

# Does Foreign Portfolio Investment Reach Small Listed Firms?

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## Abstract

*Because investors generally choose to invest in large firms when investing internationally, it is not immediately obvious whether small listed firms would benefit from foreign portfolio investment. A capital infusion of this form could either serve to alleviate constrained capital markets or make large firms stronger, increasing competition and crowding out small firms. In this paper, I examine the impact of foreign portfolio investment on the capital issuance behaviour of small listed firms. I find that foreign portfolio investment (scaled by gross domestic product) is associated with an increased probability of small firm security issuance in all nations, regardless of property rights development. Evidence suggests that the mechanism by which this occurs is a freeing up of capital in domestic markets when large firms utilise foreign investment directly. Long-term debt levels increase in nations where property rights are more developed, suggesting that foreign portfolio investment may reach small firms through the banking channel as well in these nations. The banking channel results, however, are somewhat sensitive to the definition of foreign portfolio investment.*

**Keywords:** *foreign portfolio investment, access to capital, emerging markets, small firm*

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## 1. Introduction

Recent literature suggests that informational asymmetry on the part of foreign investors hampers small firm access to international capital. A study conducted by Aggarwal *et al.* (2005) finds that disclosure at the firm level is an important determinant of firm choice for institutional investors. Since information asymmetry appears to be worse for smaller firms, foreign investors often steer clear of these firms, even if they are listed. Dahlquist and Robertsson (2001), Kang and Stulz (1997), Edison and Warnock (2004), and Cai and Warnock (2004) all find that foreign owners prefer to invest in large firms.<sup>1</sup> Leuz *et al.* (2009) find that information asymmetry and monitoring costs lead investors to choose firms with the least opaque earnings, implying that foreign investment would go directly to large firms.

The results of the aforementioned studies imply that it is not immediately obvious whether small listed firms could benefit from foreign portfolio investment (FPI), defined by the International Monetary Fund as 'equity and debt issuances including country funds, depository receipts, and direct purchases by foreign investors of less than 10% control' (Balance of Payments Manual, 1993). The allocation of FPI capital to heterogeneous firms that might result from the opening of a country's borders to foreign investment is important in understanding the impact of liberalisation and if that impact varies by firm size. Though the likelihood of small firms directly accessing foreign capital is slight,<sup>2</sup> foreign portfolio investment could have implications on capital allocation in the domestic market. Indeed, Wurgler (2000) finds that financial markets facilitate capital allocation. Henry (2000) finds that foreign investment deepens financial markets.<sup>3</sup> Other works help to explain the impact of financial development on financial constraints. For example, Khurana *et al.* (2006) find that financial development alleviates financial constraints. Beck *et al.* (2005) suggest that financial obstacles (such as explicit barriers to international investment) constrain small firm growth, that financial development alleviates these effects to some degree, and that when they do, small firms benefit the most. To the extent that the deepening of financial markets accompanying FPI constitutes financial development, we could hypothesise that FPI is positively associated with the access to finance of small listed firms.

Extant literature suggests that the route through which FPI might reach a small listed firm may differ, depending on the level of property rights in each nation. The level of property rights influences whether or not and how much foreigners are willing to invest. Lee and Mansfield (1996) find that the volume and composition of US foreign direct investment is determined by perceptions of the level of (intellectual) property rights.

<sup>1</sup> However, Holland and Warnock (2003) find that firm size does not appear to be an important determinant for US investment in Chilean firms.

<sup>2</sup> Investment in small firms may happen as part of an index fund, a small firm-oriented mutual fund, or even cross-listing (note that the proportion of small listed firms that are cross-listed is not zero). This direct investment in the small firms does not contradict the conclusions of this paper, which is that FPI improves small firm access to capital. It does, however, impact the conclusions with regard to the mechanism by which this benefit occurs. To the extent that investment occurs by one of the above vehicles, the benefit would be direct. I am grateful to an anonymous referee for pointing this out.

<sup>3</sup> See also Kim and Singal (2000), who find that liberalisation improves returns and Bekaert and Harvey (2000), who find that liberalisation decreases the cost of capital. Both of these could have positive externalities with regard to small firm access to capital.

Chhibber and Majumdar (1999) link the extent of property rights in India to the ultimate profitability of the invested firm. Claessens and Laeven (2003) define property rights as 'protection against powerful competition.' Defined in this way, property rights could directly affect the impact of FPI on small firm access to capital (versus large firms). In this way, protection against powerful competitors increases the likelihood of greater returns on their assets, which could increase the willingness of foreign (and domestic) investors to invest in these firms.

Eun *et al.* (1995) find that an increase in asset values of purely domestic firms based on the cross-listing of international firms may improve access to finance for these firms (i.e., small listed firms). The authors suggest that this positive asset-pricing spill-over effect might occur when markets become partially integrated. According to Miller and Puthenpurackal (2002), however, this effect would mostly be felt in countries where property rights were protected, further implying that property rights is a key determinant in whether and how FPI might reach small firms.

Lastly, Johnson *et al.* (2002) suggest that weak property rights squelch a firm's desire to reinvest profits, even when bank credit is available. The authors suggest that in an environment where property rights are only weakly protected, small firms would not utilise bank credit since protection against competition is weaker and their investment could be stolen. Small firms, particularly dependent on bank credit as a source of capital and particularly vulnerable to larger competition, would be more affected by inferior protection of property rights.

Based on this evidence, we would expect small firms in environments with weakly protected property rights to prefer accessing capital in capital markets. The disparate effects of both the impact of and the route taken by FPI across firm size and property rights protection suggest that the analysis be undertaken separately for strong and weak property rights protection.

Collectively, this research implies that FPI could actually improve access to finance for small listed firms despite investor bias for large company equity through a more efficient allocation of capital. I examine the extent to which FPI can help small public firms<sup>4</sup> obtain financing for growth, even when markets and institutions in their countries are underdeveloped. I further examine which route this potential benefit takes: (1) through the capital markets, or (2) through bank lending.

I find that the probability of a small listed firm issuing capital in a given year increases with the level of FPI (scaled by the nation's GDP). This relation exists regardless of the development of property rights in the firm's domicile nation. Consistent with the implications of Johnson *et al.* (2002), the route that FPI takes to reach small listed firms in nations with less developed property rights (LDPR) is through the capital markets only. This can be seen by the increased probability of domestic capital issuance along with decreased levels of short-term, long-term, and total debt. The route that FPI takes to reach small listed firms in nations with developed property rights (DPR) is through both capital markets and bank lending. Results show an increased probability of domestic capital issuance in these nations, as well as a decrease (an increase) in the short-term (long-term) debt levels.

<sup>4</sup> Small is defined here as listed firms that have total assets less than the country-year median. This paper does not attempt to empirically examine private firms. Number of employees is not used due to lack of data and resultant sample selection problems.

The results survive a battery of robustness checks involving the definition of key variables (e.g., FPI and FPI volatility); sample inclusion (e.g., excluding countries with capital control changes during the sample term, size categorisation, and firm issuance type); methodology (e.g., error clustering, country indicators, and weighting schemes); and sample segmentation (e.g., domestic capital and financing obstacles). Results regarding the banking channel are somewhat sensitive to the definition of FPI.

Comprehensively, these results suggest that the benefits of FPI are more widespread than was previously believed. Specifically, the paper finds that FPI reaches small listed firms. It also serves to identify key aspects of a nation that facilitate this benefit: strong protection of property rights and minimal political risk. In particular, it is important that given a sufficient level of property rights in a nation, FPI might facilitate the enhancement of a firm's debt maturity, which would serve to minimise any negative effects felt by a subsequent capital flight. These findings are particularly timely given the International Monetary Fund's reversal in opinion over the use of capital controls as an insulator in crisis situations.<sup>5</sup>

This paper contributes to three main areas of financial literature. The first is that of small firm access to capital. As markets become more integrated, FPI is a potential source of new investment capital for small firms. Information as to whether and how this additional source of capital increases access to financing for small firms is useful in extending this literature.

Second, this work relates to the literature on global capital flows. As more countries consider reforming foreign investment policy to include foreign investors, this research provides evidence that FPI reaches small listed firms and enhances the debate on the merit of FPI as a vehicle for growth.

Finally, this research is related to the liberalisation literature. Although this research is not a study on liberalisation, it offers insight into the impact of one of the capital flows that might result from the opening of a country's borders to foreign investment. Understanding what drives the aftermath of liberalisation, such as the impact of a change in FPI, may offer insight into the debate on liberalisation.

The papers most related to this work are Laeven (2003) and Harrison *et al.* (2004).<sup>6</sup> Although similar in intent, these two papers differ from this work on many dimensions. For example, Harrison *et al.* (2004) focus on the impact of foreign direct investment on the financial constraints of firms.<sup>7</sup> They examine foreign direct investment capital flows as a proportion of all foreign investment rather than the size of the market in question.<sup>8</sup> Laeven (2003) examines the impact of liberalisation (i.e., reform policies that open financial markets to foreign direct and portfolio investment) on financial constraints rather than on the specific cash flows resulting from said reformation. This paper differs from the aforementioned studies in that this research is concerned with access to capital

<sup>5</sup> <http://www.imf.org/external/pubs/ft/spn/2010/spn1004.pdf>

<sup>6</sup> See also Khurana *et al.* (2006) who do an analogous examination to Harrison (2004) looking at financial development and cash flow sensitivity.

<sup>7</sup> See Goldstein and Razin (2006) for a theoretical motivation of the choice between foreign direct investment and foreign portfolio investment.

<sup>8</sup> Foreign direct investment is defined by the IMF as 'investment that is concerned with longer-term ownership (contrasted with foreign portfolio investment, which is often considered short-term) or a controlling interest of more than 10%' (Balance of Payments, 1993).

(versus financial constraints), which can be directly measured by issuance data and accounting levels.

Furthermore, this paper differs from what has been previously published with regard to data. Both Harrison *et al.* (2004) and Laeven (2003) use the Worldscope database. Since my emphasis is on small listed firms, I have created a unique database of over 250,000 firm-year observations across 43 countries, merging two datasets to circumvent the larger firm bias from which many existing international databases suffer.

The rest of the paper is organised as follows. Section 2 describes the mechanism by which FPI may be beneficial to small listed firms. Section 3 describes the data. Section 4 describes the empirical methodology. Section 5 provides the results, Section 6 contains the robustness analysis, and Section 7 serves as the conclusion.

## 2. Small Firm Access to Finance

Small firms tend to be dependent on bank lending to finance their growth (Cull *et al.*, 2006). A portion of small firms reach the capital markets and might use public financing to grow their businesses. Those who do access public capital markets ('listed' firms) might still rely, at least in part, on bank lending to finance their growth. Given this tendency toward bank credit, I examine two ways in which FPI might reach the small firm: (1) through the capital markets, and (2) through banks, which, in turn, invest in or extend more credit to these small listed firms.

### 2.1. Capital markets

Generally speaking, FPI flowing into a country increases the supply of capital in that country. If a small listed firm is unable to access capital because of capital supply limitations, an infusion of capital (i.e., in this case, FPI) should increase the likelihood that a firm would be able to issue capital.<sup>9</sup> Beck *et al.* (2005) find that small firms benefit the most from increases in financial development. To the extent that increases in FPI are correlated with financial development, we would expect this to be the case. Empirically stated,

*H1. The probability of domestic capital issuance for small listed firms is significantly positively related to the level of FPI (scaled by the size of its domicile nation).*

Wurgler (2000) finds that capital markets facilitate a transfer of investment from declining industries toward growing industries. If large firms are receiving foreign capital directly, they will arguably have less of a need to issue capital domestically than they would otherwise. Love (2003) suggests that financial development affects firm growth through alleviating financial constraints, which would otherwise discourage proper allocation of capital. Combining these results and using a firm size corollary to Wurgler's industry-level analysis, the mechanism by which an increase in FPI could reach small firms is through a freeing up of domestic capital, which facilitates the transfer of

<sup>9</sup> According to Beck *et al.* 2005, small firms are financially constrained so often that small is a good proxy for financial constraint. Because this is the case, one can assume that whether a firm issues capital or not is indicative of whether they can access markets. I lift this assumption in the robustness section of the paper.

investment from more established firms to growing firms. The ‘freeing up’ of capital results from large firms (and possibly only these firms) gaining access to the increased foreign capital. The additional capital supplied to large firms potentially frees up capital in the domestic market that would otherwise be absorbed by those large firms, implying a shift in capital allocation similar to that in Wurgler (2000).<sup>10</sup> Tested empirically, this becomes:

*H2. The probability of domestic capital issuance for large listed firms is significantly negatively related to the level of FPI (scaled by the size of its domicile nation).*

Since some large firms are raising funds through listings overseas, international issuances are also an important consideration for analysis. If markets are freed up when large firms raise capital internationally, we should see a positive association between large firm international capital proceeds and the probability that small firms issue capital domestically. Empirically stated this becomes:

*H3. The probability that a small firm issues securities domestically is significantly positively related to the international proceeds of large firms.*

## 2.2. Bank lending

For those small firms that are dependent on bank lending, the path FPI takes through financial institutions is relevant. The theory that motivates this path of investment can be found in the bank lending theory of monetary policy (Bernanke and Blinder, 1988; Kashyap and Stein, 1995; Gambacorta and Mistrulli, 2004). Kashyap and Stein (2000) find that small banks are exceptionally sensitive to monetary policy. Kashyap and Stein’s finding is relevant to this study since small banks are most inclined to serve small firms (see, e.g., Berger *et al.*, 2005 as well as Peek and Rosengren, 1995). The lending theory finds that when the money supply tightens (expands), it appears to decrease (increase) the ability of banks to loan funds based on the relative illiquidity (liquidity) of their balance sheets. This relation implies that a positive money shock in a country will cause bank balance sheets to be relatively more liquid, which, in turn, enables banks to increase the amount of credit extended to the public, or to ‘risk shift’ their portfolio, extending more and/or longer-term debt to previously perceived ‘risky’ clients (i.e., small firms).

At the same time, firms within nations that receive capital inflows enjoy higher net values, based on a lower cost of capital (Eun *et al.*, 1995). Bekaert *et al.* (2002) assure us this lower cost of capital is at least partially permanent (based on evidence of reduced dividend yields). Even if these higher net values are temporary, the increase in net values could potentially help firms increase the maturity of their debt. To the extent that long-term debt is, in fact, acquired, the higher net values are particularly helpful since short-term debt is typically curtailed when there are sudden reversals in capital flows (see Claessens *et al.*, 2000 for a discussion of the roles that short-term debt and total debt play in post-crisis poor operational performance).

<sup>10</sup> Implicit in the freeing up hypothesis is the assumption that foreign firms do not benefit from this available capital. Since FPI flows in both directions, it is possible, that foreign firms could in fact benefit as well. The extent to which small domestic firms benefit will therefore depend on the openness of the country to foreign firm fundraising.



