

**Bond Markets in Latin
America: On the Verge of a
Big Bang?**

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Building Bond Markets in Latin America

Eduardo Borensztein, Kevin Cowan, Barry Eichengreen, and Ugo Panizza

As they recovered from the debt crisis of the 1980s, Latin American countries regained access to international bond markets for foreign financing, while for domestic financial intermediation they relied mainly on banks. This strategy had several drawbacks. Investors in international markets have a preference for bonds denominated in the major international currencies, such as US dollars, rendering borrowers vulnerable to currency mismatches and to disruptions when exchange rates change.¹ Dependence on bank intermediation, for its part, heightens the vulnerability of the economy to systemic banking crises. These drawbacks are reasons why Latin American countries would benefit from better diversified financial systems and specifically deep and liquid bond markets. The corporate bond market plays a key role in the financial system, providing cheap and stable financing for large, well-established corporations, leaving banks to specialize in lending to borrowers for which information asymmetries are greater. Moreover, well-established yield curves for public bonds provide crucial information on market expectations of interest rates, inflation, and sovereign risk.

Yet the development of well-functioning corporate and government bond markets presupposes extensive infrastructure, payments and settlements systems, rating agencies, and networks of brokers to sell bonds. In the case of corporate bonds, it also requires rigorous disclosure standards and effective governance of corporations issuing publicly traded debt securities along with well-developed accounting, legal, and regulatory systems. Finally, it presupposes the existence of corporations that are large enough to defray the fixed costs of placing a bond issue.

These are not conditions that develop overnight. Rather, they are by-products of the larger process of economic and financial development,

which is why even in the advanced countries bond markets historically have been late to develop. So long as some of these developmental preconditions remain absent, borrowers may prefer to tap the more extensive and efficient bond market infrastructure that exists in the major financial centers. Or they may find it easier to borrow from banks, which rely on long-term relationships with their clients to obtain information and enforce repayment, thereby enabling them to circumvent imperfections in the information and contracting environments.

Latin American countries have made some progress in bond market development in the course of the last ten years, but the region's bond markets remain small by international standards—particularly the private securities segment. A comparatively low share of both public and corporate bonds is made up of long-duration, local-currency, fixed-interest debt instruments, despite notable progress in a number of countries. This volume asks why and what can be done about this situation.

The work presented in this volume has three main objectives. The first is to document the characteristics of Latin American bond markets and evaluate their “underdevelopment” in absolute terms and relative to other forms of financing. A second objective is identify the factors behind the recent growth (or lack thereof) in these bond markets. In recent years the countries covered in this volume carried out extensive policy reforms, including improvements in market infrastructure and regulation, privatization of utilities and other public enterprises, reforms of pension systems, and a broad enhancement of macroeconomic and financial stability; this raises the question of why there has not been more of a payoff in terms of bond market development. The third and final objective is to discuss whether policies aimed at promoting the growth of Latin American bond markets will have a positive effect on the region's economic performance.

The chapters that follow exploit three approaches to these issues: they analyze conceptual models of the role of bonds in corporate finance, present country case studies, and exploit international comparisons. Chapter 2 presents a framework that addresses the value of bond markets for firms that operate in the typical emerging market environment, namely, in the presence of fragile credit markets and tenuous macroeconomic stability. Chapters 3 through 8 comprise studies of six national cases: Mexico, Argentina, Colombia, Chile, Brazil, and Uruguay. Importantly, these six case studies adopt a common template. All analyze broad historical trends in the development of markets for

public and private debt securities, their current state, and the main obstacles and distortions that may impede their fuller development. Focusing on both private and government bonds is necessary because the interactions between the two markets are extensive. Wherever possible, the authors also analyze firm and issue-level data, addressing questions such as what types of firms issue bonds and what sort of investors buy them rather than sticking to national aggregates. Most of these case studies utilize not only micro-data sets but also the results of surveys of issuers and investors specifically commissioned for this volume. Finally, chapter 9 analyzes data on bond market development for a cross-section of emerging markets and advanced countries as a way of summarizing the state of play. It uses evidence from other regions as a yardstick for measuring the principal obstacles to the corporate bond market in Latin America.

An important contribution of the research teams whose work is assembled here has been to gather, for the first time, data on individual corporate bond issues in a number of Latin American countries along with information on the issuing firms and the bond markets of the economies of which they are part. These data sets, which underlie much of the analysis that follows, are made available to the reader through a website hosted by the MIT Press (<http://mitpress.mit.edu/9780262026321/webappendix>).

The State of the Markets

Latin American bond markets lag along a number of dimensions, not just when compared with the advanced industrial countries, but even when assessed relative to the emerging economies of East Asia, which are similarly seeking to develop their local markets.² This is evident from table 1.1, which shows the stocks of public and private bonds relative to GDP. The capitalization of Latin American bond markets, measured as percent of GDP, is markedly lower. Moreover, Latin American bond markets tend to be dominated by government securities, although this feature is also prominent in other emerging market economies, especially those of Europe.

Latin American bond markets also appear to be lagging in dimensions such as the duration of issues (see figure 1.1). The region has made some progress here, but in terms of the share of bonds with a residual maturity of less than one year, for example, it still compares unfavorably with both the advanced economies and emerging East Asia.

Table 1.1
The State of Bond Markets, 2004

	Developed economies	East Asia	Latin America	Other emerging markets
Bonds issued as percent of GDP:				
Private	70.9	22.0	9.0	3.9
Financial	44.6	11.8	4.8	2.6
Corporate	26.3	10.2	4.3	1.2
Government	59.6	29.3	22.3	47.1
Total	130.5	51.3	31.3	50.9

Source: Calculations based on BIS and Dealogic data.

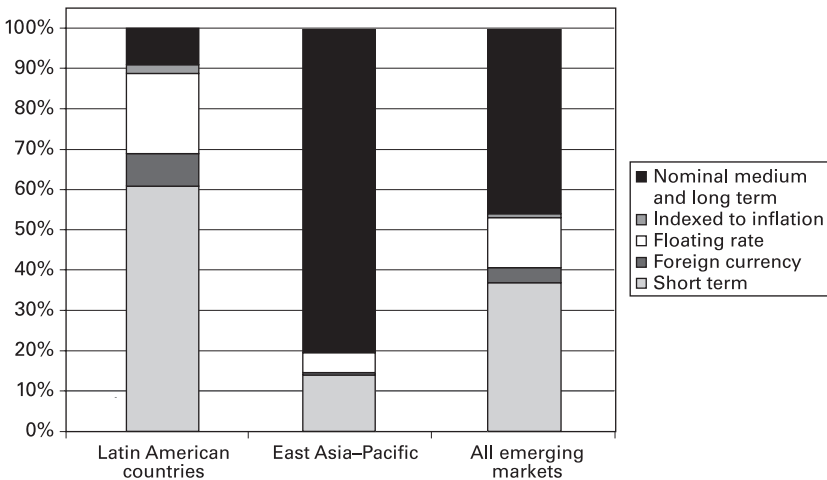


Figure 1.1
Composition of bonds issued, 2000–2005. Source: Chapter 9, based on Dealogic data.

