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**Political Institutions, Size of Government and
Redistribution:
An empirical investigation**

Martina Tonizzo

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Development Studies Institute

London School of Economics and Political Science

Houghton Street

Tel: +44 (020) 7955 7425/6252

London

Fax: +44 (020) 7955-6844

WC2A 2AE UK

Email: d.daley@lse.ac.uk

Web site: www.lse.ac.uk/depts/destin

Abstract

How do political institutions shape government size and redistributive policies? An empirical model proposes a possible framework to evaluate sign and magnitude of the relation. Political institutions are classified in complementary constraints, namely political competition, competition in executive recruitment and constraints on the executive. Results show that the stronger democratic institutions are, the lower is government size and the higher the redistributive capacity of the state. Political competition exercises the strongest and most robust effect on the two variables.

The analysis underlines the importance of understanding *how* governments spend instead of limiting the attention on *how much*. Different policies in fact aim to reach different purposes.

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1. Introduction

The state has a central role in the development process. Its presence in the economy is far from being neutral (Kohli 2004). Public policies require resources that the state draws from economically active population. Once they are collected, resources are used to pursue different objectives. Both collection and use of resources have an impact on economic and social life of those individuals that live under the state's rule. Therefore, the understanding of how political incentives shape the objectives that the state wants to pursue is crucial in the development discourse.

The purpose of the present investigation is to evaluate how political institutions influence public policies. The focus is not only on *how much* the state spends, but also on *how* it is doing it. Political institutions are represented in terms of electoral and executive constraints in order to capture complementary aspects of the state structure. Public policy is divided in two main categories: the size of government intervention and its redistributive capacity. Following Olson's framework (1993), the main idea to be tested is that monopolistic power manifests in both collection and use of resources. More democratic institutions will face stronger constraints compared to nondemocracies. Consequently autocracies are able to consume a bigger amount of resources but the consumption is mainly devoted to political supporters¹, increasing entry barriers to the political arena. Democracies on the other side, despite not completely isolated from encompassing interests, are more exposed to the demand of poor majority. The exposure takes the form of more progressive redistributive policies, namely public good transfers along the rich-poor axis.

Compared to the existing studies in the field, we add essential conceptual and methodological innovations. In the first place, we shift the attention on how the government actually spends. In order to do that, we sharply distinguish between extraction and redistribution. Extraction is represented by different variables that depict distinct dimensions of state presence in the economy. Redistribution has specifically a progressive connotation. The economic literature often identifies redistribution with a general transfer of resources from one share of the population to another. Redistribution here, instead, is progressive because it absolves the function of safety net, i.e. it configures as a kind of insurance for the weakest (or poorer) layers of the population. We

¹ Olson talks more generally about private consumption of the dictator. Retribution of supporters, such as bureaucrats or military can be seen as a form of private consumption as long as staying into power is one of the main elements of the dictator's utility function.

develop an innovative measure able to capture this aspect that has never been proposed before in the literature.

Moreover, we expand the democracy/dictatorship dichotomy to a more varied set of political incentives. We think that the choice of a clear cut between democracy and autocracy is too simplistic and reduce to minimal terms the richness of features that modern political institutions present.

The analysis is supported by an empirical investigation. Other authors (see section 2) have accepted the challenge posed by Olson and have empirically tested his assumptions. However, the specification we present has many advantages. First of all it is based on the broader, but more insightful concepts described above. Secondly, it accounts specifically for a country and time varying effects that are often overlooked in existing models.

The final outcome sheds lights on the way political framework shapes governmental expenditure choices. We will demonstrate that some political constraints are more restrictive than others. This insight has important implications in terms of policy: higher equity in resource allocation can be pursued more efficiently by focusing on political competition rather than other desirable institutional features. Other characteristics are important in the long run, but probably less urgent to address. Understanding the order of priority is critical to foster the development process that can often count only on limited resources.

The paper proceeds as follow: In section 2 we discuss how political institutions and public policies have been characterised before. We also summarise the main results the literature has reached on the relations between the two. Section 3 formalises the conceptual framework underlying the empirical investigation. We give here the details about conceptual and empirical origins of the measure for redistribution. Section 4 gives technical information about the data in use. Section 5 presents and discusses the results and section 6 concludes translating the main theoretical findings into policy implications.

2. Political Institutions and Size of Government

2.1. Democracy versus autocracy?

Following the main stream of economic literature that deals with the topic, a popular classification of political institutions consists of dividing them into democracy or autocracy. Przeworski et al. (2000, 14) warn the reader against the “innumerable definitions” that include “almost all normatively desirable aspects of political life, and sometimes even social and

economic life...” as “definitional features of democracy”. In principle this is correct since empirical investigation needs clear descriptive and procedural definitions.

However, we think that for the purpose of the present study a more subtle classification is needed. As Linz and Stepan (1996) clarify in their book, democratic transition is completed only when democratic institutions are stable, but the transition itself consists in the process of institutional modification. Huntington (1991) adopts a broader historical perspective and describes regimes changes from absolute monarchies to one-party and military systems. Wintrobe (1990) distinguish between “tinpot” and totalitarian dictatorships and classifies several subtypes. He describes how autocratic regimes face different incentives that bring them to adopt alternative behaviours as a response to economic change; for example a decline in economic performance will lead a tin-pot regime to increase its repression of the population. All these author recognise the variety of transitional institutions.

Dividing the polities into democracies and dictatorships has therefore at least two shortcomings. The first one consist of flattening the variance between regime types. It is reasonable to think that in post-totalitarian countries, a greater degree of responsiveness is required to the politicians, compared to the one that a military power is exposed to. If we think to the recent events in Thailand it is easy to clarify this point. Thaksin Shinawatra was elected and although the democratic transition is not yet completed in the country, his government was much more exposed to popular support compared to actual military junta (Tejapira 2006). The second limitation is the necessity to trace a line between what is democracy and what is autocracy. The distinction between those regimes that we have classified as “consolidated democracies” and those that have not yet reached the status makes the evaluation of autocratic harshness impossible. As Marshall and Jagers (2002) suggest, different regimes can still present similar characteristics. For example, Venezuela’s President Chavez has been democratically elected, but the constraints on his executive are very different (and softer) than the one on the US or French executive. Classifying this country as democracy (or autocracy) would be as considering the Venezuelan polity exposed to the same incentives the US or French government is exposed to.

The variance among dictatorships is not the only one that is flattened in the dichotomy. Recent studies on the effects of institutional arrangements on economic policies (Presson and Tabellini 2000; Lizzeri and Persico 2001) try to identify the impact of distinct forms of government and electoral rule on government budget. The general prediction is that proportional systems tend to have higher budget since they have to satisfy broader constituencies. Consequently the fact that democracy can be treated as a unique identity that exercises homogenous effects on taxation

cannot be accepted. In conclusion, the neglect of such big variety of situations would be a mistake or at least an unnecessary limitation.

We decide to focus on three constraints that allow capturing the forces in place during regime formation (*ex ante*) and during regime functioning (*ex post*) (Marshall and Jagers 2002).

Political competition is usually regarded as the main constitutional characteristic of a democratic regime. The Schumpeterian description of democracy defines “democratic method” as an “institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of competitive struggle for peoples vote” (Schumpeter 1943). It is possible to identify two separate areas of political life in which competition is desirable. The first one consists of the selection of the candidates or leader from the society, while the second is represented by the regulation of selection procedures, such as election and the extent to which the incumbent can interfere with the mentioned procedures.