Although the money supply augmentation in Kashyap and Stein's (2000) paper is due to monetary policy, their theory could arguably be extended to a different source of money supply augmentation: foreign portfolio inflows. An increase in the liquidity of a bank's balance sheet through increased outside investment enables it to lend in the same manner as if it were experiencing changes in the money supply caused by (unsterilised) monetary policy. This liquidity increase can occur through investment in the banking sector or because of the implications that increased money supply has on the ability of banks to raise reservable forms of financing. If the amount of credit extended to small listed firms is increased, we would expect to see a corresponding increase in small firms' level of debt, particularly long-term debt. More concisely stated:

*H4. Long-term debt levels of small listed firms are significantly positively related to the level of FPI (scaled by the size of its domicile nation).*

### 3. Data

Issuance data was obtained from the Securities Data Corporation (SDC) Global New Issues database for the time period 1/1/1996 through 12/31/2007.<sup>11</sup> Following many empirical studies in corporate finance, regulated industries such as financial services (see, e.g., Opler *et al.*, 1999) and utilities firms were excluded. Collectively, these firms operate differently than the average firm not in either category, and would likely confound the results if included. Firms that have gone bankrupt are also excluded because of the special set of issues that are included in capital structure determination when a company is failing. This exclusion follows the method of Asquith *et al.* (1994) who find that such situations generally cause a major restructuring of capital structure outside of the scope of financial constraint relaxation.<sup>12</sup>

Over 65,000 domestic issuance observations of common stock, non-convertible debt, convertible debt, non-convertible preferred stock, and convertible preferred stock were collected. International issuances were excluded due to the endogeneity between FPI and international issues. Only one issue per year was retained for each company in order to avoid upward bias in the results toward issuing capital. Dropping multiple issuance observations for firm years left 40,649 observations. Financials for the companies issuing domestically were hand-collected from Reuters. This approach, although time consuming, provides a much richer sample than afforded by SDC Platinum alone. Reuters provides financial information on all publicly-traded firms for the majority of countries in the world and, as such, does not suffer from the bias toward large firms that other international databases such as Worldscope/Datastream/Research Insight do. In fact, according to Reuters, financials are provided for over 90% of the firms covered in its database. A list of the cumulative firm year issuances by country is provided in Table 1.

<sup>11</sup> Global new issues are not consistently available preceding 1996 in SDC.

<sup>12</sup> The exclusion of these firms could certainly create a survivorship bias. Collecting data for the sample term from Compustat Global (since Reuters drops these firms from their database) and using the status alert ('stalt') variable to identify firms in bankruptcy reveals that less than 1% of firms globally fall into this category. To the extent that Compustat Global has a large firm bias, this number may fall short of the actual number of bankrupted public firms. Given the negligible proportion of bankrupted firms in the sample, any bias resulting from the exclusion of these firms is considered immaterial.

Table 1  
Security issuances and investment environment

This table presents the breakdown of the type of securities issued in each country in the sample between the years of 1996–2007. Debt (Equity) Issues are the number of firm-years where firm  $i$  issued debt (equity) at time  $t$ . Average annual proceeds are the average amount issued by country  $j$  at time  $t$  in millions of current US dollars. FPI Inflows (Net Flows) is the amount of foreign portfolio investment inflows (net flows) into country  $j$  in millions of current US dollars. Property Rights is an index which measures the efficacy of enforcing contracts (1 – very effective; 5 – very ineffective). Figures (except issuances) are averaged across the sample term.

	Debt Issuances	Equity Issuances	All Issuances	Number of Issuers	Annual Proceeds	FPI Inflows	FPI Net Flows	Property Rights
<i>Panel A: Developed property rights nations</i>								
Austria	25	63	88	6	58.07	20,934.51	1,518.21	1
Belgium	74	90	164	14	36.40	12,512.14	-143,358.00	1
Canada	1,495	2,261	3,756	246	42.83	16,396.08	-9,042.96	1
Chile	96	113	209	16	50.21	1,236.34	-1,741.43	1
Denmark	39	116	155	12	37.89	7,089.47	-4,349.65	1
Finland	34	120	154	14	77.27	8,565.43	-3,931.91	1
Germany	196	574	770	60	196.14	125,166.30	361.69	1
Hong Kong	524	1,216	1,740	138	22.61	13,704.87	-18,855.72	1
Ireland	11	73	84	6	86.67	74,560.66	-8,752.51	1
Netherlands	61	179	240	19	150.56	55,175.08	-5,054.71	1
New Zealand	66	88	154	10	40.58	1,371.89	281.84	1
Norway	71	150	221	20	40.29	7,852.60	-15,310.18	1
Singapore	403	508	911	68	36.93	2,799.52	-10,648.36	1
United Kingdom	662	2,829	3,491	260	46.41	126,689.50	26,640.50	1
United States	3,569	5,574	9,143	847	445.44	433,408.10	284,187.70	1
Switzerland	142	121	263	21	157.05	6,992.60	-22,533.16	1.09
South Korea	3,936	867	4,803	415	38.03	12,689.47	9,025.91	1.33
Japan	3,076	3,101	6,177	450	102.29	89,612.33	-25,856.69	1.42
Sweden	74	312	386	31	46.43	4,227.84	-13,927.87	1.5
France	235	746	981	72	113.24	96,308.03	-16,381.35	2
Hungary	0	12	12	1	38.67	1,860.93	1,593.78	2



Table 1  
Continued

	Debt Issuances	Equity Issuances	All Issuances	Number of Issuers	Annual Proceeds	FPI Inflows	FPI Net Flows	Property Rights
<i>Panel A: Developed property rights nations</i>								
Israel	29	84	113	8	57.70	3,548.19	707.61	2
Portugal	27	53	80	7	148.69	7,299.65	463.81	2
Spain	61	119	180	14	146.61	52,563.16	14,270.31	2
Thailand	265	243	508	37	34.39	1,984.10	1,586.53	2
<i>Panel B: Hybrid nations (classification dependent on annual rating)</i>								
Italy	70	191	261	18	274.48	74,498.17	12,400.93	2.08
Poland	89	49	138	7	18.64	3,662.28	2,761.67	2.33
Greece	31	184	215	13	55.53	15,711.16	6,704.75	2.42
Turkey	8	20	28	2	46.93	2,793.88	1,489.63	2.42
Malaysia	328	642	970	63	32.32	583.84	215.35	2.5
Argentina	85	59	144	13	89.21	395.94	-526.79	2.83
Philippines	51	46	97	6	35.87	1,852.31	1,221.56	2.83
Mexico	197	57	254	17	68.13	3,389.31	4,121.14	2.92
Sri Lanka	0	13	13	1	0.45	-113.94	4.47	2.92
<i>Panel C: Less developed property rights nations</i>								
Brazil	339	35	374	27	142.04	6,160.28	5,568.81	3
India	464	1,063	1,527	197	8.99	2,667.53	2,640.22	3
Bolivia	22	17	39	3	2.60	.	-36.48	3.33
Peru	61	8	69	4	14.63	875.94	475.06	3.33
Colombia	64	24	88	9	13.34	1,335.61	456.69	3.42
Pakistan	2	17	19	1	7.39	136.77	138.19	3.42
Indonesia	118	156	274	18	56.61	1,343.45	1,126.93	3.5
Venezuela	28	29	57	7	67.20	1.59	-812.03	3.5
China	394	905	1,299	86	72.90	12,159.98	-10,701.62	4
Total	17,522	23,127	40,649	226				

The only firms not covered by Reuters are those that have gone bankrupt or have merged with another firm. As previously mentioned, bankrupt firms are deliberately excluded from the sample. The absence of merged firms would only be a problem if the issuing company had acquired a firm (or was acquired by a firm) vastly different in its issuing behaviour than the remainder of the sample.

Adding to the 40,649 observations of capital issuance, data was collected for those years that issuing companies did not issue to create a panel dataset.<sup>13</sup> Data was also collected on firms not issuing capital during the sample period (1996–2007) in order to represent those public companies that either could not issue capital or did not have sufficient funds internally. With the inclusion of non-issuing firms, the sample exceeded 250,000 firm-year observations.

Seven countries out of the original 53 were dropped due to insufficient data.<sup>14</sup> In these cases, there were only one or two observations of capital issuance, not enough from which to obtain any statistically significant results. Two more countries, Taiwan and Bermuda, were dropped due to insufficient macroeconomic data. The exclusion of these countries decreased the sample size by 3,294 firm year observations, which is less than 2% of the overall sample.

Cross-country studies that examine equity issues often exclude Australia due to its unique form of equity rights issues. This form of offering allows the existing shareholders to decide whether they would like to accept a certain amount of shares based on a pre-determined ratio at a price lower than market value. These equity offerings are typically excluded (or the entire country in the cross-country sample) as rights issues affect firm fundamentals such as share capital, book value per share, earnings per share, and the liquidity of the stock. Since the inclusion of these observations would clearly bias the results, they were excluded. With the exclusion of Australia, the number of countries in the final sample was 43.

Firm-level data are winsorised at 1% to minimise the biasing impact of outliers. A full list of summary statistics for the dataset is provided in Table 2.

### 3.1. *Firm-specific information*

Databases, such as Reuters, obtain financials for these listed companies from the exchanges. To the extent that these exchanges have different reporting requirements, financial definitions might vary. Differences in currency value were avoided by using ratios, which are comparable across countries. Ratios were created through a scaling by total assets unless otherwise noted.

As many empiricists have attributed size as a determinant of capital structure, which could have implications on capital issuance, firm size is taken into consideration. Korajczyk and Levy (2003) and Baker and Wurgler (2002) find a positive relation between leverage and firm size. Titman and Wessels (1988) find that firm size influences not only the extent of leverage, but also the type. Firms that have total assets less (more) than the country-year median are classified as Small (Large).

Leverage itself plays a role in the timing of issuance for many firms, as found in the market timing literature (Leary and Roberts, 2005; Korajczyk and Levy, 2003; Baker

<sup>13</sup> Issuances include IPOs. The sample is not limited to those that were public on 1/1/1996.

<sup>14</sup> These countries are Costa Rica, Czech Republic, Iceland, Luxembourg, Papua New Guinea, South Africa, and Bangladesh.

Table 2  
Summary statistics from 1996 to 2007

This table presents summary statistics of the variables used in this analysis. Definitions may be found in Appendix A.

*Panel A: Firm-level variables*

Variable	Obs.	Mean	Std. Dev.	Min	Max
<i>Small firms</i>					
Capital Dummy	78,930	0.10	0.29	0	1
Asset Tangibility	78,930	0.57	0.36	0.06	1
Cash	78,930	0.16	0.17	0.00	0.64
Cross-listing	78,930	0.01	0.11	0	1
Short-term Leverage	76,647	0.37	0.23	0.06	0.94
Long-term Leverage	77,011	0.12	0.14	0.00	0.46
Total Leverage	78,930	0.51	0.25	0.11	0.96
Profitability	78,930	-0.07	0.41	-1.46	0.47
Risk	78,930	0.08	0.08	0.00	0.28
<i>Large firms</i>					
Capital Dummy	64,256	0.16	0.37	0	1
Asset Tangibility	64,256	0.53	0.24	0.07	1
Cash	64,256	0.10	0.11	0.00	0.48
Cross-listing	64,256	0.07	0.26	0.00	1
Short-term Leverage	63,606	0.34	0.19	0.05	0.72
Long-term Leverage	58,207	0.16	0.15	0.00	0.50
Total Leverage	64,256	0.55	0.22	0.10	0.96
Profitability	64,256	0.02	0.20	-0.98	0.36
Risk	64,256	0.05	0.05	0.00	0.18

*Panel B: Country-level variables*

Corruption	463	3.63	1.37	1	6
Domestic Credit	467	0.73	0.63	0.00	3.22
Domestic Capital	467	71.36	77.80	0.88	903.57
FDI	467	0.04	0.07	-0.15	0.94
Financing Obstacles	26	2.67	0.50	1.82	3.51
Fiscal Burden	426	11.33	15.10	1	68.01
FPI Net Flow	464	-0.02	0.11	-1.18	0.32
FPI Inflow	452	-0.01	0.05	-0.30	0.32
%ΔFPI	383	0.01	0.09	-0.04	1.04
FPI/Gross Private Capital Flows	450	0.01	0.15	-0.51	0.32
FPI (Winsorised)	464	-0.01	0.06	-0.24	0.13
FPIVol (5 yrs)	446	0.00	0.00	0.00	0.05
FPIVol (3 yrs)	467	0.12	0.46	0	6.26
ΔFXRate	467	0.04	0.14	-0.24	1.24
GDP Growth	467	0.04	0.03	-0.13	0.18
Investment Profile	463	8.70	2.31	2.79	12
Law and Order	463	4.80	1.35	1	6
Large Firm Intl Proceeds	467	7.09	2.10	-2.3	11.96
Market Share	467	0.71	0.70	0.03	5.97
Property Rights	428	2.09	1.13	1	9
Real Interest Rates	441	0.07	0.10	-0.35	0.78
Relative Interest Rates	467	0.08	0.25	-0.06	1.76
Savings	467	0.24	0.09	-0.05	0.54

and Wurgler, 2002). This variable was included to control for any implications market timing or capital structure may have on firm issuance.

Cash and Profitability of firms would be an obvious influence on firm issuance since they impact how well a firm could fund positive net present value (NPV) projects internally (i.e., avoid external fundraising). Following the definition of profitability found in Titman and Wessels (1988), Profitability is defined as operating income divided by sales. Another obvious influence on firm issuance is the perceived level of risk for a firm. Risk is calculated as the standard deviation of a firm's return on assets for time  $t - 3$  through time  $t - 1$ .

Also relevant is Asset Tangibility. This variable refers to how palpable the assets of a firm are and relates to a small firm's access to capital concerns through its limitations on debt levels based on the ability to provide collateral. A firm with fewer tangible assets is thought to have an increased probability of bankruptcy, since a firm with few tangible assets would have less ability to raise funds through liquidation in times of financial distress. Following Rajan and Zingales (1995), this variable was calculated by dividing fixed assets by the book value of assets.

To correct for any additional access a firm might have in other nations (Lins *et al.*, 2005), an indication of whether a firm has listings in other countries (e.g., an American Depositary Receipt on a US stock exchange for a non-US firm) is included.<sup>15</sup> An indicator variable called Cross-listing was included. The variable takes on a value of one if a firm is listed on an exchange outside of its nation of domicile, and zero otherwise.

### 3.2. Industry information

Differences in industry classification were avoided by using the issuers' (one digit) primary SIC code as an industry indicator. These indicators were included in all specifications to account for any industry fixed effects.

### 3.3. Macroeconomic information

To control for the impact of other potential sources of funds for firms, I included Savings, Domestic Credit, and Foreign Direct Investment. Savings was calculated as the difference between gross domestic product and consumption. Domestic Credit was the level of credit extended by financial institutions domestically. Foreign Direct Investment was included to control for the effect provided by the more stable of the two global capital flows on capital issuance. This inclusion was important given the fact that the impact of Foreign Direct Investment is likewise beneficial for alleviating financing constraints (Harrison *et al.*, 2004). To control for business cycle effects, GDP Growth was included.

Fiscal Burden, from Heritage Foundation, was used to control for the tax implications of debt in the bank-lending route of FPI analysis. This variable considers the proven relation between taxes and lending in a multinational setting (Desai *et al.*, 2004).

Controlling for political risk, which Kang and Stulz (1997) identify as an implicit barrier to foreign investment, Investment Profile, Law and Order, and Corruption were included. These indices reflect the host government's attitude toward foreign investors, the level of legal development, and the level of corruption, respectively, in a country.

<sup>15</sup> All forms of cross-listing are treated the same here (e.g., Level I, II, or III ADR programs, private placement (Rule 144A) or Canadian direct listing).

All three indices are created by the International Country Risk Guide and collectively reflect the political risk environment of a country. The inclusion of proxies for political risk follows the method of Beck *et al.* (2002, 2005), as well as many other examinations of access to financing in an international setting. Papers such as Claessens and Laeven (2003), Bekaert and Harvey (2003), and La Porta *et al.* (1997) point out the importance of political risk as a determinant of financial development.

The variable of interest in this study, FPI, is included in two forms: net flow (inflows minus outflows) and inflows. This data was collected from World Bank's World Development Indicators and International Monetary Fund's Balance of Payment Statistics, respectively. These figures include both debt and equity investments made by investors foreign to the issuer's domicile nation. Figures are scaled by a proxy for the size of the nation, the country's GDP. Alternate definitions for this variable are examined in the robustness section of the paper.

