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SHOULD VOTING BE MANDATORY? THE EFFECT OF COMPULSORY VOTING RULES ON CANDIDATES' POLITICAL PLATFORMS

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This article analyzes the effect of political participation in the electoral process on parties' announced platforms in a model of electoral competition. The model highlights the existence of a class bias that favors groups of voters with higher turnout. There exists empirical evidence that wealthier economic classes present higher levels of political participation. In that situation, the model suggests that compulsory voting may be a useful mechanism to reduce the bias in favor of the higher-turnout class.

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Key words: electoral competition, asymmetric voter turnout, higher-turnout class bias, compulsory voting, voluntary voting

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I. Introduction

Political participation is the cornerstone of modern democracies. Indeed, it is through voting that citizens select their representatives and, thereby, have their interests upheld in the policymaking arena. Yet, due either to legal impediments or to personal choice, citizens' participation in elections has been limited even in traditional democracies. In the United States, for instance, there were strong legal restrictions to voting until very recently. Only those who paid poll taxes and were able to pass literacy tests could vote, excluding not just the very poor classes, but also impeding black people from voting, since the tests were typically very difficult for them (Husted and Kenny 1997). It was only in the 1960's that such restrictions were banned in the American states, allowing for an increased political participation. In spite of the enlarged legal access, political participation in the U.S. has remained low, to the point where "Bill Clinton was, for example, elected to the White House in the 1996 U.S. presidential election with the support of less than 25% of the voting age population" (Jakee and Sun 2006).

Developing democracies have a similar history of limited participation. In Brazil, for example, until recently, significant portions of the population were legally excluded from the political scene. The vote franchise was extended to women only in 1934[1], while the illiterate's suffrage was only established in the Federal Constitution of 1988. However, there are still several practical impediments to voting for the very poor citizens and residents living in deprived locations, such as displacement costs. According to the United Nations Development Program (UNDP 2005), during the period 1990-2002 only 75.9% of the voting population indeed voted, in spite of the fact that voting is mandatory in the country. Moreover, only 54.6% of the voting population cast valid votes.

In view of the low electoral participation, the academic literature and practice as well have suggested creating higher-powered incentives to voting. In countries such as Italy and the United States, voting is a voluntary decision, but there are several "encouragement" policies for voters' participation in elections, such as subsidies to transportation and promotion of absentee voting. Moreover, in countries such as Australia and Brazil, voting is mandatory and there are sanctions

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[1] This happened many years after the granting of the right to vote to women in countries such as Germany (1918), Sweden (1919) and the United States (1920). See http://www.ipu.org/wmn-e/suffrage.htm.

for absentees, such as fines and loss of salaries for public servants. According to Commonwealth of Australia (2008) and the World Factbook (CIA 2012) there are presently 25 countries that adopt mandatory voting, including the majority of Latin American countries.[2]

A 2011 New York Times debate shows the lack of consensus when it comes to mandatory voting.[3] According to Georgetown University's professor Jason Brennan, not only voting should be voluntary, but it should also be discouraged: "The median voter is incompetent at politics. The citizens who abstain are, on average, even more incompetent. If we force everyone to vote, the electorate will become even more irrational and misinformed. The result: not only will the worse candidate on the ballot get a better shot at winning, but the candidates who make it on the ballot in the first place will be worse." (Brennan 2011). On the other hand, University of Adelaide's professor Lisa Hill argues that voting should be mandatory in order to ensure the very legitimacy of democracy: "Failure to vote is concentrated among groups already experiencing one or more forms of deprivation, namely, the poor, the unemployed, the homeless, indigenous peoples, the isolated, new citizens and the young. This transfers greater voting power to the well off and causes policies to be geared disproportionately to the interests of voters (politicians aren't stupid: they know who their customers are). The legitimacy of American democracy is thereby undermined, assuming you agree that political inequality and unrepresentativeness are bad for democracy."[4]

The lack of practical consensus on whether vote should be voluntary or compulsory reflects a theoretical indetermination. To cite only recent articles, Börgers (2004) suggests that voting creates a negative externality as an extra vote reduces the probability that the next person's vote becomes decisive. Since voters do not internalize that externality, there are already an excessive number of votes even in the voluntary equilibrium. As a consequence, voting should not be stimulated, let alone made mandatory. However, that result is based on the assumption that the electorate is split into two blocs, with respect to the preferred policy, which have the exact same expected size. When there is an asymmetry in bloc size, Krasa

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[2] The combined list includes Argentina, Australia, Belgium, Bolivia, Brazil, Chile, Costa Rica, Cyprus, Congo, the Dominican Republic, Ecuador, Egypt, Fiji, Greece, Honduras, Liechtenstein, Luxembourg, Mexico, Nauru, Panama, Paraguay, Peru, Singapore, Thailand and Uruguay.

