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3. The international debt securities market

Gross issuance of bonds and notes in the international debt securities market amounted to $1,055 billion in the first quarter of 2005, up by 7.3% over the same quarter in the previous year (Table 3.1). Building on the pace of record issuance in 2004, borrowers continued to have easy access to international credit markets and to enjoy favourable financing conditions, as spreads remained low on a historical basis during the quarter despite widening towards the end of March. Gross issuance by euro area nationals and sovereigns was particularly strong. Global net issuance also rose, from $426.1 billion to $492.4 billion (Table 3.2). Whereas net issuance increased in the euro area and emerging markets, it fell in the United States and in offshore centres.

Euro area issuance rises again

Euro area issuance increases for third consecutive quarter

Gross issuance of bonds and notes in the international market by euro area entities rose for the third straight quarter, by 48.8% on a quarterly basis. Increases took place in all euro area economies except Ireland and Luxembourg. The rapid expansion in borrowing cannot be explained by seasonal or valuation effects. Gross issuance in the euro area tends to be relatively high during the first quarter of the year, yet the rise this year was particularly large (22% higher than in the first quarter of 2004). Furthermore, with the exchange rate of the euro vis-à-vis the dollar having depreciated by 4.8% during the first quarter, the increase in issuance reflects a jump in issuance in euros by euro area nationals rather than currency conversion. Total gross issuance of all debt securities (bonds and notes plus money market securities) also went up, to $814 billion.

Net issuance also rises despite economic weakness

Net issuance of bonds and notes by euro area entities also increased rapidly in the first quarter, by 27.1%, and net issuance of all debt securities rose by 39%. These growth rates are perhaps surprising given the ongoing weakness in the euro area economy as a whole. However, the pattern of issuance across countries largely reflects the performance of the various national economies during the quarter. For example, net issuance increased most in Germany, which was experiencing strong growth, whereas a drop in net issuance in Italy and Portugal coincided with slower growth. The proceeds from new net issuance may also have been used for balance sheet

Gross issuance in the international bond and note markets

In billions of US dollars

	2003	2004	2004				2005
	Year	Year	Q1	Q2	Q3	Q4	Q1
Total announced issues	2,885.3	3,300.9	983.1	768.8	726.1	822.9	1,054.5
Bond issues	1,610.9	1,786.6	570.5	402.5	378.2	435.5	575.1
Note issues	1,274.4	1,514.3	412.7	366.4	347.9	387.4	479.5
Floating rate issues	962.7	1,257.3	337.4	306.4	285.2	328.2	346.9
Straight fixed rate issues	1,834.5	1,986.2	628.3	444.1	430.3	483.4	693.6
Equity-related issues[1]	88.1	57.4	17.4	18.3	10.5	11.2	14.1
US dollar	1,171.8	1,154.4	357.2	257.3	255.5	284.4	305.7
Euro	1,287.9	1,597.9	478.8	379.0	350.2	389.8	571.5
Yen	102.8	111.5	29.3	33.8	22.4	26.0	30.4
Other currencies	322.9	437.1	117.8	98.7	98.0	122.6	146.9
Developed countries	2,620.6	3,010.4	907.2	694.8	655.8	752.7	967.2
United States	739.5	771.9	249.8	167.9	169.6	184.6	216.1
Euro area	1,302.3	1,470.3	442.8	358.3	306.1	363.1	540.4
Japan	48.3	62.1	20.3	19.8	12.1	10.0	13.6
Offshore centres	31.7	41.7	7.2	7.0	13.9	13.5	11.6
Emerging markets	140.5	151.7	45.1	36.7	35.0	34.9	46.3
Financial institutions	2,280.4	2,687.3	788.5	603.5	606.5	688.9	854.5
Private	1,913.2	2,276.7	667.9	515.5	500.4	592.9	707.5
Public	367.1	410.7	120.6	88.0	106.1	96.0	147.0
Corporate issuers	269.8	271.3	61.9	72.2	62.3	75.0	58.5
Private	217.7	231.4	52.8	60.6	57.0	60.9	55.1
Public	52.1	39.9	9.0	11.5	5.3	14.0	3.4
Governments	242.6	245.2	109.1	62.9	35.9	37.3	112.0
International organisations	92.5	97.1	23.7	30.3	21.3	21.8	29.5
Completed issues	2,866.5	3,304.5	934.4	796.5	708.9	864.8	1,009.5
Memo: Repayments	*1,478.1*	*1,744.5*	*449.6*	*453.1*	*403.0*	*438.7*	*517.1*

[1] Convertible bonds and bonds with equity warrants.