The majority of long-term issues in Latin American markets either have floating interest rates or are indexed to inflation or the exchange rate, in contrast to emerging Asian markets where fixed rates are the norm and indexation is virtually nonexistent. About 80% of all bonds issued in East Asia between 2000 and 2005 (weighted by value) had a maturity above one year and no indexation, whereas the comparable figure for Latin America was less than 10%.

The question is whether these contrasts are likely to be short-lived or enduring. If the problem in Latin America is that years of budget defi-

Table 1.2
Bond Markets in Latin America, 2004

	Argentina	Brazil	Chile	Colombia	Mexico	Peru
Bonds issued as percent of GDP:						
Private	9.8	12.6	23.3	0.6	3.4	4.5
Financial	3.4	12.0	11.1	0.0	0.8	1.3
Corporate	6.3	0.7	12.2	0.6	2.6	3.2
Government	5.0	48.9	21.3	30.4	22.4	5.8
Total	14.7	61.5	44.5	31.0	25.7	10.4
Share of corporate bonds with maturity above 5 years	25.7	21.9	93.0	40.7	4.1	91.6
Turnover of locally issued bonds (percent of stock of bonds)	108.6	123.4	56.7	75.0	463.4	4.8

Source: Calculations based on BIS data, Dealogic data, and 2005 EMTA surveys.

cits have led to excessive government bond issuance that has crowded out private bond issuance, then many years of primary fiscal surpluses may have to pass before the overhang of government bonds is worked down. If the problem is that Latin America's history of macroeconomic and financial instability limits investors' demands to debt securities with interest rates indexed to inflation or the exchange rate, then many years may have to pass before stronger policies produce a demand for longer-term issues. If perceptions of imperfect corporate governance and unreliable contract enforcement currently make investors reluctant to hold corporate bonds at any price, then some time may have to pass before the relevant reforms begin to create a significant demand. If in smaller Latin American and Caribbean countries the local market's lack of scale is the obstacle to spreading the fixed cost of an issue and enhancing secondary-market liquidity, then reasonable questions can be raised about whether this obstacle can ever be overcome. Or perhaps these qualms are overstated: the key reforms could succeed in producing deeper and more liquid bond markets in short order.

Note that bond markets in Latin America are far from homogeneous. This is evident from table 1.2. The table shows, for example, that bond markets in Brazil and Chile are an order of magnitude larger than those of Argentina and Peru, even scaled by GDP. This variation is especially prominent in the case of bonds placed by private issuers

(corporations and financial institutions), the market segment of particular concern to many policy makers. Thus, we see that while Brazil and Chile have the two best-capitalized bond markets in the region, those markets are very different in composition: in Brazil private bonds are relatively small, while in Chile they represent a larger share of market capitalization than government bonds. This variation is equally apparent in other dimensions of bond market development, including the maturity of corporate issues and turnover rates.³

A substantial and growing literature discusses the benefits and determinants of domestic bond markets in emerging economies. This literature includes both broad cross-country overviews and detailed case studies (see, for example, IFC 2000; Turner 2002; IMF 2002; De la Torre and Schmukler 2004; Mihaljek et al. 2002). There is also an ample collection of studies in connection with recent initiatives to develop local bond markets in Asia. The policy literature has generally endorsed the value of local bond markets as the natural venue for domestic currency securities and for strengthening the soundness of domestic financial markets in emerging economies, where the banking system may not be as robust as in more mature economies. This literature has additionally highlighted measures to improve bond market infrastructure, along with supporting institutions, and has debated the pros and cons of regional integration, international openness, and sequencing of institutional and market development initiatives.

A more limited empirical literature explores the determinants of bond market development at the government and corporate levels. (See chapter 9 for a review.) Existing studies explore the impact of three sets of variables on bond market depth: macroeconomic policies and outcomes, including interest rates, fiscal deficits, inflation and the exchange rate regime; institutional quality, as measured directly by indices of the rule of law and corruption, or more indirectly by geographical and legal origin variables; and structural variables, such as country size. Because of lack of comparable cross-country data, none of these studies analyzes the impact of the bond market “infrastructure” discussed above. Furthermore, several potentially important reforms implemented recently in Latin America, including the role of pension reform, tax changes, and the privatization of public companies, are not evaluated. In sum, many important policy questions remain unanswered.

With these limitations in mind, we turn next to the main results presented in the chapters of this volume.

Findings of the Country Studies

The case studies of six Latin American bond markets included in this volume help us to better understand the constraints on the development of local bond markets. It is noteworthy that there is broad variation across the region on several dimensions. The size of the economy, the size of potential corporate issuers, macroeconomic stability, institutional shortcomings, the development of institutional investors such as pension funds, and the extent of openness and of international integration—all of these factors, among others, play a role in explaining contrasts among countries.

Government Bond Markets

Five of the six countries considered in this volume had strikingly small domestic government bond markets for most of the 1990s (less than 15 percent of GDP). Indeed, Argentina and Uruguay saw very little growth in the market (again, relative to GDP) as late as 1999. On the other hand, in Brazil, Colombia, and Mexico, 1995 marks the beginning of a period of rapid growth in domestic government bond markets that continued until 2005. Issuance was particularly large in Brazil, which in 2003 overtook Chile as the Latin American country with the largest government bond market. Unlike the other five countries covered in this volume, Chile started the period with government bond market capitalization above 60 percent of GDP but experienced a reduction in bond market capitalization (relative to GDP) over the 1990–2005 period as a result of continuous fiscal surpluses (figure 1.2, panel A).

