001; Powell 2009). Finally, different levels of congruence between officeholders and citizens with different incomes may mistakenly be interpreted as unequal responsiveness (for a conceptual discussion of congruence, see Golder and Stramski 2010). Differential measurement error across income groups, unequal 'descriptive' representation (Mansbridge 1999, 629) and greater cue-taking among affluent constituents can all lead to a relatively higher level of congruence between policy-makers (or policy outcomes) and upper-income citizens, even if policy-making is equally responsive to different income groups.

In this article we employ a research design that allows us to address these problems, which have plagued previous work on income group representation. Taking advantage of direct democratic procedures in Switzerland, we are able to measure the preferences of citizens and legislators on identical scales for a wide range of policy proposals. Combining voting data with information on citizens' political knowledge, legislators' occupational status and the intensity of voting campaigns further allows us to disentangle legislator responsiveness from other factors that may affect the level of congruence between legislators and citizens. Moreover, since our preference measures are based only on citizens who turned out to vote, we can analyze legislator responsiveness to different income groups without conflating income representation with voter (vs. non-voter) representation.[4]

[3]Unless noted otherwise, we refer to representation in terms of what Pitkin (1967, 209) describes as 'substantive' representation.

[4]Most authors studying income representation compare the behavior of policy-makers (or policy outcomes) to the preferences of citizens with different incomes, usually encompassing both voters and non-voters (e.g., Gilens 2005, 2012; Bartels 2008; Hayes 2012). This approach, however, is problematic, since upper-income citizens are more likely to turn out to vote and legislators have been shown to be more responsive to

Our data show that the preferences of different income groups vary substantially for a broad set of policies. What is more, our analysis demonstrates that legislators of all parties are highly responsive to affluent voters. Yet when it comes to the representation of the poor, we find that only left-wing legislators respond to some extent to the preferences of less well-off citizens, while members of center and right-wing parties appear largely unresponsive to them. Consequently, although the responsiveness of legislators is strongly skewed in favor of the affluent, our results suggest that the preferences of poor voters are not entirely neglected in parliament.

Economic Inequality and Representation

The research design of studies that analyze government responsiveness to various income groups typically varies along two key aspects. First, studies differ regarding the stage of the governmental policy-making process which they analyze; second, they differ with regard to the actors whose preferences they compare.

Most authors dealing with the responsiveness of policy-making in the United States (US) adopt a dyadic representation approach (for an early analysis of dyadic representation, see Miller and Stokes 1963). Focusing on congressional decision-making, these scholars usually compare the average preferences of various income groups to the aggregate roll call voting behavior of legislators. For instance, Bartels (2008) relates the voting behavior of US Senators to the average ideological positions held by low-, middle- and high-income constituents. Hayes (2012) relies on a larger dataset and covers a more recent period of time, but otherwise his analysis is similar to Bartels' (2008) study. In order to analyze the responsiveness of members of the US House of Representatives, Ellis (2012) compares the ideological locations of citizens to the voting behavior of their representatives. These studies consistently find legislators to be most responsive to

voters (e.g., Griffin and Newman 2005).

upper-income constituents. In contrast, the ideological opinions of low-income citizens appear to have little impact on legislators' voting behavior.

Other stages of the US policy-making process are analyzed by Rigby and Wright (2013) and Gilens (2005, 2012). Looking at the early stage of policy-making, Rigby and Wright (2013) show that during electoral campaigns, US state parties adopt policy positions that are better aligned with the preferences of economically advantaged citizens. Gilens (2005, 2012), on the other hand, focuses on outcomes of the policy-making process. By comparing the support for (potential) policy changes across income groups with actual policy outcomes, he provides empirical evidence that responsiveness to the less well-off is virtually nonexistent. These results thus corroborate the finding of dyadic analyses that government responsiveness is strongest for high-income Americans and weakest for the poor.

In addition, a few studies have examined representational inequality in parliamentary and hybrid systems, mostly across European democracies (e.g., Hakhverdian 2010; Giger, Rosset and Bernauer 2012). Since parliamentary systems are generally characterized by high levels of party unity (e.g., Bowler, Farrell and Katz 1999; Kam 2009), legislative accountability in such systems works primarily through party-dominated representation (Carey 2009). Consequently, instead of focusing on the dyadic relationship between legislators and constituents, differential representation in parliamentary democracies has mainly been studied in terms of how collective actors (such as parties in the executive or in parliament) respond to the preferences of different income groups.

For the United Kingdom (UK), Hakhverdian (2010) demonstrates that under electorally safe conservative governments budget proposals of the executive are biased towards the preferences of high-income citizens, while safe Labor governments produce proposals that are more likely to reflect the preferences of lower-income groups. By contrast, if a governing party is electorally vulnerable, its budget proposal is found to be most responsive to the middle class. In their analysis of 21 non-presidential sys-

tems, Giger, Rosset and Bernauer (2012) show that, in general, both executives and parliamentary parties have ideological positions more aligned with the preferences of upper-income citizens.

The conclusion drawn from this literature is quite unambiguous. Citizens with lower incomes tend to be less well-represented than citizens with higher incomes. This applies to various stages in the policy-making process and it holds true for both the US presidential system and Western non-presidential democracies (but see Hakhverdian 2010). Yet there is a second body of literature that casts doubt on this findings. First of all, a number of authors have argued that the preferences of different income groups are largely the same for most policy domains (Soroka and Wlezien 2008, 2010; Ura and Ellis 2008; Erikson and Bhatti 2011). Issues related to welfare spending and taxation may be notable exceptions, as these are the only domains for which Soroka and Wlezien (2008) found variation in income groups' preferences. For most other domains, however, there appears to be little room for differential representation.

A second problem pertains to the fact that common measures for legislators' and citizens' policy positions rarely exist. In dyadic representation analyses, indicators for legislator preferences are typically based on roll call records, while constituent preferences are measured by opinion surveys (e.g., by the respondents' ideological self-placement on a left-right scale). Other studies rely on survey data (Rigby and Wright 2013), content analysis of speeches (Hakhverdian 2010) or expert judgments (Giger, Rosset and Bernauer 2012) to derive measures for the positions of collective actors such as executives or parties in parliament. Yet, as Achen (1977, 1978), Matsusaka (2001) and Powell (2009) have noted, assessing representation can be difficult if the positions of citizens and political elites are measured on different scales.[5]

[5]Some authors have suggested to jointly scale the preferences of legislators and constituents by linking legislators' positions to particular survey responses of constituents (e.g., Bafumi and Herron 2010; Masket and Noel 2012). However, as Lewis and Tausanovitch (2013) point out, this approach relies on the strong assumption that for a given survey item, a respondent's preferences determine her position in exactly the

Third, there could be greater congruence between policy-makers and affluent citizens (relative to poorer citizens), even if the former are not more responsive to the preferences of the latter. This may be due to the fact that citizens with lower incomes tend to be less interested in politics and have lower levels of education and political knowledge (e.g., Verba, Schlozman and Brady 1995). Since these are critical resources for forming coherent, stable and well-developed opinions on policy issues, the survey responses of lower-income citizens are more prone to error (Zaller 1992). As a consequence, even if the various income groups share similar preferences and political elites are equally responsive to all groups, congruence between policy-makers and affluent citizens may be higher due to more measurement error in the responses of lower-income constituents.

Furthermore, unequal representation of high-income preferences may simply be a consequence of unequal descriptive representation among officeholders. Carnes (2012) shows that members of the working class are severely underrepresented in the US Congress. Moreover, his analysis demonstrates that there are considerable occupational differences in legislators' roll call voting behavior. Compared to representatives who last held working-class jobs before entering politics, legislators who previously ran businesses, were farm owners or worked in other private-sector professions voted substantially more conservatively on economic issues. Unequal descriptive representation may thus be an alternative mechanism to differential legislator responsiveness.

Finally, several studies provide evidence that citizens form their policy preferences (at least in part) based on cues from political elites (e.g., Zaller 1992; Lupia 1994; Hill and Hurley 1999). Since income correlates strongly with political interest, education and political knowledge (Verba, Schlozman and Brady 1995), citizens with higher incomes might be more attentive to such cues. If this is true, the preferences of policy-makers may correlate more strongly with the preferences of well-off citizens, but the causality would be reversed (see also Gilens 2005, 2012).

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same way as the preferences of a legislator determine her voting decision on a similar subject.

Our research design allows us to overcome these major limitations of previous research and determine the extent to which the preferences of various income groups are represented in the lower chamber in Switzerland. Candidates to the Swiss lower chamber are elected by an open-list PR system, in which citizens can vote for individual candidates or a pre-ordered party list (Lutz 2011).[6] This open ballot structure, together with the absence of a confidence vote procedure, enhances the individual accountability of legislators (Traber, Hug and Sciarini 2013). Party unity in the Swiss parliament is therefore considerably lower than in most parliamentary democracies. Consequently, we focus in this article on the responsiveness of individual legislators and not of collective actors such as the executive or parties in parliament.

Data and Empirical Models

We exploit Swiss direct democratic procedures to assess the responsiveness of individual legislators to different income groups. In Switzerland, there are two primary instruments allowing citizens to vote on national policy proposals, the referendum and the popular initiative for constitutional amendments.[7] Referendums allow citizens to decide whether or not bills passed by parliament become law. There are two types of referendum, namely the mandatory and the optional referendum. Constitutional amendments and important international treaties are subject to a mandatory referendum. Moreover, 50,000 citizens or eight cantons[8] can request an optional referendum on any change to federal legislation within a period of 100 days after the publication of the law in question (Kriesi and Trechsel 2008, 52; Linder 2010, 93).

In addition, by signing a formal proposition, citizens may launch a popular initiative

[6]According to Lutz (2011), 46% of voters cast a party ballot without making any changes to the proposed list in the 2007 parliamentary election.

[7]For an overview of direct democracy in Switzerland, see Kriesi and Trechsel (2008, 49-68) and Linder (2010, 92-127) as well as the citations therein.

[8]Switzerland is a Confederation of 26 cantons. These cantons also serve as the electoral districts for national parliamentary elections.

aiming to revise the constitution. Such an initiative can either take the form of a fully formulated proposal or state a general goal of changing the constitution in some respect. Both forms require 100,000 signatures of eligible voters to be gathered within a period of 18 months. If an initiative is submitted (and provided that it meets some formal validity requirements), the parliament votes on whether to recommend acceptance or rejection of the proposal. Parliament may also make a counterproposal to an initiative (unless it is formulated in general terms), giving voters the choice between the adoption of either one of the proposals or the status quo (Kriesi and Trechsel 2008, 52f.; Linder 2010, 95).[9] The initiative and the eventual counterproposal are then voted on simultaneously by the people.

Voting on referendums and initiatives may take place on up to four days a year. Since 1977, standardized post-vote surveys (VOX surveys) are carried out after each ballot, providing information on a series of both respondent-specific variables (such as voting choice, perceived importance of a proposal and socio-economic factors) and vote-specific characteristics (e.g., turnout rate, voting recommendations of parties and type of the popular vote). These surveys are based on nationally representative samples of about 1,000 to 1,500 eligible voters and they are conducted within two weeks following a vote. It is important to note that all proposals which are put to a popular vote were previously voted on in parliament. Both legislators and the people thus voted on exactly the same proposals (presented in the same wording) and they chose their actions from a common choice set (yes, no, blank vote, abstain). Since the Swiss lower chamber has recorded the individual voting behavior of its members from 1996 onwards (e.g., Hug and Martin 2012), we are able to combine the voting record of both legislators and voters. In total, our data cover 113 policy proposals that were voted on in parliament and then submitted to a popular vote in the period from 1997 to 2010.

