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Volunteering and the state

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Abstract Volunteering participation rates vary greatly across countries even when the potential volunteers' individual characteristics are controlled. We therefore analyze the volunteers' motives against the backdrop of the predominant political and economic environment in different countries, focusing on the state's role in influencing an individual's decision to volunteer. Combining individual-level data from the European and World Values Survey with macroeconomic and political variables for OECD countries, we identify three channels through which governmental activities influence voluntary labor: size of the state (i.e., amount of public social expenditure), political consensus between voters and the government, and government support for democratization.

Keywords Volunteering · Voluntary labor supply · Private provision of public goods · Public social expenditure · Political consensus · Democratization

JEL Classification H41 · H44 · H31 · J22 · I38 · H11 · D30 · D64

1 Introduction

Volunteering is a widespread economic phenomenon with high relevance for the society. Organizations that benefit from this source of manpower offer social and health services, education and youth work, and rescue, cultural, recreation, and religious services, among other things. From the society's point of view, volunteering is a highly desirable leisure activity, and volunteers contribute significantly to economic welfare, which would otherwise require paid resources.[1] For example, 87% of the US fire departments, predominantly oper-

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[1] Voluntary labor output is not considered in the System of National Accounts. For valuation techniques of voluntary labor output, see Pho (2008).

ated by volunteers, protected 38% of the population in 2006. In Austria, only the six biggest cities have a professional fire brigade. As a result, volunteer firefighters serve at least 70% of the population; their responsibilities include putting out hazardous fires, rescuing people from car accidents, and providing other technical rescue services. The German Red Cross covers 40% of emergency treatment, 60% of patient transport, and 70% of medical assistance services in Germany, and volunteers make up 80% of its paramedics.[2]

The share of the population offering voluntary labor varies considerably from country to country (see column 1 of Table 1). Sweden exhibits the highest participation rate among OECD member countries with a share of 56% of all adults supplying voluntary labor, followed by the Slovak Republic (54%), the United States (50%), Canada (48%), and the Netherlands (44%). Poland, Japan, Spain, and Hungary show the lowest participation rates—between 14% and 16%.

In order to explain the motivation behind volunteering, the economic literature has focused on its determinants at the individual level. There are three basic explanations for volunteering: Menchik and Weisbrod (1987) suggest in their seminal paper that volunteering can either be treated as an ordinary consumption good (consumption hypothesis) or as a way of increasing an individual's income on the paid-labor market over time (investment hypothesis). Freeman (1997) argues that organizations looking for productive volunteers address people with high human capital. This strategy is successful since volunteering is something that people feel morally obliged to do when asked (conscience good hypothesis). Empirical papers (see Hackl et al. 2007, and the references therein) analyzing these three motives identify a robust relationship between certain economic and sociodemographic characteristics and voluntary engagement. The typical volunteer is employed, highly educated, married with children, and has a high household income.[3]

However, the large variation in participation rates across countries can only be partly explained by the variation in the individual characteristics of the population. Although working for free is an individual decision, we argue in this paper that citizens from different countries face different environments, so participation in voluntary activities may also depend on living conditions, the cultural environment, institutional arrangements, (economic) policy measures, and the state of the society in general.

Figure 1 shows a large variation in voluntary participation rates among countries even with a comprehensive set of individual characteristics controlled for. This graph is based on a series of logit estimations of participation in volunteering based on data collected from almost 38,000 respondents from the European and World Values Survey (E/WVS) with age, sex, family status, number of children, household income, education, size of place of residence, and labor market status used as explanatory variables. The dots represent the distribution of individuals' propensity to volunteer, the diamonds show the country-specific predicted means of these distributions, and the x-symbols indicate the corresponding 25th and 75th percentiles. Predicted participation rates can directly be compared with the countries' actual participation rates represented by triangles. This comparison shows that individual-level variables can only partly explain the pattern of volunteer behavior. The unexplained remainder is substantial. The actual participation rate does not lie between the 25th and 75th percentiles of predicted values in more than half of all countries. For instance, the predicted participation rate for the United States based on individual characteristics is 32.8%, whereas

[2]Sources: http://www.usfa.dhs.gov, http://www.feuerwehr.at, and http://www.drk.de.

[3]Moreover, Meier and Stutzer (2008) provide evidence that volunteers are more satisfied with their life than non-volunteers.

Table 1 Mean of variables of primary interest

Country	Participation rate in volunteering[a]	Public social expenditures[b] (% of GDP)[c]	Political consensus[c]	Vanhanen's democratization index[d]
Austria	0.29	24.63	0.50	68.37
Belgium	0.37	25.33	0.56	79.48
Canada	0.48	17.40	0.50	48.64
Czech Republic	0.34	20.01	0.35	72.95
Denmark	0.34	26.13	0.42	74.92
Finland	0.42	21.32	0.41	66.14
France	0.27	25.29	0.57	59.11
Germany	0.28	24.42	0.42	63.57
Great Britain	0.32	18.06	0.48	58.35
Greece	0.43	21.38	0.42	70.36
Hungary	0.16	21.64	0.26	47.23
Iceland	0.34	15.45	0.45	67.13
Ireland	0.29	15.52	0.74	51.90
Italy	0.26	20.85	0.31	78.67
Japan	0.16	13.68	0.42	49.29
Luxembourg	0.32	21.74	0.28	54.07
Netherlands	0.44	22.13	0.57	71.68
Norway	0.38	22.61	0.86	76.81
Poland	0.14	22.23	0.32	43.85
Portugal	0.19	13.67	0.41	52.23
Slovak Republic	0.54	18.76	0.60	62.91
Spain	0.16	20.23	0.46	63.54
Sweden	0.56	30.06	0.70	70.03
United States	0.50	13.97	0.53	33.33
	0.33	20.69	0.48	61.86

Note: Values relate to the years listed in Table 2. We have calculated the average where information for more than one year per country is available.

[a]Share of the adult population that does unpaid voluntary work (source: E/WVS)

[b]For details, refer to the Data Appendix A (source: OECD Social Expenditure Database)

[c]Share of adult population that would vote for the current prime minister's party in a hypothetical national election at the time of the survey (source: E/WVS)

[d]Vanhanen's democratization index is calculated by multiplying the percentage of votes obtained by all parties except the one with the largest number of votes and the percentage of the total population that actually votes in elections (source: Finnish Social Science Data Archive)

the actual participation rate is as much as 50%. Similarly, large differences can be observed for Canada, Greece, the Slovak Republic, and Sweden, where the actual rates are underestimated. The actual participation rates for countries such as Hungary, Japan, Poland, Portugal, and Spain are clearly overestimated.

These results indicate that the analysis of the motivation to volunteer has to be extended to a wider context, encompassing the social, economic, and political environment in which individuals live. In this paper, we focus on the role of the state and examine its potential to

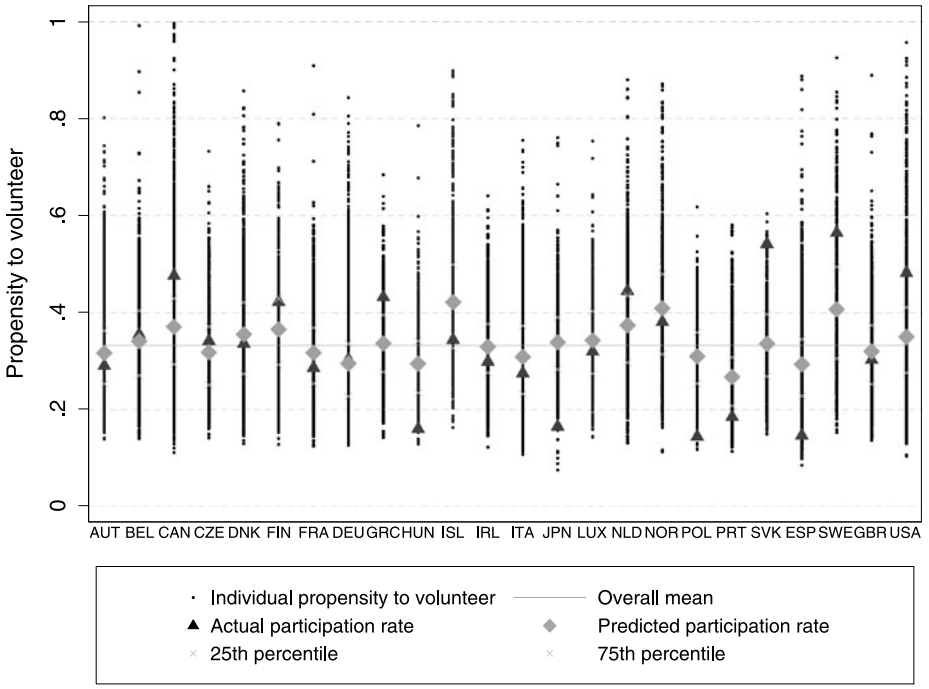

Fig. 1 Predicted versus actual propensity to volunteer. Predicted values are based on logit estimates for 37,959 respondents from the World Values Survey dataset with age, sex, family status, number of children, household income, education, size of place of residence, and labor market status as regressors

influence the individual's decision to volunteer. Why should the state be interested in volunteering activities? First, collective action can serve as a substitute for the state (Durlauf and Fafchamps 2005: 1648). When tax revenues and/or the organizational capacity of a state to provide a public good are limited, it may be essential that people volunteer. Similarly, it might be cheaper for the state to advance structures on a macro and micro level by promoting voluntary work rather than purchasing these activities on the markets (cost efficiency argument). Moreover, it is often argued that the services and functions provided by volunteers represent goods with merit characteristics. Consequently, volunteering is appreciated as a worthwhile activity *per se*. Finally, volunteering obviously contributes to a society's social capital, which is considered as a prerequisite for economic growth and well-being.[4]

Controlling for potential endogeneity with an instrumental variable approach, we examine three channels through which governmental activities crowd in/out volunteering:

(i) Allocation and distribution: Public social expenditure is hypothesized to crowd in/out volunteer activities (fiscal crowding in/out).
(ii) Political consensus: We hypothesize that an ideological congruence between the people and the government may influence the willingness to volunteer (consensual crowding in/out).