[3] "Should voting be mandatory?" See http://www.nytimes.com/roomfordebate/2011/11/07/should-voting-in-the-us-be-mandatory-14

[4] Hill (2011).

and Polborn (2009) reach the conclusion that a voter supporting a majoritarian position imposes a positive externality on the other citizens supporting that same position, as it becomes more likely to win the elections. But then, compulsory voting may improve welfare. A similar debate appears in Lijphart (1997), who argues for the social benefits of compulsory voting, whereas Jakee and Sun (2006) argues that forcing unmotivated and uninformed citizens to vote may produce a welfare inferior outcome.

It is noteworthy that the theoretic literature has its origin in Condorcet's Jury Theorem, a property of small committee decision-making that was first highlighted by 18th century French philosopher Nicolas de Condorcet. The Jury Theorem can be simply stated as follows: "If each member of a jury is more likely to be right than wrong, then the majority of the jury, too, is more likely to be right than wrong; and the probability that the right outcome is supported by a majority of the jury is a (swiftly) increasing function of the size of the jury, converging to 1 as the size of the jury tends to infinity".[5] Therefore, the studies focus on capability of elections to select the best of two outcomes. In particular, the literature takes the political candidates platforms as given alternatives, and postulate that there is one of them that is the "right" one. Then, the theoretic models try to identify which voting rule, mandatory or voluntary voting, is more likely to aggregate voters' individual ballots into the choice of the "right" alternative.

Real world elections, however, are not about selecting one "right" alternative, but about redistributive choices that may benefit some groups in society while hurting others. As Lindert (2004, p.3) very precisely puts it "the political process […] taxes some groups and transfers to others", that is to say, it disfavors those who are taxed in order to benefit those who receive the transfers. When we consider such a redistributive approach, candidates' platforms should be an endogenous part of political competition rather than fixed and exogenously given. The objective of this note is to discuss the desirability of compulsory versus voluntary voting in such a framework in which candidates choose their political platforms in order to win elections in an endogenous political competition game where different groups of voters (the distinct social classes) may have different stands on the optimal redistributive policy.

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[5] Condorcet (1785), p. 279, apud List and Goodin (2001).

The important friction that we introduce here is that not all social classes participate in the voting process with the same intensity. Indeed, there is strong empirical evidence that more economic disadvantaged minorities tend to have lower participation rates in the electoral process. Frey (1971) presents a series of earlier studies that show clear positive correlation between income and political participation in the US. Green and Nikolaev (1999)'s study using US survey data from 1972 to 1993 confirms that participation rates generally rise monotonically with income. Borgonovi et al. (2010) show for a panel of 15 European countries that education is positively associated with voter turnout. Elkins (2000) finds that in Brazil the interest for politics increases with the education level of a citizen.

That empirically observed bias, whereby different economic classes may have distinct participation rates in elections, has not been explored in the literature, to the best knowledge of the authors. This note aims at filling that gap by explicitly modeling exogenous differential participation rates and deriving its policy consequences. Then, we review the debate on voluntary versus compulsory voting in the light of this differential participation approach.

The main findings of this article can be presented very simply. Differential participation rates translate into a distinct treatment of the different classes by the political candidates. Indeed, a class with low voter turnout is more likely to have its political preferences ignored by politicians when deciding on which platform they will present society. Then, in equilibrium, the winning platforms will more likely reflect the preferences of the higher turnout classes. If one believes that the desired policy to be implemented should take into consideration all citizens, then we find that the mandatory voting rule allows a country to reach a political-competition equilibrium closer to that desired policy.

In addition to this introduction, the present paper is structured as follows. Section II presents the basic ideas of the political economy model, and discusses its main conclusions. Section III relates our findings with the literature on the size of the government initiated with Meltzer and Richards (1981). Finally, Section IV concludes. The complete political economics model is presented in the Appendix.