Political competition is an *ex ante* condition that defines democracy, namely it is the necessary and (not always) sufficient condition for different candidates or party to take part to the political selection. If we consider the moment in which the selection has been made, we have to evaluate the strength of institutional constraints that limit the actions of people in power. This is a second aspect of political institutions that is as important as the first one. Its importance derives from the fact that the strength of political selection is not constant. Even in a consolidated democracy politicians feel a higher pressure just close to the elections. To understand this, we can think to the argument expressed by Hirschmann (1970). He finds the existence of less reactive customers in the market desirable in order to allow the improvement of goods’ quality. The same kind of reasoning is applicable to politicians. If they were discarded instantly at the first voters’ dissatisfaction, improvement of their “quality” and/or institutional learning would be harmed². In order to account for these two forces that the polity is exposed to, pre and post selection³, we will consider increasing degrees of pressure that the incentives exercise on the political activity.

For sake of completeness is worth mentioning that the institutional characteristics discussed above are fundamental mechanisms for the proper work of democracy, but they are certainly not the only ones. Dahl (1971) theorises the existence of another dimension that is critical to a

² This is not meant to be an assumption about the nature of politicians. The way politicians behave has been modelled in different fashions (Basley 2006). As specified later, in this case I will just assume self interested politicians that care of remaining into power. In the empirical investigation, the length of the regime will in any case be controlled for.

³ Selection can be explicit or implicit. Explicit selection is represented by free and competitive election or the choice of the party of its leader. Implicit one could be the non-contestation of an absolute monarch by his people. Data that depict selection strength are recorded annually.

The necessary assumption here is that whether explicit or not, there is a moment in which the polity is exposed to the process. The mechanism of exposure is elegantly formalised in Acemoglu and Robinson (2005).

realistic democracy, namely contestation. Contestation is translated into the existence of political and civil freedoms, such as the right to speak, publish, assemble and organise, so all the activities that are necessary to support the political debate. Another way to see Dahl's contestation is by considering the strength and the organisation of civil society or the amount of social capital (Putnam 1993) a community is endowed. This is however of limited interest for several reasons. First of all, the economic policies put in place by a given polity are already the result of a lively or repressed conflict among citizens. The pressure that civil society can put on the government is not a *de jure* institutional limitation: it is ultimately the government that implement policies and the dynamics of commitment or credibility issue is not the main interest of this analysis. Secondly, institutions are much more persistent than civil society movements that are often capture by the number of civic associations operating in the community⁴. Therefore, conceptually and methodologically the shift of focus from legal arrangements to *de facto* contestation is relatively flawed and does not add value to the present investigation. As a consequence, we prefer to constrain our attention to formal political institutions despite some authors assume a perfect overlap between social activity and democratic attitude.

2.2. Extraction capacity and redistribution

How do political constraints shape government's allocation choices? As mentioned before, we classify economic policies in order to capture both size and purpose of government action. The first one is represented by the amount of resources the regime can capture in the economy. The definition is voluntarily general because different measures can represent a broader or a narrower concept (see section 4). The second one is the represented redistributive policies. Economic literature (Presson and Tabellini 2000) tends to identify redistribution in terms of general expenditure. Theoretically this is correct because government expenditure implies the collection of certain resources from one share of the population and allocation to others. However, in this study redistribution does not only mean "different allocation", but includes a progressive dimension. In other words, we are interested to understand *how* resources are distributed between rich and poor.

The existing literature presents two alternative problems. Many studies (see later) do not clearly distinguish between collection/extraction and redistribution. Some others, on the other

⁴ It is not completely clear how relatively young civic associations and organisations would be able to depict the process of social capital formation that is supposed to be stably rooted in history (Putnam 1993). Even the connection of their presence with higher sense of "civicness" is rather questionable since it presumes that the nature of association does not matter (Putzel 1997)

hand, focus just on one of the two policies, neglecting the importance of common factors that might influence the two. It is however possible to separate rather clearly the theoretical literature from the empirical one. We start considering some theoretical predictions about the size of government that theorists have more or less recently figured out, and then proceed with some reflections on empirical tests.

There is no agreement about the impact that more democratic institutions should have on government size. The framework that inspires the present paper predicts that autocracies can extract more resources from the population because of their monopoly power, but they redistribute them less equally to the society. The view is championed by Olson (1982, 2000). Autocrats can extract resources to their people in exchange of minimal public good supply. The dynamics of state organisation starts from a hypothetical roving bandit that steal resources in each place he rules. In this setting, subjects do not have any incentive to produce. When the “invisible hand” (Olson and McGuire 1996) turns the roving bandit to a public-good providing king, subjects have a bigger incentive to produce, since in exchange of their tributes they receive protection. Because of its monopolistic power, the stationary bandit is able to use a bigger amount of resources for private consumption. As a consequence higher level of extraction should be observed in autocracies compared to democracies. Niskanen (2003) focuses on redistributive outcomes under alternative political organizations. He developed a framework that equates income to discretionary government consumption in goods and services and taxes. He finds that autocracies are more likely to raise taxes but then spend a higher fraction of the revenues on discretionary goods. The policies are highly regressive. Taxes are used to support the factions that are friendly to the regime, leaving the majority of the population in an “equally” poor status, i.e. after-tax income of the general population in a democracy is much higher compared to the authoritarian counterpart.

Other authors have developed different models reaching diametrically different conclusions. According to De Schweinitz (1964) democracies will inevitably end with higher levels of taxation compared to autocracies. He pinpoints that democracies have to satisfy pressures for immediate consumption that are much stronger compared to the ones under autocracies, since democratic regimes depend on popular support. The problem described by the author is clearly a product of collective action. He sees workers as a powerful majority able to divert money from investment to wages, to demand higher protection of labour markets and finally a higher amount of social benefits. Therefore democracies not only spend more, but they also grow less. The main shortfall of this view is that the workers are identified with the poor and are the only possible ruling

majority with homogenous interests, including preference of immediate consumption over saving.

Pure economic theory has tried to understand how individual preferences determine the overall size of government through the influence of political institutions. A famous model by Meltzer and Richard (1981) shows that the higher the inequality within a society, the higher the pressure for redistribution. In the study redistribution and government size are perfect synonyms. Widening inequality between the average income and the one of the decisive individual (or median voter in case of democracy), should lead to a higher demand for redistribution, i.e. overall government size. The result has been used to explain the rise of social spending of the WWII aftermath under democratic governments. Because of the franchise enlargement that has characterised that period, the electorate has become more unequally distributed. As a consequence the demand for broader redistribution has risen and therefore the overall size of government in all the industrialised countries⁵. As mentioned earlier, Meltzer and Richard do not limit their attention to the median voter. They speak more generally of a decisive (or pivotal) individual that could be an autocratic decision maker. As a consequence with the transition from dictatorship to democracy, government size should increase if the distance between the median and the average voter is higher than the one between the dictator's income and the average income in the population (or at least the distance that the dictator perceives)⁶. This implies that if we do not know the decisive/average income ratio before and after democratic transition, it is impossible to predict if democracy or autocracy will lead to a bigger government size and more progressive form of redistribution⁷.