[4]For a comprehensive discussion and critical acclaim, see, for example, Putnam et al. (1993), Knack and Keefer (1997), and Durlauf and Fafchamps (2005).

(iii) Degree of democratization: Finally, we examine to what extent political rights and participatory freedoms affect the individual's propensity to volunteer (participatory crowding in/out).

The paper is structured as follows. The next section summarizes the literature on the crowding effects of governmental actions and derives testable hypotheses to explore the role of the state. In Sect. 3, we present the data and our estimation strategy. Section 4 provides the results of our estimations. Section 5 concludes the study with a discussion of potential policy implications.

2 Crowding effects of governmental action

The variety of services provided by volunteers (social and health services, education, youth work, family support, rescue activities, culture, recreation, religious services, and others) makes the unambiguous economic classification of these goods impossible. Some services are clearly private, some represent public goods or club goods with collective characteristics, and others share characteristics of mixed goods. In general, these goods and services can be provided by the state through public (social) expenditure, via private markets, or by the population's voluntary activities. Although a clear-cut categorization of voluntary services is difficult, most exhibit public-good characteristics. We therefore interpret volunteering as the private contribution to a public good. Since volunteering displays similarities with private monetary contributions to public goods, the debate about volunteering refers to a huge body of public economics literature.

2.1 Fiscal crowding in/out of money donations

We focus on the crowding-out effects of volunteering, or the private provision of time. The literature on private money donations to a public good is therefore a natural starting point. In their seminal paper, Bergstrom et al. (1986) provide a model in which individuals are concerned about their consumption of a private good and the total provision of a public good. Using Nash equilibria, they show to what extent government provision of a public good can crowd out private voluntary contributions. Whether the tax burden falls on private contributors, noncontributing consumers, or both is of crucial importance in this model, since the government-provided public good is paid for with tax revenues. The authors argue that, if the contributing consumers form only a subset of the taxpaying population, the crowding-out effects of government provision will be partial. Andreoni (1990) extends the analysis by explicitly assuming impure altruism (the warm-glow effect), where both the public good and the individual contributions to the public good are arguments in a person's utility function. The author confirms the finding of a partial crowding-out effect of governmental public-good provision on private contributions.

On the basis of these theoretical models, a number of papers empirically analyze the effects of public expenditure on private money donations. Surveying the pre-1991 literature, Steinberg (1991) finds evidences of relatively minor crowding-out effects in private donations. Abrams and Schmitz (1978, 1984), Kingma (1989), Payne (1998), Chan et al. (2002), Ribar and Wilhelm (2002), and Crumpler and Grossman (2008) provide empirical and experimental evidences of a partial crowding-out effect and emphasize the importance of the warm-glow effect. Roberts (1984) presents evidences of a "dollar for dollar" crowding-out phenomenon. In their time series analysis, Garrett and Rhine (2010) find that state and local government education expenditure exerts a different crowding-out effect on charitable contributions to education as compared to federal government expenditure. However, Khanna

et al. (1995) do not find evidence that government expenditure crowds out private money donations.

Studies have also found empirical evidence that money donations crowd in government actions. Controlling for the potential endogeneity of government grants, Khanna and Sandler (2000) found crowding-in effects for the United Kingdom. Borgonovi (2006) reports that the crowding-out effect appears as an inverted U-shaped curve. A crowding-in effect of private donations can be observed at least for low levels of public support, whereas public expenditure displaces private donations at higher levels. Summarizing the literature on charitable money giving, there is more evidence of partial crowding out, although further research is required for a clear-cut picture.

2.2 Fiscal crowding in/out of time donations

It is *a priori* not clear whether the results on financial donations can be directly related to voluntary labor supply (charitable time giving). There are good reasons to presume considerably lower crowding out, or even crowding in, with donations of time as compared to money. The direct involvement of the donor in the volunteering process might increase the warm-glow effect in comparison to the more impersonal monetary donations. In general, government spending might influence people's thinking about interdependence and mutuality in society and, in turn, increase the inclination to volunteer. Furthermore, people would be willing to donate their time only after the necessary infrastructure (typically capital intensive, for example, expensive fire engines and ambulances) has been provided by the government. Government provision of infrastructure may raise the marginal productivity of volunteers, as well as their level of volunteering. Personal income constraints might inhibit private provision of adequate infrastructure. From a psychological perspective, one can argue that government provision of infrastructure is an important signal acknowledging the importance of certain volunteering activities.

Only a few papers empirically address the relationship between government spending and volunteering.[5] Duncan (1999) extends the theoretical analysis of the crowding-out phenomenon to a public-good model in which individuals contribute both money and time (i.e., volunteer their labor), but does not find empirical support for the crowding-out hypothesis in the 1974 National Study of Philanthropy. Simmons and Emanuele (2004) find a small crowding-out effect for the United States, which they argue is due to the fact that government expenditure emphasizes the ideals of volunteering and thereby compensates the crowding-out effect to some extent. Van Oorschot and Arts (2005) explore the crowding-out hypothesis with data from the third wave of the 23-country European Values Survey. They do not find evidence in support of the crowding-out effect of public expenditure on social capital, including volunteering. The information on volunteering behavior is based on the same survey question that we use in our study. However, the authors employ the rather nonspecific "annual total public expenditure as a percentage of GDP" as the explaining variable to identify crowding out. For Canada, Day and Devlin (1996) find a positive impact of government expenditure on the decision to volunteer, but not on the number of hours donated.

[5] A related topic is the impact of tax deductions on private money or donations of time. Feldman (2008) analyzes the effect of different tax treatments of monetary donations on the decision to donate money and time to volunteering institutions. It is shown that more favorable tax deductions will not only lead to expected increases in money donations but also raise donations of time. The negative direct substitution effect on voluntary labor supply is overcompensated for, since those who donate more money are more likely to be asked to volunteer.

To summarize the theoretical and empirical evidence, whether public expenditure crowds out or crowds in voluntary activities still remains an open question. Even though the effect of expenditure aggregates on volunteering is interesting *per se*, our analysis of public social expenditure is more revealing because of the correspondence between social expenditure and the fields of voluntary activities. Both complementary and substitutive relationships between volunteering and different types of expenditure categories can be expected. Knowledge of this relationship is crucial to the public sector's endeavors in promoting voluntary activities.

2.3 Consensual crowding in/out of time donations

Focusing on the crowding-out effect of the amount of money spent by the government is a too narrow-minded strategy. What matters is not only the *amount* of money but also the *purpose* for which it is spent. In that respect, a similarity between the political ideologies of ordinary people and decision makers may also prove to be decisive. The individuals' compatibility with the ideological orientation of the government can be expected to stimulate the willingness to volunteer.

Back in the nineteenth century, de Tocqueville (1835) argued in *Democracy in America* that "political association singularly strengthens and improves commitment for civil purposes". Referring to the example that the state sets by its actions, de Tocqueville presumed a crowding-in effect of political consensus on volunteering. However, this is not the only plausible hypothesis; a crowding-out effect can also be expected if the ideology of the ruling class is used as a predictor for future governmental action. People may tend to reduce their collective efforts if they think that the state will behave in accordance with their political preferences. If the political positions of individuals and the government do not coincide, voters can be expected to take matters into their own hands and increase their voluntary labor supply in areas that are perceived as being neglected by the state. Political consensus (coincidence of individual and governmental ideological positions) may therefore crowd out voluntary labor supply.

In one strand of the empirical political science literature, political consensus is approximated by "confidence in the government". This seems legitimate as those voters who are not convinced by the competence of the government and political institutions cannot be expected to be supportive toward the governing parties. Brooks and Lewis (2001) and Brooks (2004) measure political consensus via "trust in the government" and examine whether low confidence in the federal government encourages or discourages contributions of time and money. Their findings point to crowding out due to political consensus.

2.4 Participatory crowding in/out of time donations

Frey (1992, 1997) argues in favor of crowding out based on a moral motivation: if a governmental measure is perceived as controlling, we might expect crowding out. However, when individuals feel acknowledged by governmental contribution, crowding in could also be expected. He postulates a change in preferences arising from an external intervention. Benabou and Tirole (2000) model the influence of extrinsic factors on the crowding effect via their impact as a signal on given preferences.[6] From a sociopolitical perspective, extensive political rights and a high degree of democratization represent such motivating interventions that can crowd in private provision of voluntary labor. Countries that guarantee a high degree of personal freedom and political rights allow their citizens to actively participate in the political process and to engage in volunteer organizations.

[6]For a survey on motivation crowding, see Frey and Jegen (2001).

On the other hand, an increase in personal freedom may be accompanied by more individualism (egoism), which leads to reduced solidarity among people. Consequently, volunteering may decrease if the government supports a high degree of democratization. In line with this argument, we refer again to the notion of crowding out, indicating that governmental promotion of democratization has a detrimental effect on volunteering behavior. Beyond that, several volunteering associations advocate personal freedom and human rights. Their efforts in this area represent a substitute for government endeavors to promote personal liberties. This substitutional relationship further strengthens the crowding-out hypothesis of voluntary activities by civil rights and a high degree of democratization.