II. The basic model

A. Main elements

We now model the strategic interaction among two parties and voters. The model draws heavily on Portugal and Bugarin (2008), which is based on Persson and Tabellini (2000). The main modeling hypothesis here is that parties announce their policy platforms at the outset. The announced platforms state how much of a public good the party will produce if it wins the election. Since the public good is financed by taxation, the political platform may equivalently be seen as a tax rate proposal. Society is divided into several social classes and a proportion of citizens in each class do not vote, although all citizens pay taxes. Citizens in each class have the same income, but citizens in different classes have distinct incomes. Therefore, all citizens in the same class have the same preference for the amount of public good to be provided. Voters are assumed to be sincere, so that they vote for the party that better represents their preferences; however, their preferences are influenced both by parties' political platforms and by stochastic factors that are orthogonal to the policy as well. Examples of such stochastic factors could be a sex scandal involving one of the parties' candidates, or an unexpected terrorist attack to the country. There is one national electoral district in which each voter has one vote. After the elections, each party is assigned a quantity of seats in the Legislature that corresponds to the percentage of votes it received. After the new Legislature is formed, the party that has a majority of seats implements its campaign platform: taxes are collected and the public good is provided.[6] Figure 1 presents the general form of the game. The details of the game are presented in the Appendix, where the electoral competition game is solved by backwards induction.

B. Main results

The solution to the model highlights the following properties of the equilibrium.

First, there is Downsian convergence of platforms in equilibrium, i.e., both parties announce the same platform, say the amount of public goods g^E.

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[6] The model assumes that the Legislature is composed of an odd number of seats. Therefore, one party always has a majority of seats.

Second, there is a class bias, i.e., the equilibrium platform g^E is biased towards the preferred policy of the classes with higher turnout. If the poor classes have lower turnout rates, as suggested by the empirical literature discussed earlier, then their preferences will be considered to a lesser extent in the equilibrium platform. Conversely, if the richer classes have higher turnout, then their preferred policies will be more strongly represented in the equilibrium policy.

Figure 1.The electoral competition game
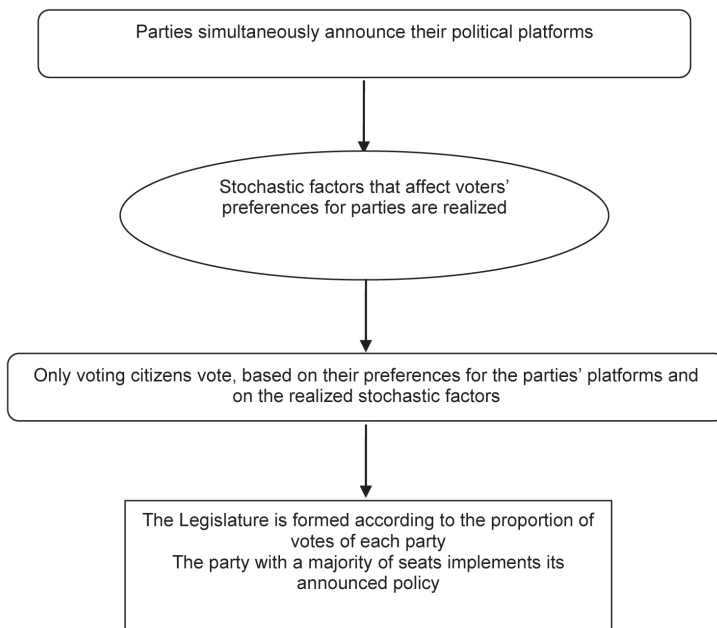
C. Application to the debate on voluntary versus mandatory voting

The debate regarding the desirability of mandatory voting has focused mainly on the analysis of electoral outcomes when there is an exogenously given optimal alternative. However, real world politics deals with decision regarding tax collection and redistribution among different groups in society.

When we consider such redistributive motive to the electoral process, the optimal policy is less clear-cut than in the exogenous optimal policy models. One natural way to define society's optimal policy in such a context is to consider the utilities of each individual citizen and then calculate the social utility by adding each individual utility in a Benthamian way, then finding its maximum, say g^*. Then, we can compare the previous equilibrium policy g^E with g^* under different electoral rules.