Instruments of the variable of interest were included due to the endogenous nature of FPI. Relative Interest Rates were included to control for an investor's demand for interest-bearing securities in the firm's domicile nation versus those of other countries (Samak and Helmy, 2000). Market Share was included to address the attractiveness of a given economy based on market capitalisation (generally in more developed capital markets), or the decrease in the cost of equity and the resulting increase in the price of existing shares that occurs with market integration (Patro and Wald, 2005; Henry, 2000). To provide an additional determinant of international investment, the change in Real Foreign Exchange Rates was included to provide a meaningful value indicator of capital investments (Agarwal, 1997). FPI Volatility was calculated as the variance of FPI levels for the trailing three-year term (time  $t - 3$  through  $t - 1$ ).

As discussed in the introduction, property rights might influence the channel through which FPI reaches small firms. For countries with high levels of property rights, global capital flows should have the capability to reach small firms through either the capital markets or through bank lending. In countries where property rights are weak, FPI should be allocated to small firms through capital markets only since small firms are unwilling to overextend themselves to banks when protection against their competitors is minimal. Property Rights is an appraisal by the Heritage Foundation of the level of freedom an individual possesses to accumulate personal property. The measure is based on the extent and enforcement of laws designed to protect property accumulation. Specifically, the measure takes into consideration the independence of a country's judiciary system as well as the ability of an individual to enforce his right to hold property through contracts. The index uses a scale from 1 (maximum freedom) to 5 (minimum freedom).<sup>16</sup> The sample used in this paper includes countries with scores between 1 and 4.

Descriptions, as well as sources, of both firm-specific and macroeconomic variables and definitions of financial data used in the analysis are provided in Appendix A.

### 3.4. Data correlation

Table 3 provides correlation matrices for all variables used in the analysis. There are no notable significant relations in the firm-specific data. The only variables that exhibit

<sup>16</sup> Heritage Foundation altered this rating in 2005 and values are converted to the old scale. Specifically, instead of a scale of 1 (high level of property rights) to 5 (low level of property rights) was changed to a scale from 10 through 100 in increments of 10. Dividing the latter by 20 and reversing the scale allows for a simple conversation to the old scale.

Table 3  
Correlation (small firm sample)

This table presents correlations of the variables used in this analysis. Definitions of these variables may be found in Appendix A.

	1	2	3	4	5	6	7	8
<i>Panel A: Firm-level variable correlation</i>								
Capital Dummy (1)	1.00							
Cash (2)	<b>0.09</b>	1.00						
Cross-listing (3)	<b>0.17</b>	-0.27	1.00					
Short-term Leverage (4)	<b>0.15</b>	-0.05	<b>0.06</b>	1.00				
Long-term Leverage (5)	<b>0.04</b>	-0.01	-0.01	-0.01	1.00			
Total Leverage (6)	<b>0.11</b>	0.32	-0.14	<b>0.02</b>	<b>0.02</b>	1.00		
Profitability (7)	0.00	<b>0.16</b>	-0.19	-0.02	<b>0.78</b>	<b>0.49</b>	1.00	
Risk (8)	0.00	<b>0.13</b>	-0.20	-0.02	-0.17	<b>0.07</b>	-0.08	1.00



Panel B: Country-level variable correlation

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Corruption (1)	1.00																	
Domestic Credit (2)	<b>0.23</b>	1.00																
FDI (3)	0.08	<b>0.10</b>	1.00															
Fiscal Burden (4)	0.00	<b>-0.56</b>	<b>-0.10</b>	1.00														
FPI Net Flows(5)	-0.06	<b>-0.13</b>	<b>-0.45</b>	0.07	1.00													
FPI Inflows (6)	<b>0.39</b>	0.07	<b>0.18</b>	<b>0.25</b>	<b>0.10</b>	1.00												
%ΔFPI Inflows (7)	0.07	0.00	0.02	-0.02	0.02	0.05	1.00											
FPI/GPCF (8)	<b>0.10</b>	-0.04	<b>-0.10</b>	<b>0.20</b>	<b>0.40</b>	<b>0.56</b>	0.04	1.00										
FPI (winsorised) (9)	<b>-0.14</b>	<b>-0.13</b>	<b>-0.50</b>	0.07	0.09	<b>0.78</b>	0.02	<b>0.41</b>	1.00									
FPIVol (5 yrs) (10)	0.08	-0.01	<b>0.15</b>	-0.01	<b>-0.18</b>	<b>0.11</b>	-0.02	-0.04	<b>-0.33</b>	1.00								
FPIVol (3 yrs) (11)	0.09	0.06	0.07	0.00	<b>-0.14</b>	<b>0.12</b>	-0.01	0.02	<b>-0.21</b>	<b>0.73</b>	1.00							
ΔFXRate (12)	<b>-0.13</b>	0.02	0.03	<b>-0.26</b>	-0.03	<b>-0.14</b>	-0.01	<b>-0.21</b>	-0.03	-0.04	-0.03	1.00						
GDP Growth (13)	<b>-0.13</b>	<b>-0.15</b>	0.07	0.06	0.03	-0.08	-0.02	0.02	0.01	0.02	-0.03	<b>-0.35</b>	1.00					
Investment Profile(14)	<b>0.27</b>	-0.06	<b>0.12</b>	<b>0.41</b>	-0.08	<b>0.46</b>	0.06	<b>0.23</b>	<b>-0.13</b>	<b>0.18</b>	<b>0.15</b>	<b>-0.36</b>	-0.07	1.00				
Law and Order (15)	<b>0.60</b>	<b>0.26</b>	<b>0.12</b>	0.08	<b>-0.10</b>	<b>0.35</b>	0.04	<b>0.16</b>	<b>-0.18</b>	0.06	0.06	<b>-0.26</b>	0.02	<b>0.27</b>	1.00			
Realinrates (16)	-0.08	-0.04	0.00	<b>-0.16</b>	0.04	<b>-0.16</b>	-0.02	-0.01	0.08	-0.04	-0.04	-0.05	<b>-0.14</b>	<b>-0.13</b>	<b>-0.18</b>	1.00		
RelIntRates (17)	0.05	<b>-0.33</b>	-0.07	<b>0.59</b>	0.06	<b>0.22</b>	-0.01	<b>0.20</b>	0.08	-0.02	-0.02	<b>-0.17</b>	-0.03	<b>0.27</b>	<b>0.12</b>	<b>0.32</b>	1.00	
Savings (18)	-0.04	<b>0.13</b>	<b>0.17</b>	-0.08	<b>-0.16</b>	-0.07	0.01	<b>-0.15</b>	<b>-0.31</b>	<b>0.10</b>	0.07	0.04	<b>0.27</b>	<b>-0.11</b>	<b>0.10</b>	<b>-0.23</b>	<b>-0.12</b>	1.00
Market Share (19)	<b>0.33</b>	<b>0.30</b>	<b>0.29</b>	<b>-0.11</b>	<b>-0.20</b>	<b>0.21</b>	0.01	-0.05	<b>-0.39</b>	<b>0.45</b>	<b>0.28</b>	<b>-0.11</b>	0.05	<b>0.26</b>	<b>0.28</b>	<b>-0.08</b>	<b>-0.06</b>	<b>0.25</b>

Bold font identifies significance of 5% or 1%.

significant correlation are some of the macro variables. The correlation of several macroeconomic variables is significant and is generally an issue in many international studies. As a result, empirical examinations using different specifications, including select macroeconomic variables and the subsequent addition of problematic variables, are used to provide robustness to the results given the potential empirical biases based on the correlation between the macroeconomic independent variables.

#### 4. Empirical Method

##### 4.1. Capital markets

To examine the impact of FPI on the access to finance of small listed firms, my analysis focuses on the sub-sample of listed firms that have fewer total assets than the country-year median. Using annual medians within countries allows firms to move into and out of size categories as their assets allow.

The value of FPI can be measured in two ways: 1) net flows or 2) inflows (versus outflows). Both measures are potentially important with regard to the supply of capital in a country. For example, suppose a country has equal inflows and outflows of capital; the net capital would be equal to zero. Certainly, FPI inflows could still have an impact on small firm access to capital. In this case, one could argue that net FPI flows misrepresent the true impact on the supply of capital. Likewise, inflows can be misleading. Suppose a second country has equal inflows to the first, yet it has no outflows. Certainly, the impact on supply of domestic capital, which is central to the freeing up hypothesis, is different for these two countries. Since both measures have merit (as well as limitations), I include both for the sake of thoroughness.

The results of a Durbin-Wu-Hausman test for endogeneity for FPI demonstrate that endogeneity is a concern. In support of this evidence are the results of Agarwal (1997), which indicate that the significant determinants of FPI are the (change in the) Real Exchange Rate,<sup>17</sup> the Market Share of the world capital market, and some proxy for economic activity. As such, an instrumental variable method is used that in the first stage regresses FPI on the above variables with Relative Interest Rates (annual real interest rates scaled by the annual sample average) serving to explain the economic activity. Also included here is a trailing FPI Volatility in order to predict FPI with its determinants (Bekaert and Harvey, 2003; Henry, 2000; Patro and Wald, 2005; Mukherjee *et al.*, 2002). The first stage regression is therefore:

$$FPI_{j,t} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon_{j,t}. \quad (1)$$

To discern the impact of FPI on access to capital, I divide the sample into halves based on property rights (DPR nations are those with property rights = 1 or 2; LDPR nations are those with property rights = 3 or 4). I control for firm, time, and industry fixed effects. I further control for firm-level capital structure choice determinants to ensure that firms issue based on need, not based on capital structure decisions. The dependent variable in this model is the probability of domestic capital issuance (i.e.,  $y = 1$  if a firm

<sup>17</sup> The relevance of this variable is supported in Brennan and Chao (1997) and Brooks *et al.* (2004).

issues and  $y = 0$  if it does not). Empirically stated, this becomes:

$$\begin{aligned} \text{Prob}(y = 1)_{i,t} &= \phi(ZB) \\ &= \phi(\gamma_0 + \gamma_1 FPI_{j,t-1} + \gamma_2 X_{i,t-1} + \gamma_3 Y_{j,t-1} + \gamma_4 I_i + \gamma_5 t), \end{aligned} \quad (2)$$

where  $\phi$  represents the standard cumulative normal probability distribution,  $Z$  represents a vector of explanatory variables, and  $B$  is a vector of coefficients. FPI is the predicted level of foreign portfolio investment as a percentage of GDP resulting from the first stage of the instrumental variable probit regression (Equation 1).  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility, and Cross-listing. These variables are included to control for times when firms would be more likely to issue securities (Korajczyk and Levy, 2003).  $Y$  is a vector of lagged macroeconomic variables including GDP Growth, levels of other potential sources of capital (such as Foreign Direct Investment, Domestic Credit, and Savings), and political risk variables including Investment Profile, Law and Order, and Corruption.<sup>18</sup>  $I$  is a vector of industry dummies to control for industry effects, and  $t$  represents time dummies, which control for time effects in the panel. A description of the firm-, industry-, and country-specific variables is in the data section, as well as in the Appendix. Based on hypothesis H1, it is expected that  $\gamma_1$  would be both positive and significant for small firms in DPR countries, and potentially the same for small firms in LDPR countries.

Based on hypothesis H2, it is anticipated that  $\gamma_1$  would be nonpositive for large firms, regardless of property rights development, suggesting that the supply of capital in domestic markets may free up, however slightly, for small firm use. To test H2, the mechanism by which FPI reaches small listed firms, it had to be ascertained whether large firms raise less capital domestically when more FPI flows into its domicile nation. Since large firms are, in general, not financially constrained, the external financing needs of each firm needs to be determined. Following Demirgüç-Kunt and Maksimovic (1998) and Beck *et al.* (2002), each firm's external funds necessary (EFN) from the 'percentage of sales' approach to financial planning was calculated as follows:

$$EFN_t = (\varsigma_t^*) \text{Assets}_t - (1 + \varsigma_t^*) \text{Earnings}_t * RR_t. \quad (3)$$

The first term in Equation (3) refers to the assets necessary for firm growth. The second term is the internal financing available for firm growth. Earnings are after taxes. RR is the retention ratio for the firm.<sup>19</sup> As noted in Beck *et al.* (2002), the use of the formula to discern external funds necessary depends on the true values of assets being reported (relative to their depreciable basis). To forecast growth for period  $t$ ,  $\varsigma_t^*$ , the fitted values of growth resulting from the following equation are utilised:

$$G_{i,t} = \delta_0 + \delta_1 X_{i,t-1} + \delta_2 Y_{j,t-1} + \delta_3 I_i + \delta_4 t + \varepsilon_{i,t}, \quad (4)$$

where  $G$  is the log difference in total assets from time  $t - 1$  to  $t$  and all other variables are as defined in Equation (2). I adopt the Rajan and Zingales (1998) approach to obtain unconstrained growth rates for the sample, since using firm-specific information would imply that the resulting predicted growth rates would be optimal. To that end, fitted growth rates from the results of Equation (4) using US firms are mapped by both

<sup>18</sup> Results are robust to using three-year trailing averages for all macroeconomic variables. These results were included in a previous version of the paper and are available upon request.

<sup>19</sup> I assume this is 100% to be conservative. This assumption would tend to bias results toward a rejection of the hypothesis.

industry and size to all other countries. These observations were subsequently dropped from the analysis.<sup>20</sup> This exclusion avoids any downward bias based on the inclusion of the firms that were used to obtain the unconstrained growth rates.

Using a subsample of only large firms, those firms with negative EFN values are dropped. The specifications in Equations (1) and (2) were then rerun. To test H3, a sample of international issuances from SDC Platinum Global New Issues was collected for the same term as the base sample (1996–2007). These issuances were identified following the methodology of Gozzi *et al.* (2009). Specifically, international issues were classified as securities issues listed on an exchange in a nation other than the company's domicile nation.<sup>21</sup> These issuances were then merged with the large firm sample so that only large firm international issuances were retained. The average annual international proceeds of these large firms were calculated and these figures were matched by country-year to the small firm sample. The following empirical model is specified to examine the relation between large firm international capital raising and the probability of small firm domestic capital issuance.

$$\begin{aligned} Prob(y = 1)_{i,t} &= \Phi(ZB) \\ &= \Phi(\lambda_0 + \lambda_1 LFIntlProceeds_{j,t-1} + \lambda_2 X_{i,t-1} + \lambda_3 Y_{j,t-1} + \lambda_4 I_i + \lambda_5 t), \end{aligned} \quad (5)$$

where *LFIntlProceeds* is the natural log of the average proceeds raised by large firms in country *j* at time *t*. All other variables are as previously defined in Equation (2). If H3 is true, the coefficient on *LFIntlProceeds*,  $\lambda_1$ , will be positive and statistically significant.

#### 4.2. Bank lending

To address those small firms in the dataset that are at least, in part, reliant on bank debt, the impact of FPI on short-term, long-term, and total debt levels are examined. All three aspects of debt are examined to observe how total leverage, as well as the maturity of debt, changes with levels of FPI.<sup>22</sup> An increase in total debt would suggest that more credit, i.e., an increased level of access to capital, is available to small firms. A decrease in the level of short-term debt, a debt maturity on which these firms most typically depend (Barclay and Smith, 1995), in favour of longer-term debt would also imply increased access to finance. Indeed, longer-term debt secures capital access over a longer period of time and could secure financing in times of capital flight. To ascertain the impact of FPI on debt levels and maturity, a robust ordinary least squares methodology is used in the following.<sup>23</sup>

$$\begin{aligned} (Short-term/Long-term/Total)Lev_{i,t} &= \rho_0 + \rho_1 FPI_{j,t-1} + \rho_2 X_{j,t-1} + \rho_3 Y_{i,t-1} \\ &\quad + \rho_4 I_i + \rho_5 t + \varepsilon_{i,t}, \end{aligned} \quad (7)$$

where  $Lev_{i,t}$  refers to the amount of leverage (short-term, long-term, and total; each regressed separately) firm *i* holds at time *t*. All other variables are as they appear in Equation (2). Real Interest Rates and Fiscal Burden, a measure of the average firm's tax

<sup>20</sup> This results in 55,707 observations being dropped.