3 Data and estimation strategy

In order to test our hypotheses on crowding effects, we combine data from different sources.[7] Most important, we observe individual data for OECD member countries from the E/WVS. The E/WVS is an ongoing academic project organized as a network of social scientists coordinated by a central body, the World Values Survey Association. The survey provides data from representative national samples (based on face-to-face interviews) from more than 80 countries. To date, four survey waves have been conducted: 1981–1984, 1990–1993, 1995–1997, and 1999–2004. Each wave contains information on socioeconomic characteristics, basic attitudes, beliefs and human values covering religion, morality, politics, work, and leisure.

In particular, respondents are asked whether they do unpaid voluntary work for any organization. We use a sample of almost 38,000 respondents from 24 OECD member countries for the time span 1981 to 2000 (see Table 2). In our sample, approximately one-third of the adult population does unpaid work for at least one organization, and volunteers operate in different types of organizations. Approximately 16% of all volunteering activities (multiple voting possible) are provided for religious and church organizations, followed by associations for sports or recreation (14.2%) and education, arts, music, or cultural activities (10.7%). A complete breakdown of shares of voluntary activities across organizations can be found in the Data Appendix A. Hodgkinson (2003) provides a critical appraisal of the volunteering information in the E/WVS. For instance, no information is available on the amount of volunteering; besides, pretests have not been done for the classification of the types of volunteering.

We estimate a linear probability model[8] for a volunteering decision by individual i of country c in year t,

$$volunteering_{ict} = \alpha + \beta_1 pse_{ct} + \beta_2 pc_{ict} + \beta_3 di_{ct} + \Gamma \mathbf{C}_{ct} + \Theta \mathbf{I}_{ict} + \zeta_c + \eta_t + \varepsilon_{ict},$$

where the dependent variable is equal to one if the respondent does unpaid voluntary work for any organization, and zero otherwise. As variables of primary interest (to be explained in detail below), we include public social expenditure as a percentage of GDP (*pse*), a measure of political consensus (*pc*) and an index of democratization (*di*). The set of country-level

[7] The Data Appendix A includes detailed information on all variable definitions and data sources.

[8] Since the qualitative results of a logit estimation (discussed below) are equivalent, we will, for ease of presentation, focus on the linear probability model throughout the paper. As pointed out by Ai and Norton (2003) and Norton et al. (2004), the interpretation of nonlinear models is quite cumbersome and not fully demonstrative.

Table 2 Number of available observations per country and year

Country	1981	1982	1990	1999	2000	
Austria	0	0	1,014	942	0	1,956
Belgium	100	0	1,203	1,127	0	2,430
Canada	0	156	1,088	0	1,323	2,567
Czech Republic	0	0	0	1,421	0	1,421
Denmark	0	0	746	749	0	1,495
Finland	0	0	0	0	712	712
France	156	0	578	1,000	0	1,734
Germany	0	0	2,775	1,301	0	4,076
Great Britain	122	0	936	551	0	1,609
Greece	0	0	0	705	0	705
Hungary	0	0	0	748	0	748
Iceland	0	0	0	720	0	720
Ireland	60	0	767	670	0	1,497
Italy	198	0	932	1,055	0	2,185
Japan	0	0	612	0	966	1,578
Luxembourg	0	0	0	459	0	459
Netherlands	0	0	666	832	0	1,498
Norway	0	0	829	0	0	829
Poland	0	0	0	892	0	892
Portugal	0	0	832	0	0	832
Slovak Republic	0	0	0	1,059	0	1,059
Spain	0	0	1,410	547	706	2,663
Sweden	0	0	0	532	0	532
United States	0	1,309	1,409	1,044	0	3,762
	636	1,465	15,797	16,354	3,707	37,959

control variables $\mathbf{C}_{ct}$ comprises three groups: tax variables and public deficits, other macroeconomic variables (GDP per capita, GDP deflater, unemployment rate, and the population size), and political variables (the prime minister's political position). The set of individual-level controls $\mathbf{I}_{ict}$ consists of two groups: socioeconomic variables (age, sex, family status, number of children, education, labor market status, household income, and size of hometown) and political variables (individual's political position).

In order to test our hypotheses on crowding effects, controlling for unobserved time-invariant heterogeneity at the country level is indispensable.[9] We therefore control for country fixed effects ζ_c and year fixed effects η_t. If all relevant control variables are not included, an estimation without country fixed effects would be less conclusive, since unobservable factors may be correlated with the variables of primary interest.

Theoretically, crowding effects may occur in both directions: (i) public expenditure could replace private initiatives, and (ii) public expenditure may be necessary to stimulate people to volunteer at all (e.g., provision of a minimum level of infrastructure so that potential volunteers have somewhere to meet). To clarify whether government spending crowds in or

[9] In principle, it would be preferable to control for unobserved individual time-invariant heterogeneity. However, to the best of our knowledge, no individual-level panel data across counties on volunteering are available.

crowds out voluntary-labor supply, we would like to confine public expenditure to fields where volunteers provide their services. As a proxy for government provision of public goods, we use information on public social expenditure. In particular, we have retrieved our data from the OECD Social Expenditure Database. Public social expenditure contains information on public spending along nine core social policy areas: old age, survivors, incapacity-related benefits, health, family, active labor market policies (ALMP), unemployment, housing, and other social policy areas. These data are adequate for our analysis for the following reasons: (i) we observe a high correspondence between components of public social expenditure and the voluntary fields of action reported in the E/WVS, indicating that volunteers are predominantly active in the social area (charitable services for religious organizations, social welfare activities for the elderly and disabled, youth work, local community action to tackle poverty, employment and housing, etc.). (ii) The OECD Social Expenditure Database provides widely accepted, internationally comparable statistics on social expenditure at the program level. In contrast, international comparability is not fully guaranteed for expenditure aggregates from the System of National Accounts, which are therefore inadequate for the analysis of public social policy, as pointed out by the OECD (2007). Column 2 in Table 1 shows the average aggregate public social expenditure as a percentage of GDP across countries. Public social expenditure is highest in Sweden, Denmark, Belgium, and France, and is relatively low in Japan and the Anglo-Saxon countries.

Our measure of political consensus (*pc*) is equal to one if the respondent's political position corresponds to the prime minister's, and zero otherwise. For a categorization of the parties, we rely on the stated political positions in the respective party's entry in the free encyclopedia Wikipedia.[10] This procedure results in a list of 12 political positions for the parties: far left, left, liberal left, green left, center left, center, center right, green right, liberal right, right, far right, vote for other party. Details are provided in the Data Appendix A. To construct a variable on the respondent's political position, we use the following question from the E/WVS: "If there were a national election tomorrow, for which party on this list would you vote?" We start with an aggregated classification of political positions with the attributes left wing, right wing, and other. In our baseline specification, we therefore distinguish between respondents and prime ministers who are classified as left wing, right wing, or other. Nonvoters are included in the residual group, and we assume that they have no political consensus with their prime minister.[11] Column 3 in Table 1 provides summary statistics of average political consensus across countries. It varies from 0.26 in Hungary to 0.86 in Norway. In a subsequent step, we use the whole scale of political positions to test the sensitivity of our results.

The political science literature offers different measurements (called *democracy indices*) to quantify the degree of democratization. In this paper, we use Vanhanen's democratization index (Vanhanen 2003). This index is formed by multiplying a competition component and a participation component. Political competition (VAN-C) represents the percentage of votes gained by the smaller parties in national elections. The political participation variable

[10] We presume that each party has a strong interest in ensuring that its entry in Wikipedia provides correct information (on its political position) and, therefore, maintains it with great care. A deflection of actual political actions from the written positions of the parties (e.g., substantial expansion of public budgets by conservatives, privatizations by socialists) will not have a significant impact on our analysis as individuals' perceptions of party ideology matter more strongly for our study than the discretionary dissent from the parties' programs. We do not believe that party ideologies documented in Wikipedia and individual perceptions of these ideologies are systematically biased.

[11] To check the robustness of our results, we alternatively define nonvoters to be in consensus with their prime minister and rerun our estimations. The results remain unchanged.

(VAN-P) indicates the percentage of the total population that actually votes in elections. Whereas competition implies that individuals are free to organize themselves and groups are equally free to compete for power, participation in decision making indicates the relative number of people who take part in politics in general. The higher either component becomes, the higher the degree of democratization.[12] As can be seen in column 4 of Table 1, Belgium (79.84), Italy (78.67), Norway (78.81), and Denmark (74.92) show the highest democracy scores, whereas the United States (33.33) appears at the bottom of the list, behind Poland (43.85), Hungary (47.23), and Canada (48.64).[13] Although other existing democratization indices such as the Freedom House Democracy Rating (FH) (see www.freedomhouse.org); its two subcomponents, civil liberties (FH-CL)[14] and political rights ratings (FH-PR); the Combined Polity Score (Marshall and Jaggers 2002); and the ACLP index (Cheibub and Gandhi 2004) measure different aspects of democracy, they show a very high level of correlation between one another (see Munck and Verkuilen 2002).[15] Since our estimation sample consists only of developed countries, and we do not have enough variation in each democracy index, we focus on the Vanhanen index as the main indicator of the degree of democratization and use the other indices for robustness checks.