The evolution of the share of bonds in total public debt has also differed across the region (figure 1.2, panel B). Broadly speaking, the countries fall into three groups. In the case of Chile, the evolution of the share of domestic government bonds in total public debt has the appearance of an inverted U. This is due to the fact that the Chilean authorities increased their reliance on the domestic market until 1999 but then started issuing international sovereign debt in order to provide a benchmark for private issuers. A second group, comprised of Argentina and Uruguay, displays a steady fall in the share of domestic government bonds in total debt since the late 1990s. This implies that the increase in domestic government bonds relative to GDP that took place after 1999 was due to higher levels of debt and not to a shift toward more domestic bonded debt.⁴ And in the third group of

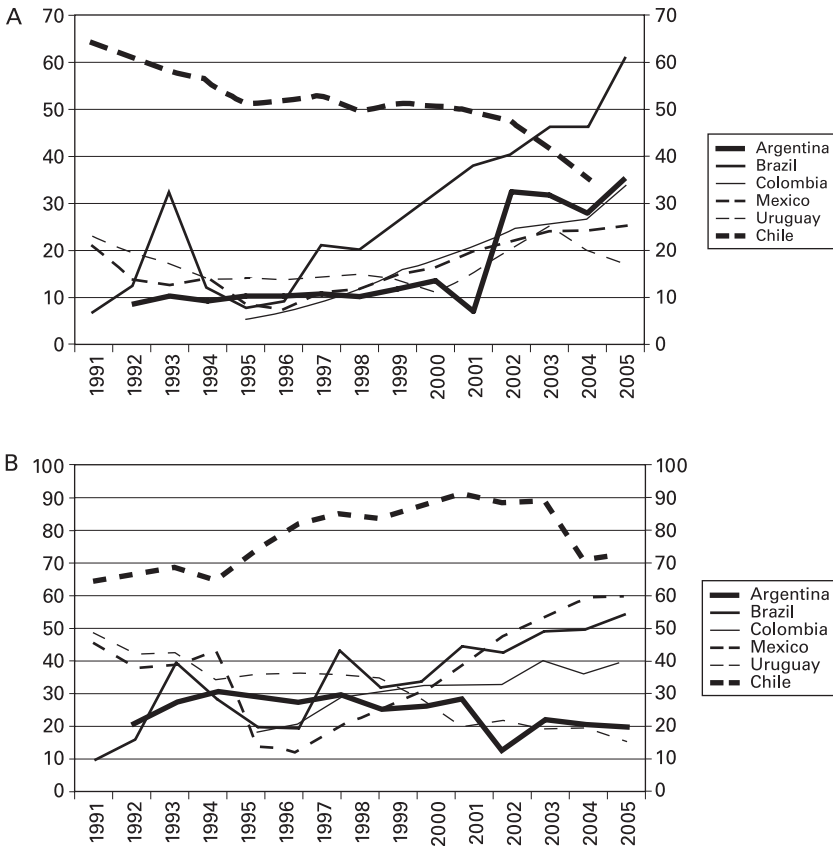


Figure 1.2

(Panel A): Stock of domestic government bonds relative to GDP (%). (Panel B): Domestic government bonds as a share of total public debt (%). Source: Chapters 3 to 8, as described in the appendix to chapter 9.

countries—Brazil, Colombia, and Mexico—the increase in the stock of domestic government bonds over GDP was due to a shift toward domestic issuance that led to an increase in the share of domestic government bonds in total public debt.

The turnaround in the pattern of government debt financing in this last group of countries coincided with the international financial crises that started in Mexico in 1995, followed by East Asia in 1997, and Russia in 1998. These crises limited access to international capital markets and convinced policy makers of the importance of developing reliable domestic sources of funding. To be sure, this was not the first

time that a crisis, either domestic or international, had served as a catalyst for the development of government bond markets. Mexico and Uruguay, for instance, started issuing domestic government bonds when the debt crisis of 1982 prevented them from accessing international capital markets. The Argentine bond market restarted in 1990–1991 in the wake of that country's inflationary crisis, when the government issued bonds to consolidate Central Bank debt with commercial bank debt and to consolidate existing liabilities to pensioners, government contractors, and victims of the military regime. In Chile, a significant fraction of outstanding government bonds (mostly those issued by the Central Bank) is a legacy of the banking crisis that hit the country in the early 1980s.^{5,6} To be sure, this relationship between crisis and development of the local bond market is not only a Latin American phenomenon: Bordo, Meissner, and Redish (2005) show that several former British colonies started developing their domestic markets when external events such as World War II prevented them from accessing international capital markets.

Another theme of the country studies is the role played by macroeconomic factors in the development of sovereign debt markets. In Brazil, the government bond market started growing when the government implemented the Real Plan and stopped monetizing fiscal deficits. Likewise, in Mexico falling inflation and greater macroeconomic stability played a key role in the growth of the stock of sovereign bonds. In Colombia, in contrast, large and persistent fiscal deficits, rather than stabilization, spurred growth in the stock of government bonds since the mid-1990s.

A further theme is the role of pension reform. Five of our six countries undertook some form of pension reform in the last 25 years, moving from pay-as-you-go to individual capitalization systems. In four countries, private pension funds (PPFs) directly held more than 20% of total domestic public debt as of 2004 (see table 1.3). While official data suggest that Brazilian pension funds do not have large holdings of government debt, these figures may underestimate the actual share of Brazilian pension fund assets invested in government securities. Leal and Lustosa (2004) show that in 2004 Brazilian pension funds had only 12% of their portfolios directly invested in treasury securities, but their indirect holdings were much larger. A full 62% of their portfolios were invested in fixed-income funds and hedge funds, which invest most of their assets in securities issued by the Brazilian Treasury. Leal and Lustosa (2004) suggest that aggregate pension fund holdings of

Table 1.3
The Importance of Private Pension Funds (PPF) in Bond Markets

Country	Year of implementation of the pension reform	Year	PPF holdings of public debt as a percent of:			
			Total public debt	Total domestic public debt	Total PPF assets	
Argentina	1994	1994	1	3	98	
		1999	6	23	46	
		2004	5	14	59	
Brazil	No pension reform	1994	1	2	4	
		1999	1	2	6	
		2004	2	3	11	
Chile	1981	1994	18	22	40	
		1999	28	30	35	
		2004	25	28	19	
Colombia	1999	1994	0	0	45	
		1999	3	6	83	
		2004	15	27		
Mexico	1996	1994	0	0	95	
		1999	5	9	85	
		2004	14	20		
Uruguay	1996	1994	0	0	60	
		1999	4	9	79	
		2004	9	36		

Source: Asociación Internacional de Organismos de Supervisión de Fondos de Pensiones; Associação Brasileira de Fundos de Pensão.

treasury securities may be well above 60% of total assets (12% in direct holdings and more than 50% indirectly through other funds). This would suggest that the only country in which public debt accounts for less than 50% of PPFs' assets is Chile, where it is only about 20%.

Placing public debt is a necessity for governments during the transition from a public to a private pension system. During this transition, social security contributions cease to accrue to the government, which is still responsible for pension payments to the currently retired population, and this results in an increase in the government's financing needs.⁷ This explanation for the dominance of public debt in PPFs' assets is consistent with the gradual reduction of the share of government bonds in the total assets of pension funds in Chile (where government bonds fell from 40% to 20% of assets over the 1994–2004 period) and, to a lesser extent, in Mexico. However, it does not fit with the rising importance of public debt in the assets of PPFs in Colombia, Argentina, and Uruguay.

In these countries other factors are apparently at work. As discussed in chapters 4 and 8, during Argentina and Uruguay's financial crises, institutional investors were forced by their governments to increase their holdings of public bonds. Although in the case of Colombia the causes of the upward trend are unclear, the need to finance large public deficits with domestic bond issuances, discussed in chapter 5, probably played a role.

