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Capital Market Development Whither Latin America?

Augusto de la Torre, Juan Carlos Gozzi,
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4.1 Introduction

Back in the early 1990s, economists and policymakers had high expectations about the prospects for capital market development in emerging economies.¹ This led to significant reforms, including financial liberalization, the establishment of stock exchanges and bond markets, and the development of regulatory and supervisory frameworks. These reforms, together with improved macroeconomic fundamentals and capital market-related reforms, such as the privatization of state-owned enterprises and the shift to privately managed defined contribution pension systems, were expected to foster financial development.²

Despite the intense reform efforts, the performance of domestic capital

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This paper is part of a broader study on capital markets, conducted at the Chief Economist Office, Latin America and the Caribbean Region, The World Bank, available at <http://www.worldbank.org/laccapitalmarkets>. We thank participants at the PUC-Rio de Janeiro (Brazil) conference for very useful discussions. We are particularly grateful to Sebastian Edwards, Márcio G. P. Garcia, Eduardo Loyo, Ugo Panizza, and two anonymous referees for very helpful comments. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily represent the views of The World Bank.

1. Capital market development has been deemed an important goal, as growing evidence supports the view that a sound financial system is not just correlated with a healthy economy, but actually causes economic growth. See Levine (2005) for a comprehensive review of the literature on the finance-growth nexus.

2. These expectations were supported by the cross-sectional empirical evidence on the determinants of financial development, which shows that countries with sounder macroeconomic policies, better institutional environments, and more efficient legal systems, especially regarding the protection of creditors and minority shareholders, have more developed do-

markets in many emerging economies has been disappointing. Although some countries experienced growth of their domestic markets, this growth in most cases has not been as significant as the one witnessed by industrialized nations. Other countries experienced an actual deterioration of their capital markets. Stock markets in many developing countries have seen listings and liquidity decrease, as a growing number of firms have cross-listed and raised capital in international financial centers, such as New York and London.³ In many emerging economies, stock markets remain highly illiquid and segmented, with trading and capitalization concentrated on few stocks. Also, bonds tend to be concentrated at the short end of the maturity spectrum and denominated in foreign currency, exposing governments and firms to maturity and currency risks.⁴ The large number of policy initiatives and the disappointing performance of capital markets have left policymakers without clear guidance on how to revise the reform agenda going forward, and many do not envision a bright future for domestic capital markets in developing countries.

In this paper, we analyze the state of capital market in Latin America and discuss how to rethink the reform agenda going forward in light of this evidence. Our focus on Latin American countries is motivated by the fact that these countries were at the forefront of the capital market reform process over the last decades.⁵ Despite the intense reform effort, capital markets in the region seem to have lagged behind, not only relative to developed countries, but also compared to emerging economies in other regions, such as East Asia (de la Torre and Schmukler 2006). Analyzing the experience of Latin American countries may provide significant lessons for the capital market reform agenda going forward, which may also apply to emerging economies in other regions.

We start by documenting the extent of capital market development in Latin America and comparing it to other regions. We then use formal analyses to further understand how the state of stock markets in the region

mestic financial markets (see, for example, Boyd, Levine, and Smith 2001; La Porta, Lopez de Silanes, and Shleifer 2006; and La Porta et al., 1997, 1998).

3. Karolyi (2004) and Moel (2001) offer evidence on how the use of American Depositary Receipts (ADRs) is related to stock market development in emerging economies. Levine and Schmukler (2006a,b) analyze the impact of migration to international markets on domestic market trading and liquidity.

4. See Mihajek, Scatigna, and Villar (2002) for an overview of the characteristics of bond markets in emerging economies.

5. Starting in the late 1980s and early 1990s, most Latin American countries implemented macro stabilization programs and liberalized their financial systems, ending a long period of financial repression. Apart from macro stabilization and liberalization, governments throughout the region approved new legislation aimed at creating the proper market infrastructure and institutions for capital markets to flourish. These capital market reforms were complemented in a number of cases by privatization efforts and by comprehensive pension system reforms. See de la Torre and Schmukler (2006) for an overview of the capital market reform process in Latin America.

differs from that in other regions. In particular, we are interested in assessing whether there is a gap between fundamentals and policies, on the one hand, and actual stock market development, on the other. This issue is highly relevant for the policy debate. The observed lack of capital market development in Latin America may be a consequence of the region's poor fundamentals, suggesting the need to push further ahead in the reform effort to achieve a higher level of economic and institutional development, which in turn should result in more developed capital markets. On the other hand, the finding of a shortfall between actual capital market development in the region and the level of development predicted by its economic and institutional fundamentals could indicate that reforms and improvements in these fundamentals have not had the expected results so far. This suggests that it might be necessary to revise the reform agenda and related expectations to take into account certain characteristics of these countries that may limit the scope for developing deep domestic securities markets. Finally, we discuss alternative ways of interpreting the evidence, with the goal of drawing lessons for the reform agenda going forward.

The evidence shows that despite the intense reform effort, capital markets in Latin America remain underdeveloped compared to markets in East Asia and developed countries. Furthermore, we find that stock markets in the region are below what can be expected, given economic and institutional fundamentals. In particular, we find that there is a shortfall in domestic stock market activity (market capitalization, trading, and capital raising) in Latin America after controlling for many factors, including per capita income, macroeconomic policies, and measures of the legal and institutional environment.

We discuss how different lines of thought would assess this gap between predicted and observed outcomes. This exercise helps to gain a better understanding of the possible reasons for this divergence and sharpen the criteria to guide an appropriate reformulation of policy recommendations. We argue that two stylized views dominate the current reform debate in this regard. The first view, encapsulated in the message "be patient and redouble the effort," contends that the gap between expectations and observed outcomes is due to the combination of impatience with imperfect and incomplete reform efforts. This view argues that past reforms were basically right, that reforms needed in the future are essentially known, and that reforms have long gestation periods before producing visible results.⁶ The second view, encapsulated in the message "get the sequence right," claims that the gap is due to faulty reform sequencing. This view draws attention to the problems that arise when some reforms are implemented

6. Renditions of this view, in the more general context of assessing the impact of reforms on economic development, can be found, for instance, in Fernandez Arias and Montiel (2001), Krueger (2004), Singh et al. (2005), and World Bank (1997).

ahead of others and argues that key preconditions should be met before fully liberalizing domestic financial markets and allowing free international capital mobility.⁷

Though differing in diagnoses and policy prescriptions, these views are not necessarily incompatible, and both capture important aspects of the problem at hand, yielding considerable insights. Our main argument, however, is that neither of the two views may adequately address a number of salient questions posed by the evidence. We therefore propose a third, complementary view that is much less prescriptive. This view can be encapsulated in the message “revisit basic issues and reshape expectations.”⁸ It contends that, although more research is needed, it is difficult to pinpoint which factors may explain the relative underdevelopment of domestic capital markets in Latin America. Future research might find that the gap between predicted and observed outcomes is explained by some factor not included in the long list of controls used in this paper. Nevertheless, we claim that there might as well be important deficiencies with the expectations and design of past reforms. This view argues that policy initiatives need to take into account the intrinsic characteristics of developing countries (such as small size, lack of risk diversification opportunities, presence of weak currencies, and prevalence of systemic risk) and how these features limit the scope for developing deep domestic capital markets in a context of international financial integration. These limitations are difficult to overcome by the reform process. In other words, even if emerging economies carry out all the necessary reforms, they might not obtain a domestic capital market development comparable to that of industrialized countries.

The rest of the paper is structured as follows. Section 4.2 presents descriptive statistics on capital market development in Latin America and compares them to other regions. Section 4.3 describes the econometric estimations of whether stock market development in Latin America is close to the level predicted by fundamentals. Section 4.4 discusses the typological views on why the state of capital markets is different than expected. Section 4.5 concludes.

