



Patterns of international capital raisings[☆]

Juan Carlos Gozzi^a, Ross Levine^{a,b,*}, Sergio L. Schmukler^c

^a Brown University, United States

^b NBER, United States

^c World Bank, United States

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ABSTRACT

This paper documents several new patterns associated with firms issuing stocks and bonds in foreign markets that motivate the need for and help guide the direction of future research. Three major patterns stand out. (1) A large and growing fraction of capital raisings, especially debt issuances, occurs in international markets, but a very small number of firms accounts for the bulk of international capital raisings, highlighting the cross-firm heterogeneity in financial globalization. (2) Changes in firm performance following equity and debt issuances in international markets are qualitatively similar to those following domestic issuances, suggesting that capital raisings abroad are not intrinsically different from those in domestic markets. (3) Firms continue to issue securities both abroad and at home after accessing international markets, suggesting that international and domestic markets are complements, not substitutes. Existing theories do not fully account for these patterns.

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1. Introduction

Financial globalization has reshaped international and corporate finance over the last two decades. About 30% of all capital raised by firms through stock and bond issues over the period 1991–2005 occurred in securities markets outside their home countries. [Obstfeld and Taylor \(2004\)](#) show that a historically unprecedented percentage of the world's financial capital now flows across international borders. Furthermore, the amount raised by firms in foreign markets has grown almost four-fold since 1991, approaching one trillion U.S. dollars in 2005.

Yet, basic questions about the internationalization of capital markets remain incompletely answered. Why do firms sell stocks and bonds in foreign markets? What are the effects of issuing securities in foreign markets on firm performance? What are the cross-firm distributional

effects from international capital raisings? The lack of firm-level information on equity and debt issuances in both foreign and domestic markets limits our understanding of the causes and effects of financial globalization at the macro and micro level.

To help address these questions, we provide the first documentation of several salient firm-level patterns associated with international capital raisings. First, we illustrate the characteristics of firms that raise capital through the issuance of equity and debt abroad and document how these firms differ from both firms that only raise capital domestically and firms that do not issue securities locally or internationally. We analyze numerous firm-level characteristics, including firm size, growth, investment, profitability, capital structure, and corporate valuation. Second, we show what happens to firms after issuing equity or debt abroad and compare these patterns to firms that raise capital domestically. Third, we compare how firms use domestic bond and equity markets before and after they internationalize. Rather than testing hypotheses or formulating new theories, we contribute to the literature by documenting new patterns and relating them to existing theories. As a result, our research both advertises the need for and helps guide the direction of future research.

To analyze the firm-level patterns associated with international capital raisings, we construct a new database. The dataset includes 168,513 equity and debt issues in domestic and international capital markets, conducted by 45,969 firms from 116 countries, and covers the period 1991–2005. We match these data with comprehensive information on firm balance sheets and income statements for 38,801 firms.

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* Corresponding author. Brown University, United States.

E-mail addresses: juan_carlos_gozzi_valdez@brown.edu (J.C. Gozzi), ross_levine@brown.edu (R. Levine), sschmukler@worldbank.org (S.L. Schmukler).

Three broad categories of findings emerge from our analysis. We first summarize the findings and then relate them to existing theoretical and empirical work on capital raisings and international financial integration.

First, a large and growing fraction of capital raisings, especially debt issuances, is conducted in international markets, but only a small proportion of firms actually uses international markets, and of this small fraction, a very small sub-sample accounts for the bulk of international capital raisings. Of the total capital raised through security issuances in capital markets in 2005, firms from developing and developed countries raised, respectively, 51% and 39% outside their home countries. This share is higher for debt than for equity issues. Debt issuances abroad accounted for 35% of the total amount raised through debt issuances in capital markets over the period 1991–2005, while equity issues abroad represented 10% of total amount raised through equity issues over the same period. Furthermore, about 15% of the almost 46,000 firms that issued any securities in public markets during our sample period accessed international markets, and only one-tenth of these firms (less than 700 firms) collected about two-thirds of all the funds raised internationally. Finally, firms raising capital abroad are larger, slower growing, and more leveraged than firms that only raise capital domestically.

Second, changes in firm performance following equity and debt issues in international markets are qualitatively similar to those that follow the issuance of securities in domestic markets. Whether firms issue securities in domestic or international markets, they tend to become larger and experience a decrease in their growth rate and profitability following capital raisings. These patterns suggest that issues in international markets are not intrinsically different from those in domestic markets. Furthermore, the differences between firms that raise capital abroad and those that only issue securities domestically exist many years before firms actually access international markets.

Third, although issues abroad tend to be significantly larger than issues at home, firms (1) continue to issue securities in both international and domestic markets after accessing international markets and (2) increase the amount of money raised in domestic markets after internationalizing. In particular, for firms from developing (developed) countries, the median issuance in international markets is about 18 (two) times larger than the median issuance in domestic markets. Furthermore, firms do not opt out of domestic markets once they internationalize. To the contrary, while continuing to use international markets, firms significantly *increase* their capital raisings at home. For example, following internationalization, the typical developed country firm more than triples the average annual amount raised in domestic markets, increases the amount raised domestically relative to assets, and also captures a larger fraction of the total capital raising activity in its domestic market.

Our findings relate to three theories of the causes and effects of international capital raisings. First, the segmentation view argues that firms internationalize to circumvent regulations, poor accounting systems, taxes, and illiquid domestic markets that discourage foreign investors from purchasing their shares (Black, 1974; Solnik, 1974; Stapleton and Subrahmanyam, 1977; Errunza and Losq, 1985; Alexander et al., 1987; Domowitz et al., 1998). Thus, firms internationalize to gain access to less expensive capital (Foerster and Karolyi, 1999; Miller, 1999). Second, the “bonding” view argues that firms internationalize to bond themselves to a better corporate governance framework that limits the extraction of private benefits by corporate insiders (Stulz, 1999; Coffee, 2002; Reese and Weisbach, 2002; Doidge et al., 2004). This makes firms more attractive to potential investors, reducing their cost of capital, and inducing an enduring improvement in firm performance. Third, the market timing view suggests that firms raise capital abroad to exploit temporarily high prices for their securities during “hot” markets (Errunza and Miller, 2000; Henderson et al., 2006).

While the patterns we document do not formally reject or confirm existing theories, they suggest that there are large gaps in the ability of these theories to account for noteworthy features of international

capital raisings. For instance, the finding that the changes in firm characteristics following international capital raisings are qualitatively similar to those that follow domestic capital raisings are difficult to reconcile with the bonding view, which argues that capital raisings in international markets are intrinsically different from capital raisings in domestic markets and should therefore have qualitatively different effects on firm performance. Similarly, our finding that firms do not opt out of domestic markets after raising capital abroad, but actually increase their participation in these capital markets, does not fit the predictions of simple segmentation arguments that international markets offer unambiguously better services and/or less expensive capital than local markets (once firms meet the conditions required for going abroad). In terms of market timing, the argument that hot international markets for firms' securities are driving the decision to raise capital abroad does not fully explain why only very few firms actually raise capital abroad.

Furthermore, theories of internationalization and corporate finance need to account for three patterns associated with international capital raisings that are not the focus of existing research. First, debt markets tend to be more internationalized than equity markets. Second, firms that raise capital abroad are different from firms that only raise capital at home *before* they internationalize; these differences in firm characteristics do not emerge after firms internationalize. Third, firms raise capital in both international and domestic markets after accessing international markets. In sum, our findings indicate that current theories have substantive limitations in accounting for firm-level experiences and highlight directions for developing more precise theories of the internationalization process and its implications.

In addition, our paper extends several strands of empirical literature related to capital market internationalization. Henderson et al. (2006) analyze aggregate patterns of capital raising activity around the world and document how internationalization varies across security types and regions. We expand their work by analyzing the extent of internationalization at the firm level. Several other papers analyze the characteristics of firms that list their shares abroad, through either direct cross-listings or depositary receipts (see, for example, Pagano et al., 2002; Lang et al., 2003a,b; Claessens and Schmukler, 2007; Gozzi et al., 2008). In contrast, we focus on capital raisings, not on equity market cross-listings. Moreover, while most studies ignore debt issuances, we analyze both equity and debt markets. Indeed, we find that debt issues in public markets are a much more important source of capital for firms than equity issues, and debt markets are far more internationalized than equity markets.

This paper also identifies patterns relevant for the large corporate finance literature on the motivations for issuing debt and equity (see, for example, Loughran and Ritter, 1995; Pagano et al., 1998; Baker and Wurgler, 2002; DeAngelo et al., 2007; Kim and Weisbach, 2008). We contribute to this literature by tracing the evolution of firm characteristics, including capital structure, investment, and profitability, after firms issue debt and equity securities in domestic and international markets. These time-series patterns for a broad array of firms from around the world provide new evidence regarding the motivations for security issuances. Furthermore, the finding that firms issue debt and equity securities in both domestic and foreign markets following internationalization suggests that future research needs to account for these corporate financing patterns.

The remainder of the paper is organized as follows. Section 2 describes the data. Section 3 documents the extent of internationalization of securities markets and analyzes the characteristics of those firms that raise capital abroad. Section 4 analyzes the evolution of firm characteristics and performance following capital raisings in international markets and compares these patterns to firms that only raise capital in domestic securities markets. Section 5 examines the international and domestic capital raising activity of firms that have accessed international markets. We conclude in Section 6.

