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Why Do Governments Privatize Abroad?*

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ABSTRACT

Privatization through global equity market placement has largely contributed to financial market development and integration. Despite the relevance of the fact, the reasons underlying governments' choice to sell shares of privatized companies abroad are still poorly understood. This paper presents new evidence for a sample of 233 share issue privatizations in 20 OECD countries, showing that redistribution concerns and the objective of domestic financial market development make domestic privatization more likely. However, if budget constraints are binding, governments tend to sell abroad a larger quantity of shares, particularly when corporate governance at home is weak.

I. INTRODUCTION

Privatization has certainly been a major event in the economic and financial history of the past twenty years,[1] and its impact on equity markets has been particularly dramatic. To provide a rough yet significant measure, the total market value of privatized companies to date is nearly 10% of the world's total

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1 From 1977 to date, economic activity by state-owned enterprises (henceforth SOEs) in industrialized countries has fallen from 10 to 6% of GDP. The assets that have been transferred to the private sector in this period, i.e. global privatization proceeds, are worth approximately US$1 trillion, with 140 countries to a greater or lesser extent involved in the process (Gibbon 2000).

market capitalization, accounting for over one-fifth of the non-US total (Boutchkova and Megginson 2000).

Governments often specifically target foreign investors or launch the privatized company into foreign stock markets. Fifteen of the 21 largest common stock issues in history (which have all been privatizations) featured the listing of shares in more than one national exchange. Among the 650 major privatization deals of the past ten years reported in the *Privatisation International* dataset, around 150 involved an equity issue on non-domestic markets, and the tranches sold abroad raised revenues worth approximately US$52 billion. Furthermore, the listing of newly privatized shares abroad displays a definite trend, growing steadily during the 1990s (see Fig. 1).

While causes and consequences of divestiture are relatively well understood (Megginson and Netter 2001), the international profile of privatization is still an unexplored field in empirical research. The limited evidence on the issue is provided by Pagano *et al*. (2002), who find that privatized companies are particularly eager to seek a foreign listing. Indeed, being a recently privatized company emerges as one of the most relevant factors in explaining cross-listing in European and US stock markets.

Is listing newly privatized shares abroad really a common practice? What political and economic incentives determine the choice between privatization on the domestic stock market and via international offerings? Why do some

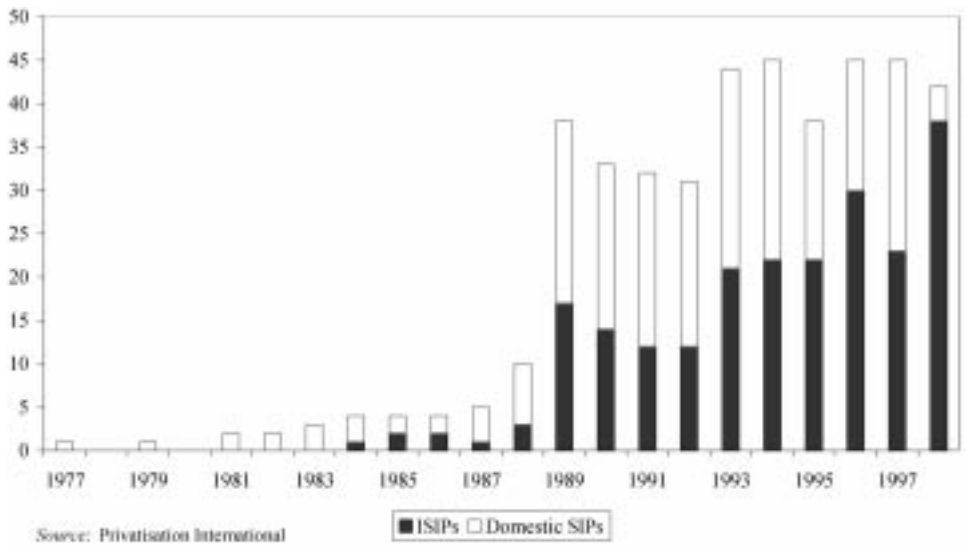

Figure 1 Privatization at home and abroad

Note: Data in this chart to privatization in OECD and non-OECD countries. International share issue privatizations (ISIPs) is the number of share issue privatizations with shares listed on a foreign exchange and/pr allocated to foreign institutional investors. Domestic SIPs is the number od share issue privatizations on domestic stock markets.

governments decide to reserve significant numbers of shares for foreign investors? This paper sheds some light on these issues, and argues that the answers to these questions can be traced back to the political and economic objectives of privatization, and to the way governments balance these objectives in the design of privatization.

The literature has identified a trade-off in selling or not selling privatized firms abroad. Floating companies on a liquid foreign market allows governments to generate higher privatization revenues. Moreover, large shareholdings by foreigners may discipline managers, forcing them to enhance the efficiency and profitability of firms. However, this choice entails political and economic costs. First, by selling firms abroad, governments lose a powerful instrument for redistribution, i.e. selling underpriced shares to domestic voters. Second, by privatizing abroad, governments may waste an opportunity to foster domestic equity markets, a key ingredient of sustained economic growth.

In order to test which elements of this trade-off prevail, we have analysed 233 share issue privatizations (SIPs) in 20 OECD countries from 1977 to 1998, including virtually all the major deals that took place in industrialized economies in this period. Within this sample, we distinguish between international SIPs, characterized by the existence of a tranche earmarked to foreign markets and investors, and domestic SIPs, defined as SIPs where all shares are sold at home. Then we implement a two-stage empirical test to estimate: (a) the probability of a privatization abroad; and (b) the number of shares sold abroad as a percentage of total shares sold.

As for the choice between selling at home or abroad, we find robust evidence that a government's redistributive concern and the need to develop domestic stock markets play a major role. First, market-oriented governments typically privatize at home, floating companies on domestic markets, as predicted by Biais and Perotti (2002). In fact, these 'right-wing' governments aim to create a large number of small capitalists interested in the performance of the stock market and supporting free-market policies. Second, governments opt for domestic issues especially when home equity markets are illiquid and inefficient, seeking to foster more active domestic financial markets by increasing their capitalization through a sequence of large issues.

Revenue generation certainly matters at the first stage, but it seems to be even more relevant in determining how many shares to sell once the decision to allocate shares abroad or not is taken. In this respect, looking at the percentage of shares sold, we find that large fiscal deficits increase the stake sold abroad, suggesting that governments in financial distress are eager to tap foreign investors, possibly in order to get a better price for shares. Second, more shares are sold abroad if investor protection in the home market is poor. By floating a big stake in countries affording extensive legal protection to minority investors, governments may credibly signal a commitment not to expropriate them, and investors will be willing to pay more for a less risky asset.

The analysis in this paper is closely related to the broader literature on privatization methods. Within this literature, Megginson *et al.* (2000) study

governments' choice of selling the company in the form of a private placement versus flotation on public equity markets, finding that the frequency of share offerings is positively related to the size of the firm. On the other hand, private sales are more likely when government credibility is high. Bortolotti *et al*. (2003) confirm the importance of budget constraints in the decision of governments to opt for a direct sale, also finding a political determinant in the choice of the privatization method: right-wing governments are associated with privatization on public equity markets. Jones *et al*. (1999), in a comprehensive analysis of share issue privatizations, provide descriptive evidence about the percentage of shares allocated to foreign investors. They find foreign allocation of shares in 60 per cent of the 505 initial offers reported for the 1977–97 period, with an average percentage of stock of 30 per cent. They use these percentages to try to explain underpricing, finding little significance. Although our samples of SIPs partially overlap, they do not examine the determinants of the allocation of shares to foreign investors.

In the international finance literature, the paper is similar in spirit to some recent work on the determinants of cross-listing decisions by private companies. Blass and Yafeh (2000) show that Israeli companies listing in the US are young and high-technology oriented, arguing that listing abroad is an effective screening device for high-quality firms. The aforementioned paper by Pagano *et al*. (2002) also shows that the probability of a cross-listing by a European company is positively related to the size of the company, and identify different reasons why these companies cross-list shares in Europe or in the USA. The paper is also related to the law and finance literature, which has shown that the legal protection of investors affects corporate ownership and external finance around the world (La Porta *et al*. 1998, 2000). Indeed, legal institutions seem to shape the international profile of privatization.