[9]More precisely, since 1987 voters have the option of accepting both the initiative and the counterproposal. A subsidiary question allows voters to specify which of the two proposals should prevail if both of them are accepted (Kriesi and Trechsel 2008, 60).

Our approach has two major advantages for the study of legislative responsiveness. First of all, it allows us to measure legislators' and voters' revealed preferences on identical scales (see Achen 1977, 1978; Matsusaka 2001; Powell 2009). Second, analyses of representation based on roll call votes have been criticized on the grounds of failing to account for the government's control over the agenda. However, as Gilens (2012) points out, a comprehensive assessment of public attitudes needs to consider not only preferences towards government policies, but also towards policies not on the "formal government agenda" (Kingdon 1995). Popular initiatives and referendums enable citizens to set the political agenda and to intervene at the end of the parliamentary decision-making process. Therefore, our data consist of a set of policy proposals emanating from both the government and the people. In many cases these proposals address issues ranking high on the public agenda.

Our empirical analysis proceeds in two steps. Since unequal representation of different income groups is possible only if these groups exhibit different preferences over policy alternatives (e.g., Soroka and Wlezien 2008; Ura and Ellis 2008; Gilens 2009), we first examine the extent to which citizens of various income groups differ in their voting behavior. Hence, drawing on the VOX survey data, we estimate the effect of household income on citizens' voting behavior. In our sample of $J = 113$ votes, an average of about 639 survey respondents reported participation in voting on a proposal. If we exclude those respondents who did not vote, our data provides information on $N = 71{,}801$ respondents. Unfortunately, no data on household income is available for about 15% of the voters in our dataset. In a first step, we therefore generate 25 imputed datasets.[10] Then, based on the imputed data, we fit for each vote $j \in J$ a logistic regression of the

[10]Missing data were imputed using Amelia II (Honaker, King and Blackwell 2011). The distribution of imputed values suggests that missing data on income are present in all income groups, though the proportion is higher for the top and especially the bottom income bracket. More information on the imputation procedure is available in the online appendix.

form

$$\Pr(y_i = 1) = \text{logit}^{-1}(\mathbf{X}_i\boldsymbol{\beta}), \tag{1}$$

for $i = 1, \ldots, N_j$, where N_j is the sample size for vote j. In this model, the unit of analysis is the individual voter i. We thus run 113 regressions where the outcome variable y_i is the voting decision of individual i in vote j.[11] The outcome variable was recoded to take a value of 1 if individual i voted in favor of the more liberal alternative in vote j and 0 otherwise.[12] $\mathbf{X}$ includes the constant term, two variables indicating whether a voter is poor and affluent, respectively, and two control variables that show the number of wage earners contributing to the voter's household income (`two wage earners`; `three or more wage earners`). Consequently, the reference category are middle class voters with only one wage earner in the household.[13]

In a second step, we draw on the combined records of citizens' and legislators' voting behavior to assess whether legislators are more responsive to the preferences of the affluent. Since variation in policy preferences across income groups is a prerequisite for unequal representation, we restrict the analysis to policy proposals on which poor and affluent voters hold different preferences. Based on our analysis in the first step, we therefore exclude those votes for which the voting behavior was found to be statistically indistinguishable between poor and affluent citizens. This reduces the sample to $J_r = 91$ policy proposals.

[11] The logistic regressions were estimated using Zelig (Imai, King and Lau 2014).

[12] We adopted the following strategy to recode the outcome variable. First, if the Social Democratic Party (PSS) issued a voting recommendation for vote j, individual i's voting decision was coded as 1 if it was in line with the recommendation of the PSS. Second, if the PSS did not issue a voting recommendation, i's voting decision was coded as 1 if it corresponded with the voting recommendation of the Green Party (PES), provided that the PES issued a recommendation. Third, if neither the PSS nor the PES issued a recommendation, the outcome variable was coded to take a value of 1 if i voted contrary to the voting recommendation of the conservative Swiss People's Party (UDC). Voters casting a blank vote were excluded from the analysis.

[13] VOX surveys distinguish five brackets of monthly net household income: CHF 3,000 or less, CHF 3,001-5,000, CHF 5,001-7,000, CHF 7,001-9,000 and CHF 9,001 or more. In this article, we define citizens with a household income in the lowest bracket as poor, while those with a net income of CHF 9,001 or more are considered affluent.

The Swiss lower chamber consists of 200 members elected proportionally from 26 districts (the cantons).[14] As our data cover four subsequent legislative periods (i.e., the 45th-48th legislatures), we have voting data for $K = 452$ legislators. In total, there are $N_d = 15{,}848$ legislator-vote dyads on which our analysis is based. We start by estimating a three-level mixed-effects model of the following form:

$$\begin{aligned}
\Pr(y_i = 1) &= \text{logit}^{-1}\Big(\mathbf{X}_i\boldsymbol{\beta} + \alpha^{\text{vote}}_{j[i]} + \alpha^{\text{legislator}}_{k[i]}\Big), \text{ for } i = 1, \ldots, N_d \\
\alpha^{\text{vote}}_j &\sim \text{N}(\mathbf{Z}_j\boldsymbol{\gamma}, \sigma^2_{\text{vote}}), \text{ for } j = 1, \ldots, J_r \\
\alpha^{\text{legislator}}_k &\sim \text{N}(\mathbf{U}_k\boldsymbol{\delta}, \sigma^2_{\text{legislator}}), \text{ for } k = 1, \ldots, K. \qquad (2)
\end{aligned}$$

In model (2), the unit of analysis is the legislator-vote. The outcome variable shows how a legislator voted in the roll call vote on a proposal. Again, this variable was recoded to 1 indicating a vote in favor of the more liberal alternative.[15] $\mathbf{X}$ includes the constant term and a variable measuring the importance of the policy proposal as perceived by citizens (`importance`). In the VOX surveys, respondents were asked to rate the importance of a proposal for society as a whole. We divided survey respondents based on their ideological self-placement into three categories (left-wing, center and right-wing voters) and calculated for each of these groups the average level of importance. For each legislator, variable `importance` then takes on the mean value of those group of voters who are ideologically close to her (e.g., for left-wing legislators variable `importance` takes on the mean level of importance among left-wing voters).

$\mathbf{Z}$ is a matrix of vote-level predictors. First of all, it contains our three variables of main interest: a variable measuring the proportion of middle class citizens voting in favor of the more liberal alternative (`yes middle class (coll.)`), a variable that shows the difference between the proportion of poor citizens voting for the more liberal op-

[14] A few less-populous cantons have only one seat in the lower chamber. Therefore, a small proportion of legislators are elected in majoritarian elections.

[15] As in the first step of our analysis, blank votes were excluded from the analyses.

tion and the proportion of liberal votes among middle class citizens (`yes poor-middle (coll.)`) and a variable for the difference between the proportion of liberal votes among the affluent and the proportion of middle class citizens in favor of the more liberal alternative (`yes rich-middle (coll.)`). In addition, matrix **Z** contains variables controlling for the voter turnout rate (`turnout`), the issue area of a proposal (`social issues`; `Swiss-EU issues`, which concern the bilateral relations between Switzerland and the European Union (EU); and `other issues`; `economic issues` is the reference category)[16] and the type of the popular vote (`optional referendum`; `mandatory referendum`; and `counterproposal` to an initiative; `initiative` is the reference category).

Finally, **U** contains the following legislator-level control variables: an indicator variable for female MPs (`female MP`), a variable indicating whether a legislator is a freshman or not (`senior MP`), a dummy variable taking the value of 1 for legislators from a (predominantly) French- or Italian-speaking canton (`Latin canton`), a z-standardized variable measuring district magnitude (`district magnitude`) and dummy variables for party affiliation.[17]

The basic idea of proportional representation is that all (numerically significant) political opinions in the electorate should be reflected in the legislature. Our first model lets us assess legislator responsiveness to different income groups in the national elec-

[16]Proposals dealing primarily with the intervention of the state in the economy are subsumed under economic issues. Under social issues we categorize proposals that mainly relate to values and attitudes, but have less of an impact on firms and their competitive environment. Although proposals dealing with the bilateral relations between Switzerland and the EU usually concern economic questions, we treat them as a separate category. The reason is that especially parties campaigning against more integration with the EU often focus on non-economic aspects such as the loss of national sovereignty and identity. The online appendix contains a table listing all the popular votes we use in the analysis as well as their issue domain.

[17]We include party variables for the center-left Christian Democratic People's Party (`PDC`), the center-right Radical Democratic Party (`PRL`) and the right-wing Swiss People's Party (`UDC`). In addition, there are three variables subsuming smaller parties, namely `other left party`, `other center party` and `other right party`. The reference category is the left-wing Social Democratic Party (`PSS`).

torate. It thus shows the degree to which the collective preferences of various income groups are represented in parliament.[18] Yet in a system with proportional representation, legislators can hardly be conceived as agents of all constituents in their districts. Rather, we would expect them to cater primarily to the preferences of their support base.[19] We therefore estimate a second model in which legislators represent only the preferences of those voters who are ideologically close to them. To do so, we create a new set of predictors, measuring the proportion of a legislator's support base that voted in favor of the more liberal alternative in a given vote. Since legislators are now assumed to behave "ideologically," we label these new variables `yes middle class (ideol.)`, `yes poor-middle (ideol.)` and `yes rich-middle (ideol.)`.[20]

So far we have assumed that all legislators are equally responsive to the preferences of an income group. However, if parties act as the agents of particular segments of society (e.g., Katz 2014), this assumption is likely to be violated. We therefore fit a third model in which the slopes of our independent variables of main interest – i.e., the income group preference measures – are allowed to vary by party (otherwise, the model is identical to the second model described above).

Finally, in order to gain confidence in our results, we run a series of robustness checks. We first fit our third model only to the politically knowledgeable voters in our sample. This allows us to address the (potential) problem of differential measurement error across income groups. The subset of knowledgeable voters consists of all survey respondents who either correctly recalled the title of the proposal they have voted on

[18]Such an analysis resembles what Golder and Stramski (2010) describe as "many-to-one" congruence.

[19]Similar to "partisan theory" (e.g., Hibbs 1977, 1992), we expect legislators to behave "ideologically," meaning that they promote policies broadly consistent with the interests and revealed preferences of their core constituencies (Hibbs 1992, 363).

[20]For example, for a legislator of a left-wing party the variable `yes middle class (ideol.)` shows the proportion among middle-class left-wing voters who voted in favor of the more liberal alternative. As for some cantons the number of survey respondents is rather small, we calculate these proportions based on the national electorate. We thus assume that voters who locate themselves on the same position on the left-right scale are similar across cantons.

or could describe the content and aim of the proposed policy. In a next step, we include indicators for legislators' occupational status in our model, thus controlling for the possible consequences of descriptive representation (Carnes 2012). Drawing on Pilloti (2012), we distinguish three categories of legislators, namely those who have lower-, middle- and higher-income occupations (the online appendix provides additional information on our coding of the occupational categories). Third, to address the issue of reverse causality, we rely on Nai's (2013) data on campaign intensity for popular votes between 1999 and 2005. The idea here is that if the intensity of a campaign is low, it is difficult for voters to take cues from political elites. We thus include in our model a variable that measures campaign intensity by the logarithm of the total size (in cm^2) of all ads published in six major newspapers (approximately 7,200 ads) during the month prior to the ballot (Nai 2013, 54).