2. Data

To document patterns of international capital raisings and analyze the characteristics and performance of firms that raise capital through security issues in international capital markets, we assemble a comprehensive dataset on firms' security issuances in capital markets around the world and match this information with balance sheet and income statement data.

We examine security issuances in public capital markets. Firms may also access foreign financing by, among other things, borrowing directly from foreign banks and issuing syndicated loans abroad. These financing alternatives constitute a significant source of cross-border capital for firms and have been the focus of substantial previous research, e.g., Carey and Nini (2007) provide a general overview of international syndicated loan markets, while Claessens (2006) reviews the literature on cross-border banking. We analyze security issuances in public capital markets, rather than relationship lending associated with syndicated bank loans, because basic questions and theories of the causes and consequences of these capital raisings remain incompletely addressed.

Our data on firms' capital raising activity come from Security Data Corporation's (SDC) New Issues Database, which provides transaction-level information on new issues of common and preferred equity and bonds with an original maturity of more than one year. The data capture the actual proceeds from the issue, not the face value at issuance. Given that SDC does not collect data on debt issues with a maturity of less than one year, our dataset does not include commercial paper issues with such short-term maturities. While data for public issues in the U.S. start in the 1970s, coverage of other markets starts later, with most regional databases starting in 1991. Therefore, we restrict our sample to the period 1991–2005.¹

Since our analysis focuses on corporate capital raising activity, we exclude all public sector bond issuances, comprising debt issued by national, local, and regional governments, government agencies, regional agencies, and multilateral organizations. We also exclude security issuances by investment funds, investment companies, and real estate investment trusts (REITs), as well as mortgage-backed securities and other asset-backed securities. Moreover, since we focus on capital raising activity in public markets we exclude all private placements. After these exclusions, we are left with a database covering 168,513 security issuances by 45,969 firms from 116 economies over the period 1991–2005.

To classify security issuances as domestic or international, we consider the main exchange where the issues are listed and compare it to the issuing firm's nationality.² For offerings that take place in more

than one market, we consider issues in each market as separate issues. In the case of subsidiaries, one could consider the nationality of the firm's parent company instead of its own nationality for classifying issues as foreign or domestic. For instance, an equity issue by a British subsidiary of a U.S. firm in the London Stock Exchange would be classified as international, instead of domestic as in our classification. Which approach provides a better criterion for classifying security issues depends on the degree of integration of financing decisions between firms and their subsidiaries, among other factors. If financial decisions are highly integrated, considering firms' parent nationality may provide a more accurate classification of security issuances. But if financing decisions are relatively decentralized, considering subsidiaries' own nationality may be a better criterion. Actual decision-making policies may lie somewhere in-between these two extremes, with multinational firms possibly coordinating financing decisions with their subsidiaries across several markets. All the results reported in the paper are obtained classifying issues as foreign or domestic based on subsidiaries' nationality. In unreported robustness tests, we classified issues by subsidiaries based on their parents' nationality and obtained results similar to those reported throughout the paper.

To analyze the characteristics of firms that raise capital through security issues, we match the data on security issuances from SDC with firm-level accounting and income statement data. These data come from Compustat North America for U.S. firms and Worldscope for firms from the rest of the world. We combine both datasets because Worldscope's coverage of U.S. firms is very limited. To ameliorate possible concerns about data comparability and to control for any differences across datasets, we include country- or firm-level fixed effects in our analyses. We also conducted all our analyses using only data from Worldscope and excluding U.S. firms, obtaining results similar to those reported throughout the paper. In addition, we conducted these analyses including the small sample of U.S. firms with firm-level data available from Worldscope and also obtained similar results.

After eliminating firms with missing data, outliers, and firms with less than three annual observations for our variables of interest, we are left with a sample of 38,801 firms from 60 economies covering the period 1991–2005, totaling 335,539 firm-year observations. Of these firms, 21,634 issued securities in public markets over the sample period according to SDC, while the remaining 17,167 did not raise capital in public capital markets over this period. The working paper version of this paper provides detailed information on the economies included in our dataset, their regional and income level classification, the number of observations and firms by region and income level, and the construction of each variable. It also presents additional analyses and robustness tests.

Throughout the paper we group issues into equity and debt. Equity issues include initial public offerings (IPOs) and seasoned equity offerings (SEOs). Debt issues include convertible and non-convertible debt issues and preferred shares issues. Preferred shares have features of both equity and debt securities and therefore could be classified in either of the two categories. All the results reported in the paper classify preferred shares issues as debt issues. As a robustness test, we classified preferred shares issues as equity issues and obtained results similar to those reported throughout the paper.

3. Which firms raise capital abroad?

This section analyzes the extent of internationalization of capital raising activity around the world and the characteristics of those firms that issue securities in international capital markets. We address three questions. First, what is the role of international capital markets relative to domestic markets in providing firm financing and has this changed? Second, what fraction of firms raises capital in international markets? Third, what are the characteristics of firms that raise capital abroad, compared to firms that only raise capital domestically and to firms that are listed in their domestic stock markets but do not issue securities over our sample period?

¹ The SDC database is divided into twelve regional sub-databases covering different markets: Asian Pacific Domestic (Hong Kong, Indonesia, Malaysia, Philippines, Singapore, Taiwan, and Thailand.); Australian/New Zealand Domestic (Australia, New Zealand, and Papua New Guinea); Canadian Domestic (Canada); Continental European Domestic (Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, and Switzerland); Indian and Subcontinent (Bangladesh, India, Pakistan, and Sri Lanka); International (Eurobonds and other cross-border issues); Japanese Domestic (Japan); Korean Domestic (South Korea); Latin American Domestic (Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Panama, Peru, Uruguay, and Venezuela); United States (United States); United Kingdom Domestic (United Kingdom); and Rest of the World (countries not included in other SDC regional sub-databases, such as China). The academic version of SDC to which we have access does not include the Canadian and Korean Domestic sub-databases. Therefore, we exclude all Canadian and South Korean firms from our analysis.

² SDC classifies Eurobonds as being listed on the Luxembourg exchange, although these securities are issued all over Europe and trade mostly over the counter. This implies that Eurobond issues by firms from Luxembourg are classified as domestic issues, even though they may trade in other European countries. However, the number of firms from Luxembourg carrying out bond issuances at home according to SDC is relatively low. We re-did all our analyses excluding these firms and obtained results similar to those reported below.

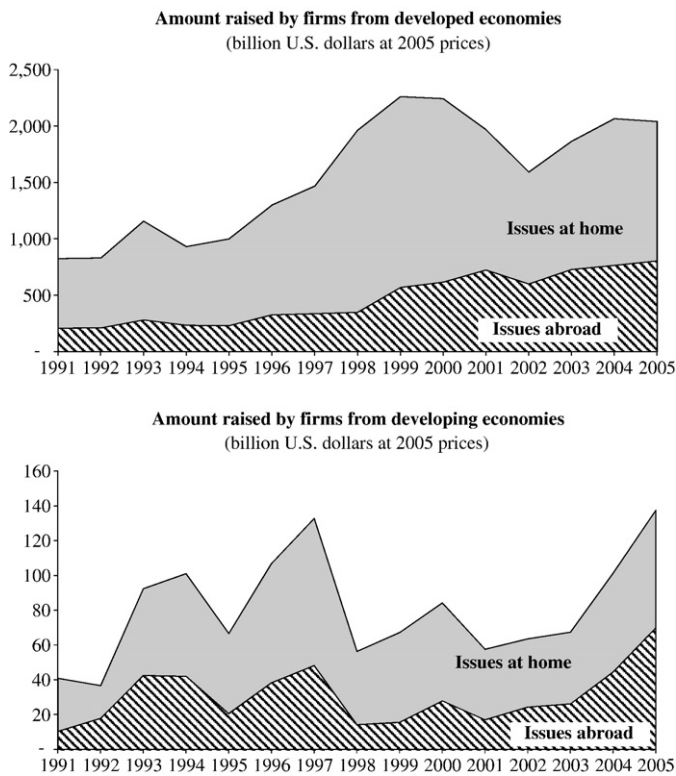


Fig. 1. Evolution of capital raising activity in public markets around the world. This figure shows the evolution of the aggregate amount of capital raised by firms from developed and developing economies through security issues in public markets in each year over the 1991–2005 period. Issues at home are those carried out in a public market in the firm's home country. Issues abroad are those carried out in a public market outside the firm's home country. Data are in constant 2005 U.S. dollars.

3.1. Patterns of global capital raising activity

As a first step towards analyzing the extent of internationalization of capital markets, Fig. 1 shows the evolution of the aggregate amount of capital raised by firms from developed and developing economies through security issues in public markets over the period 1991–2005, differentiating between issues at home and abroad.

Fig. 1 shows that the aggregate amount of capital raised in public markets by firms from developed and developing economies increased significantly over our sample period. The total amount raised by firms from developed economies increased from 826 billion U.S. dollars at 2005 prices in 1991 to more than two trillion in 2005. Although the amount of capital raised in public capital markets by firms from developing economies over this period showed significant volatility, it nevertheless increased more than three-fold over the sample period, reaching 138 billion U.S. dollars in 2005.

