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Centre interuniversitaire sur le risque, les politiques économiques et l'emploi

Cahier de recherche/Working Paper **04-05**

Foreign Investor Participation in Privatizations: Does the Institutional Environment Matter?

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Mars/March 2004

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Abstract: Using a two-stage estimation procedure, we examine the determinants of foreign investors' participation in the privatization process of developing countries, with a particular emphasis on the role of the institutional environment. First, we estimate the probability that foreign investors target privatized firms in a given country. We show that an investor-friendly institutional environment which protects shareholders' rights favors foreign investors' participation. Foreigners also prefer large firms from high growth economies and socially stable countries with low political risk. Second, we restrict our analysis to those firms that foreign investors actually choose. We show that the use of private sales is a key determinant of foreign investors' stake in a privatized firm.

FOREIGN INVESTOR PARTICIPATION IN PRIVATIZATIONS:
DOES THE INSTITUTIONAL ENVIRONMENT MATTER?

I. Introduction

Foreign investors are a major stakeholder in the privatization process in developing countries. In this context, foreign investment is generally viewed as a valuable way to bring new capital for the often much needed restructuring of newly privatized firms, and to contribute to the transfer of technology and managerial expertise to the host country. Foreign investors also help to improve the corporate governance of newly privatized firms by requiring high information disclosure standards and, for reputation concerns, by maintaining a strict control of managers' actions (Dyck 2001; Shirley 2002).

Whether the sales method of state-owned enterprises is a direct sale or a public offering, foreign participation is omnipresent. For example, foreign participation as a share of total divestitures in the developing world increased steadily in the 1990s, reaching close to 76 percent of total privatization proceeds in 1999 and generating an estimated $32.3 billion in foreign exchange (World Bank 2001). In 1999, foreign direct investment was the main source of foreign revenues raised through privatization activity, accounting for 86 percent of the total, while foreign portfolio investment accounted for the remaining 14 percent. However, it also appears that the extent of foreign participation in privatization varies greatly across regions. For example, over the 1990-1999 period, foreign investors contributed to 71 and 15 percent of total privatization proceeds for (1) Latin America and the Caribbean and (2) Middle East and North Africa, respectively.

The objective of this paper is to examine what drives foreign investors in the privatization process in developing countries and to determine the extent of ownership they hold thereafter. We especially seek to determine whether the cross-country differences in the institutional environment help to explain the cross-country variation in foreign participation. In other words,

we examine whether foreign participation depends, among other things, on the extent of investor protection and law enforcement, in addition to the privatization process characteristics that signal the extent of government commitment to its policy reforms. A great variety in the (often weak) legal and institutional environments of developing countries (Shleifer and Vishny 1997; Denis and McConnell 2003) makes the analysis of this issue in this specific context interesting.

We relate and contribute to the literature on privatization and corporate governance in two ways: First, privatization constitutes a dramatic change of ownership from public to private, providing us with a unique opportunity to determine what attracts foreign investors to a country and what explains their choice of ownership structure in a firm. Second, we consider firm-specific attributes and characteristics of the privatization process in addition to country-specific determinants. By considering the role of both firm and country characteristics in the foreign ownership decision, we extend the single country studies that examine the firm characteristics most valued by foreign investors (e.g., Kang and Stulz 1997; Dahlquist and Robertsson 2001; Anderson, Jandik and Makhija 2001). Additionally, by focusing on the role of the legal and institutional environment, we contribute to the line of research initiated by La Porta, López-de-Silanes, Shleifer, and Vishny, who showed in a series of papers that the difference in legal systems across countries explains, to a large extent, the cross-country differences in ownership structure, capital structure, economic growth and corporate policies (La Porta, López-de-Silanes, Shleifer, and Vishny 1997 1998 2000; La Porta, López-de-Silanes and Shleifer 1999). To explore these issues, we use a rich dataset that includes 220 newly privatized firms from various industries and that operate in as many as 28 countries, institutionally and geographically diverse.

Since we analyze both the decision to invest by foreign investors and the extent of their participation in the firm, the appropriate framework in this case is a two-stage estimation

procedure. This allows us to account for any possibility of sample selection bias (Heckman, 1979). Indeed, it is often argued in the privatization context that certain types of owners, particularly foreign investors, may be able to identify better-quality firms from institutionally better countries (Megginson and Netter 2001). Accordingly, we estimate, in the first stage, the probability that foreigners invest in a newly privatized firm. In the second stage, we look into the determinants of the extent of foreign participation in a newly privatized firm (given that it is positive). Our results from the first-stage estimation indicate that an investor-friendly institutional environment, where minority investors' rights are protected and laws are enforced, positively influence foreign investors' participation in privatization. For example, law and order is positively and significantly related to the foreign investment decision. So is the degree of social stability in the country, proxied by the internal conflict index. Furthermore, foreign investors are more likely to invest in privatized firms at the latest stages of the process in line with Perotti's (1995) confidence building hypothesis. Finally, foreign investors are more likely to participate in larger privatized firms and high growth economies.