<sup>21</sup> Subsidiaries issuing in their domicile nation are therefore not considered international.

<sup>22</sup> I am not able to observe the impact of FPI on trade credit. This is an unfortunate limitation of the data.

<sup>23</sup> Results are qualitatively identical using Tobit and are available upon request.

burden in a country, are added to the vector of macroeconomic variables,  $Y$ . Fiscal Burden is included to control for capital issuance choice with regard to tax minimisation. Real Interest Rates is included to account for the cost of raising debt and the possible implications of those costs on demand. FPI is once again the predicted level resulting from Equation (1). If FPI enhances the access to finance of small listed firms through an extension of the maturity of their outstanding debt,  $\rho_I$  would be positive (negative) in specifications using long-term (short-term) debt as the regressand.

## 5. Results

### 5.1. *The impact of FPI on capital issuance*

Intuitively appealing is the fact that variables such as Asset Tangibility and Risk are significantly positively related to capital issuance. In LDPR nations, Leverage and Profitability play a more pivotal role on capital issuance than they do for their DPR counterparts. This is not surprising given the relatively constrained access to capital in LDPR nations. Overall, firm level variables exhibit the expected marginal coefficients and, as such, are omitted for brevity.

Marginal effects of macroeconomic control variables exhibit reasonable signs and are seen in Table 4. In DPR (LDPR) nations, domestic credit exhibits a positive (negative) association with capital issuance, demonstrating that bank credit is a complement (substitute) for accessing capital from the public markets in these nations. Savings has a positive significant association with capital issuance in LDPR nations demonstrating that savings is yet another source of capital that provides liquidity for a nation. Foreign Direct Investment seems to be a competing source of capital in DPR nations. These results are supported by Agosin and Machado (2005) and Harrison and McMillan (2003), who find that foreign direct investment squelches domestic investment. GDP Growth in DPR nations is positive and significant suggesting that when times are good, firms issue securities to fund growth (perhaps suggesting market timing). GDP Growth in LDPR nations, however, is negative and significant. These results are supported by the findings of Korajczyk and Levy (2003), who find that constrained firms are able to issue only when macroeconomic variables (such as GDP Growth) are favourable.

The results of the analysis support the contention that FPI increases the access to financing of small listed firms. The marginal effect of FPI (scaled by GDP) shown in Table 4 is positive and significant. Indeed, the probability that a small listed firm issues in a given year increases by 1.31% with a one standard deviation increase in FPI inflows standardised by GDP (see Specification 1).<sup>24</sup> Net FPI flows show a likewise positive impact. The probability that a small listed firm issues in a given year increases by 2.98% with a one standard deviation increase in FPI net flows (see Specification 2). Controlling for political risk factors such as Investment Profile, Law and Order, and Corruption does not significantly change the magnitude or the significance of the impact of FPI on access to finance (see Specifications 3-8).

Looking to LDPR nations in Table 4 (Panel B), we again see a positive marginal effect of FPI. The magnitude for these firms, however, is considerably greater. Indeed, a one

<sup>24</sup> This number is obtained by multiplying the coefficient in Specification 1 of Table 4 by the standard deviation of FPI (scaled by GDP), which is found, rounded to the nearest hundredth, in Table 2.

Table 4  
FPI and small firm access to capital

This table presents from the following probit model:  $P(Capital\ Issuance)_{i,t} = \gamma_0 + \gamma_1 FPI_{j,t-1} + \gamma_2 X_{i,t-1} + \gamma_3 Y_{j,t-1} + \gamma_4 I_t + \gamma_5 t + \varepsilon$ . Development groups are based on the level of property rights in a nation. Only small firms (those firms with total assets less than the country-year median) are tested. FPI is foreign portfolio investment standardised by gross domestic product and represents the instrumented value obtained from the following first stage regression:  $FPI_{j,t} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $\Delta FXRate$  is the change in the real foreign exchange rate.  $MktShare$  is country  $j$ 's market capitalisation scaled by world market capitalisation.  $RelIntRates$  are the annual real interest rates of country  $j$  scaled by sample average calculated annually.  $FPIVol$  is the variance of FPI flows in times  $t - 1$  through  $t - 3$ .  $Y$  is a vector of lagged macroeconomic variables including the following: FDI is the level of foreign direct investment scaled by country  $j$ 's GDP. GDP Growth is the growth rate in gross domestic product of country  $j$ . Domestic Credit is the level of credit provided to the public by domestic banks and financial institutions, scaled by GDP. Savings is the difference between GDP and consumption, scaled by GDP. Investment Profile is the perceived risk facing foreign investors. Law and Order is an index referring to the development of the legal system. Corruption is an index that reflects the level of corruption.  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $I$  is a vector of industry dummies to control for industry effects and  $t$  represents time dummies, which control for any time effects in the panel. Observations are firm-year specific and for the term 1996-2007. Firm-level control variables are left out for brevity. Robust standard errors are clustered around issuer and are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

Dependent variable: P(capital issuance)								
	Inflows 1	Net flows 2	Inflows 3	Net flows 4	Inflows 5	Net flows 6	Inflows 7	Net flows 8
<i>Panel A: Developed property rights (N = 64,496)</i>								
FPI	0.246*** [0.075]	0.272*** [0.067]	0.194*** [0.068]	0.271*** [0.068]	0.274*** [0.070]	0.312*** [0.064]	0.226*** [0.072]	0.269*** [0.067]
FDI	-0.392*** [0.104]	0.153** [0.060]	-0.288*** [0.106]	0.184*** [0.062]	-0.355*** [0.097]	0.262*** [0.063]	-0.356*** [0.104]	0.161*** [0.062]
GDP Growth	1.390*** [0.198]	1.055*** [0.167]	1.389*** [0.192]	1.104*** [0.163]	1.262*** [0.178]	0.883*** [0.152]	1.354*** [0.194]	1.035*** [0.165]



Domestic Credit	0.027*** [0.008]	0.012** [0.005]	0.024*** [0.008]	0.012** [0.005]	0.033*** [0.008]	0.016*** [0.005]	0.025*** [0.008]	0.011** [0.005]
Savings	0.312*** [0.120]	-0.050 [0.058]	0.182 [0.120]	-0.091 [0.067]	0.304*** [0.115]	-0.097 [0.062]	0.267** [0.120]	-0.063 [0.061]
Investment Profile			-0.005* [0.003]	-0.006** [0.003]				
Law and Order					-0.022*** [0.004]	-0.022*** [0.004]		
Corruption							-0.003* [0.002]	-0.003** [0.002]
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage)	0.442	0.456	0.453	0.458	0.451	0.456	0.445	0.456
F-Test (instruments)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Pseudo R <sup>2</sup>	0.222	0.223	0.223	0.224	0.227	0.227	0.223	0.223

Table 4  
Continued

Panel B: Less developed property rights (N = 14,434)								
FPI	1.591*** [0.202]	3.587*** [0.778]	1.599*** [0.205]	3.612*** [0.772]	1.559*** [0.211]	3.726*** [0.716]	1.681*** [0.201]	3.345*** [0.714]
FDI	0.368*** [0.093]	0.213* [0.115]	0.377*** [0.093]	0.226* [0.117]	0.370*** [0.094]	0.184* [0.110]	0.423*** [0.092]	0.301*** [0.113]
GDP Growth	-0.172*** [0.050]	-0.191*** [0.057]	-0.172*** [0.050]	-0.192*** [0.057]	-0.199*** [0.054]	-0.280*** [0.065]	-0.236*** [0.051]	-0.234*** [0.060]
Domestic Credit	-0.039*** [0.008]	-0.058*** [0.011]	-0.038*** [0.008]	-0.057*** [0.011]	-0.040*** [0.008]	-0.063*** [0.011]	-0.044*** [0.008]	-0.058*** [0.011]
Savings	0.259*** [0.044]	0.494*** [0.092]	0.257*** [0.044]	0.492*** [0.091]	0.254*** [0.045]	0.508*** [0.087]	0.273*** [0.045]	0.469*** [0.086]
Investment Profile			0.000 [0.001]	-0.001 [0.001]				
Law and Order					0.002 [0.002]	0.004** [0.002]		
Corruption							-0.008*** [0.002]	-0.006*** [0.002]
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage)	0.461	0.448	0.498	0.471	0.461	0.449	0.461	0.457
F-Test (instruments)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Pseudo R <sup>2</sup>	0.285	0.285	0.285	0.285	0.286	0.286	0.287	0.287

standard deviation increase in FPI inflows (net flows) results in an increased probability of issuance of 8.50% in Specification 1 (39.30% in Specification 2). Adding political risk factors, we see economically important impacts reaching as high as 40.82% (see Specification 6). First stage results may be found in Appendix B. Partial scatter plots derived from Specification (1) of Table 4 complement the analysis and may be found in Figure 1.

It is interesting to note the impact of the political risk factors (Investment Profile, Law and Order, Corruption) on small firm access to finance. For DPR nations, the stronger the Investment Profile, Law and Order, and (lack of) Corruption, the less likely it is that a small listed firm will issue securities. This could suggest that large firms have more influence on the laws that are put into place with regard to securities. In LDPR nations, Law and Order has a positive and marginally significant (in the case of net FPI flows) marginal effect on small firm access to capital. This suggests that as the Law and Order in a country improves, these firms have better access to capital, which is certainly reasonable. The coefficient on corruption is negative for LDPR nations. This is likely due to the fact that bribery may have an instrumental role in small firms accessing capital in these nations. The results of Johnson and Mitton (2003) support this contention in that they show that politically-connected firms in Malaysia receive preferential access to capital.

These impacts, taken collectively, imply that FPI reaches small firms in both DPR and LDPR nations through the capital market, effectively increasing the access to finance for small listed firms.<sup>25</sup> More concretely, according to the results in Table 4, an increase of FPI inflows into Brazil of \$329 million should increase the probability that their small listed firms would issue capital domestically by 8.5%. Increasing their net FPI flows by \$610 million would increase the probability by 39.3%. Given that the average outward FPI flows for the USA, only one of the major providers of foreign investment capital, during the sample term was \$311 billion, this is not an insurmountable task. These results imply that the financial markets of the USA and other developed nations can confer benefits on developing nations by helping to fund the growth of small firms in those nations whose markets cannot perform this function alone.

Table 5 provides evidence that the mechanism by which FPI reaches small firms is through a freeing up of capital in the domestic market. FPI has a nonpositive impact on the probability of *domestic* capital issuance for large firms that have a need for external financing. In DPR nations (Panel A), marginal effects on FPI inflows are marginally significant. The average impact of a one standard deviation increase in FPI inflows (FPI net flows) is -1.19% (zero) in these nations. What should be noted here, however, is that the impact is nonpositive, leaving room for the possibility that domestic capital is freed up. This effect is seen more extensively in LDPR nations (Panel B). The average impact of FPI inflows (FPI net flows) in these nations is -7.28% (-14.07%). This suggests that large firms, which are more than likely the direct beneficiary of an increase in foreign investment, are less likely to issue capital in domestic markets, due to their increased access to global capital. Meshing nicely with the results found in Table 4, greater

<sup>25</sup> These results are not directly comparable to those found in Levine and Schmukler (2006) since FPI figures include more than investment in firms that cross-list. Additionally, although certainly correlated, access to capital is not equivalent to liquidity. Likewise, results are not directly comparable to Melvin and Valero (2009), who do an event study around cross-listing announcements. Once again, FPI figures include more than just investment in cross-listed firms and access to capital is not equivalent to cumulative abnormal return.

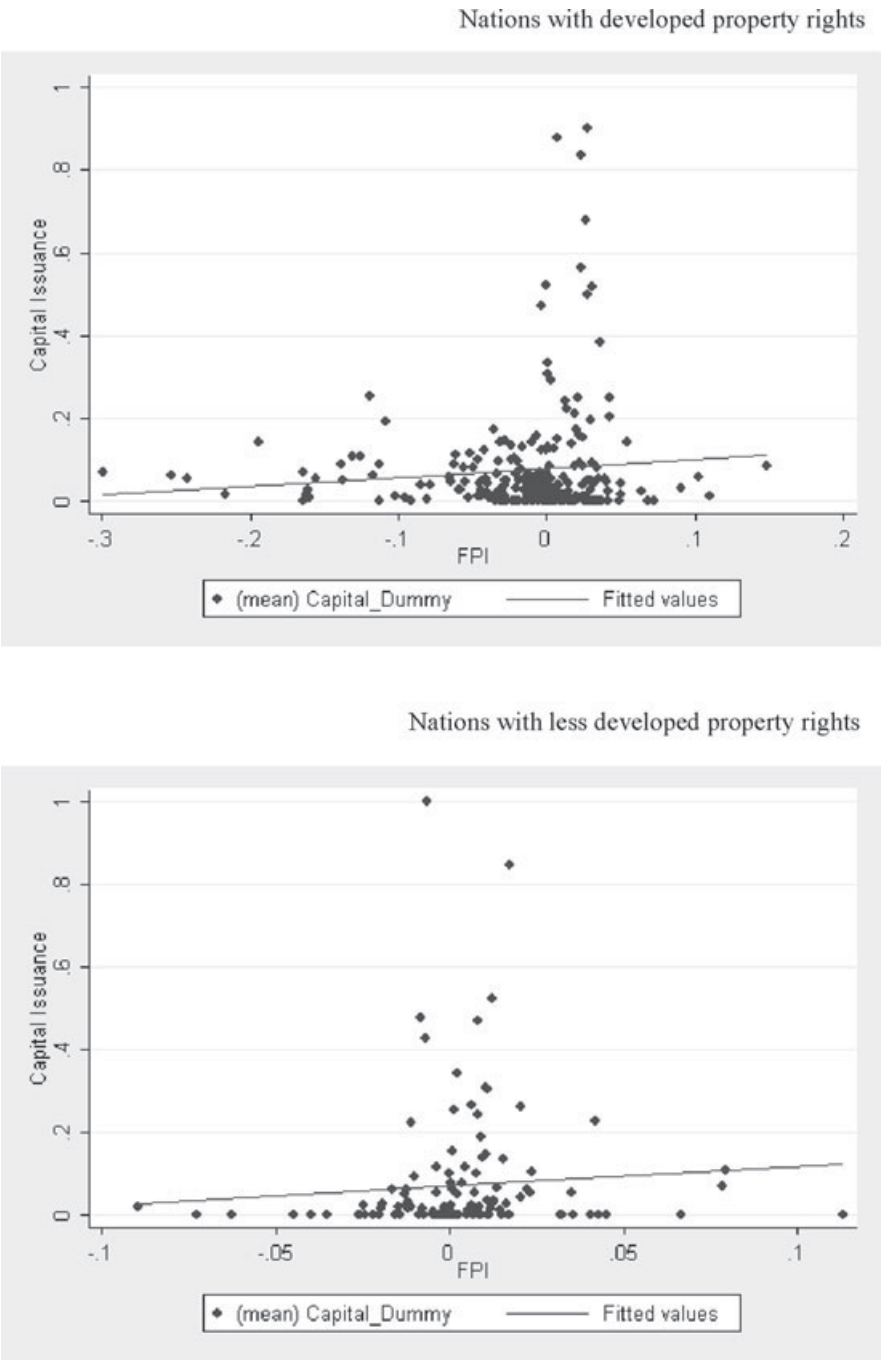


Fig. 1. Scatter plots of FPI and capital issuance

These figures present partial scatter plots obtained from Specification 1 in Table 4:  $P(Capital\ Issuance)_{i,t} = \gamma_0 + FPI_{j,t-1}\gamma_1 + X_{i,t-1}\gamma_2 + Y_{j,t-1}\gamma_3 + I_i + t + \varepsilon$ . Nations with (less) developed property rights are those with property rights indices equal to a “1” or “2” (“3” or “4”). For tractability, each dot represents a country-year.

