

Democratic Redistribution and Rule of the Majority

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Abstract: Does redistribution in democracies cater to the will of the majority? We resort to the median-voter theorem and exploit international survey data in order to answer that question. We find that the median-voter theorem provides an acceptable first approximation to how redistribution is determined, provided the theorem is not restricted by assuming that voters are guided by pecuniary motives alone. However, a non-negligible share of democracies violates the theorem and implements some minority-backed redistributive policy. Those violations cannot be explained by political absenteeism of the poor. Rather, they are explained by the electoral bundling of redistribution with issues that pertain to societal conflicts over values and rights.

Keywords: *Income redistribution, Democracy, Median-voter theorem, Inequality.*

JEL-Classification: *D3, D7, H1, P16*

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1. Introduction

Redistribution is one of the central domains upon which democratic polities have the power to make far-reaching decisions. But does redistribution in democracies occur in “a democratic way”, i.e. does it cater to the will of the majority of citizens? And if not, what are the driving forces that determine actual redistributive politics in democracies?

Political economists often employ the median-voter theorem to describe how the preferences of the electorate translate into policy outcomes. Alesina and Angeletos (2005), Alesina and Rodrik (1994), Bénabou and Ok (2001), Bénabou and Tirole (2006), Cervellati et al. (2010), Corneo and Grüner (2000), Lindbeck et al. (1999), Persson and Tabellini (1994) and Piketty (1995) are examples of papers positing that redistribution caters to the tastes of the median voter. The amount of redistribution preferred by the median voter obtains in equilibrium because at that level one half of the electorate prefers redistribution to be carried further and one half of the electorate prefers to reduce it. Thus, the median-voter theorem epitomizes the view of democracy as “rule of the majority”.

We refer to the presumption that democracies implement the distributional preferences of the median voter as to the *median-voter view on redistribution*. Despite its prominence in modelling and its intuitive appeal, this view is far from being generally accepted. Of course, this is not merely of academic interest: assessing the validity of the median-voter view can inform political judgments about the actual working of democracy. A recent example where this issue came to the fore is the controversy about the reasons why democracy has not slowed rising income inequality during the last three decades, both in the US and elsewhere (see e.g. Bonica et al., 2013, and references therein). A popular statement in this debate is that actual redistributive policies substantially depart from those preferred by the majority of citizens, i.e. the median-voter view on redistribution is misleading.

While it is not difficult to criticize the assumptions on which the median-voter theory of redistribution is based, its empirical falsification has proven to be a daunting task. The seminal contributions of Romer (1975), Roberts (1977) and Meltzer and Richard (1981) identified the median voter with the individual with the median productivity in the population. Subsequent empirical analyses have therefore investigated the link between the level of redistribution and the distance between the median and the average wage rate (viz. pre-tax income) or the Gini coefficient of the distribution of market incomes. Investigations along those lines have usually produced either negative or mixed results (e.g. Perotti, 1996; Milanovic, 2000; Georgiadis and Manning, 2012; Scervini, 2012).

However, the observation that actual redistribution does not cater to the preferences of the individual with median productivity is no refutation of the median-voter view. The coincidence of the median voter with the individual with median productivity is an artefact of the basic model of redistributive taxation. It is not a general property of the median-voter view on redistribution. In a more general version of that model, citizens' preferences for redistribution can hinge upon a variety of non-pecuniary factors. Unless pecuniary and non-pecuniary motives are perfectly correlated, the individual that is the median in the distribution of skills or pre-tax incomes does not need to be the median in the distribution of preferences for redistribution. Therefore, empirical analyses that relate pre-fisc income inequality to redistribution cannot answer the question whether democracies redistribute according to the will of the majority.

Several investigations of individual preferences for redistribution suggest that the above observation is germane to a fair appraisal of the median-voter view. A common finding from survey and experimental evidence is that people often express a demand for redistribution that apparently contradicts their pecuniary self-interest. Correspondingly, several papers including Alesina and Giuliano (2010), Corneo and Grüner (2002), Fong (2001), Höchtl et al. (2012), Klor and Shayo (2010), Luttmer, (2001), Luttmer and Singhal (2011), Shayo (2009) and Tyran and Sausgruber (2006) have found that preferences for redistribution are significantly affected by non-pecuniary motives. Chief among them are concerns for justice, identity, and social status. Furthermore, individuals' attitudes towards redistribution have been found to depend on their beliefs about the costs inflicted by redistribution to the overall economy and on their perceptions of inequality and income mobility (Alesina and La Ferrara, 2005; Bernasconi, 2006; Engelhardt and Wagener, 2014; Osberg and Smeeding, 2006; Ravallion and Lokshin, 2000). Those concerns and beliefs vastly differ across individuals and display no robust relationship to their wage rates or pre-tax incomes.

In the current paper, we try to assess the empirical validity of the median-voter view on redistribution. In doing this, we take into account the fact that the median voter needs not coincide with the individual with median income.

We follow a novel empirical strategy that sidesteps the problem of identifying the median voter on the basis of its skills, preferences, and beliefs. Our strategy consists of *directly* eliciting the median voter's preference for redistribution from surveys. The dataset we use is representative of the adult population in a large number of countries – both democracies and non-democracies – in a number of years. That dataset allows us to recover for each country and year the entire distribution of desired deviations from the amount of redistribution in the

status quo. We use this information to ascertain whether the distributional preferences of the median voters are implemented and, if not, how they differ from actual redistribution. By comparing democracies with non-democracies, we then assess to what extent one is entitled to rely on the median-voter theory in order to predict the amount of redistribution in democracies.

Our findings give some qualified support to the median-voter view on redistribution. We find that democracies are different from non-democracies in the extent to which redistribution caters to the preferences of the median voter: the higher the quality of democracy, as measured by standard indexes, the higher the probability that the government implements the level of redistribution demanded by the median voter.¹ In the majority of cases, variations in the amount of redistribution in democracies mirror variations in the preferences of the respective median voters – both over time and across countries. This finding suggests that, as a first approximation, redistribution in democracies does conform to the will of the majority. Interestingly, and differently from the basic model of redistributive taxation, median voters and median-income receivers turn out to constitute quite different sets of people with little overlap.

While democracies often do a good job in serving the median voter, the alignment of redistributive policies to the will of the majority is far from perfect. In about forty percent of the democratic countries in our sample there exists a strict majority of citizens that would prefer a different amount of redistribution. Interestingly, there are both cases where the majority prefers more redistribution than in the status quo and cases where it prefers less redistribution. What accounts for this ostensible departure from the rule of the majority? We attack this question in the second part of the paper by putting to test two prominent theories of minority-supported redistributions.

The first theory of political redistribution that we address is the *asymmetric-participation theory* (e.g. Bénabou, 2000). It purports that some groups of the population do not participate in elections and that citizens exert unequal influence on political outcomes. This can generate a gap between the hypothetical and the actual median voter, leading to a level of redistribution that is not the one preferred by the majority of the population.

The second theory we resort to is the *policy-bundle theory* (e.g. Roemer, 2001). It grounds on the observation that electoral competitions involve several dimensions. Voters do not express themselves on redistribution alone but on a bundle of policies that include the

¹ This does not imply that democracy increases redistribution – an issue that has been studied by a voluminous empirical literature and recently summarized and extended by Acemoglu et al. (2013). They put forward that democracy has a robust effect on tax revenues as a fraction of GDP, but ambiguous effects on income inequality.

level of redistribution. If non-redistributive issues – like race and religion – are salient, parties may target redistributive policies to the groups that take a moderate stand in the non-redistributive issues, i.e. to the median voters in those dimensions. Those groups, however, may have redistributive tastes that substantially differ from those of the majority.

In accordance with the asymmetric-participation theory, we find that political participation significantly correlates with education and income. However, we find that the effect of this asymmetry on redistributive politics is weak, i.e. it does not significantly contribute to explain why the level of redistribution may differ from the one preferred by the majority of citizens.

The policy-bundle theory proves to be very helpful to interpret the data. Consistent with it, we find that redistributive policies tend to adjust to the preferences of the voters who hold median views on values issues. The distance between those preferences and the preferences of the median voter in the redistribution dimension significantly contributes to explain why in democracies the level of redistribution sometimes differs from the one that is desired by the majority of the population.

