

Domestic bond markets in Latin America: achievements and challenges¹

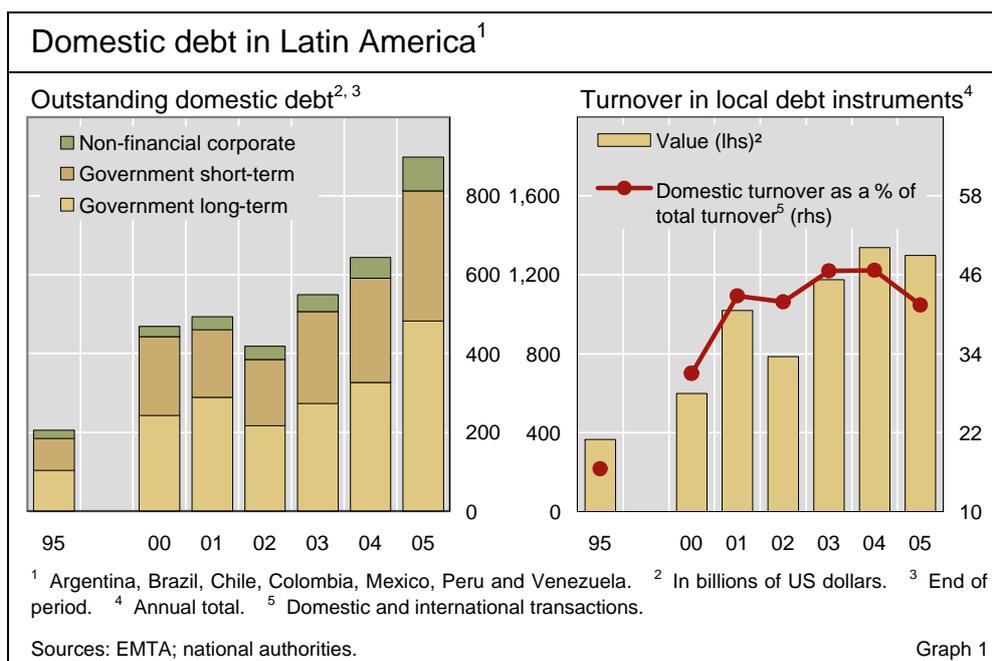
Domestic bond markets in Latin America have expanded significantly over the past few years. This development should help reduce the region's historical dependence on external financing. Although much progress has been made, vulnerabilities associated with refinancing risk remain and secondary markets still suffer from low liquidity.

JEL classification: E440, F340, G150, G180, H630, O160.

Domestic bond markets have remained underdeveloped for much of Latin America's modern history owing to a number of policy and structural impediments. These included a poor record of macroeconomic management; the absence of a deep and diversified investor base; regulatory restrictions that hampered the development of primary and secondary market activity; and the lack of an adequate infrastructure for the issuance of private sector debt securities. The resulting structure of domestic government and private sector debt, which was heavily biased towards short-term and/or dollar-indexed liabilities, contributed to a worsening of the financial crises in the region during the 1990s and early 2000s.

In recent years, however, domestic bond markets have constituted a growing source of financing for Latin American economies and of portfolio allocation for global investors (Graph 1). This has called into question the view that countries in the region cannot borrow in local currency at longer maturities, sometimes referred to as the "original sin" hypothesis. The expansion of these markets has reflected a conscious effort by the authorities of most countries to reduce their vulnerability to adverse external shocks. In this context, a key objective has been the strengthening of demand conditions for domestic debt. This has been accomplished *inter alia* through a transition to more stable macroeconomic policies; a move to privately funded and managed pension systems; and the removal of restrictions on foreign investment. Policy initiatives have also been taken on the supply side, including a gradual shift of

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government liabilities to the domestic market; a move to greater predictability and transparency in debt issuance; and attempts to create liquid benchmark securities. Such initiatives have been supported by a particularly favourable external environment, including high commodity prices and their beneficial effects on internal and external accounts, together with a search for yield on the part of international investors.

Drawing on statistics collected primarily from national sources, this special feature argues that considerable progress has been made by countries in the region in developing their domestic bond markets but that a number of vulnerabilities persist. The shift from external to domestic debt has helped in reducing the risk resulting from currency mismatches but it may also have amplified that arising from maturity mismatches. Investors are still reluctant to commit their funds at fixed rates for long periods of time, which could expose borrowers in the region to a significant degree of refinancing risk should domestic or global financial conditions deteriorate. Moreover, the investor base remains narrow, hampering the development of secondary market liquidity.

Main features of domestic fixed income markets

The issuance of domestic securities has expanded rapidly in Latin America over the past decade (Graph 1).² The amount of such securities issued by central governments and non-financial corporate entities from the seven largest countries in the region rose by 337% between the end of 1995 and the end of 2005, to \$895 billion, equivalent to about 40% of those countries' combined

² Fully consistent cross-country data sets covering Latin American domestic debt markets are not available. In this special feature, an attempt has been made to assemble comparable data for the central government and non-financial corporate sectors of Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. Domestic issuance comprises the securities issued on local markets in local or foreign currency. Issuance by financial entities is excluded from the analysis owing to the limited coverage of available data.

