The Political Economy of Privatization

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Summary

This paper provides an empirical analysis of the role of political institutions in privatization. The empirical testing relies on a new political database with continuous and time-varying measures of the political-institutional setting, and of the partisan orientation of the executive. Using panel data for 21 industrialized countries in the 1977-1999 period, first we show the likelihood and the extent of privatization to be strongly and positively associated with majoritarian political systems. On the contrary, in consensual democracies privatization seems delayed by a "war of attrition" among different political actors. Second, we identify a partisan determinant of the choice of the privatization method. As theory predicts, right wing executives with re-election concerns design privatization to spread share ownership among domestic voters.

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1   Introduction

In the last two decades, privatization policy has swept the world. Up to end 2002, governments sold assets worth US$1,127bn in more than 3,535 privatization deals. Not surprisingly, industrialized economies got the lion's share of total revenues (67 per cent) (Securities Data Corporation); however, 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, especially due to the bad outlook in equity markets: global privatization figures are back to the values reported at the beginning of the cycle (see Figure 1).

Even if privatization processes 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 ousted 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, Societé Nationale d'Investissement (SNI) and CGER (Spinnewyn, 2000). Again, this program was deeply ousted even within the coalition members and did not result in any actual privatization. In 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 Deahene asked and obtained by the Parliament a special authorization to legislate by decree on certain economic matters, including divestiture. Only under these exceptional rules, has Belgium been able to float in the stock market a large number of shares of two important SOEs (i.e. Distrigaz and Dexia), to generate in a two-year period three quarters of total proceeds raised to date (end 2002), and to implement privatization sales amid a wide social protest.

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 in turn provide higher 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 in the coalition supporting the executive allows incumbent governments to privatize sooner, and 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, so that privatization is delayed by a "war of attrition" as in Alesina and Drazen (1991).

In this paper, we test this prediction using an original dataset with continuous and time varying measures of political institutions for 21 OECD economies for the 1977-1999 period. Our panel data estimations show that indeed political institutions matter in privatization. Majoritarian countries, especially where the electoral rule allows a higher dis-proportionality between seats and votes, are more likely to privatize and privatize more, while 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 favor market economy, and therefore privatization, than leftist governments, traditionally more inclined to reduce social inequalities and 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

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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, Péchiney, 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 (the third value in the global ranking by proceeds after the UK and Japan) 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 does not have significant impact neither on the likelihood of privatization nor on the extent of privatization. Instead, and more interestingly, political preferences shape the privatization method. Governments leaning towards the right of the political spectrum tend to sell shares in the domestic retail market rather than selling them to strategic investors or abroad. 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 (1999) 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 field of literature analyzes the political-institutional determinants of economic policy. Persson and Tabellini (2001) provide evidence that the majoritarian electoral rules lead to lower government spending and lower welfare programs. 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.

Our paper complements previous empirical work in two ways. First, it identifies a new determinant of privatization such as majoritarian political institutions. Second, it tests partisan theories by use of more precise measure of political orientation, finding new evidence that the choice of the privatization method is politically motivated.

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   Political determinants of privatization

A formal theory about the effects of political institutions on privatization is not available 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 try to 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 The role of political institutions

The effect of different political institutions on stabilization policy 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 between 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. Importantly, the model predicts that countries characterized by political cohesion (i.e. where stabilization costs are distributed more equally between "winners" and "losers") stabilize sooner. Large coalition cabinets made of diverse parties may hardly reach an agreement on how to allocate tax increase among the different constituencies. In the absence of political cohesion, stabilization is delayed. This prediction seems supported by data (Roubini and Sachs, 1989; Alesina and Perotti, 1995).

Alesina and Drazen (1991) build their model in the context of budgetary adjustment. However, their argument is far more general: any efficient policy change with significant distributional consequences can be delayed by a "war of attrition". Privatization is a typical example of this kind of policy change. 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 consequences. Privatization typically involves a transfer of wealth from insiders of State-owned enterprises (managers and employees) to outsiders, and 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 favors the formation of large coalitional cabinets, the interest group of "losers" from privatization has voice in the political arena, and engages in a "war of attrition" which delays 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 behaviour. 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 and the distribution of public expenditure in terms of public good provision and targeted redistribution. 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, 2002). Majoritarian elections (and stiffer electoral competition) should keep politicians "on their toes", mitigating rent-seeking behaviour and moral hazard problems arising from the political control of State-owned firms. Ceteris paribus, politicians should be less reluctant to privatize in countries with majoritarian electoral rules, as the equilibrium level of rents they can extract via political interference in State-owned firms is lower.

A political economy approach has been recently applied also in the finance literature to explain the degree of investor protection. Pagano and Volpin (2000) develop a model where the relevant stakeholders in society are entrepreneurs, minority shareholders, and workers. In this setting, there exists a "corporatist" political equilibrium between entrepreneurs and workers where low investor protection is traded for high employee protection. The former allows entrepreneurs to freely enjoy large benefits of control, while the latter allows low-productivity workers to extract rents in the form of severance pay. By striking this political agreement, both classes preserve their rents at the expense of minority investors. This agreement is more likely in consensual democracies, i.e. where the political system favors the formation of large coalitional governments and where interest groups are well-organized and powerful (Lijphart, 1999).

This result may also hold in a model where the entrepreneurs are the managers of public firms and the policy choice is privatization vs state ownership of firms. Minority investors would prefer state-owned enterprises to be privately owned as they could obtain a fraction of the efficiency gains from privatization. But bureaucrats strike a political agreement with workers trading public ownership for employee protection. A corporatist agreement may also emerge in this context, where bureaucrats protect the rents associated with political interference in state-owned firms and workers obtain wages above their marginal productivity.

To summarize, the traditional political economy models reviewed in this section yield the following empirical implication:

H1.   *Ceteris paribus, "majoritarian" political systems, as opposed to "consensual-corporatist" democracies, should be more likely to privatize, and should be associated with a more intense privatization effort.*

2.2 The partisan dimension of privatization

During the last fifteen years political economy has witnessed a growing interest in the positive analysis of the consequences of the political conflict between partisan politicians on economic policy. 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; Franzese, 2002).

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 averse to the redistribution 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. Importantly, Bias and Perotti show that the left can also strategically design privatization to obtain re-election. However, the privatization objectives of the two parties would be different, as the left wing does not have any incentive to underprice shares, but instead to maximize revenues available for redistribution.

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 (i.e. direct sales of control blocks to strategic investors) or share issues in international (and more liquid) exchanges as both strategies allow to generate higher privatization revenues (Megginson et al. 2002; Ellul and Pagano, 2002).

The partisan model of privatization yields the following empirical implications:

H2. *Ceteris paribus, right wing governments, as opposed to center or left wing governments should privatize by spreading share ownership among domestic voters.*

The next section will describe how we try to assess the empirical validity of these theoretical predictions.

3 Measuring political institutions

An empirical analysis on the political economy of economic policy raises difficult methodological issues. First, one needs to define quantitative indicators about the functioning of political systems in different countries. Second, in order to capture the partisan dimension of privatization, one needs to identify objective measures for the ideological orientation of the executive. Unfortunately, political datasets suitable for a thorough empirical testing of the issues at stake are not available in the political economy literature. Most of the empirical studies

adopted simple measures such as dummies or indicators with very limited variability across countries and over time.

One of the major attempts to construct a comprehensive political data set for a large sample of countries has been carried out by Beck, Clarke, Groff, Keefer, and Walsh (2001) on behalf of the World Bank. However, their Database on Political Institutions (DPI) is flawed by some problems and inconsistencies that will be pointed out in section 4.

Some quantitative indicators have been developed to capture the ideological orientation of incumbent governments (Alesina and Rubini, 1992). However, political dummies (i.e. left, center, right) are certainly unsatisfactory for a precise location of executives along the ideological spectrum.

Indeed, the lack of suitable data represents a major obstacle for a proper assessment of the new theories in political economy. This paper tries to make a step forward in this direction by constructing a comprehensive panel data set with reliable measures for one country's political institutions and political orientation of the executive.

3.1 The POLINST Index

In order to lay down a classification for the institutional systems in our sample of countries we refer to the seminal work in comparative political science by Lijphart (1999). In this approach, institutional systems are ordered along a continuum between two ideal models, *majoritarian* and *consensus*. Both of the models acknowledge the right of the majority to take decisions that bind all other citizens. However, whereas the majoritarian model relies upon the bare majority, the consensus model tries to broaden its size by dispersing decision-making power both within and between different institutional bodies, and by increasing the number of veto players.

The majoritarian model is characterized by an extreme predominance accorded to majority will in winner-takes-all systems, which in turn favors government stability; on the contrary, in consensual models, stability is traded against the protection of minority rights. The balancing

between majority and minority rights entails a trade-off between government stability and representativeness, which is key in the analysis of political outcomes and their determinants.

Decision-making power accorded to minorities strongly relates to the political fractionalization depicted in the "war of attrition" game by Alesina and Drazen (1991). Stability in majoritarian system is achieved by the means of institutions such as electoral thresholds, which aim at reducing the number and political power of veto players. On the other side, consensus model fosters representation and even over-representation of minor parties and constituencies, thus increasing the number of veto players and the political fractionalization.