Sources: Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; BIS. Table 3.1

restructuring in some cases, as the incidence of shareholder-friendly activity began to pick up during the first quarter.

Share of global net issuance in euros rises to 63%

The share of net borrowing by all nationalities in euros rose in the first quarter, from 59% to 63% (Table 3.3). This mainly reflects the relatively large increase in borrowing by euro area nationalities, though some large issues in euros by nationals from other regions were also announced during the quarter, such as the Republic of Poland (see below).

In the past, there has typically been a positive relationship between a currency's strength and its share of international debt issuance (see the special feature on "Currency choice in international bond issuance" on page 53). For instance, all else equal, a 10% appreciation of the euro has tended to be associated with a 0.9 percentage point increase in euro issuance. Thus, in the light of the fact that the effective exchange rate of the euro has been high

Main features of net issuance in the international bond and note markets In billions of US dollars								
	2003	2004	2004				2005	Stocks at end-Mar 2005
	Year	Year	Q1	Q2	Q3	Q4	Q1	
Total net issues	1,388.4	1,560.1	484.7	343.3	305.9	426.1	492.4	13,380.1
Floating rate issues	384.3	639.5	152.4	163.5	129.7	193.9	99.5	3,646.3
Straight fixed rate issues	983.2	926.6	339.2	172.2	178.8	236.5	397.3	9,377.5
Equity-related issues	20.9	–6.1	–6.8	7.7	–2.7	–4.3	–4.4	356.2
Developed countries	1,283.2	1,432.8	447.5	311.4	276.6	397.3	456.9	11,936.1
United States	258.5	218.6	115.4	4.2	34.9	64.0	62.2	3,300.7
Euro area	733.1	781.7	215.8	205.6	139.8	220.5	280.9	5,940.7
Japan	–1.6	17.5	5.2	10.0	1.9	0.5	4.7	279.4
Offshore centres	16.3	22.2	0.4	4.4	8.5	8.9	2.5	154.5
Emerging markets	66.3	82.2	25.8	18.8	15.0	22.6	30.8	751.3
Financial institutions	1,104.0	1,303.9	385.0	275.0	278.0	365.8	389.6	9,888.0
Private	908.0	1,088.1	315.4	235.3	220.3	317.1	315.7	8,345.8
Public	196.0	215.8	69.6	39.8	57.7	48.7	73.9	1,542.2
Corporate issuers	110.3	74.7	8.9	11.6	11.3	42.9	14.3	1,559.6
Private	90.3	55.9	2.6	5.9	12.6	34.8	22.3	1,310.5
Public	20.0	18.8	6.3	5.7	–1.3	8.1	–8.1	249.1
Governments	151.5	158.7	79.9	47.9	10.8	20.1	86.3	1,394.3
International organisations	22.6	22.9	11.0	8.8	5.8	–2.7	2.1	538.1

Sources: Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; national authorities; BIS. Table 3.2

recently relative to its historical average, the rise in euro-denominated issuance is perhaps not surprising.

Supply feeds demand for duration

Demand for longer-maturity assets surges

The demand for long-dated securities has burgeoned in recent months. This has been driven, in part, by supervisory and regulatory actions in some countries requiring a better match in the duration of financial institutions' assets and liabilities. Pension funds, in particular, have been eager to acquire debt securities with long maturities. The heightened demand for longer-dated instruments also reflects, to some extent, a desire on the part of many investors to boost returns given the low level of yields on many default-free and credit-risky securities at shorter maturities, despite the greater risks associated with very long-term debt. Overall, this new-found demand for duration pushed long-term yields to near or below historical lows during the first quarter. As a consequence, some borrowers have taken advantage of the favourable pricing conditions and started to issue longer-dated paper.