This paper is organized as follows. Section II states the main theoretical hypotheses; section III presents the data and preliminary descriptive analyses; section IV illustrates the main empirical results; section V concludes.

II. THE DETERMINANTS OF THE DECISION TO PRIVATIZE ABROAD

The choice of selling shares of privatized companies abroad relates to the various objectives of privatization itself. In this section, we briefly present the relevant objectives, and spell out the hypotheses that we test. The privatization objectives that we consider are the following: (a) revenue maximization; (b) fiscal stabilization; (c) redistribution policy; (d) stock market development; (e) political interference.

A. Revenues maximization

Selling shares abroad – which often entails having the company listed on a major foreign exchange – can broaden the market for the firm's shares, allowing the

government to sell the shares on better terms. The literature has identified several channels through which listing shares abroad yields positive effects in terms of revenue generation.

The first one we consider is *liquidity*. Stock traded in a more liquid market is less risky, as shareholders can sell it or buy it more promptly, with lower price volatility and/or lower bidask spreads. Liquidity also facilitates diversification (Pagano 1993), information aggregation (Grossman 1976) and monitoring of managers (Holmström and Tirole 1993). An increase in the liquidity entails a greater desirability of the stock from an investor's viewpoint, lowering expected returns. The evidence on the effects of cross-listing surveyed in Karolyi (1998) indicates that listing abroad could be effective to increase the liquidity of the stock, although factors like market fragmentation could have an offsetting impact (Domowitz *et al*. 1998; Amihud 2002).

The second is *investor protection*. Minority investors discount the risk of expropriation by managers of privatized firms when buying shares in a country with poor systems of information disclosure and investor protection. By listing on a more regulated foreign exchange, managers of SOEs may signal a credible commitment not to expropriate minority investors, which in turn reduces the cost of capital. The costs of increased regulatory exposure should be more then offset by higher stock prices (Fuerst 1998; Stulz 1999; Leuz and Verrecchia 2000; La Porta *et al*. 2000; Pagano *et al*. 2002; Denis and McConnell 2003). Alternatively, governments could improve corporate governance at home by reforming the law, but this is typically a difficult and long lasting process.

The previous observations yield the first hypothesis to be tested:

> **H1.** If the government's objective is revenue maximization, the probability of selling shares of privatized companies abroad is higher, the lower is domestic stock market liquidity and the lower the legal protection of minority shareholders at home.

B. Fiscal stabilization

Privatization has represented part of a policy of budgetary adjustment and has often constituted an alternative to spending cuts or tax increases.[2] Indeed, financial distress has set the pace of privatization around the world. High fiscal deficits are typically associated with a more intense privatization effort, as privatization has significant positive effects on governments' fiscal conditions (Davis *et al*. 2000). Public finance also matters in the choice of the privatization method. Governments in financial distress tend to resort to private equity placements in order to avoid IPO underpricing (Bortolotti *et al*. 2003). Similarly, shares sold abroad might get a better price, and therefore governments with hard budget constraints might be eager to seek a foreign listing of privatized firms.

2 Clearly, the objective of fiscal stabilization is closely linked to revenue maximization, already discussed above.

Tapping foreign markets and investors at the privatization stage could also have an indirect effect on public finances, as a signal of political commitment (Perotti 1995; Fuerst 1998). Indeed, only governments committed to market-oriented policies should be willing to accept the monitoring coming from a foreign listing. Increased credibility reduces political risk (Perotti and van Ojien 2001), improving the rating for government bonds and finally reducing interest payment and the service of debt. The above theoretical arguments suggest the following testable implication:

> **H2.** Selling shares of privatized companies abroad aims at favouring fiscal stabilization. Therefore, the probability of selling shares of privatized companies abroad is higher, the higher is the country's public deficit and the lower the credibility or country risk rating.

C. Distributional policies

Distributional policies are high on the political agenda of privatizing governments. Indeed, incumbent politicians may favour certain classes of citizens in the allocation of shares: the amount of wealth that is distributed is determined by the level of underpricing.[3]

Widening share ownership and the development of popular capitalism have been top priorities in several privatization programmes, especially associated with liberal-conservative majorities. These objectives were prominent in the British programme in the 1984–90 period onwards, which is the most important historically, but also in the policy of denationalization by the Adenauer government at the beginning of the 1960s, the first 'privatization' in modern times. Privatization experiences in France, Chile and the Czech Republic followed a similar pattern.

The political economy of privatization has been recently analysed in a bipartisan model where right-wing governments earmark shares to domestic shareholders as voters (Biais and Perotti 2002). In this context, underpricing can be fine-tuned in order to turn the median voter into a small capitalist, more prone to support 'free-market-oriented' platforms and vote with the right in the future. Privatization can therefore be designed to shift political preferences to the right and increase the probability of re-election of market-oriented coalitions.[4] Biais and Perotti's model has a straightforward implication on the decision to sell shares abroad, which we test in this paper:

3 It is now well documented that shares of privatized companies are largely underpriced. Jones *et al*. (1999) report that the mean level of underpricing at IPO is 34.1%, falling to 9.4% in seasoned offers. Furthermore, insiders/employees and domestic investors typically obtain the most favourable conditions, also having their allocation guaranteed in case of oversubscription.

4 Some recent evidence is consistent with the theoretical predictions of Biais and Perotti's model. First, governments supported by right-wing majorities privatize more, opting for issues on public equity markets rather then private placements (Bortolotti *et al*. 2003). Second,

H3. The probability of selling the shares of privatized companies abroad is lower if privatization issues are implemented by a government supported by a right-wing coalition.

D. Financial market development

The establishment or development of efficient capital markets is an important objective of privatization programmes. A deep and liquid stock market not only allows the efficient mobilization of domestic savings, with direct implications on economic growth (Levine 1997), but is also a key factor to provide stable funding for pension systems, which is becoming a priority for many European and Asian countries (Boutchkova and Megginson 2000).

Unlike private owners, who are typically affected by coordination problems, a privatizing government as the *single* owner of several companies might internalize the externalities stemming from the listing decision, and try to increase the liquidity of the home market through a sequence of well designed issues (Pagano 1993). Furthermore, cross-listing shares could be detrimental to domestic financial market development, as market fragmentation reduces the liquidity of individual markets, especially when intermarket information linkages are poor (Domowitz *et al*. 1998).

If financial market development is an actual objective of privatization processes, then the following holds:

H4. The probability of selling the shares of privatized companies abroad is higher, the higher is stock market liquidity at home.

E. Political interference

It is a well documented fact that the control of SOEs by politicians generates excess employment and high wages (Donahue 1989). Theoretical explanations for this observation can be found in Boycko *et al*. (1996). In this simple model, the costs of spending too much on labour in terms of profits forgone by the Treasury are not fully internalized by the politicians, as they also care about the votes of the employed.

Excess employment can be particularly acute in utilities, a sector typically subject to political interference, and which is not subject to any even indirect market control. Pint (1991) studies the effects of different ownership structures on the efficiency of a monopoly, showing that state-owned monopolies are biased toward labour.

Another reason why utilities are different is that political interference does not end with privatization, as direct control is replaced by the introduction of

underpricing of privatized companies is positively associated with income inequality, indicating that the amount of redistribution needed to convince the median voter to buy shares is decreasing with his wealth. (Jones *et al.* 1999).

