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Privatization in OECD Countries: the Importance of Electoral Institutions and Government Ideology*

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Abstract

This paper provides an empirical analysis of the role of political institutions in privatization. Using panel data for 21 industrialized countries we first show that the extent of privatization is positively associated with political cohesion and majoritarian elections. Second, privatization seems strongly affected by partisan politics. Particularly, right-wing executives with re-election concerns design privatization to spread share ownership among domestic voters.

Keywords: political institutions, partisan politics, privatization

JEL ns.: D72, D78, L33

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1. Introduction

During the last two decades, privatization policy has swept the world. Industrialized economies got the lion's share of total privatization revenues (67 per cent), but developing countries have also privatized large chunks of their State-owned enterprise (SOE) sector under the pressure of international lending agencies. The big privatization cycle of the 90s seems now over. During the first decade of the century, global privatization figures were back to the values reported at the beginning of the cycle.

Even if privatization seem to follow a common global trend, the extent of divestiture varies greatly across countries. In some countries, governments have pursued a consistent and sustained privatization policy as a part of wider reform packages, while in others ambitious programs have been blocked on their way by adverse interest groups, so that privatization has been sporadic and small-scaled.

The United Kingdom provides an illustrative example of the first kind of privatization policy. Although not explicitly mentioned in the Conservatives' program at the 1979 elections which brought Mrs. Thatcher to power, privatization started in (reasonably) competitive industries with the sale of British Aerospace, Britoil, and Cable and Wireless, and then gained momentum after the 1983 re-election with the privatization of sizeable companies with market power (such as British Telecommunications, British Gas, and British Airport Authority). The complete divestiture of the SOE sector was instead a top priority of the political manifesto which allowed the Conservatives to obtain re-election in 1987. Privatization continued apace with important sales in the newly liberalized electricity market and in the water industry. At the end of the third Conservative legislature, the annual proceeds approached £5bn (i.e. ten times the initial level) and virtually all State-owned corporations have been sold out, with SOE value added accounting for a marginal share of domestic GDP (Vickers and Yarrow, 1991; World Bank, 1995).

Importantly, the privatization process in the United Kingdom was initially fiercely opposed by the trade unions. In 1985-86, the National Union of Mineworkers went on a two-year strike against the restructuring of the to-be-privatized coal industry. The engineers of BT also called a strike to oppose the major reductions in the staff numbers that privatization foresaw. However, the comfortable majority enjoyed by the

Conservatives in Parliament allowed to push back the opposition and to accomplish the announced program.

Some countries' privatization history is also fraught with failed attempts. The Belgian case is certainly interesting in that respect. A significant attempt to restructure and denationalize the public sector was made at the beginning of the 80s under various weak coalitional governments led by Prime Minister Martens. This attempt was thwarted by trade unions in 1983, with a general strike lasting several weeks. This strong reaction forced the governments to postpone this first reforming effort.

In 1986, Martens tried to launch an austerity program which also included privatization. In this direction, a public commission was established with the aim to study the rationalization of state-owned enterprises, eventually recommending the partial sale of Sabena, Belgacom, Soci t  Nationale d'Investissement (SNI) and CGER (Spinnewyn, 2000). Again, this program was deeply opposed even within the coalition members and did not result in any actual privatization. At the beginning of the 90s, the sales recommended by the 1986 public commission were finally launched, amid strong political and social resistance leading to a new wave of strikes by public sector employees.

The worsening of public finance and the urgent need to meet Maastricht convergence criteria called again for fiscal discipline and privatization. In order to overcome the political stalemate that characterized the previous stabilization attempts, in 1995 the prime Minister Dehaene asked and obtained by the Parliament a special authorization to legislate by decree on certain economic matters, including divestiture. Only under these exceptional rules, the Belgian government finally floated in the stock market a large number of shares of two important SOEs (i.e. Distrigaz and Dexia).

In this paper we claim that different political institutions matter in explaining one country's ability of implementing policies with significant distributional consequences, such as privatization. Particularly, majoritarian political systems – as opposed to proportional systems – should be more likely to privatize. Majoritarian systems are characterized by a set of institutions which tend to reduce the number of veto players, which results in greater executive stability. On the contrary, consensual or proportional systems tend to disperse decision making power among different actors, so

that executives are weaker and characterized by higher turnover. In a majoritarian country, the greater political cohesion of the parliamentary coalition supporting the executive allows incumbent governments to privatize a larger fraction of the SOE sector, as the constituency of the “losers” from the policy change is less likely to enjoy bargaining power. On the contrary, in proportional countries the different political actors will hardly reach an agreement about how to distribute the burden of the policy change.

In this paper, we test this prediction using an original dataset with continuous and time varying measures of political institutions for 21 OECD economies. Our panel estimates show that indeed political institutions matter in privatization. Majoritarian countries, characterized by lower political fragmentation, tend to privatize more, even after controlling for other economic and political determinants.

A political economy approach seems therefore useful in understanding the determinants of privatization. This fact begs a natural question: does ideology or political orientation also matter? According to a largely held view, governments supported by right-wing coalitions are more prone to privatization than leftist governments, traditionally more inclined to broaden the size of government.

In the privatization history large scale processes implemented by right wing executives abound. Privatization in the United Kingdom is again a notable example, as the process in its entirety has been implemented in the course of three consecutive legislatures with Mrs. Thatcher in office (1979-1991). The French case is also deeply shaped by partisan politics. In the beginning of the 80s, the newly elected socialist government undertakes a massive nationalization plan involving 5 industrial firms (Compagnie Générale d'Electricité (CGE), Rhône Poulenc, Saint Gobain, Pêchiney, and Thomson Brandt), 2 financial firms (Paribas and Suez), and 39 banks. Following the electoral defeat of the socialists in 1986, the conservative government led by Chirac decided to re-privatize 13 firms and financial institutions. The privatization wave stopped with the return to power of the socialists between 1988 and 1992. Privatization resumed in 1993 when the socialists lost the presidential elections, and continued under conservative governments led by Balladur and Juppé. At the end of the 90s most of the

companies that were nationalized in 1982 were again (partially) private (Dumontier and Laurin, 2002).

However, center-left governments have also embarked privatization especially when fiscal conditions deteriorate. In Italy, proceeds worth more than US\$135bn have been raised almost exclusively by center-left governments. At a smaller scale, the timing of Danish privatizations has coincided exactly with the tenure of a social-democratic cabinet led by Rasmussen.

The logic that privatization policy is *a priori* adopted on the grounds of ideological preferences is not completely satisfactory. Indeed, privatization might be a consistent policy also for left wing governments if revenues are used for redistribution. Theoretically, political preferences should instead matter in the choice of privatization method. Even if governments of all political stripes may privatize, only market-oriented (right-wing) governments design privatization to spread share ownership and foster popular capitalism. The rationale for this policy is re-election. By selling underpriced shares in the domestic retail market, right wing governments make equity investment attractive for the median voter, and create a constituency interested in the maximization of the value of financial assets and averse to the redistribution policies of the left. Strategic privatization can therefore be a rational strategy for raising the probability of success of market-oriented coalitions at future elections (Biais and Perotti, 2002).

To assess this theory, we first construct an original political database with a continuous and time-varying measure of the governments' ideological orientation for 21 OECD countries, and then use it as an explanatory variable in several privatization regressions.

Our results indicate that - in the context of advanced economies - the partisan orientation of the government has a significant impact on the timing, extent and methods of privatization. Governments leaning towards the right of the political spectrum privatize sooner and more. Importantly, they tend to sell shares in the domestic retail market rather than selling them to strategic investors or abroad, as theory suggests. This evidence confirms that privatization is politically motivated, and that a political economy approach is particularly useful in understanding why and how divestiture takes place around the world.