In the second-stage estimation, we find that, in addition to the quality of the institutional environment, the extent of foreign ownership is larger in firms privatized through private sales.

Overall, our results highlight the importance of reforming the institutional environment in the countries that are anxious to increase foreign direct involvement in the privatization process.

II. Privatization, Institutions and Foreign Ownership

Privatization typically leads to a drastic change in the ownership structure of state-owned enterprises. The government divestiture allows participation by new stakeholders that generally include foreign investors. By seeking foreign investors' participation, the government wants to import technological and managerial know-how as well as important sources of financing which are necessary to fund the restructuring of newly privatized firms. However, a

variety of reasons, including the inefficient legal systems and the political uncertainty related to privatization can deter foreign investors from investing in developing countries (DCs).

In this paper, we refer to the country-specific socio-economic and legal environments as the institutional framework. Economic growth and investment are more likely to occur within a favorable institutional environment (World Bank 2002). In such a framework, the legal system efficiently protects shareholders' rights. La Porta, López-de-Silanes, Shleifer, and Vishny (1998) (LLSV hereafter) show that commercial and corporate laws vary across countries, primarily because of differences in legal origins, and conclude that common law countries provide a stronger investor protection than civil law countries. Therefore, an efficient institutional framework that protects and enforces the rights of investors is more likely to attract foreign investors than otherwise. A recent study by Globerman and Shapiro (2003) confirms this assertion and shows that governance infrastructure (including the legal system) is a significant determinant of the decision of US investors to target a country.[1]

Along this evidence, several studies have recognized the impact of cross-country institutional differences on foreign direct investment flows. In the specific case of privatization, we conjecture that the institutional framework is particularly important for the following reasons: First, in the case of privatized firms, the institutional environment has been shown to be a significant determinant of performance improvements and efficiency gains in state-owned enterprises after divestiture (e.g., Boubakri, Cosset and Guedhami 2001). Thus, through their role in establishing expectations about the rights to use resources and repatriate gains (Chhibber and Majumdar 1999), institutions become particularly important to foreign investors involved in privatization. Second, the legal system affects both the ownership structure and the ex-ante decision to participate. For example, LLSV (1998) show that corporate ownership structure

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[1] The authors include in the governance infrastructure public institutions and policies created by governments as a framework for economic, legal and social relations.

tends to be more concentrated in civil law countries to substitute for the poor prevailing investor protection and to ensure effective monitoring. For instance, Djankov and Hoekman (1999) show that, under the Czech's law that provides little protection to minority shareholders, equity investors have an incentive to take a majority stake. Hence, to substitute for the weak legal system, most firms with foreign ownership are majority foreign-owned.

The institutional framework is also likely to have an impact on foreign ownership through corruption. Wei (2000), for example, finds that a rise in corruption significantly reduces bilateral foreign direct investment (FDI) flows from twelve source countries to forty-five host countries. A recent study by Habib and Zurawicki (2002) also confirms that corruption is negatively related to aggregate bilateral FDI flows between 1996 and 1998 for eighty-nine countries.

Finally, political risk is an other component of the institutional framework that is likely to influence foreign investors' participation in privatizations. To foreign investors, political uncertainty and restrictions on gains' repatriation, are a major concern. (Heinisz 2002). This situation is further exacerbated by the uncertainty that is related to the privatization process itself. For instance, most privatized firms in DCs involve a stake retained by the government. The government residual participation may provide it with the opportunity to intervene in the firms operations either directly through its retained shares or indirectly through regulation.

In addition to the institutional framework, the privatization process characteristics might play a role in the investment decision of foreign investors: for example, the method of sale might have a direct impact on the extent of ownership that foreign investors will ultimately hold. Compared to privatizations through public offerings, private sales are more likely to yield a larger participation by foreign investors. Another characteristic of the privatization process that could be potentially important is the timing of sale. According to Perotti (1995), governments try to build confidence among investors and signal their commitment through the terms of sale

(pricing and residual ownership). If policy uncertainty is resolved over time, one should observe, other things being equal, more foreign investment recently.

The above discussion suggests that the decision of foreign investors to buy newly privatized firms and the extent of their participation in the ownership structure of the firms will most likely depend on the prevailing institutional framework and the privatization process characteristics in a given country. To examine this issue, we adopt a unified approach and use both target firm- and country-specific variables in order to identify the determinants of foreign participation in privatization across countries and the extent of ownership across firms. The advantage of conducting a cross-country study instead of focusing on one country is to be able to control for institutional differences among countries. It also allows us to capture the regional, institutional and macro-economic considerations that are inherent to the investment decision in DCs.

III. Data Description

The Sample

Table 1 describes the characteristics of the sample which includes 220 newly privatized firms from 28 countries, diversified across three main geographical regions: 30% of the firms come from North Africa and the Middle East, 19.50% come from East and South Asia and the Pacific, and 29% come from Latin America and the Caribbean. Sub-Saharan African firms account for 14% of the sample.