Empirical Results

To examine the extent to which citizens of various income groups differ in their policy preferences, we run for each of the 113 popular votes in our sample a logistic regression as specified in model (1). We then conduct a series of post-estimation simulations to estimate the effects of being affluent (versus poor) on citizens' voting behavior. The means and 99% confidence intervals (CIs) of these simulations are shown in Figure 1. In that figure, we distinguish between four broad issue domains: proposals concerning economic issues, the bilateral relations between Switzerland and the EU, social issues and proposals on other issues that do not fit into one of these three categories. Additionally, the figure shows which of the proposals are considered important (in black) and not or only moderately important (in gray) by poor citizens for society as a whole.[21]

[21]Survey respondents were asked to rate the importance of a proposal on a 0 (not important) to 10 (very important) scale. If a proposal received an average score of 7.5 or more among the poor, we consider it to be perceived as important by poor citizens.

Our results demonstrate that for most proposals the preferences of poor and affluent voters differ quite substantially. While some authors have argued that in the US such differences exist only for issues related to welfare spending and taxation (Soroka and Wlezien 2008), we find that preference variation is not limited to such economic issues in Switzerland. In general, the data show that higher-income citizens tend to be more conservative on economic issues and more liberal on social issues, thus corroborating the findings of Ansolabehere, Rodden and Snyder (2006), Gilens (2009) and Rigby and Wright (2011) for the US. Furthermore, we find a preference gap for many of the policies that poor voters consider important. The upshot is that if income groups are represented unequally, it is likely that this affects issues which poor citizens perceive as important.

Based on the policy proposals for which the confidence interval does not overlap zero, we estimate our three models of legislator responsiveness to the preferences of different income groups. Table 1 presents the results of the models. The first model shows that legislators clearly respond to the preferences of affluent citizens. The proportion of affluent voters favoring the more liberal alternative in a vote (relative to the proportion of middle class voters) has a positive and significant effect on the probability that a legislator votes for this alternative. Similarly, the preferences of middle class voters are positively and significantly related to the voting behavior of legislators. This stands in stark contrast to the poor. If the proportion of poor voters in favor of the more liberal alternative increases (relative to the proportion of the middle class), a legislator is less likely to cast a vote for this alternative.

Instead of focusing on collective group preferences, the second model examines how legislators respond to the preferences of income groups in their support base. The results show a pattern of unequal representation very similar to the one we have found in the first model. Legislators are responsive to the proportion favoring the more liberal alternative in a vote among citizens with higher and medium incomes, but they do not

respond to the preferences of the poor in their core constituency.

In the third model, the slopes of the income group preference variables are allowed to vary across parties. For each of the four large parties in parliament, Figure 2 shows how the predicted probability of voting for the more liberal alternative varies across different values for the preferences of the affluent (in black) and the poor (in gray).[22] Especially the legislators of the center-left PDC and the center-right PRL seem to respond strongly to the preferences of affluent voters. To a somewhat lesser extent, this also holds for the representatives of the left-wing PSS and the right-wing UDC. Yet legislators differ in how they respond to the preferences of the poor. While the members of centrist and right-wing parties appear unresponsive to the preferences of lower-income voters, this is not the case for Social Democratic (PSS) legislators. In fact, the proportion favoring the more liberal outcome among the poor (relative to the proportion among middle-income citizens) has a positive effect on the predicted probability of a PSS legislator voting in a liberal manner. To increase confidence in these results, we next perform a series of robustness checks.

Robustness Checks

We estimate three alternative specifications of our third model to gain confidence in our claim that it is indeed legislator responsiveness to income groups which drives our results. First, we fit the model to the subset of knowledgeable voters in our sample. Our preference measures thus take into account only those respondents who could either recall the title of a proposal or describe its content and aim. Second, in order to examine whether the low level of congruence between legislators and lower-income citizens is due to the overrepresentation of representatives who are themselves well-off, we intro-

[22]The uncertainty in the predicted probabilities is rather large. Note, however, that there are only seven parties, which makes it difficult to estimate the between-group variation. When the group-level standard deviation cannot be estimated well, it tends to be overestimated (Gelman and Hill 2007, 275).

duce two variables indicating the occupational status of a legislator (`middle-income occupation` and `higher-income occupation`; the reference category is `lower-income occupation`). Third, finally, we re-estimate the model including a variable measuring the intensity of the voting campaign before a proposal is put to a popular vote. This variable takes higher values for more intensive campaigns, where we expect cue-taking by citizens to be more likely. The results of the models are presented in Table 2 (figures showing the predicted probabilities from the models are provided in the online appendix).

Comparing these results to our third model reported in Table 1 shows that the coefficient estimates for the income group preference variables remain largely unchanged. In addition, the predicted probabilities generated by the alternative models all show a pattern similar to that observed for Model 3. Therefore, the higher level of congruence between legislators and affluent voters seems not to be driven by differential measurement error across income groups, the consequences of unequal descriptive representation and greater cue-taking among higher-income voters. We thus conclude that legislators are in general more responsive to the preferences of more affluent voters. In contrast, with the exception of members from left-wing parties, there is little responsiveness to the preferences of the poor.

Conclusion

Although canonical political economy models suggest that income inequality – at least to some extent – should be self-correcting in democratic systems (e.g., Meltzer and Richard 1981; Iversen and Soskice 2006), many democracies have witnessed substantial increases in domestic inequality during the past few decades (e.g., Gottschalk and Smeeding 2000; Atkinson 2008; OECD 2008, 2011). There are two crucial assumptions on which these models are based: first, all agents turn out to vote and second, their preferences are

given equal weight in the policy-making process.

While much recent research has demonstrated that both legislators and policy outcomes are more responsive to the preferences of economically advantaged citizens (e.g, Gilens 2005, 2012; Bartels 2008; Ellis 2012; Giger, Rosset and Bernauer 2012; Hayes 2012; Rigby and Wright 2013), a number of other studies cast doubt on this findings. Broadly speaking, this second literature identifies three problems which complicate the analysis of income group representation. First, several authors argue that there is little room for differential representation, since income groups have very similar preferences on most policy issues (e.g., Soroka and Wlezien 2008, 2010; Ura and Ellis 2008; Erikson and Bhatti 2011). Second, research is complicated by the fact that common measures for the preferences of policy-makers and citizens are generally lacking (e.g., Achen 1977, 1978; Matsusaka 2001; Powell 2009). Finally, the higher level of congruence found between policy-makers and the more affluent may be due to differential measurement error across income groups, unequal descriptive representation (Carnes 2012) and greater cue-taking among well-off citizens (Gilens 2005, 2012).

Taking advantage of Swiss direct democratic procedures, we obtain data that allows us to address these problems. Our analysis demonstrates that the preferences of lower- and higher-income citizens differ quite substantially on a variety of issues. What is more, we find that legislators of all parties are highly responsive to the preferences of affluent voters. Yet our analysis also shows that there are important differences across parties. While the members of center and right-wing parties are largely unresponsive to poor citizens' preferences, this is not the case for their left-wing counterparts. Compared to center and right-wing representatives, legislators from left-wing parties appear to be somewhat more responsive to the preferences of poorer voters. These results suggest that although representation is strongly skewed in favor of the affluent, poor citizens are not entirely without a voice in parliament. It is, however, primarily the left-wing legislators who represent their preferences there.

Our findings also relate to a broader literature. In recent years, a lively debate has emerged on whether democracies with PR institutions generate more ideological congruence between citizens and representatives than democracies employing majoritarian electoral rules. While several studies demonstrate that this is true for the citizenry as a whole (e.g., Powell 2000; Powell and Vanberg 2000; Golder and Stramski 2010), comparing our findings to analyses focusing on the unequal representation of different income groups in the US Congress (e.g., Bartels 2008; Hayes 2012; Ellis 2012) suggests that this relationship may also hold for the representation of lower-income citizens. The Swiss case obviously provides a strong design for the study of income group representation. However, in order to say more about the generality of our findings, additional research on other PR systems is necessary.

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Table 1: Legislator Responsiveness to Income Groups

	Collective Representation	**Ideological Representation**	
	Model 1	Model 2	Model 3
Intercept	−0.24	−5.84***	−5.69***
	(1.02)	(0.62)	(0.84)
Importance	−3.10***	−2.33***	−2.04***
	(0.13)	(0.13)	(0.13)
Yes middle class (coll.)	7.94***		
	(1.60)		
Yes poor-middle (coll.)	−3.19		
	(5.13)		
Yes rich-middle (coll.)	18.55***		
	(3.61)		
Yes middle class (ideol.)		12.88***	11.23***
		(0.41)	(0.87)
Yes poor-middle (ideol.)		−2.33***	−3.53*
		(0.55)	(1.81)
Yes rich-middle (ideol.)		8.49***	8.32***
		(0.49)	(2.72)
Turnout	−0.13	0.03	0.07
	(0.32)	(0.29)	(0.27)
Swiss-EU issues	1.79	3.28***	2.89***
	(1.27)	(1.04)	(0.97)
Social issues	−0.95	0.19	−0.12
	(0.72)	(0.59)	(0.55)
Other issues	−2.76**	−2.52**	−2.27*
	(1.40)	(1.26)	(1.17)
Optional referendum	0.03	−0.35	−0.63
	(0.72)	(0.63)	(0.59)
Mandatory referendum	0.45	0.97	0.70
	(0.97)	(0.88)	(0.82)
Counterproposal	−0.51	−1.49	−0.93
	(1.36)	(1.16)	(1.08)
Female MP	0.31***	0.37***	0.40***
	(0.08)	(0.09)	(0.09)
Senior MP	0.11	0.13	0.15
	(0.08)	(0.09)	(0.09)
Latin canton	0.22***	0.26***	0.28***
	(0.08)	(0.09)	(0.09)
District magnitude	0.04	0.05	0.05
	(0.03)	(0.04)	(0.04)
PDC	−3.81***	−1.29***	
	(0.11)	(0.13)	
PRL	−4.14***	−1.68***	
	(0.11)	(0.13)	
UDC	−5.87***	−1.89***	
	(0.12)	(0.15)	
Other left party	−0.31**	−0.30*	
	(0.15)	(0.16)	
Other center party	−3.19***	−0.65***	
	(0.19)	(0.22)	
Other right party	−5.31***	−1.50***	
	(0.22)	(0.26)	
Includes random slopes	No	No	Yes
N	15,848	15,848	15,848
Log Likelihood	-5,007.44	-4,312.92	-4,015.57
AIC	10,062.89	8,673.85	8,087.14
BIC	10,246.99	8,857.95	8,301.92