Table 5

## FPI and large firm access to capital

This table presents results from the following probit model:  $P(\text{Capital Issuance})_{i,t} = \gamma_0 + \gamma_1 FPI_{j,t-1} + \gamma_2 X_{i,t-1} + \gamma_3 Y_{j,t-1} + \gamma_4 I_t + \gamma_5 t + \varepsilon$ . Development groups are based on the level of property rights in a nation. Only large firms (those firms with total assets greater than the country-year median) are tested. FPI is foreign portfolio investment standardised by gross domestic product and represents the instrumented value obtained from the following first stage regression:  $FPI_{j,t} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelInRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $\Delta FXRate$  is the change in the real foreign exchange rate.  $MktShare$  is country  $j$ 's market capitalisation scaled by world market capitalisation.  $RelInRates$  are the annual real interest rates of country  $j$  scaled by sample average calculated annually.  $FPIVol$  is the variance of FPI flows in times  $t - 1$  through  $t - 3$ .  $Y$  is a vector of lagged macroeconomic variables including the following: FDI is the level of foreign direct investment scaled by country  $j$ 's GDP. GDP Growth is the growth rate in gross domestic product of country  $j$ . Domestic Credit is the level of credit provided to the public by domestic banks and financial institutions, scaled by GDP. Savings is the difference between GDP and consumption, scaled by GDP. Investment Profile is the perceived risk facing foreign investors. Law and Order is an index referring to the development of the legal system. Corruption is an index that reflects the level of corruption.  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $I$  is a vector of industry dummies to control for industry effects and  $t$  represents time dummies, which control for any time effects in the panel. Observations are firm-year specific and for the term 1996-2007. Firm-level control variables are left out for brevity. Robust standard errors are clustered around issuer and are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

## Dependent variable: P(capital issuance)

	Inflows 1	Net flows 2	Inflows 3	Net flows 4	Inflows 5	Net flows 6	Inflows 7	Net flows 8
<i>Panel A: Developed property rights (N = 51,807)</i>								
FPI	-0.155* [0.094]	-0.180 [0.115]	-0.218** [0.097]	-0.171 [0.115]	-0.223** [0.094]	-0.187 [0.116]	-0.297*** [0.095]	-0.140 [0.116]
FDI	-0.088 [0.140]	-0.344*** [0.048]	-0.022 [0.144]	-0.355*** [0.049]	-0.032 [0.141]	-0.381*** [0.051]	0.075 [0.142]	-0.362*** [0.050]
GDP Growth	0.759*** [0.101]	0.867*** [0.089]	0.706*** [0.106]	0.853*** [0.091]	0.799*** [0.103]	0.938*** [0.092]	0.700*** [0.103]	0.876*** [0.090]

Table 5  
Continued

	Dependent variable: P(capital issuance)							
	Inflows 1	Net flows 2	Inflows 3	Net flows 4	Inflows 5	Net flows 6	Inflows 7	Net flows 8
Domestic Credit	0.016** [0.006]	0.025*** [0.003]	0.013** [0.006]	0.025*** [0.004]	0.010 [0.006]	0.023*** [0.004]	0.013** [0.006]	0.030*** [0.004]
Savings	-0.288* [0.174]	-0.060 [0.050]	-0.378** [0.178]	-0.041 [0.051]	-0.370** [0.174]	-0.023 [0.051]	-0.492*** [0.175]	0.000 [0.052]
Investment Profile								
Law and Order			0.004** [0.002]	0.003 [0.002]				
Corruption					0.016*** [0.004]	0.015*** [0.004]	0.014*** [0.003]	0.012*** [0.002]
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage)	0.452	0.469	0.477	0.472	0.465	0.484	0.454	0.475
F-Test (instruments)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Pseudo R <sup>2</sup>	0.071	0.071	0.071	0.071	0.071	0.071	0.072	0.072



Table 5  
Continued*Panel B: Less Developed Property Rights (N = 12,445)*

FPI	-1.334*** [0.449]	-1.220*** [0.457]	-1.603*** [0.466]	-1.514*** [0.473]	-1.171** [0.483]	-1.163** [0.491]	-1.343*** [0.453]	-1.239*** [0.463]
FDI	0.592*** [0.168]	0.695*** [0.171]	0.470*** [0.172]	0.598*** [0.174]	1.026*** [0.197]	1.135*** [0.202]	0.582*** [0.166]	0.686*** [0.170]
GDP growth	0.196* [0.115]	0.080 [0.096]	0.204* [0.116]	0.070 [0.096]	0.131 [0.121]	0.036 [0.099]	0.198* [0.116]	0.083 [0.096]
Domestic credit	0.319*** [0.080]	0.271*** [0.078]	0.302*** [0.079]	0.246*** [0.078]	0.366*** [0.079]	0.328*** [0.077]	0.309*** [0.081]	0.261*** [0.081]
Savings	-0.132** [0.058]	-0.111* [0.057]	-0.130** [0.057]	-0.109* [0.056]	-0.127** [0.063]	-0.118* [0.061]	-0.126** [0.058]	-0.105* [0.057]
Investment profile			0.005** [0.002]	0.005** [0.002]				
Law and order					-0.009*** [0.002]	-0.009*** [0.002]		
Corruption							0.002 [0.004]	0.002 [0.004]
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage)	0.336	0.410	0.396	0.444	0.337	0.421	0.338	0.412
F-Test (instruments)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Pseudo R <sup>2</sup>	0.245	0.245	0.246	0.246	0.248	0.248	0.245	0.245

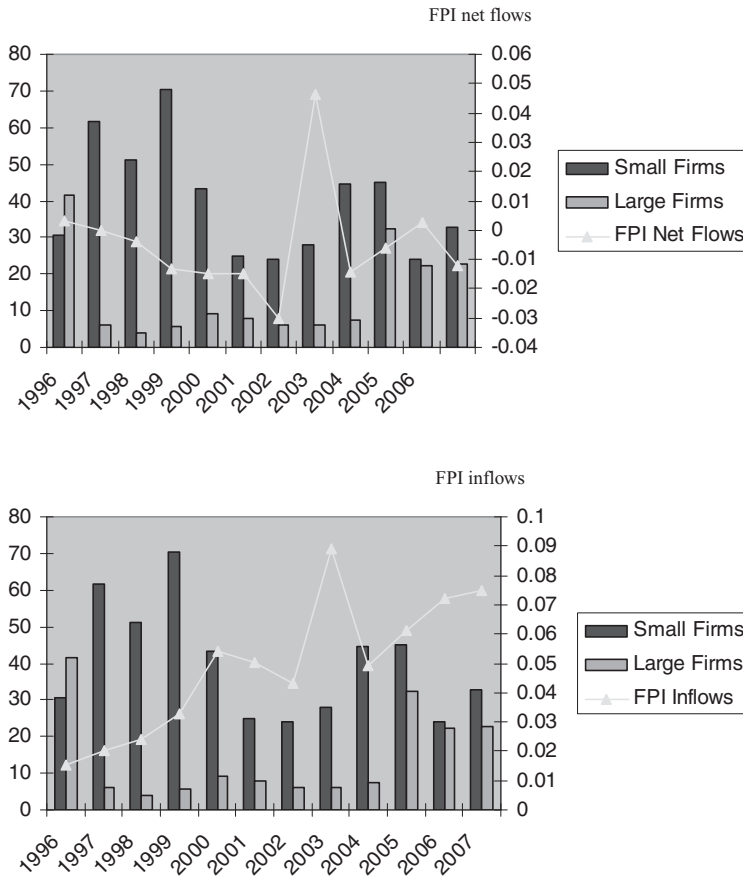


Fig. 2. FPI and capital issuance over time

These figures present the average annual number of capital issuance across countries by small and large firms (separately) and lagged FPI (net flows in the top figure and inflows in the bottom figure). The sample captures capital issuance from 1996–2007 across 43 countries. Small (Large) firms are firms with total assets less than (greater than) the country annual median.

statistical significance and marginal effects are seen for large firms in LDPR nations. Figure 2 helps to support these conclusions showing the relation between small/large firm issuance and FPI flows.

One could argue that a reduction in the probability of large firm capital issuance in domestic markets in response to an increase in FPI is only half of the story in the freeing up hypothesis. To bolster the implications of Table 5 with regard to the freeing up hypothesis, the relation between the international proceeds raised by large firms and small firm access to capital is examined. The results, found in Table 6, show a statistically significant positive relation between large firm international proceeds and the probability that small firms issue capital domestically. Specifically, a one standard deviation increase in large firm international proceeds results in a 2.94% increase in the probability that small firms issue capital (see Specification 1). The inclusion of political risk factors in the specification alters the results only slightly, producing a range in this impact from 2.52% to 3.57%. These results are consistent with the idea that small

Table 6  
Small firm domestic issuance and large firm international issuance

This table presents results from the following probit model:  $P(\text{Capital Issuance})_{i,t} = \phi(\lambda_0 + \lambda_1 LFIIntProceeds_{j,t-1} + \lambda_2 X_{i,t-1} + \lambda_3 Y_{i,t-1} + \lambda_4 I_i + \lambda_5 t)$ . Development groups are based on the level of property rights in a nation. Only small firms (those firms with total assets less than the country-year median) are tested.  $LFIIntProceeds$  is large firm international proceeds aggregated for country  $k$  at time  $t$  and represents the instrumented value obtained from the following first stage regression:  $LFIIntProceeds_{j,t-1} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $\Delta FXRate$  is the change in the real foreign exchange rate.  $MktShare$  is country  $j$ 's market capitalisation scaled by world market capitalisation.  $RelIntRates$  are the annual real interest rates of country  $j$  scaled by sample average calculated annually.  $FPIVol$  is the variance of FPI flows in times  $t - 1$  through  $t - 3$ .  $Y$  is a vector of lagged macroeconomic variables including the following: FDI is the level of foreign direct investment scaled by country  $j$ 's GDP. GDP Growth is the growth rate in gross domestic product of country  $j$ . Domestic Credit is the level of credit provided to the public by domestic banks and financial institutions, scaled by GDP. Savings is the difference between GDP and consumption, scaled by GDP. Investment Profile is the perceived risk facing foreign investors. Law and Order is an index referring to the development of the legal system. Corruption is an index that reflects the level of corruption.  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $I$  is a vector of industry dummies to control for industry effects and  $t$  represents time dummies, which control for any time effects in the panel. Observations are firm-year specific and for the term 1996-2007. Firm-level control variables are left out for brevity. Robust standard errors are clustered around issuer and are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

	Dependent variable: P(capital issuance)							
	Developed property rights ( $N = 64,496$ )				Less developed property rights ( $N = 14,434$ )			
	1	2	3	4	5	6	7	8
		Investment	Law and order	Corruption		Investment	Law and order	Corruption
Large Firm Intl Proceeds	0.014** [0.006]	0.012** [0.005]	0.017*** [0.006]	0.013** [0.006]	0.012*** [0.002]	0.012*** [0.002]	0.013*** [0.002]	0.011*** [0.002]
FDI	-0.057 [0.039]	-0.027 [0.043]	0.025 [0.040]	-0.05 [0.039]	0.745*** [0.090]	0.747*** [0.093]	0.740*** [0.091]	0.772*** [0.092]
GDP Growth	1.335*** [0.200]	1.354*** [0.197]	1.203*** [0.179]	1.313*** [0.199]	0.241*** [0.072]	0.242*** [0.072]	0.184*** [0.072]	0.184*** [0.074]

Table 6  
Continued

	Dependent variable: P(capital issuance)							
	Developed property rights ( $N = 64,496$ )				Less developed property rights ( $N = 14,434$ )			
	1	Investment 2	Law and order 3	Corruption 4	5	Investment 6	Law and order 7	Corruption 8
Domestic Credit	0.012** [0.005]	0.012** [0.005]	0.017*** [0.006]	0.012** [0.005]	-0.012* [0.006]	-0.012* [0.006]	-0.014** [0.006]	-0.014** [0.006]
Savings	-0.008 [0.046]	-0.058 [0.042]	-0.043 [0.048]	-0.021 [0.048]	-0.006 [0.027]	-0.007 [0.027]	-0.017 [0.025]	0.003 [0.027]
Investment Profile		-0.005* [0.003]				0.000 [0.001]		
Law and Order			-0.024*** [0.004]				0.005*** [0.002]	
Corruption				-0.002 [0.002]				-0.004** [0.002]
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage)	0.264	0.307	0.283	0.288	0.562	0.562	0.562	0.563
F-Test (instruments)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Pseudo R <sup>2</sup>	0.223	0.224	0.228	0.223	0.286	0.286	0.287	0.286

firms do (not) raise capital when large firms raise more (less) capital internationally and support the freeing up hypothesis.

### 5.2. *The impact of FPI on credit availability*

Table 7 displays statistically significant evidence consistent with an increase in the maturity of debt extended to small firms in DPR nations. This increase is seen in Specifications 1–4, where there is a marginally significant decrease (significant increase) in the portion of short-term (long-term) debt with a corresponding increase in FPI. These impacts demonstrate evidence of an extension of the bank-lending channel of monetary transmission (Kashyap and Stein, 2000) to generic money shocks in DPR nations. Consistent with Johnson *et al.* (2002), results indicate that firms in nations with developed property rights reinvest their profits and take advantage of access to capital through any and all paths. The statistically significant increase in long-term debt suggests better access to capital and perhaps a lengthening of the maturity of debt. This could imply that when FPI flows into a DPR country, banks are able to ‘risk shift’ their portfolio to include more risky holdings, potentially including longer-term loans to small firms. Although part (or all) of this empirical finding could be due to public debt issuance, the dependence of small firms on bank loans suggests that these results are likely due, at least in part, to FPI’s influence on bank lending. The marginally (i.e., mixed) statistically significant decrease in total debt may be due to a switch from debt to equity capital, or it could be a contraction in the amount of capital allocated to small firms. Given the impact of FPI on the maturity of debt extended to small firms and the implications of the bank-lending channel literature (i.e., the amount and maturity of loans extended would be increased); it is likely a switch from debt to equity capital. These results are further explored in the Robustness section of the paper.

The impact of FPI on debt levels in LDPR nations is considerably different. All three forms of debt: Short-term, Long-term, and Total, appear to be significantly negatively influenced by FPI (see Specifications 7–12). These findings suggest that an extension of the bank-lending channel does not exist in LDPR nations. These results are not surprising considering the volatility of FPI capital flows and the less supportive property rights in these nations. From the firm’s perspective, weak property rights reduce the incentive to reinvest profits (i.e., grow). From the bank’s perspective, it appears that the same investment environment that limits the amount of FPI entering a nation precludes any benefits that FPI capital flows might offer through the banking channel, perhaps because banks are concerned that increases in their liquidity may well be short-lived. In fact, it suggests that there may be a substitution effect between bank lending and FPI in LDPR nations. Giannetti (2007) supports this notion by establishing a reverse relation between capital inflows and the stability of bank lending in less developed nations. Given the relation between Short-term and Total Debt levels to poor operating performance after crisis periods found in Claessens *et al.* (2000), the reduction in Short-term and Total Debt levels can be perceived as beneficial regardless of the cause.<sup>26</sup>

<sup>26</sup> Mitton (2007) finds that firms in 34 emerging markets increased their market-value debt ratio by 15% from 1980–2004. This suggests that the impact of FPI on debt levels in LDPR nations is perhaps even more noteworthy. That said, the sample in Mitton (2007) is different than the sample used in this paper; LDPR nations are not necessarily emerging market nations and this paper is interested in small firms only.

