Political Institutions, Voter Turnout and Policy Outcomes

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Abstract

The impact of political institutions on policy outcomes has gained much attention in the literature over the last years. The aim of this paper is to test whether the impact of constitutions on economic outcomes is direct. By introducing citizens' political participation, rather than politicians' incentives, as the driving force connecting institutions to policy outcomes, we empirically show that voter turnout is the channel through which forms of government affect economic policies. We provide evidence of the existence of two relationships. First, presidential regimes appear to be related to lower voter participation in national elections. Second, higher voter participation induces an increase in government expenditure, total revenues, welfare state spending, and budget deficit. We conclude that forms of government affect policy outcomes only through voter turnout.

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Keywords: Electoral rule, form of government, voter participation, policy outcomes.

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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 (2000), Persson, Roland and Tabellini (2007), 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 programs. In 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. 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 as 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 prompt smaller public good provision than parliamentary regimes. In this study we question whether the impact of constitutions on economic outcomes is direct. We provide evidence that forms of government 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 empirically show that voter turnout is the channel through which forms of government affect economic policies. We demonstrate the existence of two relationships, the first one connecting political institutions to voter turnout and the second one linking voter turnout to economic policies.

From an empirical point of view, the first link has been widely studied with regard to the effects of the electoral rule on turnout decisions.[1] 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), who 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. This study shows that forms of government affect turnout rates. Presidential regimes are indeed found to be associated to lower participation relative to parliamentary systems. This result is robust even when we relax the conditional mean independence assumption and we instrument government regimes.

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. Furthermore, as the franchise was extended to individuals from the lower part of the income distribution, government spending increased in Europe (Aidt, Dutta, and Loukoianova 2006). In a recent paper, Aidt, Dauton and Dutta (2010) provide evidence of a U-shaped relationship between enfranchisement and spending

[1] See Dhillon and Peralta (2002) for a review of the economic theories of voter turnout.

in England and Wales. 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 positive impact on the size of government and a negative effect on income inequality.

Unlike previous empirical studies, we focus on the relationship between forms of government and electoral participation and how this relationship affects total government expenditure, revenues, welfare state spending and budget surplus. We prove that electoral participation is lower in presidential regimes. Moreover, the instrumental variable analysis shows that higher turnout rates are associated to larger government spending, higher government revenues, more generous welfare state and larger budget deficits. We conclude that the way forms of government influence policies is through voter participation at general elections.

The rest of the paper is organized as follows: Section 2 describes the data set used in the analysis. Section 3 empirically proves the existence of the link between constitutional variables and voter turnout and provides a set of exogenous instruments for voter turnout. Section 4 shows the impact of voter turnout on policy outcomes. Section 5 presents a robustness check on the analysis performed, while Section 6 concludes.

2 Data

We use two main data sources. The first data source is the cross-country data set used by Persson and Tabellini (2003, 2004). The data set contains information on 85 countries classified as democ-

racies 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 continuos 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 population 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 presents the results of a simple exercise. We split the data on voter participation by electoral rule and form of government. In line with the literature presented in the introduction, 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.

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 we will

[2]See Table A1.

explore further the relationship between constitutions and electoral participation.

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: first, we analyze the relationship between constitutions and voter turnout; second, we identify the exogenous instruments for electoral participation required to assess its impact on economic policies. The dependent variable is voter participation at national elections, as defined in Section 2.

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.

$$Turnout_i = \alpha_0 + \alpha_1 Majoritarian_i + \alpha_2 Presidential_i + \mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i \quad (1)$$

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 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 constituencies. This variable was constructed by Seddon et al. (2003) and it identifies who appoints the candidates. A candidate selected by national leaders is considered to be from a national constituency. 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 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.

We include the natural logarithm of total population in order to proxy the weight of one single vote whereby the larger the population the lower the weight. In addition, we control for real GDP per capita, the Gini index of income distribution, whether the country is an OECD member, the quality of democracy (*Gastil Index*) and the presence of a federal structure.[3] 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) show that colonial history is relevant for the institutional

[3]The Gini index is available for a smaller set of countries, thereby reducing the overall sample size.

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 conditionally mean independent. Under this assumption, the OLS estimator is unbiased and consistent for equation (1). We will relax this assumption, allowing for an Heckman correction and an instrumental variable analysis in the next section.

Column 1 in Table 2 shows the baseline specification where voter turnout is regressed on the constitutional variables and the set of socioeconomic variables. The form of government is found to be associated to voter turnout: presidential regimes negatively affect voter turnout rates at the 5% significance level. Electoral participation in presidential regimes is 10.9% lower than electoral participation in parliamentary regimes. We do not find a statistically significant impact of the electoral rule on participation rate.