GDP. By comparison, the total stock of securities issued by such borrowers in international debt markets expanded by 65% over the same period, to \$264 billion. As a result of this growth, local fixed income markets have become the dominant source of funding for the public and private sectors (see Mathieson et al (2004)).

The current configuration of domestic debt markets in Latin America is characterised by six main features:

Domestic debt markets vary in size ...

First, domestic debt markets vary widely in size (Table 1). Brazil has by far the largest, with an outstanding stock of securities of \$583 billion at the end of 2005 (market equivalent to 74% of its GDP). Mexico's is the second largest in absolute terms, with \$159 billion in outstanding securities, but it is substantially smaller than Brazil's in terms of GDP (21%). The debt markets of other countries are much smaller in absolute terms, although some of those markets are reasonably large relative to GDP.

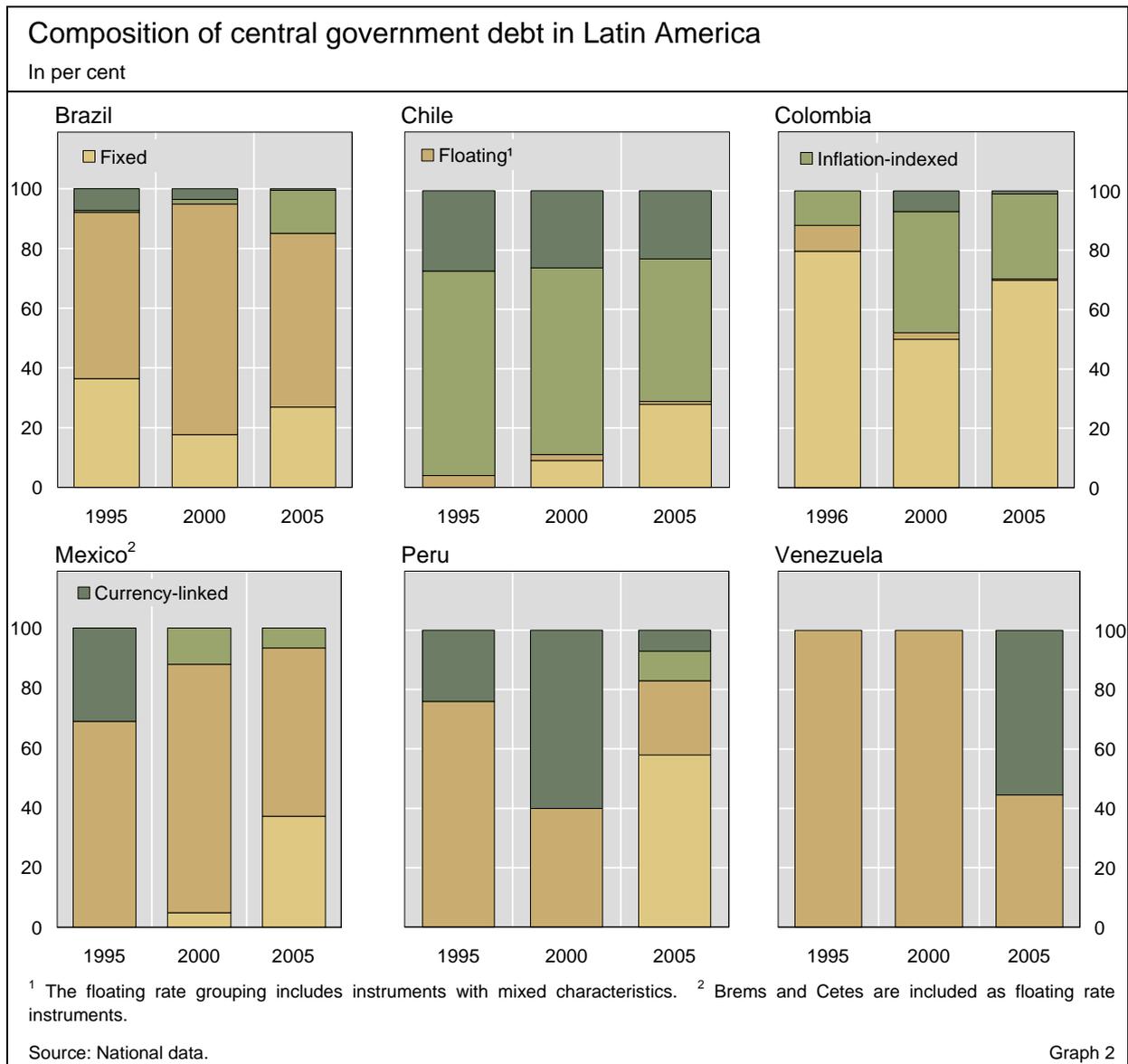
... and are dominated by the public sector

Second, public sector issuers dominate domestic securities markets (Graph 1). The central governments of the seven largest countries had issued marketable liabilities amounting to \$808 billion at the end of 2005. By comparison, corporate bond markets are much less developed. Although corporate markets may reach up to 40–50% of the respective government bond markets in some countries (eg Chile and Peru), they only total \$87 billion in the region as a whole. Moreover, even in countries where corporate markets are more developed, activity is restricted to top-tier companies. There has nevertheless been some progress in developing non-government bond markets, as illustrated by the expansion of securitisation in the region (see the box on page 55).