Meltzer and Richard own a significant intellectual contribution to Downsian model of the median voter (Downs 1957). Despite this, their framework proposes opposite conclusions compared to the one predicted by Downs (1960) himself. He argues that government budget will be systematically lower in a democracy because "rationally ignorant" electorate is called to vote on issues which is not completely familiar with. As a consequence the rational action of the government is to allocate resources in a less than optimal way.

⁵ Despite the initial empirical regularity, the model can no longer appropriately explain the pattern of social spending since the rise of government size has continued long after the enlargement of electoral franchise all over the Western world.

⁶ But is it reasonable to assume that the dictator is poorer than the average?

⁷ Additionally the problem of commitment is completely ignored by the model. Why would an interest maximising dictator extract *and* redistribute if not exposed to any kind of constraints? Moreover, without a credible pledge or commitment not even a democratic government would have an incentive to redistribute the collected money instead of stealing it. The assumption the authors make is that the government (of any type) is benevolent.

If theorists do not seem to agree with the entity of the democratic effect on government size, empirical evidences can be defied at least puzzling. Levi (1988) demonstrates with historical case studies that rulers adopt a revenue maximising attitude. The level of extraction will depend upon their bargaining power relative to other players in the community, the transaction costs and the rate at which the ruler discounts the future. Cross-country regressions analysed by Cheibub (1998) show that there is no systematic advantage of authoritarian regimes on taxation compared to democracies. Boix (2001) on the other side, finds that government budgets under democratic regimes grows parallel to the structural changes associated with economic development; in autocracies the size of public sector remains small.

A similar kind of disagreement is found when turning to the analysis of different government policies. Mulligan et al. (2002, 2004) do not find any relevant difference in public policies as measured by the share of GDP spent on a given sector. In terms of social security, democratic regimes are equally likely to have retirement benefits compared to demographically and economically similar nondemocratic countries. When they broaden the spectrum of possible public policies, the only significant difference they find is related to the amount that regimes allocate to military expenditure: nondemocracies are found to spend systematically more. The most likely explanation is that autocracies have to rely on military power to elevate entry barriers to political participation. We will remark later that expenditure as a percentage of GDP does not constitute a solid measure of redistributive effectiveness and it is only an alternative measure to show how much the state spends.

When we shift the attention from mere expenditure to living standard indicators, beneficial effects of democracy unfold clearly. Besley and Kudamatsu (2006) focus on the relation between democracy and health. Life expectancy and mortality rate seem to (conditionally) improve under politically free regimes. Deacon (2003) identifies the beneficial effects of democracy on higher level of public schooling, roads, safe water, public sanitation, and pollution control provision.

The model that is presented deepens the idea of government intervention and deliver further insight in the consequences that distinct political mechanisms imply on government size and progressive redistribution. The existing works that go in this direction are not many. Gould and Baker (2002) give a comprehensive literature review of taxation models under democratic rule. They recognise the necessity of clearly distinguish several phases of political process, such as electoral competition or post election allocation. However, they just concentrate on the revenue side and do not provide any new empirical evidence. Brown and Hunter (1999) on the other side limit their attention to the expenditure side in 17 Latin American countries. They find a higher commitment of democratic regimes to spend more in social security programme in particular

during economic crisis. The present study is reaching similar conclusions for a broader set of countries and does not limit to it.

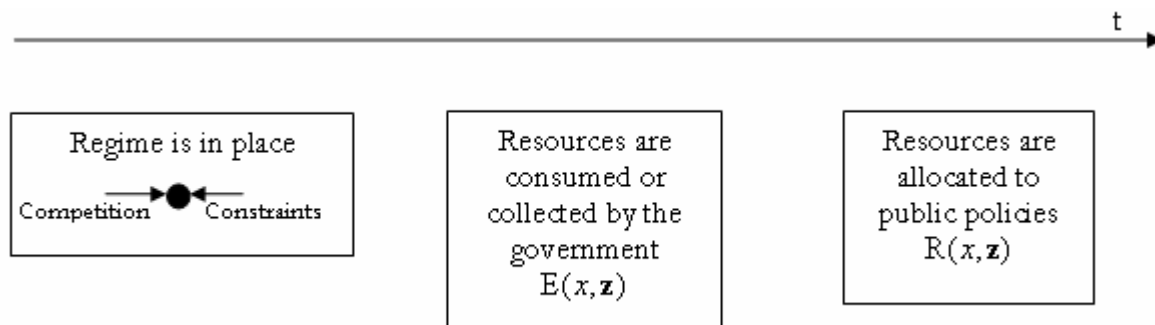
3. The Model

Problem disaggregation is the first advantage of our model. As Mueller thoroughly summarises (2003) in his review of investigations about government size, often revenue and expenditure are treated in the same way. One of the common hypotheses in the mentioned economic models is that the state collects and spends exactly the same amount of resources (Meltzer and Richard 1981; Olson and McGuire 1996) as if grants or debt were not accessible tools for the incumbent. But if we accept that autocrats can extract more and redistribute less, a clear distinction between extraction and redistribution is necessary. Moreover, considering similar causal factors, can shed important lights on the way politicians' actions are formed conditional on institutional constraints.

A simple timeline clarifies the mechanism at the base of the present empirical investigation. At the starting point a given regime is in place. The regime has the legitimacy to tax and then allocate the collected resources.

The timeline is represented in Figure 1. Once the regime is in place, decisions about revenue/resource collection are made. Once they have been extracted, resources can be either use for consumption or allocated to public policies.

Figure 1 – Revenue and Expenditure Cycle



One clarification is necessary. Starting from the regime in place is as to say that political institutions are considered exogenous to the policy under evaluation.

The hypothesis might be questionable. An exaggeratedly rent-seeking attitude translated into high taxation and low redistributive policies can be punished by the subject with a revolution aiming to a regime wreck. Acemoglu and Robinson (2005) present an interesting model in which the ruling elite has to decide if to keep ruling autocratically or to democratise. The function that they face considers their gain in terms of resource concentration in their hand versus the costs of

repression of the mass that can eventually decide to revolt. The authors describe the imbalance between the elite and the mass in terms of inequality. In any case, nothing prevents the inequality to be formed as a consequence of specific will or power exercise of the elite. This is as to say that the type of regime in place is in fact a function of both resource extraction and resource distribution.

There are however, at least two shortcomings to this possible critique. First of all, if taxation is too high, the regime change or the possibility of revolution will concretise just *after* resources has been collected and distributed (or not distributed). Considering the regime in place for a given amount of resources, namely the simultaneity of the two variables⁸ can partially avoid the problem. Secondly, even if a dictator can extract high rents thanks to his monopolistic position, it is rational for him not to extract too much, in the same way that it is rational for the poor majority in a democracy not to expropriate the rich minority entirely⁹. The argument gives support to the idea that the regime in place takes decision on resource extraction and public good provision *given* the nature of the political constraints it operates into. Policies rarely create constraints *per se*. Therefore it is fairly reasonable to consider the regime type exogenous to the two economic policies under focus.