The convergence to either one model or the other polar model is achieved by the body of laws, rules and customs that shape the power accorded to minorities while aggregating political preferences. Within modern democracies, such an aggregation takes place mainly by legislative election and cabinet formation. Thus, the "political technologies" which transform electoral votes into parliamentary seats and these, in turn, into executive power, are key.

Classifications currently used by economists in this field mainly consist of dummy or discrete variables. As far as electoral rules are concerned, such classifications crudely distinguish between "proportional" and "majoritarian" systems (Persson and Tabellini, 2001), depending on the use of a closed list or uninominal vote. However, this approach does not allow for an adequate account of the residual power enjoyed by minorities, which does not depend only upon the electoral rules. With regard to government's fragmentation, common measures distinguish between one-party executives, two-party coalitions and broader ones (Roubini and Sachs, 1989).

Research in comparative political science has produced much more precise measures in several respects. First, these contributions have set forth continuous variables rather than dummies or discrete indicators. Second, they use simple mathematical formulas like, for instance, concentration indexes, in order to limit researcher discretion. Third, being based on electoral outcomes, they display some variability in the time dimension, which allows to perform panel data estimation. Despite their appeal, these measured have not been used extensively in the empirical testing of political economy models.

In the rest of this section, we briefly describe some of these measures, and how we synthesize them to construct our political-institutional index, which we define POLINST.

Our political-institutional index has three components: (i) a disproportionality index (the Gallagher index); (ii) the effective number of parties; (iii) an indicator of the type of executive.

The Gallagher index. Electoral disproportionality indexes account for some measure of the divergence between parties' votes distribution and seats distribution implied by different electoral rules. Such divergence mainly consists of overrepresentation of major parties and partial or complete exclusion of minor ones. Thus, greater disproportionality accords with the majoritarian principle.

The Gallagher index (1991) is based on the following formula:

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

v_i = votes share obtained by party i

s_i = seats share held by party i

N = total number of parties

The index is continuous and takes value zero when the apportionment of parliamentary seats is exactly proportional to electoral results.[1] It increases, on average, as disproportionality increases, taking maximum values for presidential elections, where the number of seats is reduced to the minimum (which is 1); in this case, the disproportionality index equals the percentage of votes obtained by the defeated candidates. For presidential and semi-presidential countries, (such as USA and France, respectively) the yearly disproportionality index results from the average of values taken at the last legislative and presidential elections.

Effective Number of Parties. Political scientists claim that the more constituencies obtain representation within the legislative assembly, the more the party system approaches consensualism. Yet, how to count parties? Indeed, counting parties holding at least one

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[1] In bicameral systems, the electoral outcomes of the lower house are considered.

parliamentary seat is unsatisfactory, since negligible representations would be overestimated. Sartori (1976) suggests to count only those parties which either hold "coalition potential" or "blackmail potential", i.e. substantial bargaining power in terms of seats.

Laakso and Taagepera (1979) provide a methodology to gauge this "coalition potential" measuring the Effective Number of Parties Index (ENP), which parallels the Herfindal concentration index commonly used in industrial economics. The ENP, in fact, considers one party's parliamentary share instead of market share:

$$ENP = \frac{1}{\sum\limits_{j=1}^{P} s_j^2} \qquad (2)$$

s_i = seats share held by party j

P = number of parties represented in the Parliament

Clearly, if there are p parties in the parliament, the ENP will take the value p if they hold exactly the same seats share. As the number of parties increases, the seat shares decrease, and the ENP increases.

Type of Cabinet. When we try to locate political regimes in the majoritarian-consensual dimension, the characterization of the executive involves its fractionalization (which raises transaction costs within the executive) and its bargaining power with regard to the parliament (which lowers transaction costs in dealing with the legislative power). To take account of both aspects, Lijphart (1999) sets forth an index distinguishing: (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:

CABINET	One-Party	Coalition
Minimal Winning	1	0,5
Minority or Oversized	0,5	0

The minimal winning – one party cabinet (MWOP), 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 of turnover both by coalition allies and by the opposition; such possibility in turn fosters 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.[2] Clearly, this discrete index increases as political institutions approach the majoritarian pattern.

Each of the three measures refers to a specific feature of the political institutional setting; however, as Lijphart (1999) has shown, they are strongly interrelated and maybe jointly determined. Indeed, one might argue that electoral rules affect the ENP and this in turn determines the type of coalition formed. For this reason, we tend to consider the three indexes as complements, rather than as substitutes. At the same time, their inclusion in the right hand side of the same econometric equation is very likely to cause of multicollinearity problems. Therefore, following Lijphart (1999) we standardize the three indexes on the whole sample and then compute their mean, which yields the POLINST variable.[3]

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[2] 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

[3] Obviously, the sign of the ENP has been reversed as a *higher* effective number of parties fits with the consensus model.

3.2 The PARTISAN index

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 by Hibbs (1977). This classification is suitable for the small sample of countries where political competition results in a strong and clearly marked bi-polarism. 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 from 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 Alesina, Roubini and Cohen (1997) 4-value index, or Woldendrop, Keman and Budge (1998) 5 values index) 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 assigned to each party entering in the ruling coalition, and *not* to the coalition as a whole; second, the values obtained by the different parties of the coalition parties 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 these issues in turn.

During the last 20 years, several methodologies have been established to locate different parties on a 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 itself a reliable tool in limiting researchers 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 as we know, this is the most recent attempt to provide such a partisan 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; where the weights are given by 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 by the ruling coalition as a whole. Our index of political orientation is defined PARTISAN.

An alternative procedure could have used 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.[4]

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 rules for sampling and our sources; we present the FEEM Political Database (FPD) and compare it with existing databases; finally, we describe our privatization measures and control variables.

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[4] 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.

4.1 Political variables

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), Japan, the only non-Western country included in our sample.

Our source for the data on political institutions is Lijphart (1999). As we mentioned in the previous section, Lijphart (1999) has developed series of country indicators along several dimensions of the political system using electoral data. We have used the same data to construct the three components of our POLINST index for the 21 countries in our sample for the period 1977-1999, 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 values for the Gallagher index, the effective number of parties, type of executive, and the POLINST variable for the countries of our sample. Three countries implemented institutional reforms in our sample 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, before and after the first post-reform election. Figure 2 plots the same cross-country means on two and three-dimensional graphs.

The slope of the regression lines is consistent with the expected pair-wise relationship between the three variables. Majoritarian electoral rules, which are associated with greater disproportionality, allow fewer parties to gain seats in the parliament; in turn, a lower number of parties is associated with a higher probability of observing MWOP ruling coalitions. This

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"pattern of democracy" is 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 comprise the Low Countries (Belgium and Netherlands), the Scandinavian Countries (Denmark, Finland, Norway and Sweden), Italy and, finally, Switzerland, which is certainly the most consensual country of our sample. South European countries (Greece, Portugal and Spain), the German-speaking countries (Germany and Austria), Japan (the only Asian country in the sample) and Ireland (the exception among the Anglo-Saxon countries) occupy half-way positions. 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 (3 out of 483 country-years in our sample), 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.[5]

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 even faced 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. These last findings suggest that in order to get an adequate characterization of complexity of the political-institutional systems, it is important to construct aggregate measures taking into account the various dimensions of political decision-making.

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[5] Before 1993, New Zealand was the only country of the sample that has been ruled by MWOP for the whole period; after the reform its index has always been around 0.5

We now turn to the description of the sources used for the construction of our partisan index. As to party 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 the web site. Table 2 reports also the means of the PARTISAN index for the countries of our sample.

4.2 Comparison with existing political databases

The World Bank Database on Political Institutions (DPI) by Beck et al. (2001) reports the number of seats obtained by each of the three main parties of the ruling coalition and the number of seats held by the coalition as a whole. These data could be an important starting point in the construction of our POLINST index. However, the DPI data do not appear accurate, as in some cases the total number of parliamentary seats in a given country changes across elections. We have therefore constructed a new database, updating Lijphart's by using the primary sources listed in Table 1.

To cross-check the precision of our database and to identify the presence of any systematic error in the World Bank DPI, we compared them pair-wise to a third data base compiled by an independent source (Tsebelis, 2001) in the country years when the three databases overlap. Table 3 presents the results of this comparison.

The column OBS refers to the number of observations (i.e., the number of elections) reported in two databases. SEATS DIFF is the average difference between the number of seats reported in two databases for the first, the second, and the third largest party in the government coalition, respectively, and for the government as a whole. Finally, % MATCHED SEATS reports the percentage of cases in which the numbers of seats coincide exactly in the two databases.

Indeed, the FPD and Tsebelis' appear similar in several respects. The average difference between the reported number of seats is very low for each of the three main parties and for the government coalition as a whole. Moreover, the percentage of "perfectly matched" cases is above 80% for each of the parties, and quite high for the government coalition.

On the contrary, the World Bank DPI does not seem to be related to any of the other two databases. First, a lower number of observations is reported, so that several electoral results are missing. Second, the comparison with both alternative datasets yields a very high average difference in terms of reported seats (around 30 seats each election for the first party and for the government as a whole). Finally, the percentage of matched data is dramatically low, always under the 5% for the first party and for the government as a whole.