This paper is related to two strands of empirical literature. The first studies the determinants of privatization. Bortolotti, Fantini and Siniscalco (2003) have shown that privatization takes typically place in wealthy democracies, encumbered by high public debt but endowed with deep and liquid stock markets, and that the extent of privatization in terms of revenues and stakes sold appears more limited in civil law countries, where shareholders are poorly protected, banks powerful, and capital markets less developed. Jones, Megginson, Nash, and Netter (2001) show that privatization underpricing is negatively associated with government expenditures as a percentage of GDP, which they interpret as a proxy for “populism”. Populist governments – as opposed to market oriented governments – appear more interested in raising revenues rather than targeting underpriced shares to the median voter. Megginson, Nash, Netter, and Poulsen, (2002) study the determinants of the choice of the privatization method in a large sample of privatization sales in developed and developing nations, finding that public offers are more likely in less developed capital markets and for more profitable SOEs.

The second strand of literature analyzes the political-institutional determinants of economic policy.¹ Persson, Roland and Tabellini (2003) provide theory and evidence about the role of electoral rules in shaping political fragmentation, which in turn affects government spending. Milesi-Ferretti, Perotti and Rostagno (2001) study how measures of proportionality relate to the composition of spending, showing that proportional systems exhibit higher shares of transfers and overall primary public expenditure to GDP. A political economy approach has been recently applied also to explain the degree of investor protection. Pagano and Volpin (2004) analyze the political decision that determines the degree of investor protection in a country, concluding that proportional electoral systems are conducive to weaker investor protection and stronger employment protection than majoritarian systems.

Our paper complements previous empirical work in two ways. First, it identifies a new determinant of the extent of privatization, namely majoritarian political institutions. Second, it tests partisan theories by using a precise measure of political orientation.

¹ See Alesina and Perotti (1995) for an excellent survey on the political economy of fiscal policy.

The paper is organized as follows: section 2 reviews the relevant political economy models and states the theoretical hypotheses being tested; section 3 describes our political measures; section 4 presents the data; section 5 describes the empirical methodology and the econometric results; section 6 concludes.

2. The political economy of privatization

A formal theory about the effects of political institutions on privatization has not been developed in the literature. However, some contributions in modern political economy can be suitably adapted to the context of privatization. In what follows, we review these theories and draw our empirical implications from these models. A partisan theory of privatization has instead been developed by Biais and Perotti (2002). In this section, we will also present this model and its main predictions.

2.1 Political institution and public policy

The political economy of policy adjustment (particularly, fiscal stabilization) has been studied by Alesina and Drazen (1991). In their model, the benefit of stabilization accrues to all citizens and stems from abandoning a highly distortionary method of financing public expenditure. However, the costs of stabilization (i.e. higher taxation) are apportioned differently among interest groups, with one group bearing a disproportionate fraction of the tax burden. Under these assumptions, the process leading to stabilization becomes a “war of attrition” between groups, characterized by political stalemate until one group concedes. Concession occurs at equilibrium when the group-specific cost of waiting equals the expected benefit from waiting. Alesina and Drazen note that large coalition cabinets made of diverse parties may hardly reach an agreement on how to allocate tax increase among the different constituencies. Therefore lower political cohesion should be associated with a lower degree of fiscal adjustment.

Spolaore (2003) extends this model by comparing adjustment policies in different types of governments. Two benchmark systems are considered: the “cabinet” system, giving full control over policies to one decision maker, and the pure “consensus” system, in which each political agent retains veto power over adjustment

policies. The two systems differ therefore in terms of *political fragmentation*, which can be simply defined as the number of political agents with veto power. The cabinet system is shown to provide prompt adjustment, even it in may adjust too often as the policy-maker fails to consider the adjustment costs of other political agents. On the contrary, the consensus system may fail to adjust even when adjustment is optimal.

Privatization is an important example of adjustment policy, defined as any efficient policy change with significant distributional consequences. First, privatization curbs political interference, improves managers' incentives, and tends on average to increase the efficiency of firms (Megginson and Netter, 2001). Second, privatization has important distributional effects as it typically involves a transfer of wealth from insiders of State-owned enterprises (managers and employees) to outsiders, especially shareholders. Indeed, state sell-offs have been often associated with restructuring and layoffs, with efficiency gains accruing to shareholders of newly privatized firms (Megginson et al., 1994; Haltinwanger, J. and M. Singh, 1999). If one country's political system is highly fragmented, the interest group of "losers" from privatization has voice in the political arena, and engages in a war of attrition which may prevent the efficient policy change.

Standard models of electoral competition with opportunistic politicians also provide a theoretical underpinning to explain the role of political institutions in privatization. Persson and Tabellini (2000) contrast majoritarian and proportional systems to show how the electoral rule affects policy outcomes and rent-seeking behavior. Particularly, majoritarian elections foster competition for votes in marginal districts, where the most mobile voters are concentrated; in turn, enhanced electoral competition reduces rents for politicians.

These models have been developed to study explicitly the size of government, the distribution of public expenditure in terms of public good provision and targeted redistribution (Persson and Tabellini, 2004), and corruption (Persson, Tabellini, Trebbi, 2003). However, the rent-seeking behavior by politicians induced by different electoral rules has important implications also in terms of privatization policy. It has been largely documented that State-owned enterprises are an important source of political rent for elected politicians, who can interfere in the operating activity of the company in order to

cater specific interest groups. First, they can maintain the political support from employees by forcing the managers of State-owned enterprises to keep redundant workers and high wages (Vishny and Shleifer, 1994). Second, they can extract outright rents in the form of corruption or enjoy other private benefits of control (Dyck and Zingales, 2004). Majoritarian elections (and stiffer electoral competition) should keep politicians “on their toes”, mitigating rent-seeking behavior and moral hazard problems arising from the political control of State-owned firms. *Ceteris paribus*, politicians should be more reluctant to privatize in countries with proportional electoral rules, as the equilibrium level of rents they can extract via political interference in State-owned firms is lower. We can therefore state the following hypothesis:

H1. *Ceteris paribus, the extent of privatization should be larger in majoritarian than in proportional countries.*

2.1 The partisan dimension of privatization

During the last fifteen years political economy has witnessed a growing interest in the positive analysis of the economic consequences of political conflict between partisan politicians. Within this strand of literature, some contributions analyzed the possibility of strategic manipulation of economic variables by politicians in order to achieve reappointment. (Aghion and Bolton, 1990).

Biais and Perotti (2002) develop a model of privatization where right wing politicians privatize in order to gain future support from the constituencies of shareholders of newly privatized firms. They assume that the right wing party maximizes the utility of the rich, the left the utility of the poor, and each party needs the vote of the median class to win the elections. They show that by allocating a substantial amount of shares of privatized companies to the middle class, the right makes the median voter adverse to the redistributive policies of the left, and more prone to vote with the right at future elections. A large-scale privatization program may therefore represent a strategy for switching to forms of “popular capitalism”, by creating a

constituency of voters interested in the maximization of the value of their financial assets.

This theoretical argument suggests that while privatization can be a bi-partisan policy, its implementation will be affected by political preferences. On the one hand, right wing governments will tend to privatize by public offer, earmarking (underpriced) shares to domestic investors. On the other hand, left wing governments will opt more frequently for private placements and share issues in international exchanges, as both strategies allow to generate higher privatization revenues (Megginson et al. 2002; Ellul and Pagano, 2002).

Therefore, the partisan model of privatization yields the following empirical implication:

H3. *Ceteris paribus, right wing governments, as opposed to center or left wing governments, should privatize by spreading share ownership among domestic voters.*

The next sections will describe how we assess the empirical validity of these theoretical predictions.

3 Measuring political institutions and partisan orientation

In order to test empirically the above mentioned theories, quantitative indicators on the relevant features of political systems are needed. First, relating the extent of privatization to political institutions requires measures of political fragmentation and dis-proportionality of the electoral system (H1). Second, a proper test of partisan model predicates on objective measures for the ideological orientation of the executive (H2).

3.1 Political fragmentation and electoral systems

Conceptually, political fragmentation relates to the presence of political agents enjoying veto power. The larger the number of these veto players, the higher the degree of political fragmentation. When it comes to make the notion operational, one has first to

decide who are the relevant political agents, and second to provide an objectively quantifiable measure of their veto power in a given political system.

