

Privatisation: politics, institutions, and financial markets[☆]

Bernardo Bortolotti^{a,b,*}, Marcella Fantini^{b,c},
Domenico Siniscalco^{a,b,d}

^a*Fundazione Eni Enrico Mattei, Corso Magenta 63, 20123 Milan, Italy*

^b*Università di Torino, Italy*

^c*Università di Bergamo, Italy*

^d*CESifo, Germany*

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Abstract

This paper presents evidence on privatisation processes in 49 countries for the period 1977–1996. The empirical analysis shows that the decision to privatise and the choice of privatisation method appear to be influenced by the governing political majority and public-sector budget constraints, while the success of privatisation in terms of revenues and stakes sold requires suitable legal institutions and developed capital markets. © 2001 Elsevier Science B.V. All rights reserved.

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* Corresponding author. Tel.: +39-02-52036968; fax: +39-02-52036946.

E-mail address: bortolotti@feem.it (B. Bortolotti).

1. Introduction

In the period 1977–1997, more than 1850 large-scale privatisations were carried out in the world, bringing government revenues of over US\$750 billions. The process grew exponentially, both in terms of number of transactions and of revenue (see Fig. 1), involving more than 100 countries, and all the sectors in which state-owned enterprises (SOEs) traditionally operate.

One of the first privatisations, in modern times, was that undertaken by the Adenauer government in the Federal Republic of Germany. In 1961, the German government, on the basis of an explicit policy of denationalisation of the economy, sold a majority stake in Volkswagen through a public offering, mainly earmarked for small investors. This issue was followed by the sale of Veba shares in 1965. Both offers seemed successful, but, as stock market collapsed, the government was forced to bail out many of the investors. Similar experiments, of an occasional nature, took place in Chile and Ireland at the beginning of the 1970s.¹

The story picks up in 1979, in the Great Britain of Margaret Thatcher's conservative government, which indeed accomplished the largest-scale privatisation program in the western world: SOE activity in terms of value added as a percentage of GDP decreased from 6.1 in 1978 to 1.9 in 1991 (World Bank, 1995). Thereafter, the process spread around countries and continents.

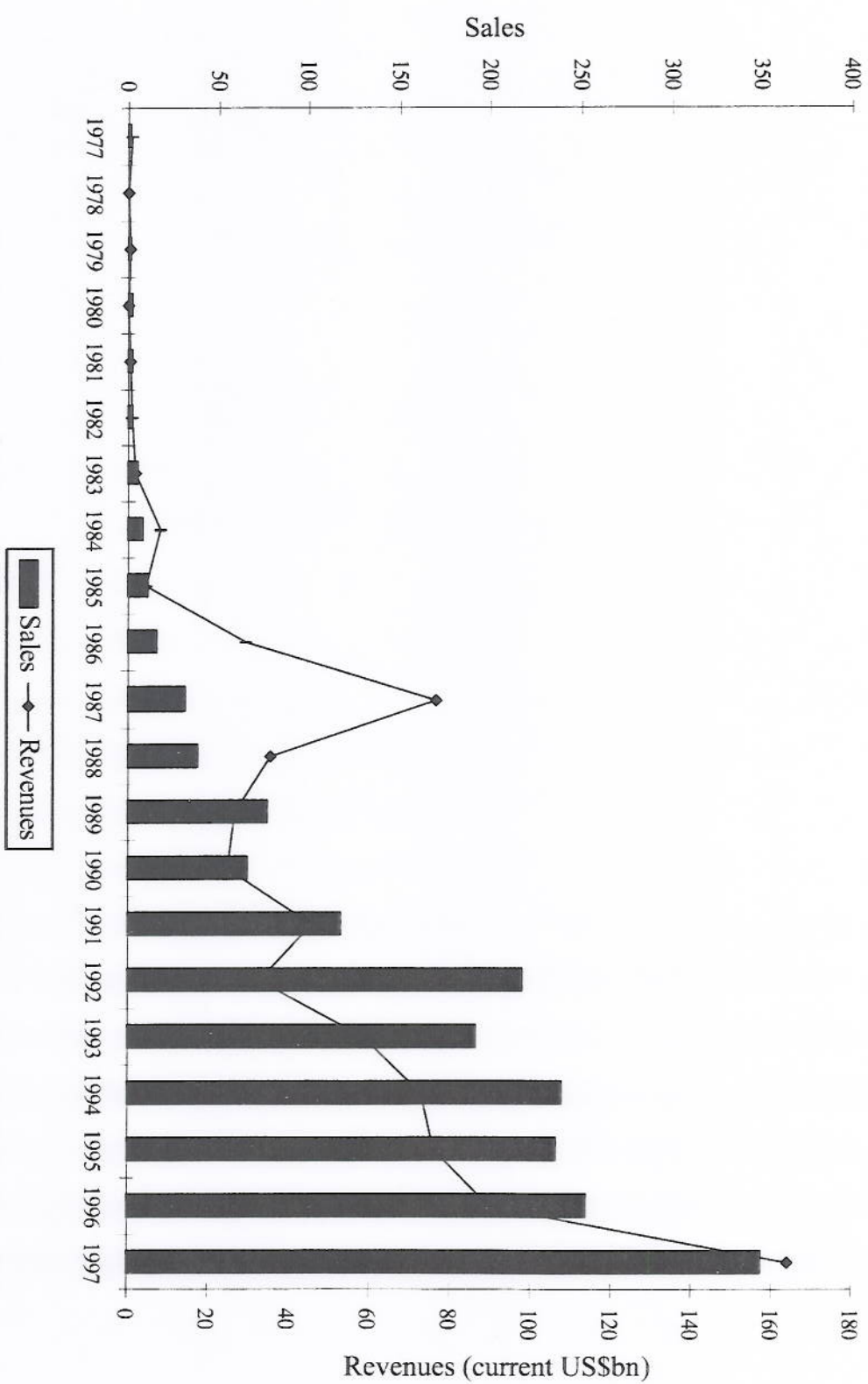
The breakdown of privatisation data by geographic areas shows that Western Europe has implemented the greatest number of sales, followed by Central and Eastern Europe and the former Soviet Union, Latin America and Asia (Fig. 2). The analysis of revenues confirms that Western Europe, over the 20-year period, accounted for 50% of global revenues, followed by Asia (22%) and Latin America (13%) (Fig. 3). The comparison of number of sales and revenue offers interesting insights. For example, privatisations in Eastern Europe and the former Soviet Union — similar to those in Africa and the Middle East — were numerous, but minor in size. The opposite occurred in Asia.

The data on the privatisation methods are also surprising. In almost all areas, and even in Western Europe, direct sale (that is without a public offer to retail investors on the equity market), accounts for the majority of cases. The choice to privatise on public equity markets (public offering, PO), however, regards the sales of greater size, greatly increasing the weight of POs in terms of revenue. The breakdown by industry shows that almost no sector was left out of the privatisation process, and that the greater part of revenues came from utilities, industrial products, finance and energy (Fig. 4).

Privatisation is certainly a widespread phenomenon, but the extent, size, and quality of privatisation seems to differ substantially in a cross-country comparison. First, why is it so? Why do some countries accomplish large-scale privatisation programmes? Second, how do governments privatise? Why do some governments privatise big stakes in SOEs, while others stick to partial privatisation? Finally, why

¹For an historical overview of privatisation, see Megginson and Netter (in press).

Fig. 1. Number of sales and revenues from privatisation around the world. Source: Authors' calculation on Privatisation International Database.