According to the World Bank classification, most of the privatizations in our sample occurred in low income countries (39%), followed by upper middle income countries (32%) and lower middle income countries (30%). The privatizations in the sample are distributed across a wide range of industries: mainly, financials (24%), industrials (13%), materials (15%) and utilities (close to 11%). Table 1 also shows that privatizations are more clustered during the nineties

which indicate more intensive privatization efforts undertaken in DCs during the last decade as reported by the World Bank (2001).

As described earlier, our first objective is to explain the likelihood that a foreigner invests in a privatized firm from a DC. Our second objective is to investigate the determinants of the extent of foreign ownership in newly privatized firms. Out of the initial sample of 220 firms, 20 firms have no data on the extent of foreign ownership, which results in a total sample of 200 firms where foreign ownership is higher than or equal to zero. We observe a strictly positive foreign ownership stake in 108 firms.

< Insert Table 1 around here >

According to Table 2, the mean percentage held by foreign investors at the time of privatization is 19% ranging from a minimum of 0% to a maximum of 100%. The government's stake is 37% on average. For the sub-sample of 108 firms with positive foreign ownership, the mean stake held by foreign investors is 35.50%, while the government's ownership gravitates around 40%.

< Insert Table 2 around here>

Variables

Table 3 provides the definition and the data source of the variables used to investigate the determinants of foreign investors' participation in privatizations. We consider three broad categories of variables. The first category gathers institutional variables such as law and order, corruption, social inequality indicators, internal conflicts, political risk as well as a measure of stock market development. The second category encompasses variables related to the privatization process such as the method of sales, the timing of privatization and the possible relinquishment of control by the government following divestiture. The third category includes firm- and country-specific control variables such as the profitability, the size and the industry of

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the newly privatized firms as well as the real GDP growth, the size of the host country and restrictions on foreign ownership.

<Insert Table 3 around here>

Institutional Variables. To proxy for the institutional environment, we use the following measures: First, we hypothesize that legal protection and law enforcement, proxied by the law and order index (*LAW)*, should positively influence the decision and the extent of ownership by foreign investors, because they are directly related to the risk of expropriation of their wealth. We also conjecture that corruption (*COR*) is a barrier to investment as it increases the transaction costs to the foreign investors and hence may deter them from investing in the country. Therefore, we expect a negative relationship between corruption and the investment decision and the extent of ownership (Drabek and Payne 1999; Smartzyska and Wei 2001; Habib and Zurawicki 2002).

The literature on FDI generally agrees that political risk is a major determinant of the investment decision (Heinisz 2002). Therefore, we include the political risk *index (POLRISK)* constructed by *International Country Risk Guide* (*ICRG*). We conjecture that the likelihood of foreign investment increases when political risk is lower, that is, when governments are more stable and the risk of nationalization is lower. Further, we account for the underlying socio-economic conditions by including internal conflicts (*IC*) as a proxy for social stability in the country, and the *GINI* coefficient as a proxy for social inequality. We expect favorable social and institutional conditions to positively affect the decision of foreign investors to enter the country, and the extent of their stake in the privatized firm.

Finally, we control for the degree of development of the stock market by considering the turnover ratio *(TURNOVER)*. Foreign investors generally seek more liquid markets which provide them with the opportunity to liquidate their positions more easily in times of uncertainty.

Privatization Process Characteristics. To control for the characteristics of the privatization process, we include the following variables. First, we consider a dummy *CONTROL* that indicates whether the government relinquished control in the firm: the government's partnership may represent an implicit guarantee to foreigners that their investment will be protected, or a guarantee of the firm's quality. Second, the privatization method can also be important in determining the foreign ownership in a privatized firm. A private (direct) sale (*PS*), for example, transfers control rights to foreign investors which can lead to higher foreign ownership stakes. Finally, we conjecture that foreign investors should be more involved in recent privatizations rather than in earlier ones as policy uncertainty about the privatization policy is resolved over time (Perotti 1995; Perotti and van Oijen 1999). To proxy for the timing of privatization, we classify the newly privatized firms with respect to the median country privatization date and include a dummy *LATE* that equals 1 if the firm is privatized after the country median date of all privatizations, and zero otherwise.

Firm- and Country-Specific Control Variables. Studies that analyze the determinants of foreign ownership in a firm generally agree on several firm attributes. For example, Kang and Stulz (1997) study the shareholdings of foreigners in individual Japanese firms between 1971 and 1991, and find that foreigners prefer larger firms. The evidence, more recently confirmed by Dahlquist and Robertsson (2001) for a sample of Swedish firms, is consistent with the conjecture that foreigners invest in firms that they are better informed about. This argument is also valid for newly privatized firms since larger, more established firms are more likely to appeal to foreign investors. Therefore, we control for *size* by including the logarithm of the size of the privatization issue at the time of privatization (*LISSUE*).

