The Choice of Private Versus Public Capital Markets: Evidence from Privatizations

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ABSTRACT

We examine the impact of political, institutional, and economic factors on the choice between selling a state-owned enterprise in the public capital market through a share issue privatization (SIP) and selling it in the private capital market in an asset sale. SIPs are more likely in less developed capital markets, for more profitable state-owned enterprises, and where there are more protections of minority shareholders. Asset sales are more likely when there is less state control of the economy and when the firm is smaller. Our results suggest the importance of privatization activities in developing the equity markets of privatizing countries.

IN THE LATE 1970s, the Thatcher government of Great Britain coined the term privatization, meaning the sale of state-owned enterprises (SOEs) to private investors. Since then, the growth of privatization programs throughout the world has been phenomenal. This change in ownership has greatly reduced

the role of the state in many national economies. In this paper, we examine the impact of political, institutional, and economic factors that affect the choice between selling the SOE in the public capital market through a share issue privatization (SIP) and selling it in the private capital market to a relatively small group of buyers in an asset sale.

This paper contributes to the growing literature on the importance of a country's institutional characteristics and corporate governance system to the workings of its capital markets. Typically, the choice of whether to use the public capital market or the private capital market is based on where the seller (in this case, the government) can receive the best price. The pricing is, in turn, a function of the characteristics of the firm and the investors, and the structure of the capital markets, including the corporate governance system. We examine the impact of all these factors on the choices made by governments between public and private capital markets in privatizing SOEs.[1]

There is an additional factor in our study however that is unique to privatizing governments. Commentators have suggested that privatization by share offerings can be an important tool for governments in developing their public equity markets. Specifically, by choosing a share issue privatization, governments may willingly sacrifice some revenue to enhance market liquidity and broaden equity ownership. Thus, we also consider how governments use the sale of an SOE as a tool to develop a capital market.

We hypothesize that the choice between using private or public capital markets in privatizations is influenced by three types of economic, political, and institutional factors—market considerations, the political and legal environment, and firm-specific characteristics. In the first category, we find that the choice of privatizing via a share offering is more likely when the country's capital markets are less developed and when the level of income equality is greater. Our finding that SIPs tend to be used in countries with less-developed stock markets suggests that governments explicitly try to use SIPs as a means to develop their capital markets. The finding that SIPs are more likely when income equality is higher supports the theoretical prediction by Biais and Perotti (2002) that SIPs would be more expensive in countries with greater income inequality, since governments would have to underprice share offerings by larger amounts. Additionally, we find that SIPs are more likely in hot markets, consistent with much of the IPO literature.

Our findings also support the importance of the political and legal environment in the choice of whether to privatize through an SIP or an asset sale. We find that an SOE is more likely to be sold in an asset sale the less there is state control of the economy. This result suggests that investors are more willing to make the substantial investment of purchasing an SOE through an asset sale when they perceive a favorable political environment that protects property

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[1] Megginson and Netter (2001) and Djankov and Murrell (2002) provide comprehensive surveys of the extensive literature that has been developed around the privatization phenomenon. Our paper adds to this literature by highlighting the factors influencing an important choice made by privatizing governments.

rights. We also find that SIPs are more likely when there is a stronger legal tradition and greater protection of shareholder rights and minority interests. This is consistent with much of the recent literature examining the impacts of differing legal systems on financial markets (see Denis and McConnell (2003) for a review of this literature).

As expected, firm-specific characteristics such as the size of the firm and its profitability impact the privatization decision. The larger the SOE, the more likely it is to be sold through an SIP, suggesting that SIPs are more expensive for smaller firms where information costs are higher. Also, SIPs may be the only practical means of privatizing the larger SOEs in countries with less developed capital markets and few large public firms, since it may be difficult for private firms or small groups of private investors to raise enough capital to directly purchase the largest enterprises. Additionally, we find some evidence that more profitable firms are more likely to be privatized through an SIP, a strategy consistent with building popular support for privatization programs, since SIPs frequently involve millions of individual domestic shareholders. However, our profitability data are limited.

Our study contributes generally to our understanding of financial markets and the factors that determine the choice between raising capital in public versus private capital markets, whether for the privatization activity of a government or the sale of a private firm through an initial public offering or an asset selloff. It also contributes to our understanding of the impact of an important government policy (privatization) on the development of capital markets.

The paper is organized as follows. Section I provides an overview of the types of privatization techniques. Section II identifies economic and political characteristics that affect the choice of privatization technique and offers predictions about the relation between these factors and the government's choice of privatization method. In this section, we also review the proxies that measure the economic and political characteristics in each country. Section III describes the empirical analysis and results, and Section IV summarizes and concludes.

I. Privatization Techniques

Governments usually choose one of three techniques to privatize: asset sales, share issue privatizations, or voucher privatizations. With an asset sale, the government sells ownership of the SOE to an existing private firm or to a small group of investors. This is similar to the traditional use of the private capital market in non-SOE transactions. The government may sell a fraction or all of the SOE through an asset sale. Typically, these asset sales are implemented through an auction, although governments sometimes sell SOEs directly to private investors. Lopez-de-Silanes (1997) and La Porta and Lopez-de-Silanes (1999) describe a very important national privatization program (Mexico) that relied almost exclusively on asset sales.

In share issue privatizations (SIPs), the privatizing government sells equity shares in the public capital market both to retail and institutional investors. SIPs are the largest and most economically significant of all privatizations,

and account for the preponderance of the value of assets privatized outside communist and formerly communist countries. Jones et al. (1999) report that through 1997, governments in 59 countries raised over \$446 billion through 630 SIP transactions.

Formerly communist Eastern European nations such as Russia, Poland, and the Czech Republic have primarily used voucher privatizations. Voucher privatizations are similar to SIPs, in which shares of ownership are distributed broadly. However, in this method of privatization, the government distributes vouchers (paper claims that are exchanged for ownership in previously state-owned firms) to each citizen. These vouchers are usually free or very low in price and are available to most citizens. Thus, voucher privatizations result in assets virtually being given to citizens. In a sense, they are SIPs offered at a very low price.

We exclude voucher privatizations from our analysis for several reasons. Boycko, Shleifer, and Vishny (1994), for example, discuss the fundamental differences between the formerly communist countries (now referred to as transition economies) and the rest of the world. Low income levels characterize the transition countries, and income is also distributed very unequally. In addition, the transition countries had huge amounts of assets to be quickly privatized. SIPs were politically unacceptable in Eastern Europe because the only individuals with the wealth to acquire shares were generally viewed as communists, criminals, or foreigners. Thus, the only viable way to privatize and maintain significant domestic ownership was perceived to be through voucher distributions. In addition, during this period, the transition countries were undergoing dramatic changes in their political and economic processes that would be difficult to capture in our empirical tests. Perhaps the best evidence that it would be inappropriate to include the transition countries in our general analysis is that there simply are no voucher distribution plans outside these formerly communist countries, indicating that the communist countries are fundamentally different from the rest of the world. Data availability is also very limited for the voucher distributions in transition countries.[2]

II. Economic and Political Determinants of the Method of Privatization

When determining the method of privatizing SOEs, a government considers numerous factors, including characteristics of the markets and the potential investors, the institutional environment, and the firm itself, as well as considering its own political objectives. Previous research has documented the importance of these factors in the development of financial markets in general, including

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[2] In a more complete analysis, we would include not only the privatizations from former communist countries, but also every decision by a government whether or not to privatize an SOE. However, the limitations of data and the difficulty of modeling every political environment preclude this alternative. Our analysis provides significant information about the SIP versus asset sale decision in noncommunist countries.

Stulz (2000), Demirguc-Kunt and Maksimovic (1999), Lieberman and Kirkness (1998), La Porta et al. (1997, 1998), and Levine (1997). The following section describes economic and political characteristics that may influence the choice of a particular method of sale in a privatization. Several of these factors may influence the choice of privatization method in ways that are difficult to predict ex ante. We recognize this uncertainty by stating alternative hypotheses where appropriate and seek to clarify ambiguities through our empirical analysis.

A. Market Considerations

The overall degree of development of the privatizing country's capital market can affect how a government privatizes an SOE. If the domestic capital market is relatively primitive, it is difficult for share issue privatizations to succeed, in part because it is hard to find buyers. Dewenter and Malatesta (1997) report that countries with less-developed capital markets find it more costly to use SIPs (generally due to greater required underpricing). A government's desire to promote wider equity ownership by significantly underpricing shares and the greater uncertainty regarding the SOE's intrinsic value (because of fewer comparable firms or fewer analysts) in lesser-developed markets are factors that influence these costs. Because of the higher costs of using the public capital markets, governments may favor privatizing by asset sales in less-developed capital markets in order to maximize sale proceeds.

Alternatively, governments may be willing to sacrifice some of the proceeds from the transaction and instead use the more costly SIPs in an effort to spur the growth of fledgling financial markets. Perotti and Oijen (2001), Subrahmanyam and Titman (1999), McLindon (1996), and Kleiman and Morrissey (1994) note that privatization through SIPs can jump-start stock market development and trigger gains in economic growth and efficiency.[3] Specifically, Subrahmanyam and Titman, and McLindon describe how SIPs can initiate a snowball effect. That is, as new firms go public, the enhanced liquidity and efficiency encourage more firms to go public, and the capital market experiences rapid growth. The benefits from the SIPs' creation of often millions of new, tradeable securities should be especially pronounced in emerging or less-developed equity markets. The following statement from a World Bank report emphasizes this effect:

> A carefully structured and well-articulated program for privatizing major state-owned entities, combined with efforts to establish a suitable regulatory and legislative framework, can give a stock market the needed boost in size and quality. In some cases a single privatization—say, of the national telecommunications operator—can have this effect, creating a base of domestic retail investors, encouraging the establishment of domestic

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[3] Wurgler (2000), Beck, Levine, and Loayza (2000), Rousseau and Wachtel (2000), Subrahmanyam and Titman (1999), Rajan and Zingales (1998), Dow and Gorton (1997), Levine (1997), and Atje and Jovanovic (1993) also analyze the relationship between the development of a nation's financial market and greater economic efficiency and growth.

investment institutions, and attracting foreign portfolio investors to the country for the first time (Lieberman and Fergusson (1998), p. 9).