4.2 Capital Markets in Latin America

This section analyzes the state of capital markets in Latin American countries and compares them to those in other countries. Figure 4.1 shows different indicators of financial development for selected Latin American, East Asian, and developed countries. In particular, this figure presents data on credit to the private sector by financial institutions, stock market capitalization, and the amount outstanding of private sector domestic

7. This view is articulated, for example, in Bhagwati (1998) and Stiglitz (2002).

8. This view is described in more detail in de la Torre and Schmukler (2006).

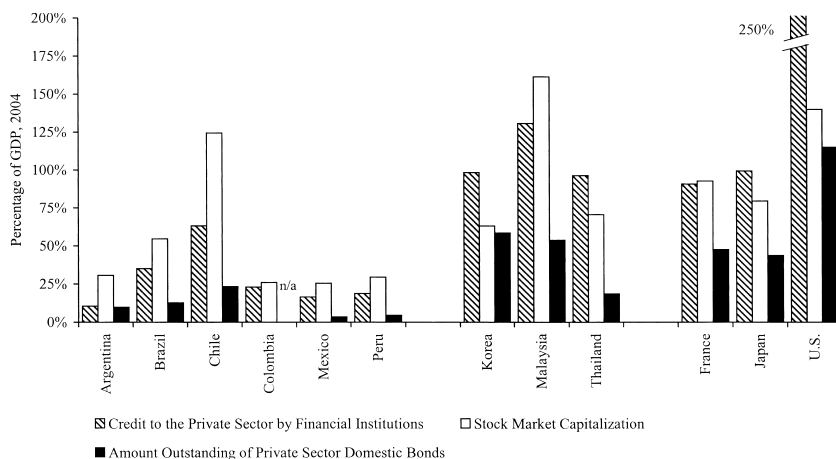


Fig. 4.1 Domestic financial sector development across countries

Note: This figure shows credit to the private sector by financial institutions over GDP, domestic stock market capitalization over GDP, and the amount outstanding of private sector domestic bonds over GDP at year-end 2004 for selected countries.

Sources: BIS, IMF International Financial Statistics, S&P Emerging Markets Database, World Bank.

bonds, all as a percentage of gross domestic product (GDP), at year-end 2004. As this figure shows, although there are differences among Latin American countries, most countries in the region have significantly smaller financial markets than G7 and East Asian countries. Chile is the only exception, as the size of its financial markets, especially its stock market, vastly exceeds that of other Latin American countries and also compares favorably with financial markets in developed and East Asian countries. However, analyzing measures of actual stock market activity, such as value traded, shows that Chile's stock market remains underdeveloped compared to markets in East Asia and developed countries.⁹

Figures 4.2 and 4.3 display average values of different measures of stock market development for Latin American, G7, and East Asian countries for the years 1990 and 2004. As figure 4.2 shows, stock markets in Latin America have grown considerably over the last decades. The average domestic stock market capitalization in terms of GDP in the seven largest markets in the region (Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela) more than tripled between 1990 and 2004. Value traded in domestic stock markets also increased significantly during this period, from an

9. Value traded over GDP reached 12.4 percent in Chile in 2004, compared to 65.5 percent in France, 74.2 percent in Japan, and 165.9 percent in the United States. The East Asian countries presented in the graph also had significantly higher levels of trading activity than Chile, with value traded over GDP reaching 94 percent in Korea, 50.8 percent in Malaysia, and 66.7 percent in Thailand.

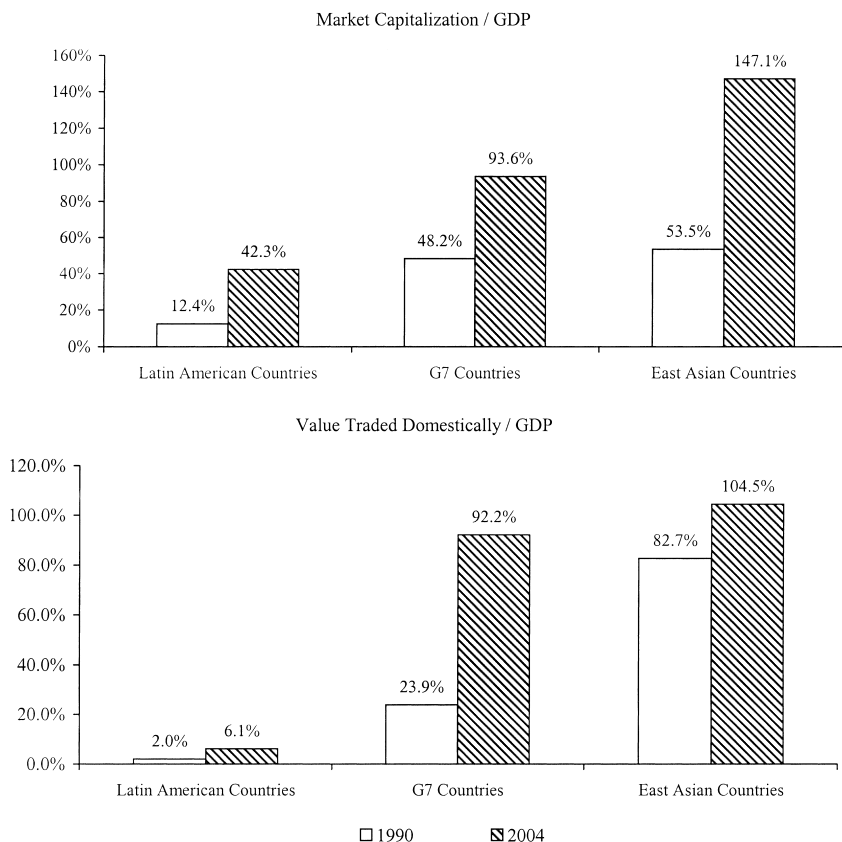


Fig. 4.2 Domestic stock market development

Notes This figure shows market capitalization over GDP and value traded domestically over GDP. The series are averages across countries. The data for G7 countries are averages for Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. The data for East Asian countries are averages for Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand. The data for Latin American countries are averages for Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

Sources: S&P Emerging Markets Database, World Bank.

average of 2.0 percent of GDP in 1990 to 6.1 percent in 2004. Despite this strong growth, stock markets in Latin America are still small when compared to those in other regions. At the end of 2004, stock market capitalization in this region reached 42.3 percent of GDP, compared to 93.6 and 147.1 percent in G7 and East Asian countries, respectively. Regional differences are more striking when analyzing trading activity, with Latin American countries appearing to be caught in a low liquidity trap. While value traded in domestic stock markets stood at 6.1 percent of GDP in Latin

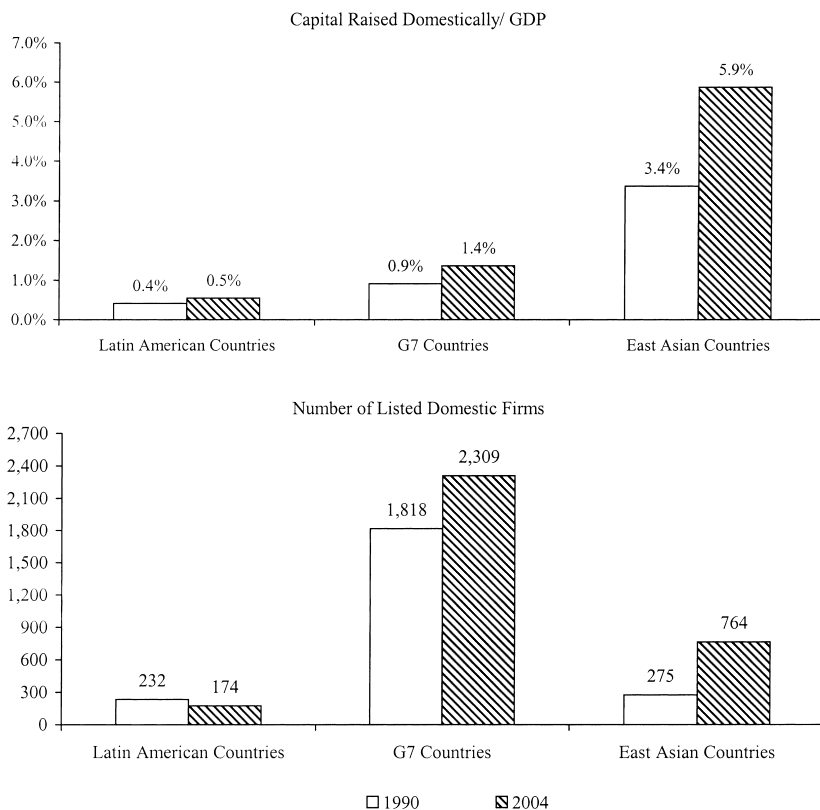


Fig. 4.3 Domestic stock market development

Notes: This figure shows capital raised over GDP and the number of listed domestic firms. The series are averages across countries. The data for G7 countries are averages for Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. The data for East Asian countries are averages for Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand. The data for Latin American countries are averages for Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

Sources: S&P Emerging Markets Database, World Federation of Exchanges, World Bank.

