

Political Institutions, Voter Turnout and Policy Outcomes

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Abstract

We question whether the impact of constitutions on economic outcomes (Persson and Tabellini, 2004) is direct. We show that voter turnout is a channel through which forms of government affect economic policies. We provide evidence of the existence of two relationships: the first links constitutions to voter turnout; the second connects voter turnout to policy outcomes. Presidential regimes are found to induce less voter participation in national elections. We then analyze the impact of constitutional variables and voter participation in shaping fiscal policies. Forms of governments lose their explanatory power once participation is accounted for. Higher participation induces an increase in government expenditure, total revenues and welfare state spending. We conclude that forms of government affect policy outcomes through electoral participation.

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1 Introduction

The impact of political institutions on policy outcomes has gained much attention in the literature over the last years. Theoretical research has shown how forms of government and electoral rules shape fiscal policies. Lizzeri and Persico (2001), Persson and Tabellini (1999, 2000), and Milesi-Ferretti, Perotti and Rostagno (2002) analyze the impact of a majoritarian rule versus a proportional one in affecting government expenditure. Majoritarian rules, which mainly focus on voters in marginal electoral districts, are found to produce smaller government expenditure and more targeted programs¹. Similarly, presidential regimes are found to induce less public good provision. Persson, Roland and Tabellini (1997) classify the form of government on the basis of the presence of a vote of confidence. Parliamentary regimes are found to be characterized by larger government expenditure. The vote of confidence for the executive power leads to legislative cohesion in parliamentary regimes. This ultimately induces a broader and more generous public good provision.

Persson and Tabellini (2003, 2004) empirically examine the economic impact of constitutions on a large set of democracies. They find that political institutions have a significant impact on policy outcomes. In particular, a majoritarian electoral rule induces smaller government spending and smaller welfare programs relatively to a proportional rule. On the other hand, presidential regimes prompts smaller public good provision than parliamentary regimes. Taking the work of Persson and Tabellini (2003, 2004) as our starting point, we question whether the impact of constitutions on economic outcomes is direct. We provide evidence that institutions shape voter participation at general elections and that voter turnout ultimately affects economic outcomes. The novelty of this work stands in the introduction of citizens' political participation, rather than politicians' incentives, as the driving force connecting institutions to policy outcomes. We show that the way forms of government influence policies is mediated by voter participation. More specifically, we provide evidence that presidential regimes have a negative impact on electoral participation. On the other hand, voter turnout positively and significantly affects total government expenditure, welfare state and budget surplus.

We provide evidence that voter turnout is a channel through which forms of government affect economic policies. We demonstrate the existence of two relationships, the first connecting political institutions to voter turnout and the second linking voter turnout to economic policies.

From an empirical point of view, the first link has been widely studied with regards to the effects of the electoral rule on turnout decisions. Among others, Blais (2000) shows that turnout is higher in proportional systems. Proportional rules are usually associated with a larger number of parties, more competitive elections and are perceived as fairer by voters.

To the best of our knowledge, there is no study of the effects of political regimes on turnout. The only exception is the work by Powell (1982). He finds lower turnout rates in countries with a presidential regime *and* a majoritarian system; the author suggests this might be due to a weaker party system and less mobilizing voting laws.

We empirically show that forms of government do significantly affect turnout rates. Presidential regimes induce less participation relative to parliamentary systems. This result is robust even when we relax the conditional mean independence and we instrument government regimes.

¹In a recent paper, Gagliarducci, Nannicini and Naticchioni (2008) test the effect of the electoral rule on politicians' behavior using Italian micro data. The authors show that, in line with the theory, politicians elected through a majoritarian rule are more likely to put forward targeted and narrow programs than proportional representatives.

Regarding the second relationship between voter turnout and policy outcomes, many studies have analyzed related topics. Husted and Kenny (1997) find that the abolition of poll taxes and literacy tests in the US had a positive impact on welfare state. Further, as the franchise was extended to individuals from the lower part of the income distribution, government spending increased in Europe, as shown by Aidt, Dutta, and Loukoianova (2005). A similar argument might be applied to voter participation in presence of universal franchise. Among others, Blais (2000) and Wolfinger and Rosenstone (1980) show that the median income of electors is higher than the median income of the actual voting age population. Lijphart (1997) assesses that such a bias in voter representation might eventually lead to a bias in policy choices. In line with this reasoning, Mueller and Stratmann (2003) analyze the effects of turnout rate on policy outcomes. Voter participation is found to have a negative effect on income inequality and a positive impact on the size of government.

Unlike Mueller and Stratmann, however, we focus on the relationship between electoral participation and form of government in influencing a number of economic variables such as total government, revenues, welfare state and budget surplus. The instrumental variable analysis shows that higher turnout rates are associated to larger government spending, higher government revenues and more generous welfare states.