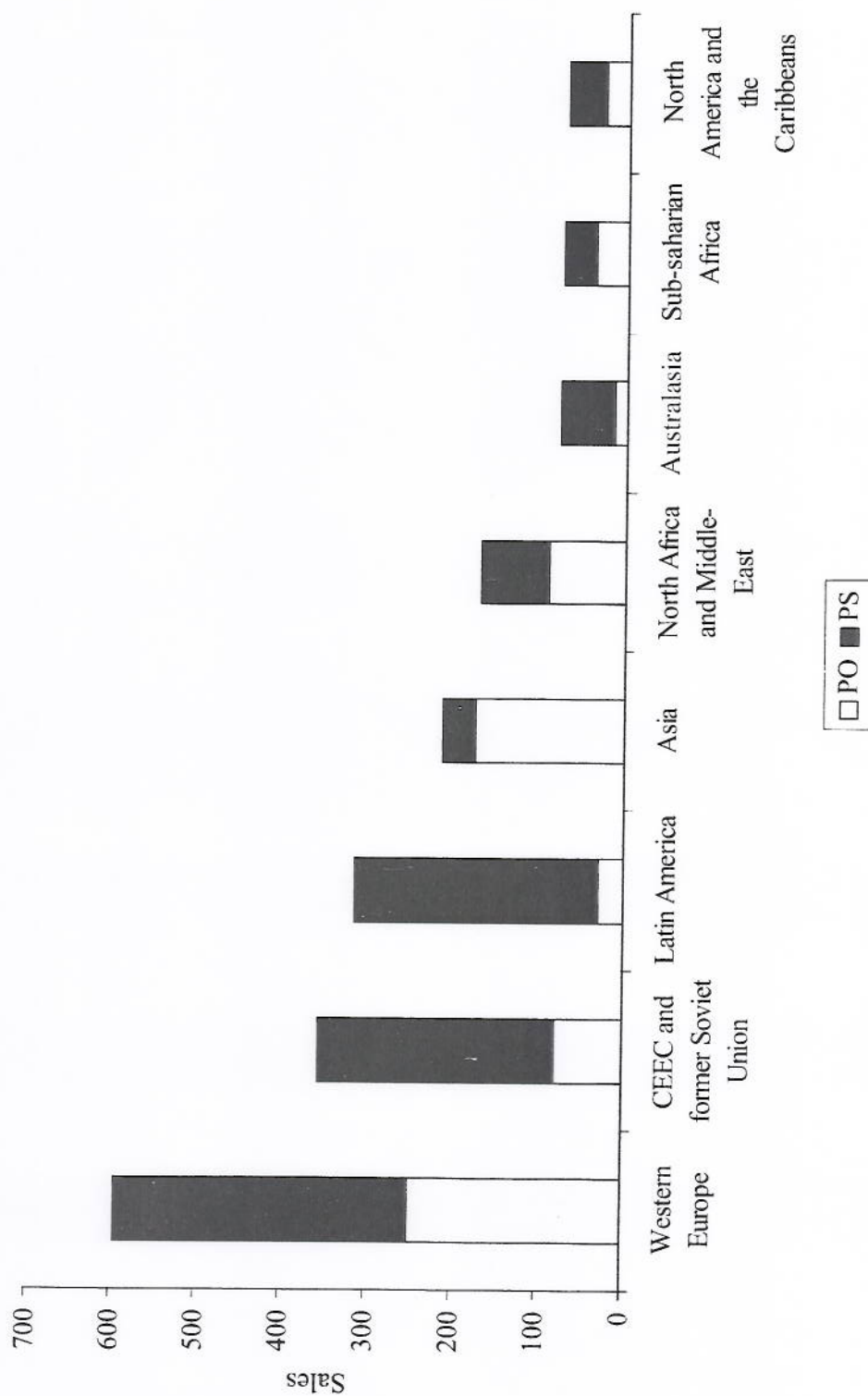


Fig. 2. Regional distribution of the sales: 1977–1997. Source: Authors' calculation on Privatisation International Database.

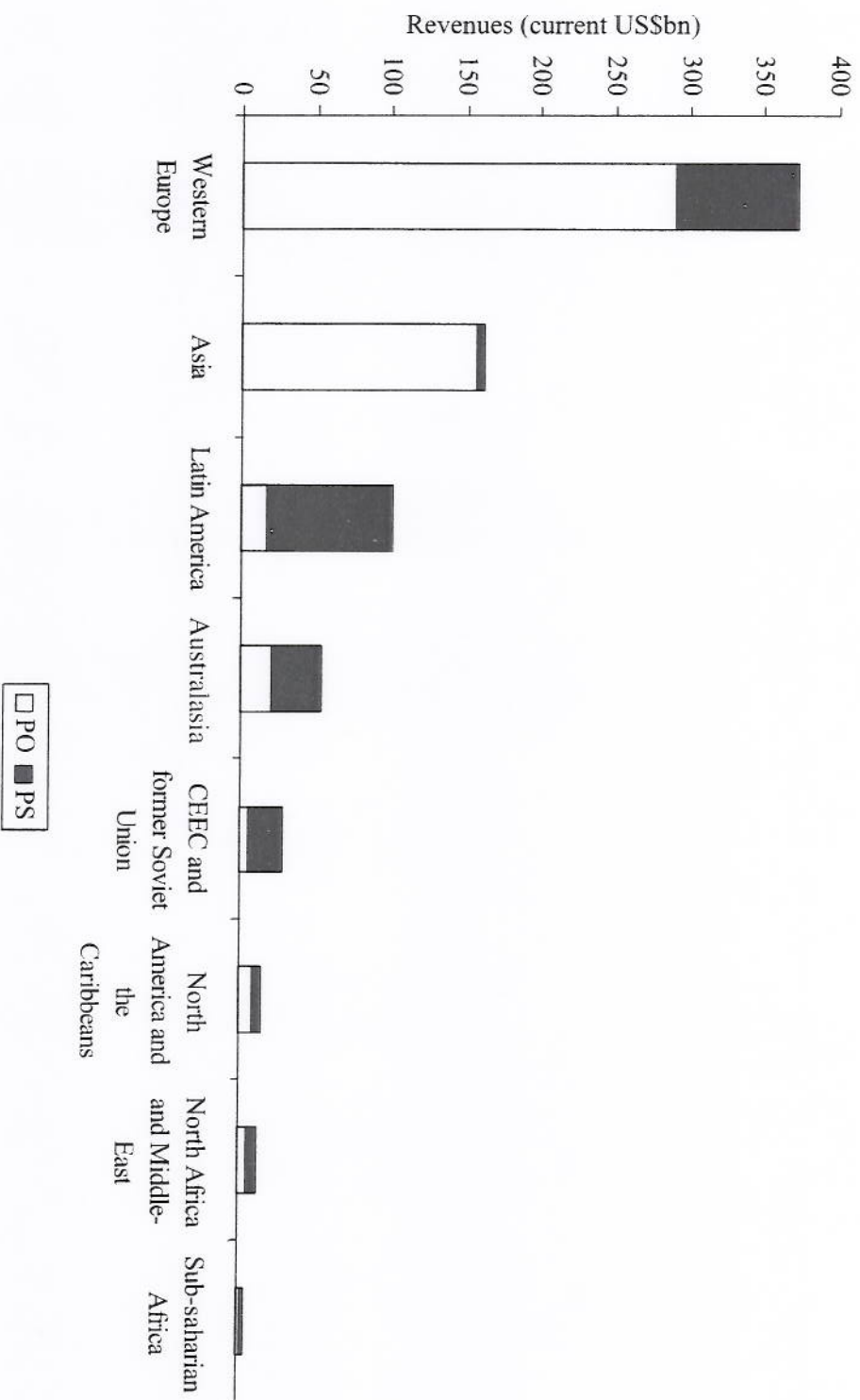


Fig. 3. Regional distribution of the revenues: 1977-1997 Source: Authors' calculation on Privatisation International Database.