Compulsory voting laws do not have a statistically significant effect on voter turnout. Weak enforcement of electoral laws might explain this result. In line with our prior, the share of legislators elected at national districts, proxying the distance between candidates and voters, has a negative and statistically significant impact on voter participation: the higher the share of legislators elected at national districts rather than at subnational districts the lower the turnout rate.

The education level is positively related to voter turnout, while the coefficient on the quality of democracy (*Gastil Index*) is not statistically significant but it has the expected negative sign. Real per capita GDP does not affect voter turnout in a statistically significant way. 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 socioeconomic

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.

In column 2 we add geographical variables (Latin America, Asia, Africa) and colonial variables (English colonies, Spanish-Portuguese colonies and other colonies) to the basic 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. This result is in line with Blais (2000), as voting acts as a way of "*expressing one's sense of belonging to the larger community*" (page 52).

Next, 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 solely relies on the initiative of voters, and 0 otherwise. This variable captures the incentive of voters to register, *i.e.* whether registration is compulsory or not, and the level of difficulty of registering, *i.e.* whether voters have to explicitly register or whether voter registers are directly compiled by the government. We expect that such a voting rule should have a negative impact on voter turnout. The results reported in column 3 show that it is indeed the case. Voter registration has a negative and significant impact on voter turnout. All the other results hold, also when we control for colonies and continents (column 4).

Finally, 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*. Columns 5 and 6 present the estimation results. The electoral rule appears to be 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

empirical evidence presented in the introduction: proportional systems are correlated with greater voter participation. Again, the impact of presidential regimes on electoral turnout is negative and statistically significant at the 1% level, while the estimated coefficient of voter registration is negative and statistically significant at the 5% level.

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 instruments.[4] We create a dummy variable, *monarchy*, taking value 1 if the country has ever been a monarchy and 0 otherwise. We argue that the likelihood of adopting a parliamentary regime is higher if a country is or has been a monarchy. Indeed,

[4]Table A2 in the Appendix shows the estimates using the set of Persson and Tabellini's (2003) instruments.

out of 33 presidential regimes in our sample, only 4 countries are or have ever been a monarchy.

Is the variable *monarchy* a valid instrument or does it capture other aspects as geography or colonial past? Table 3 presents the correlation coefficients between the variable monarchy and geographical, institutional and colonial variables. Some geographical variables, as Latin America and Africa appear to be highly correlated with monarchy. However, the correlation between monarchy and presidential is the highest (-0.46).

Given that the endogenous explanatory variable, *Presidential*, is binary, we make use of the dummy endogenous variable model by Heckman (1978). Column 1 of Table 4 reports 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 statistically significant at the 1% level. Similarly, voter registration and the distance between voters and candidates reduce electoral participation, whereby both estimated coefficients are statistically significant at the 1% level. Columns 3 and 4 of Table 4 present 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.

Columns 5-7 of Table 4 present the estimation results of the instrumental variable analysis. Column 5 reports the first stage for the form of government variable. In line with the Heckman estimation, current and former monarchies are less likely to be associated to 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 (2004)'s estimates. 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 democracy). The excluded instruments are good predictors of the variables of interest, as indicated by the Shea partial R-squared. The Hansen J test does not cast doubt on their validity. Column 6 presents the first stage for the electoral rule. Countries with a higher fraction of the population speaking English are more likely to have a majoritarian rule, following the influence of British colonization. Column 7 presents the second stage of the IV analysis: 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 a negative and statistically significant impact on voter turnout. Presidential regimes still negatively affect voter turnout and the estimated coefficient is larger than the OLS estimate. The majoritarian electoral rule has now a negative and statistically significant impact, in line with the findings by Blais (2000). 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 assumption and we instrument constitutions. The impact of the electoral formula as described by the binary 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 conducted by Mueller and Stratmann (2005). 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 in affecting fiscal policies. We investigate whether turnout can account, *inter alia*, for government expenditure, welfare state, and government budget surplus.

Persson and Tabellini (2004) 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 could be the channel through which presidential regimes affect policy outcomes.

We treat voter turnout as endogenous. It is indeed very likely that in countries with more generous economic policies citizens are more willing to participate at elections in order to keep their *status quo*. 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 3, we concentrate on a set of three instruments: voter registration, distance between candidates and voters and form of government.

Voter registration increases the costs of voting and, as shown in the previous section, it reduces voter turnout. Besides, the level of each policy outcome is not statistically different between countries with voter registration and countries without voter registration. We therefore use voter registration as exogenous instrument for electoral participation.