Several long-dated issues from euro area entities …

The number of issues with maturities of 40 years or above brought to the international market in the first quarter was a record high, although the total face value of these issues (in US dollars) was still below the amounts recorded in late 1997 and early 1998 (Graph 3.1). Many of the longer-dated issues were completed by entities from the euro area. The largest was from Agence France

Net issuance of international bonds and notes by region and currency[1]

In billions of US dollars

		2003	2004	2004				2005
		Year	Year	Q1	Q2	Q3	Q4	Q1
United States	US dollar	203.5	131.1	102.1	–27.0	4.9	51.1	41.0
	Euro	41.0	48.5	6.0	20.2	14.9	7.4	12.8
	Pound sterling	11.8	22.5	1.7	5.4	10.6	4.7	5.2
	Yen	1.2	4.8	1.3	1.7	1.5	0.3	–1.2
	Other	1.0	11.7	4.3	3.9	3.0	0.5	4.5
Euro area	US dollar	75.8	57.6	6.4	25.5	9.8	15.9	15.4
	Euro	627.6	656.5	188.2	157.5	115.4	195.3	235.2
	Pound sterling	13.5	32.6	6.4	12.6	8.2	5.3	12.0
	Yen	–9.5	3.1	1.7	3.8	0.6	–3.0	5.0
	Other	25.7	31.9	12.9	6.1	5.8	6.9	13.2
Others	US dollar	162.6	191.0	48.5	54.1	41.1	47.4	41.0
	Euro	116.7	218.5	65.1	43.0	62.6	47.8	62.1
	Pound sterling	60.4	79.2	22.9	19.1	8.2	29.0	30.4
	Yen	12.1	19.3	3.6	9.5	5.2	1.0	0.0
	Other	45.0	51.8	13.4	7.8	14.1	16.5	15.7
Total	US dollar	442.0	379.7	157.0	52.5	55.8	114.4	97.4
	Euro	785.2	923.5	259.4	220.8	192.9	250.5	310.1
	Pound sterling	85.8	134.2	31.1	37.1	27.0	39.0	47.6
	Yen	3.7	27.3	6.6	15.0	7.3	–1.7	3.8
	Other	71.7	95.4	30.7	17.9	22.9	23.9	33.4

[1] Based on the nationality of the borrower.

Sources: Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; BIS. Table 3.3

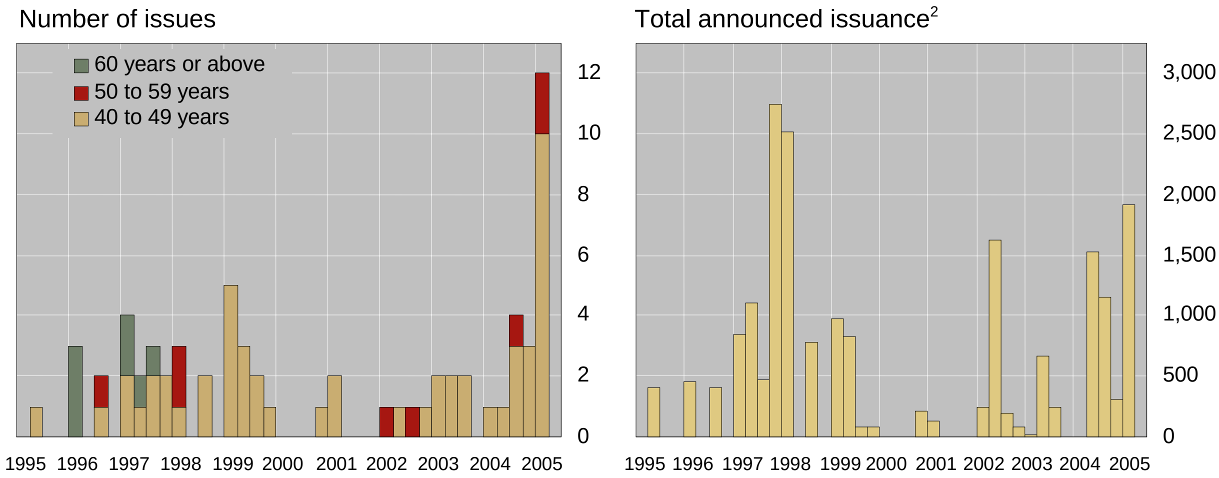
Trésor, a financing arm of the French government. With an issue size of €3 billion originally planned, the total market subscription was a far larger €19.5 billion. In the end, €6 billion ($7.9 billion) of 50-year medium-term notes were issued on 28 February at a spread of 3 basis points over the benchmark 30-year obligations assimilables du Trésor (OAT). In fact, this was the largest single issue at any maturity in the international debt securities market during the period.