Table 1 Theoretical Predictions about the Government's Decision to Privatize Abroad

Privatization objectives	Theoretical arguments and empirical implications	Expected effect on the probability of selling shares abroad
H1. Revenues maximization	Liquidity facilitates diversification (Pagano 1993), information aggregation (Grossman 1976) and monitoring of managers (Holmström and Tirole 1993). Floating SOEs in a more liquid market reduces the cost of capital and generates larger government revenues.	Stock market liquidity at home (−)
	Governments in countries with poor legal protection of investors sell SOEs abroad to comply to higher standards and credibly signal commitment, reducing the cost of capital (Fuerst 1998; Stulz 1999) and increasing investors' willingness to pay.	Shareholder protection at home (−)
H2. Fiscal stabilization	Shares sold abroad get a higher price (see H1) and revenues are used to alleviate public finance.	Deficit to GDP ratio (+)
	Tapping foreign investors signals credible commitment to market-oriented policies (Perotti 1995). This may contribute to the reduction of country risk, interest rates, and the service of debt.	Government credibility (−)
H3. Distributional policy	Market-oriented governments with re-election concerns favour domestic shareholders in the allocation of shares to increase the number of voters supporting market oriented policies (Biais and Perotti 2002).	Right-wing majority in office (−)
H4. Stock market development	Domestic issues foster the development of domestic stock markets (Pagano 1993).	Stock market liquidity at home (+)
H5. Political interference	State-owned monopolies are biased towards labour (Pint 1991). Government sticks to domestic offers to avoid interference in politically sensitive sectors.	Utility dummy (−)

This table presents possible privatization objectives, describes the empirical implications of the theoretical models and lists the expected sign of the coefficients of the explanatory variables. A positive (negative) sign in parentheses indicates that the higher the value of the explanatory variable, the higher (the lower) is the probability of observing an international share issue privatization (ISIP), defined as a share issue privatization with shares listed on a foreign exchange and/or allocated to foreign institutional investors. The variables and sources are described in detail in Table 2.

regulatory constraints. Governments might be reluctant to subject politically sensitive sectors like utilities to the pressure coming from foreign investors and consequently may prefer to stick to domestic sales.[5] In the same way, foreign investors might be reluctant to invest in a firm whose price policy is still under heavy political influence after privatization. We can therefore put forward the following hypothesis:

> **H5.** The probability of selling the shares of privatized utilities abroad is lower compared to privatized companies in competitive sectors.

These hypotheses are summarized in Table 1. The next section describes how we bring them to the data.

III. DATA

Our source of data about privatization transactions is *Privatisation International*, one of the most comprehensive sources at the transaction level. This source reports major deals with a cut-off value in terms of revenue of US$500,000 from 1977 to 1998Q1 in 113 countries. The *Privatisation International* database includes both share issue privatizations (SIPs) and private placements. The average private placement is worth US$224.8 million, with a median value of US$50 million. The average SIP is instead worth US$730 million, with a median value of US$135 million. The smallest SIP of the sample is worth US$1,000,000, which is double the cut-off value. These figures suggest that by focusing on major deals we are not losing many privatizations on public equity markets, which we focus on in this paper. The source reports a large amount of quantitative and qualitative information about the issues, such as the current US dollar value of the sale, the percentage of capital sold, the allocation of shares, the regional distribution of the offerings, the company sector and the identity of the underwriters.

To construct the variables used in the statistical analysis, we rely on several additional sources, such as World Bank Indicators, the IFC *Emerging Stock Markets Factbook*, *Federation International des Bourses des Valeurs* (FIBV), and the *International Country Risk Guide*. The variables and sources are precisely described in Table 2.

Our sample covers 233 SIPs of 205 firms in 20 OECD countries[6] for the 1977–

5 The existing evidence about the role of foreign investors in restructuring privatized companies is mainly drawn from transition economies and developing countries: foreign ownership is typically associated with greater post-privatization performance improvement via restructuring (Djankov 1999). Incentives to restructure may also be provided by minority investors, such as mutual or pension funds, which may exert pressure from abroad threatening exit if the newly privatized firms fail to generate profits under the new regulatory regime (possibly at the expense of consumers).

6 The countries considered are the following: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Turkey and the United Kingdom.

Table 2 Description of the Variables

Variable	Definition	Source
ABROAD	The number of shares sold abroad as a percentage of the number of shares offered by the government at each SIP. The number of shares sold abroad includes the shares placed on foreign public equity markets and the shares sold to foreign institutions. For US offerings, shares allocated to Qualified Buyers in compliance with Rule 144a are included.	*Privatisation International*
ANTIDIRECTOR	The index measures the legal protection that a country's company law provides against the risk of expropriation by managers. The variable takes into account the existence by law of (a) proxy voting by mail, (b) cumulative voting for directors, (c) oppressed minority mechanisms, (d) requirements about the deposit of shares prior to general share holders meeting, (e) minimum percentage of shares to call for an extraordinary meeting at 10% or below and (f) the pre-emptive rights that can be waived only by a shareholder's vote. It ranges from 0 to 6.	La Porta *et al*. (1998)
CENTRE	Dummy taking the value one when the SIP was implemented by a government supported by 'centrist' parties. This label includes parties that are in the centre of the political spectrum without officially adhering to free market values, Christian-democratic parties and wide coalitional governments without a clearly discernible orientation.	*Wilfried Derksen's Electoral Web Sites*; *Political Handbook of the World*
CREDIBILITY	Average grades obtained by the country in terms of risk of contract repudiation and risk of expropriation in the year before each SIP.	*International Country Risk Guide*
DEFICIT	Country average public sector deficit as a percentage of GDP in the three years before each SIP.	*World Development Indicators*; *International Financial Statistics*
ENERGY	Dummy taking the value one when the privatized company belongs to the following sectors: electricity (generation), oil and gas production.	*Privatisation International*
FINANCE	Dummy taking the value one when the privatized company belongs to the following sectors: banking, financial intermediation, insurance.	*Privatisation International*

GDP	Country average of the GDP/population ratio for the privatization period (from the first SIP to the last SIP reported). Gross domestic product is expressed in constant US dollars 1987. Population is current midyear population. The variable is constant across SIPs in a given country.	World Bank Indicators; World Development Indicators
INDUSTRY	Dummy taking the value one when the privatized company belongs to the following sectors: aerospace, chemicals, construction, electrical, machinery, metals, mining, motor vehicles, paper, pharmaceutical, rail equipment, tobacco.	*Privatisation International*
IPO	Dummy taking the value one when the SIP considered is an IPO.	*Privatisation International*
LEFT	Dummy taking the value one when the SIP was implemented by a government supported by 'left wing parties'. Left-wing parties include labour, socialist, social-democratic and communist parties.	*Wilfried Derksen's Electoral Web Sites*; *Political Handbook of the World*
OTHER	Dummy taking the value one when the privatized company belongs to the following sectors: holding company, multiple.	*Privatisation International*
RIGHT	Dummy taking the value one when the SIP was implemented by a government supported by a 'democratic conservative party'. Democratic conservative parties are defined as parties adhering to traditional values in combination with free-market ideology and law and order positions.	*Wilfried Derksen's Electoral Web Sites*; *Political Handbook of the World*
SIZE	Implied market value of the company privatized, obtained by dividing total revenues from the SIP in US dollars 1987 by the percentage of capital privatized, multiplied by 100.	*Privatisation International*
SIZE/CAP	Ratio of the implied market value of the company (SIZE) in current US dollars to the market capitalization in the year of the SIP.	*Privatisation International*; *IFC Emerging Stock Markets Factbook 1999*; *Federation International des Bourse des Valeurs* (*FIBV*)
TLC	Dummy taking the value one when the privatized company belongs to the telecommunication sector.	*Privatisation International*

Table 2 Continued

Variable	Definition	Source
TURNOVER	Trading value/market capitalization ratio in the year before each SIP. Trading value and market capitalization refer to a country's main stock exchange.	*IFC Emerging Stock Markets Factbook 1999*; *Federation International des Bourse des Valeurs* (*FIBV*)
UTILITY	Dummy taking the value one when the privatized company belongs to the following sectors: airline, airport, electricity distribution, gas distribution, rail services, rail-track, water and sewage.	*Privatisation International*

This table reports the definitions and sources of the variables used in the empirical analysis. The sample contains 233 privatizations (SIPs) implemented in the 197798Q1 period in the following OECD countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Turkey and the United Kingdom.

