

Privatisation and Institutions: a Cross Country Analysis

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Abstract

Privatisation, i.e. the transfer of ownership and control of State-owned enterprises, is a worldwide phenomenon. Which political, economic and institutional factors are shaping this process? This paper addresses the issue presenting new evidence from a sample of 49 countries. From an empirical analysis of the period 1977-96, 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 institutions and developed capital markets.

Keywords: Privatisation, Politics, Budget Deficit, Investor Protection, Enforcement of Law, Capital Markets.

JEL classification: L33, D72, G15, H6, K22

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1 Introduction

Privatisation, i.e. the transfer of ownership and control of State-owned enterprise (SOE),¹ is a major trend in industrial countries, transition economies and emerging countries. The process began in the late Seventies, with the Thatcher government in Great Britain, and spread across countries and continents to become a distinguishing feature of *fin de siècle* capitalism. Privatisations are now common to most countries and occur across geographical regions and sectors. From 1977 to 1997, 1,865 deals in more than 100 countries worth approximately US\$750bn were reported. According to the World Bank, global SOE value added decreased on average from 9% to 6% of GDP in the 1978-91 period. Privatisation also had a tremendous impact on financial markets: in July 1998 privatised SOEs boasted a market capitalisation worth US\$1.5trn (Megginson - Netter [32]).

Nevertheless, few governments have completely transferred ownership and control of SOEs to the private sector. In the reported public offerings between 1977-1996, the majority of stock was sold in only 41% of the 317 companies being considered, and it never happened in 18 out of 41 countries. This rough evidence indicates that control is still very much in State hands and that partial or incomplete sales are a common feature of privatisation processes. Furthermore, we observe systematic differences in privatisation methods. Some countries typically bypass security markets opting for private placements to institutional investors, while others try to widen ownership by large share offerings.

Why do governments privatise? Why do some countries accomplish large scale privatisation programmes, and others never privatise at all? Moreover, how do governments privatise? Why do some governments privatise big stakes in SOEs, while others stick to partial privatisation? Why do governments let privatised firms go public?

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

¹Some authors define privatisation in a broader sense, as the downsizing of the economic activity of the State (LSV [30]). Actually, in many countries over the last 20 years, the State withdrew from the public provision of private and public goods and services. But this process very often went beyond the privatisation as we define it, namely as the transfer of ownership and control of State-owned enterprise. In some cases (from the USA to Europe and Italy) the State outsourced the provision of goods and services to private firms. In other cases (e.g. in Middle East but also in Europe) the State liberalised the entry of private firms into former monopolistic industries, but maintained the public ownership and control of SOEs. In the two latter cases, no transfer of ownership took place, even if the process under review implied a greater role of the private sector in the economic system.

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 out 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 judgments on the ultimate results of privatisations. The 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 - Yarrow [42], Biais - Perotti [3]). Moreover, public finance theoretically matters in privatisation: financially distressed governments need to sell to improve their budgets. 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 (Branco - Mello [5], Perotti [35]). 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 - Lopez-de-Silanes - Shleifer - Vishny (henceforth LLSV) [25], [26]). 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 - Tirole [17], Faure-Grimaud [12]). 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. Our main results can be summarised as follows.

The quantity regressions show that the number of sales 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 to be an important factor in triggering divestitures: governments with hard budget constraints privatise more. The volume of a countrys privatisations in terms of revenues 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 revenues 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 upon demand factors, such as financial markets development, that 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 by 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 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 peoples 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.

The paper is organised as follows: section 2 briefly presents the related literature; section 3 describes the dependent variables of the empirical analysis; section 4 states the theoretical hypotheses being tested; section 5 describes the data; section 6 presents the empirical results. Section 6 concludes.

2 Related Literature

From the early Eighties, 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 (Laffont - Meleu [22], Yarrow - Jasinski [44], Vickers - Yarrow [42]). 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 - Netter [32] for an excellent survey). To our knowledge, few empirical papers have dealt with privatisations on a world scale. Jones et al. [20] study 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 - Nash - Van Randerborgh [31] compare 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. [13] study the effects of 12 privatisations in Chile, Malaysia, Mexico, and 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 about 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 (henceforth PO) and private sales (henceforth 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 1996 per country, scaled by the population.²

²Revenues could be alternatively scaled by GNP. Using this variable as dependent variable in the regression analysis, we obtained interesting results by controlling for the (natural log of) GNP, but multicollinearity renders

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 has to be complemented by a measure of the volume of one countrys 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 9th in the ranking by sales, but only 36th by revenues (see Table 3). In fact, very small POs were typical, ranging from US\$4ml (Alexandria Pharmaceuticals and Chemical Industries) to US\$119ml (Commercial International Bank). The Japanese privatisation programme is instead one of the most successful in terms of proceeds. With approximately US\$110bn, 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\$81bn, 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 1986-88 period, 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 countrys 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 countrys 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 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 averaged it across companies.

the interpretation of the coefficients difficult.

This variable averages the stakes sold in companies privatised by PO and PS. PS involve smaller companies often privatised fully and generally under private control after privatisation. For the whole sample, the average estimated value of a company privatised by PO is US\$1.98bn, whereas by PS it is US\$0.47bn. The average stake sold by PO is 53.40% whereas by PS it is 75.54%. POs typically involve larger companies, with the consequence that substantial revenues can be raised even through small partial sales. The simple mean therefore overestimates the average amount of stock privatised in a country that has more frequently sold through PSs than POs but raised more revenues by PO than by PS. In the statistical analysis, we will therefore use a weighted average stock where the weights are given by the ratios between the revenues from privatisation, by PO and PS, and total revenues per country. An example would clarify the working of this weighting procedure. In our sample, a country like Italy has privatised 25 companies (11 by PO and 14 by PS) generating US\$30,762ml in revenues. The average stake sold by PO is 43%, while the one by PS is 82%. The simple mean of privatised stock is 70%. Given that 80% of proceeds were generated by PO, the weighted average is 50.8%. In this way, the average privatised stock is closer to the value that, on average, has generated the largest proportion of revenues.