2. Descriptive Evidence

We exploit information on individual preferences for redistribution from the *World Values Survey* and the *European Values Study*, together referred to as WVS. The World Values Survey Network provides a harmonized file of European and World Values Surveys, extending over four survey waves carried out around 1981, 1990, 1995 and 2000 (WVS 2006).² In addition, the World Values Survey 2005 (WVS 2009) and the European Values Study 2008 (EVS 2011) provide a fifth and sixth round of survey data.³ In each wave, the survey project was conducted over a period of about three years and for each country the year when the survey was actually fielded is known. As we are interested in the perspective of voters, we restrict the sample to respondents who are 18 or older at the time the survey was conducted.

For the waves 2 to 6, the WVS-dataset contains an indicator of individuals' attitudes towards redistribution. In the section on economic policy, the respondents' views on the following issue are surveyed: "*Incomes should be made more equal*" vs. "*We need larger income differences as incentives*". Respondents have to select an answer from a scale from 1 to 10 where 1 means that they completely agree with the first statement (they demand more

² For details see <http://www.worldvaluessurvey.org>.

³ For details see <http://www.europeanvaluesstudy.eu>.

redistribution) and 10 means that they completely agree with the second statement (they demand less redistribution).⁴

The frequency distribution of the original variable, going from 1 to 10, is shown in Table 1. About 21 % of the respondents chose 5 or 6, 33 % chose smaller numbers, and 46 % chose larger ones.

Table 1. Frequency distribution of preferences for redistribution; all countries.

<i>equal_income</i>	<i>Freq.</i>	<i>Percent</i>	<i>Cum.</i>
incomes more equal	42,354	13.46	13.46
2	18,235	5.80	19.26
3	24,207	7.69	26.95
4	21,183	6.73	33.68
5	39,458	12.54	46.22
6	25,857	8.22	54.44
7	32,336	10.28	64.72
8	41,077	13.05	77.77
9	22,211	7.06	84.83
incentives to individual efforts	47,731	15.17	100.00
Total	314,649	100.00	

The use of comparatives in the wording of the question (more equal, larger differences) allows one to infer that respondents use the income distribution in their respective contexts as a benchmark. Accordingly, that question can be used to recover satisfaction with the amount of redistribution actually achieved by the government in a given country and year. More precisely, individuals who view their distributive preferences implemented in the status quo are expected to answer by placing themselves in the middle of the scale, i.e. selecting either point 5 or 6 in the scale. Conversely, individuals who are very dissatisfied with the distributive policy in their country are expected to place themselves at the extremes of the scale.

Respondents' choices on the 1-10 scale may be viewed as the peaks of some underlying well-behaved reduced-form utility functions that describe how utilities vary with the amount of redistribution. A choice in the middle of the scale tells us that the respondent's peak lies at the amount of redistribution that exists in the status quo. A choice at the far right of the scale indicates that utility is maximized by a much lower amount of governmental redistribution. A

⁴ Murthi and Tiongson (2009), Shayo (2009) and Klor and Shayo (2010) employ the same survey question to investigate the drivers of preferences for redistribution.

choice at the far left indicates that distributive preferences peak at a much higher level of redistribution than in the status quo.

This way of eliciting individual attitudes towards redistribution invites one to define a variable that captures voters' misalignment with governmental redistribution. We denote that variable by Δ and set it equal to $|\delta|$, where δ is the smallest difference between the chosen category and the median categories 5 and 6. Thus, Δ equals 0 if the respondent chose 5 or 6, it equals 1 if the respondent chose 4 or 7, 2 for response category 3 or 8, etc. Denoting the individual response by $r_i \in \{1, \dots, 10\}$, the preferred change in redistributive policy advocated by individual i is measured by

$$\delta_i = \begin{cases} r_i - 5 & \text{if } r_i < 6 \\ r_i - 6 & \text{if } r_i > 5 \end{cases} \quad (1)$$

In our initial sample there are 258 country/year observations from 100 countries and not all of them are democracies. In order to identify democracies we rely on two indicators from, respectively, the Polity IV dataset (Marshall et al. 2013) and the Freedom House index, see Appendix B1 for details. Since in some cases those indicators disagree, we concentrate on the 220 country/wave observations for which both indicators are available and classify a country/year observation as a democracy if and only if that observation is classified as a democracy according to both indicators. We call the resulting dummy variable *free_polity*; it equals 1 in case of a democracy and 0 otherwise. Accordingly, the sample we work with has 140 country/year observations pertaining to democracies and 80 pertaining to non-democracies.⁵

Table 2 shows separately for democracies and non-democracies the distribution of individual disagreement with status-quo redistribution (Δ_i). It is apparent that the portion of people very dissatisfied with redistributive policy ($\Delta_i = 4$) is substantially larger in non-democracies than in democracies.

⁵ Robustness checks based on each original indicator of democracy separately are presented in Appendix C and Appendix D.

Table 2. Absolute and relative frequency distribution of Δ_i

Δ_i	<i>free_polity</i>		<i>Total</i>
	1	0	
0	41,536 22.03	23,779 18.85	65,315 20.76
1	35,202 18.67	18,317 14.52	53,519 17.01
2	41,068 21.79	24,216 19.20	65,284 20.75
3	22,916 12.16	17,530 13.90	40,446 12.85
4	47,789 25.35	42,296 33.53	90,085 28.63
Total	188,511 100.00	126,138 100.00	314,649 100.00

In the next step we examine the extent to which the median voter – in dictatorships the hypothetical median voter – is served in terms of actual redistributive policy. For every country/year we compute the frequency distribution of the original r_i variable. This allows us to recover the preferred policy of the median voter, i.e. the voter such that her peak is the median in the distribution of all peaks. Accordingly, for each country/year we compute the value of the r_i variable when its cumulative distribution reaches 50 % and then transform that value into a value of δ , following its definition as given above. This δ at the 50-% level of the cumulative distribution is denoted by δ_m . It portrays for any given country/year the misalignment of the preferences of the median voter from the distributive policy implemented by the government.⁶ We refer to $\Delta_m = |\delta_m|$ as to the median voter’s disagreement with the government. These measures are depicted in Table 3 separately for democratic and non-democratic countries.

⁶ In general, the median voter is not the median income earner; see Table A1-A4 in Appendix A.

Table 3. δ_m and Δ_m for democracies and non-democracies.

δ_m	<i>free_polity</i>			Δ_m	<i>free_polity</i>		
	1	0	Total		1	0	Total
-3	1	1	2				
-2	9	2	11				
-1	12	2	14				
0	82	28	110	0	82	28	110
1	24	22	46	1	36	24	60
2	10	17	27	2	19	19	38
3	2	7	9	3	3	8	11
4	0	1	1	4	0	1	1
Total	140	80	220	Total	140	80	220

Table 3 reveals some interesting facts.⁷ Almost sixty percent of democracies implement the distributive preferences of the median voter, i.e. exhibit $\Delta_m = 0$, while only thirty-five percent of non-democracies do so. The average dissatisfaction with political redistribution (average Δ_m) is larger in non-democracies than in democracies: it equals .59 in democracies and 1.13 in non-democracies with a standard deviation of .80 and 1.05, respectively. Departure of governmental redistribution from the will of the majority involves both cases where the government provides too little redistribution and cases where it provides too much redistribution. Maybe surprisingly, the latter turn out to be more common, especially so in non-democracies. The interested reader may consult Table A5 in Appendix A for the country-wave specific values of δ_m .

3. Democracy and the Median Voter

In this section we present statistical tests and econometric analyses that allow us to go beyond descriptive statistics in order to ascertain the importance of the preferences of the majority in shaping governmental redistribution of income.

⁷ See Appendix, Tables C3 and D3 for descriptive statistics based on the two original indicators of democracy.