We also conjecture that foreigners are more likely to choose firms with a relatively good performance because they are safer and are less likely to be expropriated in an imperfect legal system (LLSV 1997; Anderson, Jandik and Makhija 2001). However, more profitable firms may not

need foreign blockholders for extra external monitoring. In light of these two conflicting arguments, the sign associated with performance is uncertain. As a proxy for the pre-privatization performance, we use the mean return on sales (ROS) over three years before privatization.[2]

We further include the firm's *leverage* as a proxy for long term financial distress, measured by total debt to total assets (*TDTA*). As in Kang and Stulz (1997), we conjecture that foreign investors will not invest in highly indebted firms that are more likely to bankrupt. Finally, the industry affiliation is also controlled for through the strategic versus non-strategic industry classification. We include a dummy variable *(STRATEGIC)* that equals one if the firm operates in energy, utilities, telecommunications, financials and transportations, and zero otherwise.

The literature on FDI generally agrees that a variety of domestic economic factors defines a country's ability to draw foreign investment (Bevan and Estrin 2000; Globerman and Shapiro 2003). Thus, we use real GDP growth (*GDPG*) as a proxy for the economic environment. We also control for *GDP* as a proxy for the size of the country and for *TURNOVER* as a proxy for the stock market development. Finally, we include a proxy for the restrictions on foreign ownership (*FORMAX*) that might be binding foreign investors' choices.

In Table 4, we present the correlation coefficients between the country-specific institutional variables and the control variables discussed above. The various institutional variables (law and order, corruption, political risk and social instability) are highly correlated with each other, with correlation coefficients that range from 0.66 to 0.84. Likewise, it appears that the level of market development is positively and significantly associated with the levels of legal

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[2] In an international context, we prefer to focus on return on sales because this ratio is less sensitive to inflation and accounting standards than return on assets (Megginson, Nash and Randenborgh 1994).

protection, economic development and income inequality. As a consequence of this high degree of intercorrelation, these variables will not enter jointly in any equation.

< Insert Table 4 around here>

IV. Empirical Results

We conduct our analysis in two steps: *First*, we perform a univariate analysis by comparing two partitions of the sample firms based on the presence or not of foreign investors. *Second*, we perform a multivariate analysis to investigate the determinants of foreign participation and the extent of foreign ownership.

A First Look at Foreign Ownership in Newly Privatized Firms

We first split our sample according to whether foreign investors are involved or not in the ownership structure of the privatized firms. We then assess the differences in firms' characteristics and country characteristics between both sub-samples. The rationale of such an analysis is to identify those variables that seem important in conditioning the decision of a foreign investor to choose a privatized firm.

In Panel A of Table 5, we examine the host country characteristics and uncover some interesting binary relationships. For example, foreign participation is positively and significantly related to the institutional environment as proxied by *LAW* (at the 1% level). These results suggest that the extent of shareholder protection and law enforcement is an important determinant of foreign ownership. Foreign ownership is also highly associated with more social stability (lesser internal conflicts). The difference between with and without foreign participation sub-samples is significant at the 1% level. Turnover and the Gini coefficient are also significantly different between both sub-samples suggesting that foreign investors seek more developed and liquid markets and countries where social inequality is less important. As for the level of corruption, it is not significantly different between both sub-samples.

Panel B of Table 5 suggests that foreign investors prefer large firms, low-leveraged firms and large size issues. No significant differences are reported for efficiency or profitability. For their sample of newly privatized firms in the Czeck Republic, Anderson, Jandik and Makhija (2001) find that firms with foreign investors have larger assets, revenues and profitability than firms with no foreign investor.

< Insert Table 5 around here >

In Table 6, we report the results of a few more partitions based on the privatization process characteristics, such as the government residual ownership, the privatization method, the timing of privatization, industry affiliation, as well as imposed restrictions on foreign ownership, and draw the following conclusions: First, Panel A shows that control relinquishment by the government in the privatized firms is not associated with more foreign ownership. In other words, the level of foreign ownership is not related to the percentage of shares held by the government in the firm. In contrast, data on the privatization method shows that foreign ownership is higher when privatization is implemented through private sales (Panel B). The mean (median) foreign ownership stake is 30% (11%) for private sales compared to 11% (1%) for public offerings. In Panel C, we contrast the ownership stake of foreign investors in late versus earlier privatizations, and show that the mean (median) stake is significantly higher in those firms that are privatized more recently (24%) (11%) compared to 14% (0%) for earlier privatizations.

The industry distribution (Panel D) indicates that foreign investors, to some extent, favor strategic sectors (i.e., energy, utilities, telecommunications, financials, transportations) over non-strategic sectors (i.e., manufacturing), but the difference is only significant at the 10% level. Finally, we try to account for the restrictions on foreign ownership that prevail in certain countries by splitting our sample according to a *RESTRICT* variable that captures whether foreign ownership is restricted in a given country. The results (Panel E) suggest that there is no

significant difference across the partitions and that these restrictions might not be binding to foreigners.

In summary, the newly privatized firms in our sample that involve foreign ownership have the following characteristics: their country of origin has a friendly institutional environment and the socio-economic conditions are relatively good. These firms are usually large in size and have been, on average, privatized through private sales.