We conclude that forms of government affect electors' behavior in terms of turnout at elections. This in turn has an impact on economic policies.

The rest of the paper is organized as follows: section 2 summarizes Persson and Tabellini's results and explains how this comment extends their analysis. In sections 3 to 6, we empirically investigate the interaction of voter turnout with constitutional variables and its role in explaining fiscal policies. Finally, in section 7 we summarize our results and conclude the paper.

2 Data

We use two main data sources. The first data source is the cross-country data set used by Persson and Tabellini (2004). The data set contains information on 85 countries classified as democracies in the 1990s. Observation units are average values over the period 1990-1998. The quality of a democracy is defined on the basis of the Gastil Index of Political and Civil Rights produced by Freedom House. The Gastil Index takes values from 1 to 7, where lower values correspond to better democracies. Both free and semi-free democracies are included in the data set, which corresponds to a Gastil Index less or equal to 5.

We focus on two aspects of constitutions, namely the electoral rule and the form of government. We apply two measures for the electoral rule, a binary variable, and a continuous one. First, countries in which the lower house is elected through a plurality rule are classified as majoritarian (*Majoritarian*=1). Therefore, non-majoritarian electoral rules include both mixed and proportional systems. District magnitude constitutes the second, continuous measure of the electoral rule. District magnitude captures the size of electoral districts in terms of the number of seats assigned to each district. It takes values between 0 and 1, where 1 represents single-member districts, as in the UK system, and 0 corresponds to systems characterized by one single national district, as the Israeli system.

As for the form of government, a country is coded as presidential if the government is not subject to a vote of confidence by the Parliament (*Presidential*=1). If a vote of confidence is present, the country is defined as parliamentary. The US and Argentina, for example, are labelled as presidential regimes. France, however, is classified as a parliamentary regime, given that its

executive power is subject to the vote of confidence from the Parliament.

About 58% of the parliamentary regimes in our sample have a proportional/mixed rule, while about 67% of presidential regimes have a proportional/mixed rule. This heterogeneity between forms of government and electoral rules allows to disentangle the distinctive effects of the two institutions on voter participation.

The second data source is the Institute of Democracy and Electoral Assistance (IDEA). The IDEA database contains information on political participation for national presidential and parliamentary elections since 1945. Voter participation is defined as the ratio of votes at national elections to the voting age population. In presidential regimes, voter turnout is measured as the average between National Presidential and Parliamentary elections. We focus on the ratio between the number of votes at national elections and the voting age instead of using the ratio with the number of registered voters, because registration in itself acts as a form of political participation.

Voter participation varies greatly across the 85 countries considered over the 1990-1998 period, with an overall average of 67%. Senegal, Guatemala, Colombia, Zambia, Pakistan and Switzerland have the lowest voting turnout, ranging from 24.19% to 37.67%; while Italy, Uruguay and Malta register the highest voter turnout rates, between 90.18% and 96.43%².

Many empirical studies have analyzed the impact of the electoral rule on voter participation: turnout is usually found to be lower in countries with a plurality rule. Table 1 reports the difference in participation between Majoritarian and Proportional/Mixed systems. In line with previous literature, participation at general elections is about 6% higher in Proportional regimes relative to Majoritarian ones. But do forms of government have an impact on voter turnout as well? The lower panel of Table 1 compares voter participation in presidential and parliamentary systems. Participation in elections is higher in parliamentary systems than in presidential systems and the difference is statistically different from zero. The average turnout in presidential systems amounts to 60.3% against a much higher rate of 71.1% in parliamentary systems.

Insert Table 1 here

These stylized facts are the starting point of our analysis: from Table 1 it appears that there exists a correlation between voter turnout and political institutions. In the next section and the following one, we will provide evidence that constitutions do shape voter turnout.

3 Do constitutions shape voter turnout?

3.1 Constitutions and voter turnout: OLS analysis

The focus of this section is to address two main issues: firstly, to analyze the relationship between constitutions and voter turnout and, secondly, to identify the exogenous instruments for electoral participation required to assess its impact on economic policies. Our dependent variable, therefore, is voter participation at national elections.

We focus on two sets of determinants: constitutional variables, as expressed by the form of government and the electoral rule (*Presidential*, *Majoritarian*) and socioeconomic variables.

$$Turnout_i = \alpha_0 + \alpha_1 majoritarian_i + \alpha_2 presidential_i + \beta X_i + \varepsilon_i \quad (1)$$

²See Table A1.

where $majoritarian_i$ is the dummy measuring the electoral rule, $presidential_i$ is the binary variable measuring the form of government, and \mathbf{X}_i represents the vector of controls. We are mainly interested in the effects of constitutions on electoral participation, *i.e.* in the sign and the statistical significance of the coefficients α_1 and α_2 .