$E(x, \mathbf{z})$ and $R(x, \mathbf{z})$ are different functions, although they are influenced by many common elements. $E(\cdot)$ represents the extraction capacity of the polity, while $R(\cdot)$ corresponds to its degree of “redistributiveness”. It is possible to write the two functions in their explicit form:

$$(1) \quad E_{it} = \alpha_e + \beta_e x_{it} + \phi_e \mathbf{z}_{it} + \delta_i + \eta_t + \varepsilon_{it}$$

and

$$(2) \quad R_{it} = \alpha_r + \beta_r x_{it} + \phi_r \mathbf{z}_{it} + \delta_i + \eta_t + \nu_{it}$$

Where x represent the political institution or constraint under evaluation, \mathbf{z} is a vector of control variables such as per capita GDP, level of human capital and demographic composition of the population; δ and η are the country and time fixed effect respectively, while ε and ν are the innovation term of the extraction and redistribution function. If the polity is less tightened by political constraints, the resources that it can capture from the economy should be higher. On the other hand, more democratic regimes are more likely to internalise voters’ preferences¹⁰. More formally, the empirical test of the previous assumption will imply that:

$$\frac{dE(x, \mathbf{z})}{dx} < 0 \text{ and } \frac{dR(x, \mathbf{z})}{dx} > 0$$

⁸ See functional specification below.

⁹ For a complete discussion about “slavery of the rich” in democracies, see Larcinese (2005)

¹⁰ The implicit assumption is that a poorer majority would prefer more progressive policies.

The underlying assumption is that the poor in the case of less political freedom are not as well represented as in the case of democracy (Acemoglu and Robinson 2005). In fact, if the conflict among voters can be reduced to a single dimension, namely along the level of income of the participants, democracy gives the ability to the majority to redistribute more toward the poor, and therefore is likely that democratic public policies will be *more progressive* compared to the ones in place under dictatorial regimes.

Defining progressive policies is not an easy task. It requires a deeper look to the concept of policy progressivity.

We have two distinct options. The literature distinguishes between progressive taxation and progressive redistribution. In terms of progressive taxation some surveys investigate which is the share of taxes paid by a given share of population at a certain household income level (Delfin et al. 2005). The idea is appealing, but there are important practical limitations. Because we are interested in the time and cross-country variation, such an analysis would require country-level data that are not available at the moment. Cross-national comparison is of great use when relating different regime types that are usually observed at the state level, so this is not an advantage that we want to give up.

Moreover, the monopoly power of the dictator is more than well represented by the amount that he is able to extract, without specifying in great details *who* loses the resources¹¹. The most important issue is therefore likely to rely on the side of redistribution, namely in the last step of the process sketched above.

We construct a measure for redistribution using government expenditure. Following Lindert (2004), it is possible to rank policies based on their degree of progressiveness. According to the author, social security transfers, followed by public pensions, public housing and educational expenditure are the most progressive policies. The least progressive is the expenditure in tertiary education. The classification seems quite reasonable. The part of the population that does not work or has an income far below the average is usually the one that benefits from social security transfers. Ideally we also would like to separate pensions that are paid to civil servants from the ones that are paid to other workers. This is not completely possible as data are not widely available. We limit therefore the attention to the share of total expenditure allocated to social services and welfare as representative measure for redistribution.

¹¹ It is impossible to exclude the possibility that dictators can exempt their supporters from tax payment, but it can also not be considered a regularity. The most reasonable assumption is therefore that even if supporters have to pay something, what they receive from redistribution more than compensates their losses.

In principle the measure is perfectible. Alternative techniques to measure distributional effects of government policies can be used (Lambert 1993). Some studies consider household income before and after redistribution. Others focus on aggregate data and compute the Gini coefficient, a widely used indicator for inequality, before and after government expenditure. However, the proposed solution, aside being realistic, also presents the practical advantage of being implementable for a respectable set of countries and number of years and represents a considerable amelioration of the available empirical evidence. Most of the existing investigations (Mulligan et al 2004) *do* separate different types of expenditure (education, health, social security), but *do not* consider the relative weight of each policy on the overall composition of the expenditure. As a consequence, the democratic coefficient is not significant. Conceptually this is flawed because it does not identify correctly the expenditure share that reaches the weakest part of the population. Our solution allows pushing the analysis a step further.

4. Data

The core sample used for the empirical test consists of an unbalanced panel of forty-six countries over a period of forty years (1960 - 2000). Data on government expenditure in social services and welfare, which is crucial for the measurement of the redistributive capacity of the government, constitute a bottle-neck since the sample could cover up to 105 countries. For sake of coherence, in what follows we will report descriptions and outcomes for the restricted sample. Results available for the larger dataset are included in the appendix and use to test the robustness of the specification for which they are available.

4.1. Political institutions

It has been pointed out above the advantages of using variables that can capture alternative aspects of political institutions. The Polity IV project contains a set of political indicators for countries with more than 500.000 inhabitants. For some of them, political institutional quality is available starting from the beginning of the 19th century. As said, however, the interest of the present paper is focused on the forty-year period starting from 1960.

The analysis is centred on three variables of the POLITY IV database named “concept variables”. The concept variables are composite measures that depict three different aspects of political institutions, namely political competition, executive recruitment and executive constraints.

Political competition (*POLCOMP*) is coded over a scale of 10. Table 1 gives a short description of its components.

Table 1 – Political competition coding¹².

	The final values are obtained by evaluating two features of <i>political competition</i> : the degree of institutionalization, or regulation, of political competition and the extent of government restriction on political competition. Institutionalisation is intended as the existence of binding rules on modalities and ways in which the political preferences are organised and expressed. These rules can be present even in a non democratic contest, such as a state ruled by a one-party dictatorship. Therefore the index is completed by considering the extent to which political participation is free from government control.
(1) Suppressed	
(2) Restricted	
(3) Imposed Transition: Loosening or tightening restrictions	
(4) Uninstitutionalized	
(5) Gradual Transition from Uninstitutionalized	
(6) Factional/Restricted	
(7) Factional	
(8) Electoral Transition: Persistent Conflict/Coercion	
(9) Electoral Transition: Limited Conflict/Coercion	
(10) Institutionalized Electoral	The concept of <i>executive recruitment</i> (<i>EXREC</i>) has been designed on the theory developed by Eckstein and Gurr (1975). It refers to the

way the members of the society arrive to occupy the positions of political authority, i.e. how institutionalized, competitive and open are the mechanisms for selecting a political leaders. The composite index is in fact based on these three dimensions that are unsurprisingly highly interdependent. The variable is framed by eight different patterns that are summarised in Table 2. The concept ranges from ascription to competitive elections.

Table 2 - Executive recruitment coding .

(1) Ascription	Succession by birthright	The third political institution under evaluation is represented by the <i>constraints</i> that the <i>executive</i> (<i>EXCONST</i>) faces once in place. The variable aims to evaluate the level of “horizontal accountability”, namely the strength of the limits that other governmental bodies pose on the central executive, whether it is composed by a single individual or e democratically elected group. The variable is coded on a 7 point scale and ranges from “unlimited executive authority” to “executive parity or subordination”
(2) Dual Executive: Ascription + Designation	Ascriptive and designated rulers co-exist	
(3) Designation	Informal competition within an elite	
(4) Self-Selection	Self-selection by seizure of power	
(5) Gradual Transition from Self-Selection		
(6) Dual Executive: Ascription + Election	Ascriptive and elective rulers co-exist	
(7) Transitional or Restricted Election		
(8) Competitive Election	Formal competition among publicly supported candidates	

Finally, *POLITY2* is a summary variable constructed as the sum of the autocracy and democracy indicators. Autocracy

¹² Source: PolityIV project User’s Manual 2002.

and democracy are composed by the set of variables used to compute the concept variables described above. *POLITY2* has the advantage of being coded for the transition years aside its normal coding. Transitions years are those period of war and violence in which the regime is not well identifiable. The coding ranges from -10 to 10, where -10 is absolute autocracy, while 10 is consolidated democracy. Often dichotomic indicators for democracy and autocracy are constructed using *POLITY2* and zero is used as a threshold to separate the democratic from the non democratic regimes.