3.1 Non-parametric tests

We use various non-parametric tests to gauge the statistical relationship between democracy and the government's alignment with the distributional preferences of the median voter. Since our variables of interest are ordinal and not normally distributed, Spearman's rank correlation, Wilcoxon-Mann-Whitey test (also called Wilcoxon rank sum test), the Chi-squared test (also known as Pearson's chi-squared test), and Fisher's exact test are the test statistics we focus on.⁸

Table 4. Median voter and democracy: Results from non-parametric tests

Δ_m		<i>free_polity</i>	<i>polity_7</i>	<i>free</i>
Spearman's	Coefficient	-0.2613	-0.2497	-0.2596
	p-value	0.0001	0.0002	0.0001
Wilcoxon	p-value	0.0002	0.0002	0.0001
Chi-Squared	p-value	0.002	0.003	0.001
Fisher's exact	p-value	0.001	0.002	0.001

The results for our baseline specification of democracy appear in the first column of Table 4. Spearman's rank correlation between the dissatisfaction of the median voter – as measured by Δ_m - and democracy takes the value -.26 and is highly significant ($p < .001$). This indicates that democratic countries significantly differ from non-democratic countries in terms of their ability to implement the distributive policies preferred by the median voter.

The Wilcoxon-Mann-Whitey test is used to test the hypothesis that two random variables are drawn from the same population. Employing the two-sample Wilcoxon rank-sum (Mann-Whitney) test, the hypothesis that the distribution of Δ_m is the same in democracies and non-democracies is significantly rejected ($p < .001$).

The Chi-squared test of independence of two random variables clearly rejects the hypothesis that the median voter's dissatisfaction is statistically independent from the existence of a democratic political system in her country ($p < .002$). This result is confirmed by Fisher's exact test, a modification of Pearson's chi-squared test which puts fewer constraints on the data.

The second and the third columns in Table 4 report the corresponding test statistics for the definitions of democracy separately derived from the Polity IV and the Freedom House index,

⁸ See e.g. Upton and Cook (2008).

respectively. While correlation coefficients slightly decrease, they confirm the distinctive ability of democracies to implement the preferences of the median voter.

3.2 Regression analysis

We now investigate whether being a democracy contributes to explain the extent to which the government caters to the preferences of the median voter in a logit model. Results from ordered logit regressions are shown in Table 5. Models (1) and (2) refer to our baseline definition of democracy and differ with respect to the inclusion of wave fixed effects. In both cases we find that a democratic political system significantly reduces the gap between actual redistribution and the one desired by the majority of the population.⁹ Models (3) and (4) employ the Polity IV definition of democracy and show that the effect of democracy is only slightly reduced. Models (5) and (6) use the Freedom House index of democracy and yield qualitatively similar results.

Table 5. Ordered logit for median voter's disagreement with government.

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
free_polity	-1.035*** (-3.49)	-1.087*** (-3.50)				
polity_7			-1.062** (-3.19)	-1.091** (-3.19)		
free					-1.044*** (-3.47)	-1.075*** (-3.45)
Wave Dummies		Yes		Yes		Yes
N	220	220	222	222	231	231

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

To the best of our knowledge, ours are the first empirical findings to show that democracy effectively enhances the ability of the majority of the population to obtain from the government its preferred level of redistribution.

⁹ Results are robust to the use of year dummies instead of wave dummies.

3.3 Robustness checks

In order to check the robustness of our results we repeat the above analysis by employing the following alternative measures of democracy: a binary democracy measure from Boix et al. (2012) (*democracy*), the full Polity IV index ranging from -10 to 10 (*polity*), an indicator for democracies with the most restrictive definition of democracy provided by Polity IV (*democ_10*), the full Freedom House index (*freedom*), an indicator for democracies with the most restrictive definition of democracy provided by Freedom House (*freedom_2*) and a measure of democratization computed by Vanhanen (2003), *van_index*.¹⁰

Again, we find that redistributive policies are significantly better aligned to the median voter's preferences in more democratic countries. Table 6 offers an overview of our results for the non-parametric tests.

Table 6. Non-parametric tests using alternative indicators of democracy

Δ_m		<i>democracy</i>	<i>polity</i>	<i>democ_10</i>	<i>freedom</i>	<i>freedom_2</i>	<i>van_index</i>
Spearman's	Coef.	-0.2109	-0.3011	-0.2803	-0.2888	-0.2273	-0.2610
	p-value	0.0035	0.0000	0.0000	0.0000	0.0005	0.0000
Wilcoxon	p-value	0.0037	xxx	0.0000	xxx	0.0006	xxx
	p-value	0.027	0.000	0.001	0.000	0.006	xxx
Fisher's	p-value	0.021	xxx	0.000	xxx	0.003	xxx

xxx: *polity*, *freedom* and the *van_index* are non-binary measures so that Wilcoxon rank sum test and the Fisher exact test cannot be computed.

Table 7 reports the estimation results for the above alternative measures of democracy in ordered logit regressions. As in case of Table 5, the results turn out to be robust to the inclusion of time dummies. In sum, our results strongly confirm the claim that political democracy enhances the probability that the government implements the redistributive preferences of the majority of the population.

Table 7. Ordered logit using alternative indicators of democracy

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
democracy	-0.946** (-2.70)					
polity		-0.090* (-2.29)				
democ_10			-1.123*** (-3.60)			
freedom				-0.150** (-3.14)		

¹⁰ See Appendix B1 for details on construction and distribution of all those democracy variables.

freedom_2					-0.935***	
					(-3.33)	
van_index						-0.045***
						(-3.48)
N	190	222	222	231	231	238

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4. Minority-backed Redistributions

The above findings corroborate the view that a distinctive trait of democracies is their tendency to implement the distributive preferences of the majority. However, we have also found that democracies sometimes fail to do so. In our sample, a failure to implement the distributive preferences of the median voter occurs in about 40% of the cases. What accounts for this fact?

4.1 Theoretical considerations

Political economy offers some possible explanations as to why the level of redistribution in a democracy may be supported by only a minority of citizens. We concentrate on two explanations that feature prominently in the literature and lend themselves to empirical testing: *asymmetric political participation* and *bundling of policy issues*.

The first hypothesis grounds on the observation that electoral turnout and other forms of political participation are not evenly distributed in the population. As put forward e.g. by Bénabou (2000), if non-voters are not randomly distributed across the total population, the pivotal voter in the election does not coincide with the hypothetical median voter, i.e. the citizen whose preferred policy is the median in the set of all preferred policies in the population. In this case the government implements the distributive preferences of some effective – rather than hypothetical - median voter. If for instance poor people are less likely to vote, the effective median voter will be relatively rich and the outcome may be an amount of redistribution that is too limited from the viewpoint of the majority of citizens.

The second hypothesis is based on the observation that redistribution is not the only issue that determines how people vote in elections. As a rule, issues related to morals and rights are also at stake in electoral competitions. As shown by Roemer (1998), the presence of a second dimension in the political game entails a policy-bundle effect, implying that the median preference in the redistribution dimension generally fails to be implemented. If that second

dimension of the electoral struggle – call it the values issue - is relatively salient, parties direct their efforts at winning the vote of those who are close to the median in the values dimension, as those voters are pivotal. Therefore, parties tend to propose redistributive policies that cater to the median voter in that dimension. As soon as the views on values are not independently distributed from the views on redistribution, the chosen level of redistribution will depart from the one that would have arisen had the values issue been absent.¹¹

According to the asymmetric-participation theory, governments tend to implement the level of redistribution that is the median in the distribution of the corresponding peaks of the politically active population. According to the policy-bundle theory, governments tend to implement the distributional preferences of the median voter in the values dimension. This invites one to identify the distributional preferences that are pivotal according to each of those two theories and contrast them with the distributional preferences of the median voter in the redistribution dimension.

The asymmetric-participation theory predicts the following outcome: the larger the distance between the median distributive preferences of the politically active population and the distributive preferences of the (hypothetical) median voter in the redistribution dimension, the larger is the misalignment of actual redistribution from the level of redistribution preferred by the (hypothetical) median voter, i.e. the larger is Δ_m . The policy-bundle theory generates the following prediction: the larger the distance between the distributive preferences of the median voter in the values dimension and the distributive preferences of the median voter in the redistribution dimension, the larger is Δ_m .