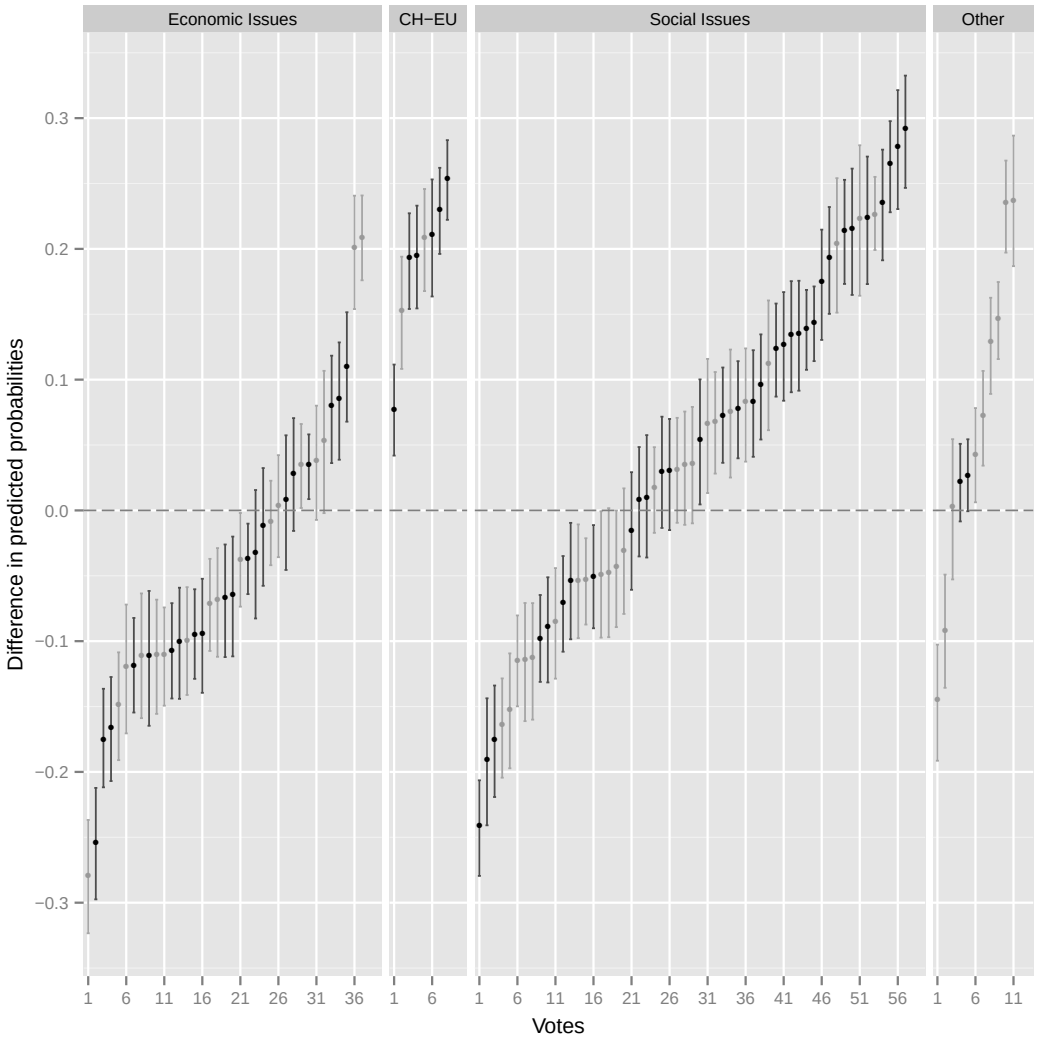
Standard errors in parentheses
* $p < .1$; ** $p < .05$; *** $p < .01$

Table 2: Responsiveness to Income Groups

	Knowledgeable Voters	**Occupational Status**	**Campaign Intensity**
	Model 4	Model 5	Model 6
Intercept	−5.51***	−5.74***	−9.03***
	(0.83)	(0.84)	(1.75)
Importance	−2.09***	−2.03***	−1.42***
	(0.13)	(0.13)	(0.17)
Yes middle class (knowl.)	10.64***		
	(0.85)		
Yes poor-middle (knowl.)	−3.63**		
	(1.53)		
Yes rich-middle (knowl.)	7.46***		
	(2.66)		
Yes middle class (ideol.)		11.27***	10.78***
		(0.87)	(1.03)
Yes poor-middle (ideol.)		−3.43*	−7.09***
		(1.79)	(2.61)
Yes rich-middle (ideol.)		8.36***	10.48***
		(2.74)	(3.20)
Turnout	0.09	0.07	0.51*
	(0.27)	(0.27)	(0.27)
Swiss-EU issues	2.92***	2.89***	1.09
	(0.96)	(0.97)	(1.02)
Social issues	−0.02	−0.11	0.13
	(0.55)	(0.55)	(0.60)
Other issues	−2.15*	−2.28*	−1.47
	(1.17)	(1.17)	(1.17)
Optional referendum	−0.46	−0.64	−0.70
	(0.58)	(0.59)	(0.56)
Mandatory referendum	0.89	0.70	3.03***
	(0.82)	(0.82)	(1.14)
Counterproposal	−0.90	−0.93	1.01
	(1.07)	(1.08)	(1.29)
Female MP	0.39***	0.40***	0.45***
	(0.09)	(0.09)	(0.13)
Senior MP	0.15	0.15	0.12
	(0.09)	(0.10)	(0.15)
Latin canton	0.28***	0.28***	0.40***
	(0.09)	(0.09)	(0.13)
District magnitude	0.06	0.05	0.02
	(0.04)	(0.04)	(0.05)
Middle-income occupation		0.03	
		(0.12)	
Higher-income occupation		0.04	
		(0.13)	
Campaign intensity			0.39**
			(0.15)
Includes random slopes	Yes	Yes	Yes
N	15,848	15,829	8,949
Log Likelihood	-4,042.87	-4,008.48	-2,189.43
AIC	8,141.75	8,076.95	4,436.86
BIC	8,356.53	8,307.04	4,642.74

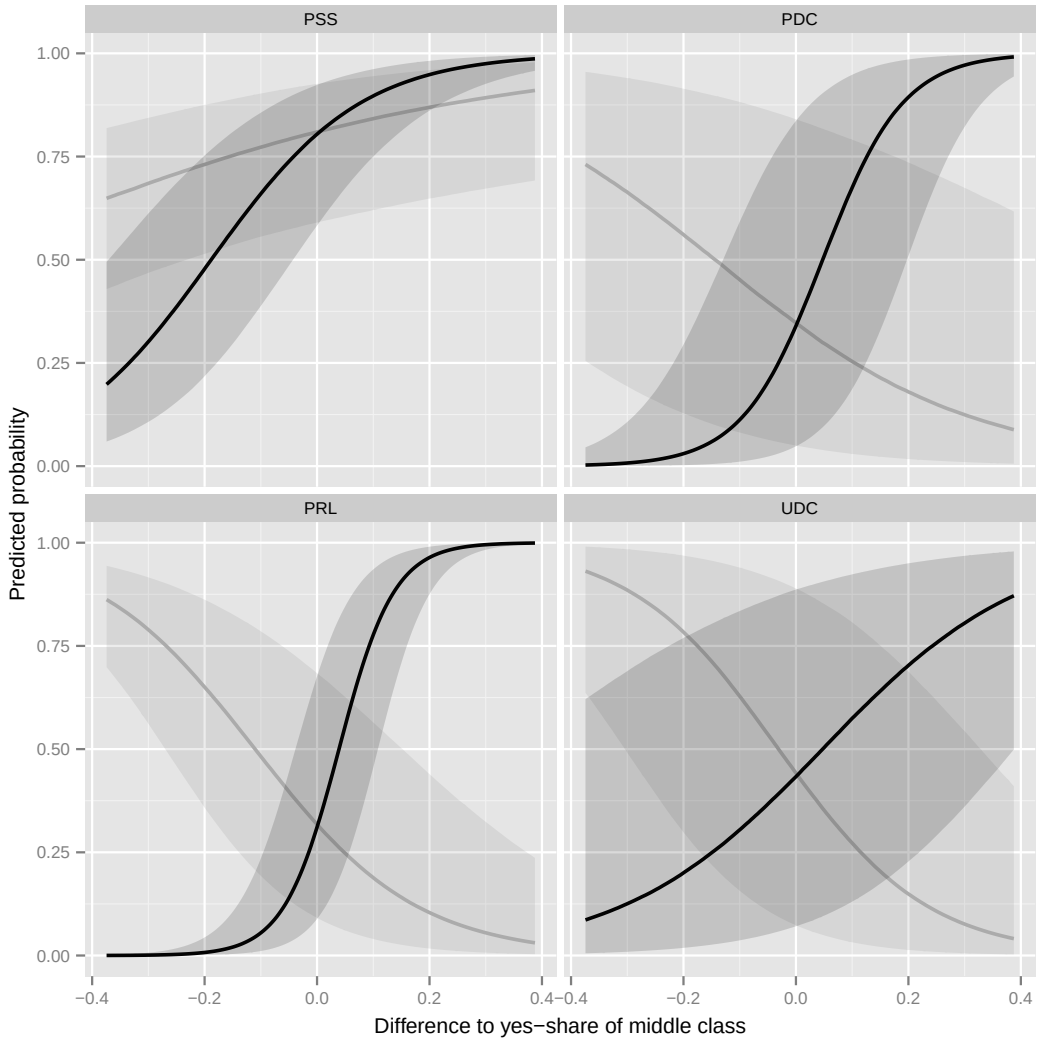
Standard errors in parentheses
* $p < .1$; ** $p < .05$; *** $p < .01$

Figure 1: Effects of Being Affluent vs. Poor on Citizens' Voting Behavior



Note: The figure shows the means and 99% CIs of post-estimation simulations to estimate the effect of being affluent versus poor on citizens' voting behavior. Black color indicates that poor voters consider a proposal important for society as a whole, while gray color means that a proposal is not or only moderately important.

Figure 2: Legislator Responsiveness to the Affluent and the Poor (Model 3)



Note: For each of the four major parties in parliament, the figure shows the predicted probability of a legislator voting for the more liberal alternative in a vote, together with the upper and lower quartiles. Predicted probabilities were calculated for economic issues. All other variables for which the values do not vary were held at their mean or modal values. The means for the income group preference variables are 0.56 (for the proportion voting in a liberal manner among the middle class), −0.01 (for the difference between the proportion voting for the liberal alternative among the poor and the proportion among the middle class) and 0.01 (for the difference between the proportion voting for the liberal option among the rich and the proportion among the middle class.)

Online Appendix

Missing Data Imputation

In our article, we draw on a series of standardized post-vote surveys (VOX surveys) to analyze citizens' voting behavior across income groups. These surveys provide information on a large number of both respondent-specific variables (such as voting choice, perceived importance of a proposal and socio-economic factors) and vote-specific characteristics (e.g., turnout rate, voting recommendations of parties and type of the popular vote). Our data cover 71,801 voters and 113 policy proposals that were submitted to a popular vote. No data on household income is available for 15.2% of the voters in our sample. We therefore generated 25 imputed datasets using Amelia II (Honaker, King and Blackwell 2011). In order to make the assumption that the data are missing at random (MAR) more plausible, we included a wide range of variables in the imputation model.[1] Table 1 provides information on the variables used in the imputation model: Column one gives a description of the variables, Column two reports the number of missing values for each variable and Column three, finally, specifies the type of each variable entered into the imputation model. Unless our analysis model required a variable to be ordinal, missing ordinal observations were allowed to take on continuously valued imputations.