Constitutions and electoral laws might regulate voting, in some cases by introducing sanctions for those who abstain. We consider two variables measuring electoral voting laws: compulsory voting laws and a measure of the easiness of electoral registration. Among others, Powell (1982), Jackman (1987) and Blais (2000) show that voting laws are indeed effective in inducing higher voter participation. We include a dummy variable, *compulsory voting*, which takes value 1 in presence of compulsory voting laws and 0 otherwise. We also measure the extent to which the state takes up the responsibility for voter registration. We create a dummy variable, *voter registration*, which takes value 1 if voter registration is not compulsory and it solely relies on the initiative of voters, and 0 otherwise. Finally, we consider a further measure of constitutions: the distance between voters and candidates in national elections. To this end, we include the percentage of legislators elected in national districts rather than in subnational districts. Our prior is that the higher the share of candidates elected at national districts, the higher the distance between voters and candidates, and therefore the lower the electoral participation.

Education is a key variable in explaining voter turnout at a micro level. Wolfinger and Rosenstone (1980) and Blais (2000) empirically show that the propensity to vote does increase substantially with education. Therefore, we insert the country's education level measured by the total enrollment in primary and secondary education as a percentage of the relevant age group in the population.

The log of total population is included in order to proxy the weight of one single vote whereby the larger the population the lower the weight. In addition, we control for the presence of a federal structure, real GDP per capita, the Gini index of income distribution, whether the country is an OECD member and the quality of democracy (*Gastil Index*). Alesina and La Ferrara (2000) provide evidence that participation in social activities is lower in more racially or ethnically fragmented communities. To this end, we control for the degree of ethno-linguistic fractionalization of the country as well. The index of ethno-linguistic fractionalization (*Avelf*) takes values between 0 (homogeneous) and 1 (strongly fractionalized). Hall and Jones (1999), Acemoglu, Johnson and Robinson (2001) and Acemoglu (2005) among others, show that colonial history is relevant for the institutional setup of a country. Therefore, we control for geographical variables (Latin America, Asia, Africa) and colonial variables (English colonies, Spanish-Portuguese colonies and other colonies).

The underlying assumption of this section is that institutions and voter turnout are conditional mean independent. Under this assumption, the OLS estimator is unbiased and consistent for eq.(1). We will relax this assumption, allowing for an Heckman correction and an instrumental variable analysis in the next section.

Insert Table 2 here

Column 1 in Table 2 shows the baseline specification where voter turnout is regressed on the constitutional variables and the set of socio-economic variables.

The electoral rule does not significantly affect participation rates, although the sign of the estimated coefficient on the electoral system is as expected. Presidential regimes negatively affect voter turnout rates at the 5% significance level. The form of government seems to negatively shape voter turnout: electoral participation in presidential regimes is 10.8% lower than electoral participation in parliamentary regimes.

Compulsory voting laws are found not to have a statistically significant impact on voter turnout. This might be due to the fact that compulsory voting laws might not be actually enforced. In line with our prior, the distance between candidates and voters has a negative impact on voter participation: the higher the share of legislators elected at national districts rather than at subnational districts the lower the turnout rate.

As expected, the higher the education level, the higher the voter turnout. The coefficient on the quality of democracy (*Gastil Index*) is not statistically significant but it has the expected negative sign: lower values of the *Gastil Index* are associated to better democracies. Real per capita GDP does not affect voter turnout significantly. When analyzed at a micro level, participation and income are usually found to be positively correlated. However, in cross-country studies such relationship becomes less clear, as noted by Mueller and Stratmann (2003).

The conclusion we draw from this baseline analysis is that, after controlling for socio-economic variables, forms of government affect voter participation. On the other hand, the electoral rule as defined by the dummy variable *majoritarian* has no role in explaining turnout in contrast with our prior. However, as we show later, this result is very likely to be driven by the way this dummy is defined.

In the second column, we add geographical variables (Latin America, Asia, Africa) and colonial variables (English colonies, Spanish-Portuguese colonies and other colonies) to the specification. Presidential regimes and the distance between voters and candidates are still associated with lower electoral participation, while majoritarian rules have no impact on turnout. Besides, countries which are more ethnolinguistically homogenous, *i.e.* those having a lower Avelf index, are associated to higher voter turnout: as pointed out by Blais (2000), voting acts as a way of "*expressing one's sense of belonging to the larger community*" (p. 52).