We first start with the voluntary voting rule. When voting is voluntary and there are different turnouts for different classes, then it is straightforward to conclude that, in general $g^E \neq g^*$. This is due to the fact that politicians do not take into consideration in their own calculations the welfare of citizens that do not vote. Therefore, g^E will be biased towards the preferences of the classes with higher turnout. Suppose, for example, that there are two classes, the rich and the poor. Suppose, furthermore, that there is a high turnout in the rich class and a small turnout in the poor class. Then, in equilibrium, $g^E < g^*$, i.e., there will be too little provision of public good and too little tax collection because that is preferred by the better-represented, richer class.

Consider now the situation where voting is mandatory and enforced, i.e., most citizens do vote. Then all classes have very high turnout and politicians take that high turnout into consideration when calculating their optimal platforms. Then, the equilibrium platform g^E will be closer to the optimal g^*. It will be exactly that optimal value if mandatory voting is completely enforced. This result is compatible with the empirical evidence in Mueller and Stratmann (2002), which finds that "high levels of democratic participation are associated with more equal distributions of income".

The conclusion to this analysis is that mandatory voting may be a welfare-improving rule, based on the Bentham's social utility criterion, if different social classes have different turnout rates under voluntary voting. The main effect of mandatory voting is to homogenize all social classes in the politicians' perspectives, making all citizens equally important, thereby maximizing aggregate utility.

III. The optimal size of government

Meltzer and Richards (1981) is one of the first articles to present a clear explanation for the growth in the size of the welfare state during the late 19th and the 20th century in OECD democracies. The main idea is a rather simple application of

the median voter theorem coupled with the progressive extension of suffrage. Indeed, throughout the past two centuries the consolidation of democracy was associated with higher contingents of citizens receiving the franchise. The new voters typically came from less favored classes, with, on average, lower incomes than the previous voting classes. Therefore, the income of the new median voter lowered. The new median voter, naturally, favored higher government social programs than before and electoral competition completed the picture, fostering higher investments on social programs.

Lindert (2004) presents a very careful account of the factors that mostly affected the growth in the size of governments based on data involving two different periods: decennial data from 1880 to 1930 and annual data from 1962 to 1981. The 1880-1930 study highlights the role of increased democratic regimes, especially the switch from "elite democracy", where less than 40% of men were entitled to vote, to full democracy. When countries moved from elite to full democracy there was a clear increase in social spending. The 1962-1981 study highlights the role of political participation. It was, indeed, in countries where voter turnout was higher that there were higher increases in social spending.

Mueller and Stratmann (2002) used a dataset containing economic and electoral information on 76 countries from 1960 to 1990 and also found evidence that "high participation rates are related to larger government sectors".

Chong and Olivera (2005) develop an empirical cross-country analysis for 91 countries during the period 1960-2000 showing that compulsory voting, when enforced strictly, reduces inequality.

Both the Meltzer and Richards (1981) and the Lindert (2004) studies call attention to the role of the increased franchise in order to generate a more social-welfare biased government. However, like our theoretic study, Lindert (2004) stresses the role of political participation. It is clear that just having the right to vote does not immediately imply stronger political representation. According to the Pew Research Center, the white voter turnout rate was 64.2%, whereas the black voter turnout was 55.1% in the 1988 U.S. Presidential election. Furthermore, Chong and Olivera (2005) stress the fact that compulsory voting only reduces inequality when it is strictly enforced.

These results reinforce the point on the possible superiority of strictly enforced mandatory voting in order to empower weaker social classes. Note that this instrument may only be really essential during a limited period of time. Indeed, as less politically active classes become more aware of their political strength, as a result of mandatory voting, the rewards to political participation becomes clearer,

which stimulates turnout. Therefore, the mandatory rule may become irrelevant in the long run.

Furthermore, such a mechanism may be especially appealing in countries with high inequality, such as Latin America, as suggested by Chong and Olivera (2005) or with high population heterogeneity, where social classes differences may be more accentuated, such as immigrant countries. It may be no coincidence that large immigrant countries such as Brazil and Australia opted for mandatory voting, thereby circumventing the asymmetric turnout phenomenon. The United States of America is also a large immigrant country, but it chose to maintain voluntary voting. It comes at no surprise that there is so little voting turnout in the country.