1998Q1 period.[7] Of these, 68 are purely domestic SIPs, with all shares allocated to domestic investors; 165 are international share issue privatizations (ISIPs), with shares allocated to foreign investors. ISIPs include both privatizations with a direct listing of shares on a foreign exchange and private placements of privatized equity to foreign institutional investors, including the Qualified Buyers defined by Rule 144(a) and listings on upstairs markets such as Portal. We report pure ISIPs, namely issues with all shares sold abroad, only in a few cases: Outokumpu (Finland), Crédit Local de France, Den norske Bank and Netas (Turkey). These figures suggest that the issue of shares both at home and abroad, which often entails the cross-listing of the stock, is common practice in privatization.

The transactions reported may refer to companies going public for the first time, seeking a foreign listing after a domestic IPO or raising capital on a foreign market where they previously listed their shares. In the sample we have 135 IPO and 98 secondary equity offers (SEO); 44 (33%) of the IPO and 23 (24%) of the SEO are purely domestic; 5 (5%) of the ISIP follow a purely domestic IPO; 19 (20%) of the ISIP instead follow an ISIP.

A. Measuring privatization abroad

7 In April 1998, *Privatisation International* merged with *IFR-Platinum* of Thomson Financial. From that date onwards, Thomson Financial has listed precisely the target market of every transaction (i.e. the domestic and/or international exchange where shares are listed), but no longer reports the number of shares allocated in the different markets. Due to this limitation, we set 1998Q1 as the end date of our sample. The evidence reported in this paper may appear quite dated. However, it should be noted that the privatization process has shrunk dramatically since the end of 1999.

To test the theoretical hypotheses set forth in Section II, we construct our dependent variable as a measure of governments' sale of shares *specifically aimed* at foreign markets and investors at the moment of privatization. This is given by *the number of shares sold abroad as a percentage of the total number of shares sold by the government in each SIP*. We label this ratio ABROAD. The shares sold abroad are those listed on a public equity market *and* those allocated to institutional investors. For US offerings, SEC Rule 144 private placements by Qualified Buyers are included.[8]

The stakes sold to foreign *strategic* investors[9] are excluded from our dependent variable; otherwise, the decision to sell shares abroad would be mixed with the decision to have (foreign) hard-core shareholders, which is driven by different determinants. Shareholdings by foreigners acquired in the domestic market of the privatizing government are equally excluded, as we want to concentrate on the effort made by the government to enter foreign markets and to involve foreign investors.

Therefore, our dependent variable takes on a value for each transaction. A privatization reporting a positive value for this variable is in turn defined as an *international share issue privatization* (ISIP). The control sample is given by the purely domestic SIPs, namely privatizations targeting only domestic equity markets and investors. This allows us to address correctly two conceptually different – albeit related – choices, i.e. whether or not to go abroad at all, and how many shares to sell.

Let us now describe the explanatory variables that we use to test the previously developed hypotheses.

B. The explanatory variables

To analyze governments' decision to sell shares abroad, the traditional financial approach is probably too narrow. Company-specific and balance sheet information is certainly valuable, but the overall outlook of the country and features of the political environment at the time of the sales are probably even more important, as they determine the objective function and major constraints of the issuer.[10]

In the empirical analysis, the focus is restricted to the following explanatory

8 The rule provides safe-harbour protections by exempting the private placements of certain issuers from the SEC's registration and disclosure requirements and by allowing eligible institutional investors to trade these securities freely among themselves without having to observe restrictions that, prior to the adoption of the rule, otherwise delayed the trading of these securities (see Karolyi 1998).

9 In many cases, governments want to form a *noyeaux dur* (hard core) of large 'strategic' investors, which sometimes includes foreign companies or institutions from other countries.

10 'Governments have discovered that privatization through a global equity market placement created an unmatched opportunity to get the attention of investors around the world and to tell the country's story. No investment mission has the impact of a global equity roadshow' (Jeffrey R. Shafer, Salomon Smith Barney, in *Privatisation International Yearbook* 2000).

variables: (a) fiscal deficits; (b) political dummy variables; (c) institutional variables; (d) financial markets development indicators; and (e) company and SIP information. All variables are time-varying and are constructed for each SIP. The only exceptions are the control variable GDP per capita (GDP), which is averaged for one country's privatization period, and the indicators for the shareholder rights in a given country. These variables will allow us to control for country-specific effects in the econometric analysis.[11] Variables and sources are described in detail in Table 2.

Fiscal deficits. We have collected historical data for the ratio of fiscal deficit to GDP and constructed the average over the *three years prior to each SIP* in our sample. By doing so, we obtain variables unaffected by endogeneity problems (a potentially important issue, since privatization – typically through revenue generation improves public finance). For this macroeconomic variable we have considered three year averages in order to focus on medium-term trends rather than on very short-term changes.

Political dummy variables. Measuring the 'politics' of privatization is a difficult exercise, as elections and coalition realignments typically occur in the course of a country's privatization process. To avoid these problems, we have identified the political orientation of the government that was in power at the actual date of each SIP. This is done by retrieving the political history of each country from the *Political Handbook of the World*,[12] which indicates the dates during which each government has been in power.

To classify these governments, we use Wilfried Derksen's *Electoral Web Sites*, which identifies three possible categories of political orientation: (a) democratic conservative (right-wing), (b) centrist and Christian-democratic; and (c) left-wing. Democratic conservative parties are defined as parties adhering to free-market ideology and law and order positions. Left-wing parties include labour, socialist, social-democratic and communist parties. The category of 'centrist' parties includes coalitions that cannot be clearly labelled in any of the above ways. In particular, these are parties that are in the centre of the political spectrum without explicitly adhering to free market values, Christian-democratic parties and wide coalitions. This source attaches one of the above labels to the political coalition supporting the governments, and thus we have constructed our dummies RIGHT, CENTER, LEFT.

Legal protection and country risk. The previous theoretical analysis points out two aspects of the institutional framework that might be relevant to our question. The first is the legal protection of shareholders. A standard measure of the legal protection that a country's company law affords against the risk of expropriation

11 We would like to stress that this has meant building a massive database on 20 countries over an interval of 22 years (197798Q1), for 18 variables referred to 233 privatizations (totalling more than 5000 data points, some of which are in turn averages of data of the three years before each SIP).

12 This is considered the standard source for this type of information, and has already been used by Alesina and Roubini (1992).

by managers is provided by the 'anti-director rights' index (ANTIDIRECTOR).[13] This variable captures the existence by law of proxy voting by mail, cumulative voting for directors, oppressed minority mechanisms, requirements about the deposit of shares prior to general share holders meeting, minimum percentage of shares to call for an extraordinary meeting at 10% or below and pre-emptive rights that can be waived only by a shareholder's vote. This variable ranges from 0 to 6. The second institutional aspect we consider is a government's reputation in terms of legal protection of private investment. To capture this aspect, we take each country's score in terms of risk of expropriation and of contract repudiation by the government (CREDIBILITY); this is provided by to the *International Country Risk Guide*.[14] We take these values in the year before each SIP. This variable ranges from 0 to 10.

Stock market development indicators. The stage of development of capital markets should be a critical element. We are particularly interested in the effects of liquidity, as the theory predicts the existence of a trade-off between revenue generation and financial market development, so that the empirical analysis could tell us which objective is more relevant. The notions of market development and liquidity are intrinsically controversial, and several definitions exist.[15] In this paper, we use the traditional turnover ratio, i.e. the ratio between the yearly volume of trade and the end-of-year market capitalization (TURNOVER). Once again, to avoid endogeneity problems, all variables are dated in the year before each SIP. As sources for these data, we relied on the IFC Emerging Markets Factbook, and *Federation Internationale des Bourses de Valeur*s (FIBV) publications, complemented by a few data directly provided by exchanges.