As to the first issue, the political economy literature conventionally identifies political parties as the main decision making units being (more or less) cohesive entities representing specific interest groups. Classifications of political fragmentation often used by economists are based on the number of parties in the government and distinguish between one-party executives, two-party coalitions and broader ones (Roubini and Sachs, 1989; Persson and Tabellini, 2003).

However, this approach does not allow for an adequate account of the veto power enjoyed by political parties in different types of government. For example, the power enjoyed by a given party within a minimal coalition cabinet (including only parties whose support is necessary to achieve majority) is stronger than in an oversized one, even if the number of parties in government is the same. Similarly, a single-party minority government may not be a powerful political agent, being typically exposed to threats by the parties of the opposition.

In line with previous studies, we focus instead on a measure based on the *Type Of Cabinet (TOC)*.² This characterization takes into account the transaction costs of political bargaining within the executive and the transaction costs of government's dealing with the parliament. The variable *TOC* distinguishes: (i) one party governments from coalition governments; (ii) minimal coalition cabinets from minority and oversized ones. Minimal coalition cabinets include only parties whose support is necessary to achieve parliamentary majority, while oversized cabinets do not.

Using this classification, cabinets are attributed scores according to the following matrix:

type of cabinet (<i>TOC</i>)	<i>one-party</i>	<i>coalition</i>
<i>minimal winning</i>	1	1/2

² This measure has been first proposed in comparative political science by Lijphart (1999) and used, among others, as a proxy of coalition size by Perotti and Kontopoulos (2002) in an empirical analysis on the political economy of fiscal policy.

The minimal winning – one party cabinet, obtains the maximum score, as it enjoys considerable bargaining power ensuring executive stability. On the contrary, the leadership in coalition minority cabinets is typically exposed to threats from both coalition allies and opposition parties. This possibility fosters in turn political bargaining and compromise. Furthermore, oversized cabinets tend to accord decision-making power to parties other than those strictly necessary for the coalition to stay in office; in this aspect they clearly fit in with the consensus model.

Cabinets deviating from these two benchmark models along one dimension receive middle scores; adjusted scores provide classification for particular cabinets, such as presidential ones.³ Clearly, this discrete index increases as political fragmentation decreases.

We then complement our measure on the type of government with another conventional measure of political fragmentation developed in comparative political science, given by the *Effective Number of Parties (ENP)*. This measure, which parallels the Herfindal concentration index commonly used in industrial economics, puts more weight to those parties which either hold “coalition potential” or “blackmail potential”, i.e. substantial bargaining power in terms of seats (Sartori, 1976; Laakso and Taagepera, 1979). *ENP* is given by the following formula:

$$ENP = \left(\sum_{j=1}^P s_j^2 \right)^{-1} \quad (2)$$

where s_j is the fraction of parliamentary seats held by the j -th party, and P is the total number of parties represented in the Parliament. Clearly, if there are p parties in the parliament, the ENP will take the value p if all parties hold exactly the same number of seats, otherwise it will take lower values in order to “discount” less important parties.

³ In particular, presidential cabinets are, in a way, one party – minimal winning by definition; thus, they should always receive score 1. However, the score ranges from 0.5 to 1 to take into account whether or not the president faces a hostile legislative assembly (the so-called divided government).

Turning to electoral rules, conventional classifications crudely distinguish between “proportional” and “majoritarian” systems, depending on the use of a closed list or uninominal vote. However, these dummies fail to capture the actual degree of heterogeneity within each of the two systems.

Research in comparative political science has produced much better measures in several respects. First, these contributions have set forth continuous variables rather than dummies or discrete indicators. Second, being based on electoral outcomes, they display some variability also over the time dimension, which allows to perform panel data estimation. Despite their appeal, these measures have not been used extensively in the empirical testing of political economy models.

Electoral dis-proportionality indexes account for the divergence between the distributions of votes and seats implied by different electoral rules. Such divergence mostly consists of overrepresentation of major parties and partial or complete exclusion of minor ones. Thus, greater dis-proportionality accords with the majoritarian principle.

The dis-proportionality index (*DISPR*) – developed by Gallagher (1991) - is based on the following formula:

$$DISPR = \sum_{i=1}^N \sqrt{\frac{1}{2}(v_i - s_i)^2} \quad (1)$$

where v_i is the share of votes obtained by party i , s_i is the share of seats held by the same party, and N the total number of parties

The index is continuous and takes value zero when the apportionment of parliamentary seats is exactly proportional to electoral results.⁴ It increases, on average, as dis-proportionality increases, taking maximum values for presidential elections, where the number of seats is reduced to the minimum (which is 1). For presidential and semi-presidential countries, (such as USA and France, respectively) the yearly dis-proportionality index results from the average of values taken in the last legislative and presidential elections.

3.2 Partisan orientation

In the empirical tests of partisan theories, researchers in political economy have up to now constructed dummy variables which crudely distinguish between left and right wing governments, with very limited methodological refinement since the seminal work of Hibbs (1977). This classification is suitable for the small sample of countries where political competition results in a strong and clearly marked bipolarism. However, in countries where the party system is highly fragmented and/or there exists a significant “center” block, the resort to political dummy variables is certainly unsatisfactory. For example, this approach would not be useful to discriminate between a left wing government and a center-left one with strong representation by Christian-democratic parties, a typical case in several continental European countries. Moreover, the dummy variables approach assigns the same score to moderate or extremist parties. Discrete variables scaling more than two values (see Perotti and Kontopoulos (2002), Alesina, Roubini and Cohen (1997) and Woldendorp, Keman and Budge (1998) 3-, 4- and 5-value indexes, respectively) represent only a partial solution to this problem, because they still arbitrarily weigh the role played within the ruling coalition by extremist or moderate parties.

We argue instead that in order to assess precisely the alignment of the executive, first a score has to be attached to each party entering the government coalition, and *not* to the coalition as a whole. Then, the values obtained by the different parties of the coalition need to be aggregated into a single score. In this direction, we proceed as follows: (i) by locating different parties of several countries on a left-right scale of political orientation; (ii) by weighting the relative importance of each party within the coalition. We will address each of these issues in turn.

With respect to the first issue, there are some methodologies that allow to locate different parties on the left-right spectrum of political orientation. All these approaches trade inaccuracy of dummy indicators for arbitrariness of continuous measures. Among them, expert survey methodology has proven a reliable tool in limiting discretion. Huber and Inglehart (1995) have produced a comprehensive dataset for a very large sample both in terms of countries considered (42) and of experts interviewed (over 800). As far

⁴ In bicameral systems, the electoral outcomes of the lower house are considered.

as we know, this is the most recent attempt to provide such a classification, and one of the broadest in terms of coverage. Therefore, in the construction of our partisan index, we will use their classification, assigning to each party a score ranging between 1 (extreme left) to 10 (extreme right).

Our index is a weighted mean of the scores obtained by parties forming the executive according to the Huber and Inglehart survey, with weights proportional to the power enjoyed by each party within the government coalition. We proxy political power by the number of parliamentary seats held by each party over the total held of the government coalition as a whole. We call *PARTISAN* our index of political orientation.

An alternative procedure could have been to use the number of cabinet seats held by each party as weights. However, as Laver and Shepsle (1996) have pointed out, the two criteria are strongly related, since the percentage of parliamentary seats and of cabinet posts held by parties are on average very similar. The method based on the percentage of seats seems more convincing, as the alternative criterion would have implied to assign the same importance to all the cabinet posts, despite the obvious differences in terms of prestige and power.⁵

4 Data

In the previous section, we have presented the methodology that we will use in the construction of our political indexes. We now describe precisely our data and sources.