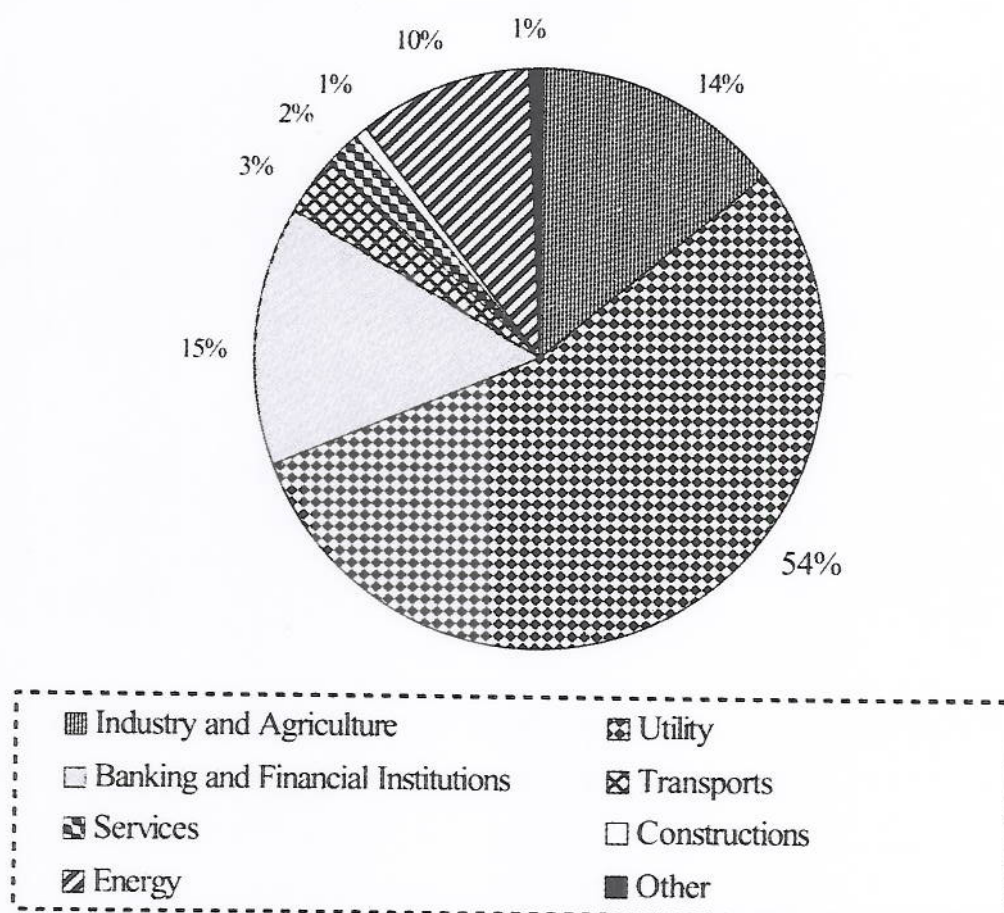


Fig. 4. Distribution of the revenues by sector: 1977–1997. Source: Authors' calculation on Privatisation International Database. Sectors are defined as follows. Industry and agriculture: agriculture, fishing, manufacturing industry. Construction: construction and public works. Energy: oil-drilling and refinery; gas extraction. Services: tourism, hotels and public businesses, other services. Transport: airlines, road transport, maritime transport. Finance: banks, financial services, insurance services. Utilities: airports, ports, urban transport, highways, network railway services, electricity, gas transmission and distribution, postal services, telecommunications, water and sewerage services.

do some governments choose public equity markets to divest companies, and others choose private sales to strategic investors?

This paper provides some tentative answers to these important questions.

To address these issues, we set forth two definitions that are instrumental to the statistical analysis of the data. The quantity of privatisations in a given country is defined in terms of: (i) the number of sales relative to the number of domestic listed firms; and (ii) revenues per capita. The quality of privatisations is defined in terms of: (i) the percentage of stock sold; and (ii) public offers as a percentage of total sales. With regard to quantity, we will examine the factors that may trigger the privatisation process, trying to explain why some countries have privatised more extensively than others. Looking at quality, we will try to find possible explanations for the persistence of partial privatisation and to identify the reasons underlying the choice of privatisation method. Although we will construct a quality measure,

we will not express judgements on the ultimate results of privatisations. An evaluation of the overall welfare effects of privatisation in terms of performance, efficiency, and redistribution among stakeholders cannot be carried out with reference to a few indicators related to the structure of the placements.

We try to account for differences in the quantity and quality variables across countries by testing several competing theories regarding the determinants of privatisation.

It is widely recognised that privatisation has strong political underpinnings; it is therefore important to bring a government's ideological preferences and budget constraints into the analysis. It is often stated that right-wing governments are more prone to privatise: a rationale for this preference is the creation of a middle class of small capitalists more inclined — as shareholders — to support market-oriented policies and to vote with the right in future (Vickers and Yarrow, 1988; Biais and Perotti, *in press*). Moreover, public finance theoretically matters in privatisation: financially distressed governments need to sell to improve their budgets (Roland, 1994).

Finally, as shown by recent literature on the political economy of privatisation, governments also face credibility constraints. They need to marshal the support of domestic and international investors over time and establish their reputations in terms of commitment to privatisation (Perotti, 1995). The credibility of governments should therefore matter in the economic success of privatisation.

A strand of literature in empirical corporate finance has shown that legal protection of investors affects the development of financial markets and ownership structures (La Porta et al., 1998). Legal protection could also matter in privatisation: governments should be concerned about the legal protection of investors in privatised firms, mostly when they opt for large flotations to create a population of widespread shareholders. Financial market development could affect the quantity and quality of privatisation. Indeed, stock market liquidity facilitates divestiture, since it provides monitoring and the aggregation of information (Hölmstrom and Tirole, 1993). Where financial markets are well developed and efficient, governments should privatise more, as there is less risk of shareholders being expropriated by managers.

Our empirical testing of the theories is based on a dataset that we assembled and which refers to a sample of 49 countries for the period 1977–1996. Our main results are summarised in the conclusion.

The paper is organised as follows: Section 2 briefly presents the related literature; Section 3 describes the privatisation variables; Section 4 describes the explanatory variables; and Section 5 presents the empirical results. Section 6 concludes.

2. Related literature

From the early 1980s, privatisation programmes have inspired an extensive body of literature on the rationale and the objectives of sell-offs, on their determinants

and effects and, more recently, on their political dimension (Vickers and Yarrow, 1988; Laffont and Meleu, 1991; Laffont and Tirole, 1991; Yarrow and Jasinski, 1996). In this literature, empirical studies are significant. However, they are basically case studies at the country or sector level, as the quality of the data does not allow for cross-country investigation (see Megginson and Netter, in press for a comprehensive survey). To our knowledge, few empirical papers have dealt with privatisations on a world scale. Jones et al. (1999) studied underpricing in 137 privatised companies in 34 countries and find evidence that it is more frequent where governments need to gain domestic political support. Megginson et al. (1994) compared the financial and operating performance of newly privatised firms in 18 countries and find substantial improvements in terms of turnover, profitability, capital investment and overall efficiency. Galal et al. (1994) studied the effects of 12 privatisations in Chile, Malaysia, Mexico, and the United Kingdom, identifying gains and losses due to privatisations, and finding that, in most cases, the net effects were positive for the enterprise and for the national economy.

3. The quantity and quality of privatisations

A first step in our analysis is to find quantitative indicators of the extent and volume of state assets disposal by country, defined as the ‘quantity’ of privatisations. We use two measures for quantity. The first variable (SALES) looks at the number of public offers (PO) and private sales (PS), scaled by the number of domestic listed firms. The second variable (REVENUES) is based on the total proceeds from those sales in US\$ billions in 1996 per country, scaled by the population.

The two variables are equally important and complement each other. The number of sales relative to domestic firms measures the extent of privatisation and proxies the willingness of incumbent governments to privatise the economy. In this respect, it is important to use privatisation transactions and not privatised companies as the unit of analysis. The fact that a company is sold in multiple tranches is important information about the extent of privatisation, since bigger companies are typically sold in a sequence of issues.

Although useful to gauge the extent of divestiture, the number of sales needs to be complemented by a measure of the volume of one country’s privatisations. The volume is suitably captured by the revenue from total sales, which is certainly also a good indicator of the economic impact and financial success of divestiture. Nevertheless, revenues alone would tend to overestimate the importance of privatisation in a country that has raised significant revenues through a handful of large flotations. Two brief examples will clarify the importance of having two complementary measures for quantity. With 40 transactions, Egypt is placed ninth in the ranking by sales, but only 36th by revenues (see Table 2). In fact, very small POs were typical, ranging from US\$4 million (Alexandria Pharmaceuticals and Chemical Industries) to US\$119 million (Commercial International Bank). The Japanese privatisation programme is instead one of the most successful in terms of proceeds.