Table 3 shows the main descriptive statistics for the four political variables. It is quite evident that the sample is rather “democratic”. Estimates could therefore suffer under a selection bias. In order to account for this possibility estimates for larger or smaller less democratic set of countries is also computed.

Table 3 – Descriptive statistics and correlation matrix of political indicators

Panel A				
Variable	Mean	Standard Deviation	Range	
<i>POLCOMP</i>	7.846	3.112	1 – 10	
<i>EXREC</i>	7.037	1.796	2 – 8	
<i>EXCONST</i>	5.493	2.107	1 – 7	
<i>POLITY2</i>	5.721	6.275	-9 – 10	
Panel B				
	<i>POLITY2</i>	<i>EXREC</i>	<i>EXCONST</i>	<i>POLCOMP</i>
<i>POLITY2</i>	1			
<i>EXREC</i>	0.929	1		
<i>EXCONST</i>	0.967	0.839	1	
<i>POLCOMP</i>	0.971	0.854	0.926	1

Panel B of Table 3 shows the correlation matrix among the four variables. The correlation with *POLITY2* is almost perfect. The correlation among the other indicators however is lower compared to the other. This is desirable because the investigation tries to evaluate different aspects of political institutions that might be present at different time within a given regime. Interestingly the way the executives are recruited in the society is the dimension that seems to be less dependent from the others. This is probably due to the fact that *EXREC* partially capture the possibility that is given to the individual belonging to a certain society to access the representative positions of the society itself. This is as to say that social inequality is much more influential for this variable than for the others.

4.2. Extraction and redistribution.

There are many dimensions through which the capacity of the state of extracting resources from the economy can be measured. The broader one is given by the amount the government is able to consume. This includes not only the government expenditure on good and services, but also the compensation of employees. When evaluating the power of a dictatorial regime this can be useful because it shows how many resources the regime as a whole, namely including its supporters, is able to collect from the society. A measure of government consumption (KG) is available from the Penn World Table. These data have two main advantages. In the first place they are recorded in constant prices at 1996 level; secondly they are measured in international dollars. This increases the level of comparability across countries. The variable that is used in the computation is the share of government as percentage of real GDP.

A second dimension of government presence is given by the amount of taxes that the institution is able to collect. Tax revenues ($CGREV$) represent a smaller component compared to the previous one. Revenue extraction is in fact influenced by the bureaucratic development. A solid network for the collection and compliance has to be in place (Cobham 2005). The presence of such a bureaucracy is not directly related to the regime type. For example the former Soviet Union used to have a strong bureaucratic network, thanks to that revenue collection was most probably effective, but it was far from being considered a highly democratic regime. This is not as to say that the variable is not worth investigating, but that other factors compared to the ones that are strictly related to the present analysis, can play a role in determining the final values.

The third aspect that is investigated is the amount of government expenditure ($CGEXP$) as a fraction of GDP. According to the results obtained by the literature, this variable is the one that should not show any significant correlation with the regime type. Both revenues and expenditure are obtained from the IMF International Financial Statistics. They are measured in current prices and they refer to the central government expenditure.

The variable social expenditure ($SOCEXP$) is constructed following the conceptual guidelines exposed in section 3 and using the IMF data. It consists of the ratio between consolidated central government expenditures on social services and welfare as percentage of GDP and the total central government expenditure. In this way, the proportion of funds allotted to the most progressive type of policies is isolated.

Panel A of Table 4 shows some descriptive statistics for the described variable. Government consumption is on average lower and it also has a sensibly lower standard deviation. This might

be one of the benefits deriving from the use of standard prices. Government revenues and expenditure look very similar, although the range is smaller for expenditure. Part of the difference depends on the fact that expenditure can exceed the costs if the government decide to indebt or receive external grants. On the other side, not all the revenues are always spent¹³. The fraction of expenditure on social services and welfare also reveals a remarkable variability. The share ranges from almost zero up to almost one. The mean however is in the lower bound of the distribution, namely around the 25%, which means around one fourth, of total expenditure allocated to social services.

Table 4 - Descriptive statistics and correlation matrix of government statistics

Panel A

Variable	Mean	Standard Deviation	Range	
<i>KG</i>	19.4073	5.9861	6.9203	50.0174
<i>CGREV</i>	25.0320	10.3951	2.6792	62.0173
<i>CGEXP</i>	27.5431	10.5894	8.0874	57.7462
<i>SOCEXP</i>	0.2450	0.1740	0.0006	0.9818

Panel B

	<i>KG</i>	<i>CGREV</i>	<i>CGEXP</i>	<i>SOCEXP</i>	<i>POLITY2</i>
<i>KG</i>	1				
<i>CGREV</i>	0.355 (0.000)	1.0000			
<i>CGEXP</i>	0.404 (0.000)	0.911 (0.000)	1		
<i>SOCEXP</i>	0.021 (0.534)	0.410 (0.000)	0.368 (0.000)	1	
<i>POLITY2</i>	-0.164 (0.000)	0.412 (0.000)	0.383 (0.000)	0.315 (0.000)	1

Note: p-values are reported in parenthesis

Panel B of Table 4 shows pairwise correlations between government size measures. Most of them are extremely significant. The correlation between revenue and expenditure, and government consumption are positive and significant, but not extremely high in magnitude. This is most probably because of the difference in the way the data were recorded. In fact revenues and expenditure have a very high correlation, around 90%. Both the share of social welfare and *POLITY2* appear to be positively related to central government revenues and expenditure. The interesting correlations however, are represented by the ones between social expenditure and government consumption, and between government consumption and *POLITY2*. The first one

¹³ The avoidance of revenue spending may be due to different reasons. The rent capturing ability of the elite is one of them. Aside this money can also be allocated to the reduction of public debt. Therefore the equation of more revenue and less expenditure equal to rent seeking attitude, although tempting, cannot be considered absolutely true.

is the only correlation not significantly different from zero. The correlation between government consumption and *POLITY2* on the other side is significantly negative. It is also worth noticing that the correlation between social services share and *POLITY2* is positive and significant.

4.3. Other control variables

Representing the extraction and redistributive variables described above as a mere function of political indicators would be at least naïve. It is therefore necessary to make some reference to the public policy literature and add to the equation the most important elements that could have an influence on the examined dimensions. Lindert (1996) analyses the components that possibly limit social spending in a sample composed by OECD countries only over a twenty-year period (1960-1980). The income level of the country seems to be the most obvious one: The richer the economy, the bigger the resources that can be used by the government as well. In order to capture this factor the per capita income is used as independent variable.

Although the voter turnout, and generally speaking the electoral mean, is not the adequate component to take into account for the present analysis, there are no grounded reasons to believe that other factors, such as population age or human capital level would not play an important role, even in a non-democracy. Dictatorships hinder political competition and fair representation, but as explained above, it would be absurd to believe that they can be completely isolated to popular demands. Therefore, even under autocratic rule, the share of older population, namely the one over 65, can consistently increase the demand for redistribution. Higher level of human capital can have different impact on overall expenditure. The human capital level is proxied by the average years of education of the adult population. It is difficult to say *a priori* which is the aggregate effect of such a variable, but it is reasonable to suppose that more educated people will be more informed or at least more willing to participate to political life¹⁴.