4.2 Main empirical results

The WVS contains the following survey question about voting that can be used to identify likely non-voters: “*If there were an election tomorrow, for which party on this list would you vote?*” In alternative to choosing a party, respondents had the possibility to state that they do not have the right to vote, or that they would not vote or cast a blank ballot. Respondents who chose one of those statements make up 14 % of the sample.

We retain the remaining 86 % of the population as the effective voters. Based on this restricted sample, we compute again for each country/wave observation the median

¹¹ Notice that the result may be either too little or too much redistribution – a point already stressed by Roemer (1998). Similarly, the asymmetric-participation theory allows for the possibility of too little redistribution e.g. in the case where political participation positively correlates with altruism towards the poor.

distributional preferences and denote them by $r_p \in \{1,2,\dots,10\}$. According to the asymmetric-participation theory, we expect the distributional bias Δ_m to be increasing in $|r_m - r_p|$, where r_m is the (hypothetical) median voter's preferred level of redistribution which we computed in sections 2 and 3 when comparing democracies with non-democracies.

With regard to the policy-bundle theory, the particular values issues that are prominent in elections are likely to exhibit much variability across countries and over time. However, research on value change in contemporary societies has established that conflicting views on particular values issues can often be traced back to a common dimension, namely the one contrasting *materialism* to *post-materialism*. Post-materialistic values emphasize self-determination, self-expression and tolerance whereas materialistic values emphasize duty, authority and acceptance. Individuals greatly differ in their degree of post-materialism and such individual differences turn out to correlate with differences in attitudes towards a number of salient policy issues concerning e.g. abortion, delinquency, immigration and race.¹² We exploit this insight to make the policy-bundle theory amenable to an empirical test.

The WVS attaches to each respondent an index-number of post-materialism that is obtained from the respondent's answers to a distinctive set of questions. We use that index of post-materialism to recover the distribution of values in the population. Then, we identify the individuals who endorse the median values in the various country/wave observations. Let their preferences for redistribution be denoted by r_v .¹³ The distributional bias due to the bundling of policy issues is expected to increase with $|r_m - r_v|$.

Table 8 presents results obtained by estimating ordered-logit regressions accounting for the deviation of the actual level of redistribution from the one preferred by the majority (Δ_m). Of course, only democracies are considered, i.e. observations with *free_polity* = 1. The specification in column (1) merely includes the asymmetric-participation effect. That is replaced in column (2) by the policy-bundle effect. Column (3) takes both effects into account. Column (4) adds wave dummies while column (5) adds the log of the GDP per capita in constant dollars and PPP (World Bank 2011). Column (6) controls for both.

¹² See e.g. Inglehart (1997) and applications to US politics provided by Brown and Carmines (1995) and Knuckey (2005, 2007). Corneo and Jeanne (2009) propose an economic theory that identifies conditions under which some part of the population endogenously develops a taste for tolerance.

¹³ Appendix B4 provides further details about the construction of the post-materialism index and about the determination of r_v .

Table 8. Ordered logit for the policy-bundle and the asymmetric-participation effect

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.385 (0.54)		1.688 (1.16)	1.572 (0.98)	1.472 (0.93)	1.227 (0.64)
$|r_m - r_v|$		5.888*** (7.63)	5.778*** (7.62)	5.830*** (7.30)	5.803*** (7.43)	5.915*** (7.16)
log-pc-GDP					-0.510 (-1.39)	-0.618 (-1.48)
Wave Dummies	No	No	No	Yes	No	Yes
N	134	93	87	87	87	87

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As shown in the Appendix (Tables A6-A8), voter turnout positively correlates with income and education. Nevertheless, we find that asymmetric political participation does not significantly contribute to explain the deviation of redistributive policy from the one preferred by the median voter – see the first row of Table 8. As reported in the Appendix (Table A10), the average $|r_m - r_p|$ is just 0.1, which mirrors the fact that in their demand for redistribution the richer and the more educated are also guided by non-pecuniary motives. Furthermore, the standard deviation of $|r_m - r_p|$ is a mere 0.3. This suggests that the effect from asymmetric political participation is too small to significantly contribute to explain distributional biases in democracies.

The results in Table 8 lend instead considerable support to the policy-bundle theory. We find that the policy-bundle effect is strongly significant and the coefficient has the expected positive sign. This suggests that values issues crucially shape political competition in democracies and affect the amount of redistribution that is eventually provided by the government.

The policy-bundle effect turns out to be quantitatively of the first order: at sample means, decreasing $|r_m - r_v|$ from 1 to 0 increases the probability to implement the preferences of the median voter (i.e. to observe $\Delta_m = 0$) from 5 % to 95 %! In fact, simple inspection of the descriptive statistics reveals that median voters in the values dimension often get their preferred redistribution policy and are better served than median voters in the redistribution dimension. To be more precise, define Δ_v analogously to Δ_m as the distance separating the

peak of the median in the distribution of values from the median categories of the question measuring the demand for redistribution. We find that in all country/years where redistribution does not accord with the will of the majority (i.e. $\Delta_m > 0$), Δ_v is always smaller than Δ_m .¹⁴

4.3 Robustness checks

The results in Table 8 are based on a sample that uses our preferred definition of democracy, obtained by combining the democracy indicators derived from Polity IV and the Freedom House datasets. Our results remain qualitatively unchanged if alternative definitions of democracy are employed - see Appendix C and D. We find that the policy-bundle effect systematically contributes to explain why democracies sometimes fail to implement the distributional preferences of the median voter. Asymmetric political participation entails instead at most a second-order effect.

With regard to the asymmetric-participation theory, a potential source of concern with the results in Table 8 is that the proxy we used identifies merely 14% of respondents as non-voters. Actual turnout rates suggest the non-voting population to be substantially larger in most democracies.

As a robustness check, we switch to an alternative survey question of the WVS about political interest. People were asked whether they are very interested in politics, somewhat interested, not very interested, or not at all interested. We employ the latter category to identify persons who are likely to have no political influence. This accounts for about 22.5 % of the sample, which is more in line with turnout rates. We retain the remaining 77.5 % of the population as the politically active one. Based on this restricted sample, we compute again for each country/wave observation the median distributional preferences and denote them by $r'_p \in \{1,2,\dots,10\}$. The distributional bias due to asymmetric political participation is again expected to be increasing in $|r_m - r'_p|$.

The results from this exercise are displayed in Table 9 (first row) and are similar to those in Table 8. Results remain qualitatively the same if we define the politically active population

¹⁴ Our results are consistent with previous findings showing that salient values issues can significantly affect the amount of redistribution in democracies. Roemer and Van der Straeten (2005) offer a simulation exercise based on French data which suggests that xenophobia had a substantial effect on the economic policies proposed by political parties at the presidential elections in the period 1988-2002. Alesina et al. (2001) and Lee and Roemer (2006) provide evidence on the effect of racism on redistribution in the United States.

as the respondents who declared to be at least somewhat interested in politics – which excludes 54% of the sample.

Table 9. Ordered logits with an alternative proxy for the asymmetric-participation effect

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r'_p|$	-0.232 (-0.34)		0.972 (0.78)	0.764 (0.56)	0.881 (0.69)	0.504 (0.34)
$|r_m - r_v|$		5.888*** (7.63)	5.986*** (7.59)	5.987*** (7.33)	5.977*** (7.48)	5.992*** (7.25)
log-pc-GDP					-0.593 ⁺ (-1.66)	-0.674 (-1.64)
Wave Dummies	No	No	No	Yes	No	Yes
N	137	93	93	93	93	93

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

With regard to the policy-bundle theory, one might be concerned that our proxy is not available for about one third of the sample, so that we lose many observations when we use it. As a robustness check, we alternatively employ survey questions about distinct values issues that are available for most countries and waves of the WVS. Specifically, people were asked whether abortion, homosexuality and divorce are justifiable. For each of those three issues, respondents could choose in a 1-10 scale indicating their level of acceptance.