Table 1: Variables in the Imputation Model

Variable Description	Number of Missing Data Points	Variable Type
Respondent-specific variables		
Voting decision of respondent	5,470	Ordinal
Respondent knows title of proposal	7	Binary
Respondent has detailed knowledge of proposal	2,767	Binary
Difficulty of opinion formation (on proposal)	3,744	Binary
Difficulty of opinion formation (in general)	5,136	Binary

[1]For a list of all variables included in the standardized VOX dataset, see `http://forsdata.unil.ch/projects/Voxit/Docu_xl_htmD/Liste_alpha_VsprojD.htm`. A more detailed description of these variables is available at `http://forsdata.unil.ch/projects/Voxit/doc10D/cat1.htm`.

continued

Variable Description	Number of Missing Data Points	Variable Type
Time when voting decision was made	3,091	Continuous
Importance of proposal for the country	3,987	Continuous
Salience of proposal for the respondent	2,257	Continuous
Respondent's frequency of participating in voting	1,261	Continuous
Party identification of respondent	3,702	Nominal
Respondent's intensity of party identification	38,425	Continuous
Respondent's left-right self-positioning	7,882	Ordinal
Respondent's interest in politics	427	Continuous
Frequency of involvement in political discussions	12,458	Continuous
Frequency of being asked about political opinion	12,939	Continuous
Frequency of convincing others about one's ideas	13,145	Continuous
Respondent's occupational status	304	Binary
Respondent's household income	10,906	Ordinal
Number of wage earners in respondent's household	1,450	Ordinal
Number of people in respondent's household	56,452	Continuous
Respondent's educational attainment	533	Continuous
Age of respondent	2	Continuous
Sex of respondent	0	Binary
Social class of respondent's household	34,408	Nominal
Social class of respondent	33,627	Nominal
Respondent owns a car	138	Binary
Number of cars respondent owns	138	Continuous
Respondent's level of local integration	56,426	Binary
Respondent's level of local integration (in years)	56,426	Continuous
Type of respondent's housing	536	Binary
Respondent's language region	0	Nominal
Rural or urban residence of respondent	0	Binary
Respondent's trust in the executive	12,079	Binary
Respondent's frequency of church attendance	14,393	Continuous
Attitude toward law and order	330	Continuous
Attitude toward environmental protection	507	Continuous
Attitude toward state intervention in the economy	716	Continuous
Attitude toward federalism	1,857	Continuous
Attitude toward preservation of tradition	40,065	Continuous
Attitude toward integration	391	Continuous
Attitude toward a progressive country	32,203	Continuous
Attitude toward gender equality	437	Continuous
Attitude toward the church	70,691	Continuous
Attitude toward the army	334	Continuous
Attitude toward equality of opportunities	12,606	Continuous
Attitude toward income inequality	1,097	Continuous
Attitude toward full employment	466	Continuous
Attitude toward direct democracy	231	Continuous
Attitude toward equal opportunities for foreigners	1,081	Continuous
VOTE-SPECIFIC VARIABLES		
Proportion of Yes-votes cast	0	Proportion
Proportion of No-votes cast	0	Proportion
Number of blank votes cast	0	Continuous
Number of invalid votes	0	Continuous
Participation rate	0	Proportion
Type of the popular vote	0	Nominal
Number of cantons accepting proposal	0	Continuous
Number of half-cantons accepting proposal	0	Continuous
Voting recommendation of federal executive	0	Binary
Voting recommendation of SD	0	Continuous
Voting recommendation of PDC	0	Binary
Voting recommendation of PES	0	Continuous
Voting recommendation of PEV	0	Continuous

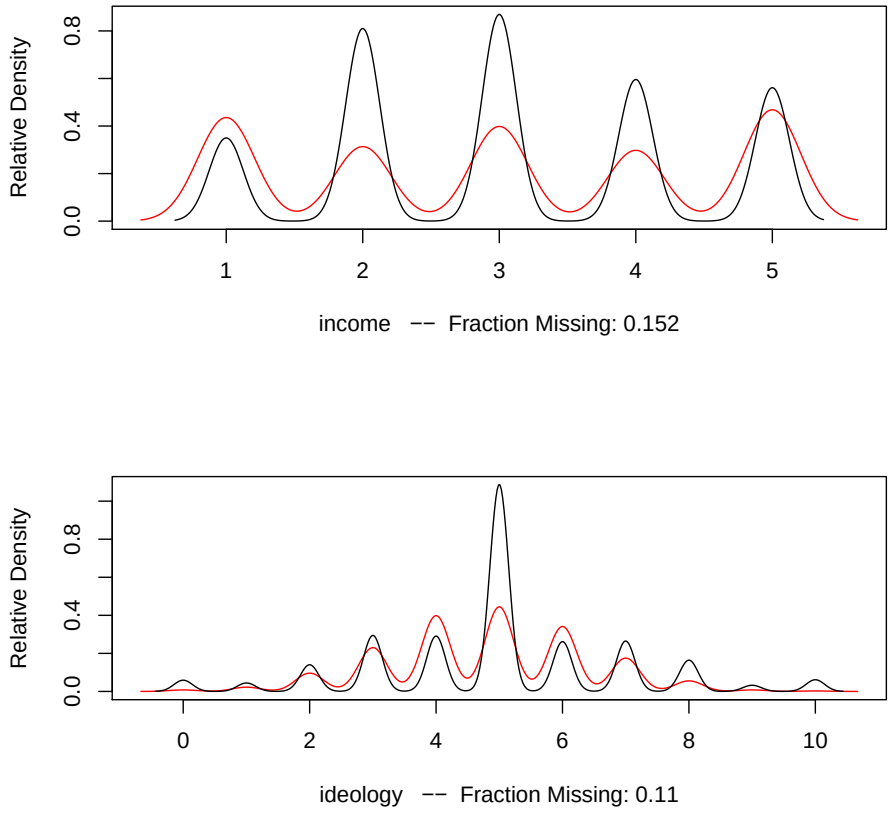
continued

Variable Description	Number of Missing Data Points	Variable Type
Voting recommendation of PSS	0	Continuous
Voting recommendation of UDC	0	Binary

Note: SD=Swiss Democrats, PDC=Christian Democratic People's Party, PES=Green Party, PEV=Evangelical People's Party, PSS=Social Democratic Party, UDC=Swiss People's Party.

Figure 1 shows the distribution of imputed and observed values for two variables central to our analysis model, namely the respondent's household income group and the respondent's ideological self-positioning on a left-right scale. The red curve plots the density of the mean imputation over the 25 imputed datasets, while the black curve shows the distribution of the observed data.

Figure 1: Observed and Imputed Values of Household Income and Ideology



Note: For each variable, the distribution of mean imputations (in red) is overlayed on the distribution of observed values (in black).

The top panel of Figure 1 shows that missing data on income is present in all income groups, though the proportion is higher for the top and especially the bottom income bracket. Furthermore, as can be seen in the bottom panel of Figure 1, missing data is rather evenly distributed across ideological positions. Only among the most left-wing and most right-wing citizens there appear to be almost no missing values.

Policy Proposals Used in the Analysis

Our analysis is based on 113 policy proposals which were first voted on in parliament and then submitted to a popular vote in the period from 1997 to 2010. Table 2 shows the title, issue domain and date of both the vote in parliament and the popular vote for each such proposal.

Table 2: Policy Proposals and Issue Domains

No.	Title	Date in Parliament	Date of Popular Vote
(i)	Economic Issues		
1	Federal act on the financing of the unemployment insurance	12/13/1996	09/28/1997
2	Federal act on measures to balance the budget	12/19/1997	06/07/1998
3	Popular initiative "for the 10th revision of the old age and survivors insurance without raising the retirement age"	12/19/1997	09/27/1998
4	Federal law on employment in industry, craft and commerce	03/20/1998	11/29/1998
5	Popular initiative "housing property for all"	10/09/1998	02/07/1999
6	Federal law on the insurance for motherhood	12/18/1998	06/13/1999
7	Popular initiative "for a flexible retirement age for woman and man from 62 upwards"	12/18/1998	11/26/2000
8	Popular initiative "for a more flexible old age and survivors insurance – against raising the retirement age for women"	12/18/1998	11/26/2000
9	Popular initiative "for lower hospital expenses"	03/24/2000	11/26/2000
10	Law on federal employees	03/24/2000	11/26/2000
11	Popular initiative "for lower-priced medicines"	06/08/2000	03/04/2001
12	Popular initiative "for a tax on capital gains"	06/22/2001	12/02/2001
13	Federal act on reducing debts	06/22/2001	12/02/2001
14	Popular initiative "for a reduced duration of work time"	06/22/2001	03/03/2002
15	Federal law on the electricity market	12/15/2000	09/22/2002
16	Popular initiative "Surplus gold reserves for the federal old age and survivors insurance funds (gold initiative)"	03/22/2002	09/22/2002
17	Counterproposal to the gold initiative "gold for the federal old age and survivors insurance fund, the cantons and the foundation"	03/22/2002	09/22/2002
18	Federal law on the compulsory unemployment insurance and the compensation in case of insolvency	03/22/2002	11/24/2002
19	Popular initiative "for fair rents"	03/12/2002	05/18/2003
20	Popular initiative "for an adequate vocational training (apprenticeship initiative)"	03/22/2002	05/18/2003
21	Popular initiative "health must remain affordable (health initiative)"	12/05/2002	05/18/2003
22	Revision of the obligations law (rents)	12/13/2002	02/08/2004
23	Federal act on the financing of the old age and survivors insurance / disability insurance by means of an increase of the value-added tax rate	10/03/2003	05/16/2004
24	Federal law on the old age and survivors insurance (11th revision)	10/03/2003	05/16/2004
25	Popular initiative "postal services for all"	03/19/2004	09/26/2004
26	Federal act on the new organization of federal finances	03/19/2004	11/28/2004
27	Popular initiative "profits from the National Bank for the old age and survivors insurance"	12/16/2005	09/24/2006
28	Federal law on family allowances	03/24/2006	11/26/2006
29	Popular initiative "for a social united health insurance"	10/07/2006	03/11/2007

continued

No.	Title	Date in Parliament	Date of Popular Vote
30	Federal law on the invalidity insurance	10/06/2006	06/17/2007
31	Federal law on the improvement of the fiscal conditions of business activities and investments	03/22/2007	02/24/2008
32	Counterproposal to the popular initiative "for lower health insurance premiums in the basic insurance system"	12/21/2007	06/01/2008
33	Popular initiative "for a flexible retirement age"	06/13/2008	11/30/2008
34	Federal act on the temporary supplementary financing of the disability insurance by means of an increase of the value-added tax rate	06/12/2009	09/27/2009
35	Revision of the federal law on the old age and survivors pension plan (minimum conversion rate)	12/12/2008	03/07/2010
36	Revision of the law on the unemployment insurance	03/19/2010	09/26/2010
37	Popular initiative "for fair taxes"	06/18/2010	11/28/2010
(ii)	Swiss-EU Issues		
38	Federal act on the approval of the sectoral agreements between Switzerland on the one hand and the European Community and its members states or Euratom on the other hand	10/08/1999	05/21/2000
39	Popular initiative "for the regulation of immigration"	03/19/1999	09/24/2000
40	Popular initiative "yes to Europe"	06/23/2000	03/04/2001
41	Federal act on the approval and implementation of the bilateral agreements between Switzerland and the EU on the Schengen and Dublin accords	12/17/2004	06/05/2005
42	Federal act on the approval and implementation of the protocol on the extension of the agreement on the free movement of people to the new EU members states between Switzerland on the one hand and the EU and its member states on the other hand, as well as on the approval of the revision of the accompanying measures to the free movement of people	12/17/2004	09/25/2005
43	Federal law on the cooperation with the countries of Eastern Europe	03/24/2006	11/26/2006
44	Federal act approving the renewal of the agreement between Switzerland and the European Community and its member states on the free movement of people, and the approval and implementation of the protocol to extend the agreement on free movement to Bulgaria and Romania	06/13/2008	02/08/2009
45	Federal act on the approval and execution of an exchange of notes between Switzerland and the European Community concerning the implementation of regulation (EG) no. 2252/2004 on biometric passports and travel documents	06/13/2008	05/17/2009
(iii)	Social Issues		
46	Popular initiative "for a ban on exporting materials of war"	10/04/1996	06/08/1997
47	Popular initiative "youth without drugs"	03/21/1997	09/28/1997
48	Popular initiative "for Switzerland without police snooping"	06/21/1996	06/07/1998
49	Popular initiative "for the protection of life and the environment against genetic manipulations"	03/21/1997	06/07/1998
50	Popular initiative "for inexpensive foodstuffs and ecological farming"	03/21/1997	09/27/1998
51	Federal law concerning an engine size-related duty on heavy goods traffic	12/19/1997	09/27/1998
52	Popular initiative "for a reasonable drug policy"	03/21/1997	11/29/1998
53	Federal act on the construction and financing of public transportation infrastructure projects	03/20/1998	11/29/1998
54	Change of the federal law on spatial planning	03/20/1998	02/07/1999
55	Federal act concerning a constitutional article on transplant medicine	06/26/1998	02/07/1999
56	Law on asylum	06/26/1998	06/13/1999