In the literature that theoretically investigates the effect of political regime on taxation, one of the common issues is the way the time is discounted (Levi 1988, Cheibub 1998). In other words, if the dictator cares about staying in power in the future years he will tend to tax less. On the other side, if the present rent-seeking attitude prevails, he will tax more. Other authors (Cukierman et al. 1992) however, have reached different conclusions observing that the more the dictator cares about the future, the more he will try to hinder future governments. Therefore he will undermine the tax-collection system and rely on distinct type of taxes. The discussion makes

¹⁴ Surveys on the electorate in the US have shown that wealthier and more educated people are more likely to show up at the election (reference needed).

the prediction quite difficult. Since it is complicated to estimate the way the regime, whether democratic or not, discounts the future, the function includes a proxy of tenure given by the number of years that the regime has been in place. One possibility is that longer durability is associated with higher expenditure. This is because the regime feels safer or stronger in the case of autocracy and because the politicians care of being re-elected in the case of democracy. The likelihood of an increase in public expenditure close to the elections has been proved by a developed literature on budgetary cycle (Presson and Tabellini 2000). On the other side, if the regime feels that extraction and redistribution will undermine its continuity, it might decrease both the invoices along with the length of its power.

5. Results

The estimate technique used to produce the outcomes below is a fixed-effect Panel-OLS model. The specification has two main advantages (Wooldridge 2002). First it allows dealing with potential unobserved effects as long as these are constant over time. Following the standard practice, the unobserved effect is indicated here with the country-specific effect. Secondly, by using a fixed effect estimator, coefficients are consistent even if the country-specific effect is correlated with any of the regressors. If this was not the case, random effect estimates would deliver more efficient results. However, there is no sound reason to exclude the correlation between country effect and other regressors since none of them can be considered strictly exogenous to the country specific context.

5.1. Extraction

Estimations of equation (1) are reported in Table 5 and Table 6. The set of specifications in Table 5 evaluates the impact of different political incentives on government expenditure. According to the results, higher levels of political competition, executive recruitment competition and constraints on the executive diminish the share of the total domestic production that the government is able to use. The effect is highly significant and it holds even when the three aspects are evaluated jointly.

It is difficult to quantify the entity of an average change in the independent variable. All of them are subjective measure of a democratic feature. Therefore, it is only possible to assume that the marginal change is equal at each point of the distribution. If the assumption is true, the reduction of government consumption for unitary changes in the political indicator can go up to 0.43%,

other conditions being equal, which corresponds to roughly one tenth of the dependent variable standard deviation. Estimate (1)-(3) have the advantage of indicating specific feature of democracy that might be desirable. *POLITY2* however is an overall indicator of the three aspects that have more intermediate steps. Each marginal improvement toward democracy, no matter in which feature of political institutions take place, turns into a 0.14% decrease of the average government consumption

Table 5 – Government Consumption

	Government Consumption			
	(1)	(2)	(3)	(4)
Political Competition	-0.372*** (-7.18)			
Executive Recruitment		-0.241*** (-2.71)		
Constraints on Executive			-0.435*** (-5.86)	
<i>POLITY2</i>				-0.138*** (-5.21)
Per capita Income	-0.428*** (-5.22)	-0.400*** (-4.64)	-0.395*** (-4.8)	-0.433*** (-5.2)
Pop over 65	0.759*** (5.06)	0.677*** (4.40)	0.694*** (4.6)	0.803*** (5.39)
Human Capital	-2.859*** (-2.78)	-3.477*** (-3.31)	-3.188*** (-3.08)	-3.229*** (-3.12)
Regime Durability	-0.124*** (-8.3)	-0.092*** (-6.03)	-0.110*** (-7.46)	-0.114*** (-7.53)
Observations	899	899	899	916

Note: Absolute value of t statistics in parentheses. Results are calculated using fixed effect estimator and accounting for time fixed effect. Constant is included but coefficient is not reported.

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

All the controls are statistically highly significant. Surprisingly per capita income has a negative impact on the overall expenditure. However, if democracies are systematically associated with higher income, while government consumption decreases with the improvement of democratic institutions, this is no longer a riddle. The positive effect of an older population is in line with the empirical findings mentioned before: older people tend to demand a bigger presence of the state in the economy.

The most interesting results are related to the factors for which a clear prediction was not reachable by the theoretic analysis. Human capital is found to have a negative impact on overall government consumption. This might be related to the fact that more educated populations are more likely to ask for broader political participation, impacting on the democratic indicators as well. The model predicts, however, that for equal political liberties, more educated citizen will

push for a reduced presence of the state. Regime durability has also a negative and statistically significant impact on government consumption. The length of government seems to create some fears in the political class and act as an incentive to constraint their resource extraction from the economy. An appealing interpretation can be that with the length of the regime, politicians start doubting the security of their office.

The outcomes presented in Appendix 3 shows that for a broader and less democratic sample, results partially differ. The marginal effect of each political variable is significantly reduced. This tells in a way that the modest number of autocratic observations is a source of possible bias in the estimate. Nonetheless, political competition and the synthetic indicator *POLITY2* remain significant at least at 10% level, confirming the powerful incentive posed by competitive election on government behaviour. Moreover, all the variables report the same sign, indicating still a negative effect of reduced competition in executive recruitment and constraints on government. Control regressors also reproduce the same effects, *ceteris paribus*, despite their magnitude is sensibly modified.

Table 6 presents the results for government revenue and expenditure as dependent variables. The model does not seem to fit the sample. The only relevant dimension is the share of population over 65, which has a positive and statistically significant effect on both revenues and expenditure. This means that older people tend to ask for more services but they also pressure for higher contributions from the entire population¹⁵.

None of the political variables presented here are significant. Most of them maintain the negative sign, but coefficients in specification (2) and (7) display a positive sign, although they are not significantly different from zero. The effect of administration length is confirmed to be negative, but not robust.

If roughly five hundred additional observations are added to the sample, the impact of political institutions on revenue becomes significant, while it remains not distinguishable from zero for the expenditure. This difference is in line with the initial predictions of the theoretical model. Revenues represent extraction power in terms of taxation. For the broader sample the monopolistic advantage of the dictator is confirmed. On the other side, there is no guarantee that the money will be used to buy good and services. Part of them under dictatorship “feed” supporters under the form of wages and pensions. It has to be recognised however, that the

¹⁵ The behaviour is extremely coherent especially if we think of the redistributive conflict as an intergenerational one. Older people are usually a strict minority compared to the rest of the population. Consequently by taxing younger people as well as themselves they benefit of the expenditure without fully internalising the costs. This is a wonderful example of common-pool resources and related collective action problem.

coefficients of all political variables except of “constraints on executive” indicator have a negative coefficient, despite not big in magnitude and statistically non-significant.

The other components of the model show the same trends found in the computation for government consumption, except per capita income. In this case income has a positive effect on the size of government for both taxation and expenditure side. This might have to do with the relative size of public servant wages component of government consumption. In low income countries public servants are probably better paid than the average worker. This increases the share of government consumption compared to higher income countries, where public wages are more probably in line or below the market standard. Therefore the aggregate effect of average per capita income on government consumption is negative in contrast with the positive effect that has on revenue and expenditure in high income countries, other conditions being equal.