Table 10. Ordered logits with an alternative proxy for the policy-bundle effect

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.385 (0.54)		-0.008 (-0.01)	-0.142 (-0.13)	0.070 (0.07)	-0.185 (-0.17)
$|r_m - r'_v|$		4.749*** (8.10)	4.688*** (7.47)	4.753*** (6.99)	4.745*** (7.85)	4.857*** (7.26)
log-pc-GDP					-0.724* (-2.16)	-0.941* (-2.21)
Wave Dummies	No	No	No	Yes	No	Yes
N	134	138	132	132	132	132

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

For each of those items we have replicated the procedure described above for the index of post-materialism in order to compute the redistributive views of the median-values holders. Then, we have conducted a regression analysis along the lines of Table 8. Our results are displayed in Table 10 for the case of values derived from respondents' attitudes towards abortion (second row). The Appendix exhibits our results for the cases of homosexuality and divorce (Tables A11 and A12). The number of observations that enter the analysis increases from 93 to 138. Results remain qualitatively unaffected, and this applies also to the marginal effects which remain strong. We see this as remarkable evidence in support of the policy-bundle theory.

6. Conclusion

Since its very beginnings, the introduction of democracy has been accompanied by hopes and fears concerning the extent to which it would promote political redistribution and a more egalitarian distribution of income. Up to these days, an intensive debate has been conducted as to whether redistribution in democracies really follows the will of the majority or is rather captured by groups of the population, like the rich, who are better able to coordinate themselves and are in a position to exert disproportionate political influence. In this paper we have empirically investigated that issue by recovering from international survey data the alignment of actual redistribution with the one demanded by the median voter.

We have found two main results. First, under democracy, in the majority of cases the median voter gets what she wants in terms of redistribution – i.e. the actual level of redistribution is backed by a majority of citizens. Moreover, the ability of serving the median voter significantly distinguishes democratic countries from non-democratic countries and the higher is the quality of democracy, the higher is the probability that the median voter is served in terms of redistribution. Still, even in the group of countries with democratic political institutions the alignment of the government to the will of the majority is far from perfect.

Second, we have shed light on the importance of two mechanisms that may generate an amount of redistribution that is not the one demanded by the majority of the population. We have found that despite the rich and more educated being more likely to participate in politics, this asymmetry in political participation does not constitute a key driving force behind minority-backed levels of redistribution. Rather, the latter can be ascribed to the use of redistributive policy as a device to attract voters who are pivotal in settling values issues – concerning e.g. abortion and homosexuality. We have found that this policy-bundle effect is

crucial in order to explain the misalignment of governmental redistribution from the will of the majority in about forty percent of the democracies in our sample. From the viewpoint of the median voter, this effect leads in some cases to an underprovision of redistribution while in others it entails an overprovision of redistribution.

To sum up, the median-voter theorem is in a first approximation an acceptable description of how redistribution is determined in democracies, provided the theorem is not unduly restricted to assume voters who are guided by pecuniary motives only. But a non-negligible share of democracies violates the prediction of the theorem and implements some minority-backed redistributive policy. Those deviations can to a large extent be explained by a policy-bundle effect. Thus, understanding why such an effect matters in some contexts but not in others seems to be a promising question for future research on political redistribution.

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Appendix

Appendix A: Descriptive Statistics and Re-estimation of Table 10

Table A1. Number and fraction of median-income-category-earners and median respondents

<i>Median respondent</i>	<i>Median income earner</i>		<i>Total</i>
	1	0	
0	56,550 21.01	212,633 78.99	269,183 100.00
1	9,255 21.43	33,937 78.57	43,192 100.00
Total	65,805 21.07	246,570 78.93	312,375 100.00

Table A2. Number and fraction of median respondents across income quintiles.

<i>Income Quintal</i>	<i>Median Respondent</i>		<i>Total</i>
	1	0	
1	12,208 13.25	79,919 86.75	92,127 100.00
2	8,836 13.67	55,797 86.33	64,633 100.00
3	8,063 14.16	48,876 85.84	56,939 100.00
4	7,976 14.62	46,570 85.38	54,546 100.00
5	6,109 13.84	38,021 86.16	44,130 100.00
Total	43,192 13.83	269,183 86.17	312,375 100

Table A3. Number and fraction of median-income-category-earners by normalized distance to the indifference position.

Δ_i	<i>Median income earner</i>		<i>Total</i>
	1	0	
0	13,608 21.21	50,553 78.79	64,161 100.00
1	11,365 21.01	42,732 78.99	54,097 100.00
2	13,543 20.74	51,771 79.26	65,314 100.00
3	8,434 21.0	31,734 79.0	40,168 100.00
4	18,855 21.27	69,780 78.73	88,635 100.00

Total	65,805	246,570	312,375
	21.07	78.93	100.00

Table A4. Mean income category of all respondents and the median respondents (i.e. all respondents choosing the category of the median respondent).

<i>country</i>	<i>all respondents</i>	<i>median respondent</i>	<i>difference</i>
Albania	3.912	3.616	0.295
Algeria	3.119	3.350	-0.231
Andorra	5.560	5.687	-0.126
Argentina	4.748	4.989	-0.241
Armenia	2.640	2.626	0.015
Australia	5.244	5.594	-0.350
Austria	5.643	5.668	-0.025
Azerbaijan	3.490	3.307	0.183
Bangladesh	4.580	4.751	-0.171
Belarus	4.375	4.261	0.114
Belgium	5.694	5.922	-0.228
Bosnia-Herz.	3.859	4.050	-0.190
Brazil	3.144	3.356	-0.212
Bulgaria	4.027	4.009	0.019
Burkina Faso	3.810	3.421	0.389
Canada	5.695	5.907	-0.211
Chile	4.549	4.574	-0.025
China	4.438	4.346	0.092
Colombia	3.928	3.947	-0.019
Croatia	4.447	4.600	-0.154
Cyprus	5.799	5.804	-0.005
Czech Rep.	4.525	4.811	-0.286
Denmark	5.891	6.892	-1.001
Dom.Rep.	4.552	4.946	-0.394
Egypt	4.622	4.872	-0.250
El Salvador	5.399	5.131	0.268
Estonia	4.040	4.063	-0.023
Ethiopia	5.176	5.038	0.138
Finland	5.610	5.411	0.199
France	5.325	4.821	0.504
Georgia	2.692	2.852	-0.160
Germany	4.726	5.081	-0.355
Ghana	4.432	4.520	-0.088
Greece	5.340	5.443	-0.103
Guatemala	2.247	2.403	-0.156
Hong Kong	4.455	4.347	0.107
Hungary	4.029	3.946	0.083
Iceland	5.948	6.143	-0.195
India	3.810	3.791	0.019
Indonesia	5.419	5.785	-0.367

Iran	4.929	4.943	-0.014
Iraq	4.193	4.016	0.177
Ireland	6.285	6.714	-0.429
Israel	3.691	3.470	0.221
Italy	5.084	4.816	0.268
Japan	5.015	5.198	-0.183
Jordan	3.478	3.528	-0.049
South-Korea	4.445	4.882	-0.437
Kosovo	2.416	2.093	0.323
Kyrgyz Rep.	4.300	4.609	-0.309
Latvia	3.884	4.229	-0.345
Lithuania	5.039	5.123	-0.084
Luxembourg	7.542	7.787	-0.246
Macedonia	3.665	3.874	-0.208
Malaysia	5.890	5.807	0.083
Mali	4.963	5.504	-0.541
Malta	4.795	4.917	-0.122
Mexico	4.413	4.749	-0.335
Moldova	3.271	3.432	-0.162
Montenegro	2.645	2.730	-0.085
Morocco	4.416	4.496	-0.080
Netherlands	6.099	6.230	-0.132
New Zealand	6.158	5.685	0.473
Nigeria	5.315	5.329	-0.015
Northern Ireland	5.518	5.856	-0.338
Norway	5.901	5.725	0.176
Pakistan	4.336	4.064	0.271
Peru	3.085	3.213	-0.128
Philippines	4.734	5.000	-0.266
Poland	4.216	4.499	-0.283
Portugal	4.509	4.870	-0.362
Puerto Rico	3.378	4.014	-0.636
Romania	4.137	4.203	-0.066
Russia	4.967	5.184	-0.217
Rwanda	3.353	3.777	-0.424
Saudi Arabia	5.452	5.649	-0.197
Serbia	3.696	3.508	0.188
Serbia-Montenegro	5.421	5.765	-0.343
Singapore	3.887	3.987	-0.100
Slovakia	4.550	4.331	0.219
Slovenia	4.895	5.228	-0.333
South Africa	4.419	4.569	-0.150
Spain	4.726	4.792	-0.066
Sweden	5.781	6.660	-0.879
Switzerland	6.087	6.357	-0.270
Taiwan	4.896	5.192	-0.296
Tanzania	3.191	4.140	-0.949