continued

No.	Title	Date in Parliament	Date of Popular Vote
57	Federal act on urgent measures in relation to asylum-seekers and foreigners	06/26/1998	06/13/1999
58	Federal act on the medical prescription of heroin	10/09/1998	06/13/1999
59	Popular initiative "for the protection of people against techniques of artificial reproduction (initiative for a reproduction respecting human dignity)"	12/18/1998	03/12/2000
60	Popular initiative "for a fair representation of women in the federal authorities (initiative of March 3rd)"	06/18/1999	03/12/2000
61	Popular initiative "to reduce by half the motorized road traffic in order to maintain and improve the living environment (initiative for the reduction of traffic)"	06/18/1999	03/12/2000
62	Constitutional article on a tax to promote renewable energy	10/08/1999	09/24/2000
63	Popular initiative "for the introduction of a solar centime (solar initiative)"	10/08/1999	09/24/2000
64	Popular initiative "saving on spending for the army and defense – for more peace and forward-looking jobs (redistribution initiative)"	03/24/2000	11/26/2000
65	Popular initiative "for more traffic safety based on a speed limit of 30km/h in towns, with exceptions (roads for everyone)"	10/06/2000	03/04/2001
66	Federal law on the army and the military administration (armament)	10/06/2000	06/10/2001
67	Federal law on the army and the military administration (training cooperation)	10/06/2000	06/10/2001
68	Federal act on the abrogation of the constitutional measure subjecting the establishment of dioceses to the approval of the Confederacy	12/15/2000	06/10/2001
69	Popular initiative "for a guaranteed old age and survivors insurance – taxing energy instead of work"	06/22/2001	12/02/2001
70	Popular initiative "for a credible security policy and Switzerland without an army"	06/22/2001	12/02/2001
71	Popular initiative "solidarity creates security: for a voluntary civilian peace service (CPS)"	06/22/2001	12/02/2001
72	Popular initiative "for the membership of Switzerland to the organization of the United Nations (UN)"	10/05/2001	03/03/2002
73	Change of the Swiss criminal code (abortion)	03/23/2001	06/02/2002
74	Popular initiative "for mother and child – for the protection of the unborn child and the help to the mother in need"	12/14/2001	06/02/2002
75	Popular initiative "against the abuse of the asylum law"	03/22/2002	11/24/2002
76	Federal law on the army and the military administration (Army XXI)	10/04/2002	05/18/2003
77	Federal law on the protection of the population and civil defense	10/04/2002	05/18/2003
78	Popular initiative "for equal rights for disabled people"	12/13/2002	05/18/2003
79	Popular initiative "for one car-free Sunday per season – an attempt limited to four years (Sunday initiative)"	12/13/2002	05/18/2003
80	Popular initiative "for non-nuclear energy – for a change in energy policy and the gradual decommissioning of nuclear power plants"	12/13/2002	05/18/2003
81	Popular initiative "for the continuation of the freeze on the building of nuclear power plants and the limitation of nuclear risk (Moratorium Plus)"	12/13/2002	05/18/2003
82	Counterproposal to the popular initiative "Avanti – for safe and efficient highways"	10/03/2003	02/08/2004
83	Federal act on the regular naturalization and the simplified naturalization of young, second-generation foreigners	10/03/2003	09/26/2004

continued

No.	Title	Date in Parliament	Date of Popular Vote
84	Federal act on the acquisition of citizenship rights by third-generation foreigners	10/03/2003	09/26/2004
85	Federal law on research on embryonic stem cells	12/19/2003	11/28/2004
86	Federal law on the registration of partnerships of same-sex couples (partnership law)	06/18/2004	06/05/2005
87	Popular initiative "for food from agriculture free of genetic engineering"	06/17/2005	11/27/2005
88	Change of the asylum law	12/16/2005	09/24/2006
89	Federal law on foreigners	12/16/2005	09/24/2006
90	Popular initiative "against the noise of fighter jets in tourist areas"	06/22/2007	02/24/2008
91	Popular initiative "for a reasonable Cannabis policy and an effective youth protection"	03/20/2008	11/30/2008
92	Change of the federal act on narcotics	03/20/2008	11/30/2008
93	Popular initiative "association's right to appeal: enough obstructionism – more growth for Switzerland"	03/20/2008	11/30/2008
94	Popular initiative "for no statute of limitation on the prosecution or punishment of pornographic crimes involving children"	06/13/2008	11/30/2008
95	Constitutional article "for a future with alternative medicine"	10/03/2008	05/17/2009
96	Federal act for the creation of a special fund for tasks in the air traffic	10/03/2008	11/29/2009
97	Popular initiative "against the building of minarets"	06/12/2009	11/29/2009
98	Popular initiative "for a ban on the export of materials of war"	06/12/2009	11/29/2009
99	Popular initiative "against the cruelty to animals and for a better legal protection of animals"	09/25/2009	03/07/2010
100	Federal act on a constitutional article concerning research on humans	09/25/2009	03/07/2010
101	Counterproposal to the popular initiative "for the deportation of foreigners convicted of a crime"	06/10/2010	11/28/2010
102	Popular initiative "for the deportation of foreigners convicted of a crime"	06/18/2010	11/28/2010
(iv)	Other Issues		
103	Federal act on the abolition of the federal monopoly on the manufacture and sale of gunpowder	12/13/1996	06/08/1997
104	Federal act on a temporary new article on cereals	04/29/1998	11/29/1998
105	Federal act on the change of the conditions of eligibility for election to the Federal Council	10/09/1998	02/07/1999
106	Federal act on a new federal constitution	12/18/1998	04/18/1999
107	Federal act on the reform of the judiciary	10/08/1999	03/12/2000
108	Popular initiative "for a faster direct democracy (processing times for popular initiatives in the form of a fully formulated proposal)"	10/08/1999	03/12/2000
109	Popular initiative "more rights for the people through referendums with counterproposals (constructive referendum)"	03/24/2000	09/24/2000
110	Federal act on the revision of the people's rights	10/04/2002	02/09/2003
111	Federal act on the revision of the constitutional articles on education	12/16/2005	05/21/2006
112	Popular initiative "popular sovereignty instead of government propaganda"	12/21/2007	06/01/2008
113	Federal act on the abandonment of the introduction of the general popular initiative	12/19/2008	09/27/2009

Coding Scheme for Legislators' Occupational Status

The Swiss parliament is a semi-professional institution, where many MPs pursue a professional activity besides their electoral mandate. Based on biographical data, Pilloti (2012) classifies legislators into three broad occupational categories. These are business people (e.g., CEOs) and self-employed professionals (e.g., lawyers), employees in the private (e.g., NGO workers) and public sector (e.g., teachers) and professional politicians. Drawing on Pilloti's (2012) data, we distinguish between legislators who have lower-, middle- and higher-income occupations. In the category of lower-income occupations, we include low-end jobs in the private sector such as manual workers and farmers. The middle-income category covers a wide range of occupations, containing, for example, public- and private-sector employees as well as professional politicians. Higher-income occupations are occupations involving high levels of responsibility and authority. Table 3 shows, on the one hand, Pilloti's (2012) classification of legislators into broad and narrow occupational categories and, on the other hand, the three categories of occupational status we use in our analysis (shaded in gray).

Table 3: Legislators' Professional Occupations and Occupational Status

Broad category	Narrow category
Higher-income occupations	
Business professionals	Associate director/CEO
	Banking
	Contractor
	Insurance
	Investment
	Manufacturer
	Real Estate
	Transportation
	Business (unspecified)
	Communication
	Business executive
Private-sector professionals	Advertising
	Engineer
	Business/economic consultant
Self-employed professionals	Architect
	Doctor/Dentist
	Lawyer
	Notary
Public-sector professionals	University professor

continued

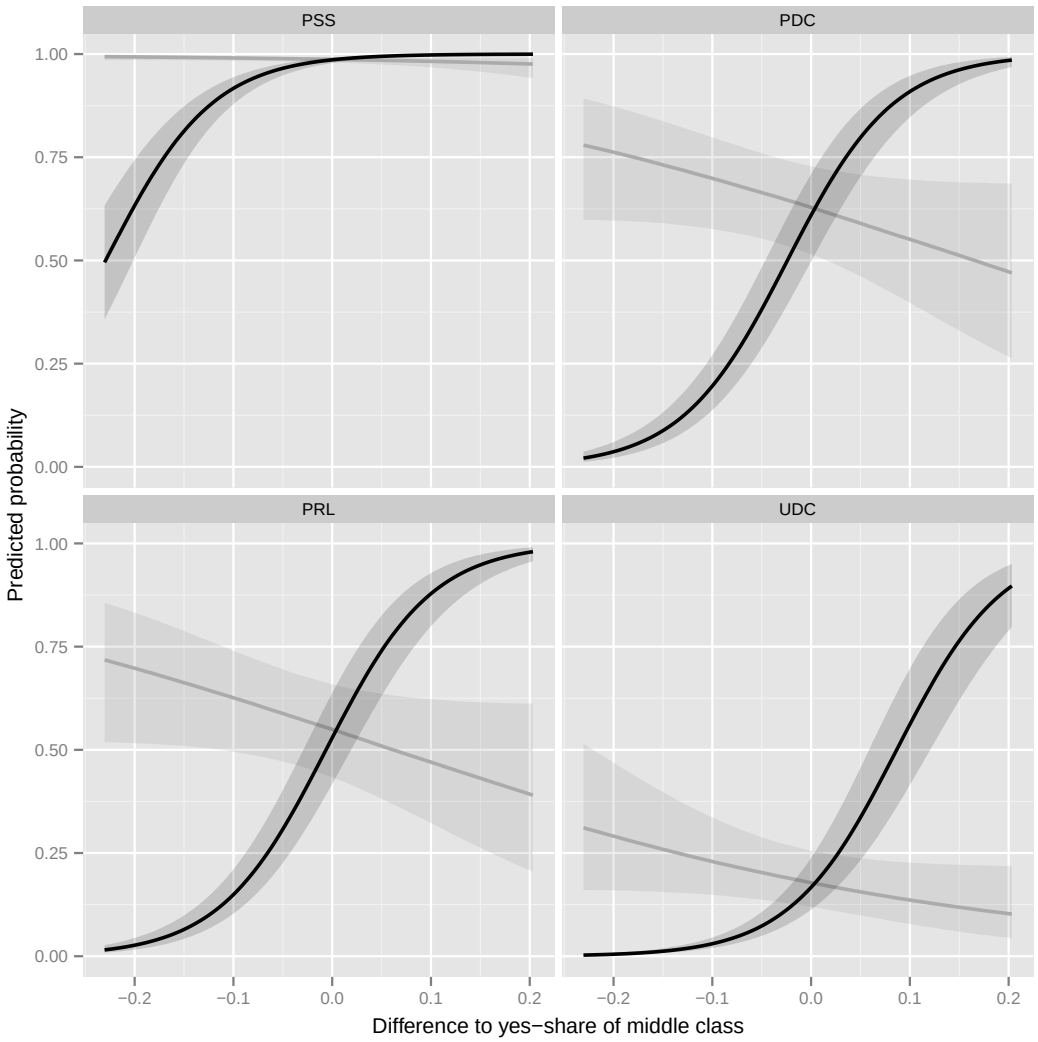
Broad category	Narrow category
MIDDLE-INCOME OCCUPATIONS	
Private-sector professionals	Accountant/Economist
	Actor
	Charity and NGOs
	Health care expert
	Legal expert
	Manager (unspecified)
	Pharmacist/Biologist
	Radio and television
	Journalist/Publisher
Public-sector and service-based professionals	Academic researcher
	Court clerk
	Civil servant
	Public relations/lobbyist
	Education (administration)
	Facilitator
	Family counselor
	Midwife
	Minister/Priest
	Primary/secondary school teacher
	Psychologist
	Social worker
	Police officer
Professional politicians	Elected cantonal official
	Elected local official
	Mayor
	Political party official
	Politicians (unspecified)
	Labor union official
LOWER-INCOME OCCUPATIONS	
Private-sector professionals	Farm laborers
	House wife
	Manuel worker
	Office clerk
	Service worker
Other	Retiree
	Student
	Union farmer

Note: The classification of occupations into broad and narrow categories is based on Pilloti (2012).