In the third column, we insert the registration variable as an alternative measure of voting laws. The registration dummy assesses the extent to which the state takes up the responsibility for voter registration. It takes value 1 if voter registration is not compulsory and it solely relies on the initiative of voters, and 0 otherwise. This variable capture the incentive of voters to register (whether registration is compulsory or not) and the level of difficulty of registering, *i.e.* whether voters have to explicitly register or whether the voter registers are directly compiled by the government. We expect that this voting law should have a negative impact on voter turnout. The third column indeed shows that it is indeed the case. Voter registration has a negative and significant impact on voter turnout. All the other results hold, even when we control for colonies and continents (column 4).

In column 5 and 6 we investigate the role of electoral rules in influencing voter turnout by adopting the continuous measure of district magnitude, *magnitude*, instead of the binary variable *majoritarian*. The new result regards indeed the electoral rule, which is now relatively effective in influencing participation once we control for continents and colonies (column 6): the higher the number of seats in the district, the higher the voter participation. This result is in line with the political science literature, as proportional systems are highly correlated with district magnitude. On the other hand, presidential regimes still negatively affect voter turnout at 1% level, while the estimated coefficient of voter registration is statistically significant at 5%.

3.2 Constitutions and voter turnout: instrumental variable analysis

Next, we generalize the link between voter turnout and constitutional variables, by relaxing the conditional mean independence assumption and allowing institutional variables to be endogenously determined. Persson and Tabellini (2003, 2004) propose as instruments for constitutional variables

the following set of variables: the date of origin of the current constitution, the age of the democracy, the distance from the equator, and the fraction of the population speaking English or any other European language. The authors argue that younger democracies and more recent constitutions are more likely to be presidential regimes. Also, English speaking countries are more likely to have a majoritarian electoral rules and a parliamentary system, while distance from the equator is negatively correlated with parliamentary regimes. Acemoglu (2005) points out a few shortcomings in the use of this set of instruments for constitutions. In particular, some concerns arise regarding the validity of the distance from the equator variable and the fraction of the population speaking English or any other European language. These variable should capture the penetration of European conquerors (Hall and Jones, 1999) and their impact in shaping the quality of institutions rather than the type of institutions. We deal with this critique by introducing a new instrument to the existing set of Persson and Tabellini’s instruments³. We create a dummy variable taking value 1 if the country has ever been a monarchy and 0 otherwise. For example, the Italian Republic, which used to be a monarchy until the referendum in 1946, is assigned value 1. We argue that the likelihood of adopting a parliamentary regime is higher if a country is or has been a monarchy. Indeed, out of 33 presidential regimes in our sample, only 4 countries have ever been a monarchy.

As the endogenous explanatory variable, *Presidential*, is binary, we can make use of the dummy endogenous variable model by Heckman (1978). In column 1 of Table 3, we report the results of the first stage regression of the two-stages Heckman estimation, where presidential system is treated as the endogenous variable. In line with our prior, monarchy has a statistically significant impact on the form of government. Countries which have ever been a monarchy are less likely to adopt a presidential form of government. Latitude and the fraction of population speaking English appear to be positively correlated with parliamentary regimes, while the fraction of population speaking any other European language has a positive and statistically significant impact on the likelihood of having a presidential regime. Column 2 presents the second stage of the Heckman estimation. The estimated coefficient of presidential regimes is negative and significant at 1%. Similarly, voter registration and the distance between voters and candidates reduce electoral participation, whereby both estimated coefficients are statistically significant at 1% level. These results hold also when we control for colonies and continents (column 3). The right hand side panel of Table 3 presents the specification with majoritarian electoral rules as the endogenous variable. However, we find no statistically significant impact of majoritarian systems on voter participation and the estimates do not differ from the previous specification, also when we control for continents and colonies.

Insert Table 3 here

The left panel of Table 3 presents the estimates from the instrumental variable analysis. Column 1 reports the first stage for the form of government variable. In line with the Heckman estimation, current and former monarchies are less likely to have a presidential form of government. Younger democracies are also correlated with presidential regimes, while Hall and Jones’s instruments are in line with Persson and Tabellini’s estimates. The year in which the constitutions was established is relevant as well. We deal with Acemoglu (2005)’s critique by showing the F-test for the joint significance of constitutional variables (year in which the constitution was set-up and age of democracies). These instruments are jointly significant at 1%. Column 2 presents the first stage for the electoral rule. Countries with higher fraction of the population speaking English are more likely to have a majoritarian rule, following the influence of British colonization. Column

³Table A2 in the Appendix shows the estimates using the set of Persson and Tabellini’s (2005) instruments.

3 presents the second stage: parliamentary regimes are more likely to be associated with higher voter participation, while proportional/mixed rules are correlated with higher electoral participation. Voter registration and distance between candidates and voters have still a negative and statistically significant impact on voter turnout. The same results hold also when we control for colonies and continents. The specification in the right hand side panel of the table includes all the covariates and the geographical and colonial history variables. Presidential regimes still negatively affect voter turnout and the estimated coefficient is higher than the OLS estimate. All the other covariates maintain their significance as in previous columns.