Fig. 1 also shows that security issuances abroad grew faster than issuances in domestic markets over the period 1991–2005. This pattern was particularly marked in the case of developing economies, where the aggregate ratio of the amount of capital raised abroad to total capital raised increased from 25.3% in 1991 to 50.8% in 2005. In the case of developed economies, the aggregate share of capital raised abroad increased from 25.3% in 1991 to 39.4% in 2005.³

³ Differences in the extent of internationalization between developed and developing countries might reflect cross-country differences in the size of the economy, differences in the institutional environment, or in other country traits. The role of country-level factors in the internationalization of equity markets is explored in Claessens, Klingebiel, and Schmukler (2006) and Claessens and Schmukler (2007). In this paper, we focus mostly on developments at the firm-level and account for cross-country differences by controlling for country- or firm-level fixed effects in the regressions.

Table 1 further stresses that issuances in international capital markets represent a significant share of the total amount raised by firms in public markets, while also showing that debt markets are more internationalized than equity markets and that debt issues are a much larger source of corporate finance than equity issues around the world. Table 1 provides information on the aggregate amounts raised through security issuances in domestic and international markets over the period 1991–2005 for different regions, differentiating between equity and debt issues. Three main features of the aggregate patterns of capital raisings are visible from the data.

First, debt issues in public markets are a more important source of capital for firms than equity issues at the aggregate level during our sample period. Firms raised 19.8 trillion U.S. dollars at 2005 prices between 1991 and 2005 through debt issues in public markets, which represents 80% of the total amount raised through security issues over this period.⁴

Second, consistent with the patterns shown in Fig. 1, international markets account for a large share of capital raising activity, both for developing and developed economies. Firms from developed economies raised about 7 trillion U.S. dollars at 2005 prices in international capital markets over our sample period, which represents 29.7% of the total amount they raised in public markets. In the case of developing country firms, capital raised outside their home countries between 1991 and 2005 totaled 459.5 billion U.S. dollars at 2005 prices, representing 37.9% of the total amount raised through security issuances during this period.

Finally, Table 1 shows that debt markets are more internationalized than equity markets. For example, in the case of developed countries, the total amount raised through equity issues abroad represents 7.8% of the total amount raised through equity issues over our sample period. This statistic is over four times higher in the case of debt offerings, reaching 34.7%. Moreover, the higher degree of debt market internationalization, compared to equity markets, is a consistent pattern across all regions shown in Table 1.⁵

3.2. Firms' access to international markets

Although the aggregate patterns documented in Section 3.1 show that securities markets are highly internationalized and that the amount of capital raised in international markets has grown significantly, these observations do not provide information on developments at the firm level. Consequently, this section describes firms' access to international capital markets.

Table 1 shows that, among those firms that issue securities in capital markets, the proportion that do so outside their home countries is relatively low, suggesting that internationalization is restricted to a small set of firms. Table 1 provides information on the total number of firms that issued securities in domestic and international markets over the period 1991–2005 for different regions, differentiating between equity and debt issues. Out of a total of 45,969 firms raising capital in public markets between 1991 and 2005, only 14.5% issued securities outside their home market.

Differentiating by type of security issuance, Table 1 shows that a very small percentage of those firms that issue equity tend to do so in

⁴ The value of debt issues is not directly comparable to that of equity issues, since equity issues have no maturity, while debt issues must be repaid. Part of the proceeds from debt issues are typically used to repay maturing debt and therefore only a fraction of debt issues can be considered new capital. Henderson, Jegadeesh, and Weisbach (2006) try to adjust the data on debt issues to take this fact into account and conclude that, even with these adjustments, debt issues constitute a larger source of new capital than equity issues at the aggregate level.

⁵ One could argue that we may observe a higher share of international debt issues in the aggregate data not due to underlying differences between equity and debt issuances, but rather because those firms that tend to access international markets are also more likely to issue debt securities, both at home and abroad. However, when analyzing only those firms that raise capital outside their home countries, we still find that the share of capital raised abroad is on average higher for debt than for equity issues.

Table 1
Capital raising activity in public markets by issuer country/region and type of issue.

	Amount raised (million U.S. dollars at 2005 prices)						Number of firms					
	Equity issues		Debt issues		Total		Equity issues		Debt issues		Total	
	Total	% abroad	Total	% abroad	Total	% abroad	Total	% abroad	Total	% abroad	Total	% abroad
Germany	287,170	6.4%	2,474,392	35.0%	2,761,562	32.1%	843	3.4%	569	39.5%	1,306	18.9%
Japan	467,897	0.5%	1,269,771	32.1%	1,737,668	23.6%	3,236	0.7%	1,193	58.9%	4,026	17.9%
United States	1,543,205	0.3%	8,807,478	14.1%	10,350,683	12.1%	8,460	1.1%	4,613	11.6%	11,852	5.3%
Africa	21,189	31.7%	13,769	96.7%	34,958	57.3%	249	17.3%	29	89.7%	274	24.5%
Asia	592,939	25.3%	302,272	63.0%	895,211	38.0%	11,780	5.0%	1,188	54.2%	12,482	9.2%
Australia & New Zealand	136,505	8.7%	285,595	88.3%	422,100	62.5%	2,150	2.7%	264	57.6%	2,330	8.8%
Eastern Europe & Central Asia	48,063	37.5%	52,515	99.5%	100,578	69.9%	236	23.7%	138	94.2%	360	49.4%
Latin America & Caribbean	147,651	28.4%	419,289	36.1%	566,941	34.1%	1,005	15.4%	2,322	16.4%	2,917	16.8%
Middle East	26,332	58.2%	20,972	100.0%	47,304	76.7%	210	83.8%	44	100.0%	248	87.5%
Western Europe	1,619,552	10.5%	5,701,823	57.9%	7,321,375	47.4%	6,466	8.1%	3,917	45.5%	9,634	23.1%
Other	65,199	100.0%	428,067	100.0%	493,266	100.0%	175	100.0%	392	99.7%	540	99.8%
Total	4,955,703	10.2%	19,775,944	35.1%	24,731,647	30.1%	34,810	5.5%	14,669	34.2%	45,969	14.5%
Developed economies	4,372,328	7.8%	19,146,822	34.7%	23,519,150	29.7%	24,313	5.2%	11,504	36.3%	32,989	15.9%
Developing economies	583,375	27.8%	629,122	47.3%	1,212,497	37.9%	10,497	6.3%	3,165	26.6%	12,980	10.9%

This table shows the aggregate amount of capital raised and the number of firms raising capital in public markets by country/region over the 1991–2005 period. Issues at home are those carried out in a public market in the firm's home country. Issues abroad are those carried out in a public market outside of the firm's home country. Data on the amount of capital raised are in constant 2005 U.S. dollars. Since firms may conduct several different types of issues, the number of firms in the total column may differ from the sum of the number of firms in the debt and equity issues columns.

international markets, while a larger proportion of firms that issue debt conduct these operations in international markets. Only 5.2% of the firms from developed economies that raised capital through equity issues did so through offerings outside their home markets. In the case of developing countries, this statistic reaches 6.3%. This suggests that only a relatively small set of firms may be able to meet the requirements to access equity markets outside their home country. The percentage of firms raising capital abroad through debt issues is much higher. For developed countries, 36.3% of the firms that issued debt securities during our sample period conducted these operations abroad, while the corresponding figure for developing countries is 26.6%.

Furthermore, we also find that capital raising activity in international markets is highly concentrated among the small proportion of firms that access international markets. In particular, the top 10% (20%) of firms accounted for 69.4% (82.7%) of the total capital raised abroad by developed country firms over our sample period. A similar pattern arises in the case of developing economies, with the top 10% (20%) of firms accounting for 53.9% (69.5%) of the total amount raised abroad by developing country firms over the 1991–2005 period.

In sum, the data indicate that (1) few firms access international markets, and (2) of those few firms that raise capital abroad, a very small fraction accounts for most of the cross-border capital raising activity. These results suggest that a better understanding of the characteristics of those firms that issue securities in international capital markets and how they may differ from firms that only raise capital at home may provide useful insights regarding the internationalization process. We now turn to this issue.

3.3. Characteristics of firms that raise capital abroad vs. those that do not

This section analyzes the characteristics of firms that raise capital through security issues in international capital markets, comparing them to firms that only raise capital in domestic markets and to firms that are listed in their domestic stock markets but do not raise capital over our sample period. We analyze a broad set of firm-level characteristics, including measures of size, growth, investment, profitability, capital structure, and valuation.⁶

⁶ We analyze more variables (including sales, sales growth, R&D, and return on assets) in the working paper version of this paper and reach similar conclusions.

Table 2 presents the medians of several firm-level variables for different groups of firms classified according to their capital raising activity. Similar patterns are visible for most firm characteristics if we compare means across the different groups of firms instead of medians. A possible concern when comparing different groups of firms is that differences in firm-level characteristics may reflect differences in the nationality and industry of firms. To account for this, Table 2 reports median regressions of the different firm characteristics on country and industry dummies and a dummy variable that equals one for those firms that raise capital abroad and zero otherwise.⁷ This variable captures the difference in medians between firms that raise capital abroad and other groups of firms classified according to their capital raising activity (firms that are listed in their domestic stock markets but do not raise capital over our sample period in column (a) and firms that only raise capital in domestic markets during our sample period in column (b)).