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 at elections.

Finally, the presidential dummy is included as exogenous instrument.[5] The electoral rule is not included as exogenous instrument for voter turnout for two reasons: first, the impact of the electoral rule on voter participation does not appear as strong as the impact of government regimes. Second, the electoral rule does still have a direct effect on policy outcome variables. Table 5 reports the estimation results.

The first stage consists of regressing participation rates on the exogenous instruments, *i.e.* the voter registration dummy, the presidential regime dummy and the share of legislators elected at national districts, together with all the other policy outcomes' determinants. In the second stage, we regress fiscal policies on the fitted participation variable and on the set of control variables. We control for the following variables: electoral rule, natural logarithm of real per capita income, natural logarithm of population, trade openness, 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.

Column 1 and 2 of Table 5 present the results for central government spending as dependent variable. Column 1 reports the first stage of the analysis, where voter turnout is regressed on the set of excluded instruments and the set of controls for the second stage. The excluded instruments are jointly significant at 5% significance level and we cannot reject the hypothesis of the excluded instruments being valid instruments. Column 2 presents the estimated coefficients for the second stage. Participation positively affects total government expenditure at 1% significance level. A higher participation rate is associated to an increase in the size of government. Our results seem to contradict the findings by Persson and Tabellini (2004): once voter turnout is included in

[5] A robustness check on the validity of the form of government as instrument is presented in Section 5.

the specification, the electoral rule has no more a statistically significant impact on government expenditure.

In columns 3 and 4 we consider another measure of government size. The dependent variable is central government revenues as percentage of GDP. Column 3 reports the first stage of the IV analysis. The excluded instruments are jointly statistically significant at 5% and we cannot reject the hypothesis of the validity of the excluded instruments. The estimated coefficients of the presidential regime and the percentage of legislators elected in national district are both statistically significant at the 5% level. Column 4 shows the estimates for the second stage: turnout does affect revenues as well and its impact is positive and significant at the 10% level.

Next, 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.

Finally, 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 statistically significant at the 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, as stated by 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 results by Persson and Tabellini (2004).

In line with our priors, we conclude that voter turnout has an impact on government size,

measured both as government expenditure and revenues, welfare state, and budget surplus. These results prove the existence of the second link, connecting participation to fiscal variables. Forms of government affect policy outcomes through citizens' participation, rather than through politicians' incentives.

5 Robustness checks: Presidential regime as independent variable

Is the presidential dummy variable a valid instrument? In order to prove that presidential regimes do not have a direct impact on policy outcomes, Table 6 shows that the estimated coefficient of presidential regimes is not statistically significant once we control for voter turnout instrumented by the remaining two instruments, *i.e.* voter registration and the percentage of legislators elected at national districts. The Hansen J statistic does not cast doubt on the validity of the instruments, although the F-value of the test on all the excluded instruments is low when budget surplus is the dependent variable. It is important to note that estimated coefficients of forms of government are never statistically significant. In line with the previous findings, voter turnout has a statistically significant impact on budget surplus and welfare spending (columns 3 and 4).

6 Conclusions

This study introduces citizens' behavior as the driving force connecting constitutions to economic outcomes. We identify and empirically test for the presence of two relationships using a large sample of democracies. First, we investigate the link between political institutions, in terms of forms of government and electoral rules, and voter turnout. Presidential regimes are found to induce less

electoral participation, once we control for other socioeconomic covariates. We also provide some evidence that proportional systems are correlated with greater voter participation, although this latter finding depends on the way the electoral rule is measured. Further, we relax the conditional mean independence assumption and we instrument political institutions. The instrumental variable analysis supports the previous results: voter participation is greater in parliamentary regimes than in presidential regimes.

Second, we analyze the relationship between voter turnout and policy outcomes. We demonstrate that higher electoral turnout is related to larger government expenditure, higher total revenues, more generous welfare state spending, and larger budget deficit. In contrast with previous findings in the literature, we provide evidence that the form of government loses its explanatory power once electoral participation is accounted for. Persson and Tabellini (2003, 2004) estimate a reduced form of the relationship between constitutions and policy outcomes and interpret it in the light of the theories underlying the importance of institutions for politicians'incentives. We propose that behind this reduced form, the structural model might go through electors' behaviour and voter turnout. 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 at national 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. 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 relies on the initiative of voters, and 0 otherwise. *Source*: Authors, on the basis of International Institute of Democracy and Electoral Assistance (IDEA) data, <www.idea.int>.