These results shed light on what we consider the *first* relationship between constitutions and voter turnout. The effect of forms of government on voter turnout is robust even when we relax the conditional mean independence and we instrument constitutions.

This shows that presidential regimes do induce less turnout. The impact of the electoral formula as described by the bivariate variable *majoritarian* is somehow less strong than that of the form of government. Having proved the first link, we now turn to the second one in order to understand the impact of voter turnout on economic policies.

4 Voter Turnout and Policy Outcomes

A first attempt to study the relationship between voter turnout and economic policies has been done by Mueller and Stratmann (2003). Their conclusions support our argument that electoral participation induces larger government size. Unlike Mueller and Stratmann, we are not solely interested in showing the impact of voter turnout on different measures of policy outcomes. Our idea grounds on the relation between participation and constitutions. To this end, it is crucial to study the *relationship* between constitutional variables and voter participation in affecting fiscal policies.

We investigate whether turnout can account, *inter alia*, for government expenditure, welfare state, and government budget surplus. In this section, we present the results obtained from using the cross-country data set.

Persson and Tabellini empirically show the effects of political institutions on economic policy. Majoritarian elections and presidential systems are found to negatively and significantly influence total government spending. We depart from their analysis to show that voter turnout is actually the channel through which presidential regimes affect policy outcomes.

Participation is treated as endogenous. It is indeed very likely that, in countries with more generous economic policies, citizens are more willing to turn out in order to keep their status quo. Again, good instruments must be found. Most of the determinants of voter turnout are endogenous to policy outcomes and they cannot be used as valid instruments. On the basis of the analysis conducted in Section 4, we concentrate on a set of three instruments.

Voter registration can be confidently used as instrument as there is wide agreement on their effectiveness in stimulating voter turnout.

The share of legislators elected at national district level rather than subnational electoral district does have an impact on electoral participation, as the more distant candidates and voters are, the lower participation.

Finally, the presidential dummy is included as exogenous instrument⁴. Table 4 reports the

⁴Table A3 in the Appendix shows that the impact of the form of government on policy outcomes is not significant once we control for voter turnout instrumented by the remaining two instruments. We conclude that the form of

estimation results.

Insert Table 4 here

The first stage consists of regressing participation rates on the voter registration, the presidential regime dummy and the share of legislators elected at national districts, together with all the other expenditure determinants. In the second stage, we regress fiscal policies on the fitted participation variable and on the set of control variables. The variables which we control for are: electoral rule, per capita income, trade, log of population, age of democracy, quality of democracy, colonial history, dummy variables for federal countries, OECD countries and continents, and two demographic variables measuring the age proportion of the population.

We first regress central government spending as a percentage of GDP on the electoral rule and voter turnout. Participation positively affects total government expenditure at 1% significance level. A higher participation rate has led to an increase in the size of governments in the 1990s.

In column 2, we consider another measure of government size. The dependent variable is central government revenues as percentage of GDP. Turnout does affect revenues as well and its impact is positive and significant at 5% level.

Next, we investigate the role of voter turnout in explaining central government spending on social services and welfare as a percentage of GDP. The estimated coefficient is positive, as expected, and it is significant at 5% level. This result is remarkable as it supports the idea that a higher turnout rate means a larger participation of the lower end of the income distribution, hence a larger representation of people who are more likely to benefit from more redistributive policies (Lijphart, 1997).

Interestingly, the introduction of voter participation reduces both quantitatively and qualitatively the impact of the electoral rule in influencing the size of government and welfare state, with respect to the findings by Persson and Tabellini.

Finally, we consider government surplus as the dependent variable. Keeping a specification similar to the ones implemented before, we regress budget surplus as a percentage of GDP on constitutional variables, participation rates and the set of usual controls. The electoral rule seems to play a major role in explaining budget surplus. Majoritarian systems are associated with higher budget surplus, while voter turnout has a negative impact on it.

In line with our priors, we conclude that voter turnout affects government size, measured both as government expenditure and revenues, and welfare state. These results prove the existence of the second link, connecting participation to fiscal variables. Forms of government affect policy outcomes through voter turnout.

5 Conclusions

This study shows that citizens' behavior plays a crucial role in understanding how institutions affect policy outcomes. We empirically identify two relationships. The first links political institutions, in terms of forms of government and electoral rules, to voter turnout. The second connects voter turnout and policy outcomes.

We investigate the first relationship by regressing average voter turnout over the 1990s on institutional and socioeconomic variables. Presidential regimes are found to induce less electoral

government can be used as a valid instrument for participation.

participation, once we control for all the other socioeconomic covariates. Further, this finding holds when we relax the conditional mean independence assumption and we instrument political institutions.