< Insert Table 6 around here >

Multivariate Analysis

In this section, we explore the determinants of foreign investors' participation in privatizations. There is substantial evidence on the presence of selection bias in the privatization setting (Megginson and Netter, 2001). For instance, certain types of owners, particularly foreign investors, may be able to identify better-quality firms from institutionally friendlier countries. To correct for the potential selection bias in the privatization process, we employ the Heckman's (1979) two-stage process summarized as follows:

$$\text{DFOR*} = \alpha_0 + \alpha_1 \text{INSTITUTION} + \alpha_2 \text{PRIVATIZATION} + \alpha_3 \text{CLV} + \alpha_4 \text{FLC} + \varepsilon_1 \qquad (1)$$

where DFOR* is a latent variable defined as DFOR=1 if DFOR*>0 (foreign investors participate in the privatization process) and DFOR=0 if DFOR*=0 (foreign investors do not participate in the privatization process); INSTITUTION includes a set of institutional variables defined in Table 3; PRIVATIZATION includes variables related to the privatization process characteristics; CLV and FLV refer to the country- and firm-specific control variables we discussed above, and ε_1 is a normally distributed error term.

In Equation (1) (first stage), we analyze the decision to invest by foreign investors, using a probit model that determines when the dependent variable in the second stage (equation 2) is

nonmissing (the dependent variable equals 1 if there is foreign participation in the privatized firm and 0 otherwise) . Equation (2) is defined as follows:

$$FOR = \beta_0 + \beta_1 PRIVATIZATION + \beta_2 FLC + \beta_3 MILLS + \varepsilon_2 \tag{2}$$

where FOR is the extent of foreign ownership, MILLS is the inverse of Mills' ratios derived from equation (1), and ε_2 is a normally distributed error term. This equation, confined to observations where FOR is positive, allows us to investigate the determinants of the extent of foreign participation in the privatized firm. We mainly include variables related to the privatization characteristics as well as firm-specific control variables.

First-stage results. Table 7 presents the results of the estimation of foreign participation likelihood using Heckman's (1979) two-step procedure. We present four specifications of the model to be able to include alternatively significantly correlated variables (see Table 4). The high level of significance of the likelihood ratio (LR) test clearly justifies the use of the Heckman selection equation for our data.

As shown in Table 7, the results are consistent with those reported in the univariate analysis and indicate that the institutional environment is an important determinant of the foreign investment decision. The coefficient estimates of the variables *LAW* and *IC* are significant in their respective specifications (3 and 4). The higher are investor protection and law enforcement in a country, the higher is the likelihood that foreigners will invest in privatized firms. Likewise, privatized firms operating in countries with low internal conflicts are more likely to be recipients of foreign investment. The coefficient estimate of the *LATE* variable is positive and significant in one of the two specifications in which it is included. This result suggests that, in conformity with Perotti's (1995) confidence building hypothesis, foreigners are more likely to invest in recently privatized firms. In specification (2), the coefficient estimate of *POLRISK* is significant at the 10% level, suggesting that foreign investors seek countries with low political

uncertainty. Furthermore, the proxy for social inequality (*GINI*) is always negatively and significantly related to the investment decision (three out of four specifications). This result suggests that income inequality in the country deters foreign investors. Corruption (*COR*), an other variable of interest, does not have a significant impact on foreign participation. In the first specification we also control for stock market development but its coefficient estimate is not significant.

By all means, the adequacy of the institutional environment seems to be a critical determinant of the investment decision undertaken by foreigners. [3]

Table 7 also shows that the firm size seems to matter to a foreign investor in his decision to invest. In particular, the firm size is consistently positively and significantly related to the likelihood that a foreign investor chooses to proceed with investment. This result is consistent with the evidence provided in both Kang and Stulz (1997) and Dahlquist and Robertsson (2001) who find that foreign ownership is positively related to size. As sustained by Kang and Stulz (1997), size is a proxy for visibility and recognition to foreign investors.

Finally, and In conformity with previous studies on the foreign direct investment decision, real GDP growth is an important factor in attracting foreign investment and is positively and significantly related to the investment decision in two out of four specifications. This result

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[3] We also consider the degree of human capital development (*HDI*) on the grounds that absorbing and adopting new technologies brought by foreign investors requires workers who have appropriate training and expertise. As a matter of fact, the presence of a well-educated pool of labor has become increasingly attractive for foreign investors (Noorbaksh, Paloni, and Youssouf 2001). However, the coefficient estimate of HDI, probably because this variable is strongly correlated with other explanatory variables, is never significant.

suggests that foreign investors show a preference for privatized firms operating in growing economies.[4]

< Insert Table 7 around here >

Second-stage results. Table 8 reports the results of the estimation of the second-stage equation. The Mills ratio is never significant, and is therefore not included. We note that the maximum ownership allowed to foreigners is never binding. Similarly, profitability is positively related to the extent of foreign ownership but its coefficient estimate is never significant.[5] In contrast, our results suggest that the extent of foreign participation in privatized firms is higher in strategic sectors than in nonstrategic sectors (although the coefficient estimate of this dummy variable is significant only in one specification). Controlling for the privatization characteristics yields interesting results. First, in all four specifications, the method of privatization has a positive and significant impact on the share of foreign ownership (at the 1% level): foreign investors buy larger shares through private sales as opposed to public offerings. Furthermore, control relinquishment by the government has a negative impact on the stake bought by foreign investors, although it is never significant.

