

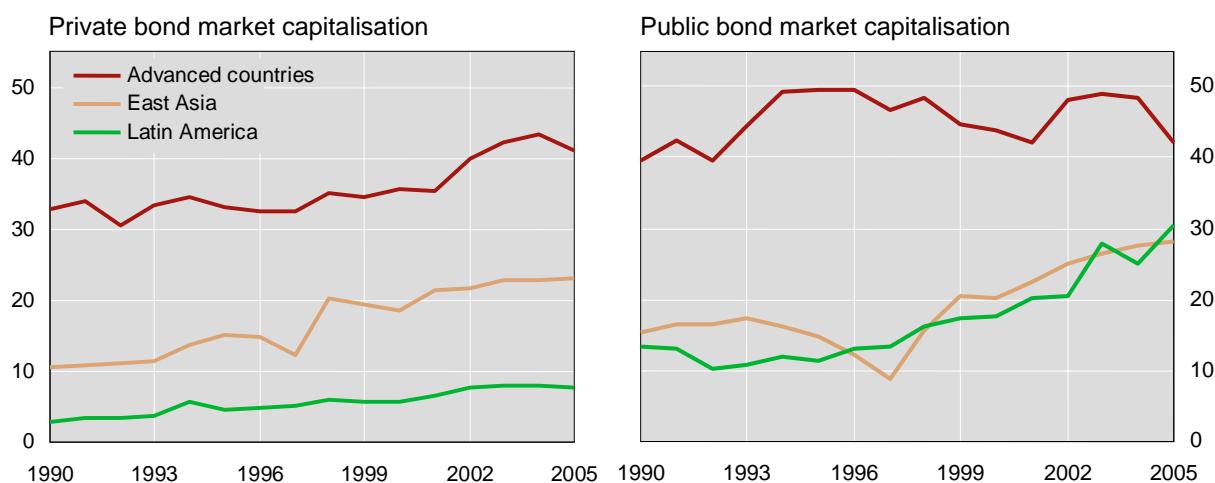
Plumbing for Latin American capital markets¹

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1. Introduction

If publicity is the measure of progress, then Latin American capital markets are booming. The financial press is awash with articles on the growth of local Latin American markets. They note that capitalisation of domestic bond markets in the seven large Latin American countries more than doubled from 1995 to 2005; in the second half of the period alone, it went up by more than 60% (see Figure 1). Stock market capitalisation rose by 52% during that same period, and trading value, averaged across countries, rose by 86%. Furthermore, foreign participation in these markets is booming (see Figure 2).

Figure 1
Bond market capitalisation by region¹



"Advanced countries" refers to Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and United States; "East Asia" refers to China, Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore and Thailand; "Latin America" refers to Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

¹ As a percentage of GDP.

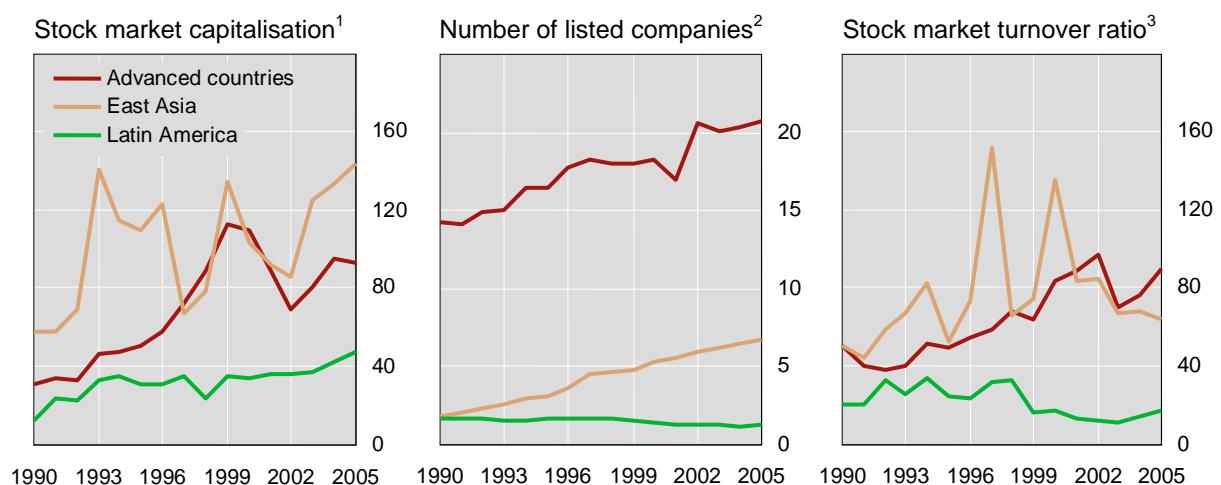
Sources: World Bank (2007), *World Development Indicators*.

However, measured by levels rather than rates of change and compared with other regions, capital market development in Latin America continues to be disappointing. Bond markets relative to GDP are small when compared not only to advanced industrial countries but also

¹ The authors are affiliated with the Bank of Thailand and the University of California, Berkeley, respectively. This paper was prepared for the BIS-Federal Reserve Bank of Atlanta meeting on "New financing trends in Latin America: a bumpy road towards stability" held in Mexico City, 24–25 May 2007. We thank conference participants for their comments, as well as Kenichi Ueda for advice regarding data and Pipat Leungaruemitchai for help in obtaining them.

to emerging East Asian markets.² The most developed segment is government bonds, reflecting Latin America's history of deficits. Although some countries, like Mexico, have successfully issued fixed-rate bonds and lengthened maturities, many others have maintained sovereign debt that is short in duration and variable in rate. Furthermore, by the standards of its government bond markets, the region's corporate bond markets are minuscule, whether measured by capitalisation, the number of firms issuing bonds or foreign investor participation.³ Maturities in this market segment are especially short. Scarcely 10% of corporate bonds issued in Latin America during 2000–05 were at fixed rates and of either medium- or long-term duration, compared to nearly 90% of those issued in emerging East Asia. Many corporate debt securities are not traded for extended periods. The absence of current price quotes prevents institutional investors required to market on a regular basis from holding such securities, further limiting liquidity through the operation of a destructive feedback loop.

Figure 2
Evolution of stock markets by region



For a list of countries included in each region see Figure 1.

¹ As a percentage of GDP. ² Total of listed companies in the region at end-year, in thousands. ³ Value of shares traded as a percentage of average market capitalisation.

Sources: World Bank (2007), *World Development Indicators*.

Latin American equity markets are similarly dominated by a small number of companies.⁴ Unlike in other regions, the number of companies listed on local markets has been falling. Equity market capitalisation scaled by GDP is less than a third of that in emerging East Asia. Only Chile and perhaps Brazil are doing tolerably well. Liquidity, as measured by bid-ask spreads and turnover, remains low; in 2005 the value of shares traded (relative to stock market capitalisation) was a mere 17%, compared to 106% in the G7 countries and 64% in East Asia (see Figure 2).

Inevitably, a balanced assessment yields something of a glass-half-full, glass-half-empty picture. While Latin American countries are making progress in developing their financial

² Data on the comparison may be found in Eichengreen et al (2006).

³ As documented by the International Monetary Fund (IMF) (2005).

⁴ There are barely a quarter as many listed companies in Latin America as in emerging East Asia (de la Torre et al 2007, Figure 3).

markets, they are starting out behind other regions. In fact, in terms of a number of important indicators – eg corporate debt issuance, stock market capitalisation, and regional stock market turnover – the current situation is unsatisfactory.

There is no shortage of explanations for this situation. Many Latin American countries have long histories of macroeconomic instability, evidenced by chronic budget deficits, high inflation and volatile business cycles. In addition, macroeconomic instability is often accompanied by financial instability in the form of banking, debt, and currency crises,⁵ which have in turn led to the collapse of profitability and hence of share prices, as well as involuntary restructurings whereby governments have unilaterally reduced the claims of bondholders. On top of this, governmental instability in the region has caused unpredictable changes in investor rights and undermined the security of creditor claims. Against this backdrop, it is not surprising that investors have shown little enthusiasm for participating in Latin American capital markets.

At a deeper level, the underdevelopment of financial markets reflects the limits of the supporting infrastructure, or what might be called the “plumbing” of capital markets. Investor rights are weak; shareholders often have limited voting rights, making it difficult to challenge entrenched management. Judicial proceedings are opaque and uncertain, rendering bankruptcy procedures time-consuming and expensive and making it difficult for creditors to recover principal and interest arrears and to attach collateral. According to conventional measures of investor and creditor protection, Chile, the highest-ranked Latin American country, has values that are below the average for emerging East Asia.⁶

Another problem related to infrastructure is that clearing and settlement systems, especially in the region’s smaller markets, are often underdeveloped. An efficient clearing and settlement system involves trade matching to ensure that the orders booked by the buyer and the seller are identical and can be accepted by an exchange’s clearing house for settlement; a delivery-versus-payment process that ensures that transfers of securities and cash are final and certain; and a central securities depository that operates an electronic book-entry system, permitting the physical movement of actual securities to be limited. Such an infrastructure would certainly make participation in the local market more attractive. Mexico, Brazil, and Argentina have made significant progress in this area, but other countries lag behind.