The last characteristics that are worth mentioning are the confirmed relevant role of population aging on both revenue and expenditure, and the notable negative effect of human capital on the two elements. The magnitude of the impact is particularly relevant for human capital: it is estimated that an additional year of average education in the adult population reduces public expenditure up to 7% *ceteris paribus*.

Table 6 – Central Government Revenue and Expenditure

	Central Government Revenue				Central Government Expenditure			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Political Competition	-0.078				-0.113			
	(-1.27)				(-1.29)			
Executive Recruitment		0.089				-0.024		
		(0.87)				(-0.16)		
Constraints on Executive			-0.099				0.051	
			(-1.16)				(0.41)	
<i>POLITY2</i>				-0.002				-0.001
				(-0.05)				(-0.02)
Per capita Income	0.002	0.042	0.006	0.021	-0.178	-0.157	-0.144	-0.135
	(-0.02)	(-0.41)	(-0.06)	(-0.2)	(-1.29)	(-1.11)	(-1.04)	(-0.97)
Pop over 65	0.648***	0.605***	0.635***	0.651***	1.044***	1.009***	0.997***	1.063***
	(3.61)	(3.38)	(3.56)	(3.7)	(4.13)	(3.99)	(3.96)	(4.27)
Human Capital	-1.862	-2.066*	-1.929	-1.903	-1.263	-1.483	-1.551	-1.33
	(-1.51)	(-1.68)	(-1.57)	(-1.55)	(-0.73)	(-0.86)	(-0.89)	(-0.77)
Regime Durability	-0.037**	-0.02	-0.035**	-0.026	-0.018	-0.004	0.002	-0.004
	(-2.13)	(-1.16)	(-2.07)	(-1.5)	(-0.7)	(-0.16)	(-0.09)	(-0.16)
Observations	851	851	851	866	899	899	899	916

Absolute value of t statistics in parentheses. Results are calculated using fixed effect estimator and accounting for time fixed effect. Constant is included but the coefficient is not reported.

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

5.2. Redistribution

The analysis turns now to the scrutiny of the redistributive power that different political incentives generate. The proxy for redistribution has been explained above and is the dependent variable for equation (2) (see section 3). Results are displayed in Table 7. The impact of various democratic features is positive and statistically significant. Higher political competition creates an average increase of 0.4% in the share of social expenditure as a share of overall public expenditure. The amount corresponds roughly to one fourth of the standard error. A unitary change in executive recruitment competition doubles the size of the impact, other conditions being equal. Constraints on executive have a milder influence, but still positive. A unitary change in the *POLITY2* index entails a 0.1% increase of social expenditure. The amount of change is very similar to the one estimated in the first model displayed in Table 5 for government consumption, in particular for the effect of political competition and *POLITY2*. The estimates confirm the ability of democratic incentives to promote more progressive policies.

Control variables also give some interesting insights. Income per capita has a negative and significant impact on the share of social services. This means that *ceteris paribus* richer countries prefer to devote less expenditure on welfare than to other activity. In the frame the model has been set, this also implies that given a certain level of democracy, human capital and demographic composition, richer countries redistribute less compared to poorer¹⁶. Another notable result is represented by the negative coefficient of the population share over 65. Apparently aging is not increasing the demand of social services. As explained in Lindert (2004) the so called “grey power” put big pressure on pension expenditure, but the lobbying is not found in terms of social expenditure. To a certain extent this is not completely unreasonable. Most likely elderly will be clearly concerned with services such as pension (as relevant source of income) and health (since physical conditions tend to worsen along with age) but far less with education and social services. Human capital is not relevant for allocative decisions. Despite the statistical insignificance, it confirms its negative push against public provision.

Length of the office seems to encourage politicians to spend more on social services. This is in line with the previous results. If politicians are generally fearing of losing their office, as the previous part of the model predicted, other conditions being equal they will try to redistribute

¹⁶ A thorough analysis would require to investigate the effect that income or even wealth inequality have on redistributive outcomes. Beside the well known problem related to the pertinence and availability of Gini coefficient as a measure of inequality, it would be out of scope to consider this feature in the model. It is therefore worth mentioning the room that this dimension would reasonably occupy in the analysis, but the actual investigation is left for another paper.

more in order to meet popular demand and try to prolong their stay into power. The effect of each incremental year is estimated to be around two percent¹⁷.

Table 7 – Social Services and Welfare as a share of Central Government Expenditure

	Social Expenditure			
	(1)	(2)	(3)	(4)
Political Competition	0.004*** (2.94)			
Executive Recruitment		0.008*** (4.09)		
Constraints on Executive			0.003** (1.99)	
<i>POLITY2</i>				0.001** (2.40)
Per capita Income	-0.007*** (-3.48)	-0.005*** (-2.76)	-0.007*** (-3.70)	-0.006*** (-3.06)
Population over 65	-0.008** (-2.43)	-0.009** (-2.55)	-0.008** (-2.23)	-0.011*** (-3.3)
Human Capital	-0.024 (-1.00)	-0.022 (-0.93)	-0.02 (-0.84)	-0.028 (-1.15)
Regime Durability	0.002*** (5.24)	0.002*** (5.77)	0.002*** (4.79)	0.002*** (4.77)
Observations	899	899	899	916

Absolute value of t statistics in parentheses. Results are calculated using fixed effect estimator and accounting for time fixed effect. Constant is included but the coefficient is not reported.

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

A last comment is due. Social spending is the so called bottle neck of the analysis. It was underlined before when describing the model of public spending that a broader and “less democratic” sample could lead to different results. It would be therefore arduous to label the analysis definitive and robust. Nonetheless, as long as further data become available, this is the best insight that investigations can give.

6. Concluding remarks

Which is the impact of political institution on public policies? Now the answer is clear. The overall size of government increases with weakening political constraints. On the other side, redistributive capacity is fostered by stronger constraints. In other words, democracy enables

¹⁷ It would be interesting to account for a non-linear relation to capture the effect of office length and expenditure. The intriguing idea to be tested is to find the point up to which the regime feel stable enough to keep rent-seeking without the need of redistribution and after which it needs to share its resources with the majority.

citizens to restrict government presence in the economy and to demand higher progressiveness for redistributive policies.

Despite the sound methodology the analysis is rooted on, we would like to prevent the reader from reaching too rigid conclusions. We give here some hints to broaden the perspective of our results.

A general outcome regarding both the overall size and redistributive power consists of the assessment that not all institutions have the same impact on these variables. Political competition has the strongest and most robust effect on public policies. Competition in executive recruitment and constraints on executive have a far less remarkable influence.

In terms of development policies, this indicates that formal institutions, such as check and balances, can better unfold their power when supported by an active civil society able to organise pressure groups and parties and demand for competitive elections. Policymakers should consider the joint powerful effect without limiting their attention to the shaping of formal constraints.

A second remark concerns the effect of political liberalisation on redistribution. Weakest shares of the population seem to be better represented by freer political institutions. The finding does not exclude the possibility of increasing their voice in another way. As the World Development Report (2004) suggests, another way to increase the voice of the poor is by strengthening the short accountability route. The proposal is a viable short-run solution implementable during the long-run pattern of state formation, even under less democratic governments.