Overall, governments can use SIPs to spur the development of the local capital market. However, as previously noted, large SIPs might not be efficient (or even possible) in less-developed equity markets. Thus, the relation between capital market development and choice of privatization technique is ambiguous. We do note however that the statements of politicians at the announcement of major privatizations or privatization programs often emphasize the importance of SIPs in the development of capital markets.[4]

The current level of market valuation may be an additional critical factor in a government's choice of privatization method. Just as a private firm attempts to time the market with its IPO, a government might be more likely to privatize by SIP during periods of high valuations or hot markets and to choose an asset sale during periods of depressed stock valuations. Loughran, Ritter, and Rydqvist (1994) present evidence for market timing by private firms. In their multicountry analysis, they find a positive correlation between the volume of IPO activity and the level of the stock market. We follow Loughran, Ritter, and Rydqvist and measure the level of each nation's stock market with its inflation-adjusted market index. Finding a positive relation between the overall market valuation and a government's use of SIPs would support the hypothesis that governments time their SIPs in a way similar to private firms.

B. Political and Legal Environment and the Protection of Investor Rights

The government's protection of private property rights (from itself and from other parties) and the long-term viability of contractual commitments are expected to have an important impact on privatization policy in general and on the method chosen to privatize assets in particular. There is an extensive literature that relates measures of the political and legal environment to economic development and growth.[5] We follow this literature and introduce several proxies for the political and legal environment into our empirical analysis.

We first consider the economic orientation of the government. To gauge a government's commitment to less control over economic activity, we observe the economic policy preferences of each nation's governing party. Beck et al. (2001) identify the economic orientation of each country's ruling government, classifying right-wing governments (conservative, Christian democratic, or rightist parties) as those that favor less state control over the economy and classifying

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[4] Several policymakers indicated directly to us that market development was an extremely important consideration in the privatization decision. For example, one member of the OECD's Privatization Working Group wrote us, "[T]he objective of privatizations had nothing to do with raising money for the budget, but solely for broadening the capitalistic base, getting people to become shareholders and private owners . . . . [I]n other words, the objective was purely political to foster market economy and thus democracy."

[5] See, for example, Knack and Keefer (1995), La Porta et al. (1997, 1998, 1999, and 2002), Henisz (2000), Beck et al. (2001), and Dyck and Zingales (2002). Denis and McConnell (2003) provide a review of this evidence.

left-wing governments (communist, socialist, or leftist parties) as those that prefer more state control. We expect to find a positive relation between the right-wing variable and the use of asset sales, since investors would only be willing to make the substantial investment required in an asset sale if the government is less intrusive in economic issues.

In addition to its stated economic orientation, a government's overall stability may also impact the investor's perception of a nation's commitment to policy. Clague et al. (1996) note that many governments (especially those established in turbulent political environments) may lack the power to protect property and contract rights. The government must have the strength and stability to enforce the rights of private investors. Our stability variable measures the government's ability to stay in office and carry out its declared programs. We expect to find a greater use of asset sales by more stable governments.

A developing literature also emphasizes the importance of the legal and political environment in determining the characteristics of financial markets within a country. These same considerations are important to the privatization decision. For example, La Porta et al. (1997, 1998, 1999, and 2002) show that countries with stronger protection for minority shareholders have a higher valuation of public firms, and that the concentration of ownership of shares in the largest public companies is negatively related to investor protections. Dyck and Zingales (2002) find that private benefits of control are lower in countries where stronger institutional curbs control owners. Thus, since the investors in SIPs would be predominantly small shareholders, we would expect more SIPs in countries providing stronger legal and political protections for minority positions.

C. Firm-Specific Characteristics

The choice of privatization method is also affected by factors similar to those faced by any firm that must decide whether to use the public or private capital markets to raise funds. As with private firms seeking external funding, a government must consider the amount of uncertainty regarding the value of the SOE prior to selecting the privatization method. Several studies have examined how information asymmetry affects the way a private firm raises capital. Hertzel and Smith (1993) find that private placements are often sold at a discount and argue that the discounts result from costs that investors incur in assessing firm value in private placements. Slovin, Sushka, and Ferraro (1995) analyze the choice between the use of public and private capital markets in restructuring. They compare carve-outs (IPOs of a subsidiary's equity in the public market), spin-offs (pro rata stock dividends), and asset selloffs (sales of subsidiaries to third parties in the private market). They argue that firms use equity carve-outs "when outside investors are likely to price the unit's equity favorably relative to managers' perceived value" (p. 91) and that they use asset selloffs when it is more difficult to value the unit. In analyzing the choice between privately and publicly placed debt, Diamond (1991), Rajan (1992), Chemmanur and Fulghieri (1994), Houston and James (1996), and Repullo

and Suarez (1998) also stress the role of information costs and strategic behavior. Thus, privatizing governments should consider the degree of information asymmetry about the value of the asset to be privatized in choosing the optimal privatization method and should be more likely to use private sales (i.e., asset sales) when it is more difficult to value the enterprise.

The expected post divestment performance of the SOE may also influence the government's choice of privatization technique. Particularly with early privatizations, governments stake a great deal of reputational capital on the economic success of the newly privatized firms. Dewenter and Malatesta (1997), Alexandrowicz (1994), and Megginson, Nash, and Van Randenborgh (1994) argue that the public's perception of the newly privatized firm's performance is important to the success or failure of the privatization program. Most important, the early privatizations must be financially successful to build credibility for the government and encourage investors to participate in subsequent privatizations. Share issue privatizations involve the greatest amount of risk, because the sales are frequently preceded by extensive promotional campaigns and often create thousands of small, first-time shareholders.[6] Alternatively, asset sales involve fewer investors and much less public scrutiny. As a result, the SOEs that are expected to perform well should be divested by SIPs, while SOEs with a more questionable future should be privatized by asset sale.

An SOE's industry may also affect whether a government privatizes through an SIP or an asset sale. Manzetti (1994) notes that governments are sometimes hesitant to privatize firms of strategic importance. Industries such as defense, transportation, and energy could be of such strategic significance that foreign ownership may be unacceptable. If one of these strategic firms were to be privatized, governments might wish to control the investor who became the new owner. Lopez-de-Silanes (1997) reports that asset sales give governments greater discretion over the type of participant in the privatization (e.g., the nationality of the potential investor) and the terms of the purchase (e.g., the period of mandatory ownership, future capital investment commitments, etc.). Therefore, governments may be more likely to privatize strategic firms through asset sales. Manzetti reports a general consensus that steel, telecommunications, aviation, mining, mail service, electricity, oil, petrochemicals, banking, nuclear energy, rail transportation, and military-related production are strategically important industries. We include an indicator variable that takes the value of one if the SOE is in a strategic industry.

III. Empirical Results

In our analysis of the choice of privatization method, our goal is to have a complete set of privatizations to avoid sample selection bias. A potential source

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[6] The German government's privatization of VEBA provides a graphic example of this risk. As part of the earliest large-scale, ideologically motivated "denationalization" program, the government of Konrad Adenauer privatized a portion of VEBA through an SIP in 1965. This SIP created hundreds of thousands of new shareholders. A significant decline in VEBA's share price prompted a governmental rescue effort aimed at protecting small investors. Following this economic and political debacle, the German government waited another 20 years before its next SIP.

of sample selection bias is the fact that SIPs, which take place in public capital markets, are more likely to be reported than asset sales to private parties. While we cannot totally eliminate this bias, we believe we have constructed as complete a list of privatizations as possible. In addition, there are many potential problems with cross-sectional analysis of firm and market characteristics across many countries, including lack of data, inconsistent data, and multicollinearity. We attempt to derive robust results by using different subsamples, different explanatory variables that proxy for the same characteristics, and econometric techniques that control for correlation in error terms resulting from unmeasured country-specific characteristics.

We draw our sample of SOEs (privatized from 1977 through 2000) from two principal sources. The first source is Privatisation International, a proprietary database that attempts to include privatizations from all nations (emerging and developed) from 1977 to 2000. We identify most of the privatizations in our sample from Privatisation International. This database is especially good at identifying large privatizations and privatizations in developed countries, but is less comprehensive in identifying them in emerging markets. We also obtained the World Bank Privatisation database. While there is considerable overlap in the two databases, we added a significant number of privatizations in emerging markets by using the World Bank database.

From Privatisation International, we obtain the offer type (SIP or asset sale), offer size (in US $), and percent of capital sold. Privatisation International also describes the terms of the transaction and identifies the purchaser. The World Bank data report information on the offer type, offer size, and percent of capital sold but is not as complete on information about the terms of the transaction and the identity of the purchaser.[7]

To verify the completeness of our data and to develop a more complete picture of how individual national stock exchanges were influenced by privatizations, we solicited information and data directly from the members of the International Federation of Stock Exchanges (FIBV). We also solicited information about national privatization programs directly from members of the OECD's Privatization Working Group. Additionally, we contacted the relevant privatization agency in every nation in our sample, asking them for a list of privatizations, both SIPs and asset sales, within their countries. We received responses from more than two-thirds of our sample countries. These reports confirmed that we had already obtained information on essentially all the privatizations in each nation that responded to our request.[8]

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[7] In the regression analysis, we note that there are more data availability problems for emerging markets countries.

[8] We thank the following people (exchanges) for providing especially useful additional information: Greg Wojciechowski (Bermuda Stock Exchange); Angeles Hewett, Claudio Pacheco, and Eduardo Trigueros (Bolsa Mexicana de Valores); Juliana Bruns (Bolsa de Sao Paulo); Rajeeva Bandaranyake (Colombo Stock Exchange); Paul Erik Skanning (Copenhagen Stock Exchange); Dirk Schlochtermeyer and Stefan Seip (Deutsche Borse); Huve Allard and Martine Charbonnier (Euronext-Paris); Vanessa Yeung (Hong Kong Stock Exchange); Tom Healy (Irish Stock Exchange); Kgosi Monaisa (Johannesburg Stock Exchange); Raoul Bertemes (Luxembourg Stock Exchange); Alfred Mallia (Malta Stock Exchange); Vegard Annweiler (Oslo Stock Exchange);

Table I
Summary Statistics for Privatizations

Shown here are summary data for privatizations of state-owned enterprises from 1977 to 2000, excluding communist and formerly communist countries. Median values are in parentheses. We convert values to U.S. dollars as of the time of the privatization. Data are from Privatisation International and the World Bank.

	Full Sample	SIPs	Asset Sales
Number of privatizations	2457	931	1526
Number of countries	108	78	96
Average (median)	59.3%	34.9%	74.2%
% of enterprise sold in privatization	(55%)	(25%)	(90%)
Average (median)	482.8	798.9	290.0
Amount of offering in US $ million	(45)	(105)	(30.3)
Average (median)	2163.3	4653.4	644.1
Value of total enterprise in US $ million	(102)	(477)	(44.9)
Total value of all offerings in US $ million	1,186,284	743,762	442,522

An additional verification of the completeness of our sample comes from the OECD. The OECD compiled a breakdown of gross privatization proceeds during the 1990s for 25 countries from each country's national statistics. Our sample includes 95% of the proceeds reported by the 25 governments. The remaining 5% primarily represents the proceeds from privatizations implemented through convertible debt offerings, concessions, management buyouts, or methods other than SIPs or asset sales.