... including Telecom Italia

Several other large bonds with a maturity greater than 40 years were also completed during the quarter. Perhaps most notable amongst these was a 45-year Telecom Italia medium-term note with a face value of €850 million. This was priced at a spread of 106.4 basis points over the 50-year OAT. This issue was striking for two reasons. First, there have been only a few long-duration bonds issued by large corporates during the past decade in Europe or the United States, and previous issues tended to be of a much smaller size. Long-dated corporate bonds have met resistance in the past partly because of the scarcity of long-dated government paper for hedging interest rate risk. Second, Telecom Italia has a relatively low rating (Baa2 by Moody's) compared to typical issuers of very long-term debt. Since long-term credit risk can be especially difficult to assess for corporates of medium credit quality, the

Long-maturity international bonds

Straight fixed rate, maturity of 40 years or above[1]



[1] Excluding asset-backed and collateralised issues. [2] All maturities 40 years or above, in millions of US dollars.

Sources: Dealogic; BIS. Graph 3.1

completion of this issue is yet further evidence of the heightened risk appetite of investors in the first quarter.

Mixed picture on US and Japanese issuance

Issuance by US financials increases sharply, but that by corporates declines

The gross amount of borrowing in the first quarter of 2005 by US entities in the international bond and note market increased on a quarterly basis; however, the level was still below the total posted during the first quarter of 2004. About 138% of the rise in gross issuance can be attributed to financial institutions. Fannie Mae and Federal Home Loan Banks continued to be amongst the largest US issuers, each with several issues of bonds and notes over $3 billion in face value. Other financial institutions, such as Wells Fargo & Co and Goldman Sachs Group Inc, also completed large issues during the quarter.

Net issuance of bonds and notes by US entities fell by $1.8 billion in the first quarter. However, a large rise in issuance of money market instruments by US financial institutions led to an increase in net borrowing of all international debt securities by 50% over the fourth quarter of 2004. By contrast, net issuance declined by 81% among non-financial corporations.

Issuance by Japanese nationals remains low

As with US nationals, gross issuance of bonds and notes by Japanese entities rose during the first quarter of 2005 (by 36%), but it declined on a year-over-year basis (by 33%). Net issuance of bonds and notes in the amount of $4.7 billion during the period under review was only slightly below the $5.2 billion posted a year earlier. Along with the rise in net issuance by Japanese nationals, the share of net issuance in yen once again became positive, but remains a negligible portion (0.8%) of the total international bond and note market. This increase in gross and net issuance cannot be attributed to revaluation effects; in fact, the yen depreciated by 4% vis-à-vis the dollar between 1 January and 31 March of this year.

As previously, banks and automotive companies were amongst the largest Japanese issuers in the international market last quarter. Notably, Resona Bank Ltd issued a €1 billion bond with a 10-year maturity. This was the first bond issued by Japan's fifth largest bank aimed at the euro investor market. Making the announcement in mid-February, the issuer was able to take advantage of the continued strong demand for BBB-rated paper in the euro market, and the bond was placed at a spread of 63 basis points over mid-swaps.