Trading platforms are similarly inefficient or underdeveloped, and information on transactions is often limited. Countries in other parts of the world have made a significant effort to address problems like this. Malaysia, for example, has established a bond information trading system in which dealers are required to enter price and quantity information within 10 minutes of completing a trade; this information then becomes available to other screen subscribers. The Thai Bond Market Association requires traders to report transactions within three minutes and distributes this information to its members four times a day. South Korea operates a similar system, and Indonesia plans to move in the same direction.⁷

One of two approaches could foster Latin American capital markets. The first approach would be hands-off: with recent movements towards macroeconomic and financial stability and improvements in sustained growth, it is probably just a matter of time before the markets develop. The second would be more direct, addressing the infrastructure needs of local

⁵ The singularity of Latin America when viewed from the perspective of financial instability is a theme of Zettelmeyer (2006).

⁶ See Borensztein et al (2006).

⁷ Some countries, such as Peru, are using tax incentives to encourage exchange-based trading of corporate bonds as an alternative to the use of over-the-counter transactions, on the grounds that exchange-based trading is an important first step towards the timely provision of information on transactions (IMF 2005).

markets – in other words, fostering their operation by fixing the “plumbing.” With the proper infrastructure in place, it would be easier to eliminate the remaining shortcomings of the region’s markets, whether they be the difficulty of issuing long-term fixed-rate corporate debt securities, the small number of listed firms or the dearth of liquidity.

This paper documents the challenges and rewards of addressing these plumbing problems, taking corporate governance reform as a case study. We first describe the progress that has taken place in corporate governance reform. We then address the question of why progress has not been faster. Finally, we explore the benefits of such reform for the development of capital markets. Throughout, we draw comparisons between Latin America and East Asia, Europe, and the United States.

2. Corporate governance as a case study

Corporate governance lends itself to the study of financial market plumbing for several reasons. First, the multilaterals cite problems in corporate governance as an explanation for financial instability and the underdevelopment of financial markets. Official post-mortems on the Asian crisis described the shortcomings of corporate governance.⁸ These post-mortems blamed principal-agent problems for the extensive leverage and excessive dependence on short-term foreign-currency-denominated debt that rendered the corporate and financial sectors so fragile. They pointed to inaccurate information about corporate finances as an explanation for why investors scrambled out of Asian markets. Subsequently, the World Bank, International Monetary Fund (IMF), Organisation for Economic Co-operation and Development (OECD), and Bank for International Settlements (BIS), among others, stressed the need for corporate governance reform.⁹

Similarly, weaknesses in Latin American corporate governance are widely cited as an explanation for why the region does not have larger capital markets. Financial transparency is lacking among publicly traded companies and issuers of debt, creating scope for management and directors, working together, to appropriate the residual cash flow of the firm at the expense of outside investors. Moreover, minority investors have limited ability to capture the residual cash flow of the firm even when they know that it exists. They have limited voting rights. Typically they must marshal a relatively large share of investors in order to call an extraordinary shareholders’ meeting. Even then, shares are often blocked before the shareholders’ meeting.¹⁰ All this makes it difficult for minority shareholders to challenge the decisions of management and a captive board of directors. Given the ease with which cash flow can be disguised and the difficulties that investors face when attempting to assert their rights, it is not surprising that Latin America does not have larger capital markets.

Second, effective corporate governance is not something that can be legislated. Rather, it emerges from the interplay of the public and private sectors. Regulators can establish guidelines for governance – voting rules, the appointment of independent directors, and so forth – but how decisions are reached and how those making them are held accountable depends on how firms implement those decisions and on how investors react. Corporate

⁸ See, for example, World Bank (1998).

⁹ A representative compendium of OECD work on reforming corporate governance can be found at www.oecd.org/topic/0,2686,en_2649_37439_1_1_1_37439,00.html.

¹⁰ Capaul (2003) provides a description of the problem, with considerable country detail.

governance thus epitomises the challenges of reform in a world where outcomes depend not only on official decisions but also on market reactions.¹¹

Third, high-profile management scandals in the United States are a reminder that even countries with sophisticated financial markets have corporate governance problems. Insofar as the United States has not been able to solve this problem, we might reasonably ask whether it is realistic to ask emerging markets to do so.

Fourth, there is disagreement on how best to provide effective corporate governance and therefore on what reforms are desirable. Even among advanced countries with relatively sophisticated financial markets – in particular, the United States and European countries – there is disagreement on the specifics of corporate governance reform. This lack of agreement in part reflects different analytical perspectives. However, it also results from differences in economic structure – for example, the fact that bank-based financial systems remain more prevalent in Europe.¹²

Similarly, in the context of the emerging market, questions arise about the suitability of one-size-fits-all governance reform advice. Legislation and regulations tailored to the circumstances of high-income countries may have very different effects in Latin America, where information is not forthcoming, cross-shareholding is common, and family control is pervasive. Governance that relies on the accurate and timely provision of accounting information may be ill-suited where the supply of independent accountants and auditors is limited and the accounting profession's self-regulatory body is weak.¹³ Furthermore, attempting to prevent management from pursuing private agendas by giving large shareholders more power may not work in an emerging market setting where the firms are heavily family-owned and -controlled, the majority owner is the manager and the problem instead is the exploitation of outside shareholders by large blockholders.¹⁴ As Capaul (2003) notes, family-owned and -run firms continue to dominate the listed sector in many Latin American countries. Observations like these prompt questions about the suitability for the region of advanced-country models.

2.1 Analysis

Our analysis makes use of the work of de Nicolo et al (2006). These authors have constructed outcome-based measures of the quality of corporate governance for a wide sample of countries for the period 1994–2003. “Outcome-based” means looking not at legislation but at what firms and markets actually do. This indicator of corporate governance quality has three components:

- (1) The share of the 40 most important accounting items, as identified by the Center for International Financial Analysis and Research of Princeton University, on which the largest companies (top 10 manufacturing companies as measured by total assets in each country) disclose information. The idea here is that greater accounting transparency means that individual investors have more information about the ability of the firm to meet its debt service obligations and about residual cash flow.

¹¹ A recent study for the Asian economies (Cheung and Jang 2005) actually reports a negative correlation between how countries rank in terms of the adequacy of corporate governance rules and regulations and the adequacy of actual practice as seen by investors.

¹² On this, see Enriques and Volpin (2007).

¹³ See Alba et al (1998).

¹⁴ These problems of self-dealing, or tunnelling, are the focus of Johnson et al (2000).

- (2) A measure of earnings smoothing, constructed as one minus the Spearman rank correlation between changes in cash flow (before accounting adjustments) and changes in profits (after accounting adjustments), both normalised by total assets, for each country and year. This speaks to the fact that accounting transparency may be meaningless if accounts are easily manipulated.
- (3) A measure of stock price synchronicity constructed from the covariation of each firm's weekly return with the market capitalisation-weighted weekly return. The idea in this case is that when firms make little information available about their financial condition, investors will be forced to infer the facts from economy-wide developments, causing share prices for different firms to move together.¹⁵

Like any summary measure of something as multifaceted as corporate governance, this one has its limitations. The number of items on which firms disclose accounting information tells us nothing about the accuracy of that information. Estimating earnings smoothing is more difficult for emerging markets than it is for advanced countries because of the absence of information on cash flow for many firms. Individual stock prices can move together to a greater or lesser extent for reasons other than the limited availability of information on individual firms' outcomes and prospects – for example, because of changes in the prevalence of common stocks.

Other limitations relate to the fact that the three measures making up the index all focus on transparency about information relevant to estimating residual cash flow, which is the variable ultimately of interest to shareholders. Better accounting means more information about the magnitude of residual cash flow; a higher correlation between underlying cash flow and profits as reported similarly tells us about the payout to which shareholders are entitled. But neither measure tells us about the ability of investors to capture that residual cash flow, which might be diverted by management and captive directors if voting rights are weak and legal enforcement is costly and time-consuming. Whether the valuations of different firms move together is arguably more informative about these last aspects of corporate governance. The prices of the shares of individual companies will co-vary with one another not only when outside investors have relatively little information about the financial condition of individual firms, leading them to infer it from economy-wide conditions, but also when they are not confident of being able to capture idiosyncratic variations in cash flow. But this measure of the dispersion of individual share prices is subject to the other problems described above.

Notwithstanding these limitations, we would argue that the outcome-based measure of de Nicolo et al (2005) tells us more about what firms and investors do than do the statute- and regulation-based alternatives.¹⁶ This index and its components are available for 41 countries, including 19 emerging markets (10 of which are in Asia), annually for the period 1994–2003. Using the same sources and following the same methods as these authors, we updated the three sub-indices through 2005.

The evolution of corporate governance for the full sample, individual regions, and emerging and advanced countries is shown in Table 1 and Figure 3. There appear to have been improvements in corporate governance in both Asia and Latin America, although progress has been a bit slower in Asia. This advancement suggests a tendency towards convergence in corporate governance quality across emerging regions. Latin America and Asia both experienced relatively little improvement prior to 1998,¹⁷ and then faster progress

¹⁵ And giving management greater scope for diverting residual cash flow.

¹⁶ This index also has some strengths relative to its predecessors. For example, it does not focus exclusively on share price co-movements (as in Morck et al 2000) or accounting practice (as in Cheung and Jang 2005).