The way the FPD and Tsebelis' dataset fit in with each other, and their pair-wise divergence from the World Bank DPI allows us to conclude that some objective systematic error affects the last one. The comparison casts serious doubts about the reliability of the "PARTIES" section of the World Bank DPI, at least as far as the variables mentioned above are concerned. Moreover, these mistakes are very likely to affect the computation of fractionalization indexes for the government and for the legislative assembly, also included in the database.

4.3 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 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 our 21 countries 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)*; privatization revenues from public offers as a percentage of total revenues in country *i* in year *t (PO/REV)*; 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. This measure will be employed to construct the indicator function used in the logit and probit estimation, and it will also be the dependent variable of our tobit analyses. The second variable *(PO/REV)* measures government's willingness to opt for public share issue privatization rather than private sales. The third captures government's intentions to tap domestic citizens and to diffuse share ownership among domestic voters. Both variables are useful to verify whether the choice of the privatization method is politically motivated. 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.

4.4 Control variables

In order to test properly the role of political institutions in privatization, we have to control for the other determinants identified by the existing literature. Particularly, empirical analyses suggest that first, fiscal conditions should be taken into account, as privatization revenues are typically used to square public finance. Second, financial market development plays an important role, as deep and more importantly liquid stock markets facilitate the flotation of large companies and allow governments to maximize proceeds. Third, the stage of economic development matters, as it has been empirically documented that large privatization programs have been typically implemented in wealthy and mature economies with high per capita GDP and low growth rates (Bortolotti et al. 2003). We will control for these factors by use of the variables described below.

To measure the current outlook of public finances in a country in a given year we take the value of total (domestic and foreign) debt as a percentage of GDP, and define this variable DEBT.

We use two measures of a country's financial development: the ratio of stock market capitalization to GDP in a country in year t, and the turnover ratio, given by the stock market total value traded to market capitalization in a country in year t. We define these variables CAP and TURNOVER, respectively. The variable CAP is a measure of the relative size of the domestic stock markets; the turnover ratio is one of the most widely accepted measures of stock market liquidity, as it is given by the percentage of outstanding shares that are effectively traded.[6]

Finally, two macroeconomic control variables are also included: GDP per capita (in constant dollars 1996) and annual growth rates of GDP. Both variables refer to country i in year t, and are labeled GDP and GROWTH, respectively. The first variable allows us to test the hypothesis that privatization is driven by economic development. The second variable allows us to control for the business cycle. High growth rates in GDP are typically associated with a booming economy and high fiscal revenue. In this context, budget constraints are less binding, and there might be less incentives to privatize.

Controlling for the initial size of the state-owned sector is certainly important to avoid biased estimates of the extent of privatization processes across countries. However, complete time series about the SOE value added as a percentage of GDP (or about the share of employment in SOEs) are missing for several countries included in our sample, such as Austria, Canada, Denmark, Finland, New Zealand, Spain, Switzerland, and the Netherlands.[7] In order to account

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[6] Both variables are ratios of stock and flow variables. The stock variable (i.e. market capitalisation) is measured at the end of period, while the flow variables (i.e. GDP and the stock market total value traded) are defined relative to a period. To deflate appropriately these variables, we divide the end-of-year market capitalisation by end-of-year CPI , and deflate the GDP and the total value traded by the annual CPI. Then, we compute the average of the real stock market capitalisation in year t and $t-1$, and divide the average by real GDP measured in year t, which yields the variable CAP. We divide instead the real value of traded shares measured in year t by the average of the real stock market capitalisation in year t and $t-1$ to obtain the variable TURNOVER (Beck, Demirgüç-Kunt, and Levine, 1999).

[7] Comprehensive data about the size of the SOE sector in developing countries can be found World Development Indicators by the World Bank.

partly for initial conditions, we will proxy the size of the SOE sector with the size of government measured by total government expenditures as a percentage of GDP in the pre-privatization period (*AVGEXP*). Indeed, large and unprofitable SOEs are usually subsidized by transfer programs financed via the public budget (World Bank, 1995). More generally, expansionary fiscal policies may reflect a tendency toward state interventionism in the economy which could also take shape in government ownership of productive assets.

5 Empirical analysis

In this section we will report the main results of the paper, starting from a preliminary analysis based on descriptive statistics, and then by performing a thorough econometric test on our panel data set.

5.1 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. Our POLINST index (i.e. the average of the standardized values of the three political institutional measures) takes the highest values in New Zealand (before 1993 electoral reform), the United Kingdom, the United States, Canada, and Australia. As we mentioned before, all these Anglo-Saxon countries are strongly majoritarian and characterized by a marked bi-polarism. Interestingly, some of these countries have also been heavily involved in privatization. Particularly, New Zealand also 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 obviously in the United Kingdom (0.11).

On the contrary, only limited privatization effort is reported in some of the countries that fit in well with the consensus model. Indeed, lower ratios of revenues to GDP are associated with

relatively low values of the POLINST index in 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 score in the POLINST index. Italy under the new electoral regime features a similar pattern, with substantial privatization revenues raised in a highly consensual political system. On the contrary, the United States – certainly a strongly majoritarian country – shows only marginal privatization revenue. But this is simply due to the fact that the SOE sector 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 5 provides a more systematic test based on univariate statistics. We have computed the means of the explanatory variables in the country years when privatization is observed and when it is not observed, and computed the difference, checking its statistical significance (column (1)). 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.

But two new factors also appear relevant: the dis-proportionality index, and the measure of the type of executive. Interestingly, we observe a higher frequency of privatizations where the electoral rules afford less power to minorities, and where the executive is more stable, and not weakened by the threat of takeover by some member of the coalition. The test performed on the aggregate index POLINST confirms this preliminary evidence, with privatization associated with higher values of the index (i.e. a better fit with the majoritarian model).

Interestingly, while political institutions seem important to discriminate privatizing and non-privatizing countries and to explain the extent of divestiture, the partisan dimension of politics appears to be more relevant in the choice of the privatization method. In Table 5, we find the percentage of revenues raised by public offering of shares, and more importantly, the fraction of revenues raised in the *domestic* retail market to be associated with right wing market-oriented 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.

5.2 Econometric tests

Our dataset allows for panel estimation techniques, which deal both with the heterogeneity across units (i.e. countries, in our case) and with the time variability of the longitudinal series.

A three-stage empirical analysis is performed. In the first stage, we estimate the probability that privatization occurs in country i in year t. In the second stage, we analyze a measure of the extent of privatization given by the ratio of total privatization revenues to GDP. Finally, in the third stage, we focus on two dependent variables that, instead, try to capture the qualitative dimension of privatization: privatization revenues from public offers as a percentage of total revenues and privatization revenues from the domestic retail market as a percentage of total revenues.

The nature of our dependent variables strictly conditions the choice of the econometric tools used in our analysis. In particular, the probability of privatization is estimated by means of a dummy variable which takes value 1 if at least one privatization is observed in a given country during a given year, and 0 otherwise; then, we estimate logit and probit models. Both estimators maximize a log-likelihood function, but the logit model adopts the logistic distribution as the transfer function, while the probit uses the normal distribution. These two distributions are very close to each other, except that the logistic distribution has slightly heavier tails.

As usual, we will assume that individual-specific effects are captured by decomposing the error term u_i in μ_i and v_{it}. It is known that the presence of fixed-effects complicates matters significantly in non-linear models as sufficient statistics conditioning on which fixed-effects are swept out of the likelihood exist only in special cases (Hsiao, 1986; Baltagi, 1995). We therefore run random-effects logit and probit model, under the assumption that

$\mu_i \sim IID\!\left(0, \sigma_\mu^2\right)$ and $v_{it} \sim IID\!\left(0, \sigma_v^2\right)$. For these estimates, the percentage of matched results is presented as a measure of goodness-of-fit.[8]

Total revenues to GDP is left censored for all the country-years when no privatization occurred, which are a significant fraction of our sample. Thus, in this case, conventional regression methods fail to account for the qualitative difference between limit (zero) observations and non-limit (continuous) observations. Tobit analysis, instead, is based on a new random variable that infers the missing tail in the distribution of the observed variable, allowing for estimation by conventional maximum likelihood methods (Amemiya, 1985).

Finally, the variables *PO/REV* and *DOM/REV* are percentages; thus, they are both left and right censored (in 0 and 1 respectively) so that tobit analysis is again appropriate. Notice that the qualitative dependent variables are defined only for positive values of the total privatization revenues. Therefore the last two sets of regressions rely on a lower number of observations as compared with the regressions on the first and second stage variables.

All the econometric models presented estimate the parameters by maximizing a log-likelihood function. Then, the F-test on the null of joint significance of explanatory variables is not feasible, and is replaced by a conventional Wald test, based on the chi-square distribution with *k-1* degrees of freedom.

Conceptually, some explanatory variables could be endogenous to privatization. In particular, privatization is known to affect directly and indirectly public finances and financial market development. In many countries, privatization revenues allowed governments to balance the budget, and to boost domestic stock markets, both in terms of capitalization and, maybe more importantly, in terms of liquidity (Megginson and Boutchkova, 2000; Bortolotti *et al*., 2002).