As shown in the introduction, 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, PS bypass markets allocating the stock to institutional investors. In this case, political control is *de imperio* replaced by private concentrated ownership (Cornelli - Li [8]).³ It is not surprising that PSs are typical in Latin America where they account for 92% of total operations and have generated 75% of the proceeds. In addition, countries like Chile and Venezuela have systematically opted for this privatisation method. On the contrary, POs are concentrated in the Far East, where they account for 82% of total sales and 96% of total revenues. Japan, Thailand, and Singapore have privatised only by PO and Korea and Taiwan exhibit very high PO/sales ratios (around 80%) (see Table 3).

³It has been noted that some privatised companies are publicly traded *and* have a controlling shareholder. Nevertheless, a share issue by PO is a necessary, albeit not sufficient, condition for the company to be widely held.

4 The Determinants of Privatisation

Which factors explain privatisation across all countries? This section describes the theoretical hypotheses that we test. Table 1 summarises the main arguments. The possible determinants of the quantity and quality of privatisations are classified into five groups: (i) politics; (ii) hard budget constraints; (iii) legal institutions; (iv) stock market liquidity; (v) controls.

Politics. It is often argued that privatisation has a political dimension. Conservative parties are believed to be more prone to privatise the economy than socialist or christian-democratic parties. A rationale for this may be the forward-looking behaviour of conservative governments aiming to gain future support from the constituencies of shareholders of newly privatised companies. Privatisation may therefore represent a strategy for switching to forms of popular capitalism, as some recent results predict (Biais - Perotti [3] and Jones et al. [20]). Alternatively, a left wing party may thwart privatisations because they tend to jeopardise employment (Boycko - Shleifer - Vishny [6]). In addition, the auctioning of public enterprises can be structured to hinder future nationalisations by left wing governments (Stiglitz [41]). Indeed, large share offerings - often with underpricing - tend to create widespread ownership, increasing the costs of government expropriation.

The political theory of privatisation has the following implications in terms of quantity and quality: a right wing privatising government should be associated with more sales, lower revenue due to underpricing, higher percentages of stock sold, and a higher proportion of share offerings in order to increase the spread of ownership.

Another important facet of the political dimension of privatisation is the governments ability to marshal the support of investors. This ability is related to many factors, namely the credibility and reputation of the government, the presence of restraints on policy reversals and on the implementation of economic policies, etc. Credibility is considered crucial for the financial success of privatisation, since it could affect an investors willingness to pay (Kikeri - Nellis - Shirley [18]). A credible government should therefore be associated with a higher quantity of privatisations: it should be able to privatise more and to raise more revenue.

As to the effect of credibility on quality, we refer to Perottis theory of partial privatisation based on strategic commitment. In his model, the structure of the offer conveys information on the willingness of governments to bear residual risk. Partial privatisations therefore commit governments not to shift policy in the future. The testable implication of this theory is that a credible government does not need to signal commitment and will be able to sell larger stakes in privatised firms.

Hard budget constraints. Many events may trigger privatisation in a country. However,

when fiscal crises occur, it is increasingly difficult for governments to continue to subsidise inefficient State-owned enterprises (Dewatripont - Roland [10], LLSV [27], Poterba [36]). Furthermore, countries burdened by public debt may resort to privatisation to reduce interest payments and improve fiscal deficits. Privatisation, indeed, has been often recommended as a policy of structural adjustment.

A government with hard budget constraints has more incentives to sell; we should therefore observe more sales, more revenues (since a financially distressed government will first sell more profitable companies), and higher stakes sold in countries running high fiscal deficits at the beginning of the privatisation process. Budget constraints should also influence the choice of privatisation method. In private sales, big blocks and controlling stakes are often sold to the private investor (Grossman - Hart [15]). Issues in public markets are instead typically under-priced (Rock [37]). These arguments suggest that *ceteris paribus*, if a governments objective is revenue, we should observe a higher frequency of private sales.

Legal institutions. Different legal traditions are also associated with radically different patterns of investor protection and corporate governance around the world. Common law countries afford extensive legal protection to shareholders and creditors; at the polar opposite, French civil law countries, such as Italy, protect both classes of investors much less; German civil law countries lie somewhere in between but are strongly pro-creditors. The legal protection of investors also affects corporate governance: widespread ownership is positively correlated to investors protection so that French civil law countries exhibit a higher ownership concentration and less developed capital markets. Access to external funds - debt or equity - becomes more difficult the weaker the legal protection a country affords to corporate investors (LLSV [25], [26]).

An efficient and impartial court system and a low level of corruption are fundamental ingredients in the deterrence of managerial misconduct. The rights written into legal codes will obviously be empty threats if the State does not enforce them appropriately. LLSV [26] have also shown that investor-friendly laws are associated with better enforcement so that investors in French civil law countries face the most serious risks in terms of expropriation.

Investor protection could particularly influence the quantity and quality of a countrys privatisations. First, the market value of a company and consequently its privatisation proceeds should be lower where legal protection is poor since (i) there will be a lower demand for privatised equity by minority shareholders and (ii) firms have difficulty raising external debt. In this context, governments are reluctant to sell big stakes since they know that investors will discount the risk of being expropriated by the managers of privatised firms. As a consequence, privatisation remains partial. Second, if ownership is highly concentrated and financial mar-

kets are small, PS should be more frequent since dominant block-holders will be involved in the deals and since the absorption capacity of markets is limited.

To summarise, poor legal protection of investors should be associated with lower revenues, smaller stakes sold, and less privatisations on public equity markets.

Stock market liquidity. The legal variables developed by LLSV are good exogenous proxies for the size of a countrys capital markets. An important element of financial development is still missing in our analysis: stock market liquidity. Liquidity facilitates diversification (Pagano [34], Levine [28]), information aggregation (Grossman [14]), monitoring of managers (Hölmstrom - Tirole [17], Jensen and Meckling [19]) and regulation (Faure - Grimaud [12]).

These functions of stock market liquidity are natural candidates for the explanation of the financial success of privatisation in terms of proceeds. First, investors require a discount for shares traded in an illiquid market. Second, by facilitating information aggregation, a liquid market allows fuller extraction of companys market value from private investors. A higher stock market liquidity should be therefore associated with higher privatisation revenues.