¹⁷ Latin America even experienced some retrogression.

subsequently, which suggests that later reforms were prompted not only by the Asian crisis but also by the general push from the multilaterals and the pressures of financial globalisation. We report some further evidence on this below.

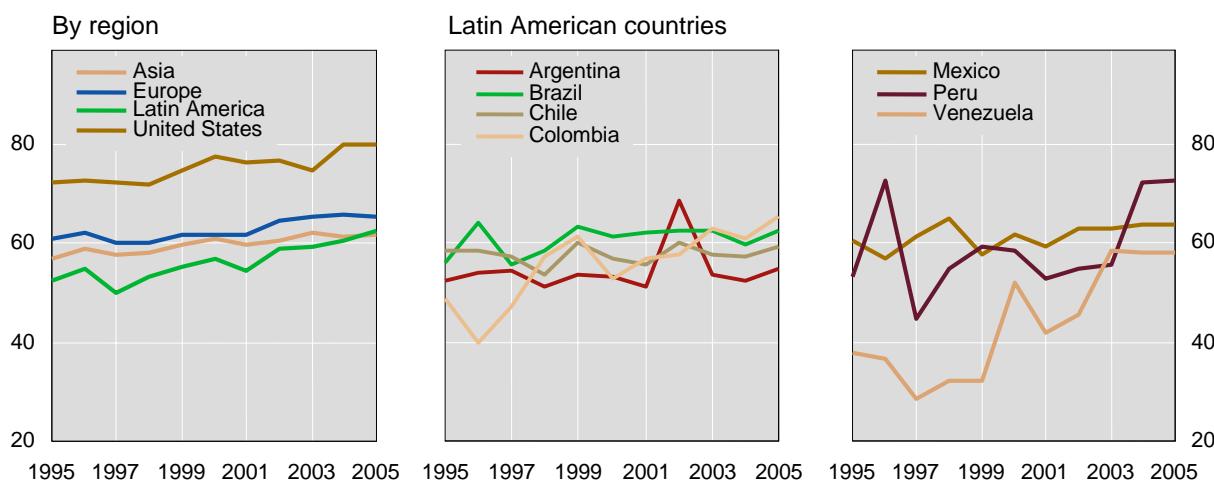
Table 1
Evolution of corporate governance quality (CGQ), 1995–2005

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All	58.7	60.2	58.0	58.9	60.7	61.1	61.0	63.2	63.9	64.7	65.2
Asia	57.0	58.8	57.7	58.2	59.7	60.7	59.9	60.7	62.2	61.3	61.7
Latin America	52.4	54.7	50.0	53.2	55.4	56.7	54.3	58.9	59.1	60.6	62.4
Europe	60.9	62.2	59.9	60.0	61.9	61.7	61.6	64.6	65.2	65.9	65.5
Others	62.8	63.3	62.9	63.6	65.3	65.7	69.0	68.6	69.0	72.0	74.0
Emerging markets	55.4	57.5	54.5	56.2	57.5	58.3	57.4	59.3	60.4	60.9	61.6
Advanced countries	61.0	62.1	60.5	60.8	63.0	63.2	63.5	65.9	66.4	67.3	67.8
<i>Memo:</i>											
<i>United States</i>	72.2	72.6	72.3	71.9	74.8	77.7	76.5	76.7	74.6	79.8	79.9
<i>Japan</i>	57.2	59.3	59.8	62.0	64.2	63.8	62.9	65.7	64.0	64.4	66.4

See Appendix Table A2 for grouping of sample countries by region.

Source: Corporate governance indices from 1995 to 2003 from de Nicolo, Laeven, and Ueda (2006), extended through 2005 by authors.

Figure 3
Corporate governance index (CGQ)¹



For a list of countries included in each region see Figure 1.

¹ CGQ index ranges from 0 (worst) to 100 (best)

Source: De Nicolo, Laeven and Ueda (2006); 2004 and 2005 figures updated by authors.

Of interest are the improvements in the quality of corporate governance as measured by this index in several Latin American countries (see Figure 3). Our outcome-based measures suggest the largest improvements in Colombia, Peru, and Venezuela. Interestingly, the efforts of regulators and the stock exchange in São Paulo (the Bolsa de Valores de São Paulo, or BOVESPA) to upgrade transparency in Brazil do not yet show up in terms of visibly improved corporate governance quality.¹⁸

2.2 Determinants

We next address the question of why progress has been more rapid in some places than in others. We regress corporate governance quality on a vector of country-specific economic and political characteristics and include alternative measures of the political system such as the stability of the government and the Polity Index, which measures the degree to which the regime is democratic or autocratic. We also include past capital inflows as a measure of the importance of foreign investors, who can be active in pressing for improvements in corporate governance. Indicators of trade and financial openness similarly speak to the question of whether more contact with foreign markets creates pressure for better corporate governance quality. Per capita GDP (in logs) is a proxy for the general level of economic and financial development. Following La Porta et al (1998) and Chong and Lopez-de-Silanes (2007), we include the origin of the legal system as a predetermined influence on the strength of investor rights. Credit provided by the banking system is a measure of the development of financial intermediation and speaks to whether banks and capital markets are substitutes or complements. The level of the lending rate captures both the competitiveness of the banking system and the degree of macroeconomic stability. The number of parent enterprises is a proxy for the population of large firms in a country. Finally, we consider some individual indicators of financial stability: the stability of the exchange rate, whether there has been a recent banking crisis, and the number of years the country has been under an IMF programme.

Table 2 shows summary statistics on these variables; Table 3 shows the correlation matrix; and Table A1 presents further information on definition and sources. We plot a number of these variables in Figures 4 and 5. The first panel of Figure 4 confirms our hypothesis that corporate governance improves with per capita GDP, which is a proxy for the general level of economic and institutional development. A number of Latin American countries – including Argentina, Colombia, Chile, and, most visibly, Venezuela – are negative outliers from the general relationship. This is indicative of the poor quality of corporate governance in the region, even when we control for general levels of economic and institutional development.¹⁹

¹⁸ In 2001 the BOVESPA created the Novo Mercado as a mechanism to enable firms to become listed by signalling the high quality of their corporate governance. Companies listed on the Novo Mercado must comply with one-share, one-vote rules; abide by international accounting standards; and have a free float (a share of issues not in the hands of controlling shareholders) of at least 25%.

¹⁹ Multiple regression, below, will help to determine whether this deviation is significant.

Table 2
Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Corporate governance quality (0 to 100)	451	61.42	7.17	28.60	89.20
Accounting standards (0 to 100)	435	84.21	4.06	66.30	93.35
Earnings smoothing (0 to 100)	451	19.22	12.04	0.00	101.01
Stock price synchronicity (0 to 100)	451	82.25	10.35	38.50	96.00
Private bond market capitalisation (% GDP)	439	24.86	26.42	0.00	145.62
Public bond market capitalisation (% GDP)	439	36.47	24.86	0.21	147.89
Stock market capitalisation (% GDP)	451	77.88	72.51	3.61	566.18
Number of listed companies	451	858	1428	50	8851
Stock turnover ratio	451	72.41	68.74	1.31	623.59
Government stability index (0 to 12)	451	8.73	1.82	4	12
Polity index (-10 to 10)	451	7.74	4.07	-7	10
Cumulative capital inflows (% GDP)	451	33.04	40.42	0.63	299.88
English legal origin dummy	451	0.34	0.47	0	1
Real GDP per capita (in log)	451	8.84	1.92	0.12	10.90
Domestic credit by banking sector (% GDP)	451	97.16	45.97	8.58	258.50
Lending interest rates	451	13.02	14.76	1.68	103.30
Number of parent enterprises	451	1483	2097	0	9356
Financial openness	451	7.03	10.23	0.07	96.38
Trade openness	451	77.56	56.73	16.30	383.06
Exchange rate stability index (0 to 10)	451	8.96	1.82	0	10
Cumulative years under IMF programmes	451	1.34	3.79	0	23
Currency crisis indicator	451	0.04	0.20	0	1
Banking crisis indicator	451	0.12	0.32	0	1

Data on private and public bond market capitalisation are unavailable for Israel throughout the sample period (1995–2005).

Sources: See Table A1 in the Appendix for data sources and definitions.