3.1 Reversed causality

One might be concerned about the potential endogeneity of the main variables of interest. For instance, citizens may not adjust their volunteering behavior in response to public social spending, whereas the government could be expected to adjust its social spending according to the citizens' willingness to volunteer.

To show that our estimates are not biased by reversed causality, we need exogenous variation in public social spending. Therefore, we suggest an instrumental variable approach based on the political budget cycle (PBC) according to which incumbent politicians use fiscal policy measures to increase the likelihood of their reelection.[16] The identifying assumption is that the timing of the election has no direct impact on the decision to volunteer. With the exclusion of political party and union volunteers, we argue that this is a reasonable assumption. Implementing our identification strategy, we distinguish between observations with a first-order election in the preceding, current, or following year. Information on elections is available in Pippa Norris's Democracy Timeseries Dataset, 2009.

Although we cannot completely rule out the possibility of reversed causality for consensual and participatory crowding in/out, reversed causality seems unlikely in both cases after partialling out unobserved time-invariant heterogeneity at the country level. Only if people

[12] Even though Vanhanen emphasizes that there is no natural index level for differentiating between democracies and nondemocracies, he argues that a country must cross a threshold 30% for competition and 10% to 20% for participation to be classified as a democracy.

[13] Note that the Vanhanen index might be influenced by the country's legislation on compulsory voting. In our dataset, only Belgium, Luxembourg, Greece, and Italy (until 1993) have made voting a legal obligation. However, compulsory voting is not strictly enforced in any of these countries, and their exclusion from our empirical analysis does not change the results. Therefore, we do not expect the countries' different voting legislations to influence our results.

[14] Freedom House civil liberties ratings cover freedom of expression and belief, personal autonomy, associational and organizational rights, and the rule of law on a 7-point scale.

[15] See Munck and Verkuilen (2002) for a discussion of the properties of the different indices.

[16] Assuming myopic voters, political budget cycle models predict increasing government expenditure before elections and budget consolidation thereafter. Surveys from Mueller (2003: Chap. 19) or Shi and Svensson (2003) provide empirical evidence for the validity of different types of PBC models.

systematically reverse their political ideology once they change their volunteering behavior might the problem of endogeneity become an issue for consensual crowding out/in. Since democratization indices do not include the incidence of volunteering, we see no problem in participatory crowding out/in.

4 Empirical results

This section presents our estimation results as follows. First, we discuss the findings on the crowding hypotheses and provide results for different groups of controls (Tables 3 and 4). Second, we present robustness checks (Tables 5 and 6). Finally, we investigate the relationship between crowding effects and income distribution (Table 7).

4.1 Crowding effects

Fiscal crowding in/out: Table 3 shows that, depending on the specification, an increase in public social expenditure by 1 percentage point of the GDP decreases the probability of volunteering by 1.7 to 2.9 percentage points. As shown by the different specifications, crowding-out effects tend to be higher with the use of more control variables.

In order to make sure that the estimated effect is causal, we present instrumental variable estimations in Table 4.[17] To capture the exogenous variation in public social spending by the political budget cycle as precisely as possible, we distinguish between observations with a first-order election in the first and second half of the preceding, current, and following year with six binary variables. The first-stage estimation is very strong; depending on the specification, the F-statistic for the excluded instruments is at least 11.12. The signs of the statistically significant binary variables capturing the timing of the elections correspond mainly to the political budget cycle with the models assuming myopic voters. We observe an increase in government social expenditure before elections and budget consolidation thereafter.

Most important, the second-stage results confirm our findings based on the linear probability model. The estimated effects of the instrumental variable estimation for the full models are similar in size—compare columns III and V of Tables 3 and 4. We therefore conclude that reversed causality is not a concern for fiscal crowding, and single-equation methods seem to be sufficient to get unbiased estimates.[18]

Consensual crowding in/out: Furthermore, we find support for the crowding-out hypothesis due to political consensus. In column II of Tables 2 and 3, the estimation is extended by the individuals' ideological positions (left-wing voter, right-wing voter, other voter). Column III adds the political orientation of the prime minister (left prime minister) in both tables.[19] On the basis of these two variables, we estimate the effect of political consensus in columns IV and V. Individuals whose ideological positions coincide with the orientation of the prime minister decrease their volunteering efforts. A political consensus reduces the probability of volunteering by about 2 percentage points. An individual can be expected to reduce her voluntary effort as she believes that those who are in political power act in the

[17] These estimations exclude the observations for political party (1,221) and union (892) volunteers.

[18] We can distinguish elections with exogenous dates, which are predetermined by the constitution, from advanced elections. About 63% of all elections in our sample are held on predetermined dates. Our results remain unchanged if we use only these predetermined election dates as an exclusion restriction.

[19] We only observe right-wing and left-wing prime ministers.

Table 3 Linear probability model of the determinants of voluntary work

	(I)		(II)		(III)		(IV)		(V)	
Public social expend. (% of GDP)	−0.018**	(0.007)	−0.017**	(0.007)	−0.027***	(0.007)	−0.029***	(0.008)	−0.025***	(0.007)
Political consensus							−0.018***	(0.007)	−0.018***	(0.007)
Vanhanen's democratization index									−0.010***	(0.003)
Country-level control variables										
Tax control variables										
Net government lending	−0.004*	(0.002)	−0.004	(0.002)	−0.015***	(0.005)	−0.015***	(0.005)	−0.009	(0.006)
Taxes on goods and services (% of GDP)	0.034*	(0.019)	0.036**	(0.017)	0.016	(0.020)	0.016	(0.020)	0.040***	(0.013)
Taxes on income and profits (% of GDP)	0.008	(0.006)	0.006	(0.006)	0.026***	(0.009)	0.026***	(0.009)	0.016	(0.011)
Taxes on misc. (% of GDP)	−0.024**	(0.011)	−0.024**	(0.011)	0.002	(0.012)	0.002	(0.012)	0.001	(0.017)
Other macroeconomic control variables										
GDP per capita (in thousands of dollars)	0.029	(0.017)	0.031*	(0.017)	0.008	(0.016)	0.009	(0.016)	0.011	(0.013)
GDP deflator	−0.016**	(0.007)	−0.016**	(0.007)	−0.025***	(0.008)	−0.025***	(0.009)	−0.015***	(0.005)
Unemployment rate	−0.005	(0.011)	−0.004	(0.011)	−0.028**	(0.012)	−0.026**	(0.012)	−0.023*	(0.013)
Population size (in millions)	−0.001	(0.002)	−0.001	(0.002)	0.001	(0.002)	0.000	(0.002)	0.001	(0.001)
Political control variables										
Left prime minister					0.059***	(0.021)	0.062***	(0.022)	−0.003	(0.031)
Individual-level control variables										
Socioeconomic control variables										
Age	0.008***	(0.001)	0.008***	(0.001)	0.008***	(0.001)	0.008***	(0.001)	0.008***	(0.001)
Age^2	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)
Female	−0.029***	(0.009)	−0.029***	(0.009)	−0.029***	(0.009)	−0.029***	(0.009)	−0.029***	(0.009)
Married	0.013*	(0.007)	0.011	(0.007)	0.011	(0.007)	0.011	(0.007)	0.011	(0.007)
No. of children	0.007***	(0.002)	0.007***	(0.002)	0.007***	(0.002)	0.007***	(0.002)	0.007***	(0.002)
Income	0.013***	(0.002)	0.012***	(0.002)	0.012***	(0.002)	0.012***	(0.002)	0.012***	(0.002)
School leaving age	0.010***	(0.001)	0.010***	(0.001)	0.010***	(0.001)	0.010***	(0.001)	0.010***	(0.001)
Town size	−0.023***	(0.005)	−0.022***	(0.005)	−0.022***	(0.005)	−0.023***	(0.005)	−0.022***	(0.005)
Out of labor force	−0.035***	(0.008)	−0.036***	(0.008)	−0.036***	(0.008)	−0.036***	(0.008)	−0.036***	(0.007)
Unemployed	−0.084***	(0.015)	−0.081***	(0.015)	−0.081***	(0.014)	−0.081***	(0.014)	−0.080***	(0.014)
Self-employed	0.011	(0.012)	0.009	(0.012)	0.009	(0.012)	0.009	(0.012)	0.008	(0.012)

Table 3 (*Continued*)

	(I)		(II)		(III)		(IV)		(V)	
Political control variables										
Left-wing voter			0.046***	(0.011)	0.045***	(0.011)	0.054***	(0.011)	0.052***	(0.011)
Right-wing voter			0.078***	(0.011)	0.077***	(0.011)	0.087***	(0.012)	0.086***	(0.011)
Other voter			0.063***	(0.019)	0.062***	(0.019)	0.063***	(0.019)	0.059***	(0.018)
Constant	0.308	(0.423)	0.282	(0.423)	−0.005	(0.422)	0.002	(0.425)	0.057	(0.408)
Fixed effects										
Country fixed effects	yes		yes		yes		yes		yes	
Year fixed effects	yes		yes		yes		yes		yes	
Adjusted R-squared	0.100		0.102		0.102		0.103		0.103	

Note: The dependent variable is equal to one if the respondent does unpaid voluntary work and zero otherwise. The number of observations is equal to 37,959. Estimation method: ordinary least squares. Robust standard errors, adjusted for clustering by country-year and heteroskedasticity of unknown form, are shown in parentheses
*, **, ***indicate statistical significance at the 10%, 5%, and 1% level

Table 4 Instrumental variable approach to identify determinants of voluntary work