Strong risk appetite continues to drive high-yield issuance

Conditions remain attractive for high-yield borrowers

Borrowing by high-yield entities in developed economies stayed at an elevated level during the first quarter. Financing conditions remained favourable for borrowers during January and February, as spreads on high-yield bonds fell to as low as 271 basis points and 234 basis points on the Merrill Lynch US and European high-yield indices, respectively. In March, with several negative news announcements surrounding the auto industry and a heightened risk of a downgrade of General Motors and Ford to junk status, spreads widened by about 80–90 basis points as the mood in credit markets decidedly turned for the worse (see the Overview). In the event, though, gross issuance (at $11.2 billion) was down only slightly from the previous three quarters, and still above the level reached in any quarter between 1999 and 2003 (Graph 3.2).

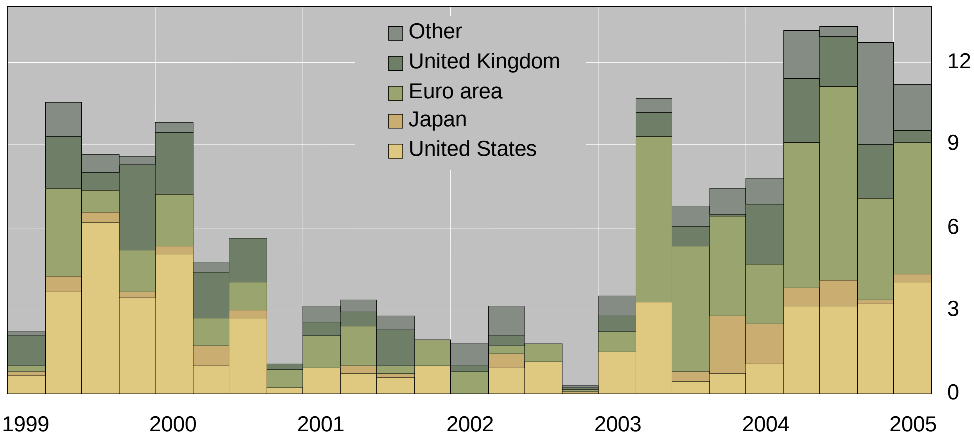
The largest issues brought to the market during the quarter came from firms across several sectors, including mining, forestry products, telecommunications, aerospace and textiles. Geographically, the largest amount of issuance was from entities in the euro area, totalling $4.7 billion.

Several large issues by French firms

This included three large issues from French firms, two of which are rated CCC+ by Standard & Poor's: Ray Acquisition SCA, an electronics outfit, issued a €600 million ($795 million) bond, and Rhodia SA, a chemicals company,

Non-investment grade[1] announced issuance of international bonds by developed country entities

In billions of US dollars, by nationality of issuer



[1] Issuers rated BB or lower.

Sources: Dealogic; BIS. Graph 3.2

issued a five-year bond for €500 million ($650 million). The largest issue from North America was by Novelis Inc, a US metals firm in Canada, which brought a US dollar-denominated $1.4 billion B/B1-rated bond to the market in late January. The bond had 10 years to maturity and was issued at a spread of 309 basis points over 10-year US Treasuries.

Emerging market borrowing surges amidst rising ratings

Gross issuance by emerging market economies at highest level since 1997

Gross issuance of bonds and notes in the international market by emerging market countries was up by 32.7% from the fourth quarter of 2004. The level of gross issuance was very high even taking into account seasonal factors, and the strong growth is particularly striking given that emerging market countries set a record for borrowing on the international market in 2004. Evidently, investors continued to have a strong appetite for emerging market debt, even though credit markets globally began to lose momentum towards the end of the quarter. A combination of improved macroeconomic fundamentals in emerging market countries broadly and low risk aversion amongst investors in emerging market debt meant that spreads on JPMorgan Chase's EMBI+ reached a historical low on 8 March. Moreover, despite widening by 54 basis points during the rest of March, spreads were still roughly equal to pre-Asian crisis levels at the end of the quarter.