Size of local fixed income markets in Latin America					
	Stock of fixed income securities		Of which:		
			Government short-term	Government long-term	Non-financial corporate long-term
	USD billions	% of GDP	USD billions	USD billions	USD billions
Argentina	59.7	33	5.1	43.8	10.8
Brazil	583.4	74	226.7	318.2	38.5
Chile	39.8	35	9.2	17.3	13.3
Colombia	38.7	32	0.9	33.2	4.6
Mexico	158.5	21	52.0	89.1	17.4
Peru	7.9	10	1.4	4.3	2.2
Venezuela	7.2	5	3.4	3.7	0.1
Total	895.2	41	298.7	509.6	86.9
<i>Memo:</i>					
<i>United States</i>	9,043.5	72	1,474.5	4,873.3	2,695.7

Note: Securities issued by financial institutions are not included in non-financial corporate fixed income securities.
Sources: Fedesarrollo; national authorities; BIS.

Table 1



Third, short-term, floating rate and inflation-indexed securities continue to account for a large share of the outstanding stock of domestic government securities but there has been a significant change in the composition of government debt. As shown in Graph 2, currency-linked debt has been phased out in a number of countries, including Brazil and Mexico, as part of debt management programmes aimed at reducing vulnerabilities to external shocks. The main exceptions to this trend are Argentina and Venezuela.³ In addition, the relative share of fixed rate debt has increased in most countries. Progress has been particularly notable in Mexico, where the share of fixed rate securities amounted to close to 40% at the end of 2005, versus less than 5% in 2000. Brazil has also made significant advances, with fixed rate bonds now accounting for close to 30% of marketable liabilities versus 15% in 2000.

Debt is biased towards floating rate and inflation-indexed securities ...

³ In Argentina, which is not shown in Graph 2, currency-linked debt has been used to regain market access since the country's default.

Securitisation in Latin America

Securitisation is a relatively recent phenomenon in Latin America given the extent to which commercial banks have traditionally dominated the intermediation process. Nevertheless, several forces have created opportunities for the expansion of structured finance, including the existence of pressures to improve banks' return on assets, the introduction of better adapted legal frameworks and bankruptcy procedures, a resumption of demand for residential housing and commercial office space, and institutional investors' need for higher-quality assets.

The exact amount of structured transactions is not easy to calculate owing to the lack of standardised definitions and centralised reporting. The major international rating agencies are the main source of data on this market segment. According to Moody's, domestic securitised issuance in Latin America exceeded cross-border business for the second year in a row in 2005: domestic and cross-border transactions in the region amounted to \$12.2 billion and \$2.3 billion respectively. Mexico, Brazil and Argentina accounted for 40%, 32% and 15% of the total volume of domestic business. Credit-linked obligations, personal and consumer loans, and mortgage-backed securities (MBSs) represented 33%, 17% and 14% of domestic activity.

Issuance of domestic asset-backed securities in Latin America

In millions of US dollars

	2000	2001	2002	2003	2004	2005
Argentina	1,590	701	130	226	525	1,790
Brazil	184	88	106	1,031	1,652	3,911
Chile	173	220	430	380	293	873
Colombia	55	63	597	510	799	323
Mexico	65	427	414	604	5,444	4,846
Peru	37	94	7	60	163	295
Venezuela
Total	2,104	1,593	1,684	2,811	8,876	12,038

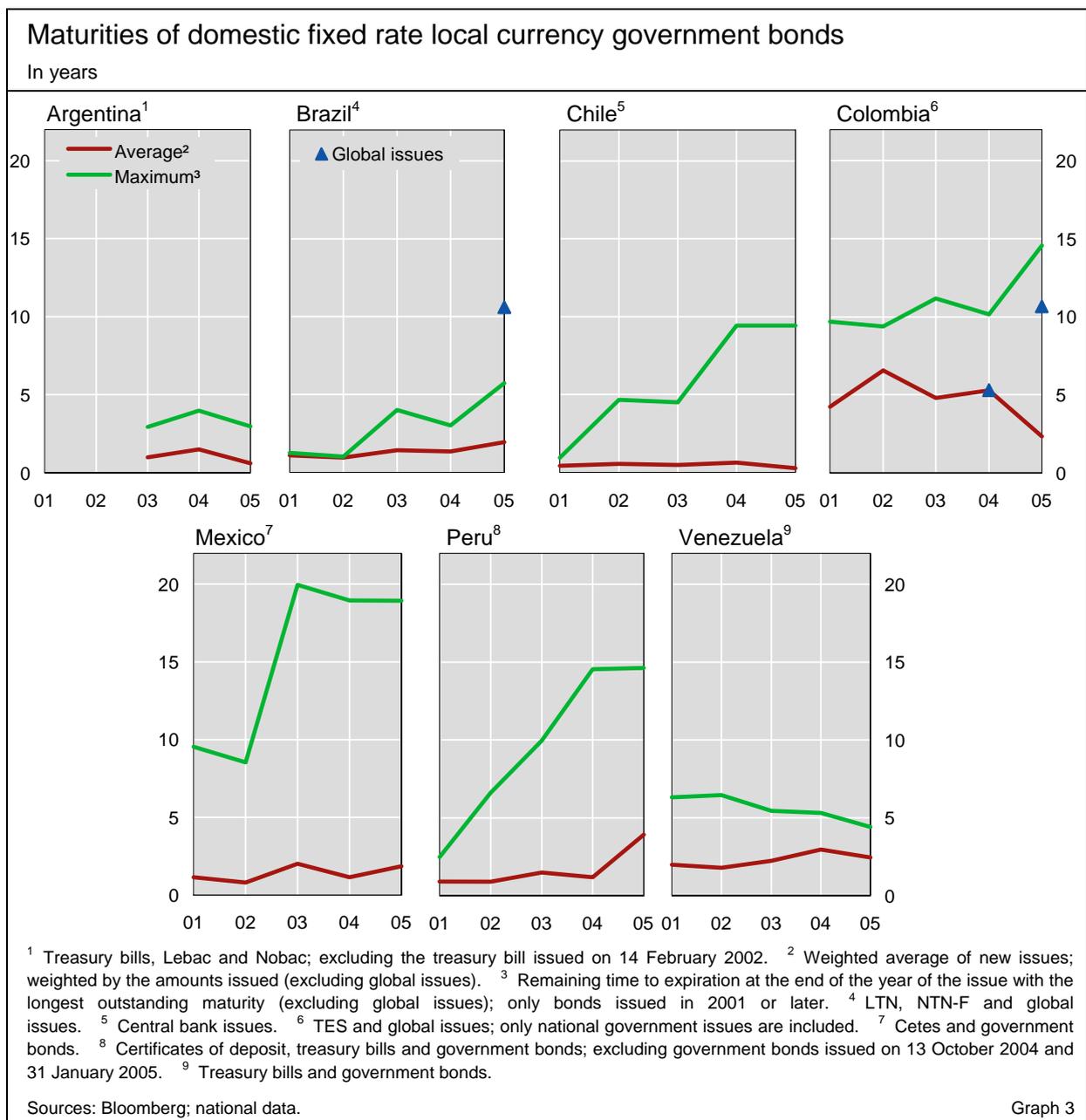
Source: Moody's.