Several chapters conclude on the basis of such observations that pension reforms are a mixed blessing for bond market development. On the one hand, PPFs are a captive source of demand for public bonds, particularly long-term bonds, leading to the growth of the stock of outstanding instruments.⁸ On the other hand, PPFs often follow buy-and-hold strategies, limiting liquidity and the usefulness of the bond market as a pricing device. This is a point emphasized in both the Chilean and Uruguayan chapters. Chapter 8, for instance, emphasizes that in Uruguay PPFs' transactions are closer to private placements than public issuance, with almost no secondary market activity.

Significant changes have also occurred over the last decade in the maturity, currency composition, and indexation of domestic government bonds (table 1.4). For most countries, the shift has been toward "safer" forms of debt.⁹ Argentina and Uruguay decreased the share of foreign-currency denominated bonds and increased the share of inflation-indexed and long-term bonds. Brazil all but eliminated foreign currency bonds, decreased the share of bonds indexed to the

Table 1.4
Composition of Domestic Government Bonds

Country	Year	Government domestic bonded debt (%)							GDP total (%)
		Foreign currency	Prices	Interest rate	Nominal	Short term	Long term		
Argentina	1994	66	0	0	34	0	100	8	
	2000	90	0	0	10	16	84	12	
	2005	28	71	0	1	0	100	30	
Brazil	1990	0	0	87	13	13	0	7	
	1994	44	32	22	2	2	76	10	
	2000	5	2	68	25	27	6	28	
	2005	1	15	54	30	18	27	52	
Chile	1990	0	84	16	0	0	84	68	
	1994	0	86	14	0	0	86	56	
	2000	0	74	26	0	0	74	51	
	2004	0	92	8	0	0	100	35	
Colombia	1995	0	0	0	100	0	100	5	
	2000	7	20	0	73	0	100	15	
	2005	1	20	0	79	3	97	29	
	1990	2	9	42	47	48	10	22	
Mexico	1994	55	17	5	24	79	17	12	
	2000	0	11	55	34	23	23	14	
	2005	0	5	43	52	17	40	22	
	1990	93	0	0	7	59	41	24	
Uruguay	1994	98	0	0	2	41	59	12	
	2000	97	0	0	3	10	90	9	
	2005	72	27	0	1	20	80	15	

Source: Web Appendix to this volume (<http://mitpress.mit.edu/9780262026321/webappendix>).

overnight interest rate, and increased the share of nominal bonds, bonds indexed to inflation, and long-term bonds. Mexico increased the share of long-term, nominal bonds while maintaining the share of debt indexed to inflation broadly unchanged.

Although there was no clear shift toward “safer” financing in Colombia and Chile, these countries started the 1990s with a debt structure that was already relatively safe. Colombia had low levels of dollarization of public sector domestic bonds and a high reliance on nominal and inflation-indexed instruments. Similarly, Chile had a large share of its public debt in long-term bonds indexed to inflation, almost no domestic bonds indexed to foreign currency, and only a small share of bonds indexed to the short-term interest rate.

Private Bond Markets

All the countries considered in this volume except Chile had essentially no private domestic bond market at the beginning of the 1990s, although regulatory reforms allowing or fostering private bond issuance had been carried out during the 1970s and 1980s.¹⁰ Most of the case studies attribute the lack of a significant corporate bond market to macroeconomic instability, particularly high inflation, which in the absence of credible indexation mechanisms heightened the risk of holding long-term instruments.¹¹ Investors’ reluctance to hold long-term instruments placed bonds at a disadvantage relative to bank credit because of the larger fixed-issuance costs of bonds, which become cost-effective only when those costs can be spread both over a large issuance and a long maturity. As Chile had enjoyed relative macroeconomic stability since the mid-1980s, it is not surprising that Chilean private bond markets were earlier to develop, reaching 5% of GDP by 1990—below developed country standards but substantially above the other five countries studied in this volume.

During the 1990s, the development of the private bond market in the six countries studied in this volume followed different paths (figure 1.3). Chapter 4 describes how in Argentina, issuance began in 1991 and continued until the 1998 recession, following the reduction of inflation and a tax reform that leveled the playing field between bank and bond finance. Although the market for Mexican bonds grew continuously (if slowly) during the 1990s, chapter 3 argues that new regulations approved in 2001, especially the creation of a new flexible debt instrument (the *certificados bursátiles*) and improvement in corporate

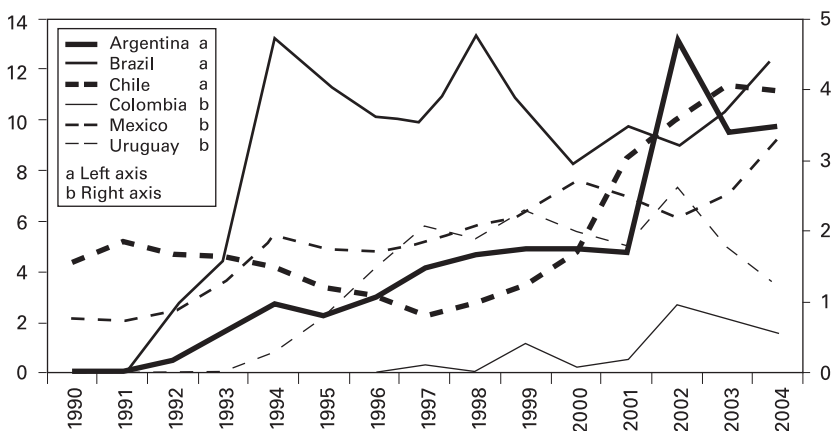


Figure 1.3

Private bonds as a share of GDP. Source: Chapters 3 to 8, as described in the appendix to chapter 9.

governance laws, stimulated growth in bond issuance in recent years.¹² The Uruguayan market had a brief renaissance following the enactment of the Securities Market Law in 1996, but financial scandals that erupted in 1998 halted issuance of new bonds. Generalizing from this experience, chapter 8 argues that lack of transparency and poor corporate governance are two of the chief obstacles to the development of the Uruguayan private bond market.