America in 2004, it reached 92.2 percent in G7 countries and 104.5 percent in East Asia.¹⁰

Similar regional differences are visible when analyzing capital raising activity (figure 4.3). Capital raised as a percentage of GDP in Latin American

10. We also estimated the figures for East Asia excluding Hong Kong, as it may serve as a regional financial center for corporations from mainland China and other Asian countries. Although this reduces the average values for East Asian countries, these countries still show significantly higher stock market capitalization and trading than Latin American countries. When excluding Hong Kong, the average capitalization for the remaining East Asian countries included in the figures stood at 83.6 percent of GDP in 2004, whereas their value traded in that year reached 77 percent of GDP.

stock markets is lower than in other regions, reaching 0.5 percent in 2004, compared to 1.5 percent in G7 countries and 5.9 percent in East Asia.¹¹ The average number of firms listed in domestic stock markets in Latin America has decreased over the last decades, from 232 in 1990 to 174 in 2004.¹² This reduction stands in contrast to the increase in the number of listings experienced by both G7 and East Asian countries during this period.¹³

Domestic bond markets in both developed and developing countries have experienced considerable growth over the last decades. This growth was especially pronounced in East Asia following the 1997 crisis, as governments and firms increasingly switched to bond financing.¹⁴ In Latin America, most progress has been made in the development of public bond markets, with the stock of domestic government bonds outstanding increasing from 12.3 percent of GDP in 1993 to 20.7 percent in 2004 (figure 4.4).¹⁵ Public sector bond markets in the region present a development level close to that of East Asian markets. On the other hand, in spite of their growth over the last decades, private bond markets in Latin America remain underdeveloped. The amount outstanding of domestic private sector bonds in the region stood at 10.7 percent of GDP in 2004, compared to an average of 36.3 percent in East Asia and 47.7 percent in G7 countries.

4.3 Empirical Analysis of Stock Market Development in Latin America

The data on stock and bond markets in Latin America presented in the previous section show that, although securities markets in the region have grown substantially since 1990, Latin American capital markets remain underdeveloped when compared to markets in industrial and East Asian

11. Capital raising activity tends to be very volatile, varying widely from year to year. This could generate some concerns about whether the years presented in figure 4.3 are representative of the general patterns. However, similar regional differences are visible if one considers average values from 1990 to 2004. The average annual amount of capital raised in domestic stock markets in Latin American countries for this period reached 0.8 percent of GDP, compared to 1.3 percent in G7 countries and 4.6 percent in East Asia.

12. The reduction in the number of listed firms has been associated with the increasing migration of Latin American firms to international markets. Merger and acquisition activity, as well as majority shareholders trying to increase their controlling stakes, have also been brought forward as possible explanations for the growing stock market delistings in Latin America (see de la Torre and Schmukler 2006).

13. Different explanations have been proposed for the diverging trend in stock market listings between Latin America and East Asia. For one, unlike the European and U.S. stock markets, which performed well during the 1990s, stock markets in Hong Kong and Tokyo, the natural candidates for migration in Asia, have not done well in recent years (World Bank 2004).

14. Following the financial crisis, it was argued that capital markets in East Asia had not been diversified enough and that well-developed bond markets would have made several Asian economies less vulnerable to the crisis (see, for example, Batten and Kim 2001; Herring and Chatusripitak 2001).

15. The sample of East Asian and Latin American countries and the period presented in this figure differ from those used in figures 4.2 and 4.3 due to data availability.

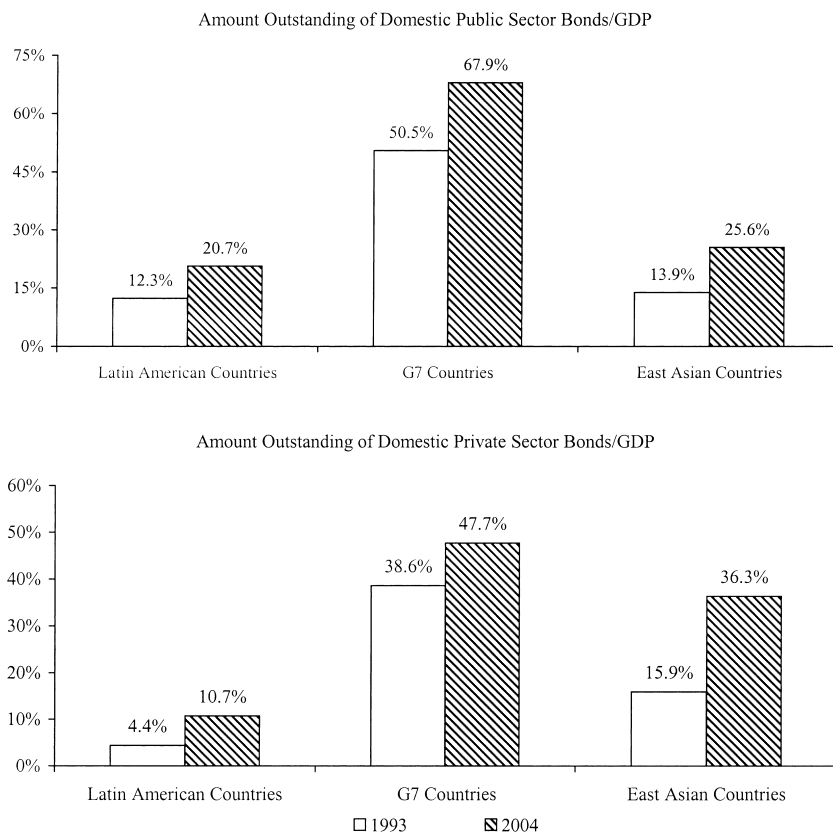


Fig. 4.4 Domestic bond market development

Notes: This figure shows the amounts outstanding of public and private sector bonds in domestic markets over GDP. The series are averages across countries. The data for G7 countries are averages for Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. The data for East Asian countries are averages for Hong Kong, Korea, Malaysia, Taiwan, and Thailand. The data for Latin American countries are averages for Argentina, Brazil, Chile, Mexico, and Peru.

Sources: BIS, World Bank.

countries. This evidence suggests that the high expectations of the early 1990s about capital market development in the region have not been met. An open question is whether this lack of development is a consequence of the failure to build an environment conducive to capital market development, despite the intense reform effort, or if even when Latin American countries have built such an environment, markets have failed to develop as predicted. In this section we focus on answering this question. Doing so requires a formal analysis of the determinants of capital market develop-

ment and then testing whether, once we control for those determinants, Latin American countries have less-developed capital markets. We focus our analysis on stock markets, as data on different measures of stock market development are available for a large cross-section of countries and a relatively long time series. In contrast, comprehensive data on domestic bond market development are available for a shorter period and a smaller sample of economies, making it more difficult to capture differences between Latin America and other regions. We first describe the dependent and explanatory variables and the methodology we use, then present the regression results, and finally discuss some robustness tests.

4.3.1 Data and Methodology

For the empirical analysis of stock markets, we follow Claessens, Klingebiel, and Schmukler (2006), who analyze the factors driving domestic stock market development and internationalization. We use three measures of domestic stock market development: market capitalization, value traded, and capital raised, all as a percentage of GDP.¹⁶

The data on market capitalization and value traded on the major local stock exchanges come from the Standard & Poor's Global Stock Markets Factbook and cover the period 1975 to 2004 for 117 countries. The amount of equity capital raised by domestic firms in the local stock market comes from the World Federation of Exchanges and covers the period 1982 to 2004 for 46 countries.

In terms of explanatory variables, we include several factors found to be important in the literature on stock market development. First, because more-developed countries tend to have deeper domestic stock markets (see, for example, La Porta, Lopez de Silanes, and Shleifer 2006; La Porta et al. 1997; and Rajan and Zingales 2003), we use GDP per capita as a measure of countries' overall economic development. Higher income countries also tend to have better institutional and legal environments, which have been found to matter for financial development (see Beck and Levine 2005).¹⁷ To further address this issue, we include an index of the strength of minority shareholder rights from Djankov et al. (2008).¹⁸

The regressions include two alternative indicators of macroeconomic

16. We also estimated regressions using turnover (defined as value traded over market capitalization) and obtained results similar to those reported below.

17. Gross domestic product per capita is highly correlated with different measures of the institutional environment. For our sample, the correlation between GDP per capita and indexes of bureaucratic quality, corruption, and law and order reported by the International Country Risk Guide (ICRG) service is 0.73, 0.67 and 0.71, respectively, and in all cases it is significant at the 1 percent level. All the results reported in the paper are robust to replacing GDP per capita with any of these measures of the institutional environment.

18. Djankov et al. (2008) present revised estimates of the antidirector rights index from La Porta et al. (1998) and expand the sample of countries covered. All the results reported in the paper are robust to replacing this updated index with the original measure from La Porta et al. (1998).

soundness, the annual inflation rate and the government deficit over GDP, given that a better macroeconomic environment promotes financial development (see Bencivenga and Smith 1992; Boyd, Levine, and Smith 2001; and Huybens and Smith 1999).