Table 3
Correlation matrix

	Corporate governance quality	Government stability	Polity index	Cumulative capital inflows (% GDP)	Log real GDP per capita	English legal origin dummy	Domestic credit by banks (% GDP)	Lending rate (%)	Number of parent enterprises	Financial openness	Trade openness	Exchange rate stability	Banking crisis dummy
Government stability	0.112**	1.000											
Polity index	0.262***	-0.154***	1.000										
Cumulative capital inflows (% GDP)	0.126***	0.194***	-0.147***	1.000									
Log real GDP per capita	0.328***	0.022	0.388***	0.249***	1.000								
English legal origin dummy	0.242***	0.155***	-0.094**	0.308***	0.073	1.000							
Domestic credit by banks (% GDP)	0.310***	0.198***	0.185***	0.212***	0.495***	0.155***	1.000						
Lending rate (%)	-0.274***	-0.152***	-0.098**	-0.187***	-0.558***	-0.187***	-0.414***	1.000					
Number of parent enterprises	0.213***	0.002	0.182***	-0.145***	0.285***	-0.267***	0.338***	-0.163***	1.000				
Financial openness	0.123***	0.199***	-0.011	0.607***	0.289***	0.082	0.226***	-0.192***	0.009	1.000			

Table 3
Correlation matrix (cont)

	Corporate governance quality	Government stability	Polity index	Cumulative capital inflows (% GDP)	Log real GDP per capita	English legal origin dummy	Domestic credit by banks (% GDP)	Lending rate (%)	Number of parent enterprises	Financial openness	Trade openness	Exchange rate stability	Banking crisis dummy
Trade openness	0.078	0.152***	-0.196***	0.805***	0.190***	0.324***	0.285***	-0.254***	-0.119**	0.546***	1.000		
Exchange rate stability	0.126***	0.059	0.005	0.118**	0.388***	0.150***	0.185***	-0.538***	0.056	0.104**	0.131***	1.000	
Banking crisis dummy	-0.203***	-0.016	-0.195***	-0.109**	-0.311***	-0.074	-0.043	0.309***	-0.013	-0.138***	0.019	-0.196***	1.000
Years under IMF programmes	-0.162***	-0.057	-0.140***	-0.124***	-0.335***	-0.150***	-0.366***	0.175***	-0.198***	-0.144***	0.183***	-0.035	0.173***

The symbols *, **, *** indicate significance level at 10%, 5% and 1%, respectively.

Source: Authors' calculations.

The second panel of Figure 4 suggests that the quality of corporate governance rises with government stability. It suggests further that the poor quality of corporate governance in Mexico, Brazil, Venezuela and Colombia has been associated with low levels of government stability. Conversely, Colombia, Argentina and especially Venezuela deviate from the general relationship, suggesting that governmental instability does not account for everything.

The third panel shows that countries with more democratic governments are likelier to have effective corporate governance. However, Argentina, Colombia and Venezuela again do not fit the pattern. Cumulative capital flows are positively related to the quality of corporate governance, although it is possible that this relationship is driven by a few observations.

Finally, domestic credit provided by the banking system and the number of parent enterprises are positively related to the quality of corporate governance. It would be nice to be able to say whether the average relationship in Latin America is different from that of other regions. Unfortunately, we do not have a sufficient number of observations for Latin America to estimate the same equations separately for the region.

For the sake of comparison, Figures 5A and 5B show these same scatter plots separately by region.

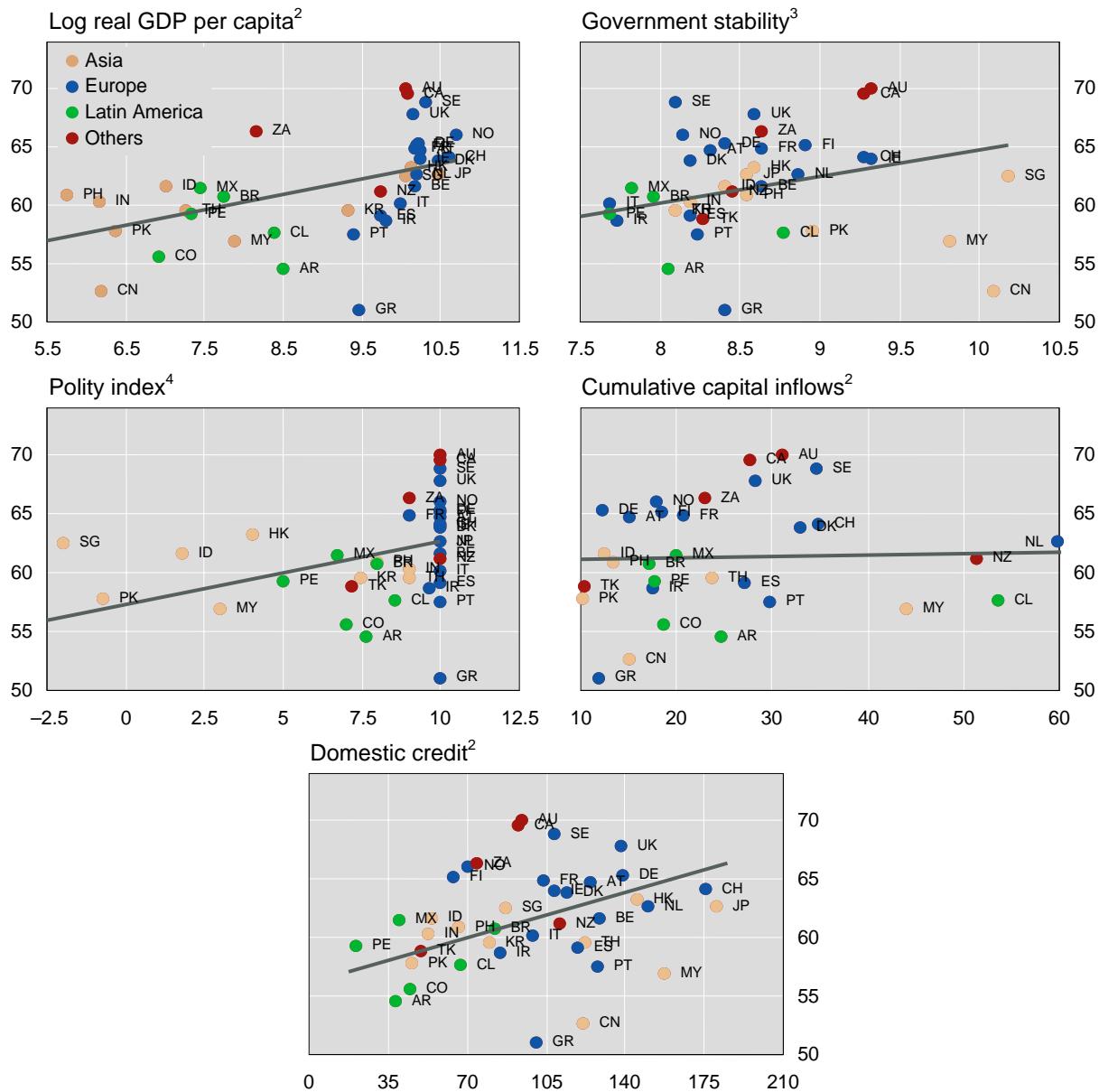
We estimated the equations on the full sample with random effects. In doing so, we followed the Hausman and Breusch-Pagan tests, which show that random effects are more accurate than fixed effects and simple pooling.²⁰ Column 1 of Table 4 shows the benchmark specification. That countries with more stable governments appear to have better corporate governance may reflect the greater willingness of politicians to invest in the upfront costs of reform that yield returns down the road. In contrast, it does not seem to matter whether that government is more or less democratic. This is surprising, based on what we might observe from the simple bivariate relationship in the third panel of Figure 4. This finding is, however, consistent with the larger literature on the economic effects of democracy. Past capital inflows scaled by GDP translate into stronger present corporate governance, possibly because foreign investors press for improvements in practice.

In addition, countries with a common-law tradition have better corporate governance, reflecting the stronger rights and voice of outside shareholders and, presumably, their greater activism. Countries with low lending rates also appear to have relatively strong corporate governance. Low lending rates may reflect stable economic conditions, which means the government has more time and resources to devote to corporate governance rather than having to attend to other economic problems. Doidge et al (2004) observe that where external finance is more readily available, the incentives for firms to improve corporate governance are greater. Finally, the number of parent enterprises (that is, multinational enterprises with subsidiaries abroad) enters positively in the benchmark specification. This number is a proxy for the number of large corporations, which in turn reflects the level of corporate sector development. It is possible that countries with a greater number of large corporations are more pressed to place them under rigorous governance standards, and these firms are seen to be better able to comply with stringent regulation. Analogous to this, some countries may hesitate to enforce rigid governance standards because their many small- and medium-sized companies would find it costly to comply with the rules.

²⁰ Reassuringly, the key results carry over when we estimate these relationships instead, using fixed effects.

Figure 4
CGQ index (y-axis) and explanatory variables (x-axis)¹

Cross section, average 1995–2005



Asia refers to China (CN), Hong Kong SAR (HK), India (IN), Indonesia (ID), Japan (JP), Malaysia (MY), Pakistan (PK), Philippines (PH), Singapore (SG), South Korea (KR) and Thailand (TH); Europe refers to Austria (AT), Belgium (BE), Denmark (DK), Finland (FI), France (FR), Germany (DE), Greece (GR), Ireland (IE), Israel (IR), Italy (IT), Netherlands (NL), Norway (NO), Portugal (PT), Spain (ES), Sweden (SE), Switzerland (CH) and United Kingdom (UK); Latin America refers to Argentina (AR), Brazil (BR), Chile (CL), Colombia (CO), Mexico (MX), Peru (PE) and Venezuela (VE); Others refers to Australia (AU), Canada (CA), New Zealand (NZ), South Africa (ZA), Turkey (TK) and United States (US).

¹ CGQ index (y-axis) against each variable (x-axis); CGQ index ranges from 0 (worst) to 100 (best).

² Domestic credit by banking sector as a percentage of GDP. ³ The index ranges from 0 (least stable governments) to 12 (most stable governments). ⁴ The index ranges from -10 (strongly autocratic) to 10 (strongly democratic).