Thailand	5.580	5.517	0.063
Trinidad & Tobago	4.803	5.000	-0.197
Turkey	3.406	3.460	-0.053
Uganda	2.973	2.742	0.230
Ukraine	3.367	3.625	-0.258
United Kingdom	6.311	6.248	0.063
United States	5.580	5.441	0.139
Uruguay	4.799	4.756	0.042
Venezuela	4.239	3.843	0.395
Vietnam	5.364	5.208	0.156
Zambia	5.365	5.845	-0.480
Zimbabwe	3.196	3.594	-0.398
Total	4.623	4.708	-0.085

Table A5. δ_m by country and wave

<i>country</i>	2	3	4	5	6	<i>Average</i>
Albania	.	0	0	.	0	0
Algeria	.	.	3	.	.	3
Andorra	.	.	.	1	.	1
Argentina	2	0	0	0	.	.5
Armenia	.	1	.	.	1	1
Australia	.	0	.	0	.	0
Austria	0	.	-1	.	-2	-1
Azerbaijan	.	0	.	.	0	0
Bangladesh	.	2	2	.	.	2
Belarus	2	1	0	.	0	.75
Belgium	0	.	0	.	0	0
Bosnia-Herz.	.	0	0	.	-1	-.333
Brazil	0	0	.	0	.	0
Bulgaria	1	0	1	0	2	.8
Burkina Faso	.	.	.	2	.	2
Canada	2	.	0	0	.	.6667
Chile	0	0	-2	0	.	-.5
China	2	0	1	0	.	.75
Colombia	.	1	.	0	.	.5
Croatia	.	0	0	.	-1	-.333
Cyprus	.	.	.	0	0	0
Czech Rep.	2	1	0	.	-1	.5
Denmark	1	.	.	.	1	1
Dom.Rep.	.	3	.	.	.	3
Egypt	.	.	3	1	.	2
El Salvador	.	2	.	.	.	2
Estonia	2	0	1	.	0	.75
Ethiopia	.	.	.	1	.	1

Finland	1	-1	-1	0	-1	-.4
France	0	.	0	0	0	0
Georgia	.	2	.	2	3	2.33
Germany	2	0	.	-1	-2	-.25
Ghana	.	.	.	3	.	3
Greece	.	.	.	.	-1	-1
Guatemala	.	.	.	2	.	2
Hong Kong	.	.	.	-1	.	-1
Hungary	0	-2	.	.	0	-.6667
Iceland	0	.	0	.	0	0
India	0	-3	-2	0	.	-1.25
Indonesia	.	.	1	2	.	1.5
Iran	.	.	0	-2	.	-1
Iraq	.	.	0	.	.	0
Ireland	1	.	1	.	0	.6667
Israel	.	.	-3	.	.	-3
Italy	0	.	0	0	0	0
Japan	0	0	0	0	.	0
Jordan	.	.	2	3	.	2.5
South-Korea	0	1	1	1	.	.75
Kosovo	.	.	.	.	-1	-1
Kyrgyz Rep.	.	.	0	.	.	0
Latvia	2	1	.	.	1	1.333
Lithuania	2	0	0	.	0	.5
Luxembourg	.	.	1	.	1	1
Macedonia	.	0	0	.	2	.6667
Malaysia	.	.	.	1	.	1
Mali	.	.	.	3	.	3
Malta	3	.	.	.	1	2
Mexico	1	0	0	1	.	.5
Moldova	.	2	1	0	0	.75
Montenegro	.	.	.	.	0	0
Morocco	.	.	4	0	.	2
Netherlands	1	.	1	0	0	.5
New Zealand	.	0	.	0	.	0
Nigeria	3	2	1	.	.	2
Northern Ireland	2	.	0	.	.	1
Norway	0	0	.	0	0	0
Pakistan	.	2	-1	.	.	.5
Peru	.	2	2	2	.	2
Philippines	.	0	1	.	.	.5
Poland	2	2	1	1	0	1.2
Portugal	-1	.	.	.	0	-.5
Puerto Rico	.	1	3	.	.	2
Romania	1	1	-2	-1	-2	-.6
Russia	1	1	2	1	1	1.2

Rwanda	.	.	.	0	.	0
Saudi Arabia	.	.	1	.	.	1
Serbia	.	.	.	0	0	0
Serbia- Montenegro	.	0	0	.	.	0
Singapore	.	.	2	.	.	2
Slovakia	1	0	.	.	0	.333
Slovenia	0	0	-1	0	-2	-.6
South Africa	1	0	0	0	.	.25
Spain	0	0	0	0	0	0
Sweden	1	0	.	1	0	.5
Switzerland	.	0	.	-2	-1	-1
Taiwan	.	0	.	1	.	.5
Tanzania	.	.	0	.	.	0
Thailand	.	.	.	1	.	1
Trinidad & Tobago	.	.	.	2	.	2
Turkey	-1	0	-2	0	0	-.6
Uganda	.	.	3	.	.	3
Ukraine	.	1	3	1	2	1.75
United Kingdom	1	0	0	0	0	.2
United States	1	0	0	0	.	.25
Uruguay	.	0	.	0	.	0
Venezuela	.	0	0	.	.	0
Vietnam	.	.	0	0	.	0
Zambia	.	.	.	1	.	1
Zimbabwe	.	.	2	.	.	2
Total	.9286	.4259	.47544	.4821	0	.4573

Table A6. Mean income category across political interest (in Democracies)

<i>Political interest</i>	<i>Mean income cat</i>	<i>Obs</i>
very interested	5.319	20,306
somewhat interested	5.139	59,046
not very interested	4.790	50,209
not at all interested	4.208	36,431
Total	4.851	165,992

Table A7. Share of political participation by income quintile (in Democracies)

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Average</i>
Interested	74.63	79.63	82.98	85.17	86.51	80.79
Not at all interested	25.37	20.37	17.02	14.83	13.49	19.21
Interested	48.14	52.15	55.79	59.31	61.87	54.33
Not very	51.86	47.85	44.21	40.69	38.13	45.67

interested						
Voting	85.48	87.5	87.6	90.08	89.5	87.7
Not voting	14.52	12.5	12.4	9.92	10.5	12.3

Table A8. Share of political participation by education (in Democracies)

	Primary	Some Sec.	Secondary	University
Interested	71.08	78.44	83.49	89.5
Not at all interested	28.92	21.56	16.51	10.5
Interested	41.89	48.16	52.88	63.07
Not very interested	58.11	51.84	47.12	36.93
Voting	85.13	85.57	84.52	89.29
Not voting	14.87	14.43	15.48	10.71

Table A9. Distribution of political interest

pol_interest	Full Sample			Democracy		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
very interested	44,966	12.10	12.10	23,503	11.79	11.79
somewhat interested	128,286	34.53	46.64	69,549	34.88	46.66
not very interested	115,145	31.00	77.63	60,836	30.51	77.17
not at all interested	83,091	22.37	100.00	45,527	22.83	100.00
Total	371,488	100.00		199,415	100.00	

Table A10. Summary statistics of all central variables

Variable	Obs	Mean	Std. Dev.	Min	Max
δ_m	258	0.457	1.150	-3	4
Δ_m	258	0.806	0.938	0	4
Policy Bundle					
$|r_m - r_v|$ (post-materialism)	183	0.533	0.467	0	2.518
$|r_m - r'_v|$ (abortion)	252	0.511	0.437	0	2.262
$|r_m - \hat{r}_v|$ (homosexuality)	249	0.541	0.422	0	2.025
$|r_m - \tilde{r}_v|$ (divorce)	255	0.550	0.518	0	3.667
Political Participation					
$|r_m - r_p|$ (no vote)	228	0.101	0.298	0	1
$|r_m - r'_p|$ (no interest)	251	0.129	0.344	0	2
$|r_m - r''_p|$ (no interest2)	251	0.247	0.448	0	2