Furthermore, the ability of a liquid market to monitor managers through informative prices and the threat of takeover should make governments less reluctant to relinquish control since the shareholders face less risk of expropriation. This observation has a straightforward implication in terms of privatised stock: governments operating in economies with liquid markets should sell higher stakes.

Finally, liquidity should also count in the choice of privatisation method. If a liquid market is operational when sales occur, it will favour the absorption of big issues, increasing the likelihood of PO. Alternatively, privatisation in economies with illiquid stock markets could be designed to foster financial development through a sequence of sales, possibly generating a critical mass effect that could boost liquidity. If this (risky) strategy is implemented, we should observe a negative relation between the frequency of POs and stock market liquidity.

Controls. Among the possible determinants of privatisation, we include a vector of control variables. We control for the size of the country by means of the average (natural log of) GNP in the privatisation period and for the initial conditions in terms of the size of the SOE sector. These two variables are particularly important when we look for the determinants of the quantity of privatisations.

We always control for the growth rates of GDP. In the years 1977-1996 the growth rate of low income economies doubled that of high income economies. East Asia and the Pacific is the area characterised by the highest GDP growth rate over the whole period (around 7.83%) followed by South Asia (4.89%) while Europe and Latin America are the areas where GDP

grew least (0.22% and 2.64% respectively). Differences in growth rates could influence both the quantity and quality of privatisation.

5 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 LLSV which identifies countries with some nonfinancial firms traded on their stock exchanges. The selection of countries is suitable for our purposes since having a functioning stock market makes relevant the choice of the privatisation method. Figures 1-4 show the global trend in privatisation and the regional and sectoral breakdown of sales and revenues.

Privatisation data are obtained from *Privatisation International Ltd.* that, to our knowledge, is the most comprehensive source of historical data at the company level.⁴ Our source reports privatisation transactions worth more than US\$500,000. Sample selection bias therefore becomes the issue.

As far as Italy is concerned, official sources report 592 sales worth US\$65.2bn during the period July 1992-December 1997 (see Ministero del Tesoro [33]). For the same period, our source reports only 49 major deals. In fact, the revenues from those deals amount to US\$60.1bn, approximately 7.9% less than the value from the universe of privatisations. Lopez-de-Silanes [29] reports 361 non-financial privatisations in Mexico during the period 1983-92 with revenue worth 6.6% of 1992 GDP (US\$22.1bn approximately). For the same period, our source reports only 30 major deals with revenues worth US\$21.7bn, approximately 1.8% less than the total value. Unfortunately, we are unable to extend the analysis of the coverage of our data set due to lack of information. However these two examples suggest that our sample is representative of the population of major deals. By the same token, it is clear that our data base is not suitable for the statistical analysis of small scale operations.

During the period under observation, 1415 major operations were reported (562 public offers - henceforth POs - and 853 private sales - henceforth PSs) in 101 countries, generating US\$544,513ml in revenues. Again sample selection bias within the *Privatisation International* data bank should be limited, since the US\$463 bn in revenues raised by countries in our sample account approximately for 85% of total revenues for the period.

We now describe in detail the independent variables that we use to test the hypotheses developed in section 4. Definitions and sources are reported in Table 2.

⁴The only alternative source which gathers more comprehensive privatisation data worldwide is Securities Data Corporation, but the period covered is very limited (1996 to date).

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 from Wilfried Derksens *Electoral Web Sites* the category democratic conservative 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 Banks - Day - Muellers [2] *Political Handbook of the World* and internet sources identifying privatising governments supported by democratic conservative parties. For OECD countries up to 1986 we referred to the data in Alesina - Roubini [1].

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 governments 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 of government or a change in the governments economic and social priorities. The risk of expropriation of private foreign investment encompasses outright confiscation and forced nationalisation.

Fiscal deficits. To test the hypothesis that hard 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 three 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 about seven years. In 1987 the deficit/GDP ratio was roughly around 14% and the Mexican government launched a macroeconomic stabilisation policy which included privatisation. In 1988 the first offerings took place, raising revenue of roughly US\$1.9bn. 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 about US\$17.2bn, 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 three years before the announcement of its privatisation programme; the average annual increase in overall deficit was around 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\$1.25bn. In the same time span, the average annual growth rate of GDP fell from roughly 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-Katsoulacos [7], Favero et al. [11]).

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 LLSV. 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 LLSV [27].

Stock market liquidity. According to LLSV, legal origin and the legal protection of investors are useful proxies for the size of capital markets. To complete the picture of a countrys 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.

Controls. We finally include the following list of control variables. The (natural log of) average Gross National Product (1977-96) (GNP); the average growth rates of GDP (1970-93) (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.

5.1 Data description

Figure 1 presents the global trend in privatisation. Table 3 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 1977-96 period. With the exception of Switzerland and Hong Kong, they 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 like Australia, Canada, and Israel present similar figures, with an average of 38 of 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 note-worthy, 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 are around US\$18.1bn, and US\$3.4bn 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 like France, Italy, Germany and Australia have raised also 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. But it is also interesting to notice that the opposite is true for developed countries such as Portugal, Israel, Canada, 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\$12.2bn), 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 3 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 like 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 8th, 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 like 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 bare 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 (around 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 4, 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 4 shows first that the political dummy is positively related to the number 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.

6 Empirical Results

Tables 6 to 10 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 variables FLOAT, we have to take into account the possibility that financial market liquidity is endogenous to privatisation. A large scale privatisation process - like 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.

6.1 The Quantity Regressions

Table 5 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).

The extent of a countrys privatisation process is largely determined by the governments 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 - Perotti [3] model is confirmed in our data: privatisation is indeed more likely to be implemented by right-wing governments, maybe 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 from 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 with the idea that bigger companies should privatise more and that the scope of privatisation simply depends upon how many State-owned companies the government has to sell.