Lastly, government size here has been more generally renamed extraction. The term gives to the policy a rather negative connotation. And if we assume that resources that are consumed discourage political competition, this is absolutely true. However, the assumption might appear too strong. Bureaucracy is a fundamental actor for the correct functioning of the state (Brett 1999) and efficient bureaucrats need to be paid well. The implication is that strong extractive capacity can be crucial in the phase of state formation during which the government is building a well-operating and capillary administration.

In conclusion, we have shown clearly that a shift of attention from *how much* governments spend to *how* they do it is essential to understand the development process. Political institutions confirm to be an important factor that influences the expenditure pattern, but not the only one. Democracy, and in particular political competition, has a negative effect on the aggregate size but a positive effect on redistributive policies. We have left an open question: is bigger government size always bad for development? The question is worth further research effort.

Appendix 1 – Average indicators of baseline sample by country

<i>Country</i>	<i>POLITY2</i>	<i>KG</i>	<i>SOCEXP</i>
Argentina	2.76	17.264	0.380
Australia	10.00	16.055	0.286
Austria	10.00	17.058	0.456
Belgium	10.00	21.257	0.415
Bolivia	4.45	20.144	0.130
Botswana	9.00	22.605	0.018
Brazil	2.00	26.172	0.314
Canada	10.00	16.394	0.374
Chile	-0.56	25.952	0.326
Colombia	8.00	18.141	0.121
Costa Rica	10.00	20.405	0.173
Denmark	10.00	23.380	0.409
Ecuador	8.75	27.705	0.017
El Salvador	3.94	16.587	0.040
Finland	10.00	20.209	0.336
France	8.42	20.348	0.429
Gambia	7.78	15.571	0.023
Germany	10.00	15.894	0.461
Greece	7.18	13.524	0.233
Guatemala	-1.00	11.908	0.053
Honduras	-1.00	20.636	0.059
Ireland	10.00	17.678	0.264
Italy	10.00	16.199	0.333
Malaysia	3.87	19.921	0.044
Mauritius	9.68	12.892	0.179
Mexico	-1.73	14.367	0.176
Nepal	-5.06	21.902	0.007
Netherlands	10.00	20.432	0.368
New Zealand	10.00	19.291	0.321
Nicaragua	-2.17	25.090	0.143
Norway	10.00	18.385	0.346
Panama	-0.57	19.375	0.006
Paraguay	-5.14	12.448	0.202
Peru	-7.00	18.444	0.003
Philippines	0.65	17.185	0.022
Portugal	9.64	22.409	0.244
Spain	7.50	14.907	0.703
Sri Lanka	5.80	32.595	0.155
Sweden	10.00	26.326	0.473
Switzerland	10.00	7.934	0.477
Thailand	3.32	17.411	0.035
Turkey	6.73	13.721	0.028
Uganda	-4.32	38.400	0.280
United States	10.00	13.804	0.313
Uruguay	1.81	20.096	0.526
Venezuela	9.00	14.805	0.067

Appendix 2 – Descriptive statistics of enlarged sample

Table 8 - Descriptive statistics and correlation matrix of political indicators

Panel A				
Variable	Mean	Standard Deviation	Range	
<i>POLCOMP</i>	4.870	3.797	1 – 10	
<i>EXREC</i>	5.318	2.438	1 – 8	
<i>EXCONST</i>	3.863	2.393	1 – 7	
<i>POLITY2</i>	-0.141	7.617	-10 – 10	
Panel B				
	<i>POLITY2</i>	<i>EXREC</i>	<i>EXCONST</i>	<i>POLCOMP</i>
<i>POLITY2</i>	1			
<i>EXREC</i>	0.941	1		
<i>EXCONST</i>	0.951	0.844	1	
<i>POLCOMP</i>	0.957	0.848	0.879	1

Table 9 – Descriptive statistics and correlation matrix of government statistics

Panel A				
Variable	Mean	Standard Deviation	Range	
<i>KG</i>	22.364	11.384	1.528	83.679
<i>CGREV</i>	22.571	10.426	2.062	62.0173
<i>CGEXP</i>	27.5431	10.970	5.105	67.702
Panel B				
	<i>KG</i>	<i>CGREV</i>	<i>CGEXP</i>	<i>POLITY2</i>
<i>KG</i>	1			
<i>CGREV</i>	0.080 (0.000)	1.0000		
<i>CGEXP</i>	0.158 (0.000)	0.912 (0.000)	1	
<i>POLITY2</i>	-0.139 (0.000)	0.438 (0.000)	0.422 (0.000)	1

Note: p-values are reported in parenthesis

Appendix 3 – Regression results with enlarged sample

Table 10 – Government Consumption as share of GDP

	Government Consumption			
	(1)	(2)	(3)	(4)
Political Competition	-0.141***			
	-3.18			
Executive Recruitment		-0.096		
		-1.52		
Constraints on Executive			-0.052	
			-0.81	
<i>POLITY2</i>				-0.036*
				-1.69
Per capita Income	-0.234***	-0.231***	-0.227***	-0.245***
	-4.17	-4.11	-4.05	-4.38
Population over 65	0.351***	0.330***	0.322***	0.368***
	-3.09	-2.91	-2.84	-3.25
Human Capital	-5.075***	-5.221***	-5.051***	-5.070***
	-6.32	-6.42	-6.28	-6.33
Regime Durability	-0.061***	-0.052***	-0.050***	-0.043***
	-6.44	-5.81	-5.59	-4.95
Observations	3536	3536	3536	3621

Note: Absolute value of t statistics in parentheses. Results are calculated using fixed effect estimator and accounting for time fixed effect. Constant is included but coefficient is not reported.

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

Table 11 – Central Government Revenue and Expenditure as a share of GDP

	Central Government Revenue				Central Government Expenditure			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Political Competition	-0.203*** (-4.38)				-0.089 (-1.4)			
Executive Recruitment		-0.165** (-2.32)				-0.064 (-0.67)		
Constraints on Executive			-0.159** (-2.44)				0.005 (0.05)	
<i>POLITY2</i>				-0.068*** (-3.02)				-0.014 (-0.44)
Per capita Income	0.174** (2.22)	0.171** (2.17)	0.180** (2.29)	0.156** (2.00)	0.274*** (2.67)	0.271*** (2.629)	0.278*** (2.70)	0.251** (2.46)
Pop over 65	0.737*** (5.86)	0.686*** (5.45)	0.686*** (5.44)	0.717*** (5.72)	1.360*** (8.07)	1.340*** (7.98)	1.337*** (7.97)	1.353*** (8.11)
Human Capital	-4.107*** (-4.07)	-4.431*** (-4.36)	-4.208*** (-4.15)	-4.268*** (-4.23)	-7.126*** (-5.38)	-7.261*** (-5.48)	-7.207*** (-5.44)	-7.044*** (-5.35)
Regime Durability	-0.064*** (-5.44)	-0.054*** (-4.63)	-0.055*** (-4.7)	-0.053*** (-4.55)	-0.081*** (-4.97)	-0.076*** (-4.78)	-0.072*** (-4.52)	-0.067*** (-4.22)
Observations	1443	1443	1443	1464	1528	1528	1528	1554

Note: Absolute value of t statistics in parentheses. Results are calculated using fixed effect estimator and accounting for time fixed effect. Constant is included but the coefficient is not reported.

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

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