The second part of this paper is devoted to understand whether and in which direction political participation affects policy outcomes. Both the cross-country and panel analysis provide evidence of the positive and significant impact of voter turnout on government spending, revenues and welfare state.

We conclude that the effect of forms of government on policy outcomes as found by Persson and Tabellini (2003, 2004) is mediated by voter participation in elections.

Data Appendix

- **Voter turnout:** Voter turnout rate is defined as the ratio between the number of votes and the voting age population, which includes all citizens above the legal voting age. It is rescaled by multiplying it by 10. Voter turnout is calculated at National Presidential and Parliamentary elections. *Source:* Institute of Democracy and Electoral Assistance (IDEA), <www.idea.int>.
- **Compulsory Voting laws:** dummy variable, equal to 1 if voting has been made compulsory by law, regardless of the level of enforcement, 0 otherwise. *Source:* International Institute of Democracy and Electoral Assistance (IDEA), <www.idea.int>.
- **Voter Registration:** dummy variable, equal to 1 if voter registration is not compulsory and it relies on the initiative of voters, and 0 otherwise. *Source:* International Institute of Democracy and Electoral Assistance (IDEA), <www.idea.int>.
- **Legislators in National Districts:** percentage of legislators elected at national districts rather than subnational districts. *Source:* Seddon et al. (2001).

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Table 1
Political Institutions and Voter Turnout

Electoral Rule		
Majoritarian	Proportional/Mixed	Difference
(1)	(2)	(2)-(1)
63.355	69.179	5.824*
(33 obs.)	(52 obs.)	
Government Regime		
Presidential	Parliamentary	Difference
(1)	(2)	(4)-(3)
60.327	71.100	10.773***
(33 obs.)	(52 obs.)	

*** significant at 1%, * significant at 10%

Table 2
Determinants of Voter Turnout. OLS estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Voter Turnout</i>					
Majoritarian	0.825 [4.003]	-4.099 [5.148]	1.561 [3.833]	-2.285 [4.779]		
Presidential	-10.875 [4.871]**	-14.754 [5.716]**	-11.741 [4.559]**	-16.125 [5.300]***	-12.388 [4.657]**	-17.425 [5.447]***
Compulsory voting	4.731 [3.407]	5.987 [4.392]				
% Legislators elected in National districts	-15.683 [8.117]*	-22.202 [8.487]**	-15.684 [6.986]**	-22.038 [7.151]***	-15.772 [6.860]**	-24.574 [6.506]***
Education	0.387 [0.173]**	0.275 [0.198]	0.416 [0.167]**	0.273 [0.197]	0.397 [0.171]**	0.231 [0.183]
Gini index	-0.106 [0.231]	-0.416 [0.300]	0.110 [0.232]	-0.052 [0.295]	0.115 [0.234]	-0.175 [0.298]
Log[Population]	0.863 [1.290]	1.773 [1.617]	1.077 [1.230]	1.744 [1.593]	1.149 [1.154]	2.206 [1.465]
Log[Real GDP per capita]	-2.009 [4.124]	1.721 [5.094]	-3.078 [3.857]	0.058 [4.498]	-3.386 [3.768]	0.206 [4.503]
Ethno-linguistic fractionalization	-4.884 [9.831]	-24.351 [10.972]**	0.727 [9.140]	-18.195 [11.139]	1.816 [9.084]	-21.657 [10.723]**
Gastil Index	-1.253 [3.087]	-0.515 [3.237]	-1.087 [3.210]	-0.026 [3.363]	-1.430 [3.104]	-0.105 [3.114]
Federal	-6.264 [4.831]	-8.492 [5.264]	-5.398 [5.202]	-6.635 [5.483]	-4.625 [5.282]	-6.048 [5.091]
Voter registration			-11.403 [5.029]**	-14.684 [4.807]***	-10.153 [5.071]*	-12.498 [5.156]**
District Magnitude					-2.570 [4.613]	-10.528 [5.529]*
OECD member	-6.821 [7.453]	-4.033 [9.407]	-3.468 [7.041]	-2.370 [9.164]	-3.507 [7.161]	-0.599 [8.569]
Continents and Colonies	Excluded	Included	Excluded	Included	Excluded	Included
Observations	63	63	63	63	63	63
Adjusted R-squared	0.28	0.28	0.34	0.36	0.34	0.40

Robust standard errors in brackets.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3
Determinants of Voter turnout. Two Stage Least Squares