We address the issue of simultaneity by using the *lagged* debt-to-GDP ratio (DEBT), the stock market capitalization to GDP (CAP), and the turnover ratio (TURNOVER) as explanatory variables. Clearly, lagging such variables provides only a partial solution to the problem since the lagged variable is predetermined but not strictly exogenous. However, it is known that as *T*

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[8] We have also run fixed-effects logit models, obtaining very similar results.

becomes large, the bias that we introduce becomes negligible (see Baltagi, 1995). Since the longitudinal size of our panel is relatively large (23 years), we believe the resulting bias being of second order relevance.

5.3 Empirical results

The main results of the first stage of the empirical analysis are shown in Table 6 and 7 where we report the estimates for the probability of privatization in random effects logit and probit models, respectively. Overall, the three different estimators yield similar results in terms of statistical significance.

The econometric analysis confirms the preliminary evidence emerging from the univariate tests. A higher frequency of privatization is found in countries with higher per capita GDP and lower growth rates, suggesting that privatization characterizes a relatively advanced stage of economic development. The inverse relation found between (lagged) growth rates and privatization could also indicate that governments resort to privatization when the economic outlook deteriorates, in order to foster economic activity via an increase in private investment. Fiscal conditions are also particularly relevant, as we find the debt ratio always highly statistically significant. Indeed, privatizing countries are often financially distressed, and they allocate revenues to amortization funds that allow directly to reduce the debt, and indirectly to improve the fiscal budget due to lower interest payments.

Finally, and not surprisingly, privatization is more likely where large and liquid stock markets are in place. The coefficients of the (lagged) market capitalization and the turnover ratio are positive and statistically significant. Well-developed financial markets are key as they allow the absorption of big share issues. Liquidity is also particularly important as after market liquidity is discounted in privatization prices, allowing governments to raise more proceeds. The turnover ratio is also a measure of market activity, which typically increases with a bull market. The positive sign of the coefficient can also be interpreted as governments taking advantage of "hot markets" to float companies, in order to fetch a better price.

We now turn to comment on the main variables of interest, namely our political and institutional variables. Several specifications are presented, where the constituents of our POLINST index and the index itself are added one at a time to avoid multicollinearity problems (regression (1) to (5) in Table 6 and 7). Regressions (6) to (8) present specifications where both main political variables (i.e. POLINST and PARTISAN) are included, along with two additional control variables, the election year dummy, and our proxy for the initial size of the SOE sector, i.e. total government expenditure as a percentage od GDP. The first variable controls for the fact the pace of privatization could slow down around elections. Indeed, elections introduce uncertainty about the identity of winning governments and the incumbent government may avoid leaving windfall privatization revenues to the opposition. The second variable allows instead to control partly for possible "supply" effects, as the extent of privatization should be affected by the size of the assets governments could to sell.

Our results in Table 6 and 7 indicate that political institutions are key in explaining the probability of privatization. Particularly, the dis-proportionality index is found to be always statistically significant at the 1 percent level. Dis-proportionality is one of the most important features of the majoritarian model, as it is directly related to the power accorded by the electoral rule to minorities. Where minority will is underrepresented, a lower number of veto players is found in the political arena, so that large scale reforms packages (which typically include privatizations) are more likely to be implemented. Another feature of the majoritarian model (i.e. a lower effective number of parties) seems important. The variable ENP is also highly statistically significant. A similar interpretation applies also in this case, as a lower number of parties is associated with a lower number of veto players ousting privatization. The type of executive (the indicator MWOP) is instead statistically significant in the probit model only, although its coefficient maintains the expected sign in all regressions. Importantly, the POLINST variable (the mean of the standardized values of our political-institutional measures) is always highly statistically significant, both in stand alone specifications, and where additional controls are included.

Importantly, the partisan orientation of incumbent governments does not seem to play any role. In OECD economies, we do not find any systematic relation between the likelihood of privatization and governments' location in the "right-left" political spectrum. However, it is too early to discard the empirical validity of partisan theories of privatization as they should apply more properly in the choice of the privatization method.

We now turn to the second stage of the estimation, where we try to estimate the extent of privatization in terms of revenues as a fraction of GDP (REV/GDP). Results are shown in Table 8. As to the choice of explanatory variables, we use exactly the same specification used in the first stage.

The empirical results are consistent with the findings of the first stage. Political institutions matter not only in explaining the likelihood of privatization, but also the volume of state assets disposal. Particularly, the coefficient for the disporportionality index and the aggregate index POLINST are positive and highly significant. As theory predicts, large scale privatization programs are more often found in majoritarian democracies, and particularly in countries where the electoral rule provides governments with a comfortable majority to support the implementation of reform packages. Fiscal conditions, economic wealth, and financial market development are again critical factors in explaining the extent of divestiture, as the debt ratio, GDP per capita, growth rates, market capitalization and liquidity are all highly significant. Again, privatization appears a relatively bi-partisan policy and quite unaffected by the initial size of the SOE sectors. Indeed, it does not have any systematic relation with our index capturing the political orientation of the executive nor with the government expenditures.

The weak evidence about the partisan dimension of privatization reported in the first and second stage is not particularly surprising. Indeed, the empirical implication of Biais and Perotti (2002) paper is not that privatization is a right wing policy, but more precisely that only right wing governments will privatize aiming at spreading share ownership among domestic owners. Table 9 and 10 provide a systematic test of this theory, by looking at the partisan dimension of the choice of the privatization method, which is the third stage of our empirical test.

We first estimate the proportion of total privatization revenues raised by Public Offer of shares. 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 asset can be achieved only through the flotation of the company on public equity markets. 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 is concentrated. Successful applicants would then have a financial interest in re-electing a market-oriented government.

Table 9 provides a first indication that political orientation may play a role. The most important result is that our PARTISAN index (which increases as government's orientations leans towards the extreme right of the political spectrum) is positively and significantly associated with a higher proportion of revenues raised by share issues in public equity markets. Overall, our control variables seem to indicate that public offers are more frequent in relatively poorer countries (with lower per capita GDP and higher growth rates) with smaller stock markets. In this respect, the privatization choice might also reflect the government objective of developing domestic stock markets, which can be easily rationalized in terms of efficiency and growth. The debt ratio seems also relevant, with highly indebted countries probably involved in the flotation of larger companies to square public finance.

Political institutions variables do not appear to be relevant in the choice of the privatization method in OECD countries. We report a statistically significant coefficient for the dis-proportionality index, but the other variables do not allow us to draw coherent conclusions on this respect. This fact is not particularly surprising, as there is not any received theory about the role political institutions in privatization in public vs private equity markets. However, they could be useful as control variables.

Table 10 presents the results of a more proper test of the partisan theories of privatization, where the dependent variable measures precisely the government's willingness to tap domestic voters at the privatization stage. Again, we find a highly statistically significant coefficient for PARTISAN index, with the expected sign. The coefficient is also robust to 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. As in Table 10, we find the proportion of privatization revenues raised in the home market to be negatively associated to market capitalization, which indicates domestic financial market development to be at least an important objective. However, governments face a trade-off between revenue generation and financial market development. Indeed, the positive and statistically significant coefficient of the turnover ratio indicates that the choice of selling shares on the domestic market is also driven by the level of liquidity at home, which in turn affects revenues. If the home market is too illiquid, divesting governments are forced to sell the company abroad, or by asset sale to strategic (large) investors.

6 Conclusions

This paper has tried to explore 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 likelihood and extent of divestiture is strongly affected by the existence of majoritarian political institutions, which curb the bargaining power of veto players and enhance executive stability. Privatization methods seem instead shaped by

political preferences, with market oriented governments involved in spreading share ownership among domestic voters.

It would certainly be interesting to use the data collected to provide a final test of the political economy of privatization, i.e. to assess whether strategic privatization by right wing governments has indeed contributed to shift political preferences and increased the likelihood of success of market-oriented platforms. We leave this to future research.

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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 yeat 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. Thus, increasing values of the index accord to the majoritarian rule, lower values to the proportional one. 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)
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
ELECTION	Dummy variable taking the value 1 on the year of a country's elections, and zero otherwise. In presidential systems, presidential elections are considered. In parliamentary systems, general elections are considered.	Banks et al. (1997), Wilfried Derksen's Electoral Web Sites (www.agora.stm.it/elections); Persson and Tabellini (2001)
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
AVGEXP	Average general government expenditure as a percentage of GDP in the pre-privatization period. Data refer to the legislature preceding the first privatization reported in Security Data Corporation	International Financial Statistics
GROWTH	Annual percentage growth rate of Gross Domestic Product at market prices based on constant local currency in country i in year t. Aggregates are based on constant 1995 U.S. dollars.	World Development Indicators, and http://www.worldbank.org

Table 1. (continued)

MWOP	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)
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)
POLINST	Standardized mean of the three measures DISPR, ENP and MWOP. The standardization is performed over the whole sample.	
PO/REV	Ratio of privatization revenues raised by Public Offer of Shares (PO) to total privatization revenues in country i in year t.	Securities Data Corporation
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 (*Public Offers* and *Private Sales*). Gross Domestic Product is expressed in current US dollars.	Securities Data Corporation Privatisation, World Development Indicators
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 variables for the period 1977-1999. Revenues/GDP are cumulative privatization proceeds (in 1996 US Dollars) in the sample period scaled by end of period GDP (in 1996 US Dollars). In countries where an institutional reform occurred during the sample period, revenues are split in two sub-periods by considering the first electoral year under the new regime. PO/REV is the average percentage of privatization revenues from Public Offers of shares. DOM/REV is the average percentage of privatization revenues obtained on the domestic retail market.