We include three alternative variables to control for the extent of financial openness and liberalization, as that has been found to affect stock market development (see Bekaert and Harvey 2000, 2003; Edison and Warnock 2003; Henry 2000; and Levine and Zervos 1998). First, we include a *de jure* measure of capital account liberalization constructed by Chinn and Ito (2006). Second, as we are analyzing stock markets, we also use a *de jure* indicator of stock market liberalization. Our data for dating the liberalization of stock markets come from three sources: Bekaert, Harvey, and Lundblad (2005), who present official liberalization dates, mostly for developing countries; Kaminsky and Schmukler (2003), who construct an index of the extent of stock market liberalization which also includes developed economies; and Vinhas de Souza (2005), who extends this index to Eastern European countries.¹⁹ We combine these three sources to get the widest possible coverage.²⁰ Finally, as a measure of *de facto* openness, we use equity flows, including both portfolio equity flows and foreign direct investment (FDI) flows, relative to GDP. This variable captures the effective integration with international capital markets and the *de facto* openness of the stock market; it can also be viewed as a measure of foreign demand for domestic equity.²¹

We also control for the possibility that local stock market development is affected by the growth opportunities that firms face. Growth opportunities may be particularly relevant for explaining capital raising behavior, as the literature on initial public offerings (IPOs) has highlighted (see Ritter and Welch [2002] for a review). Countries with better growth opportunities may need larger stock markets to satisfy a higher demand for external funds. Therefore, we include the global growth opportunities index from Bekaert et al. (2006), which measures how each country's industry mix is

19. For the data from Kaminsky and Schmukler (2003) and Vinhas de Souza (2005), we consider the first year when a country's stock market is fully liberalized as the liberalization date. Alternatively, we also used the date of the first partial liberalization and obtained similar results.

20. We also ran regressions using only the Bekaert, Harvey, and Lundblad (2005) dates and their "first sign" stock market liberalization measure, which is based on the earliest of three possibilities: the launching of a country fund, an ADR announcement, and the official liberalization date. We obtained similar results using these measures.

21. We include FDI flows because those flows, apart from new investment, also represent purchases of existing equity. In fact, equity flows are classified as FDI flows when they represent a purchase of at least 10 percent of a company's equity. Note that this variable could be affected by endogeneity, as foreign investment tends to go to countries with more developed financial markets. To reduce this potential problem and because good instruments are hard to obtain, we use this variable lagged one period. To check that our results are not affected by the inclusion of this variable, we also report estimations without it and find that the coefficients on the rest of the variables are unaffected.

priced in global capital markets, using the price earnings ratios of global industry portfolios.²²

We additionally include GDP as a control variable in our regressions. Securities markets can gain efficiency by expanding their volume and number of participants because of economies of scale and scope and network externalities.²³ Consistent with these arguments, the literature has found the size of the economy to be an important factor for the development of liquid, well-functioning securities markets. See, for example, McCauley and Remolona (2000) and Shah and Thomas (200).

Finally, to test whether the level of stock market development in Latin America differs from that predicted from fundamentals, we include a Latin American dummy variable, which takes the value one if the country is located in Latin America and the Caribbean and zero otherwise.²⁴ If stock market development in Latin America is close to the level predicted by the region's fundamentals, this dummy should not be significant.

After removing outliers, countries with missing data on the independent variables, and countries with less than five annual observations, we are left with a sample of ninety-five countries covering the period 1975 to 2004.²⁵ The sample includes eighteen Latin American countries, which account on average for seventeen percent of the observations used in the regressions.²⁶ In all cases, we pool the data over time and across countries. Regarding the estimation technique, we use least squares estimators adjusting the standard errors for clustering at the country level.²⁷

4.3.2 Regression Results

The results for stock market capitalization over GDP, value traded over GDP, and capital raised over GDP are presented in tables 4.1, 4.2, and 4.3,

22. Bekaert et al. (2006) use two country-specific industry weightings to calculate each country's growth opportunities index. One is based on the relative market capitalization of each industry in the local stock market. The other one is based on the relative value added of each industry in the respective country. We report the results using the latter weighting scheme but also estimated the regressions using the former and obtained similar results.

23. Network effects are an intrinsic feature of securities trading: the benefits of participating in a given market increase with the number of participants (Economides 1993, 1996; Di Noia 1999). This generates positive feedback, as a liquid market attracts more participants and each new participant brings additional trading opportunities and liquidity, benefiting all market participants and making the market more attractive to others. There is also evidence of economies of scale in stock exchange activities, especially regarding order execution (Malkamaki 1999).

24. For defining this dummy we consider the World Bank regional classification, which includes Latin American and Caribbean countries. We also estimated all the regressions excluding the Caribbean countries and obtained similar results.

25. We also estimated the regressions constraining the sample to countries with at least three annual observations and without imposing any restrictions on the number of observations and obtained results similar to those reported in the paper in both cases.

26. See table 4A.1 for the list of countries covered.

27. We also estimated all the regressions using panel feasible generalized least squared (FGLS), allowing for heteroscedastic error structures and different autocorrelation coefficients within countries, and obtained similar results.

respectively. The tables provide in the first column the results for a regression with GDP per capita, inflation, and capital account liberalization as the only explanatory variables. The tables then report a regression with government deficit over GDP instead of inflation as these two constitute alternative indicators of macroeconomic soundness and stability. To keep the size of the tables manageable, we just continue to use one of the macro variables, government deficit over GDP.²⁸ In the third and fourth column, the tables report regressions with the stock market liberalization index and equity flows as a percentage of GDP, respectively, replacing the capital account liberalization dummy. In the fifth and sixth columns, the shareholder rights index is introduced. In the sixth column, we include the growth opportunities measure. In the seventh and eighth columns, we control for GDP instead of GDP per capita. We do not include GDP and GDP per capita in the same specification as these variables are highly correlated.²⁹ Note, however, that all our results are robust to controlling for both variables and to replacing GDP per capita with GDP. We discuss the results in turn.

The regression results for market capitalization as a ratio of GDP (table 4.1) indicate that stock market development in our sample is related to the variables in ways already identified in the literature. In particular, GDP per capita, financial openness (measured by stock market liberalization and equity flows over GDP), shareholder rights, and the size of the economy are positively and significantly associated with market capitalization, while government deficits are negatively related to stock market development. The growth opportunities variable enters positively and significantly in the regressions.

More relevant for our analysis, the dummy variable for Latin America enters negatively and significantly in all the specifications. The effect is also economically relevant: the average coefficient for the dummy in these regressions is -0.17 , which means that market capitalization over GDP in Latin American countries is on average 17 percentage points below the level predicted by their fundamentals and policies. This is a large difference, given that the average market capitalization over GDP for Latin American countries in these regressions is 18 percent.

Similar conclusions are obtained when analyzing value traded domestically over GDP (table 4.2). Most of the control variables have the expected sign: more developed countries, with sounder macroeconomic policies and more financial openness, tend to have higher trading activity. Also, countries with better growth opportunities have more domestic trading. The dummy for Latin American countries enters negatively and significantly at the 1 percent level in all the specifications, indicating that countries in the

28. We choose this variable because inflation is not statistically significant in most regressions. We obtained results similar to those reported in the paper when controlling for both inflation and fiscal deficit.

29. The correlation between the logarithm of GDP per capita and the logarithm of GDP is 0.54 for our sample of countries and is significant at the 1 percent level.