A. Descriptive Information

Table I presents an overview of the sample. After excluding communist and formerly communist countries, we identify 2,457 privatizations from the Privatisation International ($n = 1,618$) and World Bank ($n = 839$) databases from 1977 through 2000. Of the 2,457 transactions, 931 are SIPs and 1,526 are asset sales.[9] The 108 countries represented in the data raised $1.2 trillion through these privatizations, with $744 billion coming through SIPs in 78 different

[9] Since we are analyzing the choice between selling part or all of an SOE through the private and the public capital markets, the SIP data include both initial and seasoned offers. All of the reported results are similar if we analyze the initial offers of the SOEs alone.

countries and $443 billion coming through asset sales in 96 countries. The table highlights two important differences between SIPs and asset sales. First, the SIPs are substantially larger transactions than the asset sales. The average SIP generates $799 million (median of $105 million), whereas asset sales have average proceeds of $290 million (median of $30 million). Also, governments privatize smaller portions of SOEs through SIPs. In the average SIP, governments sell 35% of the SOE's capital. The average asset sale privatizes 74% of the SOE, with a median value of 90%. This difference in the percentage of capital privatized supports the contention that governments are more likely to relinquish majority ownership through asset sales. Furthermore, governments may use an SIP to privatize only a portion of the SOE simply because the immense size of many SOEs precludes a larger sale. (The average enterprise value is more than $4.6 billion in SIPs versus $644 million in asset sales.) This is especially true given the usual political constraint that significant portions of a privatization sale must go to domestic investors (see, e.g., Jones et al. (1999)).

In Table II, we provide details about the sample based on the time period in which the privatization occurred (Panel A) and the area of the world in which the privatization occurred (Panel B). Most of the privatizations in our sample occurred after 1990, with 2,215 of the 2,457 transactions and $986 billion of the total $1.2 trillion occurring in this period. Table II also illustrates that the average (median) SIP is larger than the average (median) asset sale in the same time period. However, asset sales have become larger and more numerous over time. Prior to 1991, asset sales accounted for 36% of the number of privatization transactions and 12% of the value of assets privatized. Beginning in 1991, these numbers changed dramatically. From 1991 to 1995, asset sales accounted for 64% of the number of transactions and 37% of the value of privatized assets. The relative importance of asset sales increased even more from 1996 to 2000, accounting for 66% of the number of transactions and 45% of the total value.

As shown in Panel B, 55% of the value and 30% of the number of the privatizations are from Western Europe. Privatizations in Asia and Australia account for 26% of the transactions in value (18% in number) while Central and South America (12% in value, 22% in number) and North America (5% in value, 5% in number) also contribute significantly to the overall total. The Middle East and Africa have smaller transactions. Most of the SIPs are in Western Europe (59% of the value), and in Asia and Australia (34% of value), while asset sales are distributed primarily across Western Europe (50% in value) and South America (27% in value).

Table III reports the distribution of privatizations by industry classification. When we consider the dollar value of all privatizations, telecommunications firms represent the largest fraction of the dollar value of assets sold (41% of the total in our sample). However, the 183 telecommunications offerings represent only 7.4% of the number of transactions, illustrating the large size of the telecommunications SOEs. The average telecommunications offering is $2.66 billion and the median size is $700 million. The manufacturing,

Table II

Summary Statistics for Privatizations by Period and Region

Shown here are summary data for privatizations of state-owned enterprises from 1977 to 2000, excluding communist and formerly communist countries. Median values are in parentheses. Data are from Privatisation International and the World Bank. Values are in U.S. $ million as of the time of privatization.

	All Privatizations				SIPs				Asset Sales			
	N	Average Value of Offering (Median)	Total Value of Offers	Value as % of Total	N	Average Value of Offering (Median)	Total Value of Offers	Value as % of Total	N	Average Value of Offering (Median)	Total Value of Offers	Value as % of Total
Panel A: Time period												
1977–1985	30	565.1 (200)	16954	1.4	20	811.3 (460)	16225	2.2	10	72.9 (64)	729	0.2
1986–1990	212	863.3 (81)	183026	15.4	136	1179.1 (97)	160364	21.5	76	298.2 (65)	22662	5.1
1991–1995	1104	256.2 (28)	282887	23.9	396	449.8 (60)	178110	24.0	708	148.0 (19)	104777	23.7
1996–2000	1111	633.1 (60.4)	703417	59.3	379	1026.6 (123)	389063	52.3	732	429.4 (41.5)	314354	71.0
Total	2457	482.8 (45)	1186284	100%	931	798.9 (105)	743762	100%	1526	290.0 (30.3)	442522	100%
Panel B: Region												
Western Europe	734	894.5 (177.5)	656586	55.3	348	1253.2 (450)	436126	58.6	386	571.1 (65)	220460	49.8
Asia/Australia	435	697.1 (71)	303255	25.6	237	1065.0 (98.3)	252405	33.9	198	256.8 (42)	50850	11.5
Mid East/North Africa	298	64.9 (21.5)	19349	1.6	161	63.0 (26.3)	10144	1.4	137	67.2 (17)	9205	2.1
Africa	329	24.5 (1.7)	8072	0.7	72	41.1 (3.0)	2958	0.4	257	19.9 (1.2)	5114	1.2
North America	114	495.0 (195)	56433	4.8	42	496.6 (206.2)	20858	2.8	72	494.1 (175.5)	35575	8.0
Central/South America	547	260.7 (34.4)	142589	12.0	71	299.6 (74)	21271	2.9	476	254.9 (30)	121318	27.4
Total	2457	482.8 (45)	1186284	100%	931	798.9 (105)	743762	100%	1526	290.0 (30.3)	442522	100%

Table III
Summary Statistics for Privatizations by Industry

Shown here are summary data for privatizations of state-owned enterprises from 1977 to 2000, excluding communist and formerly communist countries. Median values are in parentheses. Data are from Privatisation International and the World Bank. Values are in U.S. $ million as of the time of the privatization.

Industry	All Privatizations			SIPs			Asset Sales			Comparison of SIPs to All Privatizations	
	N	Average Value of Offering (Median)	Industry Value as % of Total	N	Average Value of Offering (Median)	Industry Value as % of Total	N	Average Value of Offering (Median)	Industry Value as % of Total	Ratio of SIPs to All Privatizations in Industry, by N	Ratio of SIPs to All Privatizations in Industry, by Value
Telecommunications	183	2658.2 (700)	41.0	108	3171.1 (960)	46.0	75	1919.6 (546)	32.5	0.590	0.704
Financial	324	456.9 (151)	12.5	160	508.5 (181.5)	11.0	164	406.7 (142.4)	15.1	0.494	0.550
Transportation	228	298.5 (40)	5.7	67	743.4 (130)	6.7	161	113.4 (31)	4.1	0.294	0.732
Utilities	305	635.5 (216)	16.4	92	1059.1 (470)	13.1	213	452.5 (180)	21.8	0.302	0.503
Manufacturing, mining, and service	1377	202.8 (14.4)	23.5	486	340.6 (32.4)	22.2	891	127.7 (8.1)	25.7	0.353	0.593
Other	40	265.4 (22)	0.9	18	397.1 (8.6)	1.0	22	157.6 (54)	0.8	0.450	0.673
Total	2457	482.8 (45)	100%	931	798.9 (105)	100%	1526	290.0 (30.3)	100%	0.379	0.627

mining, and service industries account for 23.5% of the dollar value of the privatized assets and for 56% of the number of transactions, with an average size of $203 million (median of $14 million).

Table III also differentiates between privatization choices by SIPs versus asset sales according to industry. As with the overall sample, telecommunication firms predominate in terms of value for both SIPs (46% of assets sold) and asset sales (32.5% of assets sold). The distribution of the other industries between SIPs and asset sales is very similar to the distribution for the combined sample. The last two columns of Table III indicate the ratio of SIPs to all privatizations when compared by the number of transactions and by the value of all transactions. SIPs account for 38% of all firms privatized by number, and are a majority (based on the number of the transactions) only in the telecommunications industry. However, when considering the value of transactions, SIPs represent more than half of the assets privatized in every industry.

B. Regression Analysis

In Table IV, we report logistic regressions that explain the choice of method for privatizations from 1977 through 2000. We exclude offerings for less than US $1 million from our analysis, decreasing the overall sample size from 2,457 to 2,183 observations. We find no significant differences if these smaller transactions are included, but they are characterized by more missing data. Other observations are eliminated from the regressions because of missing values, including 391 observations without the rule of law index, an additional 130 without the inflation-adjusted market index, and an additional 17 missing other macroeconomic variables. If we do not include the rule of law index in the regression analysis, we are only able to increase the sample size for the regression by 128 observations, due to other missing macroeconomic variables. We find no substantive differences in our results if we exclude the rule of law index.

The dependent variable equals one if the privatization is through an SIP, and zero if it is through an asset sale. A positive coefficient on an explanatory variable implies that higher values of the independent variable are associated with a greater likelihood of a government choosing to privatize through an SIP. We estimate the regressions with robust standard errors and also relax the assumption of independence of errors within clusters, and estimate the standard errors by clustering by country. These methodologies adjust the standard errors to reflect the cross-correlation between observations due to common country effects. Overall, our empirical results are strongly supportive of the hypothesized relations discussed in the previous section.

As noted, we use three general types of variables to explain the choice of the means of privatization—market characteristics, political and legal characteristics, and firm-specific characteristics. Though we place each of our explanatory variables into one of the three categories, we do so for ease of exposition. Political and legal characteristics of the country impact the market characteristics, and vice versa. Firm-specific variables result from and impact many factors in their

Table IV

Logistic Regression Results Explaining the Choice of SIP or Asset Sale for the Privatization Method

Logistic regressions are estimated where the dependent variable is equal to 1 if the privatization of the state-owned enterprise is through share issue privatization (SIP) and 0 if through an asset sale. The market turnover ratio (the ratio of the value of shares traded to market capitalization), the logarithm of the GNI per capita adjusted for purchasing power, the Gini coefficient (higher value reflects more unequal incomes in the country), and the inflation-adjusted relative market index measure capital market individuality in the privatizing country. The right wing, stability, and rule of law indices measure the political and legal environment of the privatizing country. Higher values for each index represent stronger protection of property and legal rights. The log of the size of the offer, the return on sales, and whether the firm is in a strategic industry or in the telecommunications industry are firm-specific variables for the privatized enterprise. Standard errors are robust and clustered by country. The *p*-values of the coefficients are in parentheses.