The first issue to address is the selection of countries. In this direction, we follow strictly the political science literature by choosing sound democracies with established political institutions enabling an orderly succession of powers. Our sample covers: most of Western Continental Europe (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland), Anglo-Saxon countries and Western former British colonies (Australia, Canada, Ireland, New Zealand, United Kingdom, United States) and Japan. As for the time period, we chose to focus on the period between 1977 and 1999, which correspond, respectively, to the first

⁵ For majority governments, parties whose support is not essential for the coalition to have 50% of seats have been excluded in the computation of the index, as they cannot exert any veto power on the decision making of the coalition.

privatization in United Kingdom and to the end of the big privatization wave of the 1990s.

4.1 Political variables

Our source of data on political institutions is Lijphart (1999). As we mentioned in the previous section, Lijphart (1999) has developed a series of country indicators along several dimensions of the political system using electoral data. We have used the same data to construct our three indexes (TOC, ENP, and DISPR) for the 21 countries in our sample for the period, updating the original dataset to our end year.

An important feature of these political variables is that they are time varying, as they change around election years in a given country. In electoral years these variables are the weighted averages of the data in the pre- and post-election periods, and the weights are given by the proportion of months before and after the elections.

Table 2 shows the mean of these variables for the countries of our sample. Three countries in our sample implemented institutional reforms during the 1977-1999 period: Italy modified its electoral system in 1992, New Zealand and Japan in 1993. The two means presented for these countries are computed on the two sub-periods. Figure 1 plots the country means on two and three-dimensional graphs, along with the regression lines.

The regressions are consistent with the expected pair-wise relationships between the three variables. Majoritarian electoral rules, which are associated with greater disproportionality, allow fewer parties to gain seats in the parliament, which in turn raises the probability of observing minimal winning – one party government coalitions. “Majoritarian” countries are well represented in Figure 1d by the cluster including the five Anglo-Saxon countries: Australia, Canada, United Kingdom, United States and New Zealand (before 1993). At the opposite, proportional electoral institutions produce fragmented parliaments and government coalitions. Proportional countries include Belgium and Netherlands, Scandinavia (Denmark, Finland, Norway and Sweden), Italy and Switzerland. Geographic proximity may have played a role in determining these clusters, as political and commercial spheres of influence may also have shaped historically political institutions.

As we already mentioned, three cases of electoral systems' reform are reported. Since they are rare events, it may be interesting to evaluate their impact on our political indicators. In New Zealand, the 1993 reform from majoritarian to proportional electoral system resulted in an increased number of parties and in a decreased index for the government coalition.⁶

Japan and Italy, attempting to curb corruption and improve government stability, moved instead in the opposite direction, shifting from proportional to majoritarian systems. However, these reforms did not pay off as expected. In Japan, the government coalition index increased, but the number of parties increased as well, even if only slightly. Italy faced even a sharp increase in the number of parties (in the first graph, Italy moves perpendicularly to the regression line), leaving unaffected the mean score for the government coalition index.

We now turn to the description of the sources used for the construction of our partisan index. As to political orientation, we referred to Huber and Inglehart (1995). As for electoral results, our main source has been the periodical *Electoral Studies*, which reports detailed information for most of the country-years in our sample. This source has been supplemented with widely used web sources. Detailed information about these sources is reported in Table 1. As to ruling coalitions, the main source of information has been Woldendrop et al. (1998), which has been integrated using web sources. Table 2 reports also the means of the partisan index for the countries of our sample.

4.2 Privatization variables

Our source for privatization data is *Securities Data Corporation*, certainly one of the most comprehensive sources of information at the transaction level. The database contains detailed information about Public Offers of shares (i.e. privatization on public equity markets) and also about private equity placements. Clearly, the first refer to large-scale operations that often involve the targeting of shares to different classes of investors (retail, institutional) in different marketplaces (domestic, or international). The

⁶ Before 1993, New Zealand was the only country of the sample that had been ruled by minimal winning – one party cabinets for the whole period. After the reform its index has always been around 0.5

second refer instead to the sale of a large stake (often a control stake) to strategic investors.

We have aggregated transaction data to construct a panel database for the 21 countries in our sample with the following variables: total privatization revenues (i.e. from public offers and private sales) to GDP in country i in year t (REV/GDP) and privatization revenues from the domestic retail market as a percentage of total revenues in country i in year t (DOM/REV).

The first variable (REV/GDP) measures the economic value of privatizations implemented in a given year, which we will use as a proxy for one government's privatization effort. The second variable (DOM/REV) captures government's intentions to tap domestic citizens and to diffuse share ownership among domestic voters. This variable is used to verify whether the choice of the privatization method is politically motivated.⁷

4.3 Control variables

In order to isolate the role of political institutions, we have to control for the other possible determinants of privatization. First, privatization can be simply affected by the initial size of the SOE sector. Indeed, having SOEs to sell is a necessary condition for the implementation of a large scale privatization program. Second, fiscal conditions should be considered, given that privatization revenues are typically used to square public finance. Third, the stage of financial market development plays an important role, as deep and liquid stock markets facilitate the flotation of large companies and allow governments to maximize proceeds. Finally, the current economic outlook matters, as it has been empirically documented that large privatization programs have been implemented during times of declining economic activity (Bortolotti et al. 2003). We will control for these factors by using the variables described below.

The initial size of the SOE sector is measured by SOE value added as a percentage of GDP in a given country in the year preceding the first privatization

reported in SDC, (*INITSOE*). The current outlook of public finances in a country in a given year is given by the value of total (domestic and foreign) debt as a percentage of GDP, (*DEBT*). We use two conventional measures of a country's financial development: the ratio of stock market capitalization to GDP, (*CAP*), and the turnover ratio, given by the stock market total value traded to market capitalization (*TURNOVER*). Finally, we include GDP per capita (in constant dollars 1996) and annual growth rates of GDP (*GDP* and *GROWTH*, respectively). With the exception of *INITSOE*, all the controls are vary over time.

4.4 Descriptive analysis

The data presented in Table 2 are useful for a first account of the role of political institutions and government's political orientation in privatization. The average of the standardized values of the three political institutional measures (*TOC*, *ENP*, *DISPR*) takes the highest values in New Zealand (before 1993 electoral reform), the United Kingdom, the United States, Canada, and Australia. Interestingly, some of these countries have also been heavily involved in privatization. Particularly, New Zealand shows a high ratio of privatization revenues to GDP (0.16) in the sub-period when majoritarian electoral rules were in place. Privatization proceeds are also remarkable in Australia (0.18) and in the United Kingdom (0.11).

On the contrary, only limited privatization effort is reported in some typical proportional countries, such as Switzerland, Belgium, the Netherlands, Sweden, and Norway. However, we find some exceptions. For example, Portugal boasts privatized assets worth one fourth of GDP, while reporting a relatively low average score of our institutional measures. Italy, under the new electoral regime features a similar pattern, with substantial privatization revenues raised while a highly consensual political system was operational. On the contrary, the United States – certainly a strongly majoritarian country – shows only marginal privatization revenue. But this may simply be due to the

⁷ Revenues raised by Public Offer could be an alternative measure. However, *DOM/REV* allows a more precise empirical test of H2, as floating shares of privatized firms on the domestic stock market is a necessary condition for shifting the political preferences of the median voter. Similar results are obtained when data on public offers are used.

fact that the size of the public is very small and consequently there are very few firms to privatize.

These observations suggest that political institutions and political orientation might play a role in privatization. Table 3 provides a more systematic test based on univariate statistics. The statistics reported for the control variables yield very similar results with respect to the one obtained in previous work, indicating that privatizing countries are typically wealthy, fiscally distressed and endowed with large and liquid stock markets. Higher initial levels of state ownership are as well positively and significantly correlated with privatization proceeds.

A new factor appears also to be relevant: the dis-proportionality index. Interestingly, we observe a higher frequency of privatizations where the electoral rules leave less power to minorities. Interestingly, the partisan dimension of politics appears to be more relevant in the choice of the privatization method. Table 3 shows that the fraction of revenues raised in the domestic retail market is associated with right wing governments in office. This preliminary evidence indicates that our political-institutional measures might have some explanatory power, and indicate the need of a thorough econometric test.

5 Econometric analysis

Our main goal is to analyze the political and institutional determinants of the extent and methods of privatization. We propose a test of our theoretical predictions that consists of two different sets of econometric regressions.