Brazil and Chile are the two countries where the corporate bond market grew the fastest. In Brazil, growth was concentrated in the years that followed the reduction in inflation brought about by the Real Plan. Starting from less than 1% of GDP in 1990, the stock of private bonds reached 10% of GDP by 1994 and then remained stable at that level until 2004. In Chile, the private bond market started expanding after 1998; chapter 6 argues that this recent growth is due to factors affecting both the demand and supply of corporate bonds. On the supply side, the Central Bank's defense of the peso exchange rate in the aftermath of the Russian crisis in 1998 led to a sharp increase in short-term rates and a credit crunch, which increased the attractiveness of long-term, non-bank finance and encouraged borrowers to turn to the bond market. Also contributing to an increase in the supply of private bonds were the financial requirements of the large private infrastructure programs that were undertaken in the 1990s. On the demand side, placement of these bonds was facilitated by large institutional

investors who were forced by regulation to buy domestic assets and, in an environment of decreasing public debt, needed to find alternatives to their traditional strategy of investing most of their assets in government bonds.¹³

Colombia is the outlier in this group, as its private market experienced essentially no growth over the period. Chapter 5 argues that crowding out by increasing public debt played a key role in stunting demand for corporate bonds. In this sense, the poor performance of the corporate bond market is the counterpart of the growth of the government bond market documented in the previous section. We return to this point below.

Even though the countries surveyed in this volume differ with respect to recent experience, private bond finance remains small by international standards for all of them. In Argentina, Colombia, Mexico, and Uruguay, 2005 data reveal that private bond market capitalization is below 5% of GDP; in Brazil and Chile, outstanding private bonds barely exceed 10% of GDP. These values are considerably lower than the averages for East Asia and the advanced economies which, according to Bank for International Settlements (BIS) data, reach 28% and 70% of GDP, respectively.

Table 1.5 summarizes additional characteristics of the private debt instruments issued in each market. Nominal, fixed-rate debt is still rare. Chile has issued most of its debt in a unit indexed to inflation; Brazil and Colombia tend to issue debt indexed to the interest rate; and Argentina and Uruguay issue debt indexed to the dollar.¹⁴ In contrast to the government bond market, there is no clear movement toward more reliable forms of private debt, with the sole exception of Mexico. The divergence between public and private instruments is starkest in Argentina, where the dollarization of the private bond market increased at a time when government debt dollarization fell. This may be explained by the fact that the underlying factors affecting dollarization in Argentina have not changed. Perceptions of volatile inflation still persist, making dollar debt a more reliable form of financing than nominal contracts (see Levy Yeyati 2006), and new issues in the private market reflect those fears. In the public sector, in contrast, de-dollarization has been boosted in a series of debt restructuring operations that followed the default of 2001 (see chapter 4).

The country studies suggest important regularities in the characteristics of firms that issue bonds. Larger firms substitute domestic bonds for bank credit, and the largest firms also rely on offshore bond

Table 1.5
Composition of Corporate Bonds

Country	Year	Share of private domestic debt indexed to:						As a percent of GDP
		Foreign currency	Prices	Interest rate	Nominal			
					Foreign currency	Prices		
Argentina ¹	1991	84	0	0	16	0	0	
	1994	97	0	0	3	1	3	
	2000	97	0	0	3	5	5	
	2005	98	0	0	2	6	6	
Brazil	1992	2	22	76	0	3	3	
	1994	2	22	76	0	13	13	
	2000	2	17	78	3	8	8	
	2005	3	12	84	0	16	16	
Chile	1990	7	93	0	0	4	4	
	1994	12	88	0	0	4	4	
	2000	24	76	0	0	5	5	
	2004	3	96	0	1	11	11	
Colombia	1997	0	0	100	0	0	0	
	2000	0	54	36	10	0	0	
	2004	0	0	100	0	1	1	
	1990	0	0	100	0	1	1	
Mexico	1994	0	0	100	0	2	2	
	2000	0	0	100	0	3	3	
	2004	0	0	57	43	3	3	
	1994	100	0	0	0	0	0	
Uruguay	2000	100	0	0	0	2	2	
	2005	100	0	0	0	1	1	

¹ Includes private domestic and foreign bonds.

Source: Web Appendix to this volume (<http://mitpress.mit.edu/9780262026321/webappendix>).

Table 1.6
 Characteristics of Bond Issuers and Issue Size

	Mean size of issuance	Minimum size of issuance	Mean size of issuers (assets)	Minimum size of issuer	Number of issued bonds	Number of firms issuing bonds	Period
US dollars (thousands)							
Domestic issuances							
Argentina	141,900	NA	NA	NA	568	NA	1994–2001
Brazil	85,590	753	3,813,668	4,146	319	111	2004
Chile	61,833	NA	694,612	NA	186	125	1994–2004
Colombia	23,438	10,000	86,851	NA	NA	67	1994–2004
Mexico	109,545	NA	NA	NA	NA	185	1994–2004
Uruguay	17,867	NA	NA	NA	71	67	1994–2004
International issuances							
Brazil	199,435	20,000	10,161,450	130,528	117	57	2004
Chile	352,500		3,170,697		29	14	1994–2004

Source: Web Appendix to this volume (<http://mitpress.mit.edu/9780262026321/webappendix>).

Table 1.7
Firm-Level Survey

Country	Number of firms surveyed	Percentage that have issued bonds	Percentage with some experience with bonds ¹	Average size (no. of employees)	
				Issuers	Nonissuers
Argentina	56	16	25	4,762	1,416
Brazil	30	83	83	8,777	308
Chile	40	75	NA	4,264	345
Colombia	274	6	9	653	316
Uruguay	463	2	5	NA	NA

¹Have issued in the past or plan to issue in the future.

Source: This volume.

issuance. In addition, in most countries the firms that are most likely to issue bonds are those with more tangible assets, higher profitability, and greater-than-average leverage.

Another reason why bond markets are dominated by a select group of large firms that issue large bonds (table 1.6) is the significant fixed cost of issuance. Moreover, the fact that many firms are repeat issuers suggests the existence of two forms of fixed costs: those related to becoming an issuer (disclosure costs and required accounting changes) and those related to each specific issuance (such as underwriting fees). In some countries, high issuance costs also help to explain the growth of alternative short-term debt instruments such as the “checks of deferred payment” that have become an increasingly common form of financing for firms in Argentina (see chapter 4).

The importance of issuance costs is further supported by the firm-level survey results summarized in tables 1.7 and 1.8. A sizable fraction of the firms that had in the past placed bonds but no longer do so identifies high issuance costs as a reason for shunning the market. They also identify high fees and issue requirements as impediments to bond financing. Additional factors frequently cited as making bonds less attractive than bank financing include minimum size, information requirements, and lengthy procedures, all of which are related to fixed costs.

Another commonly cited obstacle to bond issuance is market size—in line with the cross-section evidence in chapter 9, which finds that country size is one of the few variables that have a significant and robust correlation with the size of the private bond market.¹⁵ Interest-

ingly, size matters when bond stocks are scaled either by GDP or by a measure of broad financial development, indicating that, in larger countries, bond markets are not only larger but are also relatively more important within the financial system.