Countries	Gallagher Index	Effective Number of Parties	Type of executive	POLINST Index	PARTISAN Index	Revenues/ GDP	PO/REV	DOM/REV
Australia	10,829	2,425	0,816	0,864	5,959	0.186	0,038	0,026
Austria	1,614	2,779	0,548	-0,109	5,402	0.049	0,015	0,006
Belgium	3,699	4,623	0,298	-0,847	5,502	0.024	0,004	0,002
Canada	13,641	2,343	0,985	1,248	5,973	0.035	0,007	0,002
Denmark	1,492	4,885	0,123	-1,258	5,736	0.075	0,018	0,001
Finland	3,347	5,109	0,017	-1,332	5,687	0.084	0,074	0,025
France	24,390	3,350	0,633	1,203	5,485	0.059	0,034	0,020
Germany	2,094	2,652	0,462	-0,133	5,697	0.035	0,013	0,009
Greece	7,729	2,231	0,973	0,906	5,911	0.066	0,048	0,023
Ireland	4,264	2,869	0,437	-0,096	5,929	0.072	0,058	0,032
Italy (-94)	3,505	3,955	0,048	-0,916	6,054	0.008	0,067	0,045
Italy (94-)	7,105	6,390	0,042	-1,486	5,086	0.086		
Japan (-96)	6,087	2,990	0,184	-0,297	8,286	0.044	0,019	0,016
Japan (96-)	8,801	3,145	0,431	0,088	8,197	0.011		
New Zealand (-96)	14,858	1,965	1,000	1,461	6,800	0.187	0,009	0,000
New Zealand (96-)	7,419	3,404	0,326	-0,194	6,630	0.051		
Norway	4,483	3,680	0,413	-0,369	5,133	0.021	0,017	0,008
Portugal	4,536	3,010	0,445	-0,116	5,898	0.254	0,163	0,109
Spain	7,851	2,733	0,712	0,468	5,485	0.108	0,061	0,041
Sweden	1,829	3,642	0,412	-0,523	4,995	0.067	0,021	0,011
Switzerland	3,059	5,578	0,000	-1,519	4,638	0.022	0,020	0,006
The Netherlands	1,308	4,282	0,390	-0,785	5,938	0.041	0,022	0,010
United Kingdom	14,852	2,174	0,953	1,343	6,792	0.114	0,060	0,038
United States	15,699	1,936	0,789	1,293	5,554	0.001	0,001	0,001
Means	7,270	3,423	0,477	-0,046	5,949	0,118	0,037	0,021

Table 3. Comparison of Political Datasets

This table presents a comparison between the FEEM FPD, the World Bank DPI, and Tsebelis (2001) database. Data about electoral observations are considered. Column OBS reports the number of common observations (i.e., the number of elections) between two databases. SEATS DIFF is the average difference between the number of seats reported for, respectively, the first, second and third party forming the government coalition, and for the government as a whole. % MATCHED SEATS is the percentage of cases in which the number of seats coincides exactly in two databases.

	Tsebelis									FEEM FPD								
	OBS	SEATS DIFF				% MATCHED SEATS				OBS	SEATS DIFF				% MATCHED SEATS			
		P1	P2	P3	GOV	P1	P2	P3	GOV		P1	P2	P3	GOV	P1	P2	P3	GOV
FEEM FPD	126	3,73	2,76	1,81	6,36	80,16	81,75	84,13	66,67									
World Bank DPI	103	28,58	13,85	4,21	30,79	4,85	43,69	66,99	2,91	109	29,64	13,30	5,01	30,46	4,59	44,95	66,06	4,59

Table 4. Correlation Matrix

This table reports the correlation coefficients and associated p-values (in parenthesis) between the explanatory variables. The dotted line refers to the correlation matrix between the political-institutional variables.

	GDP	GROWTH	DEBT	TURNOVER	CAP	PARTISAN	ENP	DISPR	MWOP	POLINST	ELECTION	AVGEXP
GDP	1,0000											
GROWTH	-0,0950 0,0401	1,0000										
DEBT	-0,1427 0,0068	-0,0360 0,5063	1,0000									
TURNOVER	0,2908 0,0000	0,1196 0,0102	0,0150 0,7834	1,0000								
CAP	0,4207 0,0000	0,1244 0,0130	-0,1290 0,0183	0,3344 0,0000	1,0000							
PARTISAN	-0,1458 0,0013	-0,0464 0,3160	0,0733 0,1666	-0,1004 0,0000	-0,0213 0,6541	1,0000						
ENP	0,4169 0,0000	-0,1240 0,0072	0,1188 0,0246	0,1548 0,0011	0,0701 0,1392	-0,1960 0,0000	1,0000					
DISPR	-0,0793 0,0820	0,0443 0,3390	-0,0796 0,1329	-0,0851 0,0000	0,1696 0,0003	0,1568 0,0005	-0,4561 0,0000	1,0000				
MWOP	-0,3550 0,0000	0,0081 0,8608	-0,0784 0,1389	-0,2144 0,0000	0,0197 0,6787	0,0234 0,6087	-0,8655 0,0000	0,5310 0,0000	1,0000			
POLINSTIT	-0,3348 0,0000	0,0688 0,1373	-0,1086 0,0400	-0,1790 0,0000	0,0476 0,3158	0,1480 0,0011	-0,7441 0,0000	0,7817 0,0000	0,8950 0,0000	1,0000		
ELECTION	-0,0247 0,5885	0,0474 0,3063	-0,0021 0,9689	-0,0603 0,2066	-0,0409 0,3889	0,0499 0,2739	0,0371 0,4157	-0,0384 0,4000	-0,0491 0,2814	-0,0490 0,2823	1,0000	
AVGEXP	-0,079 0,0956	-0,0797 0,0879	0,3500 0,0000	-0,2109 0,0000	0,2387 0,0000	-0,1566 0,0008	0,2575 0,0000	-0,1874 0,0001	-0,1133 0,0151	-0,2173 0,0000	0,0177 0,7050	1,0000

Table 5. Univariate tests

This table presents the test of significance of the differences in means of the explanatory variables. Column (1) reports the statistical significance of the differences between the average values of the explanatory variables taken in country i in year t when at least one privatisation occurred (PRIVA=1) and when no privatisation occurred (PRIVA=0). Column (2) and (3) 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 variables POREV and DOMREV respectively. a, b, c bold characters denote statistical significance at 1, 5 and 10 percent level, respectively.

	PRIVA 1	PRIVA 0	(1) difference	POREV top 25%	POREV bottom 25%	(2) difference	DOMREV top 25%	DOMREV bottom 25%	(3) difference
GDP	21664,276	18513,530	3150,746[a] (4,555)	21669,668	22696,311	-1026,657 (-0,728)	20770,480	21824	-1053 (-0,880)
GROWTH	2,557	2,541	0,016 (0,080)	3,009	2,219	0,790[b] (1,862)	2,899	2,350	0,549 (1,5845)
DEBT	0,500	0,365	0,135[a] (5,061)	0,430	0,533	-0,103[c] (-1,762)	0,464	0,498	0,033 (-0,610)
TURNOVER	0,555	0,340	0,215[a] (5,167)	0,535	0,453	0,082 (1,320)	0,569	0,463	0,105[c] (1,811)
CAP	0,528	0,266	0,261[a] (7,767)	0,549	0,537	0,012 (0,146)	0,553	0,504	0,049 (0,7122)
PARTISAN	5,852	5,876	-0,024 (-0,201)	6,147	5,645	0,502[b] (2,078)	6,364	5,713	0,650[a] (3,002)
DISPR	8,503	5,938	2,565[a] (4,484)	9,747	7,259	2,488[b] (2,222)	10,583	8,061	2,522[b] (2,311)
ENP	3,285	3,336	-0,049 (-0,453)	2,844	3,498	-0,654[a] (-3,153)	2,989	3,300	-0,310 (-1,557)
MWOP	0,543	0,473	0,070[b] (2,136)	0,564	0,557	0,007 (0,093)	0,531	0,591	-0,060 (-0,973)
POLINST	0,130	-0,120	0,250[a] (2,764)	0,378	-0,001	0,379[b] (1,984)	0,345	0,151	0,194 (1,122)
ELECTION	0,286	0,306	-0,020 (-0,476)	0,245	0,328	-0,083 (-0,995)	0,228	0,323	-0,095 (-1,261)

Table 6. Logit Regressions (Random Effects)