With approximately US\$110 billion, Japan is placed second in the ranking by revenue. However, Japan has implemented only nine operations: the three large tranches of NTT — the fourth largest corporation in the world in terms of market capitalisation in FT 500 1996 — have generated revenues worth US\$81 billion, accounting for 73% of the total. The success of these flotations is partly explained by the dimension of the company, and partly by the positive outlook for the Japanese equity markets in the period 1986–1988, when the NTT sales occurred. Furthermore, the government still owns 65% of stock, dwarfing the 1% held by foreign investors.

The quantity indicators are useful in providing a first measure of the willingness of governments to privatise and of the economic impact of one country's privatisations. Nevertheless, by focusing only on quantity, some interesting questions concerning privatisation remain unexplained. Did ownership change hands? Was the auctioning of public enterprises designed to modify prevailing ownership structures?

To address these questions, we apply the quality indicator to the country's privatisations. Quality is defined by two variables: the country average of the cumulative privatised stock (STOCK) and the ratio between POs and total sales per country (PO/sales). The first variable is a weighted average constructed at the company level: we first calculated the cumulative value when multiple tranches were issued, taking into account whether over-allotment options (green shoe) were exercised; then we computed a weighted average where the weights are given by the ratios between the revenues from privatisation, by PO and PS, and total revenues per country.

As shown in Section 1, privatisations are typically partial; STOCK is therefore a good measure of the willingness of incumbent governments to sell big stakes. Obviously, even the sale of the majority of stock would not imply that the government relinquished control. Golden shares, or other statutory constraints on shareholders rights, may grant the government veto over some strategic decisions. However, the transfer of the majority of stock is a necessary, albeit insufficient, condition for genuine privatisation.

Turning to our second quality measure, the proportion of POs against total sales captures a fundamental feature of privatisation, namely the commitment by the government to consider security markets as a primary source of equity. In contrast, PSs bypass markets, allocating the stock to institutional investors. In this case, political control is *de imperio* replaced by private concentrated ownership.

4. Data

To implement the empirical analysis we have built a data set, which refers to a broad cross-section of countries (49), both developed and less developed, observed between 1977 and 1996. The sample is the same studied by La Porta et al. (1998), which identifies countries with some non-financial firms traded on their stock

exchanges. The selection of countries is suitable for our purposes, since having a functioning stock market makes the choice of the privatisation method relevant.

Privatisation data were obtained from *Privatisation International Ltd.*, which, to our knowledge, is the most comprehensive source of historical data at the company level. Our source reports privatisation transactions worth more than US\$500 000.

During the period under observation, 1415 major operations were reported (562 POs and 853 PSs) in 101 countries, generating US\$544.513 million in revenues. Sample selection bias within the *Privatisation International* data bank should be limited, since the US\$463 billion in revenues raised by countries in our sample account for approximately 85% of total revenues for the period.

We now describe in detail the independent variables that we use in the empirical analysis. Definitions and sources are reported in Table 1.

4.1. Political variables

To find the political determinants of privatisation, we have to identify privatisation processes implemented by market-oriented (right-wing) governments. Collecting evidence on the politics of privatisation for a large number of countries is not an easy task. In most cases, privatisation occurred over a time span that featured changes in the political regime or coalition realignments. For our purposes, a reasonable proxy can be constructed by considering which incumbent party has carried out the majority of sales in a country.

In this direction, we have first picked the category ‘democratic conservative’ from Wilfried Derksen’s *Electoral Web Sites* for the political orientation. Democratic conservative parties are defined as ‘parties adhering to traditional values in combination with free-market ideology and law-and-order positions’. We then retrieved the political history for our countries from *The Political Handbook of the World* (Banks et al., 1997) and Internet sources identifying privatising governments supported by democratic conservative parties. For OECD countries up to 1986, we referred to the data in Alesina and Roubini (1992). The dummy RIGHT therefore takes a value of 1 when the majority of privatisations was implemented by ‘democratic conservative’ governments, and 0 otherwise.

As to the measurement of a government’s credibility in terms of respect to private investment, we construct a variable (CREDIBILITY) that is an average of the country rankings in terms of rule of law, risk of expropriation and risk of repudiation of contracts by the government. To avoid endogeneity problems, the variable pre-dates the privatisation decision and refers to the score received by a country the year before the first sale.

As stressed in the *International Country Risk Guide*, a country with an established law and order tradition has sound political institutions, a strong court system and provisions for an orderly succession of power. A country where the risk of contract repudiation by the government is high may initiate a contract modification with a foreign business because of an income drop, budget cutbacks, a change in government or a change in the government’s economic and social priorities. The risk of

Table 1
Description of the variables

Variable	Description	Source
Total sales	Total number of privatisations by public offer (PO) and private sales (PS) implemented in the period 1977–1996	Privatisation International
SALES	Total sales as a % of the number of domestic listed firms (1986–1993)	Privatisation International, International Financial Statistics
Total revenues	Total revenues from privatisations implemented in the period 1977–1996 (10 ⁹ US\$ 1996)	Privatisation International
REVENUES	Ratio of total revenues to the average population (1977–1996)	Privatisation International, World Development Indicators
STOCK	Weighted average of privatised stock by PO and PS at the company level in the period 1977–1996 (the weights are the proportion of revenues by PO and PS on total revenues)	Privatisation International
PO/sales	Ratio of the number of public offers (PO) to the total number of sales implemented in the period 1977–1996	Privatisation International
RIGHT	Dummy taking the value 1 if the majority of total sales is implemented by a democratic, conservative party, and 0 otherwise	Privatisation International, Banks et al. (1997), Wilfried Derksen's Electoral Web Sites
CREDIBILITY	Average scores on the rule of law, risk of expropriation and risk of contract repudiation by government in the year before the first sale	International Country Risk Guide
DEFICIT	Average deficit of the public sector on GDP in the 3 years before the first privatisation	World Bank (1995), Privatisation International
COMMON LAW	Dummy for common law countries	La Porta et al. (1998)
FRENCH LAW	Dummy for French civil law countries	La Porta et al. (1998)
GERMAN LAW	Dummy for German civil law countries	La Porta et al. (1998)
ANTIDIRECTOR	Antidirector rights index	La Porta et al. (1998)
CREDITOR	Creditors rights index	La Porta et al. (1998)

Table 1 (Continued)

Variable	Description	Source
ENFORCE	Averages of scores on the efficiency of the judicial system and corruption (1982–1995)	International Country Risk Guide
FLOAT	Ratio of the average total value of trades on the major stock exchange to GDP (1986–1993)	International Financial Statistics
Log of GNP	Log of the average gross national product (1977–1996)	World Development Indicators
GROWTH	Average annual % growth of GDP per capita, 1970–1996	World Bank (1995)
SOE	Average of: (1) the share of SOE assets on GDP, (2) the share of SOE in employment and (3) the share of SOE investment in gross domestic investment on GDP in the year before the first privatisation, where available	World Bank (1995)

expropriation of private foreign investment encompasses outright confiscation and forced nationalisation.

4.2. Budget deficits

To test the hypothesis that budget constraints may force governments to divest SOEs, we introduce the DEFICIT variable, defined as the average of the deficits of the public sector against GDP in the 3 years before the first privatisation. Although the very first sale might be incidental and not economically significant, we prefer this measure to an average for the whole period, which would be spurious, since, as we have seen, privatisations substantially improve deficits.

Some purposely chosen facts demonstrate the role of fiscal deficit as an initial condition in privatisation. Mexico, for instance, experienced a debt crisis in 1982 that prevented it from normal borrowing on world capital markets for approximately 7 years. In 1987, the deficit/GDP ratio was approximately 14% and the Mexican government launched a macroeconomic stabilisation policy, which included privatisation. In 1988, the first offerings took place, raising revenue of approximately US\$1.9 billion. The deficit/GDP ratio declined to 9.6% during that year and to 5% the following year, turning into a surplus in 1992–1993 before the new debt crisis that occurred in 1994. The decline in deficits is partly explained by the rise in privatisation revenues. In the years 1991 and 1992, they amounted to approximately US\$17.2 billion, which accounted for 92% of total revenues from the privatisation in Mexico, and for 3.5 and 3% of GDP in 1991 and 1992, respectively.