Variable	Predicted Sign	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5	Reg 6
Intercept		12.19	12.02	9.281	2.977	24.57	−0.3436
		(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.739)
Market turnover	?	−0.5526	−0.5623	−0.6201	−0.8654	−0.7328	
		(0.115)	(0.105)	(0.051)	(0.010)	(0.164)	
Log (GNI per capita in thousands of U.S.$)	?	−1.272	−1.249	−0.8006		−2.731	
		(0.000)	(0.000)	(0.003)		(0.001)	
Gini coefficient	−	−0.0789	−0.0776	−0.0796	−0.0659	−0.0877	
		(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	
Market index	+	0.3414	0.3397	0.3098	0.3242	−0.3043	
		(0.011)	(0.012)	(0.020)	(0.015)	(0.200)	
Right-wing government	−	−0.4676	−0.4638	−0.5362	−0.7949	−0.3662	
		(0.030)	(0.030)	(0.031)	(0.002)	(0.319)	
Stability of government	−	−0.0541	−0.0562	−0.0584	−0.0710	−0.0297	
		(0.218)	(0.202)	(0.235)	(0.210)	(0.788)	
Rule of law index	+	0.1764	0.1790		−0.1078	0.3535	
		(0.042)	(0.035)		(0.153)	(0.098)	
Log (size of offer)	+	0.3212	0.2973	0.3097	0.2108	0.6724	0.1787
		(0.002)	(0.008)	(0.005)	(0.045)	(0.000)	(0.320)
Return on sales	+					1.367	3.067
						(0.401)	(0.080)
Strategic industry	−		−0.0442	−0.0779	−0.1033	−0.2927	−0.1425
			(0.808)	(0.668)	(0.560)	(0.444)	(0.694)
Telecommunication firm	+		0.6622	0.6468	0.7849	−0.5105	−0.1629
			(0.034)	(0.031)	(0.006)	(0.450)	(0.778)
Chi-square		117.71	135.97	106.78	65.10	40.15	5.07
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.2798)
Pseudo R^2		0.1768	0.1805	0.1722	0.1423	0.2567	0.0499
Number of observations		1645	1645	1645	1645	347	361

environment. In Table IV, we include several specifications of the regressions testing these relations.

The market characteristic variables provide information about the economic development of the privatizing country. There are several possible empirical measures of market development. Booth et al. (2001), Perotti and Oijen (2001),

Wurgler (2000), Levine and Zervos (1998), and Mayer (1990) use the ratio of market capitalization to GDP as a measure of financial market development. However, the ability of this variable to accurately gauge financial market development has been questioned. Rajan and Zingales (1998) and Levine and Zervos note that since financial markets are forward-looking, market capitalizations can be distorted by differing growth estimates. As a result, the stock market capitalization does not reflect the amount of funding that issuers actually obtain.

Rousseau and Wachtel (2000), Subrahmanyam and Titman (1999), Levine (1997), Holmstrom and Tirole (1993), and Atje and Jovanovic (1993) argue that it is the level of stock market activity (and not so much the size of the stock market) that is the most important characteristic of financial market development. Greater market liquidity lowers transaction costs, allows for improved monitoring, and promotes informational efficiency. To measure market liquidity and development, Rousseau and Wachtel (2000), Beck, Demirguc-Kunt, and Levine (2000), Levine (1996, 1997), Demirguc-Kunt and Levine (1996), and Atje and Jovanovic use the value-traded ratio (total value of shares traded divided by GDP). However, the value-traded ratio may also be distorted by the same factors that may contaminate the market capitalization ratio. Markets with high valuations (i.e., exuberant or hot markets) have greater activity, which leads to larger amounts of value traded.

Therefore, if used independently, both the market-capitalization and the value-traded ratios may be misleading measures of financial sector development. However, combining the two into a turnover ratio (value-traded to market-capitalization) provides a more accurate indication of capital market development, since both the numerator and denominator reflect the current market conditions. Accordingly, the turnover ratio is less likely to be distorted by variations in investor expectations and fluctuations in the general hotness of the financial markets.[10] Booth et al. (2001), Demirguc-Kunt and Maksimovic (1999), Beck, Demirguc-Kunt, and Levine (2000), Demirguc-Kunt and Levine (1996), and Levine (1996) favor the turnover ratio as an indicator of financial market liquidity and development. A lower ratio suggests a less-developed financial market.

The income characteristics of the country provide an alternative indication about the development of the financial markets and can also impact the choice between public or private capital markets. We use two measures of income—gross national income per capita (GNI) and the Gini coefficient. We use the logarithm of purchasing power parity-adjusted per capita GNI to control for differences in average purchasing power across countries. Beck, Demirguc-Kunt, and Levine (2000) find that per capita GDP is positively correlated with the level of market development. Lower GNI may be associated with the decision to privatize via SIPs, as governments attempt to spur the development of those markets. However, SIPs can be difficult to market in nations with low

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[10] We further control for the current level of market hotness by including the inflation-adjusted market index as an additional explanatory variable.

average income levels if citizens lack the wealth to participate in the share offerings.

The Gini coefficient measures income distribution. A higher Gini value indicates greater income inequality within a nation's population. Biais and Perotti (2002) argue that countries with greater income inequality also find it more expensive to privatize through SIPs, since the median investor in the country has a lower average income, requiring more underpricing for a successful offering. La Porta et al. (1998) show that the concentration of share ownership across countries is related to the Gini coefficient, finding that countries with more unequal incomes also have more concentrated ownership of companies. Either of these effects would suggest that more unequal incomes (higher Gini coefficient) would be more likely to be associated with the privatization of firms through asset sales.

While more developed countries generally have more equal incomes (we find that GNI per capita and the Gini coefficient are significantly negatively correlated), there is substantial variation in Gini coefficients across development levels. If we split our sample into lower-than-median GNI per capita and greater-than-median GNI per capita, we find that lower income countries are associated with higher mean and median Gini coefficients (43 mean, 45 median versus 35 mean, 32 median). However, the standard deviation is high (9 for lower income countries and 6 for richer countries) and the 10th percentile to 90th percentile observations range from 32 to 51 for the lower income countries and from 28 to 48 for the higher income countries. Thus, Gini coefficients seem to contribute additional information beyond the relative wealth of the country.

We include these three explanatory variables in our regressions, except in regressions 4 and 6 as discussed below. Overall, our results suggest that privatization of SOEs offers the governments the opportunity to use SIPs to help develop the country's capital markets. The coefficient on the GNI per capita variable is significantly negative in all of the regressions in Table IV and is significantly negative for the turnover variable in two of five regressions. Thus, the less developed the capital market, all else being constant, the more likely it is that governments will sell SOEs by SIPs in the public market. This finding supports the contention of Subrahmanyam and Titman (1999) and McLindon (1996) that governments use SIPs to trigger the expansion of domestic capital markets. Furthermore, while the choice to use SIPs in less developed markets may result in lower proceeds for the government, it is consistent with the Jones et al. (1999) finding that privatizing governments frequently are willing to sacrifice revenue in order to achieve broader political and economic objectives.

One such objective of many privatization programs is to widen share ownership and promote an equity culture. Many SIPs create a new class of shareholders out of citizens who have never previously owned equity shares. Because of the massive size of the offerings and the preferential allocation and pricing, SIPs have generated rapid growth in share ownership in many nations, as detailed in Boutchkova and Megginson (2000). Subrahmanyam and Titman (1999) and McLindon (1996) note that privatizations have been key to the explosion

in value of many developing stock markets and have substantially increased the number of active investors in these countries.

The regressions in Table IV also indicate that the Gini coefficient is negatively and significantly related to the probability of choosing to privatize via an SIP, suggesting that SIPs are more feasible in countries with more equal incomes. This result confirms the arguments of Biais and Perotti (2002), Jones et al. (1999) and La Porta et al. (1997, 1998), finding that more unequal incomes are associated with greater ownership concentration.

Studies of IPOs, both U.S. and foreign, have shown that these stock issuances are more likely to occur in hot markets. We control for these hot markets to ensure that our results are not simply related to market conditions. We follow Loughran, Ritter, and Rydqvist (1994) and use an inflation-adjusted relative market index to measure the country's level of overall market valuation. We find a significant positive relation (except in regression 5, based on a small subsample due to missing values for the return on sales measure) between market valuation and the probability of privatizing via an SIP, consistent with the Loughran, Ritter, and Rydqvist result.[11] The inclusion of this control variable, along with deflating the value of shares traded by market capitalization in the turnover ratio, helps to offset concerns that our turnover variable is simply an alternative measure of a hot market.

The next general category of explanatory variables measures the political and legal environment of the privatizing country. We obtain the economic orientation variable for each year and each country in the sample for which it is available from Beck et al. (2001), and examine its relation with the choice of privatization method. We use an indicator variable for a right-wing government as representative of a government's commitment to less involvement in the economy. The stability variable measures the strength of the current government in maintaining its policies. Our stability variable is from the International Country Risk Guide (ICR), as reported by PRS Group, Inc., (2002). Higher values of the variable indicate a more stable government. We expect that investors would be more willing to make the substantial financial commitment necessary for an asset sale if they expect less government intrusion in that investment.

Several variables have been suggested to measure the overall legal environment and the protections it provides to minority shareholders from majority interests, or to phrase it the opposite way, the private benefits it provides to controlling interests. Our tests focus on the rule of law index, a measure of the law and order tradition in a country, from the ICR and as reported by

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[11] The Irish government provides an example of this effect. In June 2001, the Public Enterprise Minister, Mary O'Rourke, announced that the government was abandoning a planned flotation of Aer Lingus in favor of a trade (asset) sale of the national airline. She said that an SIP was "out of the question given current market sentiments towards the airline sector" (Brown, 2001). Furthermore, current governments in Italy, France, Sweden, Spain, Ireland, and the Netherlands are committed to re-launching major privatization programs that had stalled as a result of the global stock market declines of 2000 to 2002. However, all feel constrained in doing so until national stock market indices rebound.

La Porta et al. (1997, 1999).[12] Higher values of this index indicate "sound political institutions, a strong court system, and provisions for an orderly succession of power"; lower scores indicate "a tradition of depending on physical force or illegal means to settle claims" (Knack and Keefer (1995), p. 225). Overall, we expect that governments in countries with stronger legal protection of minority owner rights would be more likely to privatize by SIP.

As predicted, the coefficient on the right-wing measure is significantly negative in the regressions (except, again, in regression 5 with its small sample size), though the stability measure is insignificantly different from zero. Consistent with the findings of Bortolotti, Fantini, and Scarpa (2000), the result for the right-wing variable suggests that it is important to consider the economic orientation of the government. Acquirers in asset sales are generally making significant investments that they would be hesitant to make if the risk of government intervention were high. Thus, asset sales seem to be more likely in those countries where the existing government has a positive orientation to private ownership.