IV. Conclusion

The present article brings a new light to the theoretic debate on the voluntary versus compulsory voting dilemma by focusing on an important friction of real world elections: politics aim at redistributing resources between social groups. Therefore, elections are mechanisms to aggregate somewhat opposing preferences. Furthermore, the empirical evidence suggests that different social groups tend to have distinct rates of voter turnout. More precisely, there is evidence that the poorer, less educated social classes are also the ones with lower political participation. When these two elements are included in a model of electoral competition, we find that voluntary voting creates a bias in the equilibrium political platform chosen by the candidates. This bias favors the classes that have higher voter turnout.

As a consequence, if one believes that the optimal policy is the one that maximizes all citizens' utilities aggregated in a Benthamite fashion, one must conclude that compulsory voting is a superior electoral rule, as suggested by Lijphart (1997) and others.

This article aimed at presenting the simplest possible modeling of the effect of differential political participation on the competitive equilibrium platforms. The base model can be easily extended in several different ways.

First, interest lobby groups can be introduced in a very simple way. Lobbyists can contribute to parties' electoral campaigns and parties can use lobbyists' contributions in order to influence voters and win elections. Such a friction would introduce an additional bias in the equilibrium platform, towards the preferred policies of interest groups. Suppose interest groups are also the rich classes, which are also the ones with higher voter turnout. Then the voluntary voting rules bring

about two reinforcing biases towards the policy preferred by the rich citizens. In that case, although the mandatory voting rule does not offset the interest group bias, it counterbalances it by reducing the higher turnout class bias.

Second, parties can be made more distinct by including a political ideology to their utility function, in addition to their goal of winning the elections. Voters may also have *ex-ante* political biases towards one or the other party, as discussed, for example, in Ferejohn (1986), Bugarin (1999) and Bugarin (2003). In that case there will be full party differentiation, interest groups will actively participate in the electoral process by contributing to one or the other party and voters will see divergent platforms in equilibrium. However, the class bias will remain an important equilibrium result of the model, suggesting again a superiority of compulsory over voluntary voting.

Appendix: The political economy model

A. Citizens and social classes

There is a continuum of unit mass of agents, $W=[0,1]$. Each agent belongs to one of three social classes according to her income. The upper class R (for *rich*) is composed of agents with high-income y^R; the middle class M is formed by agents of average income y^M; finally, the lower class P (for *poor*) encloses agents with low income y^P. Thus, $y^R > y^M > y^P$.

A social class J, $J=R, M, P$, has mass α'^J of agents that vote and mass ε^J of nonvoters. Thus, part of society, in whichever social class, will not vote, although every citizen pays taxes. The total mass of class J is $\alpha^J = \alpha'^J + \varepsilon^J$ and the parameters α'^J and ε^J satisfy the unit mass equality below, where $\varepsilon = \sum_J \varepsilon^J$ represents the part of society that does not vote, and $\alpha' = \sum_J \alpha'^J$ is the part of society that votes.

$$\sum_J \alpha^J = \sum_J (\varepsilon^J + \alpha'^J) = \varepsilon + \alpha' = 1. \tag{A1}$$

B. Parties and taxation

There are two parties $P = A, B$, which compete by announcing the level of production of a *per capita* public good g that will be produced if the party obtains a majority of seats in the Legislature. Therefore, this is a model of pre-electoral politics *à la* Downs, where a party announces a political platform –the amount of *per capita* public good– and implements it if it wins a plurality of seats in the Legislature.

   The public good's provision is financed by an income tax collected according to the tax rate τ, common to all agents. All tax-collected resources are used for the public good's provision. Then the government budget constraint is given by the equation below, where $\sum_J (\varepsilon^J + \alpha'^J) y^J = \sum_J \alpha^J y^J = y$ represents the average income of all citizens.

$$\tau \sum_J (\varepsilon^J + \alpha'^J) y^J = \tau y = g. \tag{A2}$$

C. Voter's pragmatic utility

A voter's utility has two components: a pragmatic component and an ideological one.[7] The pragmatic or *economic* part of the utility represents the voter's decisions as an economic agent, and depends on the consumption of a private good, as well as the consumption of the public good provided by the government. Suppose platform g wins the election. Then the public good consumption of an agent from social class J is and his economic decision is to choose the level of private consumption c^J that solves the following maximization problem:

$$\max_{c^J} c^J + H(g)$$
$$\text{s.t. } c^J \leq (1 - \tau) y^J. \tag{A3}$$

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[7] This is the most general way of characterizing an economic agent who also has political concerns. For more on this topic, see Ferejohn (1986), Bugarin (1999) and Bugarin (2003).