The Mexican domestic market for securitised assets only emerged in 2000, but it is already the most active in Latin America. Issuance in Mexico amounted to \$5.4 billion in 2004 and \$4.8 billion in 2005. Much of the activity over the past two years has been due to very large transactions backed by loans held by the Instituto para la Protección al Ahorro Bancario (IPAB), the agency set up in 1999 to manage the debt resulting from the rescue of the banking sector.[Ⓞ] So far, aside from the deals enacted by IPAB, most transactions launched in the Mexican market have securitised bridge loans for construction and residential mortgages. Sociedad Hipotecaria Federal, a state-owned development bank that began its operations in late 2001, has worked to develop a cohesive market for MBSs. As such, it has encouraged issuers to introduce bonds with homogeneous characteristics and has played an active role as intermediary and liquidity provider in the nascent secondary market for MBSs.

Brazil's was the second most active domestic market in 2005. Issuance reached \$3.9 billion, compared with \$1.7 billion in 2004. The popularity of investment vehicles known as Fundos de Investimentos em Direitos Creditórios was largely responsible for this growing issuance. Such funds provide companies with an alternative to traditional bank credit by enabling them to securitise their receivables. Prior to 2003, there was practically no activity in the Brazilian domestic market. Potential issuers were deterred by the high cost of establishing special purpose vehicles and investors' initial indifference to such securities given the ready availability of high-quality government paper.

Argentina's market for securitised assets largely dried up in 2001 and 2002 but began to recover in 2003. Indeed, the Argentine market's expansion was noteworthy in 2005, with issuance jumping to \$1.8 billion from \$525 million in 2004.

[Ⓞ] Transactions for IPAB amounted to \$4.1 billion in 2004 and \$2.8 billion in 2005.