La Porta et al. (1997, 1999) and Dyck and Zingales (2002) emphasize the importance of the relationship between majority and minority owners, arguing that ownership concentration will be higher when there are fewer protections of minority interests. Thus, SIPs will be more likely in those instances when minority owners (or diffuse shareholders) have significant protection from the actions of controlling interests, that is, where the institutional environment constrains agency problems to a greater extent. We identify a significant relation between this measure and the privatization method decision—the rule of law index is positively associated with the probability of the government choosing to privatize via an SIP. This finding is consistent with Bortolotti, Fantini, and Siniscalco (2004), who argue that privatizing governments recognize the importance of the legal protections of shareholders when formulating privatization policy.

In Table V, we report the correlation coefficient matrix for the variables included in our regression analysis. While most of the correlation coefficients between the independent variables are relatively low, we find a strong positive correlation between the rule of law measure and the GNI per capita measure, leading to concerns about multicollinearity. In general, multicollinearity can lead to high standard errors for the coefficients of the correlated variables and a corresponding lack of significance in those coefficients, even though the coefficients will be unbiased. Given the significance of the coefficients on both the rule of law measure and the GNI measure, this does not seem to be a problem in our regressions. However, multicollinearity can also lead to instability of the estimated coefficients. One suggested means to analyze the impact of

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[12] As part of our robustness test, we consider other variables, as suggested by other authors, including anti-director rights, the risk of expropriation, accounting standards, tax compliance, the competitiveness of the economy, the circulation of newspapers, the religious orientation of the country, and the legal origin of the country. The high correlation between most of these variables however suggests the need for care in estimation and interpretation. See Section III.D for a discussion of these results.

Table V
Correlations Across Regressors

Shown here is the correlation coefficient matrix for regressors included in Table IV. The market turnover ratio (the ratio of the value of shares traded to market capitalization), the logarithm of the GNI per capita adjusted for purchasing power, the Gini coefficient (higher value reflects more unequal incomes in the country) and the inflation-adjusted relative market index measure capital market characteristics in the privatizing country. The right wing, stability, and rule of law indices measure the political and legal environment of the privatizing country. Higher values for each index represent stronger protection of property and legal rights. The log of the size of the offer and whether the firm is in a strategic industry or in the telecommunications industry are firm-specific variables for the privatized enterprise.

	Market Turnover	Log GNI per Capita	Gini Coefficient	Market Index	Right-wing Index	Stability Index	Rule of Law Index	Log Size of Offer	Strategic Industry
Market turnover	1.0								
Log GNI per capita	0.30	1.0							
Gini coefficient	−0.08	−0.24	1.0						
Market index	0.20	0.00	−0.05	1.0					
Right-wing index	0.12	0.24	0.29	−0.07	1.0				
Stability index	0.13	0.17	−0.05	0.17	−0.05	1.0			
Rule of law index	0.20	0.83	−0.28	−0.00	0.10	0.12	1.0		
Log size of offer	0.20	0.51	−0.09	0.05	0.06	0.17	0.47	1.0	
Strategic industry	0.03	0.15	0.08	0.05	0.08	0.07	0.11	0.36	1.0
Telecom firm	0.04	0.05	−0.08	0.03	−0.05	0.06	0.05	0.28	0.29

multicollinearity is to re-estimate the regression, leaving out each of the correlated variables in turn. In regression 3 (Table IV), we report the results leaving out the rule of law measure and in regression 4, we omit the GNI per capita measure to determine how multicollinearity affects our results.

When the rule of law variable is not included, GNI per capita maintains its sign and significance. However, the rule of law variable becomes insignificantly different from zero when the GNI measure is deleted. When both the variables are included in the regression, these two positively correlated variables have opposite but significant impacts on the privatization method decision. The insignificance of the rule of law variable when the GNI measure is deleted suggests that the rule of law is picking up the effect of both of these variables. As noted in Pindyck and Rubenfeld (1991, p. 164), if two variables are highly correlated and one is omitted, the coefficient of the other will include the effect of the first variable and be biased. Thus, this is a situation where the cure for the multicollinearity problem may be worse than the problem itself.

An alternative method to consider the impact of multicollinearity is to determine the stability of the estimated coefficients in different subsamples of the data. In Table VI, we report results based on different methods of stratifying the sample. The coefficients of the correlated variables remain relatively stable over the different samples, though somewhat less so for the rule of law variable. However, overall, the generally positive and significant relation between the rule of law and SIPs suggests the importance of protecting minority shareholders in the privatization decision. In a following section, we consider other measures of the protection of minority investors to further isolate the importance of the protection of minority shareholders in the privatization decision and the effects of multicollinearity in our analysis.

The third category of explanatory variables reflects characteristics about the firms being privatized. Firm size is frequently used as a measure of information asymmetry, with more information available for larger firms. Accordingly, size should be a critical factor in the government's choice of privatization technique, with larger firms being privatized through SIPs.[13] In addition, SIPs might be the only practical method of selling the largest SOEs. Due to the large size of many privatizations, the costs are often too high for the principal participants in asset sales (private companies or small groups of individual investors) to raise the necessary capital to purchase the SOE. This caveat is especially true for the largest firms that are privatized, particularly telecommunications firms, where the average value of assets privatized is over \$2.6 billion and the median is \$700 million. Therefore, when divesting the larger SOEs, governments might only be able to use SIPs. Our size measure is the log of proceeds from the privatization expressed in U.S. dollars. We expect a positive relation between size and the likelihood of using the public capital markets (an SIP). We

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[13] Jones et al. (1999) show in their analysis of SIPs that the standard information asymmetry effects between the firm and potential investors about the prospects of the firm are less relevant in privatizations than in IPOs of privately owned firms. SOEs that are privatized are usually older, well-established firms where there is less information asymmetry between the managers and the market. This effect may mitigate the importance of the size variable in characterizing information asymmetry in the privatization decision.

Table VI
Logistic Regression Results Explaining the Choice of SIP or Asset Sale for Privatization Method—Alternative Samples

Logistic regressions are estimated where the dependent variable is equal to 1 if the privatization of the state-owned enterprise is through share issue privatization (SIP) and 0 if through an asset sale. The market turnover ratio (the ratio of the value of shares traded to market capitalization), the log of the GNI per capita adjusted for purchasing power, the Gini coefficient (higher value reflects more unequal incomes in the country), and the inflation-adjusted relative market index measure capital market characteristics in the privatizing country. The right wing, stability, and rule of law indices measure the political and legal environment of the privatizing country. Higher values for each index represent stronger protection of property and legal rights. The log of the size of the offer and whether the firm is in a strategic industry or in the telecommunications industry are firm-specific variables for the privatized enterprise. Standard errors are robust and clustered by country. The *p*-values of the coefficients are in parentheses.

The samples are varied in the regressions. In the first regression, offerings or asset sales greater than $1 billion are excluded and in the second regression, transactions from the 1980s are excluded. In regressions 3 and 4, results from the first and latter parts of the sample are contrasted. Regressions 5 and 6 separate the sample on the basis of the source; in regression 5, the transactions were identified by Privatisation International, and in regression 6, the transactions were only identified in the World Bank database.

Variable	Predicted Sign	Reg 1 Excluding Large Sales	Reg 2 Excluding Sales from 1980s	Reg 3 Sales Before 1996	Reg 4 Sales 1996 and Later	Reg 5 Privatisation Int'l Data	Reg 6 World Bank Data
Intercept		11.67	11.57	16.04	6.378	11.32	9.197
		(0.000)	(0.000)	(0.000)	(0.033)	(0.000)	(0.034)
Market turnover	?	−0.6129	−0.5642	−0.1355	−0.5972	−0.6174	−0.8510
		(0.134)	(0.105)	(0.695)	(0.044)	(0.115)	(0.119)
Log (GNI per capita in thousands of U.S.$)	?	−1.241	−1.206	−1.820	−0.5200	−1.208	−0.5106
		(0.000)	(0.000)	(0.000)	(0.107)	(0.002)	(0.344)
Gini coefficient	−	−0.0686	−0.0717	−0.1009	−0.0428	−0.0949	−0.1310
		(0.000)	(0.000)	(0.000)	(0.032)	(0.000)	(0.000)

	Pred. sign					
Market index	+	0.3833	0.4073	0.4918	0.5337	0.0915
		(0.007)	(0.006)	(0.130)	(0.003)	(0.801)
Right-wing government	−	−0.5074	−0.5675	−0.2346	−1.174	−0.1769
		(0.031)	(0.022)	(0.434)	(0.000)	(0.794)
Stability of government	−	−0.0476	−0.0719	0.0893	−0.2079	−0.2919
		(0.331)	(0.113)	(0.134)	(0.001)	(0.004)
Rule of law index	+	0.2001	0.1803	0.2620	0.0216	0.7355
		(0.044)	(0.034)	(0.055)	(0.761)	(0.000)
Log (size of offer)	+	0.2190	0.2720	0.3068	0.3176	0.0520
		(0.058)	(0.006)	(0.023)	(0.003)	(0.609)
Strategic industry	−	−0.0119	−0.0828	0.2476	−0.4759	−0.2840
		(0.948)	(0.677)	(0.256)	(0.071)	(0.436)
Telecommunication firm	+	0.4814	0.7979	0.4642	0.8681	1.194
		(0.162)	(0.009)	(0.368)	(0.031)	(0.064)
Chi-square		86.86	143.89	68.10	138.90	74.98
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Pseudo R^2		0.1712	0.1825	0.2212	0.1834	0.2760
Number of observations		1436	1498	973	672	375

also include an indicator specifically for whether the industry of the privatized firm is telecommunications, since the telecommunications firms were by far the largest privatizations in the sample.

We expect to find a positive relation between the profitability variable (return on sales) and the likelihood of privatizing via an SIP, since governments may seek to gain political support by privatizing the most profitable firms by SIP. While we do not have evidence on expected future profitability, we proxy for it with the firm's previous profitability, using the ratio of net income to sales (from the year prior to privatization). To the extent possible, we obtain these data from the Privatisation International database. However, this variable is available only for about 20% of our sample. Thus, regressions 5 and 6, which include the return on sales variable, are limited to 347 and 361 observations, respectively. Finally, we include an indicator variable to measure whether the firm is in a strategic industry. It is easier for the government to maintain a significant control stake when privatizing through an asset sale, and thus we hypothesize that SOEs in strategic industries are more likely to be privatized via an asset sale.