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Presidential</i>	<i>Majoritarian</i>	<i>Turnout</i>	<i>Presidential</i>	<i>Majoritarian</i>	<i>Turnout</i>
CON2150	-0.064 [0.118]	-0.161 [0.136]		-0.063 [0.151]	-0.583 [0.196]***	
CON5180	-0.254 [0.119]**	0.442 [0.241]*		-0.075 [0.098]	0.249 [0.150]	
CON81	-0.017 [0.139]	0.180 [0.245]		0.001 [0.129]	0.128 [0.183]	
Monarchy	-0.359 [0.144]**	-0.016 [0.151]		-0.373 [0.138]**	0.067 [0.144]	
Latitude	-1.292 [0.618]**	0.245 [0.824]		-0.578 [0.538]	1.217 [0.745]	
Age of Democracy	0.583 [0.228]**	-0.165 [0.302]		0.614 [0.234]**	0.290 [0.229]	
ENGFRAC	-0.635 [0.144]***	1.121 [0.175]***		-0.478 [0.201]**	0.461 [0.205]**	
EUFRAC	0.320 [0.148]**	-0.354 [0.225]		0.001 [0.149]	0.080 [0.177]	
Voter registration	-0.059 [0.148]	-0.001 [0.156]	-9.832 [4.881]**	-0.112 [0.122]	-0.075 [0.126]	-13.521 [4.551]***
% Legislators elected in National districts	-0.138 [0.170]	0.015 [0.270]	-15.280 [6.854]**	-0.424 [0.128]***	-0.087 [0.193]	-22.122 [6.502]***
Majoritarian			-6.493 [3.894]*			-9.236 [4.126]**
Presidential			-16.119 [6.535]**			-15.665 [7.491]**
Continents and colonies	Excluded	Excluded	Excluded	Included	Included	Included
F-test on constitution variables	5.14 [0.002]	2.42 [0.063]		2.83 [0.038]	3.64 [0.013]	
F-test on all excluded instruments	9.41 [0.000]	10.36 [0.000]		3.14 [0.008]	7.12 [0.000]	
Hansen J statistic			3.889 [0.69175]			3.849 [0.69716]
Shea Partial R2 – PRES			0.4556			0.4509
Shea Partial R2 – MAJ			0.3892			0.5137
Observations	63	63	63	63	63	63

Robust standard errors in parentheses. All regressions include: Education, Gini Index, Gastil Index, log(Population), log(Real GDP per capita), Ethno linguistic fractionalization, Federal dummy, OECD member. F-test on constitutional variables refers to the test that CON2150, CON5180, CON81 and Age of democracy are equal to zero. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Policy outcomes and voter turnout: IV estimates

	[1]	[2]	[3]	[4]
	Central Government Spending	Central Government Revenues	Budget Surplus	Welfare Spending
Majoritarian	-1.350 [2.477]	-0.093 [2.269]	2.136 (0.851)**	-1.102 (1.167)
Voter Turnout	0.546 [0.196]***	0.446 [0.235]*	-0.139 (0.061)**	0.243 (0.101)**
F-test on all excluded instruments	3.49 [0.022]	3.06 [0.036]	2.61 [0.062]	2.58 [0.065]
Shea Partial R2	0.1249	0.1265	0.1255	0.1242
Hansen J statistic	0.018 [0.991]	0.339 [0.844]	3.313 [0.191]	0.385 [0.825]
Observations	74	71	68	65

All regressions include log(population), Gastil Index, OECD, Federal, prop65, prop1564, trade, log(Real GDP per capita), age of democracy. Excluded instruments: voter registration, presidential regimes, % Legislators elected at national districts. Robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A1

Voter Turnout by country.

Country	Voter Turnout	Country	Voter Turnout
Argentina	81.02	Malawi	68.16
Australia	82.45	Malaysia	63.33
Austria	75.88	Malta	96.43
Bahamas	68.19	Mauritius	79.77
Bangladesh	63.05	Nicaragua	75.8
Barbados	66.72	Norway	75.69
Belarus	60.28	Pakistan	37.48
Belgium	84.15	Papua N. Guinea	84.9
Belize	67.25	Mexico	59.03
Bolivia	57.28	Namibia	63
Botswana	44.63	Nepal	83.32
Brazil	79.07	Netherlands	72.66
Bulgaria	73.01	New Zealand	80.42
Canada	60.47	Paraguay	49.4
Chile	78.84	Peru	61.82
Colombia	33.83	Philippines	66.93
Costa Rica	81	Poland	53.84
Cyprus	79.72	Portugal	75.97
Czech republic	82.78	Romania	77.5
Denmark	81.76	Russia	62.72
Dominican Republic	48.9	Senegal	24.19
Ecuador	65.94	Singapore	54.18
El Salvador	54.95	Slovak Republic	82.9
Estonia	56.02	South Africa	85.53
Fiji	59.86	South Korea	79.22
Finland	74.82	Spain	79
France	64.47	Sri Lanka	71.32
Gambia	61.55	St. Vincent & G	75.16
Germany	73.6	Sweden	81.36
Ghana	60.15	Switzerland	37.67
Greece	84.75	Taiwan	70.9
Guatemala	31.34	Thailand	62.5
Honduras	65.8	Trinidad & Tobago	68.85
Hungary	68.13	Turkey	79.05
Iceland	87.82	USA	45.23
India	61.81	Uganda	56.67
Ireland	63.05	UK	72.38
Israel	83.7	Ukraine	69.89
Italy	90.18	Uruguay	96.11
Jamaica	46.72	Venezuela	47.04
Japan	61.46	Zambia	34.13
Latvia	60.31	Zimbabwe	39.43
Luxembourg	60.52		