The agents' private consumption is bounded above by his income, net of taxes, according to the budget constraint. Function H, assumed strictly increasing and strictly concave, models the utility of public good's consumption. The solution to the above problem yields the level of the utility's pragmatic part of a voter in class J as a function of the policy g.

$$W^J(g) = (y - g)\frac{y^J}{y} + H(g). \tag{A4}$$

Thus, each class has its own preferred amount of the public good provision. These optimal policies are obtained by maximizing each class' utility function and are presented below.

$$g^{*J} = (H')^{-1}\left(\frac{y^J}{y}\right). \tag{A5}$$

D. Social welfare maximizing provision of public goods

We calculate the socially optimal policy g^* by maximizing the Benthamite social welfare function $W^S(g)$, which consists of the sum of all individual utilities.

$$W^S(g) = \sum_{J=P,M,R} \alpha^J W^J(g) = (y - g) + H(g). \tag{A6}$$

Therefore, the social welfare maximizing policy is:

$$g^* = (H')^{-1}(1). \tag{A7}$$

Note that $g^{*R} < g^* < g^{*P}$, so that the lower income class prefers a higher provision of public good then it is socially desirable whereas the high income class prefers a lower than socially desirable public good provision.

E. Voter's ideological utility

The ideological component of a voter's utility function is given by two random variables corresponding to the voter's bias towards party B, or equivalently, party B's popularity at the time the election is held. The first random variable is common to all voters and relates to the realization of a state of nature that affects the entire population. A war, an abrupt change in international oil prices and a countrywide energy crisis are examples of such phenomena. A clear example is the popularity of the U.S. president after the terrorist attack on September 11th, 2001, which increased from 57% in February to 90% in September.[8] We model that process with a random variable δ uniformly distributed on $\left[-\frac{1}{2\psi}, \frac{1}{2\psi}\right]$. The parameter $\psi > 0$ measures the level of sensibility of society to these shocks: the lower the value of ψ, the more those shocks may affect society.

The second random variable is particular to each voter i in group J and reflects his personal bias towards party σ^{iJ}. We model that bias as a random variable uniformly distributed on $\left[-\frac{1}{2\phi}, \frac{1}{2\phi}\right]$. Hence, the greater the parameter ϕ, the more homogeneous class J is. This random variable reflects issues that may affect each individual in a different manner, such as information regarding a politician previous sexual behavior, use of drugs, attitudes that have racial content, etc.

Therefore, if party B wins a majority of seats in the Legislature with platform g^B, voter i in the social class J derives utility:

$$W^J(g^B) + \sigma^{iJ} + \delta. \tag{A8}$$

Note that positive values for σ^{iJ} and for δ indicate a favorable bias towards party B, whereas negative values indicate a favorable bias towards party A. Also note that the realization of the global random variable can be favorable to party B, whereas the realization of the individual-specific random variable can favor party A, and vice-versa.

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[8] See "Poll Analyses", Section "Gallup Poll News Service", The Gallup Organization, http:/www. gallup.com, 09/24/2001.

It is important to stress that since the ideological component of the utility function of voters is additively separable and has zero expected value, it does not affect the previous calculation of the socially optimal policy g^*.

F. Victory probability of party A

Suppose now that party P announces policy g^P, $P = A, B$. Then a voter i in class J will prefer party A to B if:

$$W^J(g^A) > W^J(g^B) + \sigma^{iJ} + \delta. \tag{A9}$$

Define, for each class J, a voter that is indifferent between the two parties, who is called the swing voter in class J. That voter corresponds to the realization σ^J of σ^{iJ} defined below.

$$\sigma^J = W^J(g^A) - W^J(g^B) - \delta. \tag{A10}$$

Therefore, the number of votes cast for party A is:

$$\pi^A = \sum_J \alpha'^J \cdot \text{Prob}\,[\sigma^{iJ} \leq \sigma^J] = \sum_J \alpha'^J \left[\sigma^J + \tfrac{1}{2\phi}\right]\phi = \sum_J \alpha'^J \sigma^J \phi + \tfrac{\alpha'}{2}. \tag{A11}$$