Net issuance strongest by entities from emerging Europe

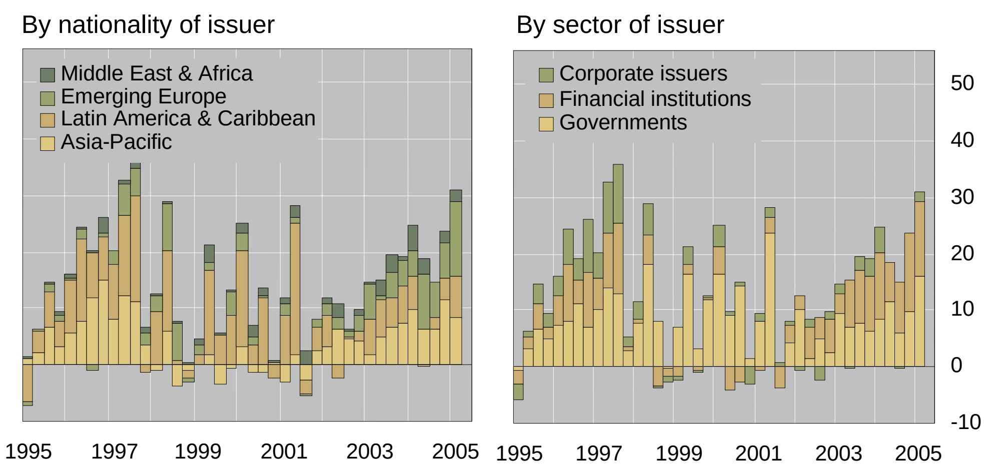
Net issuance of bonds and notes by emerging market countries also rose, by 36.3%, and was higher on a year-over-year basis as well. Most of the growth in net issuance was due to entities from emerging Europe and, to a lesser extent, Latin America (Graph 3.3). By contrast, net issuance declined in Asia. In a reversal from the previous quarter, net borrowing by governments of emerging market countries outpaced that by financial institutions.

Many large issues by Korean nationals

The largest Asian borrowers on the international market during the first quarter were mostly from Korea. Notably, two of the issues were denominated in euros, while two other large issues were in US dollars. Anecdotal evidence

International debt securities issues by emerging market entities

Net issuance, in billions of US dollars



Sources: Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; BIS. Graph 3.3

suggests that euro-based investors have been relatively underweight on Korean debt compared to dollar-based investors. The Korea Development Bank, which has ratings of A– by Standard & Poor's and A3 by Moody's, issued a five-year floating rate note denominated in euros. The €500 million ($655 million) note was placed at a spread of 30 basis points over three-month Euribor on 7 February. Korea First Mortgage No 4 Plc also issued a euro-denominated note, backed by residential mortgages, for €500 million.

The largest single issue from Asia was by the Republic of the Philippines. As market sentiment about the fiscal situation in the Philippines has wavered in recent quarters, the government has been less active in the international market. However, before receiving a two-notch rating downgrade by Moody's in February, the government was able to complete a $1.5 billion issue denominated in US dollars, with a maturity of 25 years, on 2 February.

Governments of Venezuela, Mexico and Brazil are active

Mexican and Brazilian entities were the largest net issuers from Latin America in the first quarter, with net borrowing of $3.6 billion and $2.6 billion, respectively. Moreover, Mexican corporations were the only non-public entities from the region with positive net issuance during the quarter. As was the case with Asia, two of the largest issues from Latin America were denominated in euros, one by a sovereign and one by a public oil company. The former, by the Republic of Venezuela, was a 10-year bond with a face value of €1 billion ($1.33 billion) and a coupon of 7%. The latter was also a €1 billion ($1.31 billion) medium-term note, issued by Pemex Project Funding Master Trust (and guaranteed by Petroleos Mexicanos-PEMEX). The government of Brazil issued two bonds denominated in US dollars, with face values of $1.25 billion and $1 billion on 4 February and 7 March, respectively. The Mexican government announced a $1 billion 10-year dollar-denominated bond issue on 4 January at a spread of 145 basis points over 10-year US Treasuries. Soon after, Mexico's sovereign credit rating was upgraded by two major rating agencies. On 6 January, Moody's raised its rating of Mexico from Baa2 to Baa1, and on 31 January Standard & Poor's boosted its rating from BBB– to BBB.