Furthermore, 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 quite stable also in unreported regressions. Slow-growth countries are wealthy, mature, OECD economies and those have been particularly involved in privatisation. In the descriptive analysis, we have shown that also developing economies have a great bear-

ing 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) are the second measure for the quantity of a countrys 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 deficits, supporting the view that the extent of privatisation is strongly influenced by a governments preferences and budget constraints. Aggregate proceeds instead depend crucially upon demand factors, that is, stock market liquidity and governments credibility as perceived by investors.

Before presenting the results, some comments about the empirical methodology are due. Where Revenues per Capita is the dependent variable, we will not use the (natural log of) GNP as a control variable, being highly correlated with two variables of interest (CREDIBILITY and the fitted values of FLOAT).

Table 6 shows our estimates for the variable REVENUES. Indeed, capital market liquidity and credibility explain the volume and the financial success of a countrys 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 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 to determining the volume and financial success of a countrys privatisation plan is governments 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 governments 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 (Figure 3). These are concentrated

in big and relatively mature Western European countries.

The coefficients on the political dummy and fiscal deficits are insignificant, indicating that 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 to explain the quantity of privatisation. This result provides quite conclusive evidence that having large SOE to sell is just a necessary but non sufficient for large scale divestitures.

6.2 The Quality Regressions

In the introduction 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 advanced. From the average stakes sold over long periods of time one can infer the willingness of governments to take a step backwards in the control of SOEs. 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 regressors. 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 initial condition. Unfortunately, this variable is just 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 7, 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 it also affects the stake sold. The correlation suggested by Perotti [35] 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, and 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 ([27]). 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 indicates clearly 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 since their performance will be carefully scrutinised (Faure - Grimaud [12]).

The coefficient on the political dummy is positive and almost significant, confirming the view that also the quality of privatisation 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), one can conclude that larger and more mature countries in terms of economic development tend to privatise higher percentages of stock.

The decision to let the SOEs go public or to sell them via a private placement is directly related to a governments 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, like 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 [38]). 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 8 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 positive and significant across several specifications, especially when we control for the size of the SOE sector and legal origin.

But the choice of the 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-Perotti [3]), 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.⁵

The econometric analysis confirms the results of the descriptive analysis in Table 4. 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 big 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.

7 Conclusions

This paper has presented comprehensive evidence about privatisation processes around the world. The scope of divestiture is shown to be independent of the size of government in the economy but determined by a variety of political, institutional, and economic factors. First, politics and government budget constraints play crucial roles in the decision to privatise and

⁵Our 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 an Hausman [16] test: with 96% percent confidence, we could not reject the null hypothesis of exogeneity of the political variable.

in the choice of the privatisation method. Second, stock market liquidity, the legal protection of investors, and institutional credibility are fundamental in explaining the amount of revenues raised from the sales and the size of privatised stakes.

The paper might be improved and extended in a number of directions. In order to identify more precisely the factors effecting the willingness of investors to pay for privatised shares by investors, we should build price-to-book indicators also controlling for profitability. The problem is that balance sheet data for non-listed companies privatised by PS are not available from centralised sources.

We would also like to have more data about other institutional aspects of the offer. From our database we are able to retrieve some information about the presence of constraints such as special shares, limits on the presence of international capital, and preemptive rights awarded to some classes of investors. Nevertheless, we suspect a possible source for sample selection bias since some countries may not disclose relevant information due to different financial market regulations. We leave all this for future research.

References

- [1] Alesina, A., Roubini, N. (1992) Political Cycles in OECD Economies, *Review of Economic Studies*, 59:663-88.
- [2] Banks, A.S., Day, A.J., Mueller, T.C. (eds) (1997) *The Political Handbook of the World*, Binghamton: CSA Publications.
- [3] Biais, B., Perotti, E. (1999) Machiavellian Privatization, *American Economic Review*, *forthcoming*.
- [4] Branco, F., Mello, A. (1991) A Theory of Partial Sales and Underpricing in Privatizations, Sloan School of Management, MIT, *mimeo*.
- [5] Bortolotti, B., Fantini, M., Siniscalco, D., Vitalini, S., (1997) Privatisations and institutions: a Cross-country Analysis, *FEEM Note di Lavoro*, n. 67.
- [6] Boycko, M., Shleifer, A., Vishny, R.W. (1996) A Theory of Privatisation", *Economic Journal*, 106:309-319.
- [7] Christodoulakis, N. M., Katsoulacos, Y. (1994) Privatization, Public Debt Finance, and Investment in Infrastructure", *CEPR Discussion Paper 891*.
- [8] Cornelli, F., Li, D. D. (1994) Large Shareholders, Private Benefits of Control and Optimal Schemes for Privatization", *CEPR Discussion Paper 891*.
- [9] Demirguc-Kunt A., Levine, R. (1996) Stock Market Development and Financial Intermediaries: Stylised Facts", *The World Bank Economic Review*, 10: 291-321.
- [10] Dewatripont, M., Roland, G. (1993) Design of Reform Packages Under Uncertainty", *CEPR Discussion Paper 860*.
- [11] Favero, C., Keating, G., Wilmot, J. (1992) Italy: Privatisation, the Debt Ratio, and EMU", *CSFB Economics*, January.
- [12] Faure-Grimaud, A. (1999) Using Stock Price Information to Regulate Firms, LSE, *mimeo*.
- [13] Galal, A., Jones, L., Tandon, P., Vogelsang, I. (1994) *Welfare Consequences of Selling Public Enterprises*, New York: Oxford University Press.
- [14] Grossman, S. (1976) On the Efficiency of Competitive Stock Markets where Traders Have Diverse Information, *Journal of Finance*, 31:573-85.