An obvious question is whether the fixed costs of issuance and disclosure that make bonds attractive to only a small group of large firms are particularly high in the region. Table 1.9 shows issuance costs as a percentage of the value of the issue for four of the countries in this volume. Domestic issuance is almost three times as expensive in Uruguay as in Mexico, perhaps reflecting the importance of market size and the consequently greater ease of spreading fixed costs over larger issues. Moreover, in Brazil, Chile, and Uruguay, issuance costs for debt placed offshore are lower than for domestic debt. It is not clear whether these differences are due to the existence of fixed costs associated with the development of market infrastructure—which should therefore fall as bond markets expand—or whether they are due to differences in regulation and financial market structure that would lead to higher costs for a given size of total issuance (see Zervos 2004 for a discussion of this point).

Private and Sovereign Debt Market Interactions

A large and liquid government bond market can have a positive effect on the development of the corporate bond market by creating the necessary infrastructure for trading, producing information about the future path of interest rates, and providing a benchmark yield curve (see, for example, McCauley and Remolona 2000). However, it has been noted that “bigger is not always better” and that the benefits related to the creation of pricing and hedging instruments can be annulled if excessive government issuance “crowds out” market access by private borrowers.

It is not easy to determine the net effect of government bonds on the private segment of the market. Efforts to identify these linkages through econometric methods—and to measure which effect dominates—have yielded mixed results. Eichengreen and Leungnaruemitchai (2004) found no impact of the size of the government bond market on corporate bond market capitalization in a panel of 41 countries. They conjecture that this may reflect the fact that the benefits of greater liquidity and more highly developed market infrastructure are offset by the crowding out of corporate bonds by government bonds.

Table 1.8
Why Do Firms Issue Bonds?

	Answers to the question: "If you issued in the past and you are no longer issuing, what is the main reason?"		
Argentina	High issuance costs (25%), issuance requirements (19%), low demand (13%)		
Brazil	High issuance costs (30%)		
Colombia	Issuance requirements (26%), high interest rate (23%), high issuance costs (19%)		
Uruguay	Low investor demand (33%), high issuance costs (25%)		
	Answers to the question: "What are the most important problems with domestic bond financing?"		
	All firms	Firms with experience issuing bonds	Firms without experience issuing bonds
Argentina	Small market (51%), disclosure requirements (46%)	Small market (71%), high fees (29%)	Disclosure requirements (53%), small market (47%)
Brazil	Fees (50%), low liquidity (43%), small market (40%)	Fees (40%), small market (36%), other regulatory requirements (28%)	Fees (100%), minimum issue requirement (60%), low liquidity (60%), small market (60%), no junk bond market (60%)
Chile	Small market (23%), high fees (15%)	NA	NA
Colombia	No junk bond market, small market, minimum issue requirements	NA	NA
Uruguay	Small market (62%), no junk bond market (55%), high fees (50%)	NA	NA

Relative advantages of bond and bank financing

	Bonds dominate loans in terms of:	Loans dominate bonds in terms of:
Argentina	Maturity, interest rate	Speed of access to finance, minimum amount, guarantee requirements, information requirements
Brazil	Maturity, interest rate	Speed of access to finance, guarantee requirements, information requirements, minimum amount
Chile	Maturity	Speed of access to finance, information requirements
Colombia	Maturity, interest rate, guarantee requirements	Speed of access to finance, minimum amount, information requirements
Uruguay	Maturity, guarantees	Speed of access to finance, minimum amount, information requirements

Source: Web Appendix to this volume (<http://mitpress.mit.edu/9780262026321/webappendix>).

Table 1.9

Total Issuance Costs as Percent of Issue Size (for Issues of US\$100 Million)

	Brazil	Chile	Mexico	Uruguay ¹
Domestic debt	2.39	2.74	1.18	2.88
Domestic equity	4.39	1.62	3.93	NA
International debt	2.22	2.22	2.22	2.22

¹Cost for issuing a bond with a value of US\$50 million.

Source: Zervos (2004) and chapter 8, this volume.

In principle, the crowding out effect should stem from all types of government debt, and not just bonded debt, implying that the method of financing the government deficit (through bonds or bank loans for example) should not matter. Only in the extreme case that the different financial markets are completely segmented would it be the case that only bonded debt mattered. Chapter 9 in this volume pursues this reasoning and finds that, after controlling for total public debt, the higher the share of public domestic bond financing, the greater the development of the private bond market. This is consistent with the market creation effect of government bonds, regardless of whether government debt exerts a crowding out effect (which is generally not significant).

In practice, however, most countries experience simultaneous changes in the level of total public debt and its breakdown between domestic bonded debt and other forms, making it difficult to disentangle the market development effect of a larger government bond market from the crowding-out effect of total public debt. For example, chapter 5 argues that rising domestic government bonded debt contributed to the weak performance of the private bond market in Colombia, and chapter 6 points out that the reduction of total domestic government debt played a key role in stimulating the rapid growth of the Chilean private bond market after 1999.

The country studies also provide a different perspective on this issue by directly gauging the views of institutional investors through opinion surveys. In view of the discussion above, it is perhaps not surprising that several of the questions that address the issue yield mixed results. Investors in Chile, Colombia, Mexico, and Uruguay agree with the idea that a large stock of public debt is important for the development of the corporate bond market. Investors in Brazil strongly disagree, while Argentine investors have mixed feelings about the role of the government bond market (figure 1.4). However, investors in all six

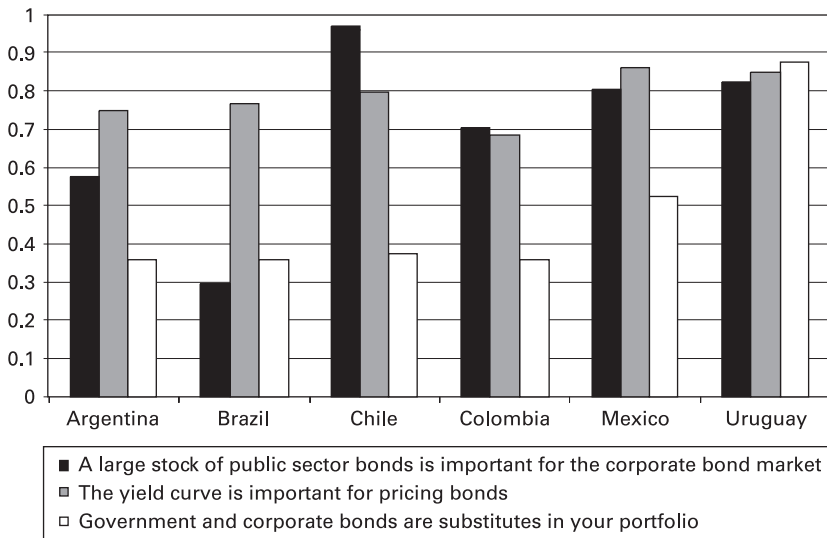


Figure 1.4

Investors' perception of the interaction between government and corporate bond markets. The figure reports average answers to the following three questions: (1) a large stock of public sector bonds is important for the development of the corporate bond market; (2) the yield curve provided by public bonds is crucial for pricing corporate bonds; (3) government and corporate bonds are substitutes in your portfolio. In the original questionnaire 1 meant that the respondent strongly agreed with the statement and 5 that the respondent strongly disagreed. The answers have been rescaled so that 1 means strongly agree and 0 strongly disagree.

countries agree that a yield curve is a crucial element for pricing corporate bonds, a key developmental function of government bonded debt. The surveys also asked a direct question of whether government and corporate bonds were substitutes in portfolios. Judging from the survey responses, government and corporate bonds compete in the portfolios of institutional investors in Uruguay and to a lesser extent Mexico (a fact consistent with crowding out), while investors located in Argentina, Brazil, Chile, and Colombia disagreed with the statement that corporate and government bonds are substitutes in their portfolios.