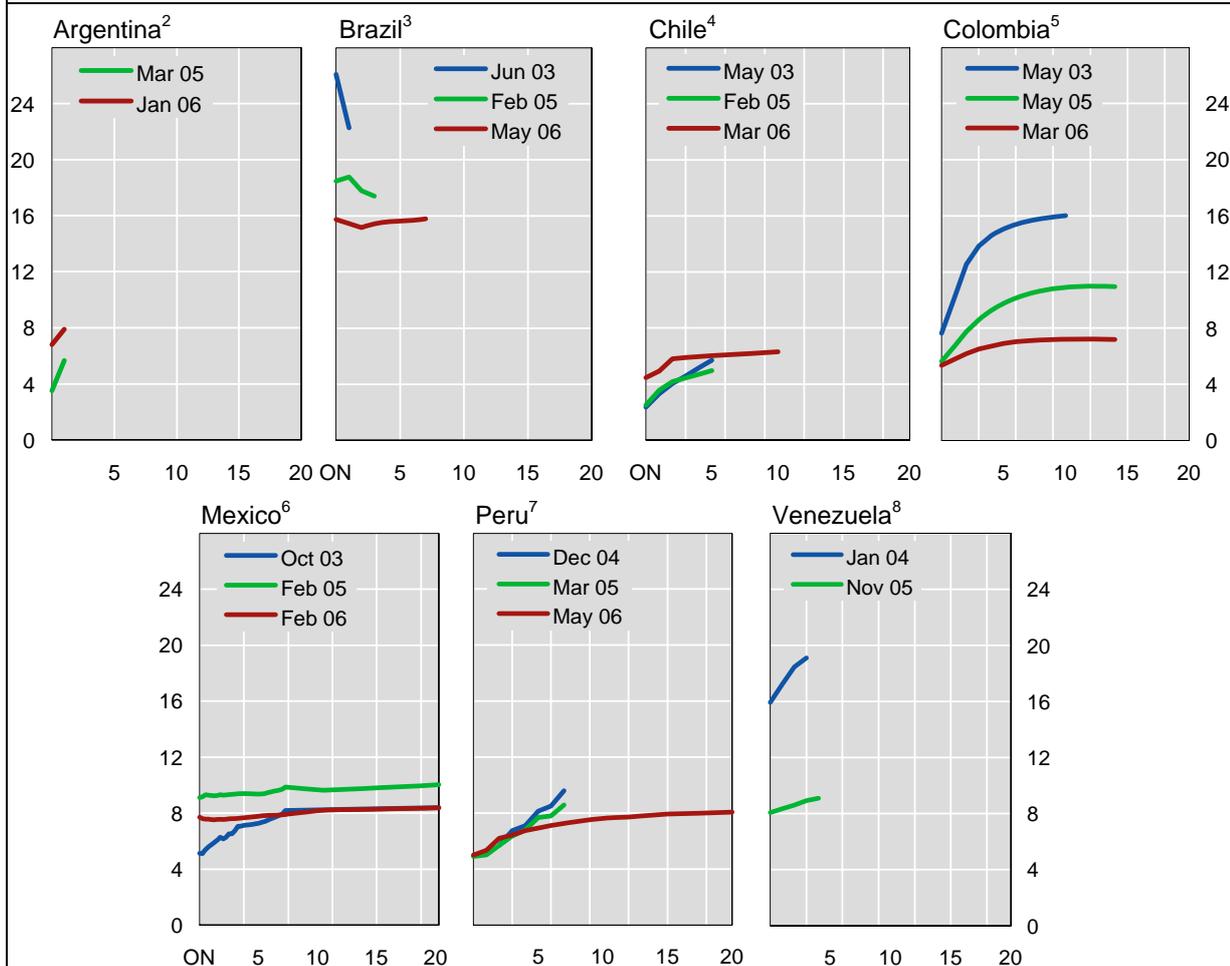
Fourth, there has been a gradual extension of the maturity structure of government debt in local currency. This has been achieved in part through a shift from short-term to fixed rate bonds and through a lengthening of the maturity of fixed rate bonds.⁴ The progress made by governments in lengthening the maturity of their fixed rate debt in local currency is illustrated in Graph 3, which shows that most countries have been able to increase the maximum maturity of such debt. Since 2003, Mexico has been able to issue 20-year bonds and is currently considering issuing 30-year bonds. Recently, Peru issued 20-year bonds in local currency, a particularly significant development given the country's high degree of dollarisation. Colombia, which has been

... but its maturity is lengthening

⁴ A lengthening of the maturity of the part of debt that is indexed to short-term rates or inflation has also played a role in some countries.

Yield curves of domestic fixed rate local currency government bonds¹

In per cent



¹ Remaining maturities in years (ON = overnight). ² Lebac. ³ Swap rates; long-term; government bonds (NTN-F). ⁴ Central bank issues. ⁵ Zero coupon yield curve. ⁶ Cetes and government bonds. ⁷ Government bonds, secondary market. ⁸ Government bonds (Vebonos), auctions.

Source: National data.

Graph 4

issuing 10-year debt for several years, has introduced 15-year bonds. Chile has issued securities out to 10 years as part of a process of reducing the degree of indexation of its government debt market. Brazil has also made some advances over the last year, in part owing to its 10-year global bond in local currency.⁵ Notwithstanding this progress in the region, the amount of fixed rate securities issued at longer tenors remains in most cases limited, as reflected by the relative stability of the weighted average maturity of new issues.

The wider availability of longer-dated bonds is beginning to provide a useful representation of the term structure of interest rates. Graph 4 plots available short- and long-term interest rates for countries in the region. The availability of such rates is helping to make financial markets more complete. However, as discussed below, the accuracy of information extracted from such curves remains an issue.

⁵ See Tovar (2005) for an analysis of recent Latin American global issues in local currencies.

Fifth, secondary market trading in domestic bonds, a common measure of liquidity, has expanded in recent years (Graph 1, right-hand panel) but it remains low relative to mature markets (Table 2). According to the Emerging Markets Trade Association (EMTA), yearly trading by its member banks in the domestic instruments of the region's seven largest countries amounted to \$1.3 trillion in 2005, or 1.6 times the outstanding stock of securities. This is a lower volume of activity than in the more mature markets. Although the data are not entirely comparable, trading in US Treasury securities amounted to about \$139 trillion in the same year, or 22 times the relevant stock of securities. Within Latin America, moreover, there is considerable variation in secondary market activity. While annual turnover in Mexican securities is five times the outstanding stock, that in Peruvian and Venezuelan is less than the outstanding stock.

Secondary market trading is low ...

Market liquidity has other important dimensions, such as the tightness of the market, ie the efficiency with which market participants can trade. As shown in Table 2, markets for fixed rate government securities do not appear to be very tight relative to the US market. Indeed, bid-ask spreads, which provide an idea of the costs incurred by market participants in executing transactions, are significantly higher in Latin America than in the United States.⁶ Again there are major differences within the region. While in Colombia and Mexico bid-ask spreads are narrow, they remain quite wide in Argentina, Peru and Venezuela.