- [15] Grossman, S., Hart, O.D. (1986) The Costs and Benefit of Ownership: a Theory of Vertical and Lateral Integration, *Journal of Political Economy*, 11:42-64.
- [16] Hausman, A. (1978) Specification Tests in Econometrics", *Econometrica*, 46:1251-1271.
- [17] Hölmstrom, B., Tirole, J. (1993) Market Liquidity and Performance Monitoring", *Journal of Political Economy*, 101:678-709.
- [18] Kikeri, S, Nellis, J., Shirley, M., (1992) *Privatization: the Lessons of Experience*, World Bank, Washington, D.C.
- [19] Jensen, M., Meckling, W.R. (1976) Theory of the Firm: Managerial Behaviour, Agency Costs, and Ownership Structure, *Journal of Financial Economics*, 3:305-60.
- [20] Jones, S., Megginson, Nash, R., Netter, J. Share Issue Privatizations as Financial Means to Political and Economic Ends", *Journal of Financial Economics*, forthcoming.
- [21] Jones, L.P., Tandon P., Vogelsang I., (1990) *Selling Public Enterprises*, Cambrige: MIT Press.
- [22] Laffont, J.J., Meleu, M. (1991) A Positive Theory of Privatization for Sub-Sahara Africa", Universit de Toulouse, *mimeo*.
- [23] Laffont, J.J., Tirole, J. (1991) Privatization and Incentives", *Journal of Law, Economics, and Organization*, 7:84-105.
- [24] La Porta, R., Lpez-de-Silanes, F., Shleifer, A., 1999, Corporate Ownership around the World, *Journal of Finance*, 54::471-517.
- [25] La Porta, R., Lpez-de-Silanes, F., Shleifer, A., Vishny, R.W. (1997) Legal Determinants of Extenal Finance", *Journal of Finance*, 52:1131-1150.
- [26] La Porta, R., Lpez-de-Silanes, F., Shleifer, A., Vishny, R.W. (1998) Law and Finance", *Journal of Political Economy* 106:1113-1155.
- [27] La Porta, R., Lpez-de-Silanes, F., Shleifer, A., Vishny, R.W., 1999, The Quality of Government, *Journal of Law, Econoimics, and Organization*, 15:222-279.
- [28] Levine, R. (1997) Financial Development and Economic Growth: Views and Agenda, *Journal of Economic Literature*, 34:688-726.
- [29] Lpez-de-Silanes, F. Determinants of Privatization Prices, *Quarterly Journal of Economics*, 4:965-1025.

- [30] Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W. (1995) Privatization in the United States", *Rand Journal of Economics*, 28:447-471.
- [31] Megginson, W., Nash, R.C., Van Randerborgh (1994) The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis", *Journal of Finance*, 49:403-452.
- [32] Megginson, W., Netter, J. (1999) From State to Market: a Survey of Empirical Studies on Privatization, *FEEM Note di Lavoro*, n. 1.
- [33] Ministero del Tesoro, *La Relazione sulle Privatizzazioni*, Rapporti n. 1, 2, 3.
- [34] Pagano, M. (1993) The Flotation of Companies on the Stock Market: a Coordination Failure Model, *European Economic Review*, 37:1101-25.
- [35] Perotti, E.C. (1995) Credible Privatization" *American Economic Review*, 4: 847-1995.
- [36] Poterba, J. (1994) State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics", *Journal of political Economy*, 102:799-821.
- [37] Rock, K., (1986) Why New Issues are Underpriced?, *Journal of Financial Economics*, 15:187-212.
- [38] Roell, A. (1996) The Decision to Go Public: An Overview", *European Economic Review*, 40:1071-1081.
- [39] Roland, G. (1994) On the Speed and Sequencing of Privatisation and Restructuring", *The Economic Journal*, 104: 1158-1168.
- [40] Shleifer, A., Vishny, R.W. (1994) Politicians and Firms, *Quarterly Journal of Economics*, 94:461-488.
- [41] Stiglitz, J.E., (1989) *The Economic Role of the State*, Oxford: Basil Blackwell.
- [42] Vickers, J., Yarrow, G. (1988) *Privatization: An Economic Analysis*, Cambridge (Mass.): MIT Press.
- [43] World Bank (1995) *Bureaucrats in Business: the Economics and Politics of Government Ownership*. New York: Oxford University Press.
- [44] Yarrow, G., Jasinski, P. (eds.) (1996) *Privatization. Critical Perspectives on the World Economy*. Routledge.

Table 1. Theoretical Predictions about the Determinants of the Quantity and Quality of Privatisations
(expected sign of the coefficients in parentheses)

	Dependent variables			
	QUANTITY		QUALITY	
	SALES	REVENUES	STOCK	PO/SALES
Independent variables				
1. Politics				
“Machiavellian” conservative governments (RIGHT)	“Privatisation is more likely to be implemented by right wing governments” (Biais and Perotti 1999) (+)	“Right wing governments are more likely to underprice shares” (Biais and Perotti 1999) (-)	“Right wing governments allocate a significant fraction of share ownership to the population” (Biais and Perotti 1999) (+)	Right wing governments should choose POs to widen share ownership and increase the likelihood of re-election. (Biais and Perotti 1999) (+)
Credible governments (CREDIBILITY)	Privatisation is more feasible if private investment will not be expropriated <i>ex post</i> . (+)	By the same token, a lower country-risk increases investor confidence and willingness to pay for shares (Kikeri, Nellis, Shirley 1992) (+)	A credible government does not need to signal commitment through partial sales (Perotti 1995) (+)	
2. Budget constraints				
Hard budget constraints (DEFICIT)	Governments running fiscal deficits have more incentives to privatise (Dewatripont and Roland 1993, LLSV 1999) (+)	By the same token, financially distressed governments should divest bigger and “healthier” companies (+)	Governments running fiscal deficits have incentives to privatise higher stakes (+)	Financially distressed governments tend to sell control to the buyer: PS are chosen to avoid underpricing and maximise revenues (Grossman and Hart 1986, Rock 1986) (-)