Wave 2	258	0.163	0.370	0	1
Wave 3	258	0.209	0.408	0	1
Wave 4	258	0.236	0.426	0	1
Wave 5	258	0.217	0.413	0	1
Wave 6	258	0.174	0.380	0	1
Log-pc-GDP	240	9.233	1.052	5.468	11.2

Table A11. Re-estimation of Table 10 with justify-homo as value

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.385 (0.54)		0.168 (0.20)	-0.073 (-0.08)	0.168 (0.21)	-0.207 (-0.23)
$|r_m - \hat{r}_v|$		3.145*** (5.59)	3.029*** (5.38)	3.212*** (5.59)	2.915*** (5.13)	3.185*** (5.60)
log-pc-GDP					-0.539+ (-1.79)	-0.795* (-2.21)
Wave Dummies	No	No	No	Yes	No	Yes
N	140	138	138	138	138	138

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;
⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A12. Re-estimation of Table 10 with justify-divorce as value

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.385 (0.54)		0.329 (0.33)	0.045 (0.04)	0.395 (0.41)	0.027 (0.03)
$|r_m - \tilde{r}_v|$		4.093*** (7.74)	3.996*** (7.45)	4.252*** (6.99)	3.916*** (7.00)	4.243*** (6.91)
log-pc-GDP					-0.433	-0.710*
Wave Dummies	No	No	No	Yes	No	Yes
N	134	139	133	133	133	133

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;
⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix B1: Definition of a Democracy

To identify democracies, we rely on the Freedom House Index and the Polity-IV index, two established measures of democracy. Since democracy is a complex concept, both indices provide multiple values and go beyond a binary definition of democracy. For discussion of different measures of democracy refer to Casper and Tufis (2003) and Munck and Verkuilen (2002). The construction of the Polity-IV measure is documented in Marshall et al. (2013). We follow the literature in deriving binary measures of democracy from both indices.

We use two basic indicators of democracy:

1. $polity_7 = 1$ if $polity \geq 7$
2. $free = 1$ if $\frac{pr + cl}{2} < 3$

In the paper the combination of both definitions is used. Accordingly:

3. $free_polity = 1$ if ($polity_7=1$ & $free=1$)

The definition of democracy based on the Polity-IV data ($polity_7$) follows Brückner and Ciccone (2011) and references therein. The definition of $free$ follows the definition of the Freedom House of what constitutes a free country.

The polity-variable ($polity$) measures democracy on a scale from -10 to 10. The index $freedom$ additively combines values of civic liberties (cl) and political rights (pr). In contrast to the original cl and pr measures, which indicate higher levels of democratization with lower numerical values, the $freedom$ variable is recoded so that higher values indicate higher levels of democratization. This variable takes values in the range of 2-14. The indicator $democ_10$ considers those countries as democracies, which have a $democ$ -value of ten in the Polity-IV dataset. $freedom_2$ selects those countries as democracies which have the best marks on both, civic liberties and political rights. We also employ a binary democracy indicator ($democracy$) constructed by Boix et al. (Boix et al. 2012) and the Index of democratization (van_index) as constructed by Vanhanen (2003). Results remain robust to any definition of democracy. Table B2 depicts descriptive statistics for all democracy measures employed. The most restrictive variable ($freedom_2$) defines 32% of countries as democratic. In contrast, according to the variable $democracy$ about 77% of countries in the sample are democratic. As can be seen in Table B3, all measures of democracy are strongly correlated. Our results do not depend on the actual choice of democracy measure.

Table B2. Summary statistics for measures of democracy

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
free_polity	220	0.636	0.482	0	1
polity_7	222	0.739	0.440	0	1
free	231	0.654	0.477	0	1
democracy	190	0.774	0.420	0	1
polity	222	6.617	5.062	-7	10
democ_10	222	0.396	0.490	0	1
freedom	231	10.970	3.332	2	14
freedom_2	231	0.325	0.469	0	1
van_index	238	24.378	11.807	0	46.1

Table B3. Pearson correlation between measures of democracy

	<i>free_polity</i>	<i>polity_7</i>	<i>free</i>	<i>democracy</i>	<i>polity</i>	<i>democ_10</i>	<i>freedom</i>
free_polity	1.0000						
polity_7	0.7915*	1.0000					
free	0.9707*	0.7505*	1.0000				
democracy	0.6658*	0.8205*	0.6889*	1.0000			
polity	0.7178*	0.8320*	0.7206*	0.8770*	1.0000		
democ_10	0.6114*	0.4819*	0.5935*	0.4116*	0.5428*	1.0000	
freedom	0.8624*	0.7985*	0.8801*	0.7972*	0.8786*	0.6724*	1.0000
freedom_2	0.5002*	0.3960*	0.5047*	0.3153*	0.4284*	0.6970*	0.6321*
van_index	0.7112*	0.6724*	0.7238*	0.6981*	0.7690*	0.6608*	0.8171*
cl	0.8387*	0.7330*	0.8536*	0.7047*	0.8118*	0.6877*	0.9745*
pr	0.8472*	0.8219*	0.8672*	0.8426*	0.8997*	0.6314*	0.9812*

*p<.05

Appendix B4: Measuring the policy bundle effect

The policy bundle effect is measured by $|r_m - r_v|$. r_v is the average response given to the survey question on inequality by those respondents who hold the median view on values in a given country and wave. In our preferred specification we recover the individuals endorsing median values from the post-materialist index. Alternatively, we use three questions regarding the justifiability of certain behavior, namely homosexuality, divorce and abortion.

*justifiability-values

The question: "Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card. (Read out statements. Code one answer for each statement).

Homosexuality / Abortion / Divorce"

Response categories: "1 Never justifiable ... 10 Always justifiable"

*the post-materialist index

The construction of the post-materialist index is described in Inglehart (1997). The index is constructed by aggregating post-materialist items which are either first or second choice from a battery of twelve items included in three questions. The resulting index runs from 0 (no post-materialist item is given high priority) to 5 (all five post-materialist items are given high priority). The response items which are considered post-materialist are indicated with an asterisk. The variable numbers refer to the aggregated WVS data (WVS 2009).

E001/E002 People sometimes talk about what the aims of this country should be for the next ten years. On this card are listed some of the goals which different people would give top priority. Would you please say which one of these you, yourself, consider the most important?

First choice / Second choice

- 1 A high level of economic growth
- 2 Strong defense forces
- 3 People have more say about how things are done(*)
- 4 Trying to make our cities and countryside more beautiful

E003/E004 If you had to choose, which one of the things on this card would you say is most important? And which would be the next most important?

First choice / Second choice

- 1 Maintaining order in the nation
- 2 Give people more say(*)
- 3 Fighting rising prices
- 4 Protecting freedom of speech(*)

E005/E006 Here is another list. In your opinion, which one of these is most important? And what would be the next most important?

First choice / Second choice

- 1 A stable economy
- 2 Progress toward a less impersonal and more humane society(*)
- 3 Ideas count more than money(*)
- 4 The fight against crime

Appendix C: All descriptive tables and regression tables for the *polity_7* sample

Appendix C shows all tables of descriptive statistics and regression results based on the Polity-IV democracy measure (*polity_7*). The Table numbers in Appendix C correspond to those in the main text (e.g. Table C2 with *polity_7* corresponds to Table 2 with *free_polity*).