Finally, there are currently no actively traded derivatives contracts on government bond benchmarks in the region but trading in short-term interest rate or swap contracts is developing rapidly in the major countries. In Brazil, position-taking in fixed income markets is conducted largely through overnight futures and swaps rather than cash market assets. This accounts for the sharp expansion in exchange-traded turnover observed in recent years, with activity reaching \$6.9 trillion in 2005 against \$2.6 trillion in 2000.⁷ In Mexico, where exchange-traded activity on fixed income assets does not extend beyond interbank rates, business amounted to \$1 trillion relative to almost nothing in 2000. However, over-the-counter (OTC) currency forwards and swaps are reported to be increasingly popular in that country. Such instruments are helping foreign investors and issuers hedge their currency and interest rate exposures to local currency bonds, thus facilitating their entry into the market for such securities.⁸

... but trading in derivatives is expanding

⁶ As a reference, bid-ask spreads in government bond markets in Asia range from 1–2 basis points in India, Korea and Singapore to 7 basis points in Indonesia. See Jiang and McCauley (2004).

⁷ By comparison, turnover on US exchanges reached about \$750 trillion in 2005.

⁸ Local currency debt markets have stimulated derivatives markets in Mexico. Taking advantage of the demand for highly rated peso paper, foreign financial institutions have issued a number of international peso-denominated bonds. Since such issuers tend to swap the proceeds of their issues into other currencies, they have provided a natural counterpart to foreign investors wishing to hedge peso paper. The Mexican peso is now one of the few emerging market currencies in which there is active OTC derivatives trading (BIS (2005)).

Indicators of secondary market liquidity in local government securities markets in 2005				
	Annual turnover		Bid-ask spread	Average size of transaction related to bid-ask spread
	In billions of US dollars	As a percentage of outstanding securities		
Argentina	91.5	187	10–50 bp on fixed rate and inflation-indexed bonds	ARS 2–10m
Brazil	433.0	79	5 bp on fixed rate bonds	BRL 10–50m
Chile	26.0	98	5 bp on fixed rate bonds	CLP 100m
Colombia	45.0	132	5–10 bp on inflation-indexed bonds	UF 100,000
Mexico	696.7	494	3–5 bp on fixed rate bonds	COP 2bn
Peru	2.6	46	5–15 bp on inflation-indexed bonds	MXN 50–100m
Venezuela	2.8	39	10–20 bp on fixed rate bonds	MXN 5–10m
Total	1,297.6	160	50–100 bp on floating rate bonds	USD 1m
<i>Memo:</i>		
<i>United States</i>	<i>138,756.0</i>	<i>2,186</i>	<i>0.8–1.6 bp on fixed rate bonds</i>	<i>USD 25m</i>

Note: Annual turnover data for Latin American countries correspond to secondary market transactions reported by major dealers and money management firms to EMTA. Annual turnover for the United States is based on daily inter-dealer transactions in US Treasury securities as reported in the Statistical Supplement to the Federal Reserve Bulletin.

Sources: Sack and Elsasser (2004); Federal Reserve; Central Bank of Venezuela; IMF; Citigroup; EMTA; JPMorgan Chase; BIS.

Table 2

Diversification and the sustainability of bond market expansion

Supporting factors appear permanent

The expansion of local bond markets depends in part on the sustainability of the global process of portfolio diversification. There are good reasons to believe that the factors supporting the development of bond markets in Latin America are largely of a permanent nature.

For one, there has been a secular process of integration between mature and emerging market economies. This includes the growing availability of low-cost and real-time information about the performance of countries and firms. The development of electronic trading technologies has also greatly reduced transaction costs and processing times, further broadening market participation (Wooldridge et al (2003)).

At the same time, the desirability of local currency debt as an asset class for international investors has been enhanced by an improvement in policies and performance in much of the region. Most countries have moved to an environment of low inflation, high primary fiscal surpluses and favourable current account positions. Partly as a result of this better environment, domestic interest rates are increasingly determined by local economic developments rather than by external factors. In fact, in some countries, such as Mexico, the local yield curve has largely “decoupled” from the US yield curve in recent periods.

Domestic bond market correlations and returns										
January 2003–April 2006										
Correlations		GBI-EM ¹						EMBI ²	10-yr US Treasury bond	
		Brazil ³	Chile	Colombia	Mexico	Lat Am	Asia			Europe
GBI-EM ¹	Brazil ³	1.00								
	Chile	0.34	1.00							
	Colombia	0.52	0.29	1.00						
	Mexico	0.50	0.56	0.48	1.00					
	Lat Am	0.78	0.53	0.72	0.89	1.00				
	Asia	0.33	0.07	0.31	0.31	0.35	1.00			
	Europe	0.10	0.21	0.21	0.28	0.25	0.42	1.00		
EMBI ²		0.52	0.24	0.49	0.50	0.56	0.49	0.49	1.00	
Ten-year US Treasury bond		0.23	0.00	0.22	0.25	0.24	0.37	0.37	0.71	1.00
Returns										
2003		23.7	27.7	19.4	7.1	16.7	7.9	14.0	22.3	2.1
2004		24.1	16.3	33.6	5.6	13.8	3.0	28.9	11.7	5.7
2005		36.9	16.2	26.1	21.2	22.8	5.2	3.9	10.3	2.4
2006 (YTD)		14.7	-1.6	3.2	-0.7	6.1	3.5	1.5	1.5	-3.1
Cumulative		142.2	65.8	117.5	34.9	73.2	21.1	55.4	53.1	7.2