To summarize, assuming that the decision to invest in a country conditions foreign ownership, we are able to conclude that, to foreign investors, confidence building by the government in addition to an adequate institutional environment and a growing economy are valuable incentives that make foreign investors more willing to participate in the privatization process.

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[4] Note that none of the specifications include the variable LGDP which has no significant impact on the foreign direct investment decision.

[5] Likewise, the coefficient estimate of the variable leverage (which we do not report) is positive but never significant.

< Insert Table 8 around here>

V. Conclusion

Foreign direct investment in developing countries has recently received a renewed attention as a major determinant of financial development. Indeed, where markets are financially constrained, foreign investment offers a viable financing opportunity assorted with a transfer of technological and managerial know-how. This paper examines the determinants of foreign ownership in developing countries. To do so, we conduct an empirical analysis to determine what factors lead foreign investors into a specific market to invest in privatized firms and what determines the extent of ownership they hold in a particular privatized firm.

Our first-stage estimation yields the following results: Consistent with our prediction, a friendly institutional environment, where minority investors' rights are protected and laws are enforced, conditions foreign participation. Furthermore, social stability plays a significant role in explaining the investment decision. We also find that foreign investors are more likely to invest in privatized firms at the latest stages of the process in line with Perotti's (1995) confidence building hypothesis. Finally, foreign investors are also more likely to participate in larger privatized firms and high growth economies.

Our second-stage estimation shows that, in addition to the quality of the institutional environment, the extent of foreign ownership is larger in firms privatized through private sales.

Our results overall highlight the need for governments to ensure a suitable and favorable institutional environment to attract and benefit from foreign investment. Our sample spans a large number of developing countries but future research could focus on transition economies, which we excluded from our analysis because of their particular institutional framework and their unique privatization experience (generally implemented through vouchers).

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Table 1
Description of the Sample of Newly Privatized Firms in Developing Countries

This table provides some descriptive statistics on the sample of 220 privatized firms from 28 developing countries. We report the distribution of privatizations in the countries included in the sample by year, region, income, legal origin, and industry.

Distribution of Privatizations					
By year			**By region***		
Year	Number	Percentage	Region (countries)	Number	Percentage
1980	1	0.46	North Africa and the Middle East (3)	66	30.00
1981	1	0.46	East and South Asia and the Pacific (8)	43	19.55
1985	4	1.83	Europe and Central Asia (1)	16	7.27
1986	4	1.83	Latin America and the Caribbean (9)	64	29.09
1987	3	1.38	Sub-Saharan Africa (7)	31	14.09
1988	5	2.29	Total (28)	220	100
1989	12	5.50	**By income***		
1990	12	5.50	Category (countries)	Number	Percentage
1991	25	11.47	Low-income Countries (15)	85	38.64
1992	22	10.09	Lower-middle-income Countries (4)	65	29.55
1993	11	5.05	Upper-middle-income Countries (9)	70	31.82
1994	18	8.26	Total (28)	220	100
1995	20	9.17	**By legal origin**		
1996	37	16.06		Number	Percentage
1997	29	13.30	Civil law (19)	170	77.27
1998	11	5.05	Common Law (9)	50	22.73
1999	4	1.83	Total (28)	220	100
2001	1	0.46	**By industry**		
			Agriculture	19	8.64
			Energy	19	8.64
			Financials	53	24.09
			Industrials	29	13.18
			Materials	32	14.55
			Telecom	13	5.91
			Transport	7	3.18
			Utility	24	10.91
			Others	24	10.91
Total	220	100	Total	220	100

* World Bank classification.

Table 2
Ownership Structure of Privatized Firms

This table provides some descriptive statistics on the foreign and government ownership at the time of privatization (end of first year), for a sample of 220 privatized firms from 28 developing countries. The data comes mainly from privatization prospectuses, annual reports and other additional sources such as *Asian, Brazil* and *Mexico Company Handbooks*, *Worldscope Disclosure* and *The Guide to Asian Companies*. In Panel A, we use 200 privatized firms with complete data on foreign ownership stake. In Panel B, we use a sub-sample of 108 firms with strictly positive foreign ownership. All statistics are presented in percent.

Ownership	Mean	Std. Dev.	Minimum	Quartile 1	Median	Quartile 3	Maximum
Panel A. All Firms (N=220)							
Foreign	19.17	29.67	0.00	0.00	1.71	25.00	100.00
Government	36.75	31.91	0.00	1.00	35.22	65.00	95.00
Panel B. Firms with Foreign Ownership (N=108)							
Foreign	35.50	32.44	0.28	9.65	23.45	56.05	100.00
Government	40.30	30.38	0.00	7.50	39.55	64.62	95.00

Table 3
Summary of the Variables

This table describes the variables used to investigate the determinants of foreign investors' participation in the privatizations.