Company and transaction information. The large size of our sample makes it very hard to obtain detailed company information, so that we have concentrated our attention on three aspects only, all covered by the *Privatisation International* database. The first aspect is company size, defined as the implied market value of the firm (SIZE), and obtained by multiplying the average offer price by the total number of existing shares (including those still held by the seller). Due to endogeneity problems, this variable is used only in the descriptive analysis. In the empirical analysis, we use a measure of relative size, scaling it by the market capitalization (SIZE/CAP).

The second aspect is the sector of activity. We have aggregated the information provided by our database in a few broad categories using dummy variables: ENERGY (firms in the production of oil and gas or in power generation),

13 Developed by La Porta *et al*. (1998), this is a becoming a standard measure and it has been used by, for instance, Rajan and Zingales (1998), Demirgüç-Kunt and Maksimovic (1998) and Lombardo and Pagano (1999).

14 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 government's economic and social priorities. The risk of expropriation of private foreign investments encompasses outright confiscation and nationalization.

15 See Demirgüç-Kunt and Levine (1996) and Baker (1996).

FINANCE (banks, insurance companies and other financial intermediaries), INDUSTRY (manufacturing companies), TLC (telecommunication companies) and UTILITY (utilities and network industries that are kept as regulated monopolies after privatization, such as water, public transport, gas and electricity distribution).

Finally, we construct the dummy variable IPO, which is set equal to 1 when the SIP is an initial public offer and to 0 for secondary offers.

C. Descriptive analysis

Table 3 provides some preliminary data about privatizations in our sample and some descriptive statistics at the country level. The first column reports the number of SIPs. It is not surprising to find the UK leading the OECD ranking by the number of sales, while the second position of Portugal indicates that the process is not purely driven by the level of economic development or GDP per capita. International SIPs are dominant in several European countries, such as France, Spain, Italy and Austria. On the contrary, Japan and Portugal tend to stick to domestic issues.

The share of privatized capital sold in foreign markets is on average quite large. The mean value of ABROAD in the sample of ISIPs is approximately 38%, and it is slightly higher in countries like Austria, France, Italy, Portugal and Sweden. The lowest averages are found in Japan and, quite curiously, the UK.

Table 3 reports a measure of the size of privatized companies given by the their market value at the privatization date. Looking at aggregate values, it would seem that governments sell abroad smaller than average firms. In fact, the aggregate figure is driven by one outlier, i.e. the domestic SIPs of NTT, the Japanese telecommunication company, the fourth largest corporation in the world in terms of market capitalization according to FT 500 1996. NTT was sold in three different issues for a global amount of US$81 billion, a sum entirely raised in the home market. After dropping NTT, the average firm size for domestic SIP is US$2.18 billion. With this correction, our evidence is consistent with Pagano *et al*. (1998), showing that larger companies can bear more easily the transaction costs associated with the cross-listing of shares.

Panel A in Table 4 provides descriptive statistics about the sectoral profile of the SIPs considered. Sectors such as finance and industry display a higher number of SIPs, probably because there are more companies to be privatized and privatization in competitive sectors is easier. The same argument might explain the lower frequencies in telecommunications and energy sectors. International SIPs are quite uniformly distributed across sectors, although for banks and financial institutions purely domestic issues tend to be more common. The sectoral breakdown of the mean values for the variable ABROAD indicates a lower value in utilities, but differences are relatively limited.

The average value for domestic SIP is again biased by NTT as an outlier. However, even dropping this observation, the telecommunication sector still sticks out as the one with the largest privatized companies, followed by the

Table 3 Descriptive Statistics by Country

Country	SIPs	ISIPs as % of SIPs	ABROAD (Means in ISIP Sample)	Company size (means in the domestic SIP sample, US$ million)	Company size (means in the ISIP sample US$ million)
Australia	11	45.45	31.75	1368.34	2984.75
Austria	17	88.23	49.06	605.60	777.76
Belgium	1	100.00	33.00	0.00	626.51
Canada	12	50.00	28.75	1082.69	1348.26
Denmark	4	50.00	50.50	637.32	3740.06
Finland	9	66.67	76.15	1148.06	1043.98
France	19	100.00	42.70	0.00	8819.38
Germany	5	60.00	26.67	1968.99	19,960.98
Greece	3	33.33	48.00	179.47	10,120.18
Ireland	3	66.67	49.50	389.26	1506.14
Italy	18	94.44	39.58	297.48	12,041.70
Japan	7	14.29	12.85	159,780.94	14,684.29
Netherlands	6	83.33	40.75	198.39	6829.71
New Zealand	2	50.00	67.00	54.89	3305.41
Norway	7	85.71	58.50	114.97	810.48
Portugal	27	29.63	42.47	668.42	3469.53
Spain	17	100.00	33.35	0.00	8536.44
Sweden	7	100.00	42.00	0.00	2301.41
Turkey	3	66.67	97.50	57.43	1043.62
United Kingdom	55	72.73	22.95	4074.13	6109.09
Mean	233	70.81	38.54	15,563.89	6034.77

This table reports the aggregate data for the 233 privatizations implemented in the 1977–98Q1 period in 20 OECD countries. SIPs are the number of share issue privatizations in a given country, ISIPs are the number of share issue privatizations with shares listed on a foreign exchange and/or allocated to foreign institutional investors in a given country. ABROAD is the percentage ratio of shares sold abroad to total shares sold, and figures are means computed within the sample of international SIPs. Company size is the implied market value of the company, obtained by dividing total revenues from the SIP in US dollars 1987 by the percentage of capital privatized, multiplied by 100. Means are computed in the two sub-samples of domestic and international SIP.

Table 4 Descriptive Statistics by Sector and Political Dummies

Sector	SIPs	ISIPs as % of SIPs	ABROAD (Means in ISIP Sample)	Company size (means in the domestic SIP sample, US$million)	Company size (means in the ISIP sample US$ million)
Panel A					
TLC	26	73.01	42.51	133,858.04	17,344.96
ENERGY	27	77.78	38.71	8196.53	14,380.46
FINANCE	60	61.67	43.53	947.49	3523.75
INDUSTRY	58	68.96	45.75	1401.52	2103.55
UTILITY	40	72.50	29.67	2109.49	2502.72
OTHERS	24	87.50	23.28	645.09	3245.61
Total	233	70.81	38.54	15,563.89	6034.77
Panel B					
RIGHT	131	62.59	32.23	20,965.47	5548.44
CENTER	45	75.56	43.97	2076.82	4819.30
LEFT	57	85.96	45.32	1023.95	7721.90
Total	233	70.81	38.54	15,563.89	6034.77

This table reports the data for the 233 privatizations implemented in the 1977–98Q1 period, aggregated by sector. SIPs are the number of share issue privatizations in a given country, ISIPs are the number of share issue privatizations with shares listed on a foreign exchange and/or allocated to foreign institutional investors in a given country. ABROAD is the percentage ratio of shares sold abroad to total shares sold, and figures are means computed within the sample of international SIPs. Company size is the implied market value of the company, obtained by dividing total revenues from the SIP in US dollars 1987 by the percentage of capital privatized, multiplied by 100. Means are computed in the two sub-samples of domestic and international SIPs. In panel A, TLC includes companies in the telecommunications sector. ENERGY includes companies in the electricity (generation), oil and gas production sector. FINANCE includes companies in banking, financial intermediation, insurance sectors. INDUSTRY includes companies in aerospace, chemicals, construction, electrical, machinery, metals, mining, motor vehicles, paper, pharmaceutical, rail equipment, tobacco sectors. UTILITY includes companies in airline, airport, electricity distribution, gas distribution, rail services, rail-track, water and sewage sectors. OTHER includes holding companies and companies in multiple sectors. In panel B, RIGHT, CENTRE and LEFT are dummies taking the value 1 when the SIP is implemented by a government supported by a democratic-conservative, centrist or socialist coalition respectively. Definitions are in Table 2.

energy sector. Finally, the breakdown by sectors confirms that in all sectors (with the usual caveat for NTT) larger companies are sold abroad more frequently.