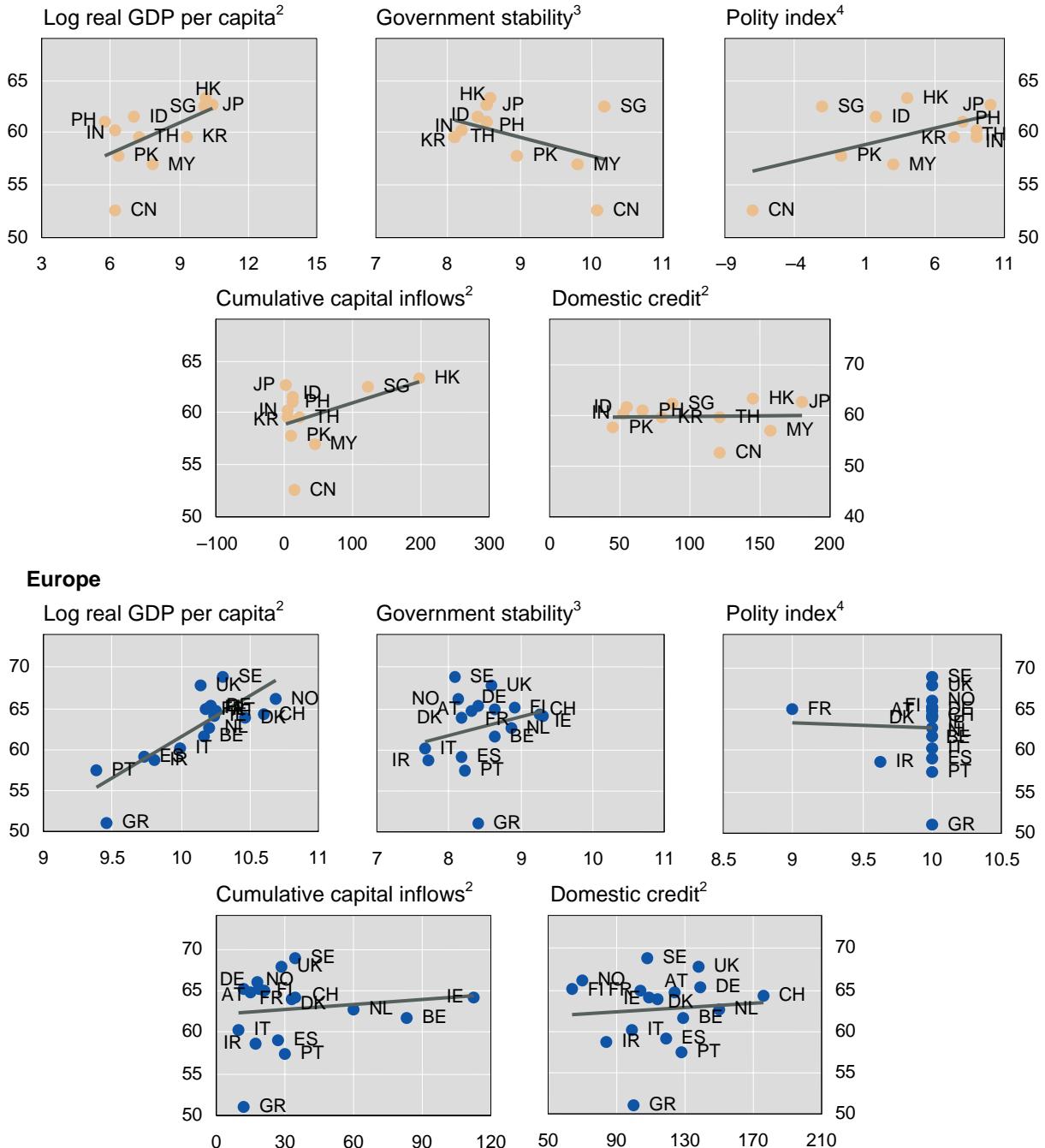
Sources: See Table A1 in the Appendix for data sources and definitions.

Figure 5A

CGQ index and explanatory variables in Asia and Europe¹

Cross section, average 1995–2005

Asia

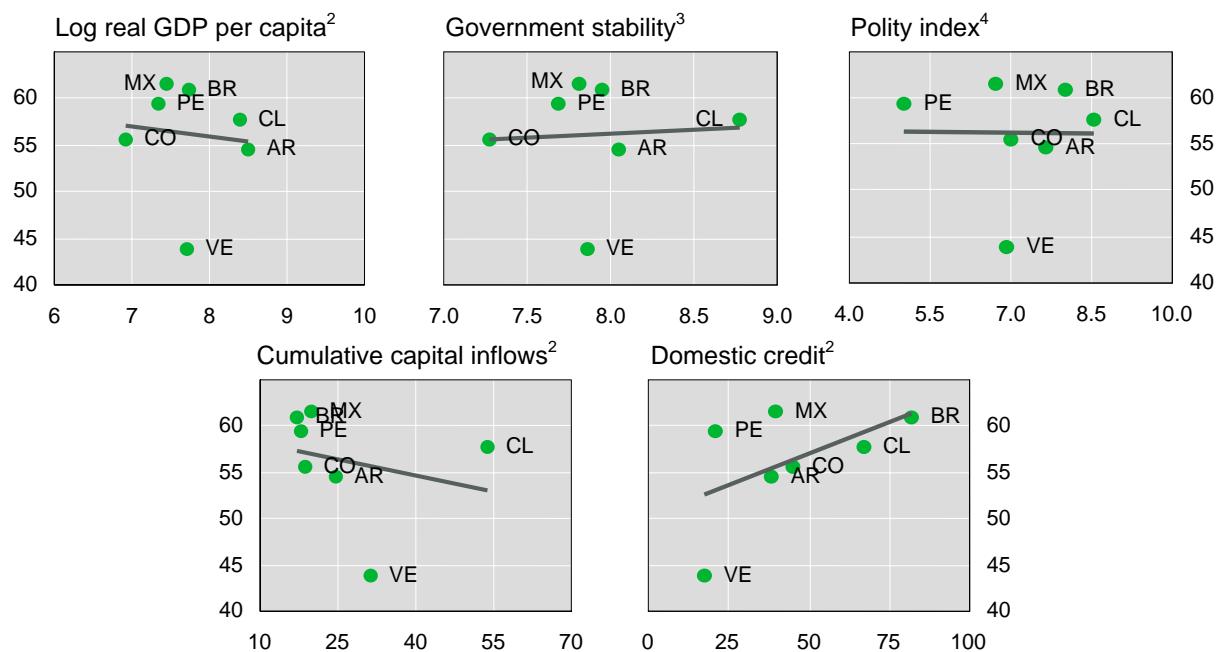


¹ CGQ index (y-axis) against each variable (x-axis); CGQ index ranges from 0 (worst) to 100 (best). See Figure 4 for country codes. ² Domestic credit by banking sector as a percentage of GDP. ³ The index ranges from 0 (least stable governments) to 12 (most stable governments). ⁴ The index ranges from -10 (strongly autocratic) to 10 (strongly democratic).

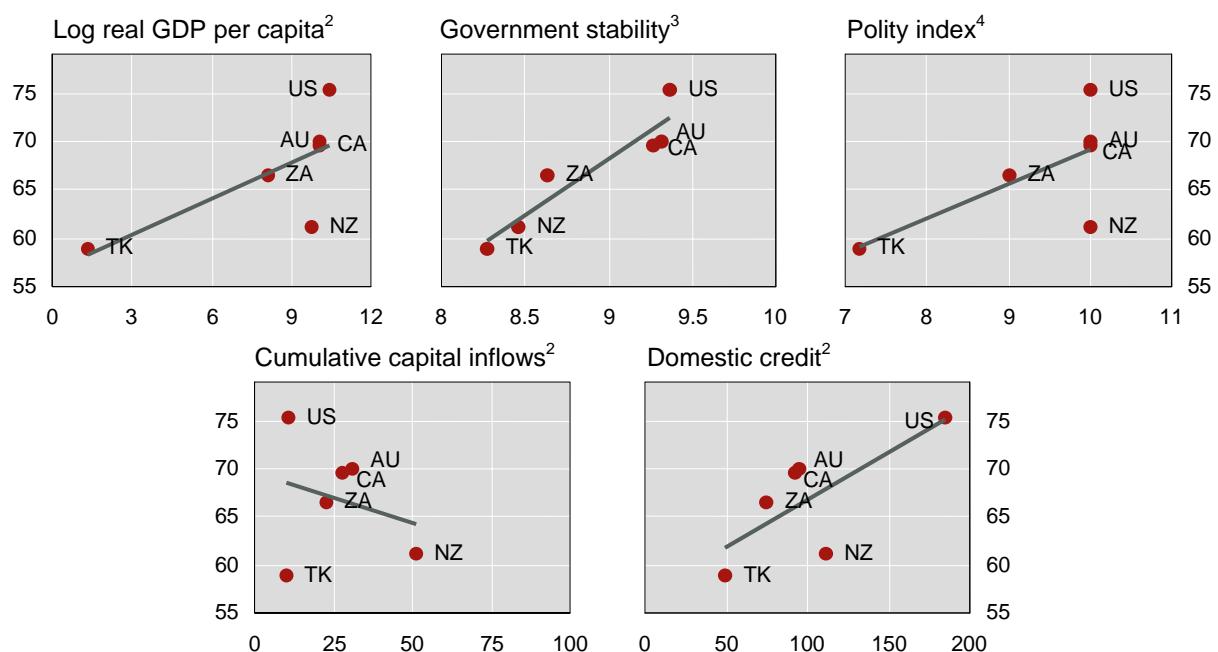
Sources: See Table A1 in the Appendix for data sources and definitions.