Define $W'(g^A) = \sum_J \alpha'^J W^J(g^A)$ and $W'(g^B) = \sum_J \alpha'^J W^J(g^B)$. Then, the probability of party A winning a plurality of seats is:

$$p^A = \text{Prob}\left[\pi^A \geq \tfrac{\alpha'}{2}\right] = \text{Prob}\left[\delta \leq \tfrac{1}{\alpha'}[W'(g^A) - W'(g^B)]\right]. \tag{A12}$$

Equivalently,

$$p^A = \frac{1}{2} + \frac{\psi}{\alpha'} [W'(g^A) - W'(g^B)]. \tag{A13}$$

By symmetry, the probability of party B winning a majority of seats is given by:

$$p^B = \frac{1}{2} - \frac{\psi}{\alpha'} [W'(g^A) - W'(g^B)]. \tag{A14}$$

G. The announced platforms: the effect of limited political participation

Parties aim to maximize the probability of obtaining a majority of seats in the Legislature, which corresponds to maximizing the probability of earning a majority of votes. When parties decide which platforms to announce, they play with each other a static game for platform announcement. This section derives the platforms parties will announce in the (dominant strategy) Nash equilibrium of that static game.

Party A solves the following optimization program:

$$\max_{g^A} p^A(g^A, g^B) = \frac{1}{2} + \frac{\psi}{\alpha'} [W'(g^A) - W'(g^B)] \tag{A15}$$

s.t. $0 \leq g^A \leq y$.

The restriction states that a *per capita* public good cannot be greater than the average value of available resources in the economy. The solution to that problem can be interpreted as party A's reaction curve to party B's strategy. Party B solves a symmetric problem. When parties maximize their probabilities of obtaining a majority of seats in the Legislature, they converge to the same platform given by:

$$g^E = (H')^{-1} \left(\frac{y'}{y} \right), \tag{A16}$$

where the income level $y' = \frac{\sum_J \alpha'^J y^J}{\sum_J \alpha'^J} = \frac{\sum_J \alpha'^J y^J}{\alpha'}$ corresponds to a linear convex combination of each class' income weighted only by the number of citizens who effectively vote in each class. Therefore, the higher the number of effective voters in a class, the closest the equilibrium platform will be from that class' preferred policy.

The equilibrium platform g^E may be greater or smaller than the socially optimal policy g^*. In the specific case where the percentage of voters in each social class is equal, the platform g^E equals the socially optimal one. Indeed, if factor μ represents the proportion of voters in each social class of size α^J, then $y' = \frac{\Sigma_J \mu \alpha^J y^J}{\Sigma_J \mu \alpha^J} = \frac{\Sigma_J \alpha^J y^J}{\Sigma_J \alpha^J} = \Sigma_J \alpha^J y^J = y$. In particular, if voting is compulsory and strictly enforced, the socially optimal policy is the equilibrium platform.

However, in general, the greater the proportion of the population of a given social class J that votes, the more the preferences of that class, y^J, affect the choice of g^E. If, for instance, only the upper class has voting franchise, even when part of it does not vote, only its income influences the average income y', so that g^E is small and coincides with the upper class optimal public good provision, g^{*R}. On the other hand, if only the lower class has voting franchise, g^E is high and coinciding with the optimal policy for the poor class, g^{*P}. Any other combination of voters actually voting in the three different classes corresponds to a platform in the interval $[\,g^{*R}, g^{*P}]$.

This result explains the observed pattern of increasing government expenditure during most of the 20th century documented in Person and Tabellini (2000) and in Lindert (2004), among others. Indeed, the evolution of democratic societies has allowed the participation of the majority of the population in the suffrage. We have moved from societies where only the wealthiest class had voting rights (which Lindert 2004 call "elite democracies") in the past to modern societies where the middle and poor classes participate in the electoral process. This has promoted a reduction in the voters' average income, represented by variable , generating, in consequence, an increase in the equilibrium public good provision, resulting in higher government expenditure. However, wherever voting remained voluntary, the class bias that we found in our model persisted.

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