Table 7  
FPI and small firm access to bank credit

This table presents results from the following robust OLS model:  $(Short-term/Long-term/Total)Lev_{i,t} = \varphi_0 + \varphi_1 FPI_{j,t-1} + \varphi_2 X_{i,t-1} + \varphi_3 Y_{j,t-1} + \varphi_4 I_t + \varphi_5 \varepsilon_t$ . Specifications (1)-(2) and (7)-(8) use Short-term Leverage scaled by Total Assets as the dependent variable. Specifications (3)-(4) and (9)-(10) use Long-term Leverage scaled by total assets as the dependent variable. Specifications (5)-(6) and (11)-(12) use Total Leverage scaled by total assets as the dependent variable. Development subsamples are based on the level of property rights in a nation. FPI is foreign portfolio investment standardised by gross domestic product and represents the instrumented value obtained from the following first stage regression:  $FPI_{i,t} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $\Delta FXRate$  is the change in the real foreign exchange rate.  $MktShare$  is country  $j$ 's market capitalisation scaled by world market capitalisation.  $FPIVol$  is the variance of FPI flows in times  $t - 1$  through  $t - 3$ .  $Y$  is a vector of lagged macroeconomic variables including the following: FDI is the level of foreign direct investment scaled by its GDP. GDP Growth is the growth rate in gross domestic product of country  $j$ . Savings is the difference between GDP and consumption, scaled by GDP. Fiscal Burden is a measure of the level of taxes usurped by the government from corporations from 1 (fewer taxes) to 5 (higher taxes). Real Int. Rates is country  $j$ 's interest rate adjusted for inflation.  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $I$  is a vector of industry dummies to control for industry effects and  $t$  represents time dummies, which control for any time effects in the panel. Observations are firm-year specific and for the term 1996-2007. Firm-level control variables are left out for brevity. Robust standard errors are clustered around issuer and are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

Dep. variable =	Developed property rights						Less developed property rights																									
	Short-term leverage			Long-term leverage			Total leverage			Short-term leverage			Long-term leverage			Total leverage																
	Inflows	Net flows	2	Inflows	Net flows	3	Inflows	Net flows	4	Inflows	Net flows	5	Inflows	Net flows	6	Inflows	Net flows	7	Inflows	Net flows	8	Inflows	Net flows	9	Inflows	Net flows	10	Inflows	Net flows	11	Inflows	Net flows
FPI	-0.545*** [0.161]	-0.144 [0.091]		0.272*** [0.078]	0.131*** [0.033]		-0.514*** [0.187]	0.005 [0.085]		-4.059*** [0.570]	-3.420*** [0.484]		-3.052*** [0.514]	-2.781*** [0.425]		-8.159*** [0.705]	-7.101*** [0.574]															
Fiscal burden	0.074** [0.034]	-0.002 [0.014]		-0.052*** [0.013]	-0.010* [0.005]		0.118*** [0.039]	0.048*** [0.014]		0.092*** [0.014]	0.078*** [0.013]		0.075*** [0.016]	0.068*** [0.015]		0.151*** [0.019]	0.127*** [0.018]															



Domestic credit	-0.005 [0.012]	0.024*** [0.005]	0.019*** [0.005]	0.005** [0.002]	0.007 [0.014]	0.036*** [0.005]	0.058*** [0.012]	0.064*** [0.012]	0.023** [0.009]	0.033*** [0.010]	0.078*** [0.015]	0.094*** [0.015]
Real interest rate	-1.242*** [0.281]	-0.360*** [0.087]	0.370*** [0.141]	-0.048 [0.046]	-0.698** [0.338]	0.016 [0.095]	0.063** [0.025]	0.087*** [0.024]	-0.086*** [0.018]	-0.073*** [0.017]	0.04 [0.031]	0.088*** [0.029]
FDI	1.311*** [0.373]	0.034 [0.066]	-0.687*** [0.176]	0.009 [0.033]	1.071** [0.433]	-0.004 [0.059]	-0.508* [0.272]	-0.843*** [0.250]	-0.019 [0.183]	-0.248 [0.162]	-0.224 [0.301]	-0.886*** [0.270]
GDP growth	-0.888*** [0.220]	-0.609*** [0.156]	0.291** [0.115]	0.125* [0.075]	-0.747*** [0.245]	-0.517*** [0.156]	0.120 [0.118]	-0.075 [0.105]	0.528*** [0.078]	0.394*** [0.065]	0.623*** [0.131]	0.245*** [0.110]
Savings	-0.683*** [0.226]	0.149*** [0.051]	0.372*** [0.123]	-0.028 [0.019]	-0.654** [0.261]	0.185*** [0.054]	0.020 [0.073]	-0.004 [0.077]	-0.492*** [0.059]	-0.548*** [0.063]	-0.661*** [0.090]	-0.733*** [0.091]
Constant	0.761*** [0.104]	0.406*** [0.074]	-0.065 [0.057]	0.093*** [0.021]	0.721*** [0.110]	0.374*** [0.069]	0.253*** [0.047]	0.232*** [0.045]	0.002 [0.041]	-0.011 [0.042]	0.430*** [0.056]	0.385*** [0.056]
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage)	0.456	0.508	0.456	0.502	0.454	0.502	0.369	0.451	0.373	0.446	0.373	0.453
F-test (instr.)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
N	59,713	60,147	60,103	60,561	62,617	63,075	13,745	13,751	13,673	13,679	14,081	14,087
Model R <sup>2</sup>	0.094	0.091	0.133	0.129	0.123	0.121	0.075	0.114	0.211	0.224	0.193	0.042

This effect, combined with the results of Table 4, suggests that small firms in DPR nations are able to obtain access from the capital markets and, perhaps, preferred forms of bank credit. The mechanism by which small listed firms in LDPR nations receive the benefits of FPI, however, appears to be strictly through capital markets. Banks and capital markets seem to be substitutes in these countries. This notion is supported by the coefficient on domestic credit for LDPR nations in Table 4.

## 6. Robustness

### 6.1. Liberalisation effect

Bekaert *et al.* (2002) argue that the rebalancing of international investors' portfolios lasts approximately three years. Inasmuch as the vast majority of the liberalisations in the sample occurred in the 90s, a liberalisation effect should not explain away the results found in the base analysis. That said, to ensure that the results are not purely a liberalisation effect (i.e., potentially temporary), two proxies for a liberalisation effect are included. Both are taken from Bekaert *et al.* (2005). The first is called Liberalisation Intensity. Originally taken from Bekaert (1995) and Edison and Warnock (2003), this proxy measures the percent of a country's stock that is available to foreigners (a measure of one implies all shares are available to foreigners). The second is called Capital Account Openness and is an altered version of the measure found in Quinn (1997). Including these variables should abstract from a liberalisation effect that could bias the results in favour of the hypotheses.

The results of this analysis, found in Table 8, provide evidence that the enhanced access to capital found in this paper is not a manifestation of a liberalisation effect. Only one specification causes a loss in significance, Specification (8), with Quinn's Capital Account Openness variable. This specification uses the net flow proxy for FPI and falls shy of statistical significance. The other proxy for FPI, inflows, remains statistically significant, however. The conflicting results across FPI definition suggest that outward flows in LDPR nations can threaten the benefit of FPI on small firm access to capital when controlling for liberalisation.

### 6.2. Interactions with political risk components

Examining the interactive effect of FPI with political risk factors gives us a better idea of the effect of FPI on small firm access to capital across levels of political risk (i.e., Investment Profile, Law and Order, and Corruption variables). Examining the implications of FPI when interacted with these variables on the entire dataset (i.e., across property rights development) offers further insight into the importance of political risk in FPI's impact on small firm access to capital.

The results are similar to those of La Porta *et al.* (1997), Bekaert and Harvey (2003), and Wurgler (2000). The impact of FPI, including a nation's Investment Profile, a variable that refers to a government's attitude toward foreign investment, is one that implies decreasing margin to return. For those governments that are relatively hostile to foreign investment (e.g., investment = sample mean minus the sample standard deviation), the marginal impact of FPI on access to capital is approaching 9% for each standard deviation increase in FPI. For those governments already open to FPI, the marginal effect of opening further is less. Those governments with an Investment Profile equal to the sample mean plus the sample standard deviation would see an 8.6% marginal benefit of a one standard deviation increase in FPI.

Table 8  
Small firm issuance and the liberalisation effect

This table presents results from the following probit model:  $P(\text{Capital Issuance})_{i,t} = \gamma_0 + \gamma_1 FPI_{j,t-1} + \gamma_2 Lib_{i,t-1} + \gamma_3 X_{j,t-1} + \gamma_4 Y_{j,t-1} + \gamma_5 I_i + \gamma_6 t + \varepsilon$ . Development groups are based on the level of property rights in a nation. Only small firms (those firms with total assets less than the country-year median) are tested. FPI is foreign portfolio investment standardised by gross domestic product and represents the instrumented value obtained from the following first stage regression:  $FPI_{j,t} = \beta_0 + \beta_1 \Delta EXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $\Delta EXRate$  is the change in the real foreign exchange rate.  $MktShare$  is country  $j$ 's market capitalisation scaled by world market capitalisation.  $RelIntRates$  are the annual real interest rates of country  $j$  scaled by sample average calculated annually.  $FPIVol$  is the variance of FPI flows in times  $t - 1$  through  $t - 3$ .  $Lib$  is a proxy for a liberalisation effect and is proxied by two variables found in Bekaert, Harvey, and Lundblad (2003): Liberalisation Intensity (LI) and Capital Account Openness (CAO).  $Y$  is a vector of lagged macroeconomic variables including the following: FDI Is the level of foreign direct investment scaled by country  $j$ 's GDP. GDP Growth is the growth rate in gross domestic product of country  $j$ . Domestic Credit is the level of credit provided to the public by domestic banks and financial institutions, scaled by GDP. Savings is the difference between GDP and consumption, scaled by GDP. Investment is the perceived risk facing foreign investors. Law and Order is an index referring to the development of the legal system. Corruption is an index that reflects the level of corruption.  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $I$  is a vector of industry dummies to control for industry effects and  $t$  represents time dummies, which control for any time effects in the panel. Observations are firm-year specific and for the term 1996-2007. Firm-level control variables are left out for brevity. Robust standard errors are clustered around issuer and are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

Dependent variable:  $P(\text{capital issuance})$

	Developed property rights ( $N = 64,496$ )				Less developed property rights ( $N = 14,434$ )			
	Inflows 1	Net flows 2	Inflows 3	Net flows 4	Inflows 5	Net flows 6	Inflows 7	Net flows 8
FPI	0.454** [0.208]	0.468*** [0.109]	1.751*** [0.231]	4.127*** [0.802]	0.480** [0.231]	0.423*** [0.100]	0.915*** [0.214]	0.976 [0.777]
Liberalisation intensity	0.043 [0.035]	0.050** [0.022]			0.038 [0.032]	0.033** [0.016]		

Table 8  
Continued

	Dependent variable: P(capital issuance)							
	Developed property rights ( $N = 64,496$ )				Less developed property rights ( $N = 14,434$ )			
	Inflows 1	Net flows 2	Inflows 3	Net flows 4	Inflows 5	Net flows 6	Inflows 7	Net flows 8
Capital acct openness			-0.067 [0.048]	-0.089* [0.047]			0.172*** [0.031]	0.204*** [0.041]
FDI	-0.829** [0.381]	0.125** [0.058]	0.460*** [0.113]	0.306** [0.127]	-0.836** [0.392]	0.164*** [0.063]	0.774*** [0.117]	0.882*** [0.164]
GDP growth	1.664*** [0.344]	1.075*** [0.167]	-0.298*** [0.103]	-0.366*** [0.109]	1.607*** [0.309]	0.998*** [0.162]	0.092 [0.068]	0.169** [0.086]
Domestic credit	0.035*** [0.013]	0.006 [0.004]	-0.022 [0.015]	-0.040** [0.016]	0.041** [0.017]	0.011** [0.005]	-0.043*** [0.008]	-0.043*** [0.010]
Savings	0.732** [0.372]	0.066 [0.047]	0.232*** [0.048]	0.501*** [0.091]	0.766* [0.403]	0.027 [0.052]	0.023 [0.057]	-0.006 [0.119]
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage – FPI)	0.442	0.456	0.442	0.456	0.461	0.448	0.461	0.448
R <sup>2</sup> (1 <sup>st</sup> stage – LI/CAO)	0.444	0.444	0.550	0.550	0.611	0.611	0.491	0.491
F-test (instr. – FPI)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
F-test (instr. – LI/CAO)	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Pseudo R <sup>2</sup>	0.223	0.223	0.289	0.287	0.223	0.223	0.294	0.292

The impact of FPI given Law and Order is considerably more influential. Looking to those nations where Law and Order is least enforced (e.g., Law and Order = sample mean minus sample standard deviation), the cumulative impact of a one standard deviation increase in FPI is 19.06%. In those nations where Law and Order is well enforced (e.g., Law and Order = sample mean plus sample standard deviation), the impact is 17.39%. These results suggest that there are decreasing returns to scale for Law and Order as well.

The impact of FPI given Corruption appears to be the most impactful political risk factor. It, too, possesses decreasing returns to scale, but the marginal impact of FPI given the level of Corruption exceeds that of both Investment Profile and Law and Order. Firms in nations where Corruption is rampant (e.g., Corruption = sample mean minus sample standard deviation) can expect a 26.28% increase in access to capital with a one standard deviation increase in FPI. Those nations where Corruption is well-controlled (e.g., Corruption = sample mean plus sample standard deviation) will see a 24.37% increase with a one standard deviation increase in FPI. This once again suggests decreasing return to scale.

When measuring FPI using net flows, political risk factors are much more pivotal. Using Investment Profile as the political risk proxy, the difference between the two groups (mean plus/minus sample standard deviation) increases dramatically. Specifically, those nations with inferior Investment Profiles see a marginal impact of FPI on access to capital of 8.41% for each standard deviation increase in FPI, while governments with superior Investment Profiles see only a 1.11% increase. The results for Law and Order and Corruption are even more striking. For both political risk factors, the level of political risk is pivotal to whether or not FPI is marginally beneficial. Nations with inferior levels of Law and Order see a marginal benefit of FPI on small firm access to capital of 6%, but nations with superior levels of Law and Order see a marginal decrease of 8.94%. This is likewise true of Corruption, although to a much lesser extent (0.35% for inferior levels and -0.55% for superior levels).

Collectively, these results suggest that those nations with the highest political risk have the most to gain from FPI. This is consistent with the results found in Table 4, where the magnitude of marginal effects in LDPR nations far exceeds that of marginal effects in DPR nations. The difference in the results across definition of FPI is telling with regard to the diminishing effect of FPI outflows on the benefit that FPI might provide. This difference, however, also underscores the likelihood that a capital-supply effect that allows for the benefit on small firm access to capital. If capital flows back out of the country, the capital supply benefit is lost. Comprehensive results can be found in Table 9.