Figure 5B
CGQ index and explanatory variables in Latin America and other countries¹
 Cross section, average 1995–2005

Latin America



Other countries



¹ CGQ index (y-axis) against each variable (x-axis); CGQ index ranges from 0 (worst) to 100 (best). See Figure 4 for country codes. ² Domestic credit by banking sector as a percentage of GDP. ³ The index ranges from 0 (least stable governments) to 12 (most stable governments). ⁴ The index ranges from -10 (strongly autocratic) to 10 (strongly democratic).

Sources: See Table A1 in the Appendix for data sources and definitions.

Table 4
Determinants of corporate governance quality
First stage, GLS random effects

	Dependent variable: corporate governance quality (CGQ)		
	(1)	(2)	(3)
Excluded instruments:			
Government stability	0.234* (1.87)	0.130 (1.01)	0.127 (0.99)
Polity index	0.247** (2.20)	0.063 (0.53)	0.051 (0.44)
Cumulative capital inflows (% GDP)	0.046*** (5.13)	0.039*** (3.40)	0.042*** (3.50)
Included instruments:			
Log GDP per capita		-0.608 (1.43)	-0.687 (1.34)
English legal origin dummy		4.300** (2.30)	3.549* (1.87)
Domestic credit provided by banking banking sector (% GDP)		0.001 (0.06)	-0.002 (0.23)
Lending interest rate (%)		-0.140*** (2.73)	-0.131** (2.46)
Number of parent enterprises		0.001*** (3.53)	0.001*** (3.12)
Financial openness		-0.026 (1.37)	-0.027 (1.38)
Trade openness		0.013 (0.96)	0.010 (0.74)
Exchange rate stability		-0.136 (0.66)	-0.123 (0.60)
Dummy for banking crisis in previous year		0.105 (0.15)	0.118 (0.17)
Years under IMF programmes		0.004 (0.03)	0.034 (0.26)
Dummy for Asia		-5.564*** (3.21)	-6.254*** (2.95)
Dummy for Latin America			-3.577 (1.21)
Dummy for other emerging markets			-0.263 (0.06)
Constant	55.991 (36.18)	64.424 (12.29)	66.633 (11.34)
F-statistics for excluded instruments' p-value	47.10 0.000	15.67 0.001	15.75 0.001
Observations	451	451	451
Number of country ID	41	41	41
R ²	0.073	0.203	0.225

Heteroskedasticity-consistent t-statistics in parentheses.

The symbols *, **, *** indicate significance level at 10%, 5%, and 1%, respectively.

A number of other variables do not appear to influence the quality of corporate governance significantly when included in the multivariate regression.²¹ Interestingly, GDP per capita is among these variables, which indicates that characteristics that are very specific to the countries account for variations in the quality of corporate governance. Per capita GDP, which captures aspects of economic and institutional development not directly measured elsewhere, has no residual explanatory power.²²

Other insignificant variables include domestic credit provided by the banking sector,²³ the incidence of recent banking crises,²⁴ the stability of the exchange rate, and the number of recent years in which the country was under an IMF programme.²⁵

Another interesting result is the negative coefficient on the dummy variable for Asia. That is, after controlling for more than a dozen economic and political characteristics, the quality of corporate governance in Asia continues to lag behind that in other regions. Since the majority of non-Asian countries in the sample are advanced economies, this would appear to reflect the differential between Asia and that grouping.

In column 3 of the table we add dummy variables for Latin America and other emerging markets (South Africa and Turkey). In contrast to the dummy variable for Asia, these dummy variables are not significantly different from zero at standard confidence levels. This is telling us that, to the extent that corporate governance in Latin America is inferior to that in other regions, this is entirely explicable by observable characteristics of countries – their macroeconomic policies, the stability of their political systems, the influence of foreign investors, and so forth. It is not necessary to invoke, in addition, some special feature of the Latin American countries and their history not captured by the other independent variables.

In short, the quality of corporate governance varies across countries for both systematic and idiosyncratic reasons. Systematic reasons include the structure of the legal system and how effectively it empowers outside investors to lobby for information disclosure and representation; the presence of foreign investors, who are likely to lobby for improvements in corporate governance; and political stability and development, which influences the readiness of government to invest in governance reform. Additionally, in Asia, the dominance of bank finance and the number of parent enterprises appear to be negatively associated with the quality of corporate governance.

²¹ However, Table 3 (the correlation matrix) shows that each of them has a statistically significant correlation with the measure of corporate governance quality.

²² The adjusted R² of this equation declines only from 0.203 to 0.200 when per capita GDP is omitted.

²³ This is included on the grounds that an active banking sector is sometimes seen as pushing for improved corporate governance.

²⁴ Banking crises may disrupt the process of market development, but they do provide additional impetus for reforms. Evidently, these effects cancel each other out.

²⁵ Any tendency for IMF tutelage to lead to improved corporate governance appears to be neutralised in the aggregate by cases of countries that were continuously under IMF programmes and in which transparency problems were rife. This variable is cumulative years under an IMF programme beginning in 1960. Its maximum value is 23 – representing Argentina, which was continuously under IMF programmes from 1983 through 2005. Similarly, although institutional strengthening, including better corporate governance, is sometimes seen as a prerequisite for moving to greater exchange rate flexibility – firms must then limit currency mismatches and other exchange rate-related balance sheet risks – this effect seems to be neutralised in the aggregate by the tendency for some countries with weak governance to exhibit relatively high levels of currency instability.

2.3 Effects

We now examine the impact of corporate governance quality on financial development. We treat corporate governance as endogenous, recognising that its quality can both be affected by and affect financial development.

We construct the fitted value of corporate governance using all the exogenous variables in the second stage as *included* instruments and the political variables and our measures of the presence of foreign investors as *excluded* instruments. We are not aware of previous arguments or evidence that the structure of the political system is important for financial development, which is why we are comfortable about omitting the political variables from the second stage and using them as instruments for corporate governance.²⁶ Omitting cumulative capital flows from the second stage is likely to be more controversial. However, dropping this variable from our list of instruments does not alter our key results, as we show below.²⁷

In the second-stage regressions, we consider the impact of corporate governance, along with a vector of controls, on the capitalisation of private bond markets (as a percentage of GDP), government bond markets (as a percentage of GDP), stock market capitalisation (as a percentage of GDP), the number of listed companies, and the turnover ratio on the stock market (in per cent). The results are in Table 5. The key finding is that the exogenous component of corporate governance as we measure it has a positive effect on all these variables, but this effect is weakest in the case of public sector bond market capitalisation. This makes sense: stronger corporate governance works directly to make investment by outsiders in private corporations more attractive, but it will stimulate investment in public debt securities only indirectly, insofar as private and public bond markets are complements; that is, they use the same market infrastructure, have a similar customer base, and so on.²⁸

When we estimate the same equations by pooled Ordinary Least Squares (OLS), ignoring the possibility of simultaneity, the significant positive effects on private bond market capitalisation, stock market capitalisation, the number of listed companies, and the measure of stock liquidity remain (see column 1 of Table 6). However, only the positive effect on private bond market capitalisation remains when we use fixed or random effects panel estimators without instrumental variables (see columns 2 and 3 of Table 6). This underscores the importance of recognising the endogeneity of corporate governance.²⁹

²⁶ This is in contrast to work like that of Roe (2003), who argues that political variables should be significantly associated with corporate governance itself – this being precisely the argument relied on here.

²⁷ See the section below on robustness. On the other hand, dropping this variable does create some other sources of econometric discomfort, as we explain in that section, requiring us to modify the specification slightly.

²⁸ When we include private bond market capitalization as a determinant of public bond market capitalization, there is only weak evidence that a larger private market stimulates public bond market development. When we substitute public bond market size lagged one year in the first column, the key results do not change. In addition, lagged public bond market size is not significant (coefficient = -0.021, t-statistic = 0.66). Similarly, when we add private bond market capitalization lagged one year in the second column, the key results remain the same and the lagged private bond market size is not significant (coefficient = 0.044, t-statistic = 0.58).

²⁹ In the case of private bond markets, although the effect is positive and significant across all regression models, the fact that the coefficient on corporate governance quality in the OLS regressions is smaller than in the instrumental variable (IV) regressions suggests that the reverse relationship, from bond market size to corporate governance quality, may be negative.