Second stage regression	(I)		(II)		(III)		(IV)		(V)	
Public social expend. as % of GDP	−0.046***	(0.013)	−0.044***	(0.013)	−0.024***	(0.008)	−0.026***	(0.008)	−0.023***	(0.006)
Political consensus							−0.019***	(0.006)	−0.020***	(0.006)
Vanhanen's democratization index									−0.010***	(0.003)
Country-level control variables										
Tax control variables										
Net government lending	−0.012**	(0.005)	−0.011**	(0.005)	−0.014***	(0.005)	−0.015***	(0.005)	−0.009*	(0.005)
Taxes on goods and services as % of GDP	0.011	(0.027)	0.013	(0.026)	0.004	(0.020)	0.004	(0.021)	0.025*	(0.015)
Taxes on income and profits as % of GDP	0.014*	(0.008)	0.012	(0.008)	0.024***	(0.008)	0.025***	(0.008)	0.016*	(0.009)
Taxes on misc. as % of GDP	−0.016	(0.016)	−0.017	(0.016)	0.002	(0.011)	0.001	(0.011)	0.001	(0.014)
Other macroeconomic control variables										
GDP per capita (in thousands of dollars)	0.033*	(0.019)	0.035*	(0.019)	0.008	(0.013)	0.009	(0.013)	0.010	(0.011)
GDP deflator	−0.023***	(0.009)	−0.023**	(0.009)	−0.027***	(0.008)	−0.027***	(0.008)	−0.018***	(0.006)
Unemployment rate	0.011	(0.013)	0.012	(0.013)	−0.025***	(0.010)	−0.024**	(0.010)	−0.021*	(0.011)
Population size (in millions)	0.00005		−0.0002	(0.002)	0.001	(0.001)	0.001	(0.001)	0.001	(0.001)
Political control variables										
Left prime minister					0.061***	(0.020)	0.065***	(0.020)	0.010	(0.026)
Individual-level control variables										
Socioeconomic control variables	*yes*		*yes*		*yes*		*yes*		*yes*	
Political control variables										
Left-wing voter			0.024***	(0.009)	0.025***	(0.009)	0.035***	(0.010)	0.033***	(0.010)
Right-wing voter			0.065***	(0.010)	0.065***	(0.010)	0.077***	(0.011)	0.076***	(0.011)
Other voter			0.043**	(0.018)	0.049***	(0.018)	0.049***	(0.018)	0.046***	(0.018)
Country and year fixed effects	yes		yes		yes		yes		yes	
Adjusted R-squared	0.089		0.092		0.093		0.094		0.094	

Table 4 (*Continued*)

First stage regression	(I)		(II)		(III)		(IV)		(V)	
Election in year $t-1$, 1st half-year	-1.831^{***}	(0.687)	-1.828^{***}	(0.686)	-3.286^{***}	(0.262)	-3.281^{***}	(0.260)	-4.682^{***}	(0.729)
Election in year $t-1$, 2nd half-year	0.848	(0.794)	0.852	(0.793)	-0.844^{***}	(0.311)	-0.841^{***}	(0.310)	-2.929^{***}	(0.919)
Election in year t, 1st half-year	0.130	(1.119)	0.141	(1.117)	−0.037	(0.407)	−0.035	(0.405)	−0.011	(0.357)
Election in year t, 2nd half-year	-1.402^{***}	(0.488)	-1.400^{***}	(0.488)	-1.294^{***}	(0.267)	-1.289^{***}	(0.267)	−0.039	(0.637)
Election in year $t+1$, 1st half-year	−0.201	(1.005)	−0.195	(1.003)	0.879^{**}	(0.360)	0.880^{**}	(0.359)	−1.737	(1.225)
Election in year $t+1$, 2nd half-year	1.784^{**}	(0.859)	1.792^{**}	(0.858)	2.008^{***}	(0.362)	2.006^{***}	(0.361)	3.641^{***}	(0.608)
Other second-stage variables	yes		yes		yes		yes		yes	
P-value of F-statistic	<0.001		<0.001		<0.001		<0.001		<0.001	

Note: The dependent variables in the second-stage regressions are equal to one if the respondent does unpaid voluntary work and zero otherwise. The number of observations is equal to 35,846. Estimation method: two-stage least squares. Public social expenditure (% of GDP) is instrumented with the dates of first-order elections. Robust standard errors, adjusted for clustering by country-year and heteroskedasticity of unknown form, are shown in parentheses

*, **, ***indicate statistical significance at the 10%, 5%, and 1% level

interest of people. Nonmonetary government action such as enacting laws and regulations, guaranteeing minority rights, or promoting or limiting access to education and medical service causes those individuals who are in line with the government to volunteer less.

In comparison with the baseline group of nonvoters, left-wing, right-wing, and voters of other parties have a higher propensity to volunteer. The positive coefficients of the political control variables may indicate that voters show a stronger social responsibility than nonvoters. According to the linear probability model in Table 3, right-wing, left-wing, and other voters have, respectively, a 7.8, 6.3, and 4.6 percentage points higher probability of volunteering than non-voters—see column II.[20] Specifications III and IV show an approximately 6 percentage points higher probability of volunteering in countries with left-wing (as compared to those with right-wing) prime ministers, but this effect becomes insignificant with the inclusion of Vanhanen's democratization index—see column V.

Participatory crowding in/out: We use the Vanhanen index—a measure that indicates a country's degree of democratization—as a third variable to analyze the relationship between government action and volunteering. It can be seen in column V of Tables 3 and 4 that a 1-point increase in the degree of democratization decreases the probability of volunteering by about 1 percentage point. Given the actual range of the Vanhanen index, from 33 to 79, the estimated effect is quantitatively important. This result supports the hypothesis of crowding out: the more a government supports democratization, the lower is the incentive for individuals to engage in volunteering activities. We ran analogical regressions for those other democratization indices where we had enough variation in our dataset: the FH rating, the FH-CL ratings, and the two sub-components of the Vanhanen index, VAN-C and VAN-P. The results obtained with all indices except VAN-P were very similar to those based on the Vanhanen index. For instance, an increase of 1 point in the 7-point FH-CL index causes a statistically significant 6.8 percentage points reduction in the probability of volunteering. In contrast to the other indices, the VAN-P index was statistically insignificant, which shows that the effect captured by VAN is mainly driven by the competition component, and to a lesser extent by the participation component.[21] The fact that both FH democracy rating indices give the same qualitative result as Vanhanen's democratization index is especially reassuring, since some countries rank quite differently according to these two indices. In sum, we interpret this as evidence in favor of participatory crowding out.

The striking result that public government activities influence private collective action to a significantly negative extent and crowd out volunteering is controlled for by two groups of variables: country-level and individual-level characteristics.

4.2 Country-level controls

Public social expenditure can be paid for with tax revenues or by public debt. Hence, we control for public revenues and government net lending in the estimations discussed above. In doing so, we indicate public revenues by three variables expressed as a percentage of the

[20] The issue of a different willingness to volunteer in accordance with a more detailed classification of political orientation and religiousness is addressed in Sect. 4.4.

[21] In a further robustness check, we exclude, in turn, a single country from our dataset. Only when the US and Finland are dropped do the Vanhanen index coefficients turn positive, though insignificant. With the omission of Hungary, the coefficient for the remaining sample becomes negative and insignificant. The coefficients of the VAN-C component, which drives the Vanhanen index in our analysis, are again negative as expected with one-sided p-values in the three subsamples: 0.136 (without Finland), <0.001 (without Hungary), and 0.095 (without the US). Note that the variation in the sample does not have an impact on the robustness of our results concerning consensual and fiscal crowding out.

gross domestic product: taxes on goods and services, taxes on income and profits, and the economically less relevant residual tax component, that is, miscellaneous taxes. With the exception of the residual tax variable, public revenues exert a positive and, in most cases, statistically significant influence on volunteering (see columns I–V in Tables 3 and 4). Apparently, the government influences the opportunity costs of volunteering by imposing taxes on income and consumption. An increase in taxes leads to a reduction in labor supply, fewer taxable leisure activities, and an increase in volunteering. The coefficient of net government lending is negative and predominantly significant throughout our estimations and specifications. Altogether, it can be shown that the evidence of crowding out is preserved if we control for taxes and public deficits.

We also control for inflation (GDP deflator) and unemployment, both of which reduce the probability of volunteering. We conclude that volunteers need a certain level of economic stability for their activities. This argument is supported by results at the individual level, where unemployed people show lower probabilities of volunteering (see below). The consumption model of volunteering hypothesizes that the propensity to volunteer increases with income or wealth. On the other hand, economic prosperity may foster individualism and reduce solidarity among the population. For instance, Miguel (2003) argues that economic growth generates pressure for labor mobility. This mobility may undermine trust and social capital as individuals are no longer able to engage in long-term recriprocal relationships necessary for community cooperation.[22] In our regression, both the per capita national income (GDP per capita) and the population size of a country remain mainly insignificant.[23]

4.3 Individual-level controls

The final block of controls includes the individual characteristics of respondents. On the basis of our regressions, the typical volunteer is male, employed, well educated, and earns a high income. Moreover, the probability of volunteering increases with the number of children and with age, but at a decreasing rate. People living in big cities show a lower probability of volunteering, and family status does not appear to have a significant influence.

Finally, it should be noted that none of the year dummies is significant in our specifications. This is an indication that no long-run trend in voluntary activities exists. Most of the country dummies are, however, statistically significant.

4.4 Robustness checks

To test the robustness of our results, we estimate a logit model, control for religiousness, and use a more detailed measurement of political orientation.