Table A2

Determinants of Voter turnout. Instrumental Variable analysis.

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Voter turnout</i>					
Majoritarian	0.474 [3.692]	-1.882 [4.325]	-2.382 [4.915]	-6.948 [5.468]	-4.853 [4.077]	-8.931 [4.167]**
Presidential	-14.095 [5.458]***	-14.999 [6.999]**	-12.464 [4.099]***	-16.735 [5.017]***	-15.510 [7.139]**	-9.312 [9.506]
Voter registration	-11.408 [4.274]***	-14.998 [4.646]***	-9.680 [4.525]**	-12.796 [4.672]***	-10.228 [4.882]**	-12.941 [4.557]***
% Legislators elected in National districts	-15.460 [5.958]***	-22.082 [6.390]***	-15.954 [5.924]***	-22.317 [6.344]***	-15.389 [6.575]**	-19.805 [6.813]***
Education	0.397 [0.135]***	0.277 [0.140]**	0.424 [0.131]***	0.277 [0.137]**	0.379 [0.174]**	0.213 [0.161]
Gini Index	0.170 [0.223]	-0.065 [0.258]	0.107 [0.202]	-0.063 [0.250]	0.199 [0.251]	-0.091 [0.252]
Log[Population]	1.238 [1.152]	1.694 [1.371]	0.712 [1.168]	1.465 [1.362]	1.329 [1.141]	2.585 [1.420]*
Log[Real GDP per capita]	-2.655 [3.584]	-0.098 [3.691]	-2.823 [3.501]	0.408 [3.598]	-4.268 [3.946]	1.413 [4.219]
Ethno-linguistic fractionalization	1.912 [7.673]	-19.103 [10.399]*	1.110 [7.440]	-18.216 [9.535]*	2.823 [8.340]	-19.965 [9.785]**
Gastil Index	-1.338 [2.507]	0.053 [2.589]	-0.462 [2.534]	0.521 [2.589]	-1.928 [2.956]	-2.062 [2.773]
Federal	-4.948 [4.915]	-6.776 [4.901]	-5.396 [4.852]	-6.925 [4.859]	-4.088 [4.813]	-9.182 [5.337]*
OECD member	-4.537 [5.884]	-2.305 [6.765]	-3.011 [5.629]	-1.707 [6.705]	-3.083 [6.646]	-3.584 [8.675]
Continents and Colonies	Excluded	Included	Excluded	Included	Excluded	Included
Endogenous selection	Presidential	Presidential	Majoritarian	Majoritarian	Presidential/ Majoritarian	Presidential/ Majoritarian
Method of Estimation	Heckman Two-step	Heckman Two-step	Heckman Two-step	Heckman Two-step	2SLS	2SLS
Rho	0.30	-0.13	0.37	0.42		
Hansen J statistic					5.069	1.469
P-value					0.535	0.917
Observations	63	63	63	63	63	63

Excluded instruments: fraction of population speaking English (engfrac), fraction of the population speaking any other European language (eurfrac), latitude, age of the democracy, date of origin of the current constitution (con81, con5180, con2150). Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A3: Policy outcomes and voter turnout: IV estimates
Presidential regimes as independent variable

	(1) Central Government Spending	(2) Central Government Revenues	(3) Budget Surplus	(4) Welfare Spending
Voter Turnout	0.538 (0.359)	0.338 (0.492)	-0.245 (0.085)***	0.298 (0.138)**
Presidential	-0.153 (5.633)	-2.171 (7.405)	-2.236 (1.512)	1.263 (2.428)
Majoritarian	-1.423 (3.912)	-1.080 (4.244)	1.187 (1.353)	-0.564 (1.776)
Hansen J statistic	0.016	0.292	0.735	0.001
P-value	[0.890]	[0.589]	[0.391]	[0.976]
Observations	74	71	68	65

All regressions include log(population), Gastil Index, OECD, Federal, prop65, prop1564, trade, log(Real GDP per capita), age of democracy. Excluded instruments: voter registration, % Legislators elected at national districts. Robust standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%