Table 5
Effects of corporate governance quality
 Second stage, IV regressions

	Dependent variable:				
	Private bond market cap (% GDP)	Public bond market cap (% GDP)	Stock market cap (% of GDP)	Number of listed companies (in log)	Stock turnover ratio (%)
Corporate governance quality (fitted)	1.509*** (4.46)	0.366 (0.71)	12.215*** (4.33)	0.053*** (3.21)	3.826** (2.27)
Log GDP per capita	2.938*** (4.89)	-6.057*** (3.57)	14.117*** (4.25)	0.092** (2.33)	-3.123 (0.75)
English legal origin dummy	-5.454 (0.95)	-1.219 (0.13)	-27.908 (1.36)	0.788*** (2.61)	5.905 (0.31)
Domestic credit provided by banking sector (% GDP)	0.172*** (6.49)	-0.094*** (2.75)	-0.082 (1.37)	-0.001 (0.77)	0.128 (1.28)
Lending interest rate (%)	0.173*** (3.04)	-0.203* (1.74)	2.132*** (4.48)	0.010*** (3.21)	0.577 (1.46)
Number of parent enterprises	0.005** (2.48)	0.004** (2.25)	-0.008* (1.72)	0.001** (2.10)	0.008 (1.28)
Financial openness	-0.026 (0.75)	-0.134** (2.25)	1.006*** (3.11)	0.003** (2.22)	0.308** (2.34)
Trade openness	0.001 (0.02)	0.117*** (2.90)	0.483** (2.25)	0.000 (0.17)	-0.349*** (2.53)
Exchange rate stability	0.381** (2.33)	0.906*** (2.80)	3.800*** (4.46)	0.015** (2.01)	0.732 (0.56)
Dummy for banking crisis in previous year	0.978 (1.07)	0.418 (0.28)	-13.119*** (2.97)	0.017 (0.47)	-4.220 (0.46)
Years under IMF programmes	-0.164*** (2.69)	0.088 (0.54)	0.922* (1.86)	-0.011*** (3.58)	1.673 (1.19)
Dummy for Asia	-0.421 (0.07)	-23.452 (1.63)	61.071** (2.32)	1.001*** (3.62)	57.944** (1.96)
Public bond market size (% GDP)	0.038 (1.17)				
Constant	-122.943 (5.40)	64.088 (1.71)	-890.114 (4.55)	0.991 (0.86)	-167.657 (1.41)
Observations	439	439	451	451	451
Number of country ID	40	40	41	41	41
R ²	0.656	0.011	0.472	0.313	0.227

Corporate governance quality is the fitted value from regressing the CGQ index on a set of instrumental variables as in column 2 of Table 4. Instruments used are: government stability, polity index and cumulative capital inflows as a percentage of GDP. Heteroskedasticity-consistent t-statistics in parentheses.

The symbols *, **, *** indicate significance level at 10%, 5%, and 1%, respectively.

Table 6
Alternative specifications for the effects of corporate governance quality on financial development

Dependent variable	Coefficient on corporate governance quality index				
	Pooled OLS	OLS/FE	GLS/RE	IV/FE	IV/RE
Private bond market cap (% GDP)	0.443*** (3.37)	0.188*** (3.12)	0.196*** (3.07)	1.393*** (3.71)	1.509*** (4.46)
Public bond market cap (% GDP)	0.143 (0.87)	0.100 (1.21)	0.126 (1.34)	-0.055 (0.10)	0.366 (0.71)
Stock market cap (% of GDP)	1.232*** (3.52)	0.065 (0.26)	0.259 (1.03)	11.940*** (3.60)	12.215*** (4.33)
Log number of listed companies	0.025*** (4.03)	-0.005** (2.17)	-0.003 (1.32)	0.025* (1.66)	0.053*** (3.21)
Stock turnover ratio (%)	0.438 (1.38)	0.232 (0.76)	0.281 (0.92)	9.028*** (2.89)	3.826** (2.27)

For the OLS and GLS models, each financial development variable is regressed on the CGQ index and the set of independent variables analogous to columns 1 through 5 in Table 5. For the IV models, first-stage regressions are analogous to column 2 of Table 4 (with English dummy origin, number of parent enterprises, and dummy for Asia dropped for the fixed effects IV regression). CGQ Index in the second-stage IV regressions is the fitted value from the first stage. Instruments used are: government stability, polity index and cumulative capital inflows as a percentage of GDP. Heteroskedasticity-consistent t-statistics in parentheses.

The symbols *, **, *** indicate significance level at 10%, 5%, and 1%, respectively.

2.4 Robustness

We performed a number of sensitivity analyses to check robustness. To start, we estimated alternative specifications for the first stage, as reported in columns 1 and 2 of Table 7. We dropped the insignificant exchange rate, banking crises, and IMF dummy variables. We then dropped the measures of financial openness, trade openness, and domestic credit provided by the banking sector. The key results carried over.

Second, we estimated our equations using fixed rather than random effects. This approach required dropping legal origin, the region dummies, and the number of parent enterprises because these variables do not vary over time. The first-stage results still hold for the other variables except that the coefficient trade openness now becomes positive and significant. The key results from the second stage are unchanged; the remaining coefficients all have the same sign and continue to differ significantly from zero at standard confidence levels.

Third, we dropped cumulative capital inflows from the first stage (column 3). We worried that the identifying power of this variable derives from the experience of a few outliers such as Hong Kong SAR. In addition, one might worry about the exclusion restriction: past capital flows may affect not just the quality of corporate governance but also the capitalisation and liquidity of financial markets directly. Reassuringly, our key results – in particular, the sign and significance level of the corporate governance variable in the second stage – remain the same.

Table 7
Determinants of corporate governance quality robustness checks

	Dependent variable: corporate governance quality (CGQ)			
	(1)	(2)	(3)	(4)
Excluded instruments:				
Government stability	0.132 (1.02)	0.127 (0.98)	0.268** (2.13)	0.124 (1.02)
Polity index	0.067 (0.55)	0.081 (0.68)	0.072 (0.60)	0.017 (0.15)
Cumulative capital inflows (% GDP)	0.039*** (3.38)	0.042*** (4.71)		
Average CGQ in other countries in the same region				0.373*** (4.59)
Included instruments:				
Log GDP per capita	-0.637 (1.56)	-0.580 (1.51)	-0.344 (0.94)	-0.087 (0.21)
English legal origin dummy	4.281** (2.39)	4.450*** (2.58)	5.084*** (3.05)	3.877** (2.34)
Domestic credit provided by banking sector (% GDP)	-0.128*** (3.01)	-0.130*** (3.09)	-0.136*** (3.19)	-0.085* (1.89)
Lending interest rate (%)	0.001*** (3.62)	0.001*** (3.78)	0.001*** (3.34)	0.001*** (2.71)
Number of parent enterprises	0.002 (0.24)			
Financial openness	-0.026 (1.35)			
Trade openness	0.012 (0.91)			
Dummy for Asia	-5.541*** (3.32)	-4.940*** (3.09)	-4.482*** (2.85)	-3.018* (1.83)
Dummy for Latin America				
Dummy for South Africa and Turkey				
Constant	63.188 (14.32)	63.307 (14.83)	61.437 (14.76)	37.583 (5.25)
F-statistic for excluded instruments' p-value	15.79 0.001	30.43 0.000	4.92 0.085	22.73 0.000
Observations	451	451	451	451
Number of country ID	41	41	41	41
R ²	0.206	0.215	0.234	0.271

All regressions are estimated using GLS random effects. Heteroskedasticity-consistent t-statistics in parentheses. The symbols *, **, *** indicate significance level at 10%, 5%, and 1%, respectively.

However, dropping this variable creates a problem of weak instruments.³⁰ The textbook treatment for this problem is to find more powerful instruments, which we could do by building on work on peer effects and policy diffusion (Simmons and Elkins 2003). Such work argues that the probability of a country's adopting a particular policy reform increases with the number of its neighbours who have already done so. One can argue that there is logic for including this latter variable – constructed, in the present context, as the quality of corporate governance in other countries in the same region – insofar as countries compete for foreign capital partly on the basis of how well they represent the interests of investors. This variable is plausibly exogenous except perhaps for countries large enough to influence the quality of corporate governance throughout the region. It is plausible to exclude it from the second stage, there being no reason to expect the quality of corporate governance elsewhere to have a first-order impact on the subject country's financial development. And it is a strong instrument. Adding it leaves the sign and significance of the key corporate governance variable in the second stage unchanged and eliminates the weak-instrument problem. A limitation of this variable is that it is not clear that a country's economic neighbours are also its geographic neighbours. This is why we relegate estimates using this instrument to this section on sensitivity analysis.

Fourth, we looked separately at the impact on market development of the individual components of our corporate governance index, having first estimated their determinants using the same specification as above. As Table 8 shows, all three elements (adoption of accounting standards, tendency not to smooth earnings, and share-price non-synchronicity) generally have the expected positive effect on private bond market capitalisation, stock market capitalisation, the number of listed companies, and the stock turnover ratio. This cumulative positive effect reassures us that the results do not hinge on the behaviour of any one component of our corporate governance measure.

Finally, we considered the number of listed companies scaled by real GDP and by total number of business registrations rather than simply the number of listed companies. We scaled by GDP to take into account the effect of country size and corporate sector size on this variable. For both specifications, the sign and significance of most variables, including corporate governance quality, remained unchanged, except for the log of real GDP per capita, the coefficient of which now became negative and significant.³¹

³⁰ The F-statistic for the excluded instruments is 15.67 with the measure of cumulative capital inflows included in the first stage and 1.33 without. The cutoff for weak instruments is a threshold of 10.00 as suggested by Staiger and Stock (1997) for the case of a single endogenous regressor.

³¹ We include these specifications in this section on robustness rather than in the results section above because it is not clear that real GDP is an appropriate variable to use as a scaling factor for number of listed firms. Using the total number of business registrations as a scaling factor is more appropriate. However, doing so reduces the number of observations greatly (from 451 to 193 country-years) because of incomplete time-series data on this variable. In addition, since we already include the number of parent companies in the list of controls, we feel justified in entering the number of listed companies as a simple number. Data on total number of registrations are obtained from the World Bank Group Database on Entrepreneurship available online: <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:21164814~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>.