We first estimate regressions where the dependent variable is the extent of privatization, *REVGDP*. This measure is left-censored at zero for all the country-years in which no privatization occurred, which are a significant fraction of our sample. Thus, in this case, conventional regression methods would fail to account for the qualitative difference between limit (zero) observations and non-limit (continuous) observations. Tobit analysis, instead, being based on a new random variable that infers the missing tail in the distribution of the observed variable, allows for estimation by conventional

maximum likelihood methods (Amemiya, 1985). Given that some of the regressors are time-invariant, a random effect specification is assumed about the error term.

Then, we run a second set of regressions that have *DOM/REV* as the dependent variable. Again, the tobit model is appropriate given that this variable is both left and right-censored (at 0 and 1 respectively).

5.1 Endogeneity

Some of our regressors could possibly be endogenous. First, our institutional measures are based on electoral data. As such, they are equilibrium political outcomes which are likely to be co-determined with privatization policy itself. Second, some control variables - chiefly the debt ratio, market capitalization and turnover - are also endogenous, given that privatization policy has a strong impact on public finance aggregates and financial market development. If error terms are correlated with the regressors, consistent estimates cannot be obtained by standard methods.

Relaxing the exogeneity assumption complicates matters significantly due to the censoring of the dependent variable. In this setting, the likelihood function has to be specified for a system of equations. One-step maximization of this function involves multiple integrals, which raise difficult computational problems. Smith and Blundell (1986) propose a two-step estimator for cross-section tobit models that makes computations considerably easier. Vella and Verbeek (1999) extend this technique to allow for panel estimation.

We will implement this approach by running first-stage OLS regressions of all endogenous variables on a set of exogenous instruments, which include: a dummy variable taking the value one in countries relying exclusively on plurality rule in the election of the lower house, and zero otherwise (*MAJ*); a measure of district size given by the number of seats awarded in the average electoral district (*DISTRICT*); and the minimum threshold needed to gain representation in the legislature (*THRESHOLD*).⁸

⁸ We are grateful to Guido Tabellini for providing us with these data.

Such a specification is justified by recent work of Persson, Roland, and Tabellini (2003), showing that the proposed instruments shape the fragmentation of the political system and the government structure and this in turn affects the level and composition of public expenditure.

5.2 First-stage results

The results of the first-stage estimates may be interesting per se and are reported in Table 4.⁹ Our findings about the effect of majoritarian electoral rules and district size resemble those reported in Persson, Roland, and Tabellini (2003) and are consistent with the predictions of their model. Majoritarian rule decreases the incidence of coalition governments and the fragmentation of the political system, while larger district size has the opposite effect. The interpretation of coefficient of *THRESHOLD* is less straightforward. Usually adopted in order to reduce the number of parties and thus the fragmentation of the political system, it shows the opposite sign in our regressions. One possible explanation could be that thresholds are usually adopted within consensual political systems in order to mitigate the effects of strongly proportional electoral rules.

5.3 Second-stage results

We now turn to the main estimating equations, in which we regress measures of privatization on politico-institutional variables. Results for *REV/GDP* are reported in Table 5. Regressions (2), (4), (6) and (8) correct for the endogeneity of some explanatory variables (*DEBT*, *CAP*, *TURNOVER*, *TOC*, *ENP*, *DISPR*) by including the estimated residuals of first-stage regressions. Tables report, along with the usual Wald chi-square statistic for the null hypothesis of all coefficients being jointly equal to 0, a further analogous test restricted to the coefficients of the first stage residuals included in the second stage regressions. The test always rejects the null of these coefficients being

⁹ The results for the other endogenous control variables are not reported for space reasons but are available upon request.

jointly equal to 0, thus indicating that is appropriate to adopt the two-step procedure in order to correct for the endogeneity bias.

The findings on the role of political institutions are consistent with our hypotheses. Our main proxy for political fragmentation, i.e. the type of cabinet variable (*TOC*), affects significantly the size of one country's adjustment in terms of privatization. The *TOC* measure is always significant, particularly when we control for the simultaneity bias in equation (4). Greater political cohesion, which is typically found in cabinet systems with a lower number of political agents in power, increases the pace and extent of divestiture overtime. On the contrary, consensual system with numerous veto players face more difficulties in stabilizing the size of the SOE sector, and stick to small-scale privatization programs.

The electoral rule and particularly its degree of dis-proportionality also shape the extent of divestiture over time especially when we correct for endogeneity. As theory predicts, large scale privatization programs are more often found in majoritarian democracies, where enhanced electoral competition curbs rents for politicians.

These results from our tobit regressions support of the empirical validity of hypothesis H1, confirming the importance of political institutions in explaining the extent of privatization.

However, ideological orientation also appears to be extremely relevant. In all our models, the partisan index is positively and significantly associated with privatization revenues, indicating that political preferences shape divestiture. Even if theoretically privatization can be a bi-partisan policy, implemented by the right for re-election concerns and by the left to raise revenues to finance redistributive policies, we provide robust evidence that in the context of OECD economies, large chunks of the SOE sector have been sold mostly by right-wing governments.

Interestingly, the initial size of the SOE sector is another critical factor. We find evidence of a strong "supply effect" with higher revenues raised in countries where the State has larger property to sell. Fiscal conditions are also relevant, as we find the debt ratio (*DEBT*) highly statistically significant when endogeneity is duly taken into account. Indeed, privatizing countries are often financially distressed, and tend to allocate revenues to amortization funds that allow to reduce outstanding debt, indirectly

alleviating the budget via lower interest payments. Finally, we report some (weaker) evidence on the role of financial market development. The negative relation found between revenues and market capitalization is consistent with the idea that governments resort to privatization to deepen stock markets.

While theoretically privatization may be a bi-partisan policy, political orientation should discriminate the choice of the privatization methods. Clearly, governments' political objective of redistributing income to the median voter and creating a class of shareholders with an interest in the maximization of the value of their financial assets can be achieved only through the flotation of the company on public equity markets, as in Biais and Perotti (2002). However, it is largely documented that privatizing governments often resort to international equity offerings and to the cross-listing of shares in more liquid markets in order to maximize the proceeds from the sale (Gehrig 2002; Ellul and Pagano, 2002). Politically motivated governments should instead earmark a larger proportion of (underpriced) shares to the domestic *retail* market, where the mass of individual shareholders-voters is concentrated. Successful applicants would then have a financial interest in re-electing a market-oriented government.

Table 8 presents the results of a test of this partisan theory of privatization (H2), where the dependent variable measures precisely the government's willingness to tap domestic voters at the privatization stage. Indeed, *DOMREV* is the fraction of total revenues raised in the domestic retail market.

We find a highly statistically significant coefficient for *PARTISAN* index, with the expected sign. The coefficient is also robust across different specifications. This strong result allows us to conclude that in advanced democracies, political preferences are key to explain how privatization is implemented. The empirical implication of partisan theories of privatization is therefore strongly supported by the data. Indeed, market-oriented governments sell more shares to domestic voters. And this privatization strategy could spread share ownership and foster popular capitalism, by increasing the political support for market-oriented platforms.

When we try to correct for endogeneity, we also find the proportion of privatization revenues raised in the home market to be negatively associated with

market capitalization, which indicates domestic financial market development to be another important objective, which can be pursued jointly with popular capitalism.

Interestingly, we find that the type of cabinet and dis-proportionality index associated with share issue privatization in the home market. We have shown in Table 6 that political fragmentation and proportional elections hinder privatization of large SOEs, which are usually floated in stock markets. Political institutions may therefore indirectly affect the choice of the privatization method.

6 Conclusions

This paper has explored empirically how political institutions and the partisan orientation of the government affect the extent and features of privatization in developed economies.

Our results show that a political economy approach is particularly useful in understanding why and how governments privatize. The extent of divestiture is affected by the existence of political institutions curbing the bargaining power of veto players and enhance executive stability. Privatization methods seem instead to be shaped by political ideology, with market oriented governments involved in spreading share ownership among domestic voters.