Panel B in Table 4 shows some preliminary statistics about the political economy of SIP. Two interesting facts are worth pointing out. First, governments supported by right-wing coalitions have implemented more than 50% of the SIPs in our sample; second, the percentage of ISIPs and the average percentage of privatized capital allocated to foreign investors decreases as we move from the left to the right of the political spectrum. Right-wing governments display the lowest percentage of ISIPs, with a value that is 13 points below the level shown by left-wing governments and 7 points below the total average. This preliminary information suggests that ideology and political preferences could be relevant drivers in the decisions we focus upon.

In Table 5, we perform tests of means for our independent variables. In panel A, we construct the differences between the values that our independent variables take on in the subsets of international SIPs and of domestic SIPs, and check whether these differences are statistically different from zero. The average values of the political dummy RIGHT are substantially lower in ISIPs than domestic SIPs, and the difference is statistically significant at the 1% level. Lower values of shareholder protection are associated with foreign issues, and domestic issues display lower values of country risk in terms of government's credibility, with statistically significant differences in means. We also find strong statistical significance (at the 1% level) in the means of our stock market development indicator, i.e. the turnover ratio. Domestic SIPs appear to be related to low liquidity of the home market, supporting the idea that governments privatize to foster financial development at home. As to sectors, there is some preliminary evidence that banks and other financial institutions are more often sold at home. Fiscal deficits, GDP per capita and the relative size of the company privatized do not display significant differences between the sub-samples.

In panel B of Table 5, we tentatively check the explanatory power of the same variables for the quantity of shares sold abroad, concentrating on international SIPs only. Here we report the differences in the average values of independent variables in the top and bottom quartile of the distribution of the positive values of the variable ABROAD, and the associated *t*-statistics.

Apparently, political and institutional factors remain relevant in the choice of how many shares to sell abroad. Right-wing governments are associated with lower stakes allocated to foreigners, providing some additional support to the political theory of privatization. A similar, but stronger, result is obtained for poor shareholder protection. The variable ANTIDIRECTOR is again strongly and negatively associated with higher privatized stakes sold abroad. Governments seem to resort to privatizing abroad to signal commitment in more poorly regulated environments.

The deficit to GDP ratio maintains the positive sign in the difference observed in panel A, but only in the test on international SIPs (panel B) is this difference highly significant. In line with the theoretical prediction, governments with hard budget constraints seem to float large stakes abroad in more liquid markets,

Table 5 Test of Means of Independent Variables

Panel A	ABROAD > 0	ABROAD = 0	Difference	*t*-statistics
GDP	13,826.61	12,483.35	1343.26	1.16
RIGHT	0.52	0.72	−0.20	−3.07***
DEFICIT	4.57	4.05	0.52	1.20
ANTIDIRECTOR	3.27	3.65	−0.38	−2.25**
CREDIBILITY	9.58	9.42	0.16	2.53**
ENERGY	0.14	0.09	0.05	1.24
FINANCE	0.23	0.34	−0.11	−1.73*
INDUSTRY	0.24	0.26	−0.02	−0.40
TLC	0.10	0.10	0.00	−0.06
UTILITY	0.19	0.16	0.03	0.50
TURNOVER	44.33	31.37	12.96	3.71***
SIZE/CAP	3.09	3.17	−0.08	−1.40
IPO	0.58	0.66	−0.08	−1.16
Panel B				
(top 25%)	ABROAD (bottom 25%)	ABROAD	Difference	*t*-statistics
GDP	13,935.68	12,978.85	956.83	0.87
RIGHT	0.58	0.73	−0.15	−1.66*
DEFICIT	4.99	2.65	2.34	4.38***
ANTIDIRECTOR	3.26	3.97	−0.71	−2.72***
CREDIBILITY	9.45	9.62	−0.17	−1.92*
TURNOVER	0.38	0.43	−0.05	−0.84
ENERGY	0.13	0.12	0.01	0.22
FINANCE	0.28	0.15	0.13	1.81*
INDUSTRY	0.28	0.18	0.10	1.24
TLC	0.09	0.09	0.00	0.06
UTILITY	0.16	0.42	−0.26	−2.82***
SIZE/CAP	0.03	0.02	0.01	2.03**
IPO	0.59	0.73	−0.14	−1.62

probably to sell them on better terms.

We have thus found preliminary evidence that some of the factors analysed seem to explain both the frequency of international SIPs and the number of shares sold abroad. These are: politics, shareholder protection and, to a lesser extent, fiscal distress. But the decision about how many shares to allocate to foreigners also has different determinants. For example, stock market liquidity does not display systematic differences in the analysis of the quartiles, while the relative size of the company now plays a role. In the same way, the UTILITY dummy is now significant and the IPO dummy almost so.

This preliminary evidence is encouraging, but there is a need for a more thorough econometric testing, which we carry out in the next section.

IV. ECONOMETRIC ANALYSIS

In order to analyze correctly the government's decisions, we estimate two issues separately. In the first stage, we analyse what affects the government's choice of whether or not to privatize abroad; in the second stage, we try to explain what determines how much capital is sold to foreign investors. It seems appropriate to use the same set of explanatory variables in both aspects of the empirical analysis, as the theories set forth in Section II apply to both choices.

A. The testing strategy

The more appropriate way to address the problem is by a two-stage empirical test: the first-stage estimation is performed using a probit model, in which the dependent variable is a dummy taking the value one for ISIPs and zero for domestic SIPs; the second-stage estimation is performed using a sample selection model, regressing the positive values of the variable ABROAD, conditional on the government having opted for an ISIP.

The econometric model is a generalized Type II Tobit as in Amemiya (1985, p.

Table 5 Notes

This table presents the test of significance of the differences in means of the independent variables. Panel A reports the differences between the average values of the independent variables taken in ISIP, i.e. when the variable ABROAD takes positive values, and in domestic SIPs, i.e. when the variable ABROAD is equal to zero. Panel B reports the differences between the average values of the independent variables in the top and bottom quartile of the distribution of the positive values of the variable ABROAD. GDP is per capita gross domestic product in US dollars 1987. RIGHT is a political dummy taking the value 1 for liberal-conservative privatizing governments. DEFICIT is fiscal deficit to GDP. ANTIDIRECTOR is the measure of shareholder protection by La Porta *et al*. (1998). CREDIBILITY is the average grades obtained by the country in terms of risk of contract repudiation and risk of expropriation taken from ICRG. TURNOVER is the ratio of the volume of trades on the country's stock market to capitalization. SIZE/CAP is the ratio of the implied market value of the company to capitalization. IPO is a dummy taking the value 1 when the SIP is an Initial public offer. ENERGY, FINANCE, INDUSTRY and TLC are sector dummies. ***, **, * denote significance at the 1, 5 and 10% levels, respectively.

385). The first equation of the model is:

$$y_1 = X_1 b_1 + e_1$$

where y_1 represents the 'utility' to the government of privatizing abroad and X_1 are the explanatory variables. Given that this utility is unobserved, we define a new observable variable that equals 1 when the utility of the government is beyond a critical threshold y^*, and therefore the government decides to sell a certain percentage of privatized stock abroad, and 0 otherwise:

$$d_1 = \begin{cases} 1 & \text{if } y > y* \\ 0 & \text{otherwise} \end{cases}$$

The dummy d_1 is the dependent variable in the equation for the choice to privatize abroad or not, and we will refer to this as to the probit (or selection) equation.