Two patterns emerge. First, firms that raise capital abroad are very different from those that are listed in local stock markets but do not issue securities in either domestic or foreign markets over the 1991–2005 period. In particular, firms that raise capital abroad tend to be larger, grow at a faster pace, have higher capital expenditures, and are more profitable. Firms that raise capital abroad also differ from non-capital raising firms in terms of their capital structure. They have higher levels of indebtedness and their debt tends to have a longer maturity (a lower ratio of short-term debt to total debt). Also, firms that raise capital abroad tend to have higher valuations, as measured by Tobin's *q*.

Second, Table 2 indicates that there are significant differences between firms that raise capital at home and abroad. Firms that raise capital abroad are significantly larger than firms that only raise capital at home and tend to grow slower. In terms of their investment, firms that raise capital in international markets show higher capital expenditures, both in absolute terms and relative to sales. Firms that raise capital abroad also show higher levels of indebtedness and exhibit longer debt maturities. Finally, as shown in the last column of Table 2, when we condition on industry and country fixed effects,

⁷ These regressions are estimated adjusting the standard errors for clustering at the firm level. Since there is no analytical solution for estimating clustered standard errors in quantile regressions, we estimate the standard errors through bootstrapping with clustering at the firm level using 100 iterations. Similar results are obtained if we use standard errors that are robust to heteroskedasticity of unknown form.

Table 2
Firm characteristics by capital raising activity.

Firm characteristics	Firms with no capital raising activity	Firms that only raise capital at home	Firms that raise capital abroad		
	Median (No. of observations)	Median (No. of observations)	Median (No. of observations)	Median regression	
				Coefficient on difference with firms with no capital raising activity (a)	Coefficient on difference with firms that only raise capital at home (b)
<i>Size</i>					
Total assets	99.3 (146,133)	153.0 (157,419)	1745.4 (24,173)	1519.0*** [16.969]	1504.0*** [17.466]
<i>Growth</i>					
Annual growth rate of total assets	4.6% (124,412)	7.7% (133,103)	7.0% (23,444)	2.7%*** [14.11]	−0.4%** [−2.14]
<i>Investment</i>					
Capital expenditures	1.6 (131,004)	4.4 (143,742)	48.6 (21,769)	42.8*** [17.781]	41.4*** [17.026]
Capital expenditures/sales	2.8% (129,111)	3.8% (141,525)	5.0% (20,908)	1.6%*** [19.255]	1.3%*** [12.47]
<i>Profitability</i>					
Return on equity	6.6% (122,683)	7.8% (132,370)	7.6% (21,517)	2.2%*** [12.606]	0.4%** [1.995]
<i>Capital structure</i>					
Total debt/total assets	18.5% (140,475)	20.4% (152,971)	29.6% (23,682)	8.2%*** [16.363]	7.3%*** [13.484]
Short-term debt/total debt	46.1% (122,238)	40.5% (135,554)	38.4% (22,764)	−13.9%*** [−24.648]	−9.6%*** [−15.348]
<i>Valuation</i>					
Tobin's <i>q</i>	1.120 (98,094)	1.208 (106,682)	1.154 (20,588)	0.094*** [10.714]	0.048*** [5.838]

This table reports the median of different firm-level characteristics for different groups of firms classified according to their capital raising activity over the 1991–2005 period. Firms with no capital raising activity are those that do not raise capital through security issues in public markets neither at home nor abroad over the sample period. Firms that only raise capital at home are those that raise capital through security issues in public markets in their home country at some point during the sample period but that do not raise capital through security issues outside their home country during the sample period. Firms that raise capital abroad are those that raise capital through security issues in public markets outside their home country at some point during the sample period. These include firms that raise capital both at home and abroad. Total assets and capital expenditures are in million U.S. dollars. The number of observations used to calculate the medians in each case is in parentheses. Columns (a) and (b) report the results of median regressions of the different firm characteristics on a dummy identifying firms that raise capital abroad, country dummies, and industry dummies. Only the coefficient on the abroad dummy is reported. Standard errors are estimated through bootstrapping with clustering at the firm level. *z*-statistics are in brackets. *, **, *** mean significance at 10, 5, and 1%, respectively.

firms that raise capital outside their home countries have significantly higher median Tobin's *q* than firms that only raise capital at home.

Most of the cross-firm differences in Table 2 are not only statistically significant but also economically relevant. For instance, the results reported in column (c) show that, controlling for country and industry fixed effects, the difference in median total assets between firms that raise capital abroad and those that only raise capital at home is 1.5 billion U.S. dollars, which is almost ten times the median total assets of firms that only raise capital at home (this difference is roughly equivalent to moving from the median of total assets for the whole sample of firms to the 85th percentile). The difference in the median capital expenditure over sales between these two groups of firms is 1.3%, which is about 34% of the median of this variable for firms that only raise capital at home (this difference is equivalent to moving from the median of this variable for the whole sample to the 60th percentile). In terms of capital structure, the difference in median total debt over assets between firms that raise capital abroad and those that only raise capital at home is 7.3%, after controlling for country and industry fixed effects. This difference represents about 36% of the median of total debt over assets for firms that only raise capital at home (it is equivalent to moving from the median of this variable for the whole sample to the 60th percentile).

The differences between firms that raise capital abroad and the other groups of firms reported in Table 2 do not simply reflect differences between larger and smaller firms. In unreported robustness tests, we found that our conclusions hold when we analyze only those firms in the top quartile according to firm size (as measured by total assets in U.S. dollars).

4. What happens to firms after raising capital abroad?

This section analyzes the evolution of the characteristics and performance of firms that raise capital through debt and equity issuances.

First, we compare the characteristics of firms that raise capital abroad relative to firms that only raise capital in domestic markets, making these comparisons before and after firms first access international markets. By tracing firms through time, we are able to test whether firms that raise capital abroad differ from firms that only raise capital at home before they actually access international capital markets or whether the cross-firm differences we observe in Table 2 materialize after internationalization. Second, we provide a detailed dynamic analysis by tracing the performance of firms over time after capital raisings, differentiating between equity and debt issues and capital raisings at home and abroad. This analysis allows us to better understand how raising capital abroad affects firms and whether these effects differ from those of domestic capital raisings.

4.1. Changes in firm-level variables after raising capital abroad

Tables 3 and 4 present regressions of the firm-level characteristics analyzed in Table 2 on dummies that identify firms' activity in international capital markets for SEOs and debt issues, respectively. These regressions include both those firms that conduct the specific type of capital raising under analysis in each case and a control group. In the case of SEOs abroad, the control group includes those firms that conduct SEOs in their home markets. Similarly, in the case of debt issues abroad, the control group includes those firms that issue debt securities at home. These regressions include country-year dummies to control for cross-country differences, industry dummies to account for cross-industry differences, and two dummy variables that identify firm's capital raising activity in international markets. The first one is a dummy variable that captures the period after capital raisings abroad, which equals one on the year of the first capital raising abroad of each type and in all subsequent years. This dummy variable equals zero before firms raise capital in international markets and for firms that do

Table 3

Before and after comparisons between firms conducting seasoned equity offerings at home and abroad.

Dependent variable	Before SEO abroad dummy (a)	After SEO abroad dummy (b)	No. of obs.	No. of firms	No. of firms raising capital abroad	After SEO dummy – before SEO dummy (c) = (b) – (a)
<i>Size</i>						
Log of total assets	0.488*** [4.064]	1.212*** [11.80]	100,090	10,465	550	0.724*** (44.21)
<i>Growth</i>						
Annual growth rate of total assets	0.068*** [5.779]	0.003 [0.488]	88,773	10,064	538	–0.065*** (25.4)
<i>Investment</i>						
Log of capital expenditures	0.744*** [5.552]	1.309*** [12.18]	86,383	9,707	512	0.565*** (20.49)
Capital expenditures/sales	0.032*** [3.120]	0.018** [2.354]	89,492	10,030	515	–0.014 (1.84)
<i>Profitability</i>						
Return on equity	0.032 [1.499]	0.014 [1.178]	87,237	9,991	521	–0.017 (0.64)
<i>Capital structure</i>						
Total debt/total assets	–0.007 [–0.672]	0.003 [0.391]	97,762	10,359	543	0.011 (0.98)
Short-term debt/total debt	–0.058*** [–3.754]	–0.068*** [–5.439]	87,940	9,634	498	–0.010 (0.43)
<i>Valuation</i>						
Tobin's <i>q</i>	0.450*** [3.914]	0.026 [0.465]	74,366	8,966	505	–0.424*** (16.1)

This table reports ordinary least square regressions of different firm-level characteristics on dummies that identify the capital raising activity of firms in international markets over the 1991–2005 period. The sample includes both firms that conduct seasoned equity offerings (SEOs) abroad at some point during the sample period and firms that conduct SEOs at home at some point during the sample period. The before SEO abroad dummy equals one before a firm raises capital through an SEO in a public market outside its home country and zero otherwise. The after SEO abroad dummy equals one on and after the year when a firm raises capital through an SEO in a public market outside its home country and zero otherwise. Both dummies equal zero for firms that only conduct SEOs at home. The first seasoned equity offering in a public market outside firms' home country during the sample period is used to identify firms' capital raising activity abroad. Total assets and capital expenditures are in million U.S. dollars. Column (c) reports the difference between the coefficients on the after SEO abroad dummy and the before SEO abroad dummy and the result of a Wald test of equality of these coefficients. *F*-statistics from these tests are in parentheses. All regressions include country-year dummies and industry dummies. Standard errors are adjusted for clustering at the firm level. *t*-statistics are in brackets. *, **, *** mean significance at 10, 5, and 1%, respectively.

not raise capital abroad. This variable captures differences between firms that raise capital abroad and the control group after capital raisings outside firms' home country. The second dummy variable equals one before firms raise capital in international markets and zero afterwards. It is zero for those firms in the control group. This dummy captures differences between firms that raise capital abroad and firms

in the control group that existed before accessing international markets.