In Egypt, the average annual deficit/GDP ratio was slightly above 6% in the 3 years before the announcement of its privatisation programme; the average annual increase in overall deficit was approximately 34%. The programme was announced in 1991, but the first sale occurred in 1993. Total revenues from privatisation between 1993 and 1996 amounted to US\$1.25 billion. In the same time span, the average annual growth rate of GDP fell from approximately 5.4 to 1.5%. Although the general economic conditions of the country deteriorated, Western creditors offered additional aid in response to the decision to accelerate the privatisation of state-owned enterprises and to pursue further economic liberalisation.

Finally, in the years following the ratification of the Maastricht Treaty, European countries might have been forced to accelerate divestiture in order to comply with convergence criteria (Christodoulakis and Katsoulacos, 1994).

4.3. Legal variables

To test the effect of legal institutions on privatisations, we use two of the legal tradition dummies (FRENCH LAW, GERMAN LAW) and the legal protection indicators developed by La Porta et al. (1998). Legal protection is defined in terms of legal rules and their enforcement. The antidirector rights index (ANTIDIRECTOR) measures the legal protection that a country's company law affords against the risk of expropriation by managers. The variable takes into account the existence by law of proxy by mail, cumulative voting for directors, oppressed

minority mechanisms, requirements for the deposit of shares prior to general shareholders meeting, the minimum percentage of shares needed to call an extraordinary meeting at 10% or below, and the preemptive rights that can be waived only by a shareholders' vote. The creditors rights index (CREDITOR) conveys information about the bankruptcy law of a country and accounts for the existence of restrictions, such as creditors consent to file for reorganisation, automatic stay on assets, special rights for secured creditors, and management stay on the reorganisation process. The enforcement of law index (ENFORCE) is the average grade obtained by a country for the efficiency of the judicial system and corruption. The three variables account for the level of deterrence against managerial misconduct and are all taken from La Porta et al. (1998).

4.4. Stock market liquidity

According to La Porta et al. (1998), legal origin and the legal protection of investors are useful proxies for the size of capital markets. To complete the picture of a country's financial development, we include a measure of stock market liquidity given by the average of total value traded against GDP (FLOAT). This variable is particularly relevant in the statistical analysis of revenues and stakes sold.

4.5. Controls

We finally include the following list of control variables. The (natural log of) average gross national product (1977–1996) (GNP); the average growth rates of GDP (1970–1996) (GROWTH); the size of the SOE sector in the year before the first privatisation (SOE), given by the average of the share of SOE assets against GDP, the share of SOE in employment and the share of SOE investment in gross domestic investment against GDP.

4.6. Data description

Table 2 presents the aggregate data on privatisation processes. Countries are ranked by GNP per capita and classified into two broad categories (developed and developing countries), using the median value of the ranking variable to split the sample.

Six countries of our sample (Switzerland, Hong Kong, Uruguay, Jordan, Ecuador, and Zimbabwe) never implemented a major privatisation during the period 1977–1996. With the exception of Switzerland and Hong Kong, these are all developing countries.

As to the number of sales, the developed countries' average is 25.42, while the corresponding average for developing countries is 16.12. With 148 operations, the UK leads the ranking, accounting for 14.61% of total sales. European countries appear particularly involved in divestiture: Austria, Germany, France, Italy and Portugal have implemented from 28 to 48 privatisations. Other wealthy economies,

Table 2
Privatisation around the world

Country	Total sales	SALES	Total revenues	REVENUES	STOCK	PO/sales	RIGHT
Japan	9	0.44	109565	883.71	0.55	1.00	1
Switzerland	0	0.00	0	0.00			1
Denmark	6	2.25	4448	854.72	0.53	0.67	0
USA	2	0.03	347	1.31	1.00	0.00	0
Norway	8	1.64	1585	366.65	0.53	0.88	0
Germany	37	6.72	17336	215.28	0.68	0.14	1
Austria	28	30.98	459	585.01	0.54	0.71	1
France	38	5.93	40971	717.50	0.50	0.84	1
Sweden	9	6.79	9005	1034.26	0.62	0.67	1
Belgium	9	4.95	4844	479.36	0.51	0.11	0
Singapore	10	1.43	4572	1574.90	0.28	1.00	0
Netherlands	16	7.08	11610	761.07	0.60	0.38	0
Hong Kong	0	0.00	0	0.00			
Canada	44	3.94	13351	474.87	0.67	0.48	1
Italy	44	19.43	30762	540.63	0.51	0.48	0
Finland	17	27.42	3164	626.75	0.56	0.88	1
Australia	34	2.87	22311	1262.32	0.89	0.29	1
UK	148	7.66	113819	1986.82	0.96	0.41	1
Ireland	8	10.13	1730	484.76	0.62	0.38	1
Israel	36	11.54	3542	707.30	0.45	0.50	0
New Zealand	24	18.97	9618	2752.99	0.90	0.08	0
Spain	17	4.44	11179	286.20	0.38	0.59	0
Portugal	48	32.71	10930	1103.37	0.70	0.54	1
Taiwan	18	9.14	5196	248.39	0.32	0.89	0
Developed countries, average	25.42	9.02	18103.46	747.84	0.60	0.51	0.52
Argentina	50	26.76	16598	486.91	0.55	0.12	0
South Korea	5	1.72	2546	57.69	0.16	0.80	1
Greece	18	14.24	1715	164.84	0.65	0.11	1
Uruguay	0	0.00	0	0.00			
Mexico	32	13.42	22793	261.44	0.60	0.09	0
Malaysia	20	10.36	6402	343.38	0.45	0.45	1
Chile	8	3.55	604	44.24	0.31	0	0
Brazil	41	7.09	10781	70.18	0.72	0.07	0
Turkey	53	58.16	2000	33.98	0.63	0.06	1
South Africa	3	0.52	1401	37.72	0.79	0.67	1
Venezuela	18	22.02	2157	100.91	0.80	0	0
Thailand	7	3.33	862	14.89	0.26	1.00	1
Peru	48	31.55	6872	294.24	0.76	0.04	1
Colombia	3	3.47	722	19.09	0.67	0.67	1
Jordan	0	0.00	0	0.00			

Table 2 (Continued)

Country	Total sales	SALES	Total revenues	REVENUES	STOCK	PO/sales	RIGHT
Ecuador	0	0.00	0	0.00			
Indonesia	5	5.52	3271	17.28	0.26	0.80	1
Philippines	10	6.18	1799	26.78	0.57	0.40	0
Egypt	40	7.38	1249	21.48	0.45	0.83	1
Sri Lanka	4	2.23	63	3.52	0.72	0.50	1
Zimbabwe	0	0.00	0	0.00			0
Pakistan	5	2.02	1319	11.04	0.30	0.40	0
India	6	0.13	2720	2.95	0.29	0.83	1
Nigeria	19	15.11	32	0.30	0.43	1.00	1
Kenya	8	14.55	118	4.79	0.31	0.75	1
Developing countries, average	16.12	9.97	3440.96	80.71	0.51	0.38	0.56
Test of means (<i>t</i> -statistics)	−1.32	0.29	−2.31	−4.96	−1.57	−1.21	0.26

such as Australia, Canada and Israel, present similar figures, with an average of 38 sales. Within the developing countries sub-sample, Turkey leads the ranking with 53 operations, and some Latin American countries (i.e. Argentina, Peru, Brazil and Mexico) have a great bearing on the number of sales. Some African countries are noteworthy, with Egypt and Nigeria boasting 40 and 19 major privatisations, respectively.

Analysing the sales, the stage of economic development does not appear to be a critical determinant of the extent of privatisation, but a more exhaustive picture will emerge by looking at revenues.

Now, the average total revenues for developed countries is approximately US\$18.1 billion, and US\$3.4 billion for less wealthy economies, with statistically significant differences in means ($t = -2.31$). In some cases, the data on revenues confirm the previous results; not surprisingly, the UK once again ranks first, and the US is second last (before Nigeria) in terms of privatisation proceeds. Developed countries, such as France, Italy, Germany and Australia, have also raised substantial revenues from the sales. A higher number of sales is also correlated to higher proceeds in some developing countries such as Mexico and Argentina. However, it is also interesting to note that the opposite is true for developed countries, such as Portugal, Israel, Canada and Australia, and developing countries (i.e. Peru, Brazil, Egypt and Turkey). Few sales are instead associated to substantial revenues in Japan, boasting the highest level of proceeds per sale (US\$12.2 billion), and to a smaller extent in Indonesia, Korea and South Africa.