The results reported in Table IV support the importance of the firm-specific characteristics. The size of the offer is positively and significantly related to the probability of choosing to privatize via an SIP, as is the return on sales variable in regression 6. In addition, being in the telecommunications industry led to a significantly higher probability of being privatized through an SIP (except in the regressions limited in sample size by the return on sales variable). Looking across the regressions, however, we find that the strategic industry dummy variable is never significant. These results emphasize the importance of considering firm-specific factors in the privatization decision in addition to the economic and political characteristics of the privatizing country.

Overall, our results strongly support the importance of market, political, and firm-specific considerations in choosing the method of privatization. Governments of countries with less developed capital markets are more likely to use SIPs, consistent with the statements of many governments and observers that privatization is a powerful tool for developing capital markets. Countries with more equal income distributions are more likely to use SIPs due to the broader base of potential investors and the reduced need for substantial underpricing. We find that asset sales involving large financial commitments by the investors are more likely the less there is state control of the economy. However, we also find some evidence that SIPs are more frequent when there are stronger protections in place for minority interests. Finally, the data indicate that SOEs are more likely to be privatized through SIPs when the enterprise is larger and, to some extent, more profitable.

C. Robustness of Results in Alternative Samples

In Table VI, we present tests of the specification from regression 2 of Table IV for several different samples. The regressions estimated for Table VI also use robust standard errors with clustering by country. In regression 1 of Table VI, we

eliminate the largest privatizations in which the transaction is valued at more than $1 billion. It is possible that these very large transactions are significantly different from the remainder of the sample and could distort our regression results, since they must involve considerable efforts to raise sufficient capital. However, we find no substantive differences in results using this restricted sample ($n = 1,436$). In regression 2, we eliminate transactions from the 1980s. Since the markets were in transition and since asset sales were less common (or else the data were collected less aggressively), it may be that the 1980s data are less representative of the privatization process. Again, we find no differences in results from the other samples.

In regressions 3 and 4, we consider whether the factors affecting the method of privatization differed in 1996 and later ($n = 672$) as compared to earlier years ($n = 973$). By 1996, privatization had become a relatively common phenomenon in many countries and investors were more experienced with the expected outcomes of the process. Almost 60% of the total value of assets privatized was sold in the last 5 years of our sample (52.3% of SIPs and 71% of the asset sales), indicating the dramatic increase in the popularity of the process in this period. As with the earlier regressions, the Gini coefficient and the size variable remain significant in regressions 3 and 4, while the GNI per capita variable is significant only in the earlier period and the turnover variable is significantly negative only in the later period. The rule of law variable is only significant in the earlier period. It may be that in the earlier period it was more difficult to privatize via an SIP unless shareholders' protections were firmly established. In the latter period, investors may have come to more broadly accept SIPs as a viable form of investment, and thus the explicit recognition of shareholder rights in laws was less necessary.

In regressions 5 and 6, we split the sample on the basis of whether the privatizations were identified in the Privatisation International database ($n = 1,270$ with the necessary data for the regression) or were identified only by the World Bank ($n = 375$). The privatizations from the World Bank included in the regression are significantly smaller than the Privatisation International observations (an average of $138.4 million versus $722.5 million) and are from significantly less developed countries ($4,467 GNI per capita versus $13,120 GNI per capita) but are more likely to be share issue privatizations (54.3% versus 40.3%). Note that this last comparison indicates an important difference between these databases. Before controlling for missing data, the two sources have relatively close ratios of SIPs (44.3% from the World Bank versus 39.3% from Privatisation International). However, the lack of data for asset sales identified by the World Bank results in the loss of a disproportionate number of those transactions in the regressions. (The most common missing variables are the rule of law index and the Gini coefficient.)

The Privatisation International observations are included in regression 5, with very slight differences from the regressions reported in Table IV. The coefficients of the market turnover, the rule of law variable, and the telecommunications indicator variable become insignificant, but in general the coefficients and significance levels suggest the same general implications as the previous

results. The World Bank results (regression 6) are less similar to the earlier regressions. The significance of the Gini coefficient suggests the importance of economic conditions. The right-wing variable is insignificant in this sample, but the significance of the stability index and the rule of law index again confirm the importance of political and market considerations in this sample comprised of developing countries. The insignificance of the size of the offer probably reflects the truncated sample and the reduced variation in the size of privatizations.

D. Robustness of Results Using Alternative Measures of the Legal and Political Environment

Legal rules and political pressures play an important role in the decisions made by any government. Analysis of the impact of this environment on financial markets has become increasingly important in international studies in economics and finance in recent years, especially since the Shleifer and Vishny (1997) survey of international corporate governance and the seminal works of La Porta et al. (1997, 1998, 1999, and 2002) analyzing the significance of legal origins in financial development. Many measures of this environment have been suggested. We examine the impact of alternative proxies for legal and political factors on our results in this section.

To this point, we have used the rule of law index as a measure of the law and order tradition in a country, which incorporates considerations such as the strength of the court system and the strength of the political system. La Porta et al. (1997, 1998, 1999, and 2002) identify several other variables to measure the legal environment in which companies operate, including indices for anti-director rights, risk of expropriation, accounting standards, and compliance with tax laws. The anti-director rights index measures the presence of minority shareholder protections such as proxy voting by mail, cumulative voting, and shareholder abilities to call special meetings. The risk of expropriation is a measure of the risk of confiscation of private assets by the government. Accounting standards and tax compliance measure the legal constraints for firms and the extent to which they operate within those standards. Each of these variables proxies for the legal protections for investors.

La Porta et al. note that many of these measures of the legal and political environment of various countries are endogenous to other factors in the country and suggest that the legal origin of the country is the "only truly exogenous variable" (1998, p. 1151). They identify four main legal systems—English, French, German, and Scandinavian. English law is common law, with a strong emphasis on judicial decision making. In contrast, French, German, and Scandinavian legal systems are based in civil law, depending on laws prescribed by the legislature. In our supplemental regressions, we also test whether a nation's legal origin affects its choice of privatization method.

Dyck and Zingales (2004) suggest several additional measures of the constraints on managers and misappropriation of minority interests' property.

They argue that the competitive environment and newspaper circulation in the country are among the extralegal institutions that constrain majority interests, in that they limit managerial discretion. Dyck and Zingales also estimate the private benefits of control (the premium paid for 412 control blocks in 39 countries) and argue that this premium represents the additional amount that private investors are willing to pay for control of a firm when there are greater opportunities to extract private benefits.

Stulz and Williamson (2003) suggest that religion, as a measure of cultural norms, can also impact financial development. They find that countries where Catholicism is the dominant religion have fewer creditor rights than non-Catholic countries, though the openness of the economy to international trade can weaken this relation. Dyck and Zingales (2004) find that the prevalence of Catholicism is also associated with greater private benefits of control.[14]

Table VII reports the correlations between the alternative measures of the legal and political environment, equally weighting each country used in the regression analysis. Four of the measures suggested by La Porta et al. (1997, 1998, 1999 and 2002) (rule of law, risk of expropriation, accounting standards, and tax compliance) have pairwise correlation coefficients of at least 0.47 and the rule of law variable and the risk of expropriation have a correlation of 0.91. Most of the other variables also have high correlation coefficients. Only the civil law and the Catholic variables have relatively low correlation coefficients with the other variables.

In Table VIII, we report the results of logistic regressions based on regression 2 in Table IV. In each of the nine regressions, we substitute the rule of law index with the indicated alternative measure of the legal, extralegal, and cultural constraints in the economy. Four of the nine measures have a significant impact on the choice of method of privatization. Better accounting standards, lower risk of expropriation, and greater per capita newspaper circulation are associated with an increased likelihood of choosing to privatize via an SIP, while the prevalence of Catholicism is more likely to be associated with asset sales. As noted above and in Table V, the correlation coefficient between the rule of law variable and log of GNI per capita is quite high, at 0.83. The four alternative measures noted here are somewhat less strongly correlated with GNI and thus can help allay some concerns with respect to multicollinearity. The correlation coefficients between these variables and the log of GNI are 0.58, 0.78, 0.69, and 0.18, respectively.

These results are consistent with the La Porta et al. (1998) finding that ownership concentration is negatively related to investor protections and the Dyck and Zingales (2004) finding that control premiums are highest in countries with weak institutional curbs on majority owners. Overall, the results of these alternative regressions suggest the importance of the legal and political

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[14] There are many additional measures of the legal and political environment proposed by various authors. We have reported our results based on a representative cross-section of the suggested measures. We did not find any other measures that substantially affected our general conclusions with respect to the importance of the legal and political environment.

Table VII
Correlations Across Measures of the Legal and Political Environment

Shown here is the correlation coefficient matrix for alternative measures of the legal and political environment for the 49 countries in the regression analysis. Higher values of the rule of law index indicate stronger law and order in a country. Higher values of the anti-director rights variable indicate more shareholder protection. Higher values of the risk of expropriation variable, accounting standards variable, and tax compliance variable, respectively, indicate less risk of confiscation, accounting fraud, and tax fraud. Higher values of the competitive environment variable indicate that market participants believe that they are protected against unfair competition, while higher values of the newspaper variable indicate greater newspaper circulation. The private benefits of control are estimated by Dyck and Zingales (2004), with higher values representing more benefits to concentrated ownership. The civil law and Catholic variables measure the legal and religious origin of the country.

	Rule of Law Index	Anti-Director Rights	Risk of Expropriation	Accounting Standards	Tax Compliance	Competitive Environment	News/ Population	Private Benefits of Control	Civil Law
Rule of law index	1.0								
Anti-director rights	0.10	1.0							
Risk of expropriation	0.91	0.04	1.0						
Accounting standards	0.54	0.37	0.61	1.0					
Tax compliance	0.52	0.49	0.47	0.51	1.0				
Competitive environment	0.64	0.30	0.67	0.52	0.62	1.0			
News/population	0.57	0.13	0.53	0.52	0.54	0.51	1.0		
Private benefits of control	−0.37	−0.30	−0.35	−0.41	−0.54	−0.37	−0.39	1.0	
Civil law	0.15	−0.53	0.09	−0.42	−0.48	−0.23	−0.14	0.23	1.0
Catholic	0.07	−0.32	0.05	−0.39	−0.42	−0.21	−0.39	0.42	0.49

Table VIII
Logit Regression Results Explaining the Choice of SIP or Asset Sale for the Privatization Method—Alternative Measures of a Country's Legal and Political Characteristics

Logistic regressions are estimated using alternative measures of a country's legal and political characteristics. Higher values of the rule of law index indicate stronger law and order in a country; higher values of the anti-director rights variable indicate more shareholder protection. Higher values of the risk of expropriation variable, accounting standards variable, and tax compliance variable, respectively, indicate less risk of confiscation, accounting fraud, and tax fraud. Higher values of the competitive environment variable indicate that market participants believe that they are protected against unfair competition, while higher values of the newspaper variable indicate greater newspaper circulation. The private benefits of control are estimated by Dyck and Zingales (2002), with higher values representing more benefits to concentrated ownership. The civil law and Catholic variables measure the legal and religious origin of the country.