The results in Tables 3 and 4 indicate that most of the differences between firms that raise capital abroad and those that issue securities domestically exist *before* these firms access international securities markets. In particular, both firms that conduct SEOs and debt

Table 4

Before and after comparisons between firms conducting debt issues at home and abroad.

Dependent variable	Before debt issue abroad dummy (a)	After debt issue abroad dummy (b)	No. of obs.	No. of firms	No. of firms raising capital abroad	After debt issue dummy – before debt issue dummy (c) = (b) – (a)
<i>Size</i>						
Log of total assets	1.182*** [18.87]	1.241*** [21.80]	55,010	4,916	1,599	0.059 (1.03)
<i>Growth</i>						
Annual growth rate of total assets	0.034*** [7.534]	–0.014*** [–4.492]	52,027	4,920	1,690	–0.048*** (120.6)
<i>Investment</i>						
Log of capital expenditures	1.075*** [14.83]	1.055*** [15.63]	45,930	4,518	1,552	–0.020 (0.09)
Capital expenditures/sales	0.006 [0.984]	–0.005 [–1.124]	48,724	4,796	1,551	–0.012** (4.26)
<i>Profitability</i>						
Return on equity	0.040*** [5.609]	0.000 [0.0321]	49,478	4,759	1,558	–0.039*** (29.58)
<i>Capital structure</i>						
Total debt/total assets	0.027*** [3.166]	0.085*** [11.79]	54,165	4,884	1,589	0.058*** (48.22)
Short-term debt/total debt	0.016* [1.850]	–0.010 [–1.416]	53,121	4,847	1,581	–0.027*** (9.58)
<i>Valuation</i>						
Tobin's <i>q</i>	0.163*** [4.643]	0.048* [1.793]	38,882	3,928	1,464	–0.116*** (15.1)

This table reports ordinary least square regressions of different firm-level characteristics on dummies that identify the capital raising activity of firms in international markets over the 1991–2005 period. The sample includes both firms that raise capital through debt issues abroad at some point during the sample period and firms that raise capital through debt issues at home at some point during the sample period. The before debt issue abroad dummy equals one before a firm raises capital through a debt issue in a public market outside its home country and zero otherwise. The after debt issue abroad dummy equals one on and after the year when a firm raises capital through a debt issue in a public market outside its home country and zero otherwise. Both dummies equal zero for firms that only issue debt at home. The first debt issue in a public market outside firms' home country during the sample period is used to identify firms' capital raising activity abroad. Total assets and capital expenditures are in million U.S. dollars. Column (c) reports the difference between the coefficients on the after debt issue abroad dummy and the before debt issue abroad dummy and the result of a Wald test of equality of these coefficients. *F*-statistics from these tests are in parentheses. All regressions include country-year dummies and industry dummies. Standard errors are adjusted for clustering at the firm level. *t*-statistics are in brackets. *, **, *** mean significance at 10, 5, and 1%, respectively.

Table 5
Evolution of firm characteristics following seasoned equity offerings.

Dependent variable	Year of SEO dummy	One year after SEO dummy	Two years after SEO dummy	Three years after SEO dummy	More than three years after SEO dummy	No. of obs.	No. of firms
<i>Size</i>							
Log of total assets							
SEOs at home	0.425*** [52.12]	0.472*** [53.06]	0.488*** [49.70]	0.496*** [45.89]	0.485*** [42.80]	97,475	10,131
SEOs abroad	0.503*** [15.27]	0.540*** [15.04]	0.537*** [13.57]	0.519*** [11.95]	0.406*** [8.541]	4,926	550
<i>Growth</i>							
Annual growth rate of total assets							
SEOs at home	0.140*** [31.94]	−0.058*** [−12.38]	−0.095*** [−18.20]	−0.106*** [−18.59]	−0.120*** [−19.50]	86,528	9,751
SEOs abroad	0.097*** [5.256]	−0.092*** [−4.663]	−0.118*** [−5.469]	−0.146*** [−6.225]	−0.166*** [−6.342]	4,490	538
<i>Investment</i>							
Log of capital expenditures							
SEOs at home	0.448*** [29.84]	0.561*** [34.18]	0.483*** [26.54]	0.401*** [19.97]	0.351*** [16.45]	84,056	9,401
SEOs abroad	0.510*** [8.477]	0.474*** [7.273]	0.435*** [6.022]	0.357*** [4.513]	0.126 [1.460]	4,418	512
Capital expenditures/sales							
SEOs at home	0.013*** [5.193]	0.011*** [3.888]	−0.009*** [−2.847]	−0.019*** [−5.668]	−0.025*** [−6.973]	87,109	9,717
SEOs abroad	0.025** [2.386]	0.008 [0.685]	−0.007 [−0.596]	−0.002 [−0.136]	−0.013 [−0.860]	4,432	515
<i>Profitability</i>							
Return on equity							
SEOs at home	−0.020*** [−2.725]	−0.048*** [−6.183]	−0.059*** [−6.814]	−0.062*** [−6.562]	−0.068*** [−6.682]	85,036	9,684
SEOs abroad	−0.013 [−0.474]	−0.078*** [−2.641]	−0.070** [−2.139]	−0.115*** [−3.228]	−0.113*** [−2.841]	4,269	521
<i>Capital structure</i>							
Total debt/total assets							
SEOs at home	−0.043*** [−23.37]	−0.030*** [−14.90]	−0.021*** [−9.538]	−0.017*** [−6.950]	−0.016*** [−6.185]	95,225	10,032
SEOs abroad	−0.033*** [−4.786]	−0.022*** [−2.903]	−0.014* [−1.681]	−0.018** [−1.996]	−0.019* [−1.913]	4,824	543
Short-term debt/total debt							
SEOs at home	−0.013*** [−3.957]	−0.009*** [−2.646]	−0.012*** [−2.987]	−0.013*** [−2.939]	−0.003 [−0.606]	85,677	9,346
SEOs abroad	−0.003 [−0.229]	−0.018 [−1.201]	0.004 [0.259]	0.010 [0.540]	0.042** [2.156]	4,460	498
<i>Valuation</i>							
Tobin's <i>q</i>							
SEOs at home	−0.044** [−2.358]	−0.304*** [−15.08]	−0.403*** [−18.13]	−0.483*** [−19.77]	−0.536*** [−20.34]	72,126	8,667
SEOs abroad	−0.073 [−0.960]	−0.490*** [−5.988]	−0.656*** [−7.302]	−0.836*** [−8.448]	−0.949*** [−8.643]	4,346	505

This table reports regressions of firm-level characteristics on dummies that identify the capital raising activity of firms. The first four dummy variables equal one in the designated year and zero otherwise. The more than three years after SEO dummy equals one after the third year following a seasoned equity offering (SEO) and zero before. The sample in each regression includes only firms that conduct the type of capital raising being analyzed in each case. The first SEO of each type during our sample period is used to identify firms' capital raising activity. SEOs at home are those carried out in a public market in the firm's home country. SEOs abroad are those carried out in a public market outside of the firm's home country. Total assets and capital expenditures are in million U.S. dollars. The regressions are estimated with fixed effects at the firm level. A constant is estimated but not reported. All regressions include year dummies. *t*-statistics are in brackets. *, **, *** mean significance at 10, 5, and 1%, respectively.

issuances abroad are larger, have higher capital expenditures, and enjoy greater valuations than firms that only raise capital at home before actually going abroad.⁸

The results in Tables 3 and 4 also show that capital raisings in international markets are related to significant changes in firm-level characteristics. For example, firms that conduct SEOs abroad tend to have higher growth and higher Tobin's *q* before going abroad than firms that only conduct SEOs at home, but not afterwards. Firms that issue debt in international markets tend to have faster growth rates, greater profits, and larger Tobin's *q* ratios before going abroad than firms that issue debt in local market. But these differences become smaller (or even disappear) following debt issuances in international markets.

4.2. Time patterns of firm-level variables following capital raising activity

An important question regarding the process of internationalization is whether capital raisings abroad have different effects

⁸ Moreover, we find no support for the view that the decision to raise capital abroad in the future induces a firm to change before it actually internationalizes and that this behavior drives the patterns we observe. In unreported robustness tests, we estimated the regressions in Tables 3 and 4 using different dummies for each year before and after capital raisings in international markets and found that the observed differences between firms that raise capital abroad and at home generally existed three or more years before these firms actually issued securities in international markets, suggesting that the results are largely capturing pre-existing differences across firms.

than domestic capital raisings. In this section, we compare the evolution of firm characteristics following capital raisings at home and abroad. Note, however, that we do not attempt to deal formally with identifying the exogenous effects of international capital raisings on firm performance. Therefore, the patterns presented in this section are only a first step towards addressing this question.