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Table 1. Description of the Variables

Variable	Definition	Source
CAP	Stock market capitalization to Gross Domestic Product in country i in year t . Stock market capitalization in year t is calculated as the average between the end-of-year market capitalization deflated by the end-of-year Consumer Price Index in year t and $t-1$. Stock market capitalization refers to a country's main stock exchange.	Beck, Demirgüç-Kunt, and Levine (1999), updated using data from IFC, Emerging Stock Markets Factbook, and FIBV.
DEBT	Total debt as a percentage of Gross Domestic Product of country i in year t . Total debt is expressed as the whole stock of direct, government, fixed term contractual obligations to others outstanding at a particular date. It includes domestic debt (such as debt held by monetary authorities, deposit money banks, non financial public enterprises, and households) and foreign debt (such as debt to international development institutions and foreign governments).	International Financial Statistics
DISPR	Disproportionality index. Sum of absolute differences between electoral votes share and seats share, for all the parties. Such divergence usually means overrepresentation of major parties and partial or complete exclusion of minor ones. Mathematical formulation of the index is presented in the text.	Original dataset from Lijphart, updated using Electoral Studies, various years; Banks et al. (1997); Elections Around the World (www.electionworld.org); Parties and Elections in Europe (www.parties-and-elections.de/indexe.html), Political Reference Almanac (http://www.polisci.com/almanac/nations.htm)
DISTRICT	Number of seats awarded in the average electoral district, rescaled to vary between 0 and 1.	Persson, Roland, Tabellini (2003)
DOM/REV	Ratio of privatization revenues raised in the domestic retail market to total privatization revenues in country i in year t .	Securities Data Corporation
ENP	Concentration index computed over parties seats shares in the legislative chamber. Mathematical formulation of the index is presented in the text.	Original dataset from Lijphart, updated using Electoral Studies, various years; Banks et al. (1997); Elections Around the World (www.electionworld.org); Parties and Elections in Europe (www.parties-and-elections.de/indexe.html), Political Reference Almanac (http://www.polisci.com/almanac/nations.htm)
GDP	Ratio of Gross Domestic Product in constant 1996 US Dollars to population in country i in year t . Total population counts all residents regardless of legal status or citizenship.	World Development Indicators, World Bank, International Financial Statistics
INITSOE	Value added of State-owned Enterprises (SOE) as a proportion of Gross Domestic Product (GDP) in the year preceding one country's first privatization as reported in Securities Data Corporation (SDC).	World Development Indicators, and http://www.worldbank.org , and Securities Data Corporation
MAJ	Dummy taking the value one for majoritarian countries, i.e. those relying exclusively on plurality rule in the most recent election to the legislature (lower house), and taking the value zero for mixed and proportional electoral systems.	Persson, Roland, Tabellini (2003)

Table 1. (continued)

PARTISAN	Indicator for the government's partisanship. It is computed as the weighted average of the score attached to parties forming the government coalition, according to Huber and Inglehart (1995) and it ranges from 0 to 10 as well. Weight i -th equal the number of seats held by party i -th in the legislative chamber over the total held by the government coalition. Null weight is assigned to parties whose seats are not essential for the government coalition to hold the absolute majority.	Electoral Studies, various years, Banks et al. (1997), Zarate's World Political Leaders since 1945 (www.terra.es/personal2/monolith), Library of Congress Country Studies (http://lcweb2.loc.gov/frd/cs/cshome.html), Administration and Cost of Elections (www.aceproject.org), Elections Around the World (www.electionworld.org), Parties and Elections in Europe (www.parties-and-elections.de/indexe.html), Political Reference Almanac (http://www.polisci.com/almanac/nations.htm)
REV/GDP	Total revenues from privatisation to Gross Domestic Product in country i in year t . Total revenues are revenues in current US dollars from total privatisation deals (<i>Public Offers</i> and <i>Private Sales</i>). Gross Domestic Product is expressed in current US dollars.	Securities Data Corporation Privatisation, World Development Indicators
THRESHOLD	Percent of the total vote at the national level to gain representation in the legislature.	Persson, Roland, Tabellini (2003)
TOC	Discrete measure which accounts for the type of government in office: one party, minimal winning, minimal winning – one party, or neither of them. See matrix in the text	Original dataset from Lijphart, updated using Electoral Studies, various years; Banks et al. (1997); Elections Around the World (www.electionworld.org); Parties and Elections in Europe (www.parties-and-elections.de/indexe.html), Political Reference Almanac (http://www.polisci.com/almanac/nations.htm)
TURNOVER	Stock market total value traded to total market capitalization in a country in year t . Total market value in year t is deflated by the Consumer Price Index in year t . Market capitalization in year t is calculated as the average between the end-of-year market capitalization deflated by the end-of-year Consumer Price Index in year t and $t-1$. Trading value and market capitalization refer to a country's main stock exchange.	IFC Emerging Stock Markets Factbook 1999, Federation International des Bourse des Valeurs (FIBV)

Table 2. Political and Privatization Data

This table presents the means of our political and privatization variables for the period 1977-1999. TOC is the type of cabinet, ENP is the effective number of parties, DISPR is the dis-proportionality of the electoral rule, AVERAGE is the (standardized) average of TOC, ENP, and DISPR. PARTISAN is measure of ideological orientation, ranging from extreme left (0) to extreme right (10) of the political spectrum. REV/GDP are cumulative privatization proceeds (in 1996 US Dollars) in the sample period scaled by end of period GDP (in 1996 US Dollars). DOM/REV is the average percentage of privatization revenues raised from the domestic retail market. In countries where an institutional reform occurred during the sample period, data are split in two sub-periods by considering the first electoral year under the new regime.

COUNTRIES	TOC	ENP	DISPR	AVERAGE	PARTISAN	REV/GDP	DOM/REV
Australia	0,816	2,425	10,829	0,864	5,959	0.186	0,026
Austria	0,548	2,779	1,614	-0,109	5,402	0.049	0,006
Belgium	0,298	4,623	3,699	-0,847	5,502	0.024	0,002
Canada	0,985	2,343	13,641	1,248	5,973	0.035	0,002
Denmark	0,123	4,885	1,492	-1,258	5,736	0.075	0,001
Finland	0,017	5,109	3,347	-1,332	5,687	0.084	0,025
France	0,633	3,350	24,390	1,203	5,485	0.059	0,020
Germany	0,462	2,652	2,094	-0,133	5,697	0.035	0,009
Greece	0,973	2,231	7,729	0,906	5,911	0.066	0,023
Ireland	0,437	2,869	4,264	-0,096	5,929	0.072	0,032
Italy (-94)	0,048	3,955	3,505	-0,916	6,054	0.008	
Italy (94-)	0,042	6,390	7,105	-1,486	5,086	0.086	0,045
Japan (-96)	0,184	2,990	6,087	-0,297	8,286	0.044	
Japan (96-)	0,431	3,145	8,801	0,088	8,197	0.011	0,016
New Zealand (-96)	1,000	1,965	14,858	1,461	6,800	0.187	
New Zealand (96-)	0,326	3,404	7,419	-0,194	6,630	0.051	0,000
Norway	0,413	3,680	4,483	-0,369	5,133	0.021	0,008
Portugal	0,445	3,010	4,536	-0,116	5,898	0.254	0,109
Spain	0,712	2,733	7,851	0,468	5,485	0.108	0,041
Sweden	0,412	3,642	1,829	-0,523	4,995	0.067	0,011
Switzerland	0,000	5,578	3,059	-1,519	4,638	0.022	0,006
The Netherlands	0,390	4,282	1,308	-0,785	5,938	0.041	0,010
United Kingdom	0,953	2,174	14,852	1,343	6,792	0.114	0,038
United States	0,789	1,936	15,699	1,293	5,554	0.001	0,001
Means	0,477	3,423	7,270	-0,046	5,949	0,118	0,021

Table 3. Univariate tests

This table presents the test of significance of the differences in means of the explanatory variables. Column (1) and (2) report the statistical significance of the differences between the average values of the explanatory variables in the top and bottom quartile of the distribution of the values of the variable REV/GDP, and DOMREV, respectively. a, b, c bold characters denote statistical significance at 1, 5 and 10 percent level, respectively.