Logit estimates—waves: A logit estimation is carried out according to the same specifications as shown in Table 3. As can be seen in Table 5, the qualitative results do not change. Results remain unchanged as well if we use wave fixed effects instead of year fixed effects. Introducing wave fixed effects accounts for the fact that different waves of the E/WVS were accomplished in different years.

[22] Economic development may also be accompanied by increasing positional concerns (the awareness of an individual's relative economic status), which erode people's cooperative behavior and engagement in collective action. For this and other arguments, both pro and contra, see Ball (2001).

[23] The coefficient of individual income is, however, positive and highly significant (see below).

Table 5 Logit model of the determinants of voluntary work

	(I)		(II)		(III)		(IV)		(V)	
Public social expend. as % of GDP	−0.086**	(0.034)	−0.079**	(0.033)	−0.118***	(0.039)	−0.127***	(0.040)	−0.105***	(0.035)
Political consensus							−0.084***	(0.030)	−0.085***	(0.031)
Vanhanen's democratization index									−0.045***	(0.017)
Country-level control variables										
Tax control variables										
Net government lending	−0.023*	(0.012)	−0.018	(0.012)	−0.065**	(0.026)	−0.066**	(0.026)	−0.040	(0.030)
Taxes on goods and services as % of GDP	0.186*	(0.096)	0.195**	(0.089)	0.096	(0.108)	0.097	(0.111)	0.204***	(0.070)
Taxes on income and profits as % of GDP	0.058*	(0.032)	0.048	(0.031)	0.129***	(0.048)	0.133***	(0.048)	0.095	(0.058)
Taxes on misc. as % of GDP	−0.107**	(0.053)	−0.106**	(0.053)	0.001	(0.067)	0.001	(0.067)	0.011	(0.095)
Other macroeconomic control variables										
GDP per capita (in thousands of dollars)	0.093	(0.094)	0.098	(0.089)	0.011	(0.081)	0.014	(0.081)	0.021	(0.065)
GDP deflator	−0.081**	(0.033)	−0.082**	(0.033)	−0.120***	(0.044)	−0.122***	(0.045)	−0.074***	(0.026)
Unemployment rate	−0.063	(0.064)	−0.062	(0.061)	−0.155**	(0.061)	−0.150**	(0.061)	−0.142**	(0.065)
Population size (in millions)	−0.004	(0.008)	−0.005	(0.008)	0.003	(0.008)	0.002	(0.008)	0.006	(0.007)
Political control variables										
Left prime minister					0.250**	(0.125)	0.265**	(0.127)	−0.004	(0.152)
Individual-level control variables										
Socioeconomic control variables										
Age	0.040***	(0.006)	0.040***	(0.006)	0.040***	(0.006)	0.040***	(0.006)	0.040***	(0.006)
Age^2	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)
Female	−0.150***	(0.045)	−0.149***	(0.045)	−0.149***	(0.045)	−0.149***	(0.045)	−0.149***	(0.045)
Married	0.061*	(0.035)	0.053	(0.034)	0.053	(0.034)	0.052	(0.034)	0.053	(0.034)
No. of children	0.035***	(0.011)	0.035***	(0.011)	0.035***	(0.011)	0.035***	(0.011)	0.035***	(0.011)
Income	0.061***	(0.009)	0.058***	(0.009)	0.058***	(0.009)	0.058***	(0.009)	0.057***	(0.009)
School-leaving age	0.050***	(0.007)	0.049***	(0.006)	0.050***	(0.007)	0.050***	(0.007)	0.049***	(0.007)
Town size	−0.115***	(0.024)	−0.109***	(0.024)	−0.110***	(0.024)	−0.111***	(0.024)	−0.111***	(0.024)
Out of labor force	−0.171***	(0.039)	−0.175***	(0.038)	−0.175***	(0.038)	−0.175***	(0.038)	−0.173***	(0.038)
Unemployed	−0.441***	(0.078)	−0.433***	(0.078)	−0.431***	(0.077)	−0.430***	(0.077)	−0.427***	(0.076)
Self-employed	0.062	(0.059)	0.050	(0.058)	0.051	(0.058)	0.051	(0.058)	0.048	(0.058)

Table 5 (*Continued*)

	(I)		(II)		(III)		(IV)		(V)	
Political control variables										
Left-wing voter			0.274***	(0.059)	0.270***	(0.059)	0.315***	(0.060)	0.303***	(0.060)
Right-wing voter			0.432***	(0.057)	0.427***	(0.057)	0.476***	(0.059)	0.469***	(0.059)
Other voter			0.355***	(0.095)	0.352***	(0.095)	0.353***	(0.095)	0.336***	(0.091)
Constant	−0.711	(1.868)	−0.826	(1.859)	−2.122	(1.957)	−2.090	(1.973)	−2.075	(2.153)
Fixed effects										
Country fixed effects	yes		yes		yes		yes		yes	
Year fixed effects	yes		yes		yes		yes		yes	
McFadden's Pseudo R-squared	0.082		0.083		0.084		0.084		0.084	

Note: The dependent variable is equal to one if the respondent does unpaid voluntary work and zero otherwise. The number of observations is equal to 37,959. Estimation method: ordinary least squares. Robust standard errors, adjusted for clustering by country-year and heteroskedasticity of unknown form, are shown in parentheses
*, **, ***indicate statistical significance at the 10%, 5%, and 1% level

Religiousness: We also test robustness by including individual religiousness as another control variable. Our measure for religiousness is based on the frequency of attendance at religious services.[24] As can be seen in Table 6, crowding-out effects hardly change.

More religious people are more likely to volunteer. Depending on the chosen specification (see columns I–V, Table 6), an increase in religiousness by 1 point in the 8-point scale raises the volunteering probability by 3.7 or 3.8 percentage points. Notably, controlling for religiousness reduces the impact of the right-wing political orientation substantially, and the statistical difference between right-wing, left-wing, and other voters disappears. Each group volunteers with a 5 percentage points higher probability compared to non-voters (see column V in Table 6). Hence, it is not the political/ideological orientation *per se,* but rather the correlation between being right wing and religious, that is responsible for the high coefficient of right-wing respondents in Table 3. Furthermore, we observe that including religiousness increases the negative impact of being female from −2.9 percentage points in the baseline specification to −5 percentage points. Moreover, the negative influence of town size decreases slightly since religiousness is higher in smaller residential areas. Finally, the coefficient for the number of children becomes insignificant in specifications I and V.

Political attitudes: In the estimations presented above, political orientation has been measured on a left-right-other scale. This approach is common since a classification of parties into left, right, and other seems to be accepted without much opposition. However, our data allow for a more detailed alignment of political orientation with the dimensions of far left, left, liberal left, green left, center left, center, center right, green right, liberal right, right, far right, and vote for other party. This more detailed scale—applicable both to the political orientation of respondents and the political affiliation of the prime minister–makes a more differentiated rating of the political consensus variable possible. Due to the higher measurement accuracy of political consensus, we expect an even stronger crowding-out effect on volunteering from this variable. Accordingly, if we switch from the 3-point to the full scale of party classification, we find that the effect of political consensus on the probability of volunteering changes from −1.8 percentage points (see columns IV and V in Table 3) to −2.8 percentage points.

One might argue that a political consensus need not necessarily be based on an ideological conformity between the individual and the prime minister's party. To check robustness with another concept, the consensus variable is set to one if an individual's preferred party is in power. On the basis of this definition of political consensus, we reconfirm the crowding-out hypothesis with statistically significant negative coefficients of −1.8 and −1.6 percentage points for political consensus (compare these with columns IV and V in Table 3).

Following Brooks and Lewis (2001) and Brooks (2004), who find that trust in the federal government discourages volunteering, we include the variable "confidence in Parliament" from the E/WVS dataset for another sensitivity analysis. In line with the crowding-out argument, we again expect a negative influence of trust on the propensity to volunteer. Our regression results confirm this expectation. The higher the confidence in Parliament, the lower is the probability to volunteer. The coefficients of all other variables (including political consensus) remain unchanged. We interpret this as further evidence of consensual crowding out.

Volunteering and monetary giving: Finally, financial charitable giving can be expected to influence people's willingness to volunteer. Depending on the general attitude toward philanthropy and the sociopolitical framework such as the tax system in a country, volunteering

[24]The religiousness question in the questionnaire reads as follows: "Apart from weddings, funerals, and christenings, about how often do you attend religious services these days?" Possible answers range from "more than once a week" to "never, practically never".