The quantity of privatisation could be determined by the size of the economy. In Table 2, we report the number of sales and the total revenues suitably scaled by the number of domestic listed firms and by the population, respectively (SALES

and REVENUES, respectively). These variables will be used in the regression analysis.

We do not report major differences in the means between developed and developing countries. Overall, a large number of sales is associated with higher values of the same variables scaled by the number of domestic firms. Wealthy economies, such as Portugal, Austria, Italy and New Zealand, still occupy medium–high positions in the ranking, as the US remains last. Nevertheless, some exceptions warrant attention; the UK is now placed only 9th, and Canada and Germany drop to middle–low positions. Similarly, the picture emerging from the analysis of sales is confirmed with exceptions for developing countries. Turkey still leads the ranking; Argentina, Venezuela, Peru and Mexico report high ratios of the number of privatisations to domestic firms. Egypt instead loses the bearing it had on the number of sales.

By comparing aggregate and per capita revenues, the difference between the two groups magnifies: developed countries report approximately US\$747 of average per capita revenues, while developing countries only US\$80, with highly statistically significant differences in means ($t = -4.96$). In the first group, the quantity of privatisation per capita is still very high in the UK, Australia, Japan, and especially New Zealand; Portugal gains some positions; France, Italy, Austria and Germany remain stable. With US\$1575 per capita revenues, Singapore now ranks third. In the second group, Argentina, Mexico and Peru are in pre-eminent positions, with Malaysia placed second.

Turning to our quality measures, in advanced economies the (weighted) average percentage of privatised stock (STOCK) is 60%, while it is 51% in developing countries, with almost statistically significant differences in means. In the first group, average privatised stakes are quite high, and particularly so in common law countries, such as the US, the UK, New Zealand and Australia. With the notable exception of France and Spain, European governments have, on average, sold the majority of stock. In developing countries, South Africa and Venezuela have privatised the largest stakes, while South Korea a mere 16% average.

Privatisations on public equity markets (given by the ratio of public offers to the total number of sales, PO/sales) appear, on average, more frequent in developed countries. Japan and Singapore have always opted for POs; Norway, France, Finland and Taiwan also exhibit very high ratios (approx. 0.9). On the contrary, developing countries — especially Latin American countries — have typically chosen to privatise through asset sales: Chile and Venezuela have never implemented a public offer, and Argentina, Mexico, Brazil, Peru exhibit the lowest PO/sales ratios.

This data description is obviously unsatisfactory, since it focuses on GNP per capita only. We aim instead at taking into account other determinants of the quality and quantity of privatisation. In Table 3, we present a more detailed descriptive analysis, where the main explanatory factors are used as ranking variables for our measures on privatisation processes. These statistics are reported only for the variables we will use in the econometric analysis.

Table 3 shows first that the political dummy is positively related to the number

Table 3
Bivariate statistics

Ranking variables	SALES	REVENUES	STOCK	PO/sales
<i>RIGHT</i>				
Right = 1	0.12	399.65	0.56	0.57
Right = 0	0.07	435.23	0.55	0.31
Test of means (<i>t</i> -statistic)	−1.35	0.21	−0.29	−2.80
<i>DEFICIT</i>				
Bottom 25%	0.04	416.88	0.50	0.39
Top 25%	0.10	356.51	0.53	0.45
Test of means (<i>t</i> -statistic)	−1.79	0.33	−0.40	−0.41
<i>CREDIBILITY</i>				
Bottom 25%	0.12	74.19	0.47	0.34
Top 25%	0.06	165.58	0.61	0.37
Test of means (<i>t</i> -statistic)	1.09	−3.21	−2.00	−0.21
<i>FLOAT</i>				
Bottom 25%	0.18	193.77	0.56	0.37
Top 25%	0.06	362.96	0.54	0.45
Test of means (<i>t</i> -statistic)	2.02	−0.98	0.16	−0.51
<i>ANTIDIRECTOR</i>				
Bottom 25%	0.11	266.27	0.62	0.14
Top 25%	0.02	319.87	0.62	0.35
Test of means (<i>t</i> -statistic)	2.42	−0.21	0.01	−1.57
<i>CREDITOR</i>				
Bottom 25%	0.12	263.81	0.71	0.29
Top 25%	0.11	50.45	0.42	0.53
Test of means (<i>t</i> -statistic)	0.09	1.56	3.53	−1.73
<i>ENFORCE</i>				
Bottom 25%	0.13	70.72	0.51	0.42
Top 25%	0.09	826.98	0.67	0.45
Test of means (<i>t</i> -statistic)	0.72	−3.23	−2.08	−0.18
<i>SOE</i>				
Bottom 25%	0.07	440.70	0.59	0.40
Top 25%	0.09	157.21	0.48	0.50
Test of means (<i>t</i> -statistic)	−0.34	1.90	1.36	−0.68

of sales relative to domestic firms and to the PO/sales ratio, with statistically significant differences in means. Conservative governments seem to privatise more and appear committed to creating widespread ownership. Higher deficits are associated with more sales, since we report a statistically significant difference between the means of the first and the top quartile of the distribution of the variable ranked by DEFICIT. This result suggests that hard budget constraints could be important in explaining the extent of a country's privatisation. The credibility index is associated with higher revenues per capita and with a higher percentage of stock sold. This evidence indicates that sovereign risk may affect revenue generation, and a credible government's commitment to privatise may provide a premium in terms of stock sold. The average stake sold also seems to be related to the quality of legal protection offered to corporate investors. The variable ENFORCE — measuring the efficiency of the judiciary and level of corruption — is associated with a higher percentage of privatised stock. The CREDITOR index instead appears to be negatively related to the two quality measures for the stakes sold. A country that affords extensive legal protection to creditors seems less willing to privatise large stakes.

Countries with higher stock market liquidity have raised more proceeds from privatisation. Indeed, the variable FLOAT appears to be positively related to REVENUES. Market liquidity could allow the seller to extract the full market value of the company and to underprice less. These preliminary results suggest that our determinants may have some explanatory power, indicating the need for thorough econometric testing.

5. Empirical results

Tables 4–7 report our estimates of the quantity and quality of privatisation. We use the following methodology in the empirical test. Multicollinearity problems do not allow the same specification for all dependent variables, but we include the political dummy (RIGHT), average fiscal deficits the year before the first sale (DEFICIT), and a macroeconomic control variable (GROWTH) in every regression, and include the (natural log of) GNP and the size of the SOE sector as additional controls where feasible.

When we use the stock market liquidity variable FLOAT, we have to take into account the possibility that financial market liquidity is endogenous to privatisation. A large-scale privatisation process — such as the British one, for instance — might make a notable contribution to financial market development. We perform IV estimates when the liquidity measure is included as regressor.

5.1. The quantity regressions

Table 4 shows regression results for our first measure for the quantity of privatisation operations, namely the number of sales relative to the number of domestic listed firms (SALES).

Table 4
The quantity regressions: privatisations/domestic firms^a

Independent variables	Dependent variable:	
	SALES	
INTERCEPT	0.1673 (0.1005)	0.2252 [*] (0.1189)
Log of GNP	–0.0066 (0.0079)	–0.0099 (0.0088)
GROWTH	–0.0126 [*] (0.0072)	–0.0210 ^{***} (0.0076)
DEFICIT	0.4628 [*] (0.2522)	0.3219 (0.3230)
RIGHT	0.0587 [*] (0.0330)	0.0684 [*] (0.0340)
SOE		0.1482 (0.1453)
Adjusted R ²	0.0200	0.0284
No. observations	47	43

^aThe dependent variable SALES is given by the number of privatisations (PO and PS) in a given country in the period 1977–1996 as a % of the average number of domestic listed firms (1986–1993). White heteroskedasticity-consistent standard errors are reported in brackets.

* Statistically significant at the 10% level.