¹ GBI-EM Broad Diversified. ² EMBI Global Diversified. ³ Sample starting in May 2003 and ending in April 2006.
Source: Authors' calculations based on JPMorgan Chase data. Table 3

Table 3 presents more general evidence concerning the diversification benefits offered by Latin American domestic bond markets relative to other asset classes in global portfolios, at least from the point of view of US dollar-based investors. Such benefits have been evident given the relatively low return correlations since January 2003 of Latin American local currency bonds with: (a) Asian and European emerging market local currency bonds (0.35 and 0.25 respectively); (b) the foreign currency EMBI index (0.56); and (c) 10-year US Treasury notes (0.24). This last set of correlations has been lower for Latin American local currency bonds than the corresponding sets for Asian and European local currency instruments (0.37 in both cases), or the EMBI Global Diversified index (0.71).⁹ The final row of Table 3 indicates that these diversification benefits did not come at the cost of lower returns over the sample period: from 2003, Latin American cumulative returns exceeded those of other emerging markets as local nominal yields declined and currencies appreciated.

However, such benefits depend in part on whether yield correlations with other fixed income instruments remain low during periods of stress. There is some supportive empirical evidence that this may be the case (Bayliss (2004)). But there are not enough data to test the stability of correlations over more than a limited time span. An extended episode of significantly less

Local markets have offered diversification benefits

⁹ Similar results are reported in Giacomelli and Pianetti (2005).

favourable market conditions would be required to arrive at more definite conclusions.

Currency mismatches and refinancing risks

A key issue regarding the development of local currency bond markets in Latin America is the extent to which it has helped to reduce the vulnerability associated with currency and maturity mismatches.

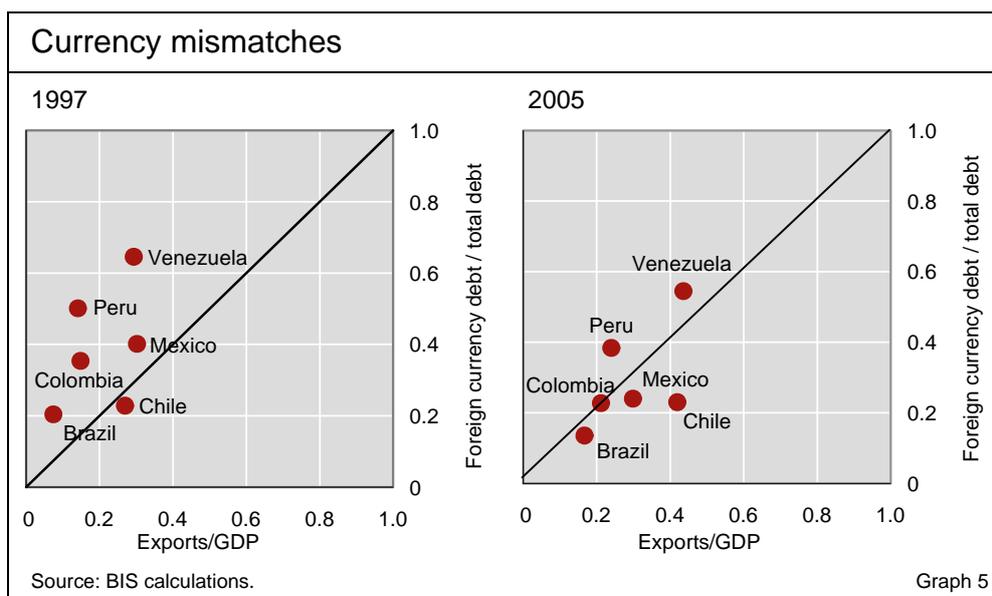
Domestic bond markets have helped reduce currency mismatches ...

Available evidence suggests that progress made so far in developing these markets may have helped to reduce currency mismatches in the region. This is clearly the case if one takes into account the above-mentioned shift away from dollar-indexed liabilities in the public sector. In addition, currency mismatches have declined across the region at the aggregate level. One frequently used measure of currency mismatch is the share of foreign currency debt in total debt divided by the ratio of exports to GDP.¹⁰ As shown in Graph 5, in 1997 this ratio was well over 1 in all of the largest countries except Chile (ie all were above the 45 degree line). By 2005, the ratio had been significantly reduced across the region. Dollarisation ratios, as measured by the percentage share of dollar deposits in total deposits in the banking system, have also declined. This has been particularly evident in Peru, where the ratio fell from 77% in 1999 to 62% in 2005. Firm-level studies also indicate that there has been a reduction in currency mismatches in the region at the corporate level. For instance, Bleakey and Cowan (2005) find that firms now tend to match the currency composition of their debts with their income flows.