- **Legislators in National Districts**: percentage of legislators elected at national districts rather than subnational districts. A candidate selected by national leaders is considered to be from a national constituency. *Source*: Seddon et al. (2003).

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

	Monarchy	Pres	Latin America	Africa	British Colony	Spanish Colony	Colony [Other]	Federal
Monarchy	1.0000							
Presidential	-0.4585	1.0000						
Latin America	-0.2968	0.4498	1.0000					
Africa	-0.3256	0.2014	-0.2420	1.0000				
British Colony	-0.2687	-0.0833	-0.0708	0.3987	1.0000			
Spanish Colony	-0.2721	0.5615	0.5594	-0.1738	-0.3268	1.0000		
Colony [Other]	-0.0556	-0.2518	-0.3323	-0.0618	-0.1958	-0.0966	1.0000	
Federal	0.1803	0.1354	0.0294	-0.1684	-0.0884	0.0696	-0.2521	1.0000
Majoritarian	-0.1367	-0.0999	-0.0885	0.2859	0.5838	-0.1509	-0.2012	0.0099

Table 4: Determinants of Voter Turnout. Instrumental Variable estimation.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	First Stage PRES	*Second stage Turnout*	*First Stage MAJ*	*Second stage Turnout*	*First stage PRES*	*First stage MAJ*	*Second stage Turnout*
CON2150	0.229		-0.756		-0.063	-0.583***	
	[1.577]		[0.745]		[0.151]	[0.196]	
CON5180	-3.553		1.321*		-0.075	0.249	
	[2.534]		[0.720]		[0.098]	[0.150]	
CON81	-1.417		1.032		0.001	0.128	
	[2.405]		[0.732]		[0.129]	[0.183]	
Monarchy	-2.911**		0.131		-0.373**	0.067	
	[1.394]		[0.587]		[0.138]	[0.144]	
Latitude	-16.884***		-2.555		-0.578	1.217	
	[6.340]		[1.885]		[0.538]	[0.745]	
Age of Democracy	3.042		0.607		0.614**	0.290	
	[2.666]		[1.426]		[0.234]	[0.229]	
ENGFRAC	-5.660**		4.738***		-0.478**	0.461**	
	[2.238]		[1.445]		[0.201]	[0.205]	
EURFRAC	4.116***		-1.537***		0.001	0.080	
	[1.441]		[0.578]		[0.149]	[0.177]	
Majoritarian		-3.726		-4.454			-9.236**
		[4.238]		[5.435]			[4.126]
Presidential		-18.822***		-16.289***			-15.665**
		[5.747]		[5.043]			[7.491]
Voter Registration		-14.325***		-13.749***	-0.112	-0.075	-13.521***
		[4.445]		[4.717]	[0.122]	[0.126]	[4.551]
% Legislators,		-22.056***		-21.683***	-0.424***	-0.087	-22.122***
National districts		[6.335]		[6.403]	[0.128]	[0.193]	[6.502]
Education		0.240*		0.278**	0.001	-0.016***	0.202
		[0.142]		[0.139]	[0.004]	[0.005]	[0.162]
Gini Index		-0.020		-0.056	-0.005	-0.006	-0.100
		[0.254]		[0.252]	[0.005]	[0.007]	[0.253]
Log[Pop]		1.871		1.567	0.030	0.144***	2.666*
		[1.358]		[1.387]	[0.032]	[0.047]	[1.365]
Log[Real GDP pc]		0.592		0.170	-0.092	0.048	0.771
		[3.673]		[3.626]	[0.078]	[0.100]	[4.157]
Avelf Index		-16.733*		-18.122*	-0.512**	-0.467	-21.062**
		[9.676]		[9.603]	[0.240]	[0.294]	[9.545]
Gastil index		-0.630		0.341	0.153***	-0.124*	-1.271
		[2.632]		[2.638]	[0.052]	[0.071]	[2.676]
Federal dummy		-6.740		-6.814	0.094	-0.108	-8.236*
		[4.887]		[4.874]	[0.126]	[0.177]	[4.899]
OECD		-2.804		-2.187	0.120	0.101	-1.347
		[6.787]		[6.744]	[0.150]	[0.205]	[8.408]
Continents and Colonies	Included		Included			Included	
Rho	0.43101		0.20712				
F-test on constitution variables [p-value]					2.83 [0.0378]	3.64 [0.0132]	
F-test on all excluded Instruments [p-value]					3.14 [0.0079]	7.12 [0.0000]	
Hansen J statistic [p-value]							3.849 [0.69716]
Shea Partial R2					0.4509	0.5137	
Estimation method	Heckman Two-step		Heckman Two-step			2SLS	
Observations	63	63	63	63	63	63	63