*** Statistically significant at the 1% level.

The extent of a country's privatisation process is largely determined by the government budget constraints and political factors. Indeed, countries that have privatised more in terms of sales had high fiscal deficits at the beginning of the privatisation process. The coefficient of the variable DEFICIT is positive and significant, although less so when we control for the dimension of the SOE sector. These results confirm the widely held view that privatisations may represent an opportunity for governments to improve the budget by raising revenues.

A first indication of the political dimension of privatisation processes is captured by the dummy RIGHT. We find a positive, stable and statistically significant relation between the quantity of sales carried out by governments and the fact that they were supported by conservative coalitions. A theoretical prediction of the Biais and Perotti (in press) model is confirmed in our data: privatisation is indeed more likely to be implemented by right-wing governments, perhaps to increase the support for market-oriented platforms in future elections.

Another striking result from regression analysis is that the extent of a country's privatisation is independent of the size of the economy and of the SOE sector. The coefficients for the (natural log of) GNP and for SOE value added as a percentage of GDP (SOE) are always insignificant. This evidence is in stark contrast to the

Table 5
The quantity regressions: revenues per capita^a

Independent variables	Dependent variable:		
	REVENUES		
INTERCEPT	84.5759 (226.063)	716.614*** (220.034)	955.298*** (264.138)
GROWTH	–122.123*** (35.3976)	–140.160*** (43.6979)	–171.313*** (44.3067)
DEFICIT	–1535.66 (1204.23)	–288.920 (1375.22)	–1896.99 (1206.87)
RIGHT	131.018 (165.915)	61.8861 (211.141)	165.466 (207.855)
CREDIBILITY	112.145*** (27.5332)		
FLOAT		1518.41* (897.221)	1205.00 (889.147)
SOE	–335.620 (482.228)		–219.362 (687.721)
Adjusted R ²	0.2766	0.1107	0.1681
No. observations	43	40	36

^a The dependent variable ‘Revenues’ is given by the ratio of the total revenues from privatisations (PO and PS) in a given country in the period 1977–1996 to the average population. We use IV estimates when the measure for financial market liquidity (FLOAT) is included. The instruments are the aggregate savings 1993, the score in terms of the enforcement of laws and average growth rates. White heteroskedasticity-consistent standard errors are reported in brackets.

* Statistically significant at the 10% level.

*** Statistically significant at the 1% level.

idea that bigger countries should privatise more and that the scope of privatisation simply depends on how many state-owned companies the government has to sell.

Economic growth matters: the number of sales is negatively correlated with the growth rates of GDP (GROWTH). The coefficient of this variable is always highly statistically significant, and also quite stable in unreported regressions. Slow-growth countries are wealthy, mature, OECD economies, and these have been particularly involved in privatisation. In the descriptive analysis, we have shown that developing economies also have a great bearing on the sales. Nevertheless, the average number of sales as a percentage of the number of domestic firms is mainly driven by Turkey. By suppressing Turkey as an outlier, the developing countries’ average drops to 7.96, which is lower than the corresponding figure for developed economies (9.02).

Revenues per capita (REVENUES) is the second measure for the quantity of a country’s privatisations; although sales and revenues should explain two facets of the same economic phenomenon, their determinants are partly different. As we have seen, the total number of sales is explained by political factors and fiscal

Table 6

The quality regressions: the privatised stock^a

Independent variables	Dependent variable:		
	STOCK		
INTERCEPT	0.5756*** (0.0956)	0.3754*** 0.1283	0.6921*** (0.1171)
GROWTH	–0.0538*** (0.0161)	–0.0302 (0.0188)	–0.0672*** (0.0171)
DEFICIT	0.7599 (0.5862)	0.8809* (0.4934)	0.4066 (0.6333)
RIGHT	0.0797 (0.0602)	0.0826 (0.0562)	0.0828 (0.0614)
CREDIBILITY	0.0135 (0.0112)		
FLOAT			0.6302* (0.3508)
ANTIDIRECTOR		0.0319 (0.0217)	
CREDITOR		–0.0369** (0.0182)	
ENFORCEMENT		0.0545** (0.0223)	
FRENCH LAW			–0.0325 (0.0803)
GERMAN LAW			–0.1578* (0.0890)
Adjusted R^2	0.1927	0.3357	0.2433
No. observations	42	41	37

^aThe dependent variable STOCK is given by the weighted average of privatised stock by PO and PS at the company level per country in the period 1977–1996, where the weights are the proportion of revenues by PO and PS on total revenues, respectively. We use IV estimates when the measure for financial market liquidity (FLOAT) is included. The instruments are the aggregate savings 1993, the score in terms of the enforcement of laws and average growth rates. White heteroskedasticity-consistent standard errors are reported in brackets.

* Statistically significant at the 10% level.

** Statistically significant at the 5% level.

*** Statistically significant at the 1% level.

deficits, supporting the view that the extent of privatisation is strongly influenced by a government's preferences and budget constraints. Aggregate proceeds instead depend crucially upon 'demand' factors, that is, stock market liquidity and governments' credibility as perceived by investors.

Table 5 shows our estimates for the variable REVENUES. Indeed, capital market liquidity and credibility explain the volume and the financial success of a country's privatisation plan. In particular, the coefficients on the measure of market liquidity (FLOAT) have a positive sign and are statistically significant. A standard deviation change in the total value traded over GDP increases revenues

Table 7

The quality regressions: privatisations on public equity markets^a

Independent variables	Dependent variable:	
	PO/sales	
INTERCEPT	–0.1049 (0.3773)	0.1467 (0.5012)
Log of GNP	0.0249 (0.0309)	0.0214 (0.0410)
GROWTH	0.0529** (0.0222)	0.0291 (0.0250)
DEFICIT	–1.3607 (0.9223)	–2.1241** (0.8665)
RIGHT	0.2259** (0.1041)	0.2452** (0.1171)
FRENCH LAW		–0.1813* (0.1074)
GERMAN LAW		–0.1237 (0.2390)
SOE		0.0812 (0.6613)
Adjusted R^2	0.2167	0.2574
No. observations	47	43

^a The dependent variable PO/sales is given by the ratio of privatisation by public offer (PO) to total sales per country in the period 1977–1996. White heteroskedasticity-consistent standard errors are reported in brackets.

* Statistically significant at the 10% level.

** Statistically significant at the 5% level.

per capita by approximately US\$168. These results suggest that stock market liquidity is a prerequisite for successful privatisations. If capital markets are active and liquid at the time of privatisation, proceeds will be maximised. This evidence is consistent with the theoretical literature showing the positive role of liquidity in information aggregation, so that governments floating SOEs in liquid markets extract the full market value of the companies and underprice shares less. Furthermore, a liquid market allows the absorption of big issues, facilitating the divestiture of large firms.

The second important factor in determining the volume and financial success of a country's privatisation plan is government credibility. In all the regressions we ran, the coefficient estimates are highly significant and positive. In particular, a one-point increase in the credibility index increases revenues per capita by an average of approximately US\$234. Investors believe in the government's commitment in countries where the law and order tradition is well established and where the risk of policy reversal and expropriation is low. Once again, investors are led to buy more and governments to underprice less.

By reading the coefficient of the macroeconomic control variables, we find that

slow-growth countries exhibit a larger volume of privatisations. This evidence is consistent with previous results on sales and with the regional distribution of revenues (Fig. 3). These are concentrated in large and relatively mature Western European countries.

The coefficients on the political dummy and fiscal deficits are insignificant, indicating that a government's political orientation and financial distress play virtually no role in revenue generation. As in the sales regressions, the size of the SOE sector is useless in explaining the quantity of privatisation. This result provides quite conclusive evidence that having large SOE's to sell is just as necessary, but not sufficient for large-scale divestitures.

5.2. The quality regressions

In Section 1, we mentioned the fact that privatisations across countries typically appear to be partial. Obviously, it is difficult to single out which privatisation programmes are still in the making and which are advanced. From the average stakes sold over long periods of time, the willingness of governments to take a step backwards in the control of SOEs can be inferred. We have seen that the extent to which a country privatises essentially depends on the preference of governments, and these might change over time. An interesting question to ask is whether, despite government preferences, there are economic or institutional impediments to full privatisation. The results presented in this section set forth some tentative answers.