What about spillover effects from the composition and maturity of public debt to the composition and maturity of private debt? No clear pattern emerges from the six studies considered in this volume. Whereas in Mexico, "safer" public bonded debt has been accompanied by "safer" private bonds, this was not the case in the other countries. This

is not surprising, as the theoretical effects are ambiguous. On the one hand, having a CPI-indexed or nominal yield curve for public debt should make the pricing of similar types of private debt easier. On the other hand, a government balance sheet with a larger share of nominal debt could lead private investors to renew their historical concerns regarding opportunistic government behavior, such as using higher inflation to dilute debts; those investors may therefore demand more, rather than fewer, dollar-denominated contracts.

Finally, there may be a “credit risk spillover” from government debt to private debt. Credit rating agencies have for years followed a “sovereign ceiling” policy in assigning ratings on foreign debt that implied that private borrowers could not attain a credit rating higher than that of the government.¹⁶ The rationale for sovereign ceilings was that, in a situation of debt default, the government would impose capital controls that would make servicing private external debts impossible. But more generally, a government debt default tends to have a strong negative impact on domestic financial markets and banks and on the credit quality of the whole private sector in the country. Although credit ratings for the government’s domestic bonds denominated in domestic currency are usually at the top of the scale, the credit risk premiums that markets require can be significant, and they do spill over from the public to the private sector.

Conclusions

The first objective of this volume is to document the characteristics of Latin American bond markets and to evaluate their level of “underdevelopment” relative to other forms of financing. The studies included here paint a mixed picture. On the one hand, government bond markets have been growing substantially and are increasingly characterized by longer-term nominal instruments. Private bond markets, on the other hand, remain small—well below those of the industrial countries but also smaller than those of the emerging economies of East Asia.

The second objective is to determine the factors behind the recent growth (or lack thereof) in the bond markets. On the positive side, macroeconomic stabilization and the privatization of pension systems have played an important role in the development of domestic bond markets. Interestingly, crisis episodes have also helped to kick-start public bond markets. On the negative side, inflation fears, default epi-

sodes, corporate scandals, and the relatively small number of large firms (in the case of private bonds) are among the main obstacles to the development of the Latin American bond markets. Regulatory restrictions and regulatory reforms are also found to be important for hindering or promoting private bond financing. Of particular interest are the development of the flexible *certificados bursátiles* in Mexico and the deferred payment checks in Argentina as tradable debt instruments.

The third objective of the volume is to describe whether policies aimed at promoting the growth of the Latin American bond market can have a positive effect on the economic performance of the region. The studies published in this book show that many countries now have a government yield curve, which is gradually pushing out its maturity, providing market interest rates for the pricing of private instruments and facilitating the conduct of monetary policy. Holding total public debt constant, these developments are also likely to benefit the private bond market and the domestic financial sector more generally. In contrast, in most countries covered, private bond financing is so small that aggregate benefits are likely to be marginal and concentrated in the largest firms. Furthermore, both firm and market size seem to be important obstacles to the development of this market, so it is not clear whether policies aimed at promoting the issuance of traditional instruments will be sufficient to foster private bond markets in all countries of the region. Addressing the issue of small firm participation may require policies aimed at developing innovative instruments with low fixed costs or instruments that allow the pooling of costs over a broad number of issuers (for instance, asset-backed securities and collateralized debt obligations). Addressing the issue of small market size may also require cross-country coordination—especially amongst the smaller countries of the region—and possibly establishing strong links with regional and global bond markets as well.¹⁷

Notes

1. See Goldstein and Turner (2004). There has been some progress recently in placing on international markets bonds denominated in Latin American currencies but not enough to change this fundamental fact. See Tovar (2005).
2. Asian efforts revolve around the Asian Bond Fund (ABF) and Asian Bond Market Initiative (ABMI). Launched by the Executives' Meeting of East Asia–Pacific Central Banks (EMEAP) in June 2003, the ABF is designed to catalyze the growth of Asian bond markets by allocating a portion of the reserves of regional central banks to purchases of

government and quasi-government securities. The initial US\$1 billion of investments, known as ABF-I, was devoted exclusively to Asian sovereign and quasi-sovereign issues of dollar-denominated bonds. ABF-II is twice as large and includes bonds denominated in regional currencies. It has two components: a \$1 billion central bank reserve pool to be overseen by professional managers for local bond allocation, and a \$1 billion index unit designed to list on eight stock exchanges beginning with Hong Kong in 2005. The latter is designed to facilitate one-stop entry for retail and institutional buyers as well as providing a benchmark structure for tracking pan-Asian performance. The ABMI, endorsed by ASEAN+3 finance ministers at their meeting in Manila in August 2003, is designed to foster an active and liquid secondary market in local-currency bonds and to develop the infrastructure needed for the growth of local bond markets, mainly through the activity of six working groups and a focal group intended to coordinate their activities. See Ito and Park (2004).

3. Note that the turnover rates reported in table 1.2 correspond to data reported by international investors. The data are obtained from monthly surveys of members of the EMTA—Trade Association for the Emerging Markets, an industry association located in New York; thus, it may not provide a full picture of the liquidity of the local markets.

4. In Argentina, after the collapse of convertibility, bonds held domestically were converted into guaranteed loans (*préstamos garantizados*), which we do not classify as bonds because they are not tradable. This led to a sudden drop in government bonds in 2001 and to recovery in 2002 when some of these loans were turned back into bonds. The alternative—to consider guaranteed loans as bonds (as in Cowan et al. 2006)—leads to a different pattern for the behavior of the domestic government bond market.

5. Chile is the only country in which the Central Bank is a major issuer of bonds; in fact, several countries prohibit the Central Bank from issuing bonds. Colombia's Central Bank was the main bond issuer within the public sector until 1991, when a new law revoked its bond-issuing authority. Argentina has moved in the opposite direction. The Central Bank could not issue bonds under the convertibility regime, which was abandoned in 2001, but now the Central Bank is becoming an important issuer in the market for short-term notes.