	Dependent variables			
	QUANTITY		QUALITY	
	SALES	REVENUES	STOCK	PO/SALES
Independent variables				
3. Legal Protection of Corporate Investors				
Shareholder rights (ANTIDIRECTOR)		The market value of the company and consequently privatisation proceeds are higher in countries where the law affords protection to minority shareholders (LLSV 1998) (+)	If shareholders are protected by law, benevolent governments are less reluctant to sell big stakes and to relinquish control (LLSV 1998) (+)	Shareholder rights are associated with developed financial markets and with ownership frangmentation (LLSV 1997, 1998). In this context, privatisations on public markets are more feasible (+)
Creditors rights (CREDITOR)			If governments care about legal protection of creditors of privatised companies, they should be prone to sell higher stakes (+)	
Enforcement of law (ENFORCE)		The quality of the enforcement of law is crucial to effective investor protection (LLSV 1998). The market value of the company and consequently privatisation proceeds are higher where courts are efficient and corruption not widespread. (+)	If shareholder rights are strongly enforced, benevolent governments are less reluctant to sell big stakes and to relinquish control (+)	The enforcement of law is associated with financial markets development and with ownership frangmentation (LLSV 1997, 1998). In this context, privatisations on public markets are more feasible (+)

	Dependent variables			
	QUANTITY		QUALITY	
	SALES	REVENUES	STOCK	PO/SALES
Independent variables				
4. Financial Markets Development				
Liquidity (FLOAT,)		Liquidity provides diversification, information and monitoring (Holmstrom and Tirole 1993, Pagano 1993, etc.). Privatisation on liquid markets allows governments to extract more fully the market value of the company and to maximise proceeds. (+)	Liquid markets perform monitoring well (Faure-Grimaud 1999): benevolent governments relinquish control more rapidly if managers of privatised companies will not entrench. Alternatively, self-interested governments with hard budget constraints will have more incentives to sell higher stakes in liquid markets in order to raise revenue (+)	Liquid markets allow to absorb big issues more easily. Therefore POs are more feasible (+)

Table 2. Description of the Variables

VARIABLE	Description
Total Sales	Total number of privatisations by Public Offer (PO) and Private Sales (PS) implemented in the 1977-96 period. Source: <i>Privatisation International, International Financial Statistics</i>
SALES	Total Sales as a percentage of the number of domestic listed firms (1986-93). Source: <i>Privatisation International, International Financial Statistics</i>
Total Revenues	Total revenues from privatisations implemented in the 1977-96 period (billion US Dollars 1996). Source: <i>Privatisation International, World Development Indicators</i>
REVENUES	Ratio of Total Revenues to the average population (1977-96). Source: <i>Privatisation International, World Development Indicators</i>
STOCK	Weighted average of privatised stock by PO and PS at the company level in the period 1977-96 (the weights are the proportion of revenues by PO and PS on total revenues respectively). Source: <i>Privatisation International</i>
PO/SALES	Ratio of the number of Public Offers (PO) to the total number of sales implemented in the 1977-96 period. Source: <i>Privatisation International</i>
RIGHT	Dummy taking the value 1 if the majority of total sales is implemented by a democratic-conservative party and 0 otherwise. Source: <i>Privatisation International, Banks, Day, Muller [2], Wilfried Derksens Electoral Web Sites</i>
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. Source: <i>International Country Risk Guide</i>
DEFICIT	Average deficit of the public sector on GDP in the three years before the first sale. Source: <i>World Tables (1995) and Privatisation International</i>
COMMON LAW	Dummy for common law countries Source: <i>LLSV [25]</i>
FRENCH LAW	Dummy for French civil Law countries Source: <i>LLSV [25]</i>
GERMAN LAW	Dummy for German civil law countries Source: <i>LLSV [25]</i>
ANTIDIRECTOR	Antidirector rights index Source: <i>LLSV [25]</i>
CREDITOR	Creditors rights index Source: <i>LLSV [25]</i>
ENFORCE	Averages of scores on the efficiency of the judicial system and corruption (1982-95) Source: <i>Business International Co. and International Country Risk Guide</i>
FLOAT	Ratio of the average total value of trades on the major stock exchange to GDP (1986-93). Source: <i>Demirguc-Kunt and Levine [9]</i>
Log of GNP	Log of the average Gross National Product (1977-96) Source: <i>World Development Indicators</i>
GROWTH	Average annual percent growth of GDP per capita, 1970-93 Source: <i>World Tables (1995)</i>
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 Source: <i>World Bank [43]</i>

Table 3. 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	4598	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 avg	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	.	.	0
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	.	.	0
Ecuador	0	0.00	0	0.00	.	.	0
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 avg	16.12	9.97	3440.96	80.71	0.51	0.38	0.56
Test of Means							
(t-statistics)	-1.32	0.29	-2.31	-4.96	-1.57	-1.21	0.26

Table 4. Bivariate Statistics

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

**Table 5. The Quantity Regressions:
Privatisations/Domestic Firms**

The dependent variable SALES is given by the number of privatisations (PO and PS) in a given country in the 1977-96 period as a percentage of the average number of domestic listed firms (1986-93). White heteroskedasticity-consistent standard errors are reported in brackets.

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)
Adj. R^2	0.0200	0.0284
Nobs.	47	43

NOTE - * Statistically significant at the 10% level; ** Statistically significant at the 5% level; *** Statistically significant at the 1% level.

**Table 6. The Quantity Regressions:
Revenues per Capita**

The dependent variable REVENUES is given by the ratio of the total revenues from privatisations (PO and PS) in a given country in the 1977-96 period to the average population (1977-96). 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.

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)
Adj. R^2	0.2766	0.1107	0.1681
Nobs.	43	40	36

NOTE - * Statistically significant at the 10% level; ** Statistically significant at the 5% level; *** Statistically significant at the 1% level.

**Table 7. The Quality Regressions:
The Privatised Stock**

The dependent variable STOCK is given by the weighted average of privatised stock by PO and PS at the company level per country in the 1977-96 period, 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.

Independent Variables	Dependent Variable: STOCK		
INTERCEPT	0.5756*** (0.0956)	0.3754*** (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)
Adj. R^2	0.1927	0.3357	0.2433
Nobs.	42	41	37

NOTE - * Statistically significant at the 10% level; ** Statistically significant at the 5% level; *** Statistically significant at the 1% level.

**Table 8. The Quality Regressions:
Privatisations on Public Equity Markets**

The dependent variable PO/SALES is given by the ratio of privatisation by Public Offer (PO) to total sales per country in the 1977-96 period. White heteroskedasticity-consistent standard errors are reported in brackets.