This table reports the estimated coefficients and associated standard errors (in parenthesis) of logit estimation. The dependent variable is an indicator taking value 1 when at least a privatization deal is observed in country i in year t. The suffix *(t-1)* indicates that the variable is lagged of one year. Logistic form is assumed for the cumulative distribution of the error term; the individual effects are assumed to be normally distributed (random-effects model). 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.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONSTANT	-7,36464[a]	-13,80022[a]	-8,48630[a]	-7,76267[a]	-10,83498[a]	-10,37827[a]	-10,34829[a]	-9,455297[a]
	(1,06197)	(1,75001)	(1,32472)	(1,14782)	(1,47352)	(1,65754)	(1,65727)	(1,769447)
GDP	0,00011[a]	0,00014[a]	0,00022[a]	0,00019[a]	0,00026[a]	0,00031[a]	0,00031[a]	0,0002[a]
	(0,00003)	(0,00003)	(0,00004)	(0,00004)	(0,00005)	(0,00005)	(0,00005)	(0,00004)
GROWTH(t-1)	-0,20079[b]	-0,32782[a]	-0,26837[a]	-0,29283[a]	-0,27493[a]	-0,28637[a]	-0,28869[a]	-0,254683[a]
	(0,10048)	(0,10548)	(0,09655)	(0,10148)	(0,10072)	(0,10549)	(0,10601)	(0,094195)
DEBT(t-1)	9,47147[a]	11,73921[a]	8,69145[a]	6,80409[a]	9,61399[a]	6,84433[a]	6,83776[a]	9,745253[a]
	(1,33896)	(1,54400)	(1,22290)	(1,00184)	(1,34934)	(0,98079)	(0,98108)	(1,44219)
TURNOVER(t-1)	0,96853[b]	2,20105[a]	2,08381[a]	2,46087[a]	2,23364[a]	2,63202[a]	2,62845[a]	1,629624[a]
	(0,48191)	(0,59428)	(0,59756)	(0,79516)	(0,60322)	(0,76787)	(0,76747)	(0,545824)
CAP(t-1)	3,25347[a]	3,65815[a]	3,52569[a]	5,77690[a]	3,27163[a]	3,02995[a]	3,04113[a]	3,98717[a]
	(1,04450)	(0,86717)	(1,07914)	(1,16792)	(0,90997)	(0,81866)	(0,81822)	(1,024992)
DISPR		0,28821[a]						
		(0,04450)						
MWOP			0,77396					
			(0,65380)					
ENP				-0,46716[b]				
				(0,23067)				
POLINST					1,90955[a]	1,15976[a]	1,16009[a]	1,769404[a]
					(0,33518)	(0,26564)	(0,26547)	(0,308490)
PARTISAN						-0,03260	-0,03195	-0,026034
						(0,15922)	(0,15957)	(0,147719)
ELECTION							-0,11482	-0,13497
							(0,38770)	(0,39306)
AVGEXP								-0,005902
								(0,02807)
Obs.	325	325	325	325	325	325	325	318
Matched	57,76%	56,94%	58,18%	58,80%	60,87%	60,66%	61,08%	60,66%
Log likelihood	-137,19	-128,81	-131,92	-133,09	-129,20	-128,80	-128,82	-126,33
Wald χ^2	79,50[a]	71,56[a]	66,38[a]	65,39[a]	68,75[a]	78,13[a]	78,16[a]	70,13[a]

Table 7. Probit regressions

This table reports the estimated coefficients and associated standard errors (in parenthesis) of probit estimation. The dependent variable is an indicator taking value 1 when at least a privatization deal is observed in country i in year t. The suffix *(t-1)* indicates that the variable is lagged of one year. Cumulative normal form is assumed for the cumulative distribution of the error term; the individual effects are assumed to be normally distributed (random-effects model). 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.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONSTANT	-3,78189[a]	-6,17663[a]	-5,57667[a]	-4,06071[a]	-5,20459[a]	-4,93531[a]	-6,71058[a]	-1,727156[b]
	(0,48953)	(0,75743)	(0,86571)	(0,56463)	(0,66810)	(0,81056)	(0,94499)	(0,818230)
GDP	0,00006[a]	0,00012[a]	0,00013[a]	0,00012[a]	0,00011[a]	0,00011[a]	0,00019[a]	0,00014[a]
	(0,00002)	(0,00002)	(0,00003)	(0,00002)	(0,00002)	(0,00002)	(0,00003)	(0,00002)
GROWTH(t-1)	-0,14104[a]	-0,17013[a]	-0,14663[a]	-0,15736[a]	-0,17873[a]	-0,17910[a]	-0,13948[b]	-0,194449[a]
	(0,04724)	(0,05840)	(0,05649)	(0,05511)	(0,05417)	(0,05399)	(0,05683)	(0,05825)
DEBT(t-1)	2,51626[a]	4,12661[a]	4,62845[a]	4,21685[a]	4,78478[a]	4,77285[a]	4,64082[a]	4,147959[a]
	(0,40409)	(0,57060)	(0,72835)	(0,54706)	(0,61428)	(0,61408)	(0,60115)	(0,584240)
TURNOVER(t-1)	1,09513[a]	1,34534[b]	1,13222[a]	1,04279[a]	1,33259[a]	1,30871[a]	1,19866[a]	1,323523[a]
	(0,28569)	(0,54272)	(0,37564)	(0,31824)	(0,33625)	(0,33696)	(0,34299)	(0,697474)
CAP(t-1)	3,28145[a]	2,68937[a]	2,02824[a]	2,62121[a]	2,41027[a]	2,45174[a]	1,39927[a]	2,014653[a]
	(0,53520)	(0,53791)	(0,55591)	(0,53136)	(0,52474)	(0,52958)	(0,42060)	(0,486956)
DISPR		0,10274[a]						
		(0,02111)						
MWOP			1,07460[b]					
			(0,51715)					
ENP				-0,41464[a]				
				(0,12512)				
POLINST					0,84930[a]	0,84797[a]	0,84628[a]	1,015191[a]
					(0,14716)	(0,14696)	(0,14924)	(0,165497)
PARTISAN						-0,04463	0,01374	-0,043416
						(0,07862)	(0,07857)	(0,080571)
ELECTION							-0,02652	-0,03362
							(0,21866)	(0,22158)
AVGEXP								-0,116142[a]
								(0,021253)
Obs.	325	325	325	325	325	325	325	318
Matched	56,94%	59,01%	60,25%	58,39%	60,25%	60,46%	59,63%	60,66%
Log likelihood	-138,95	-126,90	-132,75	-133,71	-127,09	-126,93	-126,49	-130,21
Wald χ^2	94,36[a]	89,50[a]	78,24[a]	92,51[a]	89,90[a]	89,89[a]	97,56[a]	96,99[a]

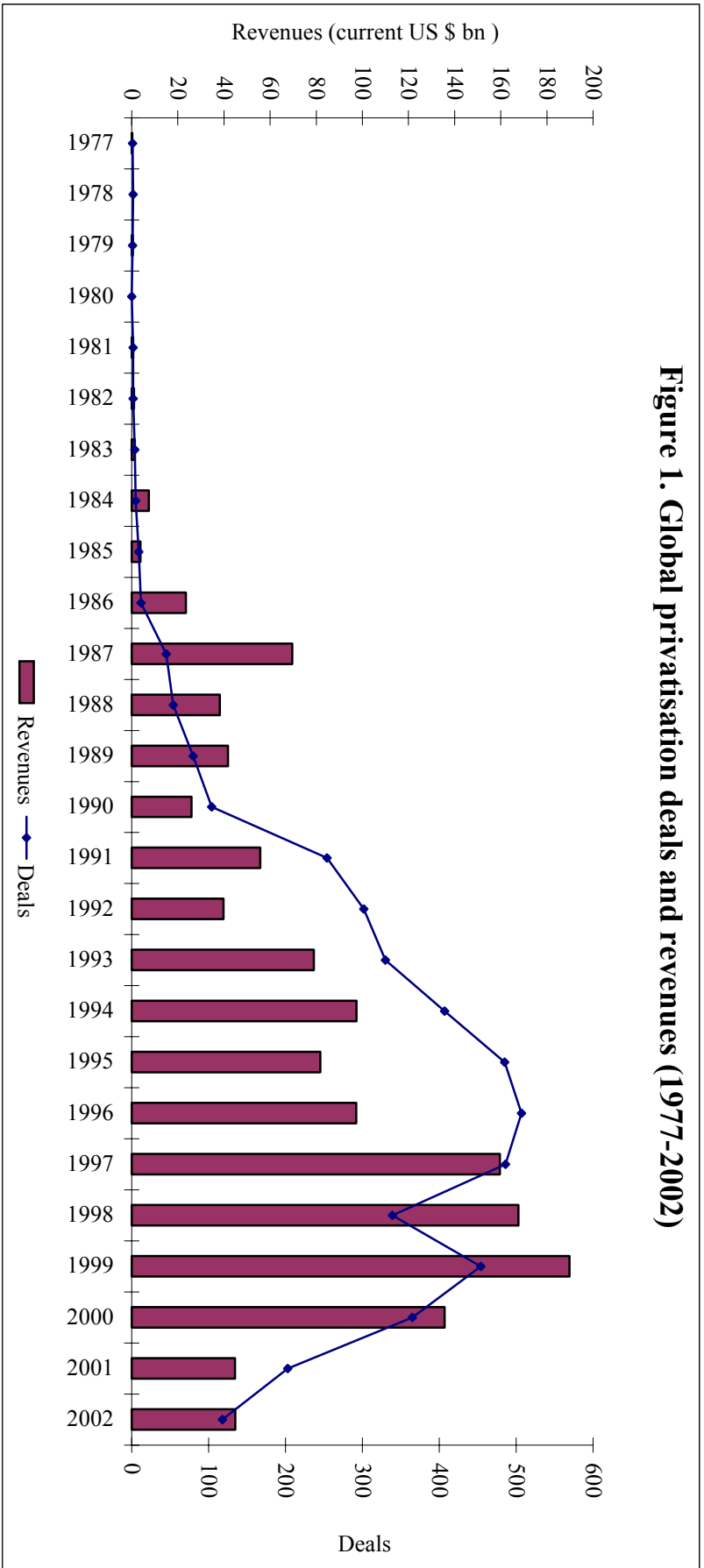# Table 8. Tobit regressions: Revenues/GDP