	REV/GDP	REV/GDP	(1)	DOM/REV	DOM/REV	(2)
	top 25%	bottom 25%	difference	top 25%	bottom 25%	difference
<i>GDP</i>	20467	18513	1953 ^b (2.303)	20770	21824	-1053 (-0.880)
<i>INITSOE</i>	12.362	11.018	1.343 ^b (2.069)	11.190	10.436	0.754 (0.877)
<i>DEBT</i>	0.553	0.365	0.188 ^a (5.872)	0.464	0.498	0.033 (-0.610)
<i>CAP</i>	0.542	0.266	0.275 ^a (7.770)	0.553	0.504	0.049 (0.7122)
<i>TURNOVER</i>	0.587	0.339	0.248 ^a (4.778)	0.569	0.463	0.105 ^c (1.811)
<i>TOC</i>	0.519	0.473	1.203 (0.229)	0.531	0.591	-0.060 (-0.973)
<i>ENP</i>	3.378	3.335	0.042 (0.329)	2.989	3.300	-0.310 (-1.557)
<i>DISPR</i>	7.968	5.938	2.030 ^a (3.044)	10.583	8.061	2.522 ^b (2.311)
<i>PARTISAN</i>	5.905	5.876	0.208 (0.201)	6.364	5.713	0.650 ^a (3.002)

Table 4. First-stage regressions for political-institutional variables

This table reports the estimated coefficients and associated t-statistics (in parenthesis) of panel data estimation. The individual effects are assumed to be normally distributed (random-effects model). The estimated residuals are used in correct for the endogeneity of political-institutional variables in tobit models. TOC is the type of cabinet, ENP is the effective number of parties, DISPR is the disproportionality of the electoral rule, MAJ is a dummy for majoritarian countries, DISTRICT is the average district size in a given country, THRESHOLD is the minimum electoral threshold to obtain representation in the legislature. GDP is per capita Gross Domestic Product. Wald χ^2 tests the null of joint significance of the parameters. a, b, c bold characters denote statistical significance at 1, 5 and 10 percent level, respectively.

	Dependent variables		
	<i>TOC</i>	<i>ENP</i>	<i>DISPR</i>
Independent variables			
<i>CONSTANT</i>	0.622 ^a (8.61)	2.707 ^a (12.22)	6.048 ^a (5.75)
<i>GDP</i>	-5.85e-06 ^a (-3.11)	0.00002 ^a (5.57)	0.00006 ^a (2.47)
<i>MAJ</i>	0.133 ^b (2.11)	-0.047 (-0.28)	3.482 ^a (4.08)
<i>DISTRICT</i>	-0.296 (-1.26)	-0.948 (-1.25)	-12.159 ^a (-3.44)
<i>THRESHOLD</i>	-0.020 ^c (-1.75)	0.264 ^a (8.94)	-0.155 (-1.03)
Obs.	482	482	482
Wald χ^2	28.64	164.46	48.15
Prob.	0.000	0.000	0.000
R-sq (overall)	0.256	0.020	0.359

Table 5. Privatization revenues: tobit regressions

This table reports the estimated coefficients and associated standard errors (in parenthesis) of tobit estimation. The dependent variable is given by the ratio of revenues from privatization by domestic public offer to total revenues from privatization in country i in year t . The dependent variable is left censored in 0 for the years in which no privatization occurred. Normality of the individual effects is assumed (random-effects model). First-stage Wald χ^2 tests the null hypothesis that the coefficients of the residuals from the first stage regression are jointly equal to 0 in the second stage. Wald χ^2 tests the null of all the coefficients being equal to 0. a, b, c superscripts denote statistical significance at 1, 5 and 10 percent level, respectively.

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>CONSTANT</i>	0.015 ^a (3.04)	-0.020 ^a (-3.66)	0.010 ^c (1.68)	-0.033 ^a (-3.89)	0.016 ^a (3.03)	-0.018 ^a (-2.78)	0.013 ^a (2.57)	-0.026 ^a (-3.75)
<i>GDP</i>	-5.18e-07 ^a (-5.04)	-3.36e-07 ^a (-2.68)	-4.48e-07 ^a (-4.05)	-1.91e-07 (-1.31)	-5.10e-07 ^a (-4.89)	-2.81e-07 ^b (-2.13)	-5.05e-07 ^a (-4.87)	-2.33e-07 (-1.45)
<i>INITSOE</i>	0.0003 ^a (3.25)	0.0004 ^a (3.90)	0.0004 ^a (3.60)	0.0006 ^a (4.41)	0.0003 ^a (3.18)	0.0006 ^a (3.99)	0.0004 ^a (3.48)	0.0005 ^a (3.98)
<i>DEBT</i>	0.0007 (0.39)	0.011 ^a (2.85)	0.003 (1.37)	0.016 ^a (3.44)	0.001 (0.59)	0.014 ^a (3.02)	0.002 (0.92)	0.015 ^a (3.26)
<i>CAPMKT</i>	-0.001 (-0.61)	-0.002 (-1.43)	-0.003 (-1.35)	-0.005 ^b (-2.21)	-0.001 (-0.75)	-0.005 ^b (-2.09)	-0.001 (-0.86)	-0.004 ^b (-1.89)
<i>TURNOVER</i>	-0.0005 (-0.28)	-0.001 (-0.68)	0.0004 (0.25)	-0.0003 (-0.13)	-0.0005 (-0.29)	-0.001 (-0.39)	0.0003 (0.19)	-0.0006 (-0.27)
<i>PARTISAN</i>	0.001 ^a (3.86)	0.002 ^a (3.98)	0.002 ^a (4.11)	0.002 ^a (3.84)	0.001 ^a (3.85)	0.002 ^a (4.17)	0.001 ^a (3.60)	0.001 ^a (3.37)
<i>TOC</i>			0.004 ^c (1.65)	0.010 ^b (2.15)				
<i>ENP</i>					-0.0003 (-0.45)	-0.002 (-1.39)		
<i>DISPR</i>							0.0001 (1.37)	0.0002 ^c (1.76)
<i>method</i>	1-STEP	2-STEP	1-STEP	2-STEP	1-STEP	2-STEP	1-STEP	2-STEP
<i>Time dummies</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	274	273	274	273	274	273	274	273
Wald χ^2	203.46	233.98	203.15	228.64	203.13	232.68	201.62	226.58
Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
First-stage								
Wald χ^2		28.58		30.64		30.40		29.67
Prob.		0.000		0.000		0.000		0.000
Log likelihood	465.69	480.34	467.07	483.00	465.80	481.56	466.65	482.09

Table 6. Privatization in domestic equity markets: tobit regressions

This table reports the estimated coefficients and associated standard errors (in parenthesis) of tobit estimation. The dependent variable is given by the ratio of revenues from privatization by domestic public offer to total revenues from privatization in country i in year t . The dependent variable is left censored in 0 for the years in which no privatization occurred. Normality of the individual effects is assumed (random-effects model). First-stage Wald χ^2 tests the null hypothesis that the coefficients of the residuals from the first stage regression are jointly equal to 0 in the second stage. Wald χ^2 tests the null of all the coefficients being equal to 0. a, b, c superscripts denote statistical significance at 1, 5 and 10 percent level, respectively.