Tables 5 and 6 analyze the time-series patterns of firm-level variables following SEOs and debt issuances, respectively. Specifically, these tables present regressions of firm characteristics on a series of dummy variables that trace out annual patterns after capital raisings. The variable "Year of SEO dummy," for instance, equals one on the year that a firm conducts a SEO, and zero otherwise. Similarly the "More than three years after SEO dummy" equals one more than three years after a firm conducts a SEO and zero afterwards. We construct corresponding dummy variables for the years following each type of capital raising. The sample in these regressions includes only the firms that conduct the specific type of capital raising under analysis in each case. Since we want to focus on the within-firm changes that follow the different types of capital raisings, these regressions include firm-level fixed effects. Therefore, we are comparing each firm to itself before raising capital. The regressions also include year dummies to control for global time effects.

The regression results in Tables 5 and 6 indicate that the time-series patterns of firm-level variables are broadly similar for issues at home and abroad. In the case of SEOs, Table 5 shows that firms

Table 6
Evolution of firm characteristics following debt issues.

Dependent variable	Year of debt issue dummy	One year after debt issue dummy	Two years after debt issue dummy	Three years after debt issue dummy	More than three years after debt issue dummy	No. of obs.	No. of firms
<i>Size</i>							
Log of total assets							
Debt issues at home	0.239*** [24.89]	0.243*** [23.86]	0.226*** [20.78]	0.202*** [17.22]	0.068*** [5.450]	46,788	4,139
Debt issues abroad	0.417*** [28.07]	0.475*** [30.36]	0.508*** [30.26]	0.508*** [28.26]	0.286*** [15.90]	18,354	1,599
<i>Growth</i>							
Annual growth rate of total assets							
Debt issues at home	0.052*** [11.07]	−0.047*** [−9.664]	−0.058*** [−11.25]	−0.075*** [−13.56]	−0.080*** [−13.40]	44,245	4,136
Debt issues abroad	0.034*** [4.792]	−0.068*** [−9.081]	−0.093*** [−11.87]	−0.110*** [−13.22]	−0.164*** [−18.90]	18,586	1,690
<i>Investment</i>							
Log of capital expenditures							
Debt issues at home	0.291*** [15.26]	0.297*** [14.71]	0.206*** [9.545]	0.141*** [6.103]	−0.025 [−1.023]	38,879	3,759
Debt issues abroad	0.356*** [10.86]	0.408*** [11.71]	0.317*** [8.433]	0.192*** [4.762]	−0.102** [−2.490]	15,703	1,552
Capital expenditures/sales							
Debt issues at home	0.006** [2.018]	−0.002 [−0.544]	−0.013*** [−3.706]	−0.017*** [−4.470]	−0.023*** [−5.841]	41,710	4,039
Debt issues abroad	−0.003 [−0.550]	−0.010* [−1.879]	−0.027*** [−4.496]	−0.041*** [−6.516]	−0.063*** [−9.762]	15,595	1,551
<i>Profitability</i>							
Return on equity							
Debt issues at home	−0.014* [−1.660]	−0.036*** [−4.037]	−0.037*** [−3.949]	−0.038*** [−3.769]	−0.032*** [−2.888]	42,126	4,011
Debt issues abroad	−0.024* [−1.876]	−0.058*** [−4.308]	−0.085*** [−5.976]	−0.102*** [−6.661]	−0.089*** [−5.645]	16,673	1,558
<i>Capital structure</i>							
Total debt/total assets							
Debt issues at home	0.048*** [20.53]	0.047*** [19.32]	0.047*** [18.03]	0.045*** [15.94]	0.030*** [10.05]	46,148	4,116
Debt issues abroad	0.070*** [18.96]	0.082*** [21.13]	0.093*** [22.42]	0.098*** [21.90]	0.088*** [19.75]	18,057	1,589
Short-term debt/total debt							
Debt issues at home	−0.096*** [−24.18]	−0.096*** [−22.76]	−0.087*** [−19.34]	−0.077*** [−15.77]	−0.041*** [−7.857]	45,242	4,085
Debt issues abroad	−0.133*** [−20.11]	−0.130*** [−18.62]	−0.124*** [−16.57]	−0.054*** [−6.737]	−0.046*** [−5.709]	17,862	1,581
<i>Valuation</i>							
Tobin's q							
Debt issues at home	−0.081*** [−5.149]	−0.124*** [−7.606]	−0.151*** [−8.726]	−0.166*** [−9.018]	−0.173*** [−8.774]	31,623	3,214
Debt issues abroad	−0.081*** [−3.723]	−0.200*** [−8.783]	−0.233*** [−9.534]	−0.253*** [−9.651]	−0.320*** [−12.08]	15,909	1,464

This table reports regressions of firm-level characteristics on dummies that identify the capital raising activity of firms. The first four dummy variables equal one in the designated year and zero otherwise. The more than three years after debt issue dummy equals one after the third year after a firm raises capital through a debt issue and zero before. The sample in each regression includes only firms that conduct the type of capital raising being analyzed in each case. The first debt issue of each type during our sample period is used to identify firms' capital raising activity. Debt issues at home are those carried out in a public market in the firm's home country. Debt issues abroad are those carried out in a public market outside of the firm's home country. Total assets and capital expenditures are in million U.S. dollars. The regressions are estimated with fixed effects at the firm level. A constant is estimated but not reported. All regressions include year dummies. *t*-statistics are in brackets. *, **, *** mean significance at 10, 5, and 1%, respectively.

expand following both SEOs at home and abroad. Also, firms tend to experience a long-term decrease in growth and profitability following SEOs. Loughran and Ritter (1997) also find evidence of a decrease in profitability following domestic SEOs by U.S. firms. They interpret this evidence as consistent with market timing arguments that emphasize that firms raise capital after periods of high performance, which may make their securities more attractive to investors. The observed worsening of firm performance could also be the result of earnings management, as insiders may have incentives to window-dress company accounts before raising capital (Rangan, 1998; Teoh et al., 1998). In terms of investment, although the absolute size of capital expenditures increases, when scaling expenditures by sales the results show that investment does not increase permanently (and even tends to decrease) following SEOs both at home and abroad. The results also indicate that firm valuation, as measured by Tobin's *q*, decreases in the long run following SEOs.

In the case of debt issuances, Table 6 shows that the time patterns of firm-level variables are broadly similar for issues at home and abroad. Firms tend to expand following debt issues and experience a long-term decrease in profitability and growth. Debt issues, both at home and abroad, are associated with increases in indebtedness levels, improvements in debt maturity profiles, and decreases in Tobin's *q*. As mentioned above, the finding that the changes in firm performance that follow equity and debt issuances in international markets are broadly similar to those that follow equity and debt

issuances at home suggests that issues in international markets are not intrinsically different from issues in the domestic market.⁹

5. The capital raising activity of firms that raise capital abroad

This section addresses three broad questions about internationalization: Are issues in international markets larger than domestic issues? How do firms that raise capital abroad distribute their capital raising activity between domestic and international markets? After firms raise capital abroad, does their use of domestic capital markets decrease?

⁹ We conducted two additional robustness tests. First, we estimated the regressions of the evolution of firm performance following SEOs and debt issues abroad reported above restricting the sample to issuances by foreign firms in U.S. capital markets. If U.S. markets have a particularly effective investor protection environment, then focusing on the U.S. would provide a more powerful test of whether firms that internationalize into stronger investor protection regimes experience an enduring improvement in firm performance, as bonding arguments predict. When restricting the sample to foreign issues in U.S. markets, the results hold. Second, a possible concern regarding the patterns presented in Tables 5 and 6 is whether they are affected by other capital raisings coinciding with the timing of the specific issuances analyzed in these tables. For instance, if following capital raisings abroad firms also issue securities at home, the observed patterns of firm performance may be partially reflecting the effects of these subsequent domestic capital raisings. We thus re-estimated all the regressions including only capital raisings in which firms did not carry out other security issuances in a five-year window around the capital raising under analysis. The results hold.

5.1. Size differences between issues at home and abroad

Fig. 2 shows that issues at home tend to be smaller than issues abroad. Fig. 2 displays the cumulative distribution of the amount raised per issue by firms from developed and developing economies, differentiating between issues at home and abroad. In the case of developed country firms, for instance, while 63% of issues at home during our sample period raised 100 million U.S. dollars at 2005 prices or less, only 39.6% of issues abroad were below this amount. In the case of firms from developing economies, more than 91% of issues at home during our sample period raised 100 million U.S. dollars at 2005 prices or less. Only 49.5% of issues abroad by developing country firms were below this size threshold.

To analyze the size differences between issues abroad and at home in more detail, Table 7 compares the median proceeds of issues in domestic and international markets for firms from developed and developing economies, differentiating between equity and debt issues. Similar results are obtained when using means instead of medians. A possible concern regarding these comparisons is that they may reflect differences in the nationality and industry of those firms that raise capital in the different markets and not actual differences between cross-border and domestic issues. For instance, firms that raise capital abroad may come mostly from industries that tend to make larger issuances. To address this concern, Table 7 reports median regressions of the amount raised per issue on country and industry dummies and a dummy variable that equals one if the issue was conducted abroad and zero otherwise.¹⁰ This variable captures differences between issues abroad and at home.