The dependent variable is equal to 1 if the privatization of the state-owned enterprise is through share issue privatization (SIP) and 0 if through an asset sale. Control variables are as in regression 2 of Table IV. In each of the nine regressions, we replace the rule of law index with the respective alternative variable listed in the first column. Standard errors are robust and clustered by country. The *p*-values of the coefficients are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Anti-director rights	0.0185								
	(0.838)								
Accounting standards		0.0168							
		(0.100)							
Risk of expropriation			0.3685						
			(0.004)						
Competitive environment				−0.1385					
				(0.792)					
News/population					0.2352				
					(0.006)				
Tax compliance						0.1971			
						(0.117)			
Private benefits of control							1.026		
							(0.283)		
Civil law								−0.0853	
								(0.749)	
Catholic									−0.4812
									(0.056)
Chi-square	104.27	194.63	140.96	121.72	109.81	141.36	126.57	109.08	117.82
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo R^2	0.1726	0.2070	0.1834	0.1562	0.1582	0.1876	0.1582	0.1724	0.1789
Number of observations	1640	1509	1645	1421	1466	1536	1421	1645	1645

environment, even though neither every proxy is significantly related to the privatization decision, nor have we completely eliminated concerns about multicollinearity. Our results emphasize the inexact nature of these variables in attempting to quantify that environment. We attempted to combine the various measures in meaningful ways to gain insights into the marginal impact of the several measures, but were unable to add to our basic findings.

Given the relation between the legal origins of a country and its financial development that has been found by other authors, in particular La Porta et al. (1997, 1998, 1999, and 2002), we estimate several alternative specifications based on the distinctions between civil and common law, and between English, French, German, and Scandinavian legal origins. While we find that civil law countries are significantly more likely to emphasize asset sales in a simple correlation test, we are not able to confirm that relation in our regression analysis. Dyck and Zingales report similar results, or a lack thereof, in their multivariate regressions. Thus, since specific indices of the political environment have an impact on the privatization decision, the relation seems to be more complex than a distinction based simply on civil versus common law. It may be that the other indices increase the richness of the information about the specific countries and how they have developed over time.

E. Country-Specific Trends and Characteristics

Another issue of interest is whether there are certain countries that focus primarily on one type of privatization due to country-specific characteristics that are not obvious from the regression analysis. For the 49 nations that are included in the regression analysis, we found 10 countries with the highest ratio of the value of SIP transactions to total privatization value and also 10 countries with the lowest ratio of SIPs to total privatization value. These countries are reported in Table IX. We find that most nations do not focus on only one method of privatization. Only 6 of the countries had more than 90% of their assets privatized via SIPs, and only 4 had less than 10% of their assets privatized via SIPs. Thus, the sample is characterized by significant intracountry variation and suggests the importance of firm-specific or period-specific factors in the decision making of the privatizing country, as considered in our regression analysis.

However, a few noticeable traits are apparent from the results. We report the countries that rely the most heavily on SIPs in Panel A. In further examination of the underlying data, we find that these countries are also the ones that emphasized telecommunications firms in their privatization efforts. For example, the 2 nations that used the largest ratio of SIPs, Singapore and Japan, were characterized by having 66% and 80%, respectively, of the value of the total privatizations in their countries result from privatizations of telecommunications firms. While most of the other countries in the top 10 did not have quite so high a ratio for telecommunications, the average across the 10 countries is 40.7% (median = 34.2%). Nine of the top 10 countries privatized telecommunications firms. These countries used SIPs almost exclusively for these actions (96% of telecommunication assets were privatized by SIPs.)

Table IX

Comparison of Countries with the Highest and Lowest Ratio of Value of Assets Privatized through Share Issue Privatizations to Total Assets Privatized

The number of privatizations, the ratio of SIPs to total privatization value, the average value per transaction and total value privatized is reported for each country, in millions of dollars. The analysis includes transactions of less than $1 million. In addition, we report the percent of privatized telecommunications assets that are privatized through SIPs and the percent of all privatizations that involve telecommunications assets. We excluded countries with fewer than seven transactions. To be consistent with the regression analysis, countries with missing data are excluded. In the bottom row, averages and medians are reported, with each country equally weighted. No entry in the "% of Telecom as SIPs" column indicates that the country did not privatize any telecommunication assets during our sample period.

Country	Number	SIPs/ Total Value	Average Value per Transaction	Total Value Privatized	% of Telecom as SIPs	Telecom as % of All Privatizations
Panel A: Countries with the Highest Ratio of SIPs to Privatizations						
Singapore	11	1.000	525.6	5781	100.0	66.2
Japan	15	1.000	11089.5	166343	100.0	80.2
India	75	0.982	99.7	7475	100.0	21.0
Taiwan	22	0.968	364.0	8009	100.0	20.0
Finland	23	0.908	461.9	10623	100.0	61.4
Spain	40	0.907	1099.1	43966	78.2	25.7
Norway	10	0.839	397.0	3970	100.0	42.7
Italy	75	0.815	1546.7	115999	100.0	13.6
Indonesia	17	0.795	546.4	9290	86.0	76.4
Kenya	30	0.777	6.2	186		0.0
Average (median)	31.8 (22.5)	0.899 (0.907)	1613.6 (493.7)	37164 (8647)	96.0 (100.0)	40.7 (34.2)
Panel B: Countries with the Lowest Ratio of SIPs to Privatizations						
Belgium	14	0.013	587.7	8228	0.0	29.8
Chile	25	0.018	158.1	3953	0.0	5.8
New Zealand	24	0.084	406.3	9752	0.0	25.7
Colombia	17	0.098	428.3	7282		0.0
Brazil	116	0.129	593.0	68785	0.0	30.3
Venezuela	27	0.179	214.1	5780	35.0	50.7
Argentina	86	0.198	442.6	38062	63.3	8.6
Peru	106	0.269	100.5	10651	41.8	54.8
Philippines	27	0.296	107.6	2905		0.0
Sri Lanka	59	0.333	12.0	706	0.0	31.9
Average (median)	50.1 (27)	0.162 (0.154)	305.0 (310.2)	15610 (7755)	17.5 (0)	23.8 (27.8)

In contrast, the countries with the lowest SIP-to-total privatization ratios had a much lower fraction of their total privatization activities focused on telecommunications. For these countries, only 23.8% of the privatized assets were from telecommunications firms (median = 27.8%). And, those nations that privatized telecommunications were much more likely to use asset sales rather than

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Table X

Central and South American Countries and the Ratio of Value of Assets Privatized through Share Issue Privatizations to Total Assets Privatized

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The number of privatizations, the ratio of SIPs to total privatization value, the average value per transaction, and total value privatized are reported for each country from Central and South America, in millions of dollars. All countries are included, whether or not they were in the regression analysis. The analysis includes transactions of less than $1 million. In addition, we report the percent of privatized telecommunications assets that are privatized through SIPs and the percent of all privatizations that involve telecommunications assets. In the bottom row, averages and medians are reported, with each country equally weighted. No entry in the "% of Telecom as SIPs" column indicates that the country did not privatize any telecommunication assets during our sample period.

Country	Number	SIPs/ Total Value	Average Value of Transaction	Total Value Privatized	% of Telecom as SIPs	Telecom as % of all Privatizations
Argentina	86	0.198	442.6	38062	63.3	8.6
Barbados	3	0.015	6.7	20		0.0
Belize	2	1.00	9.4	19	100.0	100.0
Bolivia	63	0.0001	31.6	1993	0	30.6
Brazil	116	0.129	593.0	68785	0	30.3
Chile	25	0.018	158.1	3953	0	5.8
Colombia	17	0.098	428.3	7282		0.0
Costa Rica	2	0	15.2	30		0.0
Dominican Republic	5	0	164.2	821		0.0
Ecuador	6	0.356	19.1	115		0.0
El Salvador	8	0.034	156.3	1250	12.0	28.7
Grenada	1	0	6.0	6		0.0
Guatemala	4	0	312.8	1251	0	56.0
Guyana	6	0	18.5	111	0	18.0
Haiti	1	0	16.0	16		0.0
Honduras	4	0	1.6	6		0.0
Jamaica	15	0.267	19.7	295	31.1	20.7
Nicaragua	20	0.225	0.8	16		0.0
Panama	9	0	156.7	1410	0	51.3
Paraguay	2	0	21.0	42		0.0
Peru	106	0.269	100.5	10651	41.8	54.8
Trinidad & Tobago	17	0.008	38.7	658		0.0
Uruguay	2	0	8.5	17		0.0
Venezuela	27	0.179	214.1	5780	35.0	50.7
Average	22.8	0.117	122.5	5941	23.6	19.0
(Median)	(7.0)	(0.012)	(26.3)	(476.5)	(6.0)	(2.9)

SIPs to do so. Five of the countries used asset sales exclusively for the telecommunications assets, 2 of the countries privatized no telecommunications firms, and the other 3, Venezuela, Argentina, and Peru, used SIPs for a much lower fraction of firms than those in the top 10.

The countries with the lowest SIP-to-total privatization ratio also have a distinct geographic concentration. Six of the 10 countries in this group are in Central or South America. Table X reports more information on the privatizations in this region. In addition to the lesser emphasis on telecommunications firms,

the privatizations tend to be of smaller firms—the average size per transaction for Central and South America was $122.5 million, relative to $482.8 million for the full sample. Medians are $26.3 million for Central and South America versus $45 million for the full sample. In addition, the industry concentration is focused more on utility, manufacturing, mining and service firms (34% in utilities and 34% in manufacturing) than in the full sample (16.4% and 23.5%, respectively). Overall, there does seem to be a much greater emphasis in Central and South America on privatizing smaller firms, and to privatize those firms through asset sales rather than SIPs. When we enter an indicator variable in the regression analysis for privatizations from these countries, however, it is insignificantly different from zero, suggesting that the other explanatory variables are able to capture the characteristics that determine these differences. Nevertheless, it is interesting to note the regional differences as a matter for future discussion and research.

IV. Conclusions

The choice between public and private capital markets is an important one for any entity seeking to raise money. In this paper, we examine the factors that influence how countries have chosen to privatize state-owned enterprises. There are two primary ways that a government may sell an SOE to raise revenue for a country: either in an asset sale of the SOE to a small group of investors or another firm (i.e., through the private capital market), or as a share issue privatization (i.e., through the public capital market). We consider the importance of market, political, and firm-specific characteristics in this choice.