Predicted Probabilities for Model 1 and 2

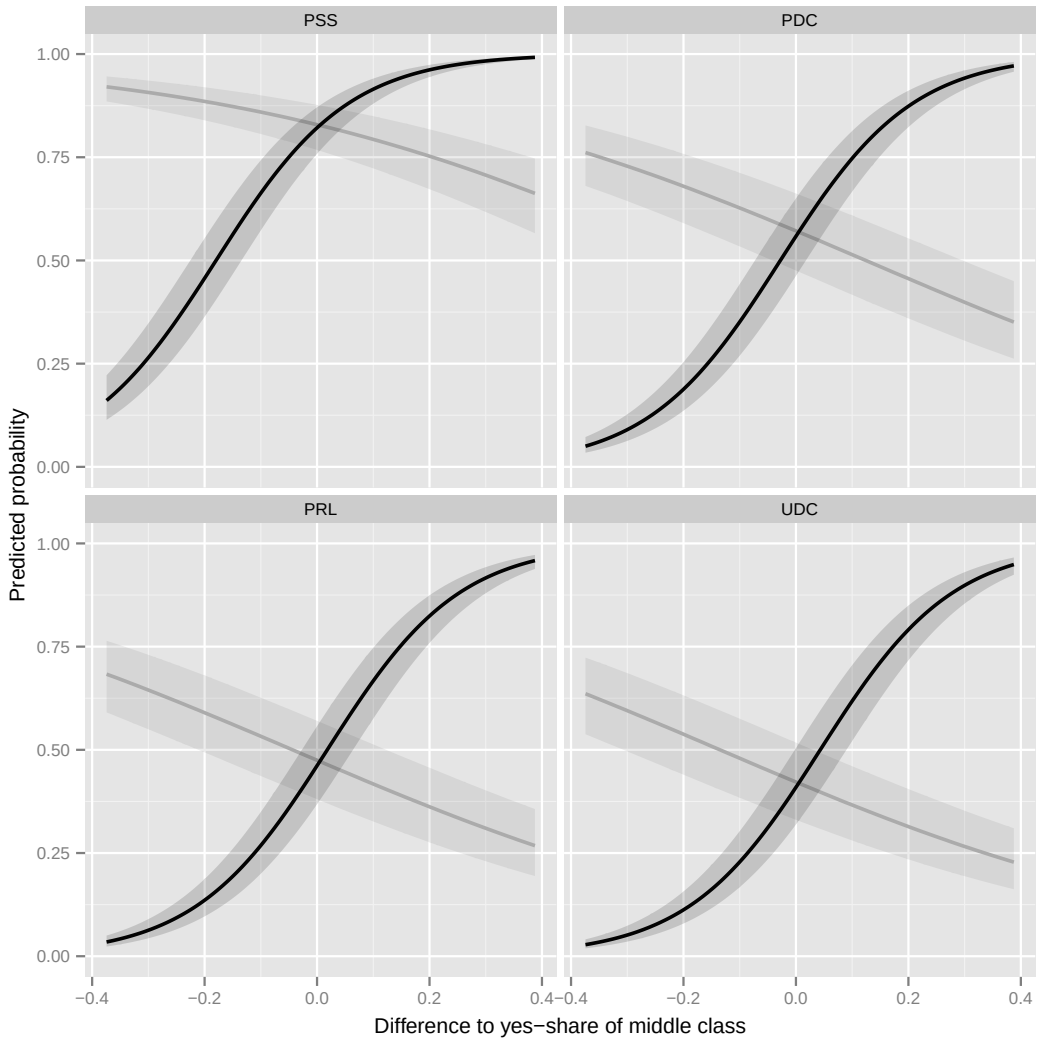
In the article, we present the predicted probabilities for the third model of legislator responsiveness to the preferences of different income groups (Figure 2 in the article). Here, in Figure 2 and 3, we show the predicted probabilities for the first and second model of legislator responsiveness (for each of the four major parties in the Swiss parliament). Both figures demonstrate that legislators are highly responsive to the preferences held by the affluent. By contrast, representatives appear not to respond to the preferences of poorer citizens.

Figure 2: Legislator Responsiveness to the Affluent and the Poor (Model 1)



Note: For each of the four major parties in parliament, the figure shows the predicted probability of a legislator voting for the more liberal alternative in a vote, together with the upper and lower quartiles. Predicted probabilities were calculated for economic issues. All other variables for which the values do not vary were held at their mean or modal values. The means for the income group preference variables are 0.54 (for the proportion voting in a liberal manner among the middle class), −0.02 (for the difference between the proportion voting for the liberal alternative among the poor and the proportion among the middle class) and 0.01 (for the difference between the proportion voting for the liberal option among the rich and the proportion among the middle class.)

Figure 3: Legislator Responsiveness to the Affluent and the Poor (Model 2)

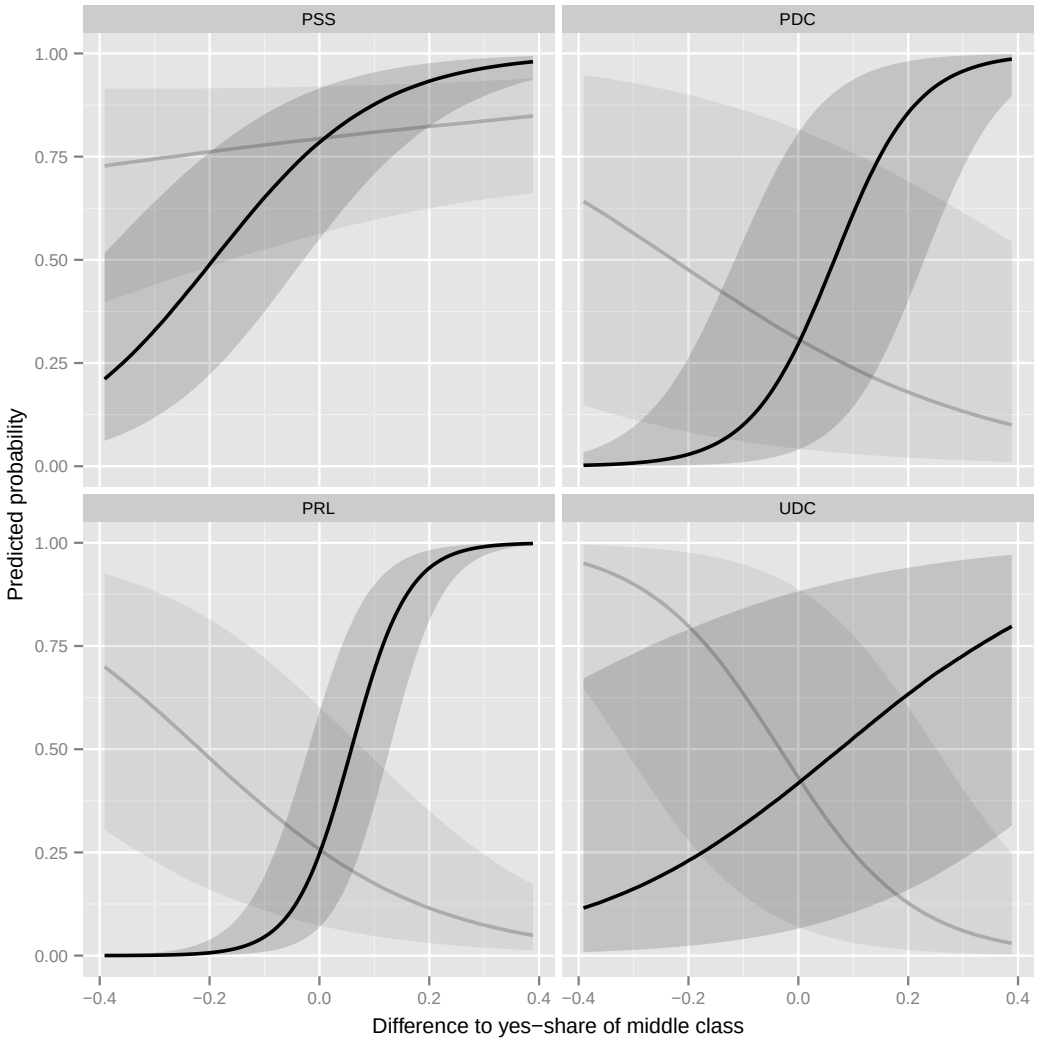


Note: For each of the four major parties in parliament, the figure shows the predicted probability of a legislator voting for the more liberal alternative in a vote, together with the upper and lower quartiles. Predicted probabilities were calculated for economic issues. All other variables for which the values do not vary were held at their mean or modal values. The means for the income group preference variables are 0.56 (for the proportion voting in a liberal manner among the middle class), −0.01 (for the difference between the proportion voting for the liberal alternative among the poor and the proportion among the middle class) and 0.01 (for the difference between the proportion voting for the liberal option among the rich and the proportion among the middle class.)