Table 4.1 Domestic stock market development—Market capitalization

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Market capitalization/GDP							
Log of GDP per capita	0.104*** (4.321)	0.094*** (3.344)	0.119*** (4.060)	0.104*** (4.665)	0.101*** (4.254)	0.077*** (3.190)		
Log of GDP							0.076*** (3.432)	0.054*** (2.176)
Shareholder rights					0.091** (2.229)	0.078** (1.736)	0.075* (1.719)	0.059 (1.260)
Log (1 + inflation)	-0.057 (1.234)							
Government deficit/GDP		-2.403*** (3.515)	-2.215*** (3.117)	-1.336*** (3.325)	-1.314*** (3.554)	-1.224*** (3.044)	-1.636*** (3.795)	-1.396*** (3.151)
Capital account liberalization	0.056** (2.088)	0.036 (1.196)						
Stock market liberalization			0.111** (2.439)					
Total equity flows/GDP (one year lagged)				4.266*** (2.778)	5.378*** (3.304)	8.693*** (4.609)	6.482*** (3.742)	9.891*** (5.107)
Global measure of country growth opportunities						0.245*** (4.595)		0.218*** (4.447)
Latin American dummy	-0.126* (1.880)	-0.194*** (3.082)	-0.177*** (2.812)	-0.168*** (2.995)	-0.132** (2.455)	-0.167*** (2.971)	-0.163** (2.448)	-0.208*** (3.236)
No. of observations	1,661	1,364	1,419	1,291	1,133	836	1,133	836
No. of countries	87	79	82	83	63	45	63	45
No. of Latin American countries	18	18	16	15	12	7	12	7
R ²	0.243	0.259	0.235	0.268	0.348	0.445	0.331	0.426

Notes: This table shows ordinary least square regressions with standard errors adjusted for clustering at the country level for a panel of ninety-five countries between 1975 and 2004. A constant is estimated but not reported. Absolute values of *t*-statistics are in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 4.2 Domestic stock market development—Value traded domestically

	Value traded domestically/GDP							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log of GDP per capita	0.081*** (4.356)	0.062*** (3.087)	0.099*** (3.182)	0.074*** (3.105)	0.074*** (3.065)	0.063*** (2.993)		
Log of GDP							0.081*** (4.019)	0.076*** (3.419)
Shareholder rights					0.020 (1.446)	0.012 (0.728)	0.007 (0.464)	-0.007 (0.320)
Log (1 + Inflation)	0.015 (0.771)							
Government deficit/GDP		-1.321*** (3.654)	-1.020** (2.145)	-0.778*** (2.668)	-0.810** (2.493)	-0.728** (2.045)	-0.976** (2.634)	-0.735* (1.985)
Capital account liberalization	0.030** (2.433)	0.024** (2.409)						
Stock market liberalization			0.058* (1.768)					
Total equity flows/GDP (one year lagged)				2.579*** (3.006)	3.007*** (2.923)	4.625*** (3.002)	3.928*** (3.502)	5.732*** (3.627)
Global measure of country growth opportunities						0.252*** (3.944)		0.188*** (4.030)
Latin American dummy	-0.143*** (5.513)	-0.125*** (4.488)	-0.145*** (3.538)	-0.128*** (4.466)	-0.120*** (3.710)	-0.137*** (3.283)	-0.134*** (3.559)	-0.169*** (3.689)
No. of observations	1,627	1,342	1,394	1,268	1,138	830	1,138	830
No. of countries	83	75	78	80	64	46	64	46
No. of Latin American countries	16	16	14	14	12	7	12	7
R ²	0.206	0.207	0.141	0.210	0.226	0.294	0.285	0.340

Notes: This table shows ordinary least square regressions with standard errors adjusted for clustering at the country level for a panel of ninety-five countries between 1975 and 2004. A constant is estimated but not reported. Absolute values of *t*-statistics are in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

region have lower value traded domestically than warranted by their fundamentals.

When analyzing capital raised domestically over GDP (table 4.3), we find similar results as for the other two measures of stock market development, although fewer variables are statistically significant, in part due to the lumpy and volatile nature of capital raising activity. Countries with sounder macro policies tend to see more capital raising, although government deficit over GDP is not always statistically significant. More open countries (as measured by equity flows over GDP), as well as countries with a better legal protection of shareholder rights and more growth opportunities, also have higher capital raising activity. The Latin American dummy enters negatively and significantly at the 1 percent level in all specifications.

Overall, the results in tables 4.1, 4.2, and 4.3 yield similar conclusions: countries with higher income, sounder macroeconomic policies, better protection of shareholder rights, greater financial openness, larger economies, and higher growth opportunities, have more developed local stock markets. Regarding Latin America, the results indicate that there is a shortfall in the actual development of stock markets in the region, relative to its fundamentals. In other words, Latin American countries have lower stock market development than countries with similar fundamentals and policies in other regions.

4.3.3 Robustness Tests

The results presented in this section show that stock markets in Latin American are below what can be expected, given the region's economic and institutional fundamentals and policies. Given the relevance of these results, we subjected them to a number of robustness tests by including several additional control variables suggested by the literature on capital market development.

First, we controlled for macroeconomic volatility as the empirical evidence suggests that the depth of domestic financial systems is inversely related to volatility (see, for example, IDB 1995). To the extent that macroeconomic volatility might have been higher in Latin America than in other regions and was not fully captured by the control variables included in the regressions, this could explain the negative sign and statistical significance of the Latin American dummy.³⁰ To address this issue, we reestimated the regressions including measures of inflation and interest rate volatility at different time horizons.³¹ We find that these variables tend to have a negative

30. Note that the regressions include two indicators of macroeconomic soundness, the annual inflation rate and the government deficit over GDP.

31. We controlled for the volatility of inflation and real interest rates over the previous three, five, and ten years. Also, as Boyd, Levine, and Smith (2001) highlight the nonlinear relation between inflation and financial-sector performance, we explored nonlinear effects of inflation on stock market development. Although the results suggest that nonlinear effects might be important, they do not affect the basic conclusions reported in the tables.

Table 4.3 Domestic stock market development—Capital raised domestically

	Capital raised domestically/GDP							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log of GDP per capita	-0.001 (0.891)	-0.002 (1.223)	-0.001 (0.272)	-0.003 (1.553)	-0.002 (1.527)	-0.003** (2.119)		
Log of GDP							0.001 (1.125)	0.000 (0.631)
Shareholder rights					0.004*** (2.741)	0.003** (2.453)	0.005** (2.663)	0.004** (2.348)
Log (1 + Inflation)	-0.003 (1.494)							
Government deficit/GDP		-0.098*** (2.878)	-0.092** (2.550)	-0.015 (0.931)	-0.013 (0.759)	-0.018 (1.094)	-0.004 (0.246)	-0.007 (0.422)
Capital account liberalization	0.001 (0.777)	0.000 (0.321)						
Stock market liberalization			0.005* (1.874)					
Total equity flows/GDP (one year lagged)				0.256*** (4.159)	0.217*** (3.355)	0.229*** (3.370)	0.220*** (3.620)	0.226*** (3.514)
Global measure of country growth opportunities						0.012*** (3.525)	0.011*** (3.116)	0.011*** (3.116)
Latin American dummy	-0.010*** (2.754)	-0.013*** (3.077)	-0.013*** (3.497)	-0.014*** (4.200)	-0.013*** (5.302)	-0.014*** (6.023)	-0.010*** (5.193)	-0.011*** (5.580)
No. of observations	688	564	617	520	505	468	505	468
No. of countries	40	37	40	35	33	31	33	31
No. of Latin American countries	5	5	5	5	5	4	5	4
R ²	0.036	0.085	0.045	0.184	0.231	0.254	0.224	0.237

Notes: This table shows ordinary least square regressions with standard errors adjusted for clustering at the country level for a panel of forty-six countries between 1982 and 2004. A constant is estimated but not reported. Absolute values of *t*-statistics are in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

(although usually not statistically significant) relation with stock market development, but their inclusion does not affect the sign and significance of the Latin American dummy. Also, the size of the coefficients on this dummy is mostly unaffected by the inclusion of these controls.

Second, the lower level of stock market development in Latin American countries may be due to a worse institutional environment in these countries, which was not adequately captured by the control variables used in the regressions. To address this issue, we included a number of additional measures of the quality of the institutional framework. In particular, we controlled for indicators of corruption, bureaucratic quality, law and order, political risk, government stability, and investment profile developed by International Country Risk Guide; an index of the quality of accounting standards constructed by Bushman, Piotroski, and Smith (2004); and different proxies for the functioning of the judicial system, including the time it takes to resolve disputes (Djankov et al. 2003) and an index of the overall efficiency of the judicial system, as reported by Business International Corporation. We also controlled for a country's legal tradition, as this has been found to be associated with the protection of shareholder rights (La Porta et al. 1997, 1998), the efficiency of the judicial system (Djankov et al. 2003), and the protection of property rights (Beck, Demirgüç-Kunt, and Levine 2003). While many of these variables are statistically significant and have the sign suggested by the literature, the Latin American dummy remains statistically significant and negative and the size of its coefficients is mostly unchanged.

Finally, we controlled for the level of savings in each country. A higher savings level means that more local resources are available to be invested in the domestic financial system and therefore may be associated with a higher stock market development (see, for example, Garcia and Liu 1999).³² The relative underdevelopment of stock markets in Latin America may be explained by the low savings rate in the region.³³ To address this issue, we reestimated the regressions controlling for savings as a percentage of GDP. This variable tends to be positive (although usually not statistically significant); however, its inclusion does not affect the sign, significance, or size of the Latin American dummy.

Although more research is needed, the robustness of the results indicates

32. Causality may also run in the other direction, from more developed financial markets to higher savings. For instance, deeper domestic financial markets may offer investors more investment opportunities and higher returns, potentially resulting in more savings. To address this concern, we use savings lagged one period.