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)
Adj. R^2	0.2167	0.2574
Nobs.	47	43

NOTE - * Statistically significant at the 10% level; ** Statistically significant at the 5% level; *** Statistically significant at the 1% level. .

Fig. 1: Number of Sales and Revenues from Privatisation in the World (1977-1997)

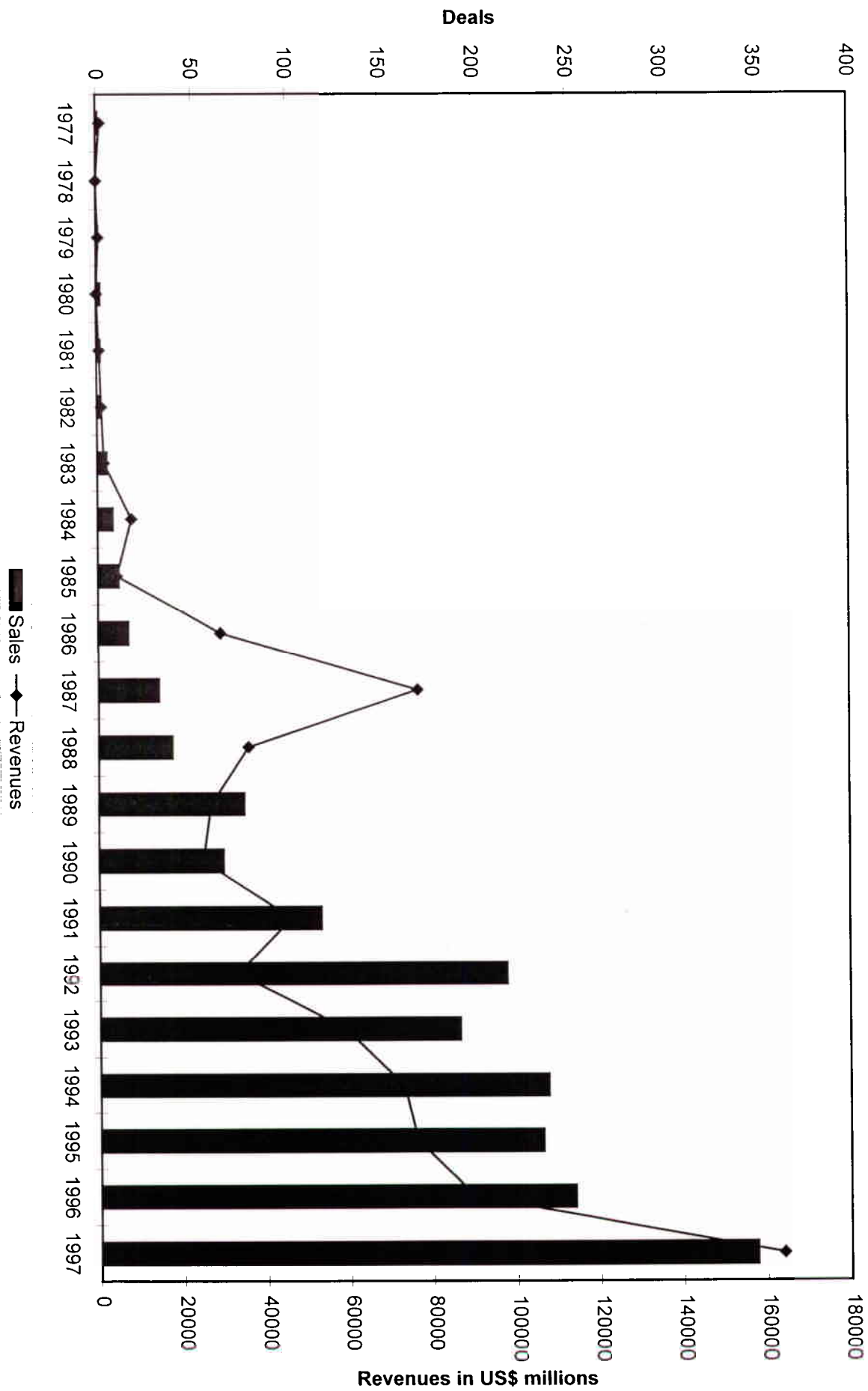


Fig. 2: Regional Distribution of Sales: 1977-1997

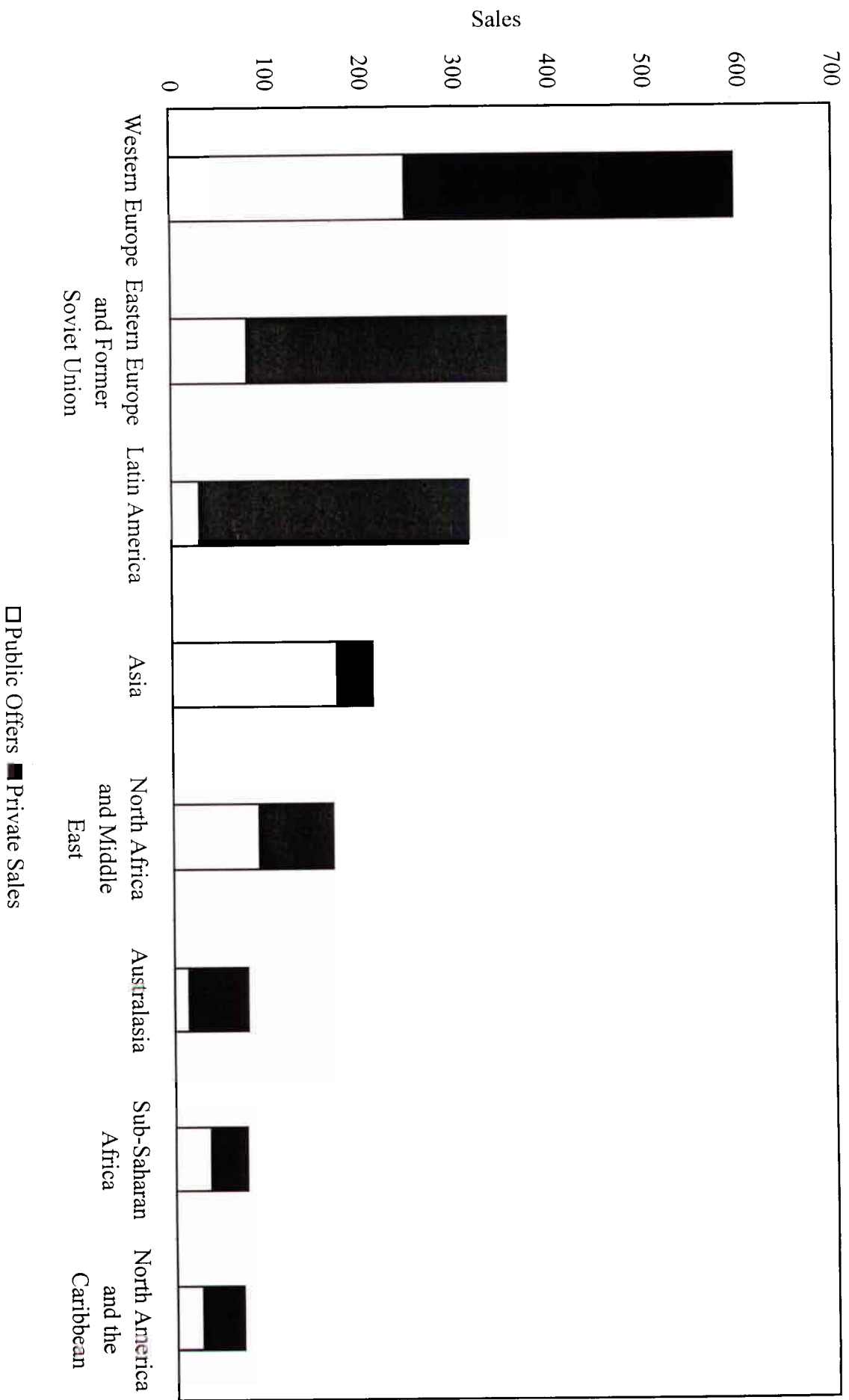


Fig. 3: Regional Distribution of Revenues: 1977-1997

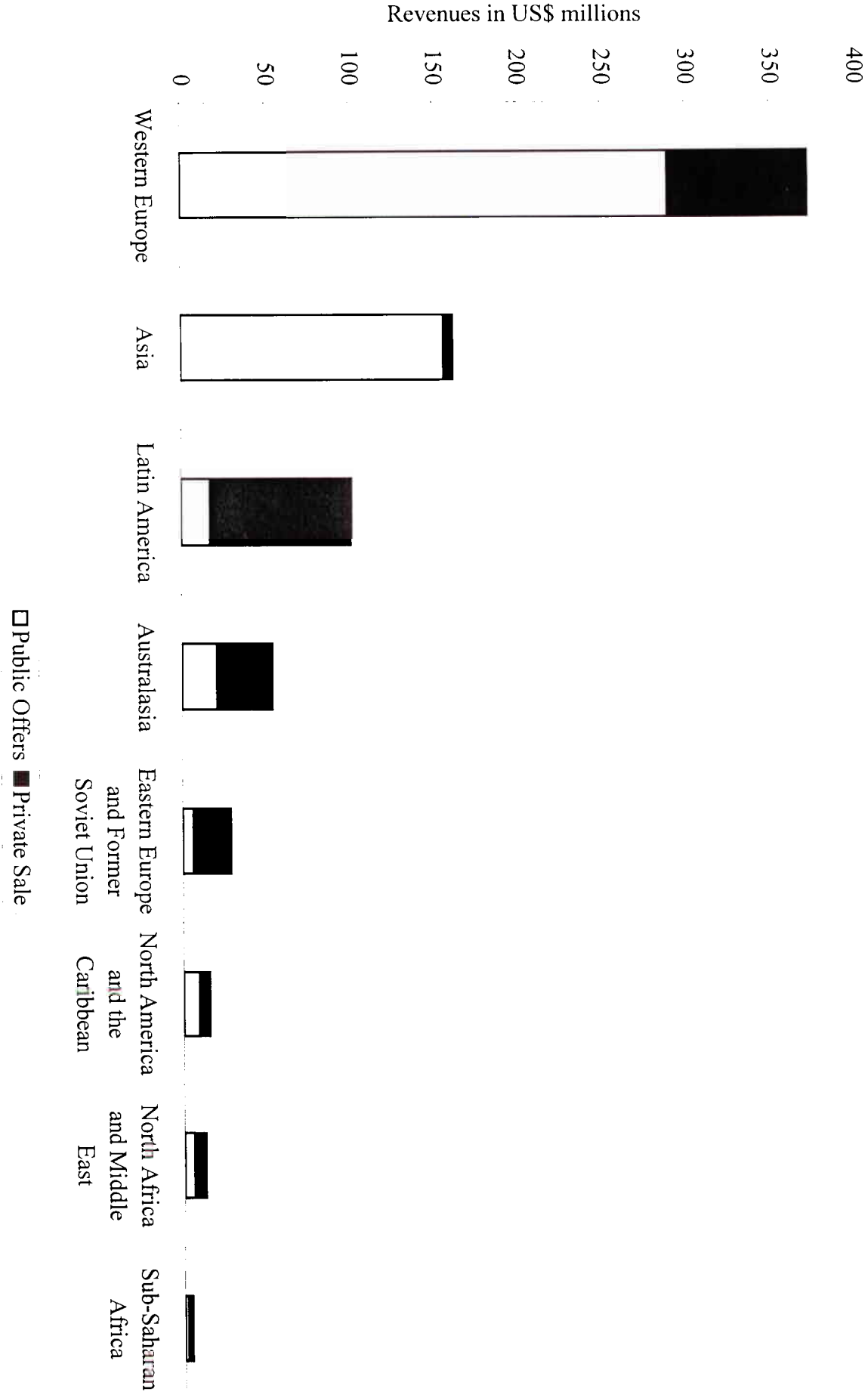


Fig.4: Sectoral Distribution of Revenues: 1977-1997