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>CONSTANT</i>	0.213 (0.68)	-0.660 (-1.39)	-0.084 (-0.20)	-2.174 ^a (-2.86)	0.203 (0.64)	-0.521 (-1.01)	-0.167 (-0.52)	-0.943 ^c (-1.70)
<i>GDP</i>	-0.00002 ^a (-2.48)	-4.87e-07 (-0.05)	-0.00002 ^b (-1.87)	0.00002 (1.33)	-0.00002 ^a (-2.42)	2.32e-06 (0.21)	-0.00001 (-1.26)	9.47e-07 (0.07)
<i>INITSOE</i>	-0.022 ^b (-2.15)	0.012 (0.58)	0.010 (0.65)	0.010 (0.58)	-0.023 ^b (-2.10)	-0.013 (-0.98)	-0.009 (-0.84)	0.016 (0.95)
<i>DEBT</i>	0.316 (1.56)	0.828 ^b (1.98)	0.321 (1.33)	0.631 (1.46)	0.257 (0.81)	0.515 (1.11)	0.300 ^c (1.67)	0.541 (1.35)
<i>CAPMKT</i>	-0.140 (-1.05)	-0.665 ^a (-2.61)	-0.229 (-1.16)	-0.522 ^b (-2.16)	-0.128 (-0.89)	-0.126 (-0.74)	-0.344 ^a (-2.19)	-0.680 ^a (-2.82)
<i>TURNOVER</i>	0.190 ^c (1.60)	0.175 (0.88)	0.179 (1.44)	0.102 (0.52)	0.185 (1.50)	-0.432 ^b (-2.19)	0.297 ^a (2.40)	0.190 (0.70)
<i>PARTISAN</i>	0.075 ^a (2.38)	0.092 ^a (2.38)	0.080 ^a (2.44)	0.130 ^a (2.93)	0.077 ^a (2.37)	0.201 ^a (5.36)	0.055 ^c (1.72)	0.072 (1.33)
<i>TOC</i>			-0.004 (-0.02)	1.900 ^a (3.07)				
<i>ENP</i>					0.017 (0.26)	-0.124 (-0.96)		
<i>DISPR</i>							0.030 ^a (4.15)	0.053 ^a (2.75)
<i>method</i>	1-STEP	2-STEP	1-STEP	2-STEP	1-STEP	2-STEP	1-STEP	2-STEP
<i>Time dummies</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	138	138	138	138	138	138	138	138
Wald χ^2	26.67	34.20	16.28	39.68	26.28	61.35	35.52	47.21
Prob.	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000
First-stage Wald χ^2		20.43		25.10		33.55		26.41
Prob.		0.002		0.001		0.000		0.001
Log likelihood	-98.83	-92.34	-99.37	-88.14	-98.80	-87.57	-97.55	-88.37

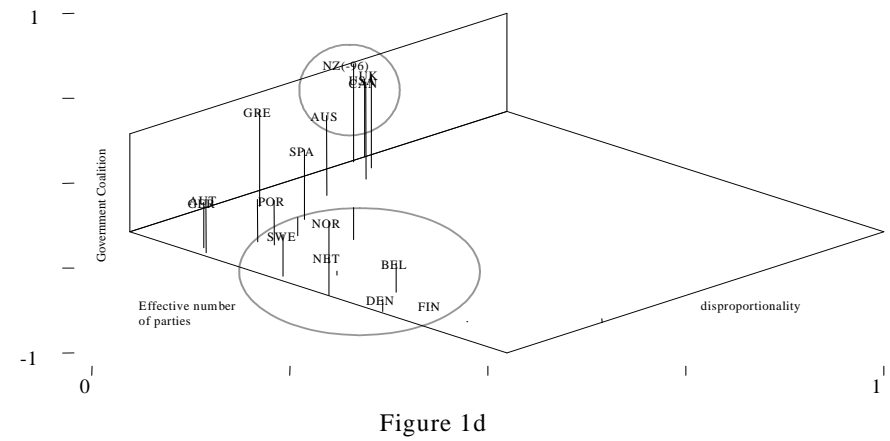
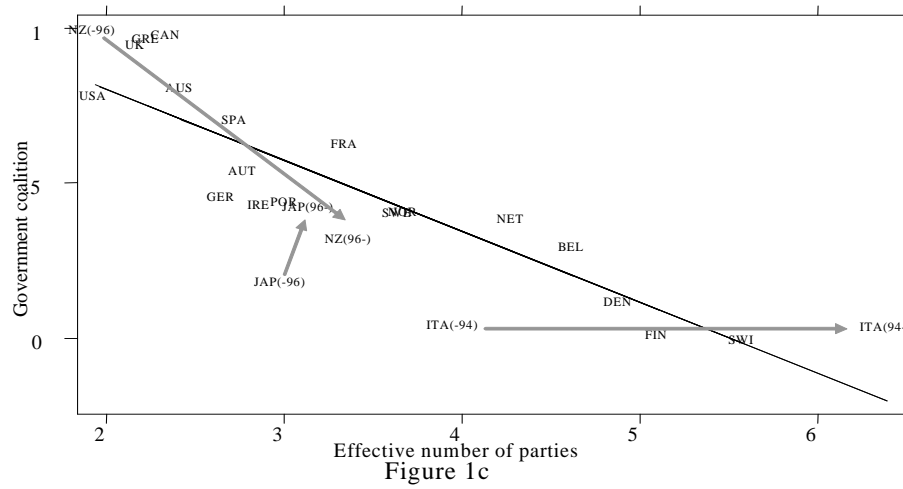
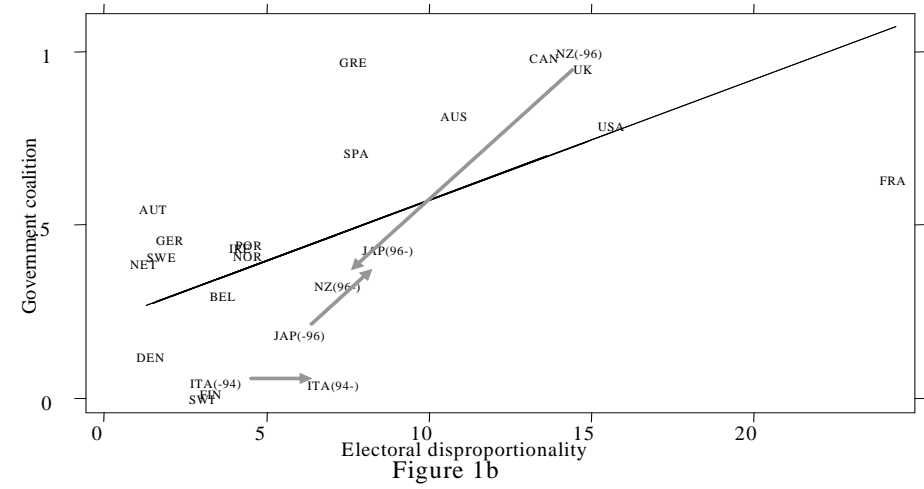
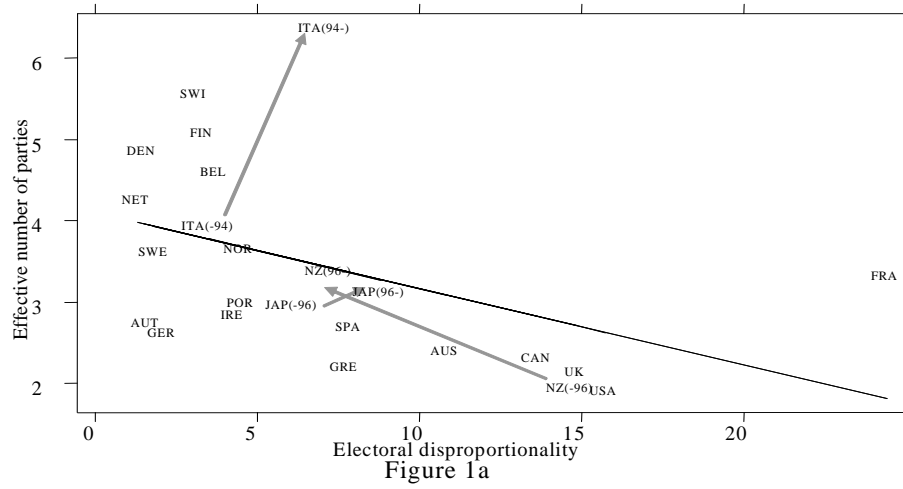


Figure 1. The Geography of Political Institutions