Table 6 Determinants of voluntary work—controlling for religiousness

	(I)		(II)		(III)		(IV)		(V)	
Religiousness	0.038***	(0.003)	0.038***	(0.003)	0.037***	(0.003)	0.037***	(0.003)	0.037***	(0.003)
Public social expend. as % of GDP	−0.018***	(0.006)	−0.017***	(0.006)	−0.024***	(0.007)	−0.026***	(0.007)	−0.023***	(0.007)
Political consensus							−0.018**	(0.007)	−0.018**	(0.007)
Vanhanen's democratization index									−0.009***	(0.003)
Country-level control variables										
Tax control variables										
Net government lending	−0.003	(0.002)	−0.003	(0.002)	−0.012***	(0.004)	−0.012***	(0.004)	−0.006	(0.005)
Taxes on goods and services as % of GDP	0.033*	(0.016)	0.034**	(0.016)	0.017	(0.018)	0.018	(0.019)	0.039***	(0.013)
Taxes on income and profits as % of GDP	0.007	(0.006)	0.006	(0.006)	0.022***	(0.008)	0.023***	(0.008)	0.014	(0.010)
Taxes on misc. as % of GDP	−0.026**	(0.011)	−0.026**	(0.010)	−0.005	(0.011)	−0.005	(0.011)	−0.006	(0.015)
Other macroeconomic control variables										
GDP per capita (in thousands of dollars)	0.025	(0.016)	0.025	(0.015)	0.006	(0.015)	0.007	(0.015)	0.009	(0.012)
GDP deflator	−0.014**	(0.006)	−0.014**	(0.006)	−0.022***	(0.008)	−0.022***	(0.008)	−0.013**	(0.005)
Unemployment rate	−0.006	(0.010)	−0.006	(0.010)	−0.025**	(0.010)	−0.024**	(0.010)	−0.021*	(0.011)
Population size (in millions)	−0.002	(0.002)	−0.002	(0.002)	0.000	(0.002)	0.000	(0.002)	0.000	(0.001)
Political control variables										
Left prime minister					0.047**	(0.019)	0.051**	(0.020)	−0.006	(0.029)
Individual-level control variables										
Socioeconomic control variables										
Age	0.008***	(0.001)	0.008***	(0.001)	0.008***	(0.001)	0.008***	(0.001)	0.008***	(0.001)
Age^2	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)	−0.000***	(0.000)
Female	−0.050***	(0.008)	−0.049***	(0.008)	−0.050***	(0.008)	−0.049***	(0.008)	−0.049***	(0.008)
Married	0.001	(0.007)	0.001	(0.007)	0.001	(0.007)	0.001	(0.007)	0.001	(0.007)
No. of children	0.003	(0.002)	0.003*	(0.002)	0.003*	(0.002)	0.003*	(0.002)	0.003	(0.002)
Income	0.013***	(0.002)	0.013***	(0.002)	0.012***	(0.002)	0.012***	(0.002)	0.012***	(0.002)
School leaving age	0.010***	(0.001)	0.010***	(0.001)	0.010***	(0.001)	0.010***	(0.001)	0.010***	(0.001)
Town size	−0.017***	(0.004)	−0.017***	(0.004)	−0.017***	(0.004)	−0.017***	(0.004)	−0.017***	(0.004)
Out of labor force	−0.041***	(0.007)	−0.041***	(0.007)	−0.041***	(0.007)	−0.041***	(0.007)	−0.041***	(0.007)
Unemployed	−0.070***	(0.014)	−0.069***	(0.014)	−0.069***	(0.014)	−0.069***	(0.014)	−0.068***	(0.013)
Self-employed	0.013	(0.012)	0.013	(0.012)	0.013	(0.012)	0.013	(0.012)	0.012	(0.012)

Table 6 (*Continued*)

	(I)		(II)		(III)		(IV)		(V)	
Political control variables										
Left-wing voter			0.045***	(0.010)	0.044***	(0.011)	0.053***	(0.011)	0.050***	(0.011)
Right-wing voter			0.043***	(0.010)	0.042***	(0.010)	0.052***	(0.011)	0.051***	(0.011)
Other voter			0.058***	(0.019)	0.057***	(0.019)	0.058***	(0.019)	0.054***	(0.018)
Constant	0.362	(0.398)	0.342	(0.388)	0.110	(0.387)	0.117	(0.391)	0.165	(0.382)
Fixed effects										
Country fixed effects	yes		yes		yes		yes		yes	
Year fixed effects	yes		yes		yes		yes		yes	
Adjusted R-squared	0.132		0.132		0.132		0.133		0.133	

Note: The dependent variable is equal to one if the respondent does unpaid voluntary work and zero otherwise. The number of observations is equal to 37,812. Estimation method: ordinary least squares. Robust standard errors, adjusted for clustering by country-year and heteroskedasticity of unknown form, are shown in parentheses
*, **, ***indicate statistical significance at the 10%, 5%, and 1% level

and charitable money giving may represent complements or substitutes. For example, tax allowances can promote private monetary giving, whereas higher taxes on labor income should lead to less paid work and, therefore, to a higher willingness to volunteer. Unfortunately, adequate data on total monetary giving by individuals are not available for our sample. However, the E/WVS dataset includes a survey question on monetary giving to prevent environmental pollution.[25] The inclusion of this additional covariate in our estimation indicates a positive relationship between the willingness to pay for the environment and the inclination to volunteer. The coefficients of our variables of primary interest remain almost unchanged. However, we acknowledge that private giving for the environment represents a very special case of private monetary giving, so that we must reserve this important issue for future research.

4.5 Crowding effects and income distribution

Bergstrom et al. (1986) argue that in a world of balanced public budgets, an increase in the governmental provision of a public good is equivalent to a redistribution of income and demonstrate that equalizing wealth redistribution will either leave constant or reduce voluntary contributions to the public good. Apart from the material coverage of an individual's livelihood in absolute terms, one may argue that the distribution of economic well-being is another important determinant of volunteering and that the vertical distribution of income among different social groups influences the provided level of volunteering. Since we expect that income redistribution reduces voluntary labor supply, we include inequality measures as robustness checks in our estimations. If individuals are expected to invest resources to catch up with incomes of others, a more equal income distribution in a country may reduce the incentive to foster one's individual income or wealth. Consequently, less time may be spent in the paid-labor market, and a higher level (probability) of volunteering may follow as a result.

Gini coefficients are natural candidates for an empirical implementation of distributional aspects. Our preference is to observe before- and after-tax Ginis. The before-tax Ginis are considered as a measure of the structural equality or inequality, which can only be influenced indirectly by the state. The difference between before- and after-tax Gini coefficients can be directly attributed to governmental redistribution through the current tax policy. Using only after-tax Ginis, one has to accept that structural redistribution cannot be disentangled from a redistribution induced by tax policy. Although the availability of before-tax Ginis is limited, two data sources of after-tax Ginis exist: Gini coefficients provided by the OECD and those available in the Luxembourg Income Study (LIS). Ginis published by the OECD would reduce our sample size substantially since the OECD database includes only values for a few countries and years. We therefore employ the LIS after-tax Gini coefficients measured between 0 and 100.[26]

Table 7 presents the estimations, including the LIS Gini coefficients. Given that taxes, public social expenditure, and net government lending influence the after-tax income distri-

[25] Respondents are asked: "I am now going to read out some statements about the environment. For each one read out, can you tell me whether you agree strongly, agree, disagree, or strongly disagree? I would give part of my income if I were certain that the money would be used to prevent environmental pollution."

[26] Readers should note that the available Gini coefficients have been subjected to criticism in the literature (Atkinson and Brandolini 2001).

Table 7 Income distribution and voluntary work

	(I)		(II)		(III)		(IV)		(V)		(VI)	
Gini coefficient	0.010***	(0.004)	0.011***	(0.004)	0.015***	(0.003)	0.012***	(0.001)	0.013***	(0.001)	0.016***	(0.001)
Pub. soc. expend. as % of GDP							−0.042***	(0.008)	−0.044***	(0.008)	−0.013***	(0.003)
Political consensus			−0.015**	(0.007)	−0.016**	(0.007)			−0.016**	(0.007)	−0.016**	(0.007)
Vanhanen's democratization index					0.008***	(0.002)					−0.004***	(0.001)
Country-level control variables												
Tax control variables	no		no		no		yes		yes		yes	
Other macroeconomic controls	yes		yes		yes		yes		yes		yes	
Political control variables	yes		yes		yes		yes		yes		yes	
Individual-level control variables												
Socioeconomic controls	yes		yes		yes		yes		yes		yes	
Political control variables	yes		yes		yes		yes		yes		yes	
Fixed effects												
Country fixed effects	yes		yes		yes		yes		yes		yes	
Year fixed effects	yes		yes		yes		yes		yes		yes	
Adjusted R-squared	0.104		0.105		0.105		0.105		0.105		0.105	

Note: The dependent variable is equal to one if the respondent does unpaid voluntary work and zero otherwise. The number of observations is equal to 27,959. In contrast to Table 3, we cannot use the following countries and years: AUT (1999), BEL (1981), CZE (1999), ISL (1999), IRL (1981, 1990), ITA (1981), JPN (1990, 2000), POL (1999), PRT (1990), SVK (1999), GBR (1981), and USA (1982) due to missing information on Gini coefficients. Estimation method: ordinary least squares. Robust standard errors, adjusted for clustering by country-year and heteroskedasticity of unknown form, are shown in parentheses. The Gini coefficients, measured on a scale of 0 to 100, are derived from Luxembourg Income Study Database

*, **, ***indicate statistical significance at the 10%, 5%, and 1% level

bution,[27] we include only the variable for the Gini measure in the first step (columns I to III). In line with Bergstrom et al. (1986), we find that higher income inequality leads to a greater propensity to volunteer. A unit increase of the Gini coefficient raises the probability of volunteering by 1 to 1.5 percentage points. We interpret this result as another form of crowding out of volunteering as a result of a more equal income distribution. Again, the coefficients for political consensus and for Vanhanen's democratization index remain unchanged. Columns IV to VI include both the Gini coefficients and the full list of fiscal policy variables. The estimations confirm the robustness of our results; the impact of the Gini coefficient and other variables of interest does not change. Public social expenditure, political consensus, and Vanhanen's democratization index maintain their significant negative influence on the propensity to volunteer.