This table reports the estimated coefficients and associated standard errors (in parenthesis) of tobit estimation. The dependent variable is given by the ratio of total revenues from privatization to Gross Domestic Product in country i in year t. The suffix *(t-1)* indicates that the variable is lagged of one year. 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). 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.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONSTANT	-0,02515[a]	-0,02881[a]	-0,02800[a]	-0,02480[a]	-0,02849[a]	-0,03147[a]	-0,03106[a]	-0,034403[a]
	(0,00325)	(0,00363)	(0,00403)	(0,00326)	(0,00370)	(0,00460)	(0,00460)	(0,005230)
GDP	4,06e-07[a]	4,70e-07[a]	4,60e-07[a]	4,60e-07[a]	5,14e-07[a]	5,28e-07[a]	5,25e-07[a]	5,38e-07[a]
	(1,13e-07)	(1,11e-07)	(1,22e-07)	(1,24e-07)	(1,22e-07)	(1,20e-07)	(1,20e-07)	(1,24e-07)
GROWTH$_{(t-1)}$	-0,00065[b]	-0,00067[b]	-0,00068[b]	-0,00070[b]	-0,00073[b]	-0,00068[b]	-0,00069[b]	-0,00068[b]
	(0,00029)	(0,00028)	(0,00028)	(0,00029)	(0,00029)	(0,00029)	(0,00029)	(0,00029)
DEBT$_{(t-1)}$	0,02568[a]	0,02738[a]	0,02689[a]	0,02727[a]	0,02826[a]	0,02825[a]	0,02813[a]	0,028152[a]
	(0,00306)	(0,00284)	(0,00286)	(0,00302)	(0,00301)	(0,00300)	(0,00299)	(0,00309)
TURNOVER$_{(t-1)}$	0,00443[a]	0,00476[a]	0,00476[a]	0,00455[a]	0,00491[a]	0,00496[a]	0,00478[a]	0,005360[a]
	(0,00168)	(0,00153)	(0,00157)	(0,00156)	(0,00157)	(0,00158)	(0,00159)	(0,00169)
CAP$_{(t-1)}$	0,01007[a]	0,00919[a]	0,00926[a]	0,00964[a]	0,00893[a]	0,00875[a]	0,00885[a]	-0,008976[a]
	(0,00179)	(0,00170)	(0,00180)	(0,00177)	(0,00175)	(0,00175)	(0,00175)	(0,00182)
DISPR		0,00019[b]						
		(0,00008)						
MWOP			0,00240					
			(0,00191)					
ENP				-0,00063				
				(0,00058)				
POLINST					0,00138[b]	0,00128[c]	0,00124[c]	0,001439[b]
					(0,00067)	(0,00067)	(0,00067)	(0,00069)
PARTISAN						0,00046	0,00046	-0,000517
						(0,00042)	(0,00042)	(0,000435)
ELECTION							-0,00098	-0,00052
							(0,00117)	(0,00120)
AVGEXP								0,000074
								(0,000078)
Obs.	325	325	325	325	325	325	325	318
Uncensored	173	173	173	173	173	173	173	166
left censored	152	152	152	152	152	152	152	152
Log likelihood	518,00	520,72	518,79	518,57	520,11	520,69	521,05	494,91
Wald χ^2	136,44[a]	137,50[a]	135,28[a]	134,25[a]	132,68[a]	135,48[a]	136,59[a]	132,42[a]

Table 9. Tobit regressions: PO Revenues / Total Revenues

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 public offer to total revenues from privatization in country i in year t. The suffix *(t-1)* indicates that the variable is lagged of one year. The dependent variable is left censored in 0 for the years in which all the privatizations occurred by public offer; it is right censored in 1 for the years in which none of the privatizations occurred by public offer; finally, it is not defined for the years in which no privatization occurred. Normality of the individual effects is assumed (random-effects model). 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.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CONSTANT	0,92783[a]	0,66776[b]	1,49856[a]	1,17290[a]	0,91398[a]	1,23268[a]	0,74934[b]
	(0,21989)	(0,25926)	(0,34500)	(0,25838)	(0,26418)	(0,37701)	(0,34764)
GDP	-0,00004[a]	-0,00003[a]	-0,00004[a]	-0,00005[a]	-0,00004[a]	-0,00004[a]	-0,00004[a]
	(0,00001)	(0,00001)	(0,00001)	(0,00001)	(0,00001)	(0,00001)	(0,00001)
GROWTH$_{(t-1)}$	0,03603[c]	0,04294[c]	0,04468[c]	0,04839[b]	0,03577	0,05356[b]	0,05090[b]
	(0,02153)	(0,02221)	(0,02292)	(0,02237)	(0,02173)	(0,02273)	(0,02225)
DEBT$_{(t-1)}$	0,40722[b]	0,36896[c]	-0,05272	0,60800[b]	0,41590[b]	-0,01832	0,21335
	(0,18194)	(0,19029)	(0,24417)	(0,25466)	(0,20353)	(0,19947)	(0,19148)
TURNOVER$_{(t-1)}$	0,19517	0,33290[b]	0,20912	0,28464[c]	0,19807	0,29278[c]	0,06105
	(0,14714)	(0,15794)	(0,15652)	(0,14443)	(0,15000)	(0,16966)	(0,14906)
CAP$_{(t-1)}$	-0,18735	-0,56932[a]	-0,30236[c]	-0,51762[a]	-0,19085	-0,41546[a]	-0,21949
	(0,13129)	(0,16265)	(0,17427)	(0,16699)	(0,13668)	(0,15536)	(0,14343)
DISPR		0,03143[a]					
		(0,00679)					
MWOP			-0,64787[a]				
			(0,20278)				
ENP				0,05783			
				(0,05409)			
POLINST					0,00521	0,09711[c]	-0,09808[c]
					(0,05516)	(0,05302)	(0,05744)
PARTISAN						0,06433[c]	0,07325[b]
						(0,03521)	(0,03438)
ELECTION							-0,11579
							(0,09231)
Obs.	173	173	173	173	173	173	173
uncensored	100	100	100	100	100	100	100
left censored	43	43	43	43	43	43	43
right censored	30	30	30	30	30	30	30
Log likelihood	-145,48	-144,25	-145,39	-147,54	-145,48	-146,25	-143,25
Wald χ^2	28,86[a]	37,37[a]	25,95[a]	35,71[a]	28,94[a]	41,89[a]	32,41[a]

Table 10. Tobit Regression: Domestic Revenues / Total Revenues

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 suffix *(t-1)* indicates that the variable is lagged of one year. The dependent variable is left censored in 0 for the years in which all the privatizations occurred by domestic public offer; it is right censored in 1 for the years in which none of the privatizations occurred by domestic public offer; finally, it is not defined for the years in which no privatization occurred. Normality of the individual effects is assumed (random-effects model). 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.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CONSTANT	0,26982 (0,23713	0,09098 (0,27353)	0,64993^c (0,33376)	0,21350 (0,22541)	0,31643 (0,26957)	-0,00790 (0,37217)	0,00680 (0,37144)
GDP	-0,00001 (0,00001	-0,00001 (0,00001)	-0,00001 (0,00002)	-0,00001 (0,00001)	-0,00001 (0,00001)	-0,00001 (0,00001)	-0,00001 (0,00001)
GROWTH$_{(t-1)}$	0,00063 (0,02057	0,00192 (0,01993)	0,00554 (0,01996)	0,00456 (0,02010)	0,00165 (0,02060)	0,01689 (0,02098)	0,01678 (0,02087)
DEBT$_{(t-1)}$	0,25027 (0,25713	-0,05106 (0,23939)	-0,01106 (0,24345)	-0,07396 (0,23337)	0,21868 (0,25573)	0,09507 (0,23632)	0,08946 (0,22715)
TURNOVER$_{(t-1)}$	0,31401^b (0,14343	0,42289^a (0,14569)	0,26498^c (0,13645)	0,29797^b (0,13748)	0,30285^b (0,14710)	0,25711^c (0,13970)	0,24700^c (0,14027)
CAP$_{(t-1)}$	-0,36102^b (0,16736	-0,46216^b (0,17852)	-0,31416 (0,25392)	-0,40565^b (0,17217)	-0,33813^c (0,17263)	-0,35646^b (0,15333)	-0,35486^b (0,15301)
DISPR		0,01474^b (0,00644)					
MWOP			-0,36094 (0,26371)				
ENP				0,08021 (0,05351)			
POLINST					-0,02588 (0,07004)	-0,10073 (0,07873)	-0,10311 (0,07333)
PARTISAN						0,05696^c (0,03356)	0,05717^c (0,03348)
ELECTION							-0,03109 (0,08498)
Obs.	173	173	173	173	173	173	173
uncensored	88	88	88	88	88	88	88
left censored	74	74	74	74	74	74	74
right censored	11	11	11	11	11	11	11
Log likelihood	-126,36	-124,09	-124,35	-125,91	-126,29	-124,08	-124,01
Wald χ^2	8,61	15,58^b	15,40^b	12,90^b	9,90	17,92^b	18,21^b