Table C2. Absolute and relative frequency distribution of Δ_i

Δ_i	<i>polity_7</i>		
	1	0	Total
0	48,375 21.41	18,607 19.67	66,982 20.90
1	40,232 17.81	14,446 15.27	54,678 17.06
2	48,369 21.41	18,130 19.17	66,499 20.75
3	27,862 12.33	13,195 13.95	41,057 12.81
4	61,087 27.04	30,201 31.93	91,288 28.48
Total	225,925 100.00	94,579 100.00	320,504 100.00

Table C3. δ_m and Δ_m for democracies and non-democracies

δ_m	<i>polity_7</i>			Δ_m	<i>polity_7</i>		
	1	0	Total		1	0	Total
-3	2	0	2				
-2	10	1	11				
-1	13	1	14				
0	93	18	111	0	93	18	111
1	29	18	47	1	42	19	61
2	14	13	27	2	24	14	38
3	3	6	9	3	5	6	11
4	0	1	1	4	0	1	1
Total	164	58	222	Total	164	58	222

Table C8. Ordered logit for the policy-bundle and the asymmetric-participation effect

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.312		1.630 ⁺	1.553 ⁺	1.334	1.131

	(0.56)		(1.92)	(1.70)	(1.37)	(1.01)
$|r_m - r_v|$		6.146 ^{***}	6.165 ^{***}	6.223 ^{***}	6.342 ^{***}	6.460 ^{***}
		(8.18)	(7.76)	(7.65)	(7.79)	(7.72)
log-pc-GDP					-0.572 ⁺	-0.715 ⁺
					(-1.78)	(-1.94)
Wave Dummies	No	No	No	Yes	No	Yes
N	157	110	103	103	101	101

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C9. Ordered logits with an alternative proxy for the asymmetric-participation effect

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r'_p|$	-0.254		1.001	0.858	0.758	0.457
	(-0.47)		(1.17)	(0.97)	(0.81)	(0.44)
$|r_m - r_v|$		6.146 ^{***}	6.282 ^{***}	6.293 ^{***}	6.426 ^{***}	6.446 ^{***}
		(8.18)	(7.71)	(7.60)	(7.89)	(7.73)
log-pc-GDP					-0.647 [*]	-0.767 [*]
					(-2.06)	(-2.08)
Wave Dummies	No	No	No	Yes	No	Yes
N	160	110	109	109	107	107

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C10. Ordered logits with an alternative proxy for the policy-bundle effect (abortion)

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.312		0.274	0.169	0.210	-0.004
	(0.56)		(0.34)	(0.20)	(0.28)	(-0.00)
$|r_m - r'_v|$		4.490 ^{***}	4.421 ^{***}	4.498 ^{***}	4.563 ^{***}	4.638 ^{***}
		(9.27)	(9.38)	(8.86)	(9.38)	(8.71)
log-pc-GDP					-0.689 ^{**}	-0.837 ^{**}
					(-2.85)	(-2.78)
Wave Dummies	No	No	No	Yes	No	Yes
N	157	160	155	154	152	152

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C11. Ordered logits with an alternative proxy for the policy-bundle effect (homo)

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.312 (0.56)		0.354 (0.48)	0.200 (0.25)	0.314 (0.47)	0.016 (0.02)
$|r_m - \hat{r}_v|$		3.433*** (6.86)	3.338*** (6.65)	3.434*** (6.83)	3.334*** (6.19)	3.561*** (6.53)
log-pc-GDP					-0.632** (-3.01)	-0.833*** (-3.33)
Wave Dummies	No	No	No	Yes	No	Yes
N	157	160	154	154	152	152

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C12. Ordered logits with an alternative proxy for the policy-bundle effect (divorce)

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.312 (0.56)		0.540 (0.71)	0.310 (0.36)	0.525 (0.75)	0.188 (0.24)
$|r_m - \tilde{r}_v|$		3.652*** (8.16)	3.588*** (8.29)	3.756*** (7.78)	3.565*** (7.59)	3.807*** (7.15)
log-pc-GDP					-0.453* (-2.02)	-0.662* (-2.32)
Wave Dummies	No	No	No	Yes	No	Yes
N	157	161	155	155	153	153

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix D: All descriptive tables and regression tables for the *free* sample

Appendix D shows all tables of descriptive statistics and regression results based on the Freedom House democracy measure (*free*). The Table numbers in Appendix D correspond to those in the main text (e.g. Table D2 with *free* corresponds to Table 2 with *free_polity*).

Table D2. Absolute and relative frequency distribution of Δ_i

Δ_i	<i>free</i>		
	1	0	Total
0	43,919	23,028	66,947
	21.87	18.86	20.73
1	37,556	17,532	55,088
	18.70	14.36	17.06
2	44,118	23,213	67,331
	21.97	19.01	20.85
3	24,452	17,020	41,472
	12.17	13.94	12.84
4	50,802	41,320	92,122
	25.29	33.84	28.52
Total	200,847	122,113	322,960
	100.00	100.00	100.00

Table D3. δ_m and Δ_m for democracies and non-democracies

δ_m	<i>free</i>			Δ_m	<i>free</i>		
	1	0	Total		1	0	Total
-3	1	1	2				
-2	9	2	11				
-1	12	2	14				
0	87	28	115	0	87	28	115
1	29	21	50	1	41	23	64
2	10	17	27	2	19	19	38
3	3	8	11	3	4	9	13
4	0	1	1	4	0	1	1
Total	151	80	231	Total	151	80	231

Table D8. Ordered logit for the policy-bundle and the asymmetric-participation effect

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.551 (0.93)		1.052 (0.82)	0.918 (0.65)	1.505 (0.99)	1.265 (0.68)
$|r_m - r_v|$		5.352*** (7.97)	5.414*** (7.60)	5.501*** (7.20)	5.528*** (7.18)	5.656*** (7.10)
log-pc-GDP					-0.462 (-1.30)	-0.576 (-1.42)
Wave Dummies	No	No	No	Yes	No	Yes
N	142	99	90	90	89	89

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D9. Ordered logits with an alternative proxy for the asymmetric-participation effect

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r'_p|$	-0.125 (-0.20)		0.831 (0.71)	0.611 (0.48)	0.732 (0.62)	0.382 (0.28)
$|r_m - r_v|$		5.352*** (7.97)	5.416*** (8.02)	5.438*** (7.47)	5.275*** (7.67)	5.299*** (7.18)
log-pc-GDP					-0.445 (-1.30)	-0.533 (-1.39)
Wave Dummies	No	No	No	Yes	No	Yes
N	148	99	99	99	98	98

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D10. Ordered logits with an alternative proxy for the policy-bundle effect (abortion)

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.551 (0.93)		0.021 (0.02)	-0.144 (-0.15)	0.359 (0.37)	0.142 (0.14)
$|r_m - r'_v|$		4.651*** (8.71)	4.541*** (7.67)	4.619*** (7.17)	4.637*** (8.25)	4.744*** (7.66)
log-pc-GDP					-0.594 ⁺ (-1.79)	-0.813* (-1.97)
Wave Dummies	No	No	No	Yes	No	Yes

N	142	149	140	140	138	138
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t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D11. Ordered logits with an alternative proxy for the policy-bundle effect (homo)

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.551 (0.93)		0.323 (0.46)	0.136 (0.17)	0.393 (0.53)	0.097 (0.11)
$|r_m - \hat{r}_v|$		3.233*** (6.02)	3.077*** (5.55)	3.220*** (5.80)	2.945*** (5.37)	3.167*** (5.89)
log-pc-GDP					-0.501 ⁺ (-1.80)	-0.760* (-2.24)
Wave Dummies	No	No	No	Yes	No	Yes
N	142	149	140	140	138	138

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D12. Ordered logits with an alternative proxy for the policy-bundle effect (divorce)

Δ_m	(1)	(2)	(3)	(4)	(5)	(6)
$|r_m - r_p|$	0.551 (0.93)		0.453 (0.54)	0.252 (0.27)	0.653 (0.72)	0.374 (0.37)
$|r_m - \tilde{r}_v|$		4.175*** (8.01)	3.987*** (7.65)	4.219*** (7.27)	3.918*** (7.43)	4.174*** (7.53)
log-pc-GDP					-0.404 (-1.55)	-0.670 ⁺ (-1.95)
Wave Dummies	No	No	No	Yes	No	Yes
N	142	150	141	141	139	139

t statistics in parentheses; s.e. corrected for clustering at country level; cut-points not reported;

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$