5 Conclusions

This paper explores the institutional and political factors shaping the citizen's motivation to work for free. Focusing on the role of the state, we find empirical evidence for crowding out of voluntary labor provision along three dimensions: (i) An increase in public social expenditure by 1 percentage point of the GDP decreases the individual's probability of volunteering by about 2 percentage points (fiscal crowding out). (ii) A political consensus between the voter and the prime minister reduces the probability of volunteering by 1.8 percentage points. A distinct government ideological orientation leads those individuals who are sympathetic to the government to volunteer less (consensual crowding out). (iii) The more a government supports democratization, the lower is the incentive to volunteer. An increase of Vanhanen's democratization index by 1 unit decreases the probability of volunteering by 1 percentage point. Similarly, redistribution policies also have negative consequences with regard to the probability of working for free (participatory crowding out).

For the first time, this paper documents that, apart from individual-level impacts, monetary and nonmonetary government activities determine the provision of voluntary labor. What is the social policy implication of these results? Social policy measures and the promotion of democratization are beneficial to society *per se*. However, negative impacts on volunteering behavior need to be taken into account.

Another striking result of this analysis is that economic stability is a prerequisite for volunteering engagement. This can be seen at both micro and macro levels. Lower rates of inflation and unemployment in a country, as well as income and employment at the individual level, contribute to higher volunteering probabilities. Consequently, a government can contribute to the provision of volunteering through macroeconomic stabilization policies.

At the individual political level, we find a higher probability of volunteering for politically motivated people (voters) than for nonvoters. Right-wing people show a higher propensity to volunteer than their left-wing counterparts. These differences disappear, however, if we control for religiousness.

Finally, our results seem to be relevant to the debate on the measurement of social capital. Generally, the measurement of social capital includes four dimensions: (i) interpersonal trust, (ii) institutional trust (e.g., confidence in Parliament), (iii) participation in civil society (e.g., volunteering), and (iv) trustworthiness of the respondents themselves. Our results

[27] The correlation coefficients between the Gini coefficient and taxes on goods and services, taxes on income and profits, public social expenditure, and net government lending are −0.54, −0.31, −0.64, and −0.02, respectively.

show that increasing confidence in Parliament reduces participation in volunteering. The trade-off between increasing institutional trust and participation in civil society complicates the concept of social capital formation considerably, and requires a more thorough analysis of the interrelation among the four components.

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Appendix A: Data

A.1 Variables of primary interest

The dependent variable *volunteering* is equal to one if the respondent does unpaid voluntary work and zero otherwise. The data are from the E/WVS. In particular, we use the E/WVS Four-Wave Integrated Data File, 1981–2004. The different organizations/activities that received the benefit of volunteering and the share of each are as follows: religious or church organizations, 16%; sports and recreation, 14.2%; education, arts, music, or cultural activities, 10.7%; social welfare services (e.g., for elderly or handicapped people), 8.7%; youth work (scouts, guides, youth clubs, etc.), 7.5%; other social groups, 7.1%; voluntary organizations concerned with health, 5.2%; political parties or groups, 5.3%; professional associations, 5.1%; labor unions, 4.9%; local community action (e.g., poverty, employment, housing), 4.1%; women's groups, 3.5%; conservation, environment, animal rights groups, 3.5%; third-world development or human rights, 3.5%; peace movements, 1.3%. We include all observations of respondents from OECD member countries where information on volunteering and all individual-level control variables is available (see below).

As a proxy for government provision of public goods, we use data on *public social expenditure* from the OECD Social Expenditure Database, measured as a percentage of GDP. An expenditure item is classified as social if the benefits are intended to address one or more social purposes and the programs regulating the provision involve either interpersonal redistribution or compulsory participation. The OECD group's programs with a social purpose fall into nine policy areas: (i) old age (pensions, early retirement pensions, home-help and residential services for the elderly), (ii) survivors (pensions and funeral payments), (iii) incapacity-related benefits (care services, disability benefits, benefits accruing from occupational injury and accident legislation, employee sickness payments), (iv) health (spending on in- and out-patient care, medical goods, prevention), (v) family (child allowances and credits, childcare support, income support during leave, single-parent payments), (vi) active labor market policies (employment services, training, youth measures, subsidized employment, employment measures for the disabled), (vii) unemployment (unemployment compensation, severance payment, early retirement for labor market reasons), (viii) housing (housing allowances and rent subsidies), and (ix) other social policy areas (non-categorical cash benefits to low-income households, other social services). For further details, refer to OECD (2007).

The variable *political consensus* is equal to one if the respondent's political position corresponds to the prime minister's, and zero otherwise. The definitions and sources of the respondents' and the prime ministers' political positions are provided below.

Vanhanen's democratization index measures the degree of democratization in different countries. Data on this index, developed by Tatu Vanhanen (Vanhanen 2003), are available from the Finnish Social Science Data Archive (http://www.fsd.uta.fi). The degree of democratization is obtained by multiplying a competition and a participation variable. The political competition variable represents the percentage of votes gained by the smaller parties in national elections. It is calculated by subtracting from 100 the percentage of votes won by the party with the largest number of votes. The political participation variable indicates the voting turnout in each election and is calculated as the percentage of the total population who actually vote in elections. The larger either component is, the higher the degree of democratization. In our data sample, the degree of democratization varies between 79.48 (Belgium) and 33.33 (United States). For further details, refer to Vanhanen (undated).

A.2 Country-level control variables

The *tax control variables* comprise a set of variables capturing tax revenues as a percentage of GDP and government net lending. Data on tax revenues as a percentage of GDP are obtained from the *OECD Factbook 2007*. This distinguishes between taxes on goods and services and taxes on income and profits. Taxes on goods and services cover all taxes levied on the production, extraction, sale, transfer, leasing, or delivery of goods, and the rendering of services, or on the use of goods or permission to use goods or to perform activities. They consist mainly of value added and sales taxes. Taxes on incomes and profits cover taxes levied on the net income or profits (gross income minus allowable tax reliefs) of individuals and enterprises. They also cover taxes levied on the capital gains of individuals and enterprises, and gains from gambling. The residual tax category (taxes on miscellaneous) includes payments by employers and employees made under compulsory social security schemes as well as payroll taxes, taxes relating to the ownership and transfer of property, and other taxes. For further details, refer to the *OECD Factbook 2007*.

The data on government net lending, based on the 1993 System of National Accounts, are also obtained from the *OECD Factbook 2007*. Net lending is equal to the difference between total revenue and total expenditure, including capital expenditure (in particular, gross fixed capital formation). A negative figure indicates a deficit.

The primary source of the *other macroeconomic control variables* (GDP per capita, GDP deflator, unemployment rate, and population size) is the *OECD Factbook 2007*. Some missing values have been supplemented with data from various issues of the *OECD Economic Outlook*. Gini coefficients are taken from the Luxembourg Income Study (http://www.lisproject.org).

The *country-level political control variables* capture the political position of the prime minister's party. The information is collected from the free encyclopedia Wikipedia. In order to categorize the parties, we rely on the political positions of parties as presented in Wikipedia; see, for example, http://en.wikipedia.org/wiki/Democratic_Party_(United_States). We presume that each party has a strong interest in ensuring that its entry in Wikipedia provides correct information on its political position and therefore maintains it with great care. This procedure results in the following categorization of parties' political positions: far left, left, liberal left, green left, center left, center, center right, green right, liberal right, right, far right, and other. In a simplified version, we use an aggregated classification of political positions with the values left wing (comprising far left, left, liberal left, green left, and center left), right wing (comprising center, center right, green right, liberal right, right, and far right), and other. Accordingly, prime ministers are classified as left-wing, right-wing, and other prime ministers.

Information on *dates of elections* in different countries is available in Pippa Norris's Democracy Timeseries Dataset, 2009.

A.3 Individual-level control variables

Information on *socioeconomic control variables* such as age, sex, marital status (married or not), number of children, household income (measured on a 10-point scale), education, size of hometown (measured on a 3-point scale), employment status (employed, self-employed, unemployed, and out of the labor force), and religiousness is obtained from the E/WVS. The E/WVS includes two questions on education: (i) "What is the highest educational level that you have attained?" and (ii) "At what age did you (or will you) complete your full-time education?" While the former question would be preferable to measure the level of education, it involves considerably more missing answers than the latter. In order to exploit all the available information on education and to retain as much data as possible, we construct a variable capturing the actual or regular school-leaving age. Specifically, if an answer to the second question is available, we use it. However, if it is missing while an answer to the first question is available, we impute the regular school-leaving age of the respective educational level. We distinguish two cases: (i) If other respondents from the same country provide answers to both questions for the same year, we impute the average school-leaving age among those with the same highest educational level attained. (ii) If there were no respondents from the same country and year available with information on both questions, we imputed the regular school-leaving age of the respective educational level. The E/WVS question on religiousness reads as follows: "Apart from weddings, funerals, and christenings, about how often do you attend religious services these days?" The possible answers are: "More than once a week" (8), "Once a week" (7), "Once a month" (6), "Only on special holy days/Christmas/Easter days" (5), "Other specific holy days" (4), "Once a year" (3), "Less often" (2), "Never, practically never" (1). In the E/WVS dataset, our trust variable is captured by the question "Could you tell me how much confidence you have in Parliament?" The following answers were offered: "None at all" (1), "Not very much confidence" (2), "Quite a lot of confidence" (3), and "A great deal of confidence" (4).

The *individual-level political control variables* are based on the E/WVS and Wikipedia. To construct a variable on the respondents' political position (e.g., left-wing, right-wing, and other voter), we use the following question from the E/WVS: "If there were a national election tomorrow, for which party on this list would you vote?" In order to categorize the parties on this list, we rely on the political positions of the parties as provided in Wikipedia (for details, see the information on the definition of the variable for the prime minister).

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