Poland completes a record issue of €3 billion

The governments of Poland, Turkey and Hungary were the largest issuers in emerging Europe. The Republic of Poland completed a euro-denominated medium-term note on 18 January with a face value of €3 billion. This is the largest single bond or note ever issued by the Polish government in the international market (in the past, other announcements of similar size have consisted of multiple tranches). One of the potential reasons for bringing such a large issue to the international market is an effort to fulfil the eligibility criteria for listing securities on the Euro MTS market, in which Polish issuers can participate once Poland becomes part of the euro currency union. The Republic of Turkey issued a $2 billion bond denominated in US dollars, and the Republic of Hungary also issued a dollar-denominated bond, in the amount of $1.5 billion. Both of these governments also announced euro-denominated issues in the amount of €1 billion each.

Several sovereigns receive rating upgrades

Along with the sovereign rating actions already mentioned above, Argentina, Chile, India, Indonesia, Russia, South Africa, Turkey and Venezuela all experienced rating upgrades by at least one major rating agency during the first quarter, yet another signal of the positive investment environment faced by many emerging market borrowers. In particular, Russia's sovereign credit rating from Standard & Poor's crossed the investment grade threshold on 31 January, going from BB+ to BBB–. In the past, crossings of this threshold have tended to be anticipated in credit markets (see box). In the case of Russia, launch spreads had declined precipitously throughout 2004, foreshadowing the subsequent rating upgrade by Standard & Poor's.

Local currency issuance by emerging markets picks up

Local currency issuance continues its upward trend

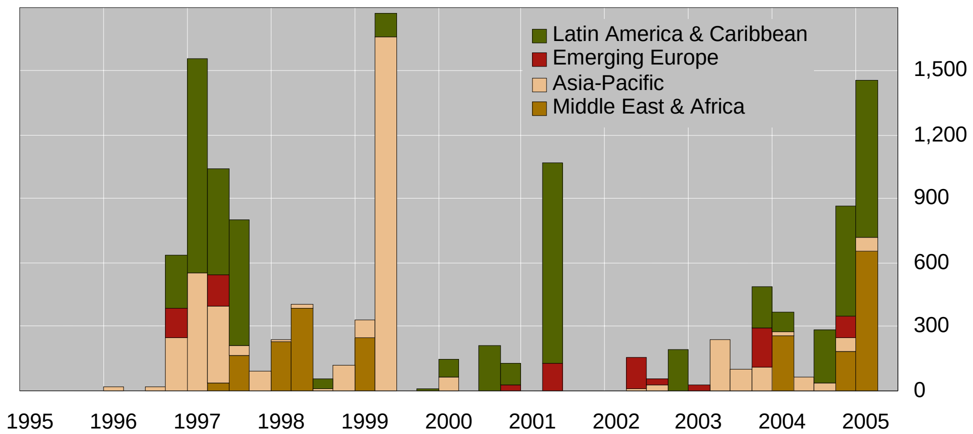
International issuance by emerging market entities in local currencies rose significantly during the first quarter, reaching the highest level (in US dollars) since the second quarter of 1999 (Graph 3.4). In fact, local currency issuance had been rising steadily since late 2003, with investors becoming more willing to buy less traditional securities as the yields on most sovereign and corporate debt fell to unusually low levels during this period.

Increases in local currency issuance were registered in the regions of Asia-Pacific, Latin America and the Middle East and Africa. The sharp rise in local currency issuance in Africa, to $653 million from $186.7 million in the previous quarter, can be attributed to two South African entities: Aveng Ltd, an industrial holding company, issued a convertible bond, and The Thekwini Fund 5 (Pty) Ltd issued several tranches of residential mortgage-backed securities. In Latin America, the Republic of Colombia issued two local currency bonds, where the coupon payments are to be made in US dollars. By contrast, there was no local currency issuance from emerging Europe in the international market during the period, although there has been substantial investment in the domestic bond markets by foreign investors.