Where the average stake sold (STOCK) is the dependent variable, we are forced to drop (as in the REVENUES regressions) the (natural log of) GNP as regressor. We do not lose information by doing this, because we do not have any strong a priori premises about the effect of the size of the country on privatised stock. By the same token, we do not control for the size of the SOE sector. The appropriate control variable would be the average stake owned by government at the beginning of the privatisation process as the initial condition. Unfortunately, this variable is only available for a handful of countries, and therefore could not be used in econometric testing.

In the sales regression, fiscal deficits were shown to be a critical determinant in triggering privatisation. As shown in Table 6, the coefficient of deficit is also positive and quite significant in the STOCK regressions. We further corroborate the importance of public finance in explaining not only the quantity, but also the quality of privatisation: governments running high fiscal deficits are led to sell larger stakes in SOEs.

Turning to the political credibility of governments, we confirm that this factor does not only explain the volume and economic impact of privatisation in terms of proceeds, but also affects the stake sold. The correlation suggested by Perotti (1995) is confirmed in our data: when the credibility constraint is binding, governments privatise larger stakes, since they need less to signal commitment. Indeed, the coefficient on the variable CREDIBILITY is positive and close to significance at conventional levels.

Among the institutional factors that may influence the structure of the sale, legal protection warrants attention. The coefficient estimate for shareholder protection is positive and significant, especially the quality of enforcement of laws in terms of corruption and efficiency of the judiciary. This indicates that governments should relinquish control more rapidly in a country where cash flow and control rights are appropriately enforced. When appropriate legal institutions are not in place and the enforcement is weak, governments may opt for partial privatisations, discounting the risk of entrenchment or expropriation by management that minority shareholders will face.

Quite surprisingly, the creditor rights index exhibits a statistically significant negative relation with the percentage of privatised stock; across unreported regressions, the coefficient estimates for this variable are remarkably stable. The same negative and statistically significant relation is found with the German civil law family that — as we have shown — protects creditors particularly well. Why are the German civil law origin and creditor rights associated with a lower quality of privatisation and partial sales? A tentative explanation is that these countries are interventionist, but quite efficient in running SOEs, so they may have fewer incentives to divest them (La Porta et al., 1999). But without controlling properly for profitability, this question remains unsettled.

The effect of a developed and liquid stock market on the quality of privatisation is particularly striking. The total value of trades against GDP (FLOAT) is positively and significantly correlated with the average stake sold. This evidence clearly indicates that stock market liquidity is critical to achieving full privatisation. A liquid market is a good monitor, so governments will more easily privatise big stakes, and possibly relinquish control, since they are less fearful that managers of privatised companies will entrench themselves because their performance will be carefully scrutinised.

The coefficient on the political dummy is positive and almost significant, confirming the view that the quality of privatisation also has a political determinant: market-oriented governments privatise larger stakes.

Finally, the coefficients of growth rates of GDP are highly significant and negative. Combining this evidence with the high correlation of the size of the country measured by the log of GNP with CREDIBILITY and FLOAT (0.48 and 0.91, respectively), it can be concluded that larger and more ‘mature’ countries in terms of economic development tend to privatise a higher percentage of stock.

The decision to let SOEs go public or to sell them via a private placement is directly related to a government’s privatisation objectives. Large flotations may be useful to spread shareholding and to develop capital markets. However, the financial success of the issue could be influenced by a number of factors, such as the capability of advisors in the share-pricing decisions, the deficiencies in exchange rate rules and regulations, inadequate legal protection for investors, the presence of a distorting tax system, and government credibility (Roell, 1996). Auctioning control directly to private investors is certainly a safer strategy for revenue maximisation. When choosing the privatisation method, governments

trade-off the political benefits of spreading ownership with the opportunity costs of lower proceeds.

The empirical analysis of the PO/sales ratio clearly shows that this trade-off exists. The results in Table 7 clearly indicate that financially distressed governments are probably forced to choose the PS method to maximise the proceeds and alleviate the public budget. Indeed, the coefficient of the fiscal deficit at the beginning of the process is negative and significant across several specifications, especially when we control for the size of the SOE sector and legal origin.

However, the choice of privatisation method is also related to the political objectives of privatisation: conservative coalitions seem particularly inclined to let state-owned firms go public. The coefficient of our political variable (RIGHT) is highly significant and has a positive sign. Recalling the evidence on sales regressions, conservative coalitions are not only more prone to privatise, but also more inclined to choose public offerings. As stressed by the recent literature on the political economy of privatisations (Biais and Perotti, *in press*), the rationale for this preference could lie in the belief that classes of shareholders might vote with the right in the future, contributing to the success of conservative parties at general elections.²

The econometric analysis confirms the results of the descriptive analysis in Table 2. French civil law countries reluctantly choose POs, and are therefore more prone to sell shares privately to hard-core investors. This evidence can be explained by the fact that in French civil law countries, capital markets are smaller and unable to absorb large issues by PO. Furthermore, in those countries, share ownership is highly concentrated, with the result that the same corporate governance structure is replicated in privatised firms. Indeed, if large domestic block-holders prevail, privatisations are more likely to be implemented by PS to local institutional investors.

6. Conclusions

This paper has presented evidence about the extent, size, and quality of privatisation processes around the world. We have shown that privatisation in a country is influenced by political factors and by government budget constraints. In line with conventional wisdom, governments supported by conservative coalitions are more willing to privatise the economy; moreover, pre-privatisation fiscal deficits appear

²Our political variable is defined as the party that has privatised more during the period under scrutiny. This raises the possibility that the incumbent party may have been endogenous to the number of POs: the more a country has privatised via PO, the more likely it is that a conservative coalition is incumbent, since its platforms could be supported by the shareholders of privatised firms. To test for possible simultaneity between PO and RIGHT, we have performed a Hausman (1978) test: with 96% percent confidence; we could not reject the null hypothesis of exogeneity of the political variable.

to be an important factor in triggering divestitures: governments with hard budget constraints privatise more. The size of privatisation in terms of revenue per capita appears to be strongly correlated with financial market development and government credibility. Liquid capital markets allow governments to obtain the full market value of the company sold; the same occurs whenever government credibility is sufficiently high. In countries with less developed capital markets and with a higher political risk, privatisations appear to be less successful in terms of proceeds. A government operating in this context and wanting to maximise revenue should therefore consider floating the company abroad, or cross-listing shares. These results on quantity suggest a quite clear distinction between the factors influencing sales and revenues: sales are explained by supply factors basically related to governments' preferences and budget constraints; revenues depend largely on demand factors, such as financial markets development, which governments are unable to control, at least in the short run.

Turning to quality measures, we show that the willingness of governments to relinquish control — proxied by the stake privatised — is particularly influenced by legal institutions and the commitment of governments to privatise. In particular, larger stakes are privatised in countries that afford extensive legal protection to shareholders and where efficient stock markets are operational, suggesting that a government might be more willing to relinquish control in a context where the owners of newly privatised firms do not risk being expropriated by managers. Alternatively, governments sell larger stakes when the need to discount against future uncertainty in terms of legal protection is lower. Furthermore, recent literature on privatisation suggests that partial privatisations — and underpricing — signal commitment in conditions of uncertainty. If investors believe that the government will not implement a policy reversal, then partial privatisations will be less frequent. This prediction seems to be confirmed by our data: indeed, credibility provides a substantial premium in terms of privatised stock.

We single out an important political determinant in the choice of the privatisation method. The frequency of large share offerings is highly correlated with conservative-backed governments. This evidence provides support for the 'Thatcherian' view that privatisation might be designed to foster the emergence of a people's capitalism. The privatisation method is crucial, since a public offering — often with underpricing — represents a necessary condition to ensure widespread share ownership, increasing the cost of future nationalisation by left-wing governments. Right-wing governments with hard budget constraints could face a difficult trade-off between achieving the political objective of privatisation and revenue maximisation. The frequency of private sales increases in the context of fiscal deficits, indicating that financially distressed governments typically choose to sell control and the associated benefits to private investors. Finally, we find that the French civil law tradition is related to a higher frequency of direct sales. POs are less frequent in countries where there is a concentration of share ownership. The political preference of governments may therefore clash with prevailing ownership structures.

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