Whenever the government decides to sell abroad, we observe the number of shares sold to foreigners. The second equation of the model is thus:

$$y_2 = \begin{cases} x_2 b_s + e_2 & \text{if } d_1 = 1 > y* \\ \text{unobserved} & \text{if } d_1 = 0 \end{cases}$$

where y_2 is the number of shares sold to foreigners as a percentage of the total number of shares sold (ABROAD) and X_2 are the factors affecting this variable. We refer to this equation as to the regression equation. The hypotheses on the error terms are standard, i.e. we assume that they are jointly normally distributed:

$$\{e_1, e_2\} \sim N(0, \Sigma)$$

As our a priori beliefs about the determinants of the first and second stage are not different, we choose specifications uniquely on the basis of the maximum set of uncorrelated variables.[16]

Before running these models, we have performed Hausman tests to check for possible endogeneity of the explanatory variables. The main concern is our proxy for firm size, given by its market value at the moment of privatization (SIZE). We have first estimated a reduced form equation for SIZE, including only exogenous variables. Then we have added the fitted values of SIZE as an independent variable in the ABROAD regression, and found the coefficient of the fitted variable to be significant at the 2% level. This new variable adds something significant to the ABROAD regression, and therefore using SIZE is not equivalent to using the reduced form estimate, which is uncorrelated with the disturbances. The result of this test does not allows us to exclude firm size (its market value) from being

16 Multicollinearity is a particularly serious problem in sample selection models. In this direction, we avoided using variables in the same regression if their correlation coefficient is greater than 0.5 in absolute value.

endogenous to our dependent variable. This is not surprising, and simply means that the quantity of shares sold on foreign markets affect the stock market valuation of the firm. To avoid simultaneity bias, we have replaced the variable for the absolute size with a measure for the relative size, given by the ratio of the implied market value of the company to the country's market capitalization in the year before the relevant SIP.

Multicollinearity forces us to two separate sets of regressions, reported in Tables 6 and 7. The political dummy RIGHT and DEFICIT are correlated to the shareholders' right index ANTIDIRECTOR (the correlation coefficients are 0.62 and −0.53, respectively). In both sets, we use the same specification in the probit analysis and in the sample selection model, using the relative size of the company and sector dummies to reach identification in the latter. We control for country effects by per capita GDP in all equations. We can thus now comment on our results.

B. Results

We perform the first stage estimation using the probit models. The results in Tables 6 and 7 appear remarkably robust: the sign of the coefficients, their absolute values, and the statistical significance of several variables of interests are maintained in the stand-alone probit and in the first stage of the sample selection model.[17]

Let us start presenting our results about the politics of SIPs. The probit model fully confirms the preliminary evidence found in the descriptive analysis: market-oriented governments are more likely to stick to domestic SIPs. The coefficient of the political dummy RIGHT in regressions (1), (2) and (4) in Table 6 is always negative, and statistically significant at the 1% level. An important empirical prediction of the Biais and Perotti (2002) model finds strong support in our data. A market-oriented government favours domestic over foreign investors in the allocation of shares. Domestic SIPs are crucial to right-wing governments with re-election concerns, as they create a class of citizens interested in stock market performance and averse to the redistributive policies that negatively affect the value of the investment.

The role of stock market liquidity in the choice between an ISIP or a domestic issue is particularly interesting, as it allows us to test two competing theories. On the one hand, investors operating in an illiquid market have a lower willingness to pay for the shares issued; thus, a revenue-maximizing government should market them abroad to obtain better prices. On the other hand, privatization on public equity markets could foster their development, and this is often considered a priority by privatizing governments; therefore, liquidity at home

17 We are presenting only a sample of our results. Alternative specifications using different control variables (in particular, macroeconomic ones) are problematic because of multicollinearity, or yield fully consistent results with the evidence presented. The printout of these specifications is available upon request.

Table 6 The Determinants of the Choice between an International and Domestic SIP and the Number of Shares Sold Abroad

Explanatory variable	Probit model Probability of an ISIP (1)	Sample selection model Probability of an ISIP (2)	Sample selection model ABROAD in ISIPs (3)	Sample selection model II Probability off an ISIP (4)	Sample selection model II ABROAD in in ISIPs (5)
CONSTANT	8.18***	8.04***	0.07	−7.94***	−0.20
	(−3.48)	(−3.43)	(0.14)	(−3.37)	(−0.44)
GDP	$-0.14E^{-4}$	$-0.16E^{-4}$	$0.22E^{-6}$	$-0.16E^{-4}$	$0.87E^{-6}$
	(−0.95)	(−1.07)	(0.06)	(−1.06)	(−0.23)
RIGHT	−0.63***	−0.61***	0.06	−0.62***	−0.06*
	(−2.89)	(−2.81)	(−1.59)	(−2.83)	(−1.76)
DEFICIT	0.06*	0.06*	0.02***	0.06*	0.02***
	(1.82)	(1.83)	(3.69)	(1.82)	(3.68)
CREDIBILITY	0.90***	0.89***	0.04	0.88***	0.06
	(3.78)	(3.70)	(0.77)	(3.66)	(1.29)
TURNOVER	1.27***	1.45***	−0.02	1.41***	−0.01
	(2.69)	(2.85)	(0.30)	(2.80)	(0.18)
ENERGY	0.27	0.21	−0.07	0.16	
	(0.72)	(0.57)	(−1.34)	(0.40)	
FINANCE	−0.63**	−0.65**	−0.02	−0.67***	
	(−2.45)	(−2.55)	(−0.43)	(−2.64)	
TLC	0.18	0.15	$-0.22E^{-2}$	0.14	
	(0.44)	(0.37)	(−0.04)	(0.36)	
UTILITY	0.07	0.05	−0.06	$0.21E^{-2}$	
	(0.24)	(0.16)	(−1.20)	($0.73E^{-2}$)	
SIZE/CAP	0.81	1.46		1.17	0.22
	(0.33)	(0.57)		(0.46)	(0.60)
IPO	−0.07	−0.10	−0.06*	−0.10	−0.06*
	(0.30)	(0.44)	(1.67)	(0.43)	(1.63)
σ			0.20***		0.20***
			(12.89)		(14.19)
ρ			−0.38		−0.31
			(−1.27)		(−1.00)
LogLikelihood	−111.14		−75.07		−76.44
Nobs		220	220		220

Table 6 Notes
This table reports the estimated coefficients and associated *t*-statistics. Regressions (1), (2) and (4) estimate the probability of an international share issue privatization. Regressions (3) and (5) estimate the number of shares sold abroad as a percentage to total shares sold (ABROAD), using the first-stage probit in sample selection models. The sample selection models I and II use the variable SIZE/CAP or the sector dummies, respectively, to identify the equations. GDP is per capita gross domestic product in US dollars 1987. RIGHT is a political dummy taking the value 1 for liberal-conservative privatizing governments. DEFICIT is fiscal deficit to GDP. CREDIBILITY is the average grades obtained by the country in terms of risk of contract repudiation and risk of expropriation taken from ICRG. TURNOVER is the ratio of the volume of trades on the country's stock market to capitalization. SIZE/CAP is the ratio of the implied market value of the company to capitalization. IPO is a dummy taking the value 1 when the SIP is an Initial Public Offer. ENERGY, FINANCE, INDUSTRY and TLC are sector dummies. The coefficient $\acute{o}$ denotes the standard error of the residuals of the regression equation, and $\tilde{n}$ is the correlation coefficient among the residuals of the two regressions. ***, **, * denote significance at the 1, 5 and 10% levels, respectively.

points in two opposite direction in terms of the probability of an ISIP.

The empirical results on this point indicate that the objective of financial market development seems to prevail over revenue generation. Our liquidity index (TURNOVER) always shows a positive and highly statistically significant coefficient: governments with less liquid markets are more likely to resort to purely domestic issues.

Redistribution and financial market development are certainly key drivers, but fiscal stabilization and revenue maximization are far from irrelevant. The coefficient in the probit regression is very stable, albeit slightly less significant than the political dummy (at the 10% level). *Ceteris paribus*, the presence of a large public deficit induces the government to sell shares abroad in order to widen the potential investor base and to reduce the average cost of capital.[18] Furthermore, governments in countries with weak corporate governance systems use ISIPs to reassure investors that receive an additional protection via the compliance to requirements of foreign exchanges. And this strategy could pay off in terms of proceeds. In regressions (6), (7) and (9) in Table 7 the ANTIDIRECTOR rights measure has a negative and statistically significant impact on the probability of an ISIP.