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5. Policy outcomes and Voter Turnout: IV estimates

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	First stage Turnout	*Second stage: Central Government Spending*	*First stage Turnout*	*Second stage: Central Government Revenue*	*First stage Turnout*	*Second stage: Budget Surplus*	*First stage Turnout*	*Second stage: Welfare spending*
Voter Turnout		0.546***		0.446*		-0.139**		0.243**
		[0.196]		[0.235]		[0.061]		[0.101]
Majoritarian	-7.000*	-1.350	-6.747*	-0.093	-6.169	2.136**	-5.355	-1.102
	[3.885]	[2.477]	[3.979]	[2.269]	[4.113]	[0.851]	[5.031]	[1.167]
Age of	-3.720	-1.307	-2.746	-1.069	-4.719	-1.700	-3.833	2.095
Democracy	[9.431]	[5.391]	[9.348]	[5.416]	[9.838]	[1.534]	[10.890]	[3.708]
Gastil index	-3.774	-0.203	-3.549	-0.814	-3.019	-0.733	-2.816	-0.351
	[2.989]	[2.207]	[2.920]	[2.518]	[3.185]	[0.732]	[3.666]	[1.057]
Log[Real GDP pc]	-0.539	0.064	-0.429	2.674	-0.703	1.676**	0.373	-0.167
	[3.732]	[2.047]	[3.935]	[2.111]	[3.766]	[0.717]	[4.037]	[1.213]
Trade	-0.075	0.118***	-0.082	0.122***	-0.090	0.010	-0.080	0.059**
	[0.082]	[0.042]	[0.081]	[0.041]	[0.081]	[0.012]	[0.088]	[0.023]
% Population	0.802	0.583	1.238	0.374	1.405	0.110	1.075	0.942**
above 65y	[1.030]	[0.630]	[1.208]	[0.741]	[1.190]	[0.166]	[1.251]	[0.380]
% Population	0.793*	-0.613*	0.857*	-0.641*	0.488	-0.143	0.509	-0.188
14-65y	[0.442]	[0.334]	[0.454]	[0.353]	[0.469]	[0.105]	[0.387]	[0.135]
Federal dummy	-4.858	-2.450	-4.679	-2.997	-5.531	-0.829	-2.690	0.028
	[5.313]	[3.106]	[5.357]	[2.693]	[5.447]	[0.951]	[5.435]	[1.405]
OECD	-6.120	1.998	-7.662	-0.242	-6.054	-2.965**	-8.002	0.047
	[7.604]	[5.232]	[7.825]	[5.472]	[7.573]	[1.330]	[7.743]	[2.492]
Log[Pop]	-0.597		-0.973		-1.056		-0.904	
	[2.474]		[2.489]		[2.505]		[2.914]	
Presidential	-10.957**		-11.764**		-10.296**		-11.635*	
	[4.798]		[4.944]		[5.062]		[6.145]	
% Legislators,	-15.200**		-14.415**		-14.885**		-13.410**	
National districts	[6.450]		[6.497]		[7.195]		[6.327]	
Voter	-4.456		-1.942		-1.102		-6.680	
Registration	[4.749]		[5.912]		[5.755]		[6.336]	
Continents and Colonies	Included		Included		Included		Included	
F-test on all excluded instruments	3.49		3.06		2.61		2.58	
	[0.022]		[0.036]		[0.062]		[0.065]	
Shea Partial R2	0.1249		0.1265		0.1255		0.1242	
Hansen J statistic	0.018		0.339		3.313		0.385	
	[0.991]		[0.844]		[0.191]		[0.825]	
Observations	74	74	71	71	68	68	65	65

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6:. Policy outcomes and Voter Turnout: IV estimates - Presidential regime as independent variable

	[1] *Central Government Spending*	[2] *Central Government Revenues*	[3] *Budget Surplus*	[4] *Welfare Spending*
Voter Turnout	0.538	0.338	-0.245***	0.298**
	[0.359]	[0.492]	[0.085]	[0.138]
Presidential	-0.153	-2.171	-2.236	1.263
	[5.633]	[7.405]	[1.512]	[2.428]
Majoritarian	-1.423	-1.080	1.187	-0.564
	[3.912]	[4.244]	[1.353]	[1.776]
Continents and Colonies	Included	Included	Included	Included
F-test on all excluded instruments	2.99	2.46	2.15	2.61
	[0.0589]	[0.0954]	[0.1271]	[0.0850]
Shea Partial R2	0.0745	0.0659	0.0771	0.0746
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%.

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 – Persson and Tabellini (2003)'s instruments.

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