Table 7 shows that when analyzing all issues, those conducted abroad tend to be significantly larger than those conducted at home, consistent with the results displayed in Fig. 2. For example, the median amount raised per equity issue abroad by developing country firms over our sample period was more than 16 times higher than the median amount raised per equity issue at home (62 and 3.8 million U.S. dollars at 2005 prices, respectively).¹¹ Similar differences across markets are visible in the case of debt issues by developing country firms. All these differences are robust to controlling for country and industry dummies and are statistically significant at the 1% level.

The larger size of issues abroad does not simply reflect the fact that firms that raise capital abroad are different, and in particular larger, than firms that raise capital at home. Table 7 shows the median amount raised per issue in domestic and international markets, restricting the sample to issues by firms that raise capital both at home and abroad at some point during our sample period. The results show that, once we control for country and industry dummies, equity and debt issues abroad are larger than issues at home for both developed and developing economies when analyzing only issues by firms that raise capital both at home and abroad.¹²

¹⁰ These regressions are estimated adjusting the standard errors for clustering at the firm level. Since there is no analytical solution for estimating clustered standard errors in quantile regressions, we estimate the standard errors through bootstrapping with clustering at the firm level using 100 iterations. Similar results are obtained if we use standard errors that are robust to heteroskedasticity of unknown form.

¹¹ Although part of the size difference between equity issues abroad and at home can be explained by the fact that the latter include a larger share of IPOs (which tend to be smaller than SEOs), there are large differences in issue sizes across markets even if we compare SEOs and IPOs separately. For developing country firms, IPOs at home over our sample period have a median size of 1.8 million U.S. dollars at 2005 prices, compared to 61.5 million for IPOs abroad. In the case of SEOs, the median size of issues in domestic securities markets by developing country firms was 16.3 million U.S. dollars at 2005 prices, compared to 62.6 million for issues abroad.

¹² We also conducted other robustness tests to analyze whether issues abroad are larger than issues at home when comparing issues by the same firm. First, we estimated ordinary least squares regressions of the amount raised per issue on firm-level dummies, year dummies, and a dummy identifying whether issues were conducted at home or abroad, including only firms that raise capital both at home and abroad at some point during our sample period. Second, for each firm that raised capital both at home and abroad at some point during our sample period we calculated the difference in proceeds between issues in domestic and international markets conducted in the same year and averaged these differences at the firm level. We then tested whether the median and mean across firms of this variable are different from zero. Both types of analysis indicate that, in most cases, issues abroad tend to be larger than domestic issues.

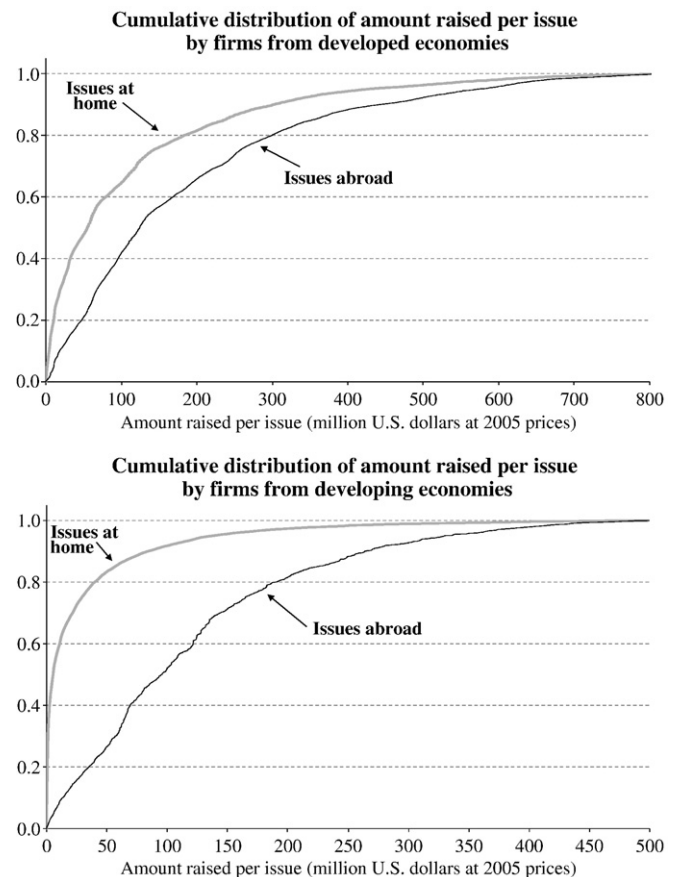


Fig. 2. Size differences among issues at home and abroad. This figure shows the cumulative distribution of the amount raised per security issue in public markets by firms from developed and developing economies over the 1991–2005 period. Issues with size above the 95th percentile are excluded. Issues at home are those carried out in a public market in the firm's home country. Issues abroad are those carried out in a public market outside the firm's home country.

5.2. Where do firms raise capital after internationalizing?

This section analyzes how firms divide their capital raisings between domestic and international markets after their first capital raising abroad. Table 8 shows the average across firms of the ratio of capital raised at home to total capital raised in public markets for each year following firms' first capital raising abroad, differentiating between equity and debt issues.

The Table 8 results indicate that while firms raise most of their capital abroad in the year when they first access international markets, the share of capital raised at home subsequently increases. In the case of firms from developed economies, the results show that in the year when they first raise capital abroad, firms raise on average only 18% and 8% of their equity and debt capital in domestic markets, respectively. However, the share of capital raised at home increases significantly in subsequent years. In the case of equity issues, firms conduct most of their subsequent capital raisings at home, with domestic issues accounting on average for 87% of the total amount raised through equity issuances more than three years after firms first access international markets. In the case of debt issues, firms that internationalize tend to conduct most of their issuances in international markets, but domestic markets remain significant, accounting on average for 40% of the total amount raised by these firms through debt issues more than three years after internationalizing. Similar patterns are visible in the case of developing economies, with the average ratio of capital raised at home to total capital raised in public markets reaching 60% (63%) for equity (debt) issues more than three years after firms first raise capital abroad.

Table 7
Size of capital raisings in public markets by type of issue.

Amount raised per security issue (million U.S. dollars at 2005 prices)	Equity issues			Debt issues		
	Median (No. of observations)		Median regression	Median (No. of observations)		Median regression
	Issues at home	Issues abroad	Coefficient on difference between issues abroad and at home (a)	Issues at home	Issues abroad	Coefficient on difference between issues abroad and at home (b)
<i>All issues</i>						
Developed economies	26.9 (40,696)	54.3 (2,182)	25.66*** [6.836]	85.1 (71,986)	138.0 (26,671)	52.02*** [7.394]
Developing economies	3.8 (11,577)	62.0 (1,092)	31.45*** [7.151]	7.2 (9,260)	122.4 (1,778)	90.42*** [20.396]
<i>Issues by firms that raise capital both at home and abroad</i>						
Developed economies	126.5 (2,882)	116.2 (600)	27.41** [2.483]	105.9 (32,067)	155.8 (16,681)	42.16*** [4.53]
Developing economies	57.3 (650)	82.8 (389)	27.89*** [4.113]	32.0 (1,243)	132.8 (695)	71.62*** [9.437]

This table shows the median amount raised per security issue for different types of issues in public markets over the 1991–2005 period. The number of observations used to calculate the medians in each case is in parentheses. Issues at home are those carried out in a public market in the firm's home country. Issues abroad are those carried out in a public market outside the firm's home country. Firms that raise capital both at home and abroad are those that issue securities both outside their home country and in their home country at some point during the sample period. Columns (a) and (b) report the results of median regressions of the amount raised per security issue on a dummy identifying issues abroad, country dummies, and industry dummies. Only the coefficient on the issue abroad dummy is reported. Standard errors are estimated through bootstrapping with clustering at the firm level. z-statistics are in brackets. *, **, *** mean significance at 10, 5, and 1%, respectively.

The results from Table 8 indicate that firms that access international capital markets remain active in domestic markets, conducting a significant share of their capital raisings in these markets. This suggests that these firms are not just opting out of domestic markets, but rather that they are choosing to use both domestic and international markets. This is consistent with the idea that these markets may provide different services and firms will access one or the other depending on their particular financing needs and market conditions.

5.3. Changes in capital raising activity in domestic markets after raising capital abroad

Having shown that firms continue using domestic capital markets quite actively after they access international markets, we now test whether firms change their use of domestic markets after raising capital abroad. Table 9 compares the amount raised domestically per year by firms that raise capital abroad before and after they first access international markets, differentiating between equity and debt issues. Since the amount raised per year is censored at zero, Table 9 displays Tobit regressions of this variable on a dummy variable that equals one on the year of the first capital raising abroad and in all subsequent years, and zero before. This variable captures changes in capital raising activity in domestic markets following internationalization.

Table 9 shows that there is an increase in the amount of capital raised in domestic markets per year after a firm first raises capital abroad. In the case of developed economies, the amount raised at home per year through equity issues by these firms averages 7.7 million U.S. dollars at 2005 prices before raising capital abroad and jumps to 20.5 million afterwards. A similar pattern is visible for debt issues, with the average amount raised per year by firms that issue securities abroad increasing from 36.8 million U.S. dollars at 2005 prices to 129.8 million following internationalization. In both cases, the Tobit regressions show that these differences are positive and significant at the 1% level. Similar results are obtained in the case of firms from developing economies.