Variable	Definition	Source
Panel A. Institutional Variables		
LAW	Law and order: an assessment of the strength and impartiality of the legal system (law component) and of popular observance of the law (order component)	International Country Risk Guide (ICRG)
COR	Corruption: an assessment of corruption within the political system	As above
IC	Internal conflicts: an assessment of political violence in the country (e.g., armed conflicts, arbitrary violence, civil war) and its actual or potential impact on governance	As above
POLRISK	Political Risk Index: an assessment of the country's political stability	As above
GINI	Gini index: a measure of the dispersion of the income shares across the whole income distribution	UNDR, World Income Inequality Database
HDI	Human Development Index; an assessment of the state of human development (e.g., adult literacy, school enrollment, life expectancy, education)	United Nations Development Program (UNDP), various reports
Panel B. Privatization Process Characteristics		
CONTROL	A dummy variable equals to unity if the privatization implies a relinquishment of control by the government and zero otherwise	Company prospectus and annual reports
METHOD	Privatization method: PS refers to a private sale and PSO refers to a public share offering	World Bank Group's Privatization Transaction Database
LATE	A dummy variable equals to unity if the privatization occurs in a relatively late period (according to the country median date of all privatizations) and zero otherwise	Authors' calculation based on the World Bank Group's Privatization Transaction Database
Panel C. Country - and Firm -Specific Control Variables		
GDPG	Real GDP growth one year before privatization	World Development Indicators
LGDP	Logarithm of GDP (constant 1995 $)	As above
FORMAX	Maximum foreign ownership allowed in the country	IFC, Price Waterhouse
TURNOVER	Stock market turnover: the total value of shares traded during the period divided by the average market capitalization for the period	World Development Indicators
ROS	Three-year pre-privatization average return on sales.	Company prospectus and annual reports
SALEFF	Three-year pre-privatization average sales efficiency (real sales/number of employees)	As above
TDTA	Three-year pre-privatization average total debt to total assets	As above

SALES	Total sales as of the time of privatization (in $ 000)	As above
LISSUE	The logarithm of the size of the privatization issue	Company prospectus and World Bank Group's Privatization Transaction Database
STRATEGIC	A dummy variable equal to unity if the firm belongs to a strategic industry (i.e., energy, utilities, telecommunications, financials, transportations) and zero otherwise	World Bank Group's Privatization Transaction Database

Table 4
Correlation Matrix: Country-Specific Institutional and Control Variables

This table presents the correlation between the country-specific institutional and control variables. The definitions of the variables are presented in Table 3. We exclude observations with missing values from the analysis.

	Mean (St. Dev.)	POLRISK	COR	IC	HDI	GINI	LAW	TURNOVER	GDPG	LGDP
POLRISK	59.014 (9.542)	1.000								
COR	2.888 (0.701)	0.778	1.000							
IC	7.799 (2.113)	0.842	0.665	1.000						
HDI	0.633 (0.112)	0.355	0.460	0.181	1.000					
GINI	41.572 (9.640)	-0.130	0.078	-0.211	0.561	1.000				
LAW	2.978 (1.153)	0.780	0.657	0.763	0.370	-0.240	1.000			
TURNOVER	0.302 (0.273)	0.108	0.167	-0.117	0.523	0.369	0.330	1.000		
GDPG	5.132 (3.114)	-0.201	-0.251	-0.058	-0.183	-0.007	-0.285	-0.022	1.000	
LGDP	25.225 (0.946)	0.190	0.200	-0.001	0.569	0.439	0.282	0.606	-0.324	1.000

Table 5
Country and Firm Characteristics

This table compares country and firm characteristics for privatized firms without versus those with foreign ownership. Panel A includes country-specific characteristics and Panel B includes firm-specific characteristics. N refers to the number of observations. The last column reports the *p*-value of the test for difference in medians. The definitions of the variables are presented in Table 3. *, ** and *** Significant at the 10 percent, 5 percent and 1 percent level, respectively.

| | Firms with versus without Foreign Ownership | | | | | | Test for Difference in |
| | Without | | | With | | | |
	N	Mean	Median	N	Mean	Median	Median
Panel A. Institutional Characteristics							
POLRISK	96	57.854	62.151	106	62.500	63.000	0.145
COR	98	2.857	3.000	117	2.966	3.000	0.228
IC	98	7.816	8.000	117	8.598	9.000	0.004***
HDI	99	42.296	41.010	116	41.007	39.145	0.188
GINI	77	1.764	1.600	69	1.741	1.600	0.087*
LAW	98	3.541	3.000	117	3.821	4.000	<.0001***
TURNOVER	90	0.270	0.217	101	0.365	0.247	0.022**
Panel B. Firm Characteristics							
ROS	97	0.089	0.061	117	0.107	0.070	0.608
SALEFF	64	1.021	0.949	99	0.978	0.962	0.778
TDTA	69	0.457	0.428	97	0.370	0.324	0.045**
SALES	95	1466706	120190	115	1041515	190847	0.027**
ISSUE (in $ 000)	87	195379	19200	90	380.379	90.550	0.000***

Table 6
Privatization Characteristics

This table compares foreign ownership stakes for the various sub-samples of privatized firms based on the characteristics of the privatization process. Panel A reports the results for control (firms privatized by more than 50%) versus revenue privatizations (firms privatized by less than or equal to 50%). Panel B reports the results for privatizations through private sales (PS) versus those through public share offerings (PSO). Panel C presents the results for early versus late privatizations. Panel D compares strategic versus non-strategic industries. Panel E presents the results according to whether foreign ownership is restricted or not. Information on foreign ownership restrictions is mainly from Brennan and Cao (1997) and various issues of Emerging Stock Markets Factbook. N refers to the number of observations. The last column reports the p-value of the test for difference in medians. The definitions of the variables are presented in Table 3. *, ** and *** Significant at the 10 percent, 5 percent and 1 percent level, respectively.