We find that the nature of the capital market in the privatizing country is key to the privatization decision—SIPs are more likely to occur in countries with less developed capital markets, perhaps resulting from the government's need and desire to use SIPs to develop the national market's liquidity and absorptive capacity. This finding is consistent with the views of many public policy commentators as well as academic researchers. Subrahmanyam and Titman (1999) have argued that SIPs can jump-start stock-market development and trigger gains in economic growth and efficiency. Policy commentators also emphasize the importance of privatizations in broadening capital markets, and in turn, economic and political development. The goal of expanding share ownership and developing an "equity culture" is a stated purpose of many privatization programs. We also find that SIPs are more likely when income is more equal throughout the country, providing more potential investors and avoiding the need for extensive underpricing of offerings. And, as noted in the IPO literature, we find that share offerings are more likely in periods of hot markets.

Our results also support the hypothesis that a country's political and legal environment affects financing decisions. We find that governments that have less state control over the economy tend to privatize SOEs via asset sales. Investors are more willing to make the substantial investments required for acquiring SOEs through asset sales when there is a stronger commitment that they will be able to maintain ownership of those assets without undue

government intervention. We also find that the stronger the legal and political environment in providing protection to minority interests, the more likely the firm is to be privatized via an SIP.

Firm-specific characteristics, such as the size of the offering or sale and the profitability of the SOE, also impact the method of privatization. Larger offerings and more profitable SOEs are more likely to be privatized through SIPs and the public capital markets. Existing public capital markets are better able to absorb the largest offerings and asymmetric information problems are fewer for larger and more profitable offerings, attracting more potential investors. In addition, we find that governments are more likely to choose to privatize profitable firms via SIPs, presumably to gain political support for their privatization policies.

REFERENCES

Alexandrowicz, Melinda R., 1994, Mass privatization programs, *FPD Note No. 4*, World Bank, Washington, DC.

Atje, Raymond, and Boyan Jovanovic, 1993, Stock markets and development, *European Economic Review* 37, 632–640.

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh, 2001, New tools in comparative political economy: The database of political institutions, *World Bank Economic Review* 15, 165–176.

Beck, Thorsten, Asli Demirguc-Kunt, and Ross Levine, 2000, A new database on financial development and structure, *World Bank Economic Review* 14, 597–605.

Beck, Thorsten, Ross Levine, and Norman Loayza, 2000, Finance and sources of growth, *Journal of Financial Economics* 58, 261–300.

Biais, Bruno, and Enrico Perotti, 2002, Machiavellian privatization, *American Economic Review* 92, 240–258.

Booth, Laurence, Varouj Aivazian, Asli Demirguc-Kunt, and Vojislav Maksimovic, 2001, Capital structure in developing countries, *Journal of Finance* 56, 87–130.

Bortolotti, Bernardo, Marcella Fantini, and Carlo Scarpa, 2000, Why do governments sell privatized companies abroad? Working paper, *FEEM*.

Bortolotti, Bernardo, Marcella Fantini, and Domenico Siniscalco, 2004, Privatisation around the world: Evidence from panel data, *Journal of Public Economics* 88, 305–332.

Boutchkova, Maria, and William Megginson, 2000, The impact of privatization on capital market development and individual share ownership, *Financial Management* 29, 31–76.

Boycko, Maxim, Andrei Shleifer, and Robert Vishny, 1994, Voucher privatization, *Journal of Financial Economics* 35, 249–266.

Brown, John, 2001, Planned Aer Lingus float is abandoned, *Financial Times*, p. 14.

Chemmanur, Thomas, and Paolo Fulghieri, 1994, Reputation, renegotiation, and the choice between bank loans and publicly traded debt, *Review of Financial Studies* 7, 475–506.

Clague, Christopher, Philip Keefer, Stephen Knack, and Mancur Olson, 1996, Property and contract rights in autocracies and democracies, *Journal of Economic Growth* 1, 243–276.

Demirguc-Kunt, Asli, and Ross Levine, 1996, Stock market development and financial intermediaries: Stylized facts, *World Bank Economic Review* 10, 291–321.

Demirguc-Kunt, Asli, and Vojislav Maksimovic, 1999, Institutions, financial markets, and firm debt maturity, *Journal of Financial Economics* 54, 295–336.

Denis, Diane K., and John McConnell, 2003, International corporate governance, *Journal of Financial and Quantitative Analysis* 38, 1–36.

Dewenter, Kathryn, and Paul H. Malatesta, 1997, Public offerings of state-owned and privately-owned enterprises: An international comparison, *Journal of Finance* 52, 1659–1679.

Diamond, Douglas, 1991, Monitoring and reputation: The choice between bank loans and directly placed debt, *Journal of Political Economy* 99, 689–721.

Djankov, Simeon, and Peter Murrell, 2002, Enterprise restructuring in transition: A quantitative survey, *Journal of Economic Literature* 40, 739–792.

Dow, James, and Gary Gorton, 1997, Stock market efficiency and economic efficiency: Is there a connection? *Journal of Finance* 52, 1087–1129.

Dyck, Alexander, and Luigi Zingales, 2004, Private benefits of control: An international comparison, *Journal of Finance* 59, 537–600.

Henisz, Witold, 2000, The institutional environment for economic growth, *Economics and Politics* 12, 1–31.

Hertzel, Michael, and Richard Smith, 1993, Market discounts are shareholder gains for placing equity privately, *Journal of Finance* 48, 459–485.

Holmstrom, Bengt, and Jean Tirole, 1993, Market liquidity and performance monitoring, *Journal of Political Economy* 101, 678–709.

Houston, Joel, and Christopher James, 1996, Bank information monopolies and the mix of private and public debt claims, *Journal of Finance* 51, 1863–1889.

Jones, Steven, William Megginson, Robert Nash, and Jeffry Netter, 1999, Share issue privatizations as financial means to political and economic ends, *Journal of Financial Economics* 53, 217–253.

Kleiman, Gary, and Elizabeth Morrissey, 1994, African equity markets: Testing Latin America's path, *Columbia Journal of World Business* 29, 122–125.

Knack, Stephen, and Philip Keefer, 1995, Institutions and economic performance: Cross-country tests using alternative institutional measures, *Economics and Politics* 7, 207–227.

La Porta, Rafael, and Florencio Lopez-de-Silanes, 1999, Benefits of privatization: Evidence from Mexico, *Quarterly Journal of Economics* 114, 1193–1242.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1997, Legal determinants of external finance, *Journal of Finance* 52, 1131–1150.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113–1150.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1999, The quality of government, *Journal of Law, Economics, and Organization* 15, 222–279.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 2002, Investor protection and corporate valuation, *Journal of Finance* 57, 1147–1170.

Levine, Ross, 1996, Stock markets: A spur to economic growth, *Finance and Development* 33, 7–10.

Levine, Ross, 1997, Financial development and economic growth: Views and agenda, *Journal of Economic Literature* 35, 688–726.

Levine, Ross, and Sara Zervos, 1998, Stock markets, banks, and economic growth, *American Economic Review* 88, 537–558.

Lieberman, Ira, and Robert Fergusson, 1998, Overview of privatization and emerging equity markets, in Ira Lieberman and Christopher Kirkness, eds.: *Privatization and Emerging Equity Markets* (The World Bank, Washington, DC).

Lieberman, Ira, and Christopher Kirkness, ed.: 1998, *Privatization and Emerging Equity Markets* (The World Bank, Washington, DC).

Lopez-de-Silanes, Florencio, 1997, Determinants of privatization prices, *Quarterly Journal of Economics* 112, 965–1025.

Loughran, Tim, Jay Ritter, and Kristian Rydqvist, 1994, Initial public offerings: International insights, *Pacific-Basin Finance Journal* 2, 165–199.

Manzetti, Luigi, 1994, The politics of privatization and deregulation in Latin America, *Quarterly Review of Economics and Finance* 34, 43–76.

Mayer, Colin, 1990, Financial systems, corporate finance, and economic development, in R. Hubbard, ed.: *Asymmetric Information, Corporate Finance, and Investment* (University of Chicago Press, Chicago).

McLindon, Michael, 1996, *Privatization and Capital Market Development: Strategies to Promote Economic Growth* (Praeger Publishers, Westport, CT.).

Megginson, William, Robert Nash, and Matthias Van Randenborgh, 1994, The financial and operating performance of newly-privatized firms: An international empirical analysis, *Journal of Finance* 49, 403–452.

Megginson, William, and Jeffry Netter, 2001, From state to market: A survey of empirical studies on privatization, *Journal of Economic Literature* 39, 321–389.

Perotti, Enrico, and Pieter van Oijen, 2001, Privatization, stock market development, and political risk, *Journal of International Money and Finance* 20, 43–69.

Pindyck, Robert, and Daniel Rubinfeld, 1991, *Econometric Models and Economic Forecasts*, third edition (McGraw-Hill, Inc., New York).

PRS Group, Inc., 2002, http://www.countrydata.com (PRS Group, Inc, East Syracuse, NY).

Rajan, Raghuram, 1992, Insiders and outsiders: The choice between informed and arm's-length debt, *Journal of Finance* 47, 1367–1400.

Rajan, Raghuram, and Luigi Zingales, 1998, Financial dependence and growth, *American Economic Review* 88, 559–586.

Repullo, Rafael, and Javier Suarez, 1998, Monitoring, liquidation, and security design, *Review of Financial Studies* 11, 163–187.

Rousseau, Peter, and Paul Wachtel, 2000, Equity markets and growth: Cross-country evidence on timing and outcomes, 1980–1995, *Journal of Banking and Finance* 24, 1933–1957.

Shleifer, Andrei, and Robert Vishny, 1997, A survey of corporate governance, *Journal of Finance* 52, 737–783.

Slovin, Myron, Marie Sushka, and Steven Ferraro, 1995, A comparison of the information conveyed by equity carve-outs, spin-offs, and asset sell-offs, *Journal of Financial Economics* 37, 89–104.

Stulz, Rene, 2000, Financial structure, corporate finance and economic growth, *International Review of Finance* 1, 11–38.

Stulz, Rene, and Rohan Williamson, 2003, Culture, openness and finance, *Journal of Financial Economics* 70, 313–349.

Subrahmanyam, Avanidhar, and Sheridan Titman, 1999, The going public decision and the development of financial markets, *Journal of Finance* 54, 1045–1082.

Wurgler, Jeffrey, 2000, Financial markets and the allocation of capital, *Journal of Financial Economics* 58, 187–214.