The increase in the domestic capital raisings of firms that access international markets does not simply reflect the fact that firms grow after raising capital abroad. In particular, Table 9 reports data on the amount raised per year in domestic markets divided by the firms' assets at the moment of the capital raising. The Tobit regressions show that, when scaling the amount raised at home by the firms' assets and accounting for the censored nature of the data, we still

find evidence of a significant increase in firms' capital raisings at home.

While these results indicate that firms tend to raise more capital in their domestic markets after accessing international markets, this does not necessarily imply that firms increase their participation in domestic capital raising activity after they internationalize, relative to other firms. In other words, do firms capture a larger share of total domestic market capital raising activity following security issuances in international markets?

Table 8
Capital raising activity in domestic markets following capital raisings abroad.

Capital raised at home/total capital raised in public markets in each year (average across firms)	Equity issues (No. of observations)	Debt issues (No. of observations)	All capital raisings (No. of observations)
<i>Developed economies</i>			
Year of first capital raising abroad	17.5% (1,362)	8.0% (4,097)	8.6% (5,238)
One year after first capital raising abroad	59.6% (512)	30.5% (2,498)	34.2% (2,872)
Two years after first capital raising abroad	71.9% (263)	37.5% (1,503)	41.9% (1,695)
Three years after first capital raising abroad	74.1% (166)	43.5% (1,075)	46.6% (1,187)
More than three years after first capital raising abroad	86.6% (246)	40.4% (1,504)	46.2% (1,693)
<i>Developing economies</i>			
Year of first capital raising abroad	11.7% (670)	5.0% (800)	6.0% (1,400)
One year after first capital raising abroad	51.3% (130)	22.7% (339)	27.9% (439)
Two years after first capital raising abroad	55.9% (82)	32.9% (199)	38.0% (264)
Three years after first capital raising abroad	68.2% (44)	48.2% (129)	51.7% (164)
More than three years after first capital raising abroad	59.8% (55)	63.5% (179)	61.9% (223)

This table analyzes the capital raising activity in domestic markets of firms that raise capital through security issues in public markets abroad at some point during the 1991–2005 period. The displayed variable is the average across these firms of the ratio of capital raised at home to total capital raised in public markets in each year following their first capital raising abroad. The number of observations used to calculate the averages in each case is in parentheses. Issues at home are those carried out in a public market in the firm's home country. Issues abroad are those carried out in a public market outside the firm's home country.

Table 9
Capital raising activity in domestic markets of firms that raise capital abroad.

	Equity issues			Debt issues		
	Mean (No. of observations)		Tobit regression	Mean (No. of observations)		Tobit regression
	Before first capital raising abroad	After first capital raising abroad	Change following first capital raising abroad (a)	Before first capital raising abroad	After first capital raising abroad	Change following first capital raising abroad (b)
<i>Annual amount raised in domestic markets per firm (million U.S. dollars at 2005 prices)</i>						
Developed economies	7.70 (35,919)	20.50 (42,751)	8.93*** [5.626]	36.83 (35,919)	129.76 (42,750)	81.75*** [8.231]
Developing economies	3.21 (9,791)	5.59 (11,438)	3.58*** [4.686]	1.62 (9,782)	6.95 (11,435)	5.23*** [5.181]
<i>Annual amount raised in domestic markets/total assets per firm</i>						
Developed economies	0.112 (35,677)	0.039 (42,481)	0.128*** [3.231]	0.012 (35,009)	0.013 (41,055)	0.066*** [2.587]
Developing economies	0.001 (9,656)	0.021 (11,245)	0.040** [2.555]	0.011 (9,681)	0.007 (11,184)	0.031*** [2.612]
<i>Annual amount raised in domestic markets per firm/total amount raised in domestic markets</i>						
Developed economies	0.001 (30,428)	0.003 (37,627)	0.001*** [5.969]	0.001 (27,649)	0.003 (34,566)	0.003*** [9.542]
Developing economies	0.002 (7,912)	0.004 (9,534)	0.002*** [4.725]	0.003 (3,600)	0.004 (8,024)	0.001** [2.396]

This table analyzes the capital raising activity in domestic markets of firms that raise capital through security issues in public markets abroad at some point during the 1991–2005 period. The first variable analyzed is the amount raised in domestic capital markets per year by these firms before and after their first capital raising abroad. The second variable analyzed is the amount raised in domestic capital markets divided by total assets at the moment of raising capital per year before and after their first capital raising abroad. The third variable analyzed is the ratio of the amount raised in domestic capital markets per firm to the total amount raised in these markets per year before and after their first capital raising abroad. For firms with multiple security issues in the same year, the amount raised divided by assets before raising capital is calculated as the weighted average of the ratio of amount raised to total assets for each issue in the year, weighted by the amount raised per issue. For the three variables, years without capital raising activity are assigned a zero. Issues abroad are those carried out in a public market outside the firm's home country. Columns (a) and (b) report the results of Tobit regressions of the different variables on a dummy identifying the period after the first capital raising abroad and a constant. The effect of a discrete change in the dummy variable on the expected value of the observed dependent variable is reported. Standard errors are adjusted for clustering at the firm level. z-statistics are in brackets. *, **, *** mean significance at 10, 5, and 1%, respectively.

The results from Table 9 show that firms are indeed capturing a larger percentage of total domestic market capital raising activity following their first capital raising abroad. In developed economies, each firm that raises capital abroad accounts on average for 0.1% of the total capital raised in their domestic markets per year before internationalization and this share increases to 0.3% afterwards. Similarly, in developing economies, the average share of domestic market activity accounted by each firm that raises capital in international markets increases from 0.3% to 0.5% following the first capital raising abroad. In all cases, the Tobit regressions show that there is a statistically significant increase in the relative participation of firms in domestic capital markets following internationalization.¹³

6. Conclusions

In this paper, we characterize patterns of equity and debt issuance activities in domestic and international capital markets, and also document the dynamics of firm performance following these distinct corporate financing activities. To do so, we compile a new database on worldwide capital raisings that allows us to compare firms that issue securities abroad with firms that issue securities domestically. We also compare these capital raising firms with corporations that are listed in the local stock markets but do not issue new securities over our sample period. This provides new firm-level information about the patterns of international capital raisings.

Several findings relate to existing theories of international finance and motivate future research. First, debt markets dwarf equity markets both in

terms of how corporations raise capital and in terms of the internationalization of securities markets. Over the period 1991–2005, corporations raised almost four times more money through bond sales relative to equity issues. Moreover, bonds markets are more internationalized. About 35% of all capital raised through debt issues was raised in markets other than the firm's home market, while the corresponding figure for equity issues is 10%. Since most empirical studies of financial globalization ignore debt markets and since major theories, such as market segmentation, bonding, and market timing, focus on the cross-listing of equities and the integration of equity markets, our findings (1) indicate that financial markets are more internationalized than suggested by only considering equity markets and (2) advertise the need for additional work that accounts for the internationalization of debt markets.

Second, while firms expand and invest more after raising debt or equity abroad, they (1) do not become more profitable or experience an increase in valuation and (2) these changes in firm performance are qualitatively similar to the changes that firms experience when they issue debt or equity domestically. These findings suggest that firms get bigger, but not necessarily “better” following internationalization. Furthermore, they suggest that capital raisings abroad are not intrinsically different from capital raisings at home. While capital raisings abroad are bigger, the changes in firm performance following debt and equity issuance in international markets are broadly similar to those in domestic markets. These findings are difficult to reconcile with arguments that firms access international markets to bond themselves to a better corporate governance system because internationalization does not seem to spark enduring improvements in corporate performance that differ from the dynamics that follow domestic issuances.

Third, firms continue to use domestic debt and equity markets after they raise capital abroad and indeed significantly expand their use of domestic securities markets. Thus, after firms internationalize, they issue debt and equity securities in both the domestic and foreign markets, using foreign markets for relatively larger issuances. These observations are difficult to reconcile with the view that international markets provide less expensive capital, but there are high fixed costs associated with initially accessing these markets (like satisfying international accounting

¹³ A possible concern regarding these results is that we are pooling all the firms that raise capital abroad at some point during our sample period. As a robustness check, we analyzed the within-firm change in capital raising activity in domestic markets following internationalization. To do this, we estimated for each firm that raises capital abroad the difference between the average amounts raised at home before and after going abroad and then tested whether the mean across firms of this variable is different from zero. Again, we found that firms increase the amount raised at home and tend to capture a larger share of domestic market activity following internationalization.

and regulatory standards), such that firms only raise capital abroad after having incurred the entry costs. These patterns also complicate the study of corporate finance since firms participate in multiple debt and equity markets simultaneously, which is not the focus of research on the determinants of corporate financing choices.

Finally, very few firms use international markets, and of the few that access international debt or equity markets, a very small number raise most of the capital garnered through the sale of securities in international markets. As emphasized by Levine and Schmukler (2006, 2007), this suggests that financial internationalization could have cross-firm distributional effects that affect those firms that rely solely on local markets. Firms that access international markets both grow relative to other corporations in the local market and account for a higher percentage of the total capital raised in domestic markets following internationalization. Future research could assess whether these changes affect the ability of smaller firms to obtain financing for growth.

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