Figure 1. Global privatisation deals and revenues (1977-2002)

Source: Securities Data Corporation
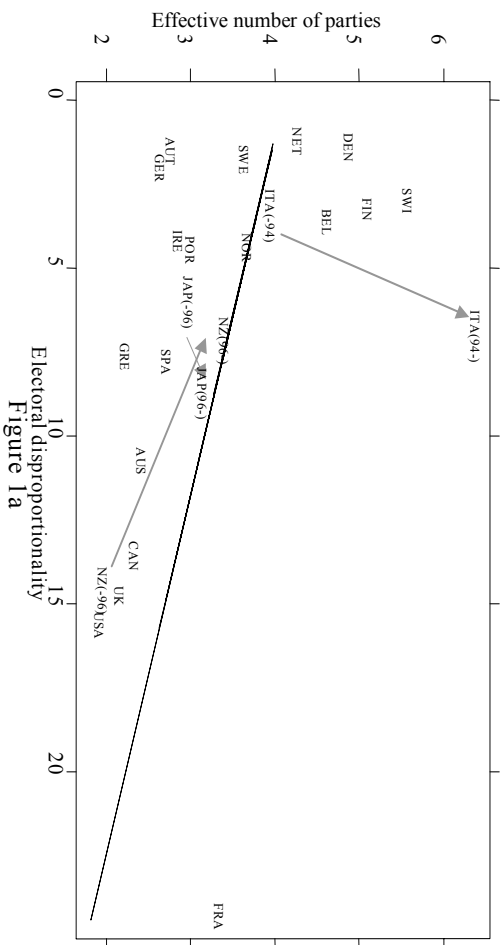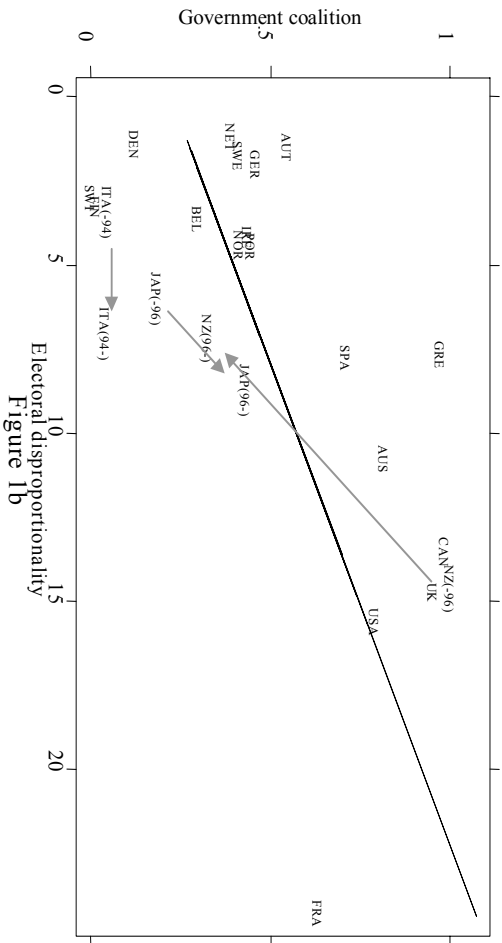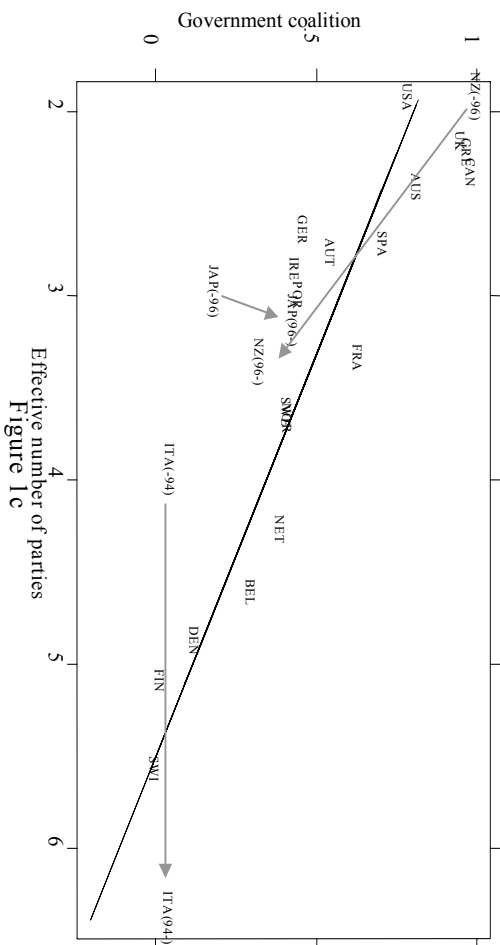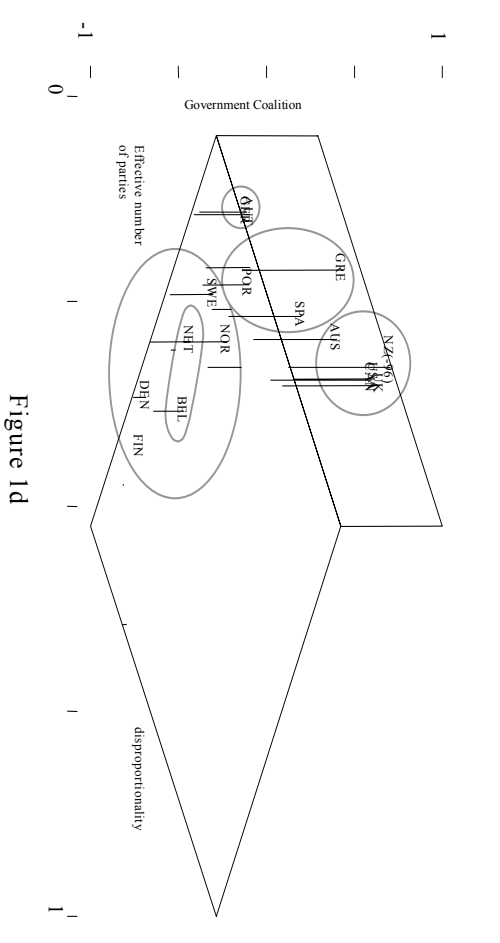
Figure 2. The Geography of Political Institutions

Figure 1a

Effective number of parties

Electoral disproportionality

SWI, DEN, FIN, BEL, AUT, GER, SWE, NET, ITA(-94), NOR, POR, IRE, JAP(-96), NZ(96-), GRE, SPA, JA(96-), AUS, CAN, UK, NZ(-96), USA, FRA

Figure 1b

Government coalition

Electoral disproportionality

AUT, GER, NET, SWE, DEN, BEL, ITA(-94), SWI, FIN, IRE, POR, NOR, JAP(-96), ITA(94-), NZ(96-), JA(96-), GRE, SPA, AUS, CAN, NZ(-96), UK, USA, FRA

Figure 1c

Government coalition

Effective number of parties

NZ(-96), USA, UK, CAN, AUS, SPA, GER, AUT, IRE, POR, JA(96-), JAP(-96), NZ(96-), FRA, SWI, NET, BEL, DEN, ITA(-94), FIN, SWI, ITA(94-)

Figure 1d

Government Coalition

Effective number of parties

disproportionality

SWI, GRE, POR, SWE, SPA, AUS, NOR, NET, DEN, FIN, BEL, NZ(-96), USA, UK

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(l) This paper was presented at the Workshop "Growth, Environmental Policies and Sustainability" organised by the Fondazione Eni Enrico Mattei, Venice, June 1, 2001

(li) This paper was presented at the Fourth Toulouse Conference on Environment and Resource Economics on "Property Rights, Institutions and Management of Environmental and Natural Resources", organised by Fondazione Eni Enrico Mattei, IDEI and INRA and sponsored by MATE, Toulouse, May 3-4, 2001

(lii) This paper was presented at the International Conference on "Economic Valuation of Environmental Goods", organised by Fondazione Eni Enrico Mattei in cooperation with CORILA, Venice, May 11, 2001

(liii) This paper was circulated at the International Conference on "Climate Policy – Do We Need a New Approach?", jointly organised by Fondazione Eni Enrico Mattei, Stanford University and Venice International University, Isola di San Servolo, Venice, September 6-8, 2001

(liv) This paper was presented at the Seventh Meeting of the Coalition Theory Network organised by the Fondazione Eni Enrico Mattei and the CORE, Université Catholique de Louvain, Venice, Italy, January 11-12, 2002

(lv) This paper was presented at the First Workshop of the Concerted Action on Tradable Emission Permits (CATEP) organised by the Fondazione Eni Enrico Mattei, Venice, Italy, December 3-4, 2001

(lvi) This paper was presented at the ESF EURESCO Conference on Environmental Policy in a Global Economy "The International Dimension of Environmental Policy", organised with the collaboration of the Fondazione Eni Enrico Mattei , Acquafredda di Maratea, October 6-11, 2001

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(lvix) This paper was presented at the ENGIME Workshop on "Mapping Diversity", Leuven, May 16-17, 2002

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