### 6.3. Definitions of key variables

**6.3.1. FPI definition.** Performing sensitivity analysis around the definition of the key variable, FPI, provides robustness for the results. I use three alternate definitions for FPI: (1) FPI net flows scaled by gross private capital flows into a nation, (2) percentage change in FPI net flows, and (3) FPI winsorised. The first definition mentioned is the same as that used in Harrison *et al.* (2004). Using this definition, the majority of the results remain. The only difference is found in the banking channel specifications in LDPR nations (Specifications 8-10). The negative significance previously found for all three proxies for Debt no longer exists. The marginal effect of Short-term Debt is

Table 9  
Interaction with political risk factors

This table presents results from the following probit model:  $P(\text{Capital Issuance})_{i,t} = \gamma_0 + \gamma_1 FPI_{j,t-1} + \gamma_2 FPI * PR_{j,t-1} + \gamma_3 PR_{j,t-1} + \gamma_4 X_{i,t-1} + \gamma_5 Y_{j,t-1} + \gamma_6 I_i + \gamma_7 t + \varepsilon$ . FPI is foreign portfolio investment standardised by gross domestic product and represents the instrumented value obtained from the following first stage regression:  $FPI_{j,t} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $\Delta FXRate$  is the change in the real foreign exchange rate. Mkt Share is country  $j$ 's market capitalisation scaled by world market capitalisation. RelIntRates are the annual real interest rates of country  $j$  scaled by sample average calculated annually. FPIVol is the variance of FPI flows in times  $t - 1$  through  $t - 3$ . PR is a vector of political risk factors including the following: Investment Profile is the perceived risk facing foreign investors. Law and Order is an index referring to the development of the legal system. Corruption is an index that reflects the level of corruption.  $Y$  is a vector of lagged macroeconomic variables including the following: GDP Growth is the growth rate in gross domestic product of country  $j$ . FDI is the level of foreign direct investment scaled by its GDP. Domestic Credit is the level of credit provided to the public by domestic banks and financial institutions, scaled by GDP. Savings is the difference between GDP and consumption, scaled by GDP.  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $I$  is a vector of industry dummies to control for industry effects and  $t$  represents time dummies, which control for any time effects in the panel. Observations are firm-year specific and for the term 1996–2007. Firm-level control variables are left out for brevity. Robust standard errors are clustered around issuer and are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

Dependent variable: P(capital issuance) ( $N = 79,937$ )						
	Inflows			Net flows		
	1	2	3	4	5	6
FDI	−0.092*	0.204***	−0.218***	0.225***	−0.470***	0.409***
	[0.054]	[0.027]	[0.038]	[0.044]	[0.052]	[0.055]
GDP growth	0.843***	0.546***	0.875***	0.556***	1.250***	0.679***
	[0.182]	[0.043]	[0.043]	[0.054]	[0.055]	[0.052]
Domestic credit	0.011	−0.004**	0.006***	0.010***	0.022***	0.006***
	[0.007]	[0.002]	[0.001]	[0.001]	[0.001]	[0.001]
Savings	−0.067	−0.405***	−0.035	−0.072***	−0.365***	−0.379***
	[0.062]	[0.025]	[0.031]	[0.015]	[0.019]	[0.022]
FPI	1.763***	3.962***	5.209***	3.467***	4.685***	0.203***
	[0.443]	[0.242]	[0.353]	[0.322]	[0.308]	[0.047]
FPI * investment profile	−0.014			−0.296***		
	[0.009]			[0.027]		
Investment profile	0.003			0.000		
	[0.006]			[0.001]		
FPI * law and order		−0.115***			−1.033***	
		[0.005]			[0.067]	
Law and order		0.039***			−0.004***	
		[0.002]			[0.001]	
FPI * corruption			−0.130***			−0.061***
			[0.007]			[0.005]
Corruption			0.037***			0.031***
			[0.002]			[0.002]

Table 9  
Continued

Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> (1 <sup>st</sup> stage – FPI)	0.466	0.483	0.451	0.510	0.483	0.488
R <sup>2</sup> (1 <sup>st</sup> stage – FPI * PR)	0.491	0.498	0.501	0.545	0.480	0.501
F-test (instr. – FPI)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
F-test (instr. – FPI * PR)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Pseudo R <sup>2</sup>	0.193	0.200	0.196	0.195	0.193	0.196

positive and significant, and Long-term as well as Total Debt levels become statistically insignificant for this definition of FPI. Given the lack of credit in these countries, these results could reflect a marginal increase in credit to small firms. This difference would suggest that it is not the portion of FPI in total capital flows that matters with regard to access to capital through the banking channel, but rather the level of FPI relative to the size of the nation that is important.

The second definition of FPI, percentage change, provides results that are qualitatively similar to those previous except for (once again) some of the debt specifications. Specification (5) (Specification 4) suggests that an increase in the percentage change results in an increase (no impact) in the level of Total Debt (Long-term Debt). This would not qualitatively alter the result that FPI reaches small firms through the banking channel in DPR nations; just how. Specifically, this is evidence that more credit (instead of an increased maturity of that credit) is extended to small firms. This distinction, coupled with that of the first FPI definition, suggests that the implications with regard to the banking channel are sensitive to the definition of FPI.

The last definition, a winsorised version of the base definition of FPI inflows, leads to results that are qualitatively identical to those in Tables 4–6. Results are provided in Table 10, Panel A.

**6.3.2. FPI volatility definition.** Since opponents of this form of foreign investment often cite the volatility of FPI as a major concern,<sup>27</sup> the definition of FPI volatility is altered to ensure results are not specific to one definition. Changing the term over which FPI volatility is measured to five years (instead of three) does not qualitatively change the results. Only the results for large firms in Specification (7) change. This marginal effect is no longer statistically significant. Since the freeing up hypothesis necessitates only a nonpositive marginal effect, this difference is largely inconsequential. The retention of all other results, particularly those of small firms, adds credence to our results and allays fears that noise in the calculated volatility might bias the results. Results are provided in Table 10, Panel A.

## 6.4. Sample inclusion

**6.4.1. Excluding countries with capital control changes.** To ascertain whether the test results are sensitive to sample country inclusion criteria, countries are dropped that might bias

<sup>27</sup> Claessens, Dooley, and Warner (1995) argue that the volatility of short-term flows (i.e., FPI) is often no more than long-term flows (i.e., FDI).



Table 10  
Robustness

This table presents results from robustness tests. For capital markets, the following probit model is specified:  $P(\text{Capital Issuance})_{i,t} = \gamma_0 + \gamma_1 FPI_{j,t-1} + \gamma_2 X_{j,t-1} + \gamma_3 Y_{j,t-1} + \gamma_4 I_t + \gamma_5 t + \varepsilon$ . Specifications (3) and (8) use Short-term Leverage scaled by total assets as the dependent variable. Specifications (4) and (9) use Long-term Leverage scaled by total assets as the dependent variable. Specifications (5) and (10) use Total Liabilities scaled by total assets as the dependent variable. Development sub samples are based on the level of property rights in a nation. FPI is foreign portfolio investment standardised by gross domestic product and represents the instrumented value obtained from the following first stage regression:  $FPI_{i,t} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $X$  is a vector of lagged firm-specific variables such as Cash, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $\Delta FXRate$  is the change in the real foreign exchange rate.  $MktShare$  is country  $j$ 's market capitalisation scaled by world market capitalisation.  $RelIntRates$  are the annual real interest rates of country  $j$  scaled by sample average calculated annually.  $FPIVol$  is the variance of FPI flows in times  $t - 1$  through  $t - 3$ .  $Y$  is a vector of lagged macroeconomic variables including the following: FDI, GDP Growth, Domestic Credit, and Savings. For Debt regressions,  $Y$  also includes Fiscal Burden and Real Int. Rates.  $I$  is a vector of industry dummies to control for industry effects (in all specifications except those clustered by industry) and  $t$  represents time dummies, which control for any time effects in the panel (in all specifications). Panel A examines different key variable definitions. Panel B examines different sample inclusion criteria. Panel C examines different methodology extrapolations. Panel D examines different sample segmentation criteria. Observations are firm-year specific and for the term 1996-2007. All control variables are left out for brevity. Robust standard errors are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

Dep. Variable	Developed property rights nations					Less developed property rights nations				
	Capital markets		debt			Capital markets		debt		
	P(capital issuance)					P(capital issuance)				
	Small firms	Large firms	Short-term debt	Long-term Debt	Total debt	Small firms	Large firms	Short-term debt	Long-term debt	Total debt
	1	2	3	4	5	6	7	8	9	10
Expected Sign	+	-/Insig.	-/Insig.	+	-/Insig.	+	-	-	-	-
Panel A: Key variable definition										
1. FPI net flow scaled by gross private capital flows										
FPI	0.143** [0.067]	-0.206* [0.117]	-0.143 [0.103]	0.123*** [0.040]	0.13 [0.097]	0.352*** [0.133]	-2.226* [1.147]	0.441*** [0.153]	-0.063 [0.133]	0.32 [0.201]
Observations	64,496	51,807	59,713	60,103	62,617	14,434	12,449	13,735	13,663	14,071
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.222	0.0707	0.093	0.130	0.121	0.281	0.244	0.139	0.282	0.177

2. Percentage change in FPI net flow										
FPI	0.086*** [0.021]	-0.037*** [0.004]	0.01 [0.019]	0.013 [0.011]	0.080*** [0.021]	0.300*** [0.101]	-0.020*** [0.005]	-0.072 [0.044]	-0.086** [0.035]	-0.254*** [0.056]
Observations	64,496	51,807	53,885	54,125	56,537	14,434	12,449	12,694	12,637	13,009
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.223	0.0732	0.044	0.128	0.002	0.281	0.246	0.159	0.176	0.109
3. FPI winsorised										
FPI	0.238*** [0.071]	-0.161* [0.094]	-0.529*** [0.169]	0.277*** [0.080]	-0.487*** [0.194]	1.591*** [0.202]	-1.334*** [0.449]	-4.059*** [0.570]	-3.052*** [0.514]	-8.159*** [0.705]
Observations	64,496	51,807	59,713	60,103	62,617	14,434	12,449	13,745	13,673	14,081
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.222	0.0707	0.094	0.133	0.122	0.288	0.245	0.075	0.211	0.207
4. Volatility										
FPI	0.204*** [0.046]	-0.452*** [0.182]	-0.502*** [0.150]	0.276*** [0.069]	-0.519*** [0.178]	0.342*** [0.078]	0.048 [0.497]	-3.480*** [0.517]	-2.357*** [0.464]	-6.701*** [0.670]
Observations	64,496	51,807	59,713	60,103	62,617	64,496	12,609	13,745	13,673	14,081
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.223	0.128	0.094	0.133	0.123	0.223	0.244	0.098	0.245	0.036

Table 10  
Continued

<i>Panel B: Sample inclusion</i>										
1. Excluding countries with capital control changes										
FPI	0.148*** [0.055]	-0.107 [0.083]	-0.336*** [0.086]	0.119** [0.047]	-0.385*** [0.103]	0.375* [0.210]	-1.489*** [0.419]	-2.110*** [0.519]	-2.681*** [0.461]	-5.258*** [0.627]
Observations	60,249	48,320	55,643	55,931	58,370	9,661	8,287	9,009	9,065	9,331
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.251	0.077	0.094	0.097	0.126	0.413	0.261	0.096	0.188	0.075
2. Dropped EFN for small firms										
FPI	0.266*** [0.078]		-0.572*** [0.183]	0.309*** [0.090]	-0.502** [0.207]	1.771*** [0.229]		-4.030*** [0.611]	-3.290*** [0.560]	-8.399*** [0.746]
Observations	63,565		58,987	59,408	61,891	13,887		13,223	13,151	13,559
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.22		0.094	0.131	0.121	0.283		0.073	0.198	0.178
3. Size Terciles										
FPI	0.401*** [0.085]	-0.358*** [0.120]	0.014 [0.225]	0.148 [0.098]	0.102 [0.258]	0.700** [0.282]	-1.088** [0.456]	-5.921*** [1.437]	-4.662*** [1.092]	-9.864*** [1.857]
Observations	39,687	36,324	36,124	37,614	38,185	5,938	10,538	5,508	5,690	5,708
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.389	0.076	0.192	0.115	0.181	0.568	0.255	0.088	0.044	0.035
4. Just equity issues										
FPI	0.119** [0.060]	-0.063 [0.079]	-0.526*** [0.144]	0.182** [0.071]	-0.562*** [0.178]	0.866*** [0.163]	-0.764* [0.404]	-4.151*** [0.572]	-3.136*** [0.518]	-8.272*** [0.709]
Observations	63,007	49,464	58,239	58,628	61,128	14,295	11,241	13,612	13,540	13,948
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.234	0.085	0.100	0.041	0.131	0.317	0.223	0.076	0.212	0.200

*Panel C: Methodology*

1. Clustered errors at industry level										
FPI	0.246**	-0.155	-0.545**	0.272**	-0.514**	1.591***	-1.334***	-4.059***	-3.052***	-8.159***
	[0.101]	[0.146]	[0.225]	[0.116]	[0.239]	[0.264]	[0.500]	[0.697]	[0.629]	[0.890]
Observations	64,496	51,807	59,713	60,103	62,617	14,434	12,449	13,745	13,673	14,081
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.222	0.071	0.094	0.133	0.123	0.288	0.245	0.075	0.211	0.193
2: Country dummies										
FPI	0.718***	-0.642***	-0.029	0.135***	0.127***	1.498***	-0.947*	-1.124**	-1.018***	-2.557***
	[0.145]	[0.102]	[0.043]	[0.024]	[0.047]	[0.221]	[0.562]	[0.490]	[0.295]	[0.515]
Observations	61,327	51,280	59,713	57,239	59,712	14,195	12,412	13,745	13,339	13,745
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.333	0.112	0.12	0.116	0.142	0.304	0.256	0.192	0.311	0.226
3: Frequency weights										
FPI	0.326***	-0.001	0.107	0.252***	0.417***	4.463***	-0.229	-2.990***	-3.084***	-6.545***
	[0.073]	[0.103]	[0.131]	[0.080]	[0.117]	[0.635]	[1.271]	[0.999]	[0.773]	[1.148]
Observations	58,074	45,253	54,719	55,216	57,616	10,246	7,991	9,907	9,840	10,243
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.209	0.145	0.097	0.135	0.031	0.27	0.536	0.100	0.205	0.059

*Panel D: Sample segmentation*

1. Segmented by domestic capital										
FPI	0.480***	0.031	-0.212***	0.048***	-0.161**	2.361***	-2.159***	-3.001***	-1.239*	-4.110***
	[0.105]	[0.071]	[0.071]	[0.013]	[0.067]	[0.441]	[0.553]	[0.488]	[0.646]	[0.640]
Observations	34,107	24,881	32,010	32,328	33,559	45,834	39,932	41,454	41,454	43,145
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.278	0.112	0.163	0.191	0.17	0.232	0.093	0.005	0.115	0.123
2: Segmented by financial obstacles										
FPI	5.177***	2.138***	0.726	0.519**	0.512	0.467***	-2.769***	-4.651***	-1.361***	-5.747***
	[0.533]	[0.413]	[0.452]	[0.232]	[0.500]	[0.062]	[0.521]	[0.360]	[0.220]	[0.393]
Observations	28,072	17,055	26,658	26,531	27,695	19,132	16,651	16,859	17,482	17,945
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.321	0.124	0.194	0.214	0.177	0.204	0.219	0.048	0.084	0.058

results due to changes in capital control policy or the existence of specific laws that may bias results. China is a good example of both since only B shares were offered on the market for foreign investors during this term, and foreign banking in China was not possible before 2002. Dropped countries in this specification include China, Hong Kong, South Korea, and Chile.<sup>28</sup> Although there is a considerable change in the marginal effect of small firms in LDPR nations, the results are otherwise qualitatively identical. Results can be found in Table 10, Panel B.

6.4.2. *The assumption of financial constraint for all small firm.* To ensure that the assumption that all small firms are consistently financially constrained is not biasing results, external financial necessary (EFN) is calculated for small firms (in the same manner as described for large firms in the methodology section). Firm-years are dropped where a negative value for EFN is calculated. Results rerun on base specifications are qualitatively identical. The small number of observations that had a negative value of EFN (i.e., just over 2,000) provides support for the contentions in Beck *et al.* (2005) regarding the prevalence of small firm financial constraints and suggests the merit of this assumption in the base analyses. Results can be found in Table 10, Panel B.

6.4.3. *Size groupings.* Changing the definition of ‘Small’ from the bottom half to the bottom tercile of firms in each country-year changes results only slightly. In DPR nations, the coefficient on FPI when regressed on Long-term Debt (Specification (4)) is no longer significant, suggesting that FPI does not reach the smallest of the small firms through the banking channel in DPR nations. Results are otherwise qualitatively identical and are provided in Table 10, Panel B.