When developing hypotheses on the role of macroeconomic stabilization, we claimed that a government could resort to international issues to enhance its credibility and build confidence. Our empirical result points in the opposite direction, in that governments with a high credibility index are more likely to allocate shares to foreigners. This evidence could be tentatively explained as follows: a government with a high country risk faces difficulties in tapping foreign markets. As country risk is a priced factor, less credible governments appear to be unwilling to accept the necessary price reduction on the shares sold.

18 Domestic SIPs often entail incentives in the form of bonus shares for investors keeping the shares for more than a minimum period. Moreover, domestic investors include insiders and employees entitled to buy shares at a discount on retail prices.

Table 7 The Determinants of the Choice between an International and Domestic SIP and the Number of Shares Sold Abroad

Explanatory variable	Probit model Probability of an ISIP (6)	Sample selection model III Probability of an ISIP (7)	Sample selection model III ABROAD in ISIPs (8)	Sample selection model IV Probability off an ISIP (9)	Sample selection model IV ABROAD in in ISIPs (10)
CONSTANT	−6.14***	−5.93***	0.40	−5.97***	0.18
	(−2.89)	(−2.77)	(0.91)	(−2.79)	(0.41)
GDP	$-0.13E^{-4}$	$-0.13E^{-4}$	$-0.24E^{-5}$	$-0.13E^{-4}$	$-0.20E^{-5}$
	(−0.91)	(−0.92)	(−0.61)	(−0.92)	(−0.47)
ANTIDIRECTOR	−0.17*	−0.15*	−0.05***	−0.15*	−0.05***
	(−1.91)	(−1.77)	(−3.37)	(−1.76)	(−3.61)
CREDIBILITY	0.74***	0.71***	0.03	0.72***	0.05
	(3.27)	(3.10)	(0.66)	(3.12)	(1.13)
TURNOVER	1.27***	1.45***	−0.05	1.39***	−0.04
	(2.66)	(2.88)	(−0.81)	(2.74)	(−0.66)
ENERGY	0.35	0.26	−0.04	0.27	
	(0.94)	(0.70)	(0.71)	(0.68)	
FINANCE	−0.54**	−0.55**	0.01	−0.55**	
	(−2.17)	(−2.25)	(0.22)	(−2.24)	
TLC	0.15	0.09	−0.01	0.09	
	(0.37)	(0.22)	(−0.21)	(0.24)	
UTILITY	0.10	0.09	−0.03	0.07	
	(0.37)	(0.31)	(−0.68)	(0.26)	
SIZE/CAP	0.71	1.23		0.95	0.16
	(0.29)	(0.51)		(0.39)	(0.41)
IPO	−0.19	−0.23	−0.10***	−0.22	−0.10***
	(−0.89)	(−1.08)	(−2.65)	(−1.01)	(−2.89)
σ			0.21***		0.20***
			(12.91)		(14.59)
ρ			−0.39		−0.26
			(−1.41)		(−0.81)
LogLikelihood	−115.66		−84.71		−85.16
Nobs:	220		220		220

Table 7 Notes
This table reports the estimated coefficients and associated t-statistics. Regressions (6), (7) and (10) estimate the probability of an International Share Issue privatization. Regressions (8) and (10) estimate the ratio of shares sold abroad to total shares sold (ABROAD) in ISIPs using the first-stage probit in sample selection models. The sample selection models III and IV use the variable SIZE/CAP or the sector dummies, respectively, to identify the equations. GDP is per capita gross domestic product in US dollars 1987. ANTIDIRECTOR is the measure of shareholder protection by La Porta *et al.* (1998). CREDIBILITY is the average grades obtained by the country in terms of risk of contract repudiation and risk of expropriation taken from ICRG. TURNOVER is the ratio of the volume of trades on the country's stock market to capitalization. SIZE/CAP is the ratio of the implied market value of the company to capitalization. IPO is a dummy taking the value 1 when the SIP is an Initial Public Offer. ENERGY, FINANCE, INDUSTRY, and TLC are sector dummies. The coefficient σ denotes the standard error of the residuals of the regression equation, and ρ is the correlation coefficient among the residuals of the two regressions. ***, **, * denote significance at the 1, 5 and 10% levels, respectively.

The analysis of sector dummies does not support the claim (supported by the preliminary evidence given by descriptive statistics) that public utilities are more subject to political interference and as such more likely to be floated domestically. Firms in heavily regulated sectors (utilities, but also firms in the telecommunication sector) seem to behave in line with firms in competitive industries. On the contrary, the coefficient of the dummy FINANCE is negative and significant: banks and financial institutions are less likely to be sold abroad. Despite the globalization of financial activities, our result seems to suggest that banks are probably still considered 'strategic' by privatizing governments.

The two control variables are never significant in our estimates, which indicates that neither country per capita income nor firm size is a relevant factor. Finally – somewhat surprisingly – the IPO dummy does not affect the probability of foreign sale. Initial offers and seasoned, secondary offers are equally likely to target foreign investors.[19]

We now turn to the second stage of the estimation. Once the decision to privatize abroad is taken, how many shares do governments allocate to foreigners? Which factors explain the quantity of capital floated abroad? The estimates performed in the regression equation of the sample selection model provide some interesting answers.

Interestingly, we find evidence consistent with many of the results of the probit analysis. In particular, governments' choice on the quantity of capital to sell abroad is still influenced by government preferences and budget constraints. The political determinant of SIP is again confirmed: the coefficient of the dummy RIGHT is still negative, albeit less statistically significant. Market-oriented governments not only stick to domestic offerings, but allocate few shares to foreigners when they implement ISIPs.

However, revenue maximization is now a more important objective. The

19 We were interested to see whether major differences emerged in the sub-samples of IPOs and secondary offers. Surprisingly, the two separate analyses yielded very similar results to those presented. (Printouts are available from the authors).

deficit to GDP ratio (DEFICIT) and the index of shareholders' rights (ANTIDIRECTOR) both maintain the sign of the probit analysis but gain statistical significance at the 1% level. Financially distressed governments expect to obtain higher revenues from foreign investors, so that they allocate a substantial quantity of capital abroad; similarly, governments with a poor corporate governance system at home allocate more shares abroad to signal commitment not to expropriate minority shareholders, and the improved credibility is reflected on prices.

Interestingly, the IPO dummy, which was never significant in the Probit estimates, is now negatively and significantly related to the quantity of shares sold abroad. This perhaps indicates that, given home bias, foreign investors anticipate 'winner's curse' if they acquire the stock at the IPO. Governments may therefore float a larger fraction of shares domestically at the IPO stage. This could allow highly discounted fixed priced offerings.

V. CONCLUDING REMARKS

Let us now try to summarize the main results we have obtained. First of all, an important background result of this paper is worth mentioning. In line with other recent empirical studies, our analysis shows quite clearly that privatizing governments design the issues to achieve economic and political objectives. A traditional financial approach would probably be too narrow to address the issue at stake, and insights from political economy are useful to pursue research in privatization.

Let us now turn to the central question, and to the answers that we tentatively provide. Why do governments list newly privatized shares abroad? This paper has shown which factors lead governments *not* to do it. First, right-wing governments appear more interested in developing domestic financial markets rather than floating shares abroad in order to foster popular capitalism. The primary drawback of this privatization strategy is that the revenues raised are more limited, so that governments score poorly in a crucial measure for the economic success of the sales. Although the objective of financial market development is dominant in the decision on whether or not to privatize abroad, we find a higher probability of selling shares abroad in countries with poor corporate governance systems and running high fiscal deficits at the time of the sales.

Revenue generation is also an important objective, and even more so when governments *do* privatize abroad. In international issues, we find a larger number of shares allocated to foreigners when budget and institutional constraints are binding. Governments tend to privatize abroad when they are urged to maximize the proceeds of the sales, and when the lack of suitable institutions would be heavily discounted in privatization prices.

It could be interesting to contrast our results with new evidence from emerging and developing countries, to see whether the same trade-offs hold in that context. Floating companies in the home market for political reasons might

prove excessively costly if stock markets are too small and illiquid and legal and political institutions still shaky. We leave this analysis to further research.

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