33. Savings rates in Latin America have stagnated over the last two decades, standing at about 17 percent of GDP. In contrast, savings in East Asia averaged more than 30 percent of GDP over this period. Several studies have pointed to low savings rates in Latin America as a significant constraint to the region's growth (see, for example, Edwards [1995] and Schmidt-Hebbel and Servén [1997]). See Plies and Reinhart (1999) for an overview of the behavior of savings in Latin America.

that it is difficult to identify the factors behind the underdevelopment of Latin American capital markets. This suggests that certain characteristics of Latin American countries, beyond those usually highlighted in the literature on capital market development, limit the scope for developing deep domestic securities markets in the region.

4.4 What Went Wrong and What to Do Next?

The evidence reported in sections 4.2 and 4.3 shows that capital markets in Latin America are underdeveloped, not only compared to markets in East Asia and industrialized nations, but also relative to the level predicted by the region's fundamentals and policies. We now turn to the analysis of these two findings to draw lessons for the capital market reform agenda going forward. Assessing the evidence is a process that, by nature, involves significant resort to judgment calls. There is thus ample scope for differing yet reasonable explanations for the gap between expectations and outcomes. This section aims at providing a flavor of the range of perspectives on this question by identifying three typological views. This typology is used mainly for presentational purposes, to help depict the nature of the debate and highlight the policy issues under discussion. A more detailed discussion of these issues is presented in de la Torre and Schmukler (2006).

The first view, encapsulated in the message "be patient and redouble the effort," ascribes the observed gap between outcomes and expectations to a combination of insufficient reform implementation with impatience. In effect, despite what many claim, key reforms were in some cases not even initiated, while other reforms were often implemented in an incomplete or inconsistent fashion. In many cases, laws and regulations were approved, but they were not duly implemented, nor were they adequately enforced.³⁴ Moreover, policymakers have been too impatient, often expecting results to materialize sooner than warranted. However, complex reforms tend to have long gestation periods. According to proponents of this view, the emphasis going forward should be on forging ahead persistently with the hard work of improving the enabling environment for capital markets; enhancing market discipline through greater competition; upgrading the regulatory and supervisory framework for securities markets; and improving key areas such as accounting and disclosure standards, corporate governance practices, and securities trading, custody, clearing, and settlement systems.³⁵

34. To the extent that the quality of reforms was lower in Latin America and the control variables used in our regressions did not capture this difference, this could explain the significance and negative sign of the Latin American dummy.

35. This is broadly consistent with our empirical findings, as our results show that economies with sounder macro policies, better protection of shareholder rights, and greater openness tend to have more developed stock markets. Also consistent with this view, de la Torre, Gozzi, and Schmukler (2006) find that capital market-related reforms tend to be followed by significant increases in domestic stock market capitalization, trading, and capital raising.

The second view, encapsulated in the message “get the sequence right,” claims that the gap between outcomes and expectations is due to faulty reform sequencing. This view contends that capital market reforms were—to one degree or another—part of the problem rather than the solution and draws attention to the problems that arise from the adoption of certain reforms before others are in place.³⁶ The most familiar rendition of this view focuses on the pitfalls of premature financial market liberalization, arguing that liberalizing the financial system before achieving a minimum threshold of institutional strength—in terms of the legal and regulatory framework, supervisory capacity, accounting and disclosure standards, and so forth—is likely to exacerbate distortions in financial markets.³⁷ According to proponents of this view, the task of recasting the reform agenda going forward hinges on the success of efforts devoted to systematically clarifying sequencing issues.

The third view, encapsulated in the message “revisit basic issues and reshape expectations,” arises from the identification of shortcomings in the previous two views. This view focuses on the gaps in our knowledge and is, as a result, much less prescriptive. It contends that policy initiatives need to take into account the intrinsic characteristics of developing countries (such as small size, lack of risk diversification opportunities, presence of weak currencies, and prevalence of systemic risk), and how these features limit the scope for developing deep domestic capital markets. These limitations are difficult to overcome by the reform process. This view therefore calls for a more varied reform agenda, as a one-size-fits-all approach is destined to fail. It emphasizes that a key step in designing country-specific reforms going forward should be a determination of whether the emerging economy in question can sustain an active domestic market for private sector securities. It also argues that ultimately, any reform agenda for capital markets needs to be couched within a broader vision of financial development for emerging markets in the context of international financial integration.

Confronting the first two views with relevant aspects of the evidence leads to the conclusion that important things are inadequately addressed by them. Perhaps the most questionable aspect of both views, in light of the

36. To the extent that reform sequencing in Latin America was imperfect and worse than in other regions and that the control variables used in our regressions failed to capture this difference, this may account for the sign and significance of the Latin American dummy in the regressions.

37. A standard policy recommendation therefore is to upgrade the financial regulation and supervision and improve the health of the financial system before deregulating financial markets and opening up the capital account (see, for example, Johnston and Sundararajan [1999] and McKinnon [1993]). Not all sequencing arguments are related to financial liberalization. Some emphasize the building block nature of financial development, whereby interlinkages across different markets make certain reforms necessary for the success of others (see, for example, Karacadag, Sundararajan, and Elliott 2003).

evidence presented in this paper, is their implicit assumption that domestic capital market development in emerging economies should be measured against the benchmark of capital markets in industrialized countries. For the first two views, the reform path may be long and difficult, and it may require an adequate sequencing of reforms, but the expected outcome is, in most cases, only one. The expectation is that, as reforms advance, domestic capital markets in emerging markets will increasingly resemble those in developed countries. But it is difficult to accept this premise given the evidence presented so far. Despite the intense reform efforts, capital markets in Latin America remain underdeveloped, not only compared to other regions, but also relative to the level predicted by the region's fundamentals and policies. These results suggest that certain characteristics of Latin American countries, beyond those usually highlighted in the capital market reform literature, limit the scope for developing deep domestic markets. Therefore, it is very difficult to pinpoint which policies Latin American countries should pursue to overcome the lack of development of their capital markets.

A salient characteristic of many emerging economies that the reform debate has failed to adequately take into account is their small size. Secondary market liquidity is a positive function of market size and the related network and agglomeration effects. Consistent with this idea, our results show that the size of the economy is positively related to domestic stock market development. The small size of many emerging economies may therefore present a significant structural barrier for developing deep and liquid domestic markets. However, this factor alone does not account for the observed lack of capital market development in Latin America, as our estimations show that the regional dummy remains negative and significant when controlling for size. In the case of Latin America, the adverse effect of smallness may be exacerbated by the higher concentration exhibited by markets in the region (de la Torre and Schmukler 2006). In effect, a general pattern in Latin American markets is that only few firms are capable of issuing securities in amounts that meet the minimum thresholds for liquidity, and these securities are mostly purchased by few institutional investors that tend to follow buy and hold strategies, further contributing to low trading activity. In the case of equity markets, lack of trading is also the result of low float ratios (a low percentage of listed shares available for trading), reflecting concentrated ownership patterns and the reluctance to give up control. To the extent that these characteristics are more prevalent in Latin America than in other regions, this may account for the significance of the Latin American dummy in our regressions.

The policy discussion on capital market reform has tended to focus on the development of domestic financial systems. This fails to reflect the fact that, in a globalized context, financial development has much to do with the extent and type of integration with international financial markets. Fi-

nancial globalization calls for a more general approach to understanding financial development—one that looks at the domestic and international sides of the process simultaneously. In this perspective, successful financial development is best characterized as the sustainable deepening and broadening of access to financial services, regardless of whether such services are provided at home or abroad, by securities markets or other markets. A greater attention to financial globalization does not imply, however, that the much wider scope for cross-border financial contracting resulting from globalization renders domestic markets useless. It is difficult to imagine that international financial markets would become a perfect substitute of local markets in every respect.³⁸ Thus, the point is not to deny the relevance of local financial markets but to stress that such relevance acquires meaning under globalization to the extent that domestic markets are a complement, rather than a substitute, to the international market integration.

One significant policy concern about the financial globalization process is that the increasing migration of firms to international financial centers may affect domestic stock markets adversely as too little activity remains at home.³⁹ This might help to explain our empirical results, as the evidence shows that the level of internationalization of Latin American stock markets far exceeds that of other regions (de la Torre and Schmukler 2006). To the extent that this higher level of internationalization was not captured by the controls included in our regressions and that internationalization adversely affects domestic markets, this may explain the sign and significance of the Latin American dummy.