	Total Sample			Test for Difference in
	N	Mean	Median	Medians
Panel A. Control versus Revenue				
Control	112	0.201	0.014	0.763
Revenue	76	0.175	0.044	
Panel B. Privatization Method				
PS	47	0.296	0.112	0.001***
POS	82	0.115	0.013	
Panel C. Early versus Late privatization				
Early	105	0.144	0.000	0.002***
Late	95	0.244	0.112	
Panel D. Strategic versus non-Strategic Industry				
Strategic	52	0.2574	0.1165	0.089*
Non- Strategic	148	0.1686	0.000	
Panel E. Foreign Restriction				
RESTRICT	94	0.207	0.007	0.753
NO-RESTRICT	104	0.176	0.037	

Table 7
Determinants of Foreign Investor Participation in Privatizations: First-Stage Results

This table presents the first stage estimates (using Heckman's (1979) two step procedure) of the determinants of foreign investor participation in privatizations. Four specifications are reported: Each contains the coefficient estimates for the first stage model, which is a probit model that determines when the dependent variable in the second stage is nonmissing (the dependent variable equals 1 if there is foreign participation in the privatized firm and 0 otherwise). *p*-values are in parentheses below the estimated coefficients. LR reported at the bottom of the table is the likelihood-ratio test which compares the joint likelihood of and independent probit model for the first-stage model and a regression model on the observed foreign ownership data against the Heckman model likelihood. The definitions of the variables are presented in Table 3. *, ** and *** Significant at the 10 percent, 5 percent and 1 percent level, respectively.

	(1)	(2)	(3)	(4)
IC				0.179**
				(0.011)
LAW			0.436***	
			(0.002)	
POLRISK		0.029*		
		(0.051)		
TURNOVER	0.646			
	(0.223)			
COR	0.134			
	(0.513)			
LATE	0.564**		0.311	
	(0.050)		(0.286)	
GINI	-0.051***	-0.030**	-0.019	-0.024*
	(0.000)	(0.022)	(0.213)	(0.077)
GDPG	0.061	0.058	0.109***	0.076**
	(0.112)	(0.124)	(0.008)	(0.050)
LISSUE	0.181***	0.182***	0.145**	0.196***
	(0.007)	(0.008)	(0.033)	(0.002)
INTERCEPT	0.185	-1.734	-2.000**	-1.798*
	(0.831)	(0.107)	(0.035)	(0.069)
LR	25.86***	23.21***	35.64***	27.91***
p	0.00	0.00	0.00	0.00
Log likelihood	-79.21	-77.40	-74.85	-78.71
N (N with positive foreign ownership)	136 (56)	133 (52)	137 (56)	137 (56)

Table 8
Determinants of Foreign Investor Participation in Privatizations: Second-Stage Results

This table presents the second-stage estimates (using Heckman's (1979) two-step procedure) of the determinants of foreign investor participation in privatizations. The second-stage results of the four specifications in Table 7 are reported: The dependent variable is the stake of foreign ownership. p-values are in parentheses below the estimated coefficients. The reported Wald test of all coefficients in the Heckman model being zero excludes the constant. The definitions of the variables are presented in Table 3. *, ** and *** Significant at the 10 percent, 5 percent and 1 percent level, respectively.

	(1)	(2)	(3)	(4)
CONTROL	-0.053	-0.066	-0.064	-0.065
	(0.446)	(0.374)	(0.368)	(0.372)
FORMAX	-0.022	0.037	0.003	0.036
	(0.845)	(0.751)	(0.978)	(0.743)
STRATEGIC	0.130*	0.107	0.097	0.094
	(0.093)	(0.190)	(0.191)	(0.241)
LATE	-0.141	-0.075	-0.113	-0.084
	(0.115)	(0.379)	(0.162)	(0.257)
PS	0.451***	0.412***	0.433***	0.391***
	(0.000)	(0.000)	(0.000)	(0.000)
ROS	0.038	0.072	0.051	0.039
	(0.816)	(0.679)	(0.761)	(0.818)
LISSUE	-0.024	-0.019	-0.015	-0.010
	(0.301)	(0.458)	(0.483)	(0.653)
INTERCEPT	0.507**	0.341	0.359*	0.248
	(0.023)	(0.154)	(0.055)	(0.197)
Wald chi^2	46.50***	29.9***	33.03***	32.26***
Prob > chi^2	0.00	0.00	0.00	0.00
N	56	52	56	56