6. Caprio and Klingebiel (2003) estimate that over 1982–1985 the Chilean government spent the equivalent of 42% of GDP to resolve the banking crisis.

7. In the case of Chile, for instance, the transition was financed by issuing *bonos de reconocimiento* ("acknowledgement" bonds that capitalized past pension contributions), which now amount to about 15% of GDP. These bonds tend to be mostly held to maturity by institutional investors, and hence they have effectively no role in contributing to market development.

8. This fact is also confirmed by chapter 9, which finds econometric evidence of the positive correlation between the presence of PPFs and the size of the domestic bond market based on a broad cross-section of countries.

9. From the borrower's point of view, long-term domestic currency nominal debt is safer than short-term debt or debt indexed to foreign currencies or interest rates. Although not as safe as long-term nominal debt, debt indexed to inflation is probably safer than short-term debt or debt indexed to the exchange rate. A crisis that causes inflation to accelerate can undermine fiscal solvency, but inflation is a slowly moving variable, in contrast to the exchange rate or short-term interest rates.

10. In Argentina corporate bonds (*obligaciones negociables*) were authorized in 1988. Brazil carried out several reforms aimed at developing the domestic financial system in the 1980s, although rules aimed at promoting the commercial paper market were passed

only in 1991. Chile implemented several regulatory changes after the financial crisis of 1982, and Mexico authorized the issuance of corporate bonds in 1982.

11. This is in line with cross-country evidence on this issue. Braun and Briones (2006) find that inflation and budget deficits have a negative impact on the maturity of bonds. In turn, Burger and Warnock (2005) find that inflation volatility negatively impacts the capitalization of local bond markets. Argentina and Brazil endured episodes of hyperinflation in the early 1990s that essentially wiped out the wealth of private bondholders. In Mexico and Uruguay, inflation only fell below 100% per annum as late as 1989 and 1992, respectively.

12. The reforms improved the rights of minority shareholders and information disclosure (see chapter 2).

13. For an alternative explanation that focuses on the role of international financial markets see Cifuentes, Desormeaux, and González (2002).

14. In fact, the bond market mimics the maturity and indexation structure of other forms of corporate debt in the region (Kamil 2004).

15. Similar results are obtained by Eichengreen and Leungnaruemitchai (2004). Their interpretation, however, is slightly different. They argue that country size matters because of fixed costs in developing the relevant bond market infrastructure, whereas the firm-level evidence reported here emphasizes fixed costs for each individual firm.

16. While this policy has been relaxed considerably, research shows that sovereign ratings still exert a strong influence on the ratings obtained by private corporations and banks (Borensztein, Cowan, and Valenzuela 2007).

17. See Eichengreen, Borensztein, and Panizza (2006) for a discussion of the costs and benefits of this approach and a comparison of the Latin American and Asian strategies for the development of their bond markets.

References

Bordo, Michael, Christopher Meissner, and Angela Redish (2005). "How Original Sin Was Overcome." In B. Eichengreen and R. Hausmann, eds., *Other People's Money*. Chicago: University of Chicago Press.

Borensztein, Eduardo, Kevin Cowan, and Patricio Valenzuela (2007). "Sovereign Ceilings 'Lite'? The Impact of Sovereign Ratings on Corporate Ratings in Emerging Market Economies." IMF Working Paper No. 07/75.

Braun, Matías, and Ignacio Briones (2006). "The Development of Bond Markets around the World." Mimeo, Anderson School, UCLA.

Burger, John, and Francis Warnock (2005). "Foreign Participation in Local-Currency Bond Markets." International Finance Discussion Paper No. 794. Washington, D.C.: Board of Governors of the Federal Reserve System.

Caprio, Gerard, and Daniela Klingebiel (2003). "Episodes of Systemic and Borderline Financial Crises." Unpublished paper, World Bank.

Cifuentes, Rodrigo, Jorge Desormeaux, and Claudio González (2002). "Capital Markets in Chile: From Financial Repression to Financial Deepening." In BIS Papers No. 11, "The Development of Bond Markets in Emerging Markets."

Cowan, Kevin, Eduardo Levy-Yeyati, Ugo Panizza, and Federico Sturzenegger (2006). "Public Debt in the Americas." Working Paper No. 577, Research Department, Inter-American Development Bank.

De la Torre, Augusto, and Sergio Schmukler (2004). *Whither Latin American Capital Markets?* Washington, D.C.: World Bank.

Eichengreen, Barry, Eduardo Borensztein, and Ugo Panizza (2006). "A Tale of Two Markets: Bond Market Development in East Asia and Latin America." Hong Kong Institute for Monetary Research, Occasional Papers No. 3.

Eichengreen, Barry, and Pipat Luengnaruemitchai (2004). "Why Doesn't Asia Have Bigger Bond Markets?" NBER Working Paper No. 10576.

Goldstein, Morris, and Paul Turner (2004). *Controlling Currency Mismatches in Emerging Markets*. Washington, D.C.: Institute for International Economics.

International Finance Corporation (2000). "Building Local Bond Markets: An Asian Perspective." World Bank, Washington D.C.

International Monetary Fund (2002). *Financial Stability Report*, Chapter IV.

Ito, Takatoshi, and Yung Chul Park, eds. (2004). *Developing Asian Bond Markets*. Canberra: Asia Pacific Press at Australian National University.

Kamil, Herman (2004). "A Database of Currency Composition of Firms in Latin America." Database Paper DBA-001, Research Department, Inter-American Development Bank.

Leal, Ricardo P. C., and Eliane Lustosa (2004). "Institutional Investors and Corporate Governance in Brazil." Unpublished paper, Coppead Business School, Rio de Janeiro.

Levy Yeyati, E. (2006). "Optimal Debt? On the Insurance Value of International Debt Flows." Working Paper No. 574, Research Department, Inter-American Development Bank.

McCauley, Robert, and Eli Remolona (2000). "Size and Liquidity of Government Bond Markets." *BIS Quarterly Review* (November), 52–60.

Mihaljek, Dubravko, Michela Scatigna, and Agustin Vilar (2002). "Recent Trends in Bond Markets." In BIS Papers No. 11, "The Development of Bond Markets in Emerging Markets."

Tovar, Camilo (2005). "International Government Debt Denominated in Local Currency: Recent Developments for Latin America." *BIS Quarterly Review*, December 2005.

Turner, Philip (2002). "Bond Markets in Emerging Economies: An Overview of Policy Issues." In BIS Papers No. 11, "The Development of Bond Markets in Emerging Markets."

Zervos, Sarah (2004). "The Transaction Costs of Primary Market Issuances: The Case of Brazil, Chile, and Mexico." World Bank, Policy Working Paper No. 3424.