Table 8
Effects of different components of CGQ index
 Second stage, IV regressions

	Dependent variable:														
	Private bond market cap (% GDP)			Public bond market cap (% GDP)			Stock market cap (% GDP)			Number of listed companies (in log)			Stock turnover ratio (%)		
CGQ Components:															
Accounting standards (fitted)	3.161*** (3.82)			-1.328 (0.89)			19.071*** (3.48)			0.142*** (3.51)			49.230*** (5.21)		
Earnings smoothing (fitted)		0.912*** (4.60)			0.104 (0.33)			6.966*** (4.38)			0.033*** (3.39)			4.564*** (3.97)	
Price non-synchronicity (fitted)			0.819*** (4.02)			0.439 (1.44)			8.663*** (4.40)			0.027** (2.51)			-2.912 (1.45)
Control variables	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	453	439	475	453	439	475	465	451	489	466	451	490	465	451	489
Number of country ID	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41
R ²	0.655	0.657	0.658	0.005	0.010	0.013	0.452	0.471	0.476	0.281	0.312	0.296	0.221	0.226	0.230

All regressions are analogous to the full specification in Table 5 with the CGQ index replaced by each of its three components. Results on other independent variables omitted. Instruments used are: government stability, polity index and cumulative capital inflows as a percentage of GDP. Heteroskedasticity-consistent t-statistics in parentheses.

The symbols *, **, *** indicate significance level at 10%, 5%, and 1%, respectively.

3. Conclusion

Latin American countries have made significant progress in developing their capital markets. This progress occurs against the backdrop of increasing macroeconomic, financial and political stability. In reciprocal fashion, it contributes to the larger environment of stability.

At the same time, however, the size of corporate bond markets, the number of companies listing on equity markets, and market liquidity remain disappointing when compared to other regions. Markets that are still relatively narrow and illiquid may prove to be fragile and volatile in the event that the economic and financial environment sours – that is, if global growth slows and investor risk aversion increases. This fragility may in turn jeopardise the consolidation of the region's newfound macroeconomic stability.

Accelerating progress in the development of Latin American capital markets is thus a matter of some urgency. Viewing capital market development as an organic part of the larger process of economic and financial development and waiting for the region's economies to "grow up" is not enough. There are specific actions that governments and policymakers can take to foster the development of their capital markets. These actions include creating a more efficient market infrastructure – for example, instituting trading platforms or payment and settlement systems – and strengthening shareholder and bondholder rights, all of which we call the "plumbing" of capital markets. In this paper, we pay particular attention to one aspect of this plumbing – namely, corporate governance.

We find that improvements in corporate governance have been more prevalent in countries with stable governments prepared to pay the up-front costs of institutional reform, where there are foreign investors prepared to lobby for reform, and where other countries in the region are undertaking corporate governance reform. We find that the relevant reforms have a significant payoff in terms of the development of equity and corporate bond markets.

At the same time, comparison of emerging markets in Latin America and elsewhere with advanced economies suggests that the process is incomplete. One view of this situation is that effective corporate governance is an organic part of the larger process of economic and financial development and that countries can close their corporate governance quality gap only as their levels of economic and financial development converge with those of the advanced countries. Our results support a more optimistic conclusion. The quality of corporate governance depends on more than just per capita income as a measure of the general level of economic development – it depends also on a number of specific factors, suggesting that emerging markets can take specific actions to promote it. Macroeconomic stability is good for the development of corporate governance. Opening markets to foreign investment can be good for corporate governance. So too is political stability, which gives investors voice and governments an incentive to invest in the future.

Corporate governance quality does not simply reflect the level of financial development – it can also affect it. The results we discuss in this paper suggest that corporate governance can affect financial development in decidedly positive ways. We suspect that these conclusions are more general – that they carry over from corporate governance to other aspects of the "plumbing" of capital markets.

Appendix

Table A1
Description of variables and data sources

Variable	Description	Source
CGQ index	Unweighted average of the indicators of accounting standards, earning smoothing, and stock price synchronicity, ranging from 0 (worst) to 100 (best)	De Nicolo, Laeven, and Ueda (2006); updated by authors
Accounting standards index	Number of reported accounting items as a percentage of 40 accounting items	De Nicolo, Laeven, and Ueda (2006); updated by authors
Earning smoothing index	Rank correlation between cash flows and profits across a set of firms at each point in time, standardised, ranging from 0 (most opaque performance) to 100 (least opaque performance)	De Nicolo, Laeven, and Ueda (2006); updated by authors
Stock price synchronicity index	Average R-squared of regressions of each company's stock return on country-average return in each year, standardised, ranging from 0 (maximum synchronicity) to 100 (minimum synchronicity)	De Nicolo, Laeven, and Ueda (2006); updated by authors
Private bond market capitalisation	Private domestic debt securities issued by financial institutions and corporations (as a percentage of GDP)	BIS Domestic and International Securities Statistics http://www.bis.org/statistics/secstats.htm Supplementary data are from Beck, Demirguc-Kunt, and Levine (2000) and national statistical databases.
Public bond market capitalisation	Public domestic debt securities issued by the government (as a percentage of GDP)	BIS Domestic and International Securities Statistics; supplementary data are from Beck, Demirguc-Kunt, and Levine (2000) and national statistical databases.
Stock market capitalisation	Value of listed shares as a percentage of GDP	World Development Indicators (WDI)
Number of listed companies	Number of companies listed on the national stock market	World Development Indicators (WDI)
Stock turnover ratio	Ratio of total value of shares traded to stock market capitalisation	Beck, Demirguc-Kunt, and Levine (2000)
Government stability	Assessment of the government's ability to carry out its declared programme(s) and its ability to stay in office, ranging from 0 (least stable) to 12 (most stable)	International Country Risk Guide (ICRG)

Table A1 (cont)
Description of variables and data sources

Variable	Description	Source
Polity index	Combined scores of polity regime characteristics, ranging from -10 (strongly autocratic) to 10 (strongly democratic)	Center for International Development and Conflict Management (CIDCM), Polity IV Project http://www.cidcm.umd.edu/polity
Cumulative capital inflows	Stock of inward foreign direct investment (as a percentage of GDP)	United Nations Conference on Trade and Development (UNCTAD) database: http://stats.unctad.org/fdi
Cumulative capital outflows	Stock of outward direct investment (as a percentage of GDP)	United Nations Conference on Trade and Development (UNCTAD) database: http://stats.unctad.org/fdi
Legal origin	Dummy variables indicating country law originated from English law, German law, French law, and Scandinavian law	La Porta et al (1998)
Log of real GDP per capita	Log of deflated GDP over total population	World Development Indicators (WDI)
Domestic credit by banking sector	Private domestic credit provided by deposit money banks and other financial institutions (as a percentage of GDP)	World Development Indicators (WDI)
Lending rate	Average lending rates paid by commercial banks (in percent)	World Development Indicators (WDI) and Global Financial Data (GFD)
Number of parent enterprises	Parent corporations are those enterprises that control assets of other entities outside their respective home countries. Typically, “control of assets” requires ownership of at least 10% of a corporation’s shares or voting power (equity capital stake), or its equivalent for an unincorporated enterprise.	United Nations Conference on Trade and Development (UNCTAD). <i>World Investment Report 2005: Transnational Corporations and the Internationalisation of R&D</i> Annex Table A.I.8. Available online at http://www.unctad.org/en/docs/wir2005_en.pdf
Financial openness	The sum of foreign direct investment and portfolio investment inflows and outflows (as a percentage of GDP)	Raw data from International Financial Statistics (IFS)
Trade openness	Total value of exports plus imports (as a percentage of GDP)	Raw data from World Development Indicators (WDI)
Exchange stability	Assessment of the appreciation or depreciation of a currency against the US dollar over a year, ranging from 0 (least stable) to 10 (most stable)	International Country Risk Guide (ICRG)

Table A1 (cont)
Description of variables and data sources

Variable	Description	Source
Years under IMF programme(s)	Cumulative number of years a country has been under IMF agreements	Vreeland (2003); updated data provided by James Vreeland
Currency crisis indicator	Dummy variable indicating an incidence of a currency crisis	Glick et al (2004) and Ranciere et al (2006)
Banking crisis indicator	Dummy variable indicating an incidence of a banking crisis	Caprio et al (2003) Banking Crises Database, World Bank http://www1.worldbank.org/finance/html/database_sfd.html . Updated banking crises data provided by Enrica Detragiache

Appendix

Table A2
Sample countries

Asia	Latin America	Europe	Other
China	Argentina	Austria	Australia
Hong Kong SAR	Brazil	Belgium	Canada
India	Chile	Denmark	New Zealand
Indonesia	Colombia	Finland	South Africa
Japan	Mexico	France	Turkey
Korea	Peru	Germany	United States
Malaysia	Venezuela	Greece	
Pakistan		Ireland	
Philippines		Israel	
Singapore		Italy	
Thailand		Netherlands	
		Norway	
		Portugal	
		Spain	
		Sweden	
		Switzerland	
		United Kingdom	

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