4.5 Conclusions

In this paper, we analyzed the state of capital markets in Latin America. We found that despite the intense reform effort, capital markets in the region remain underdeveloped compared to markets in East Asia and developed countries. Furthermore, we found that stock markets in Latin America are below what can be expected, given the region's economic and institutional fundamentals. In particular, our results indicate that there is a shortfall in domestic stock market activity (market capitalization, trading, and capital raising) in the region after controlling for many factors, including per capita income, macroeconomic policies, the size of the economy, and measures of the legal and institutional environment.

We described alternative ways of interpreting this evidence and dis-

38. Guiso, Sapienza, and Zingales (2004) find that local financial development is an important determinant of the economic success of firms (especially smaller ones) even in an environment where there are no frictions to capital movements.

39. A number of publications have expressed concerns that local markets are becoming illiquid due to internationalization (see, for example, Bovespa 1996; Federation des Bourses de Valeurs 2000; *Financial Times* 1998; *Latin Finance* 1999; and *The Economist* 2001).

cussed the lessons for the reform agenda. We argued that two stylized views dominate the current debate. The first contends that the gap between expectations and outcomes is due to the combination of impatience with imperfect and incomplete reform efforts. The second claims that the gap is due to faulty reform sequencing. Though differing in diagnoses and policy prescriptions, these views are not necessarily incompatible, and both capture important aspects of the problem at hand. Our main argument, however, is that neither of the two views may adequately address a number of salient questions posed by the evidence. The third, complementary view is much less prescriptive. It highlights the need to step back, revisit certain basic issues, and reshape expectations, as a prior step to ensure more solid grounds for a reformulation of the reform agenda.

Our study comes with several caveats. Although we used as explanatory variables what we believe are the main drivers of stock market development, some variables were not included. For example, the quality of the banking system and securities market infrastructure (like the efficiency and reliability of clearing and settlement systems) may be important determinants of domestic market development. Furthermore, it is possible that the variables we used as controls are too general and fail to capture specific aspects of the institutional and regulatory framework that are particularly relevant for domestic stock market development. To the extent that Latin American countries score worse than other countries in those respects, this may help to explain the significance and negative sign of the Latin American dummy in our regressions. However, one potential difficulty in performing empirical analysis is that some factors that are relevant for capital market development may show little or no variation over time, making it difficult to separate their effects from those of a simple regional dummy. Finally, while we discussed different factors that may explain our results, we kept the discussion at a general level and have not evaluated our hypotheses empirically. Thus, we believe that our conclusions should remain tentative and that further research is needed to identify the factors behind the lower level of capital market development in Latin America unearthed by our analyses.

Appendix

Table 4A.1 List of countries

Argentina ^a	Hong Kong	Panama ^a
Armenia	Hungary	Paraguay ^a
Australia	Iceland	Peru ^a
Austria	India	Philippines, The
Bangladesh	Indonesia	Poland
Barbados ^a	Iran	Portugal
Belgium	Ireland	Romania
Bolivia ^a	Israel	Russia
Botswana	Italy	Saudi Arabia
Brazil ^a	Jamaica ^a	Singapore
Bulgaria	Japan	Slovak Republic
Canada	Jordan	Slovenia
Chile ^a	Kenya	South Africa
China	Kuwait	South Korea
Colombia ^a	Latvia	Spain
Costa Rica ^a	Lithuania	Sri Lanka
Côte d'Ivoire	Malawi	Swaziland
Croatia	Malaysia	Sweden
Cyprus	Malta	Switzerland
Czech Republic	Mauritius	Taiwan
Denmark	Mexico ^a	Tanzania
Ecuador ^a	Moldova	Thailand
Egypt	Mongolia	Trinidad and Tobago ^a
El Salvador ^a	Morocco	Tunisia
Estonia	Namibia	Turkey
Fiji	Nepal	United Kingdom
Finland	Netherlands, The	United States
France	New Zealand	Uruguay ^a
Germany	Nigeria	Venezuela ^a
Ghana	Norway	Zambia
Greece	Oman	Zimbabwe
Guatemala ^a	Pakistan	

Note: This table shows the list of countries used in the regressions.

^aThe country is in the Latin American and Caribbean region.

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Comment Ugo Panizza

In this paper Augusto de la Torre, Juan Carlos Gozzi, and Sergio Schmukler analyze the impact of financial reforms on the development of the Latin American capital market and provide possible explanations of why the reform process did not yield the expected results.

The paper contrasts two possible views of the dismal outcome of the reform process. The first view is the one maintained by the Talibans of the Washington consensus and is summarized by de la Torre, Gozzi, and Schmukler as “be patient and redouble the effort.” The second view still maintains that reforms could have a beneficial effect but claims that there was a problem with the sequencing of the reforms process. De la Torre,

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Gozzi, and Schmukler label this position as the “get the sequence right” view.¹ De la Torre, Gozzi, and Schmukler argue that both views capture important aspects of the problem but neither of them is fully satisfactory and propose a third view that they label “revisit basic issues and reshape expectations.” In particular, de la Torre, Gozzi, and Schmukler make the point that it is not easy to identify which policies should be pursued to foster the development of the Latin American capital market and that expectations about the outcome of the reform process should be adjusted. Furthermore, they recognize that there are intrinsic characteristics of emerging market countries that may limit the development of their capital markets.

I tend to agree with this conclusion. In fact, in a recent paper on the development of the Latin American bond market written with Eduardo Borensztein and Barry Eichengreen, we conclude that “While this clearly does not mean that policies and institutions do not matter [for the development of the Latin American bond market], it means that there is no convenient short-cut . . . the same policies that are necessary for economic development in general are also necessary for the development of domestic bond markets” (Borensztein, Eichengreen, and Panizza 2006, 21).

As I agree with the big picture, I will focus my discussion on some of the details of de la Torre, Gozzi, and Schmukler’s work. A way of doing so is to frame my discussion as if it were the outline of a “shadow paper,” that is, the paper I would like to write if I were asked to rewrite de la Torre, Gozzi, and Schmukler’s paper.²

The Shadow Paper

As there seem to be a disconnect between the title and the content of de la Torre, Gozzi, and Schmukler’s paper (the title talks about capital market, but the paper is really about the development of the stock market), I would title my shadow paper: “*Stock Market Development: Whither Latin America.*”

As in de la Torre, Gozzi, and Schmukler, I would start by comparing the development of Latin America’s stock market with those of East Asia and the industrial countries. However, I would put more attention on the metric used to compare these markets. This is not an irrelevant detail. Look, for instance, at figure 4C.1 and 4C.2 (both taken from Borensztein, Eichengreen, and Panizza 2006). These figures compare the development of the government, corporate, and financial bond markets in Latin America, East Asia, and industrial countries. Figure 4C.1 scales the size of the bond mar-

1. Interestingly, de la Torre, Gozzi, and Schmukler do not mention a third view. This is the view of the antiglobalizers who are extremely critical of any type of market friendly reform.

2. Clearly, my shadow paper is a rhetorical device that has the benefit of hindsight because it internalizes what I learned by reading de la Torre, Gozzi, and Schmukler’s work. Furthermore, it allows me to say what I would like to do without the need of actually doing it.

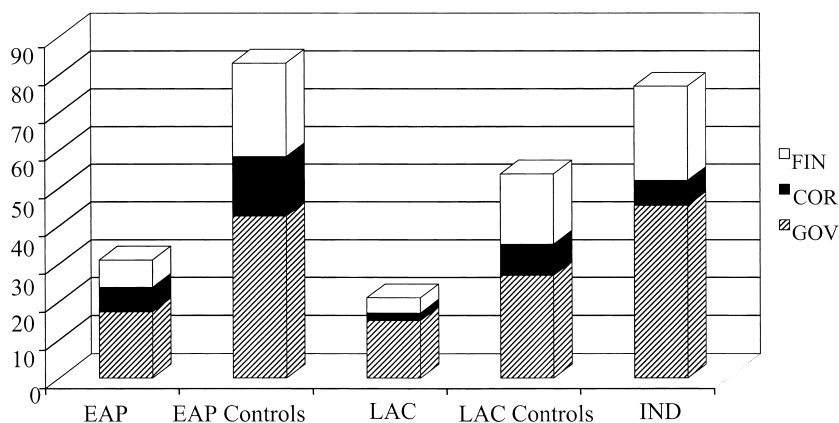


Fig. 4C.1 Outstanding bonds over GDP, with controls and without controls (simple average, 1991–2004)

Source: Borensztein, Eichengreen, and Panizza (2006).