6.4.4. *Equity issues only.* To address concerns that the inclusion of debt issuances might be problematic, the base specifications were rerun for Tables 4–6 using only equity issuances. Results are identical with regard to statistical significance and vary only slightly with regard to magnitude of the marginal effects. This serves to reinforce the results, and suggests that the inclusion of debt issuances does not bias the results. Results are provided in Table 10, Panel B.

## 6.5. Methodology extrapolation

6.5.1. *Clustering at the industry level.* To ensure that results are not spurious due to a missing industry-level variable in the specification, the base specification clustering errors at the industry level were performed. Coefficients for industry-level clustering are slightly different due to the absence of industry dummies in these specifications. As is evident from Panel C of Table 10, results with industry clustering are once again qualitatively identical.

<sup>28</sup> South Korea was liberalised in 1998, two years after the first year of the examination period. Chile removed the lock-in period for foreign investment (the ‘Encaje’) in 2000, and Hong Kong did not have FPI levels for part of the sample period.

6.5.2. *Country dummies.* Including country dummies to ensure that there is not a missing country-level variable<sup>29</sup> biasing results, results change only slightly. Only the coefficients for FPI regressed on Total Debt in DPR nations changes materially (Specification 5). Specifically, the inclusion of country dummies results in a positive and statistically significant marginal effect of FPI on Total Debt Levels for small firms. This enhances the banking channel results, as it suggests that not only the maturity of loans is enhanced, but also the amount of credit extended to small firms. Results are provided in Table 10, Panel C.

6.5.3. *Frequency weights.* To ensure that the diversity in the number of observations per country is not confounding the results, the frequency of country observations is taken into account. Using this technique, the results once again suggest an increase in the amount of credit extended to small firms in DPR nations (Specification 5). As mentioned above, this strengthens previous results. The only other change can be found in large firms in LDPR nations (Specification 7), where the marginal effect is no longer statistically significant. This does not materially change the implications of the results since, as previously mentioned, the freeing up hypothesis only requires nonpositive marginal effects. Results are provided in Table 10, Panel C.

## 6.6. Sample segmentation

To ensure that the criterion for sample segmentation is not driving the results, two other modes of segmentation were used: domestic capital and financing obstacles. Domestic capital is the sum of market capitalisation and domestic credit available in a country, and the financing obstacles are taken directly from Beck *et al.*, 2006. Sample segmentation for both is done at the median. This is done annually for domestic capital since it is time series data. The base results are unfettered, adding credence to both the original segmentation and the conclusions of the paper. Results may be found in Table 10, Panel D.

## 7. Conclusions

Despite the fact that small firms play a distinctive and influential role in both the present and future economic situations in which nations find themselves, access to financing for these firms is exacerbated by both firm- and macro-level influences. As such, supplementary sources of financing that either directly or indirectly improve the access to finance of small listed firms are worthy of investigation. Examining the importance of FPI in the capital issuance process, it can be argued that FPI enhances the access to finance for small listed firms in all 43 countries in the sample. Results suggest that the route that FPI takes to reach small listed firms is through capital markets. Although sensitive to definition of FPI, there exists some evidence that an additional route through the bank-lending channel exists in nations where property rights are strongly protected, which is consistent with work done by Johnson *et al.* (2002) and Claessens and Laeven (2003). The mechanism by which FPI reaches small firms appears to be most likely

<sup>29</sup> To ensure that the difference in the results across property rights groups is not driven by the relative wealth of the nations in these groups, I rerun the base regressions including gross domestic product. Results are qualitatively identical and are available upon request.

through a freeing up of domestic capital. This freeing up of capital is seen through a reduction in large firm domestic issuance and an increase in capital large firms raise abroad.

The positive influence of FPI on small firm access to capital supports the ideals of those who strive for optimal policy reformation in nations that do not support foreign investment and in markets that are excessively volatile or underdeveloped with regard to investor property rights. Stabilising investment capital flow and improving the treatment of foreign companies and investors could have a positive impact on the longevity of small firms.

The benefits outlined in this research come with a caveat, however. If nations do not create an infrastructure with minimal political risk, these benefits may be reversed in times of crisis when capital flows out of the politically risky nation to environments that are perceived as safer. This research serves to identify the pivotal attributes of a secure environment, namely Property Rights, Law and Order, and Corruption. Those nations that fail to create a stable investment environment should take heed of the advice of the International Monetary Fund, who recently advocated maintaining some level of capital restrictions in those nations most vulnerable to capital flight.

#### Appendix A Variable Definitions

This table presents variables for all variables used in this analysis.

##### *Panel A: Firm- and Industry-level (Source: Reuters)*

Variable	Definitions
Asset Tangibility	Fixed assets divided by the book value of total assets. $FA/TA$
Cash	Cash or cash-equivalent divided by total assets. $Cash/TA$
Cross-listing	An indicator variable equal to one if a firm has stock listed on a foreign exchange, and zero otherwise.
Leverage	The logarithm of total liabilities divided by total assets. $\ln(Short-term, Long-term or Total) Liabilities/TA$
Profitability	Operating income divided by sales. $OpInc/Sales$ (in Thous)
Risk	The log of the variance of the firm's profitability ratio over the three prior years. $\ln(var(ROA_{t-1}, ROA_{t-2}, ROA_{t-3}))$
Industry	Primary 1 digit SIC codes.

##### *Panel B: Country-level*

Variable	Definitions
Corruption	An index from 0 (most) to 6 (least) of perceived corruption in a country based on the likelihood of solicited bribes from a country in relation to such factors of business as exchange controls, tax assessment, and loan protection. <i>Source: ICRG</i>
Domestic Credit	Credit provided by financial institutions, with the exception of credit to the central government, scaled by gross domestic product. <i>Source: WDI</i>
Domestic Capital	The sum of market capitalisation and domestic credit, scaled by GDP. <i>Source: WDI; own calculation</i>



Fiscal Burden	The natural log of the score from 1 (low) to 100 (high) assigned to a country based on the income tax rates, corporate tax rates, and government expenditures as percentage of output. <i>Source: Heritage Foundation</i>
FDI	Foreign direct investment is investment by investors outside the home country that is concerned with longer-term ownership or a controlling interest of more than 10%. <i>Source: WDI</i>
Financing Obstacles	The index of financing obstacles from 1 (no obstacle) through 4 (major obstacle) in a country based on the WBES survey. <i>Source: Beck et al. (2005)</i>
FPI	Foreign portfolio investment excluding liabilities constituting foreign authorities' reserves covers transactions in equity securities and debt securities. Data are in current US dollars and are scaled by gross domestic product. <i>WDI; IMF's BOP Statistics</i>
FPI Volatility	The variance of FPI net flows from time $t - 3$ through $t - 1$ (and in robustness section from time $t - 5$ through $t - 1$ ). <i>Source: WDI; own calculation</i>
GDP Growth	GDP per capital growth (%). <i>Source: WDI</i>
Investment Profile	A measure from 0 (worst/closed) to 12 (best/open) of the government's attitude toward inward investment as determined by four components: 1) the risk to operations, 2) taxation, 3) repatriation, and 4) labor costs. <i>Source: ICRG</i>
LF International Proceeds	The natural log of the proceeds (in millions) raised by large firms in the sample, aggregated by country-year. <i>Source: SDC Platinum Global New Issues; own calculation</i>
Law and Order	An index from 0 (less) to 6 (more) of law of a nation. It is two measures comprising one risk component. Each sub-component equals half of the total. The 'law' sub-component assesses the strength and impartiality of the legal system, and the 'order' sub-component assesses popular observance of the law. <i>Source: ICRG</i>
Market Share	A country's market capitalisation divided by the average market capitalisation of the world. <i>Source: WDI; own calculation</i>
Property Rights	A score measuring the efficacy of law in enforcing contracts (1-very effective: 5-very ineffective). <i>Source: Heritage Foundation</i>
Real Interest Rates	Annual interest rates adjusted for inflation. <i>Source: WDI</i>
Relative Interest Rates	Annual real interest rates scaled by annual sample average. <i>Source: WDI</i>
Savings	Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption) as a percentage of GDP. <i>Source: WDI</i>
$\Delta$ FX Rates	The annual percentage change in the official exchange rate as determined by national authorities or the rate determined in the legally sanctioned exchange market (annual or averaged annually from monthly rates).

*Source: WDI = World Development Indicators; ICRG = International Country Risk Guide; BOP = Balance of Payments.*

## Appendix B

## First Stage Regression for FPI Levels

This table presents first stage regression results are shown for the following probit model:  $P(\text{Capital Issuance})_{i,t} = \gamma_0 + \gamma_1 FPI_{j,t-1} + \gamma_2 X_{i,t-1} + \gamma_3 Y_{j,t-1} + \gamma_4 I_t + \gamma_5 t + \varepsilon$  where FPI is foreign portfolio investment standardised by gross domestic product and represents the instrumented value obtained from the following first stage regression:  $FPI_{j,t} = \beta_0 + \beta_1 \Delta FXRate_{j,t-1} + \beta_2 MktShare_{j,t-1} + \beta_3 RelIntRates_{j,t-1} + \beta_4 FPIVol_{j,t-1} + \varepsilon$ .  $\Delta FXRate$  is the change in the real foreign exchange rate.  $MktShare$  is country  $j$ 's market capitalisation scaled by world market capitalisation.  $RelIntRates$  is the annual real interest rates of country  $j$  scaled by sample average calculated annually.  $FPIVol$  is the variance of FPI flows in times  $t - 1$  through  $t - 3$ . Development groups are based on the level of property rights in a nation. Only small firms (those firms with total assets less than the country-year median) are tested.  $Y$  is a vector of lagged macroeconomic variables including the following: FDI is the level of foreign direct investment scaled by country  $j$ 's GDP. GDP Growth is the average growth rate in gross domestic product of country  $j$ . Domestic Credit is the level of credit provided to the public by domestic banks and financial institutions. Savings is the difference between GDP and consumption, scaled by GDP. Investment Profile is the perceived risk facing foreign investors. Law and Order is an index referring to the development of the legal system. Corruption is an index that reflects the level of corruption.  $X$  is a vector of lagged firm-specific variables such as Cash Flow, Leverage, Risk, Profitability, Asset Tangibility and Cross-listing.  $I$  is a vector of industry dummies to control for industry effects and  $t$  represents time dummies, which control for any time effects in the panel. Observations are firm-year specific and for the term 1996-2007. Firm-level control variables are left out for brevity. Robust standard errors are clustered around issuer are in brackets. Marginal effects of the variables are provided. \* Significance at the 10% level. \*\* Idem, 5%. \*\*\* Idem, 1%.

## Dependent Variable: Foreign Portfolio Investment (scaled by GDP)

	Inflow 1	Net flows 2	Inflow 3	Net flows 4	Inflow 5	Net flows 6	Inflow 7	Net flows 8
FDI	1.615*** [0.028]	-0.659*** [0.006]	1.527*** [0.028]	-0.652*** [0.006]	1.426*** [0.029]	-0.658*** [0.006]	1.599*** [0.028]	-0.659*** [0.006]
GDP growth	-0.833*** [0.045]	0.342*** [0.011]	-1.134*** [0.045]	0.372*** [0.011]	-0.564*** [0.045]	0.340*** [0.011]	-0.806*** [0.045]	0.341*** [0.011]
Domestic credit	-0.062*** [0.001]	-0.005*** [0.000]	-0.060*** [0.001]	-0.005*** [0.000]	-0.068*** [0.001]	-0.005*** [0.000]	-0.055*** [0.001]	-0.005*** [0.000]
Savings	-1.763*** [0.012]	-0.247*** [0.003]	-1.546*** [0.013]	-0.268*** [0.003]	-1.624*** [0.013]	-0.248*** [0.003]	-1.687*** [0.013]	-0.248*** [0.003]
MktShare	-0.016*** [0.002]	0.002*** [0.000]	-0.024*** [0.002]	0.003*** [0.000]	-0.014*** [0.002]	0.002*** [0.000]	-0.018*** [0.002]	0.002*** [0.000]

Panel A: Developed Property Rights ( $N = 64,496$ )

$\Delta FXRate$	-0.034** [0.015]	0.079*** [0.004]	-0.112*** [0.015]	0.087*** [0.004]	0.047*** [0.015]	0.079*** [0.004]	-0.058*** [0.015]	0.080*** [0.004]
RelIntRates	0.121*** [0.007]	0.012*** [0.002]	0.089*** [0.007]	0.016*** [0.002]	0.120*** [0.007]	0.012*** [0.002]	0.115*** [0.007]	0.013*** [0.002]
FPIVol	-	-	-	-	-	-	-	-
Investment profile	-0.013*** [0.002]	-0.030*** [0.000]	-0.011*** [0.002]	-0.030*** [0.000]	-0.010*** [0.002]	-0.030*** [0.000]	-0.013*** [0.002]	-0.030*** [0.000]
Law and order			0.032*** [0.001]	-0.003*** [0.000]				
Corruption					0.050*** [0.002]	0.000 [0.000]		0.000 [0.000]
Constant	1.053*** [0.009]	0.045*** [0.002]	0.677*** [0.014]	0.082*** [0.003]	0.761*** [0.013]	0.046*** [0.003]	0.963*** [0.010]	0.046*** [0.003]
R-squared	0.442	0.456	0.453	0.457	0.451	0.456	0.445	0.456

Appendix B  
Continued

Panel B: Less Developed Property Rights ( $N = 14,434$ )

FDI	0.142*** [0.010]	0.134*** [0.009]	0.005 [0.010]	0.042*** [0.009]	0.142*** [0.010]	0.139*** [0.009]	0.136*** [0.010]	0.101*** [0.009]
GDP growth	0.072*** [0.008]	0.000 [0.007]	0.074*** [0.008]	0.002 [0.007]	0.074*** [0.009]	0.013* [0.007]	0.071*** [0.008]	-0.007 [0.007]
Domestic credit	0.006*** [0.001]	0.010*** [0.001]	0.003*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.010*** [0.001]	0.007*** [0.001]	0.013*** [0.001]
Savings	-0.082*** [0.003]	-0.105*** [0.002]	-0.058*** [0.003]	-0.089*** [0.002]	-0.082*** [0.003]	-0.104*** [0.002]	-0.081*** [0.003]	-0.102*** [0.002]
Share	0.002*** [0.001]	-0.001*** [0.000]	-0.001** [0.001]	-0.003*** [0.000]	0.002*** [0.001]	-0.001*** [0.000]	0.001 [0.001]	-0.006*** [0.001]
FXChg	-0.013*** [0.001]	-0.019*** [0.001]	-0.007*** [0.001]	-0.015*** [0.001]	-0.012*** [0.001]	-0.019*** [0.001]	-0.012*** [0.001]	-0.018*** [0.001]
RelIntRates	0.050*** [0.001]	0.010*** [0.001]	0.044*** [0.001]	0.006*** [0.001]	0.050*** [0.001]	0.011*** [0.001]	0.049*** [0.001]	0.007*** [0.001]
FPIVol	-0.011*** [0.003]	0.004 [0.002]	-0.021*** [0.003]	-0.003 [0.002]	-0.011*** [0.003]	0.003 [0.002]	-0.010*** [0.003]	0.009*** [0.002]
Investment profile			0.004*** [0.000]	0.003*** [0.000]				
Law and order					0.000 [0.000]	-0.001*** [0.000]		
Corruption							0.001** [0.000]	0.004*** [0.000]
Constant	0.046*** [0.001]	0.039*** [0.001]	0.008*** [0.002]	0.014*** [0.002]	0.046*** [0.001]	0.041*** [0.001]	0.045*** [0.001]	0.035*** [0.001]
R-squared	0.461	0.448	0.498	0.471	0.461	0.449	0.461	0.457

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