Overall, the portion of local currency issuance from emerging market nationals in the international market is still quite small. Whether the recent pickup can be sustained, particularly in the face of an increase in risk aversion among global investors, remains to be seen.

International debt securities issuance in local currency by emerging market entities

Announced issuance by nationality of issuer, in millions of US dollars



Sources: Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; BIS. Graph 3.4

The anticipation of sovereign rating migrations in bond spreads

Blaise Gadanecz

While the anticipation of future *corporate* rating migrations in current corporate spreads has been analysed in the extant literature, much less attention has been devoted to this issue from the angle of emerging markets' *sovereign* credit ratings. In addition, most of the existing literature on this topic deals with spreads on secondary, not primary, markets. In this box, we examine the relationship between emerging market sovereign bond spreads at issuance and subsequent migrations in sovereign ratings assigned by Standard & Poor's. We show that a significant relationship can be established empirically, which we interpret as evidence that emerging market sovereign rating migrations are anticipated in bond spreads. This effect can only be detected, though, when a rating migration involves crossing the investment grade threshold.

In order to assess to what extent future emerging market sovereign rating migrations are incorporated into sovereign spreads, we adapt the approach used for corporate loans by Carey and Nini (2004).[①] We regress individual sovereign bond spreads in the primary market on a number of pricing factors established in the literature, plus variables that track any sovereign rating migration during the year following issuance. Because of its importance for investors, we explicitly consider the distinction between rating migrations involving a crossing of the investment grade threshold (ie the debtor country is upgraded from speculative to investment grade or vice versa) and simple rating moves not involving such a change. These two types of rating migrations are controlled for by separate dummy variables on the right-hand side. Because of differences in market reaction established in the literature,[②] we look at upgrades and downgrades separately.

Sovereign bond spreads at issuance and subsequent rating migrations

Dependent variable: sovereign bond spreads (in basis points)	Effect on spread		Number of cases
	Coefficient	(standard error)	
Simple upgrade	26.1	(17.4)	136
Simple downgrade	31.9*	(16.4)	148
Upgrade from high-yield to investment grade	–141.9***	(32.0)	20
Downgrade from investment grade to high-yield	89.7**	(39.6)	25
Total number of observations			482
Adj R^2	0.59		
Adj R^2 (without controls for rating migrations)	0.57		

Note: Estimates are obtained from an OLS regression, using data over the period 1993–2003. ***, ** and * stand for significance at the 1%, 5% and 10% level, respectively. In 153 cases, there was no rating change during the year that followed issuance. In addition to the dummy variables tracking subsequent sovereign rating migrations, several explanatory variables commonly used in the literature were included in the regression: bond size, maturity, guarantees, collateral, currency risk, the EMBI sovereign spread index, as well as solvency and liquidity indicators for the borrower country at the time of issuance.

Using this regression analysis framework, inferences can be made regarding the anticipation of sovereign rating migrations in spreads at issuance (see table). It appears that a subsequent rating downgrade (upgrade) involving a crossing of the investment grade threshold is systematically associated with higher (lower) spreads at issuance: 90–140 basis points. This suggests that investors incorporate credit information into prices ahead of rating changes, by demanding more (less) compensation in anticipation of higher (lower) future default risk.[③] By contrast, simple rating changes (those not involving a transition from investment to speculative grade or vice versa) seem not to be anticipated in bond spreads. The importance of crossing the investment grade threshold could be related to the changes it entails with regard to the eligibility of the debtor for inclusion into an index or a class of assets on which investors can take positions.

[①] "Is the corporate loan market globally integrated? A pricing puzzle", Board of Governors of the Federal Reserve System, *International Finance Discussion Paper*, no 813, August. [②] See, for instance, M Micu, E M Remolona and P D Wooldridge, "The price impact of rating announcements: evidence from the credit default swap market", *BIS Quarterly Review*, June 2004. [③] The results could, of course, also reflect announcements of rating changes by another rating agency (eg Moody's) around the time of debt issuance, or rating outlook changes announced by any of the agencies. However, we did not examine such possibilities.