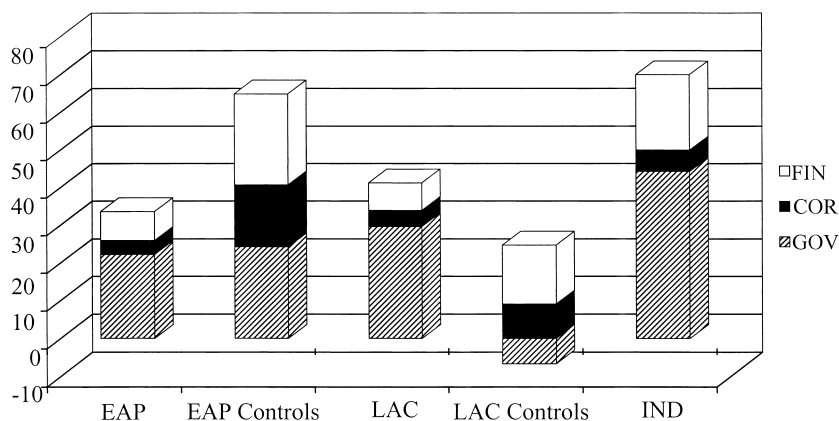


Fig. 4C.2 Outstanding bonds over domestic credit, with controls and without controls (simple average, 1991–2004)

Source: Borensztein, Eichengreen, and Panizza (2006).

ket by gross domestic product (GDP) and figure 4C.2 scales the size of the bond market by domestic credit. Focus for the moment on the columns with no controls. In figure 4C.1, we find that the industrial countries have the largest bond market, followed by East Asia (with a bond market which is 60 percent smaller than that of industrial countries), and Latin America (with a bond market which is 30 percent smaller than that of East Asia). In figure 4C.2, we still find that the industrial countries have the largest bond market, but we now find that Latin America has a bond market that is 20

percent larger than that of East Asia (furthermore, the difference with respect to industrial countries goes from 73 to 41 percent). This suggests that while Latin American bond markets are small relative to GDP, they are not so small relative to the size of the domestic financial sector. Hence, it is the Latin American financial sector and not merely the bond market that is underdeveloped. It would be interesting to conduct a similar experiment focusing on the Latin American stock market and check if there is something specific about this particular segment of the region's financial system or if, as in the case of the bond market, the underdevelopment of the Latin American stock market is just another aspect of the level of financial underdevelopment that characterizes Latin America.

After having compared simple averages (and possibly weighted averages), I would also follow de la Torre, Gozzi, and Schmukler and conduct a formal statistical analysis of the main drivers of cross-country differences in stock market development. Here, I have two issues with de la Torre, Gozzi, and Schmukler's approach. The first has to do with the set of explanatory variables included in the model and the second with the set of countries included in the sample.

Although de la Torre, Gozzi, and Schmukler do not lack degrees of freedom (their smaller sample has more than 400 observations, and in most cases they have more than 1,000 observations), they decided to adopt an extremely parsimonious specification with at most five explanatory variables plus a dummy for Latin America. As a consequence, they manage to explain a rather small share of the variance of stock market development (up to 45 percent of it in one regression but less than 25 percent in most regressions). I would definitely try to include a larger number of explanatory variables and report the regressions that include these explanatory variables.³ Besides the variables mentioned by de la Torre, Gozzi, and Schmukler in their "Robustness Test" section, I would also include the squares of log GDP and log GDP per capita (to better control for nonlinearities), the effect of measures of the efficiency of the banking system (like banking spreads and bank concentration), the overall size of the financial system, and the effect of having large institutional investors (for instance, the effect of having privatized pension systems). Controlling for the overall size of the financial system is particularly important because it would allow me to check whether there is something specific about the stock market or whether having a small stock market is just another manifestation of financial underdevelopment. In the concluding section of their paper, de la Torre, Gozzi, and Schmukler recognize that there are a host of variables that they do not include in their analysis, and some of these variables are exactly the ones mentioned in the preceding. They argue that these vari-

3. De la Torre, Gozzi, and Schmukler include some extra explanatory variables in a robustness section but do not report the regressions that include these variables.

ables are not included because they do not vary much over time; hence, it is difficult to separate their effect from that of the Latin America and Caribbean (LAC) dummy. This argument is not fully convincing. First of all, the authors do include shareholder rights, which is a variable that does not vary over time (not because it cannot change but because there are no panel data on this variable). Second, I will argue later that it would be interesting to decompose the factors that explain the difference between Latin America and industrial countries into three groups, and having information on such time-invariant variables would help us in such a decomposition (especially because some of these variables like shareholder rights, bank concentration, and bank efficiency could be object of policy and hence change over time).⁴

I would also augment the model with a full set of regional fixed effects. For instance, I would add three dummy variables, one for East Asia, one for East Europe and Central Asia, and for other developing countries (industrial countries would be the excluded dummy). By doing so, I would be able to test whether the Latin America dummy is mostly capturing the difference between Latin America and the industrial countries or whether there are also significant differences between Latin America and other developing regions (my tables would provide *F*-tests on the difference between the LAC dummy and each of the other regional dummies included in the various regressions).

Finally, I would relax the assumption that the relationship between the explanatory variables and the dependent variables is homogenous across countries and reestimate the model by restricting the sample to emerging market countries. This is important because Borensztein, Eichengreen, and Panizza's (2006) study of the determinants of bond market development and show that certain results (the effect of capital controls, for instance) reverse when industrial countries are excluded from the sample.⁵

After having estimated the model, I would use its results to perform two sets of comparisons.

First, I would use the regional dummies to evaluate which share of the difference with respect to industrial countries can be explained by the factors included in the various regressions. This is not very different from what de la Torre, Gozzi, and Schmukler do when they look at the LAC dummy.

4. I would also include year fixed effects to control for common trends.

5. Another issue has to do with sample size. Consider, for instance, table 4.1 in de la Torre, Gozzi, and Schmukler. The first column includes eighty-seven countries (and over 1,600 observations), and the last column includes forty-five countries (and 836 observations). It would be interesting to know what would happen if I were to estimate the model of columns (1) to (5) using the sample of column (6). Also, note that table 4A.1 lists ninety-five countries, but the regressions of tables 4.1 to 4.3 use at most eighty-seven countries and in most cases less than eighty countries. It would be good to know which countries are included in the various regressions or at least how many countries for each region (LAC, East Asia, East Europe, industrial countries, other emerging market countries).

However, by having included other regional dummies in the model and a much larger set of explanatory variables, I would be able to have a clearer picture. Consider again figures 4C.1 and 4C.2, and now focus on the columns with controls. These columns show what would happen to the bond markets of Latin America and East Asia if these regions had the same country characteristics as the industrial countries. The figures show that when we scale the size of the bond market by GDP, the difference between Latin America and industrial countries drops drastically but remains large (without controls the Latin American bond market is less than one-third that of industrial countries, but after we control for country characteristics, the relative size of the Latin American bond market more than doubles and reaches 70 percent of the size of the industrial countries' bond market). In the case of East Asia, instead, we find that country characteristics fully explain the difference with respect to industrial countries. Interestingly, if we scale bond market by domestic credit, we find that if we were to assign to Latin America the same country characteristics of the industrial countries we would find a substantial *drop* in the size of the Latin American bond market.⁶ It would be very interesting to conduct a similar analysis for the stock market.

Second, I would use the point estimates to separate the impact of three types of variables: (a) historical and geographical variables (like latitude, origin of the legal code, colonial history, etc.); (b) variables that measure country size or the level of development (GDP, GDP per capita, rule of law, financial development, etc.); (c) policy variables (shareholder rights, government deficit, stock market liberalization, privatization, etc.). Such a decomposition is interesting because it would tell me how policies could help me to close the gap with industrial countries. Suppose, for instance, that we were to find that 30 percent of the difference between average stock market capitalization in Latin America and industrial countries is not explained by our model (this is the LAC dummy); another 30 percent is explained by geographical and historical variables; another 30 percent by country size, the level of development, and financial development; and the remaining 10 percent by policy variables. Then we would know that changes in policies would have a limited direct effect on the size of the stock market (they could have a larger indirect effect if they affect GDP growth and the size of the financial system). This is important because it would help policymakers in forming the right expectations on the impact of the reform process and also in conducting cost benefit analyses of the process of financial reforms. Note that this decomposition is very close to what is implicitly done by de la Torre, Gozzi, and Schmukler, and the potential results from such

6. This is due to the negative relationship between the size of the financial market and the ratio between government bonds and domestic credit. As average domestic credit in industrial countries is about three times that of Latin America if we substitute the value of domestic credit of industrial countries into Latin America we obtain a much smaller bond market.

a decomposition are likely to be consistent with their view “revisit basic issues and reshape expectations.” In fact, presenting the results of such a decomposition is likely to strengthen, by quantifying it, the authors’ main message.

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