Predicted Probabilities for Model 4, 5 and 6

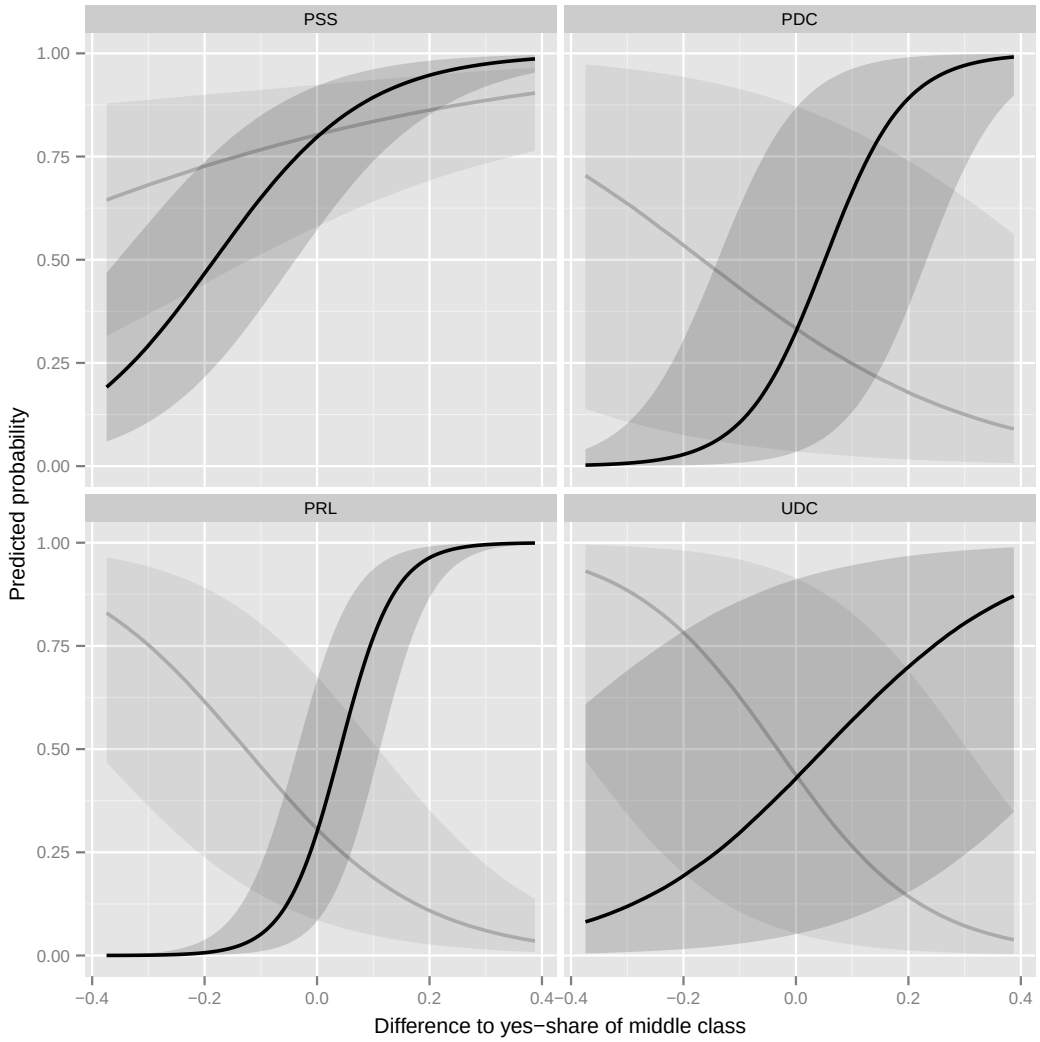
Figure 4, 5 and 6 show the predicted probabilities from the models presented in the robustness check section of our article (these are Models 4, 5 and 6, reported in Table 2 in the article). In order to gain confidence in our results, we estimated three alternative specifications of our third model (this model is described on pp. 14-17 in the article). First, we fitted the third model only to the politically knowledgeable voters in our sample (Model 4). Second, we added two additional predictor variables indicating the occupational status of a legislator, namely `middle-income occupation` and `higher-income occupation` (Model 5). Third, finally, we re-estimated the model including a measure for the intensity of voting campaigns (Model 6). The predicted probabilities generated by these alternative models all show a pattern very similar to that observed for Model 3.

Figure 4: Legislator Responsiveness to the Affluent and the Poor (Model 4)



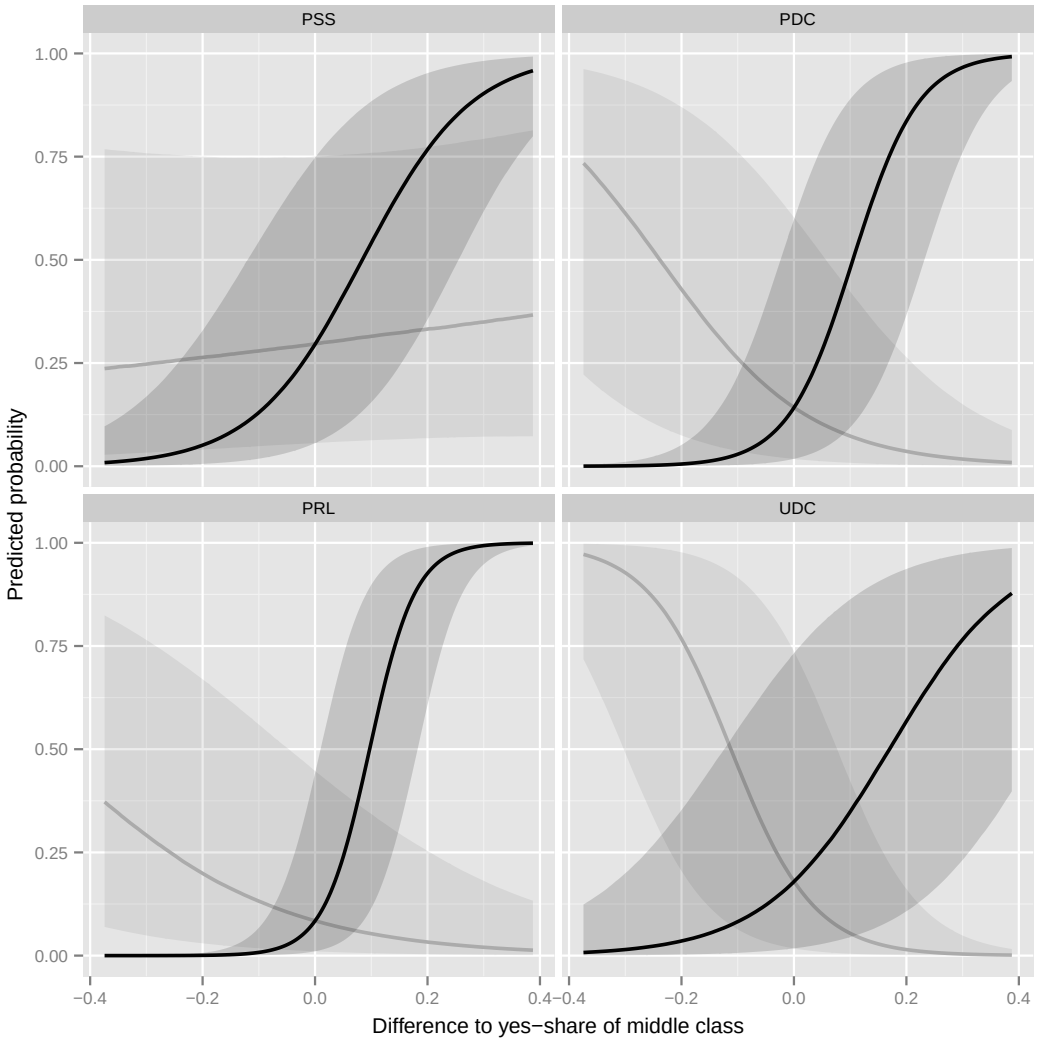
Note: For each of the four major parties in parliament, the figure shows the predicted probability of a legislator voting for the more liberal alternative in a vote, together with the upper and lower quartiles. Predicted probabilities were calculated for economic issues. All other variables for which the values do not vary were held at their mean or modal values. The means for the income group preference variables are 0.56 (for the proportion voting in a liberal manner among the 'knowledgeable' middle class voters), −0.01 (for the difference between the proportion voting for the liberal alternative among the knowledgeable poor and the proportion among the knowledgeable middle class voters) and 0.01 (for the difference between the proportion voting for the liberal option among the knowledgeable rich and the proportion among the knowledgeable middle class voters.)

Figure 5: Legislator Responsiveness to the Affluent and the Poor (Model 5)



Note: For each of the four major parties in parliament, the figure shows the predicted probability of a legislator voting for the more liberal alternative in a vote, together with the upper and lower quartiles. Predicted probabilities were calculated for economic issues and legislators with a lower-income occupation. All other variables for which the values do not vary were held at their mean or modal values. The means for the income group preference variables are 0.56 (for the proportion voting in a liberal manner among the middle class), −0.01 (for the difference between the proportion voting for the liberal alternative among the poor and the proportion among the middle class) and 0.01 (for the difference between the proportion voting for the liberal option among the rich and the proportion among the middle class.)

Figure 6: Legislator Responsiveness to the Affluent and the Poor (Model 6)



Note: For each of the four major parties in parliament, the figure shows the predicted probability of a legislator voting for the more liberal alternative in a vote, together with the upper and lower quartiles. Predicted probabilities were calculated for economic issues. The variable measuring campaign intensity was fixed at its 10th percentile. All other variables for which the values do not vary were held at their mean or modal values. The means for the income group preference variables are 0.56 (for the proportion voting in a liberal manner among the middle class), −0.01 (for the difference between the proportion voting for the liberal alternative among the poor and the proportion among the middle class) and 0.01 (for the difference between the proportion voting for the liberal option among the rich and the proportion among the middle class.)

Additional Robustness Checks

Several authors have noted that preferences are highly correlated across income groups (e.g., Soroka and Wlezien 2008; Ura and Ellis 2008; Erikson and Bhatti 2011). The correlation between our income group preference variables is low, so they are unlikely to lead to collinearity problems. The Pearson's correlation coefficient is $r = -0.26$ for `yes middle class (ideol.)` and `yes poor-middle (ideol.)`, $r = 0.09$ for `yes middle class (ideol.)` and `yes rich-middle (ideol.)` and $r = -0.14$ for `yes poor-middle (ideol.)` and `yes rich-middle (ideol.)`. Nevertheless, as an additional robustness check, we re-estimate our third model after omitting, first, the variable for the preferences of the affluent (relative to the preferences of the middle class) (Model 7) and, second, the variable for the preferences of the poor (relative to the preferences of the middle class) (Model 8). Table 4 shows the results. The estimates of these models are very similar to the ones of the third model (presented in Table 1 in the article).

Table 4: Responsiveness to Income Groups

	Omit Preferences of Affluent Voters	**Omit Preferences of Poor Voters**
	Model 7	Model 8
Intercept	−6.17***	−5.63***
	(0.90)	(0.82)
Importance	−2.40***	−1.84***
	(0.14)	(0.13)
Yes middle class (ideol.)	10.49***	11.43***
	(0.83)	(0.85)
Yes poor-middle (ideol.)	−4.55*	
	(2.61)	
Yes rich-middle (ideol.)		8.90***
		(2.72)
Turnout	0.09	−0.01
	(0.32)	(0.25)
Swiss-EU issues	4.89***	2.59***
	(1.14)	(0.90)
Social issues	0.86	−0.21
	(0.65)	(0.51)
Other issues	−1.57	−2.18**
	(1.37)	(1.09)
Optional referendum	−0.21	−0.68
	(0.69)	(0.55)
Mandatory referendum	1.31	0.62
	(0.96)	(0.76)
Counterproposal	−0.85	−1.57
	(1.27)	(1.00)
Female MP	0.39***	0.40***
	(0.09)	(0.09)
Senior MP	0.15*	0.13
	(0.09)	(0.09)
Latin canton	0.29***	0.27***
	(0.09)	(0.09)
District magnitude	0.05	0.05
	(0.04)	(0.04)
Includes random slopes	Yes	Yes
N	15,848	15,848
Log Likelihood	-4,339.43	-4,092.29
AIC	8,724.85	8,230.58
BIC	8,901.28	8,407.00

Standard errors in parentheses
* $p < .1$; ** $p < .05$; *** $p < .01$

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