... but they may have amplified maturity mismatches

Despite these positive developments, the shift from external to domestic debt may have replaced the risk resulting from currency mismatches with that arising from maturity mismatches. The economic environment has improved but investors in some countries remain reluctant to commit their funds to local currency obligations at fixed rates for long periods of time. The resulting predominance of short-term, floating rate and inflation-indexed securities, as shown in Graphs 1 and 2, could expose the region's governments to a significant degree of refinancing risk should domestic or global financial conditions deteriorate. This is also true of the corporate sector, where little progress has been made in reducing maturity mismatches. For instance, firm-level data compiled by Kamil (2004) show that the share of long-term liabilities in total liabilities has fallen in the region since the mid-1990s.

¹⁰ This indicator takes into account not only the impact of exchange rates on the value of assets and liabilities but also the currency denomination of income flows; see Goldstein and Turner (2004).



Secondary market liquidity

The low level of secondary market trading is a concern since active markets are an essential prerequisite for the cost-effective taking or unwinding of positions. Poor liquidity or a liquidity breakdown under stress can induce large changes in market prices and volatility.¹¹ Furthermore, liquid financial markets are necessary for the functioning of modern risk management systems, which rely on the derivation of accurate benchmark rates for the pricing of portfolios and the smooth functioning of markets for the frequent rebalancing of positions. Limited depth and liquidity at the longer end of local yield curves can also lower the accuracy of the price information derived from those yield curves. For instance, movements in the yield curve may be difficult to interpret because, in addition to macroeconomic factors, the pricing of longer-term bonds can be influenced by liquidity and other premia.¹²

Market liquidity can be related to a number of factors. The size of a bond market and its individual issues is usually seen as a determinant of its depth and liquidity. McCauley and Remolona (2000) estimate the rough size threshold for a deep and liquid bond market to be \$100 billion. In the region, only Brazil and Mexico exceed that threshold. However, as shown in Table 2, Colombia has managed to develop a relatively liquid market despite the small size of its government bond market.

The size of markets has a bearing on liquidity ...

¹¹ In fact, several countries in the region have already shown some vulnerability during periods of stress. Good examples are Brazil in 2001 and 2002, and Colombia in 2002, where financial turmoil led to a drying-up of market liquidity in government paper. In Colombia, the government was unable to issue bonds in the second half of 2002 in what is referred to by locals as the "TES mini-crisis".

¹² In economies with a history of high inflation and/or persistent fiscal imbalances, the variation in the risk premium can be so large and difficult to disentangle as to blur price signals about real economic activity and macroeconomic policy. The possibility of large but low-probability adverse events can also add to the risk premium.

... as do the array
of existing
instruments ...

What is more, the type of securities traded in a market can have a bearing on market liquidity. In general, indexed securities tend to be held until maturity and are therefore less actively traded and liquid than money market instruments or straight fixed rate bonds. This is illustrated by the wider bid-ask spread for inflation-linked securities. The availability of a wide array of instruments can also prevent the build-up of a sufficiently large stock of homogeneous securities for active trading. In Brazil, for example, there are various types of inflation-indexed securities, while in Mexico fixed rate securities are issued by a number of public sector borrowers. A consolidation in the offering of government securities, in terms of either the instruments themselves or their issuing entities, would probably do much to improve liquidity.

... and the size of
the investor base

Equally important is the breadth of the investor base. The shift to privately funded pension systems in the region has boosted institutional demand for local securities but the investor base remains narrow.¹³ For instance, the mutual fund industry is underdeveloped (the main exception being in Brazil), insurance companies tend to be small, and the local hedge fund industry is practically non-existent. In some countries, such as Chile, pension funds have created a virtual monopsony in securities markets. Furthermore, foreign investors still have a limited presence in most domestic markets owing to the prevalence of capital controls, which remain in place in Argentina, Brazil, Colombia and Venezuela. Trading is also limited by various regulatory restrictions or taxes on interest rate payments, capital gains or transactions.¹⁴ The strong international demand for the global issues in local currencies launched by Brazil and Colombia clearly captured the preference of investors for securities that are not affected by such impediments (Tovar (2005)). In Mexico, the recent vibrancy of domestic markets has been partly related to the unfettered access by foreign investors to the domestic bond market.

Concluding remarks

Latin American economies have made significant progress in developing their domestic bond markets. However, there are still a number of challenges. The most pressing are the need to reduce the vulnerability of debt structures to refinancing risk and to increase secondary market liquidity. Moreover, the extent to which such markets constitute a dependable source of funding for these economies remains to be tested. Although the region appears at this time

¹³ Institutional investment has played a limited role in most countries. In Chile, assets held by pension funds rose gradually from the early 1970s to reach about 70% of GDP in 2004. However, similar holdings in other countries are much lower, ranging from 6% of GDP in Mexico to 14% of GDP in Argentina (Crabbe (2005)).

¹⁴ In Brazil, foreign investors must register their purchases of securities with the Brazilian securities regulator and the central bank and nominate a legal representative that is required to monitor the fiscal status of their transactions. They are also subject to at least two transaction taxes (an additional 15% withholding tax on capital gains was removed in February 2006). In Colombia, foreign investors can only purchase domestic securities through an investment trust and a withholding tax varying with the maturity of the securities is levied.

to be less vulnerable to financial shocks, less auspicious market conditions could expose incipient domestic bond markets to additional, unforeseen pressures. In this respect, policymakers should encourage the further development of such markets.

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