BIS QUARTERLY REVIEW

June 1999

INTERNATIONAL BANKING AND FINANCIAL MARKET DEVELOPMENTS

BANK FOR INTERNATIONAL SETTLEMENTS
Monetary and Economic Department
Basel, Switzerland

Copies of publications are available from:

Bank for International Settlements
Information, Press & Library Services
CH-4002 Basel, Switzerland

Fax: +41 61 / 280 91 00 and +41 61 / 280 81 00

This publication is available on the BIS website (www.bis.org).

© *Bank for International Settlements 1999. All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.*

ISSN 1012-9979
Also published in French, German and Italian.

CONTENTS*

I. Overview of recent international banking and financial market developments 1

II. The international banking market 5

Overview 5
Business with countries inside the reporting area 7
Business with countries outside the reporting area 8
Structural and regulatory developments 11
Box: Recent developments in the international banking business of Hong Kong 13

III. The international securities markets 15

Overview 15
Money market instruments 17
Longer-term international securities 18
Structural and regulatory developments 24
Box: The impact of debt restructuring on emerging market bonds 25

IV. Derivatives markets 26

Overview 26
Exchange-traded instruments 26
Over-the-counter instruments 30
Structural and regulatory developments 32
Box: Effects of the new millennium on money market interest rates 34

STATISTICAL ANNEX

LIST OF RECENT BIS PUBLICATIONS

* Queries concerning the contents of this commentary should be addressed to Jean Kertudo (Tel. +41 61 280 8445), Serge Jeanneau (Tel. +41 61 280 8416) or Eli Remolona (Tel. +41 61 280 8414). Queries concerning the statistics should be addressed to Rainer Widera (Tel. +41 61 280 8425).

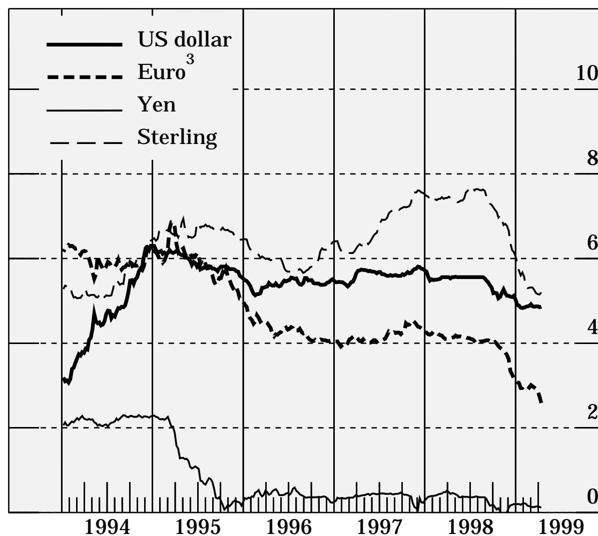
I

Overview of recent international banking and financial market developments

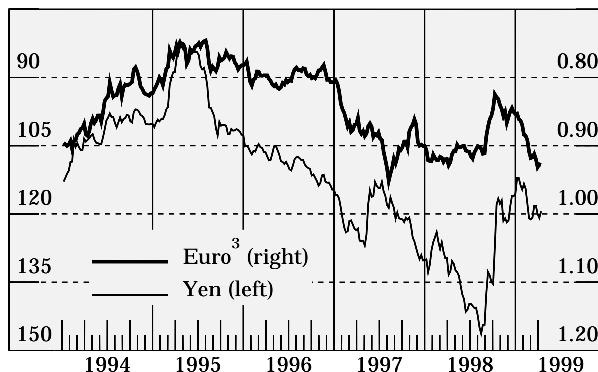
Conditions in global financial markets showed signs of improving during the *first quarter of 1999*. The decision to float the Brazilian currency in January had a negative impact on market conditions, but this was short-lived since the announcement had been largely anticipated and leverage considerably reduced. While the rebound of yields on benchmark long-term bonds and of equity indices indicated some reversal in the flight to safety and liquidity, various indicators of market stress suggested that last autumn's global reassessment of risk had a lasting influence. Thus, despite some retreat,

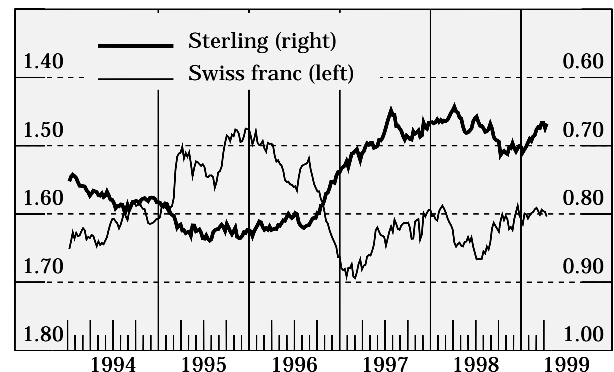
International short and long-term interest rates

Weekly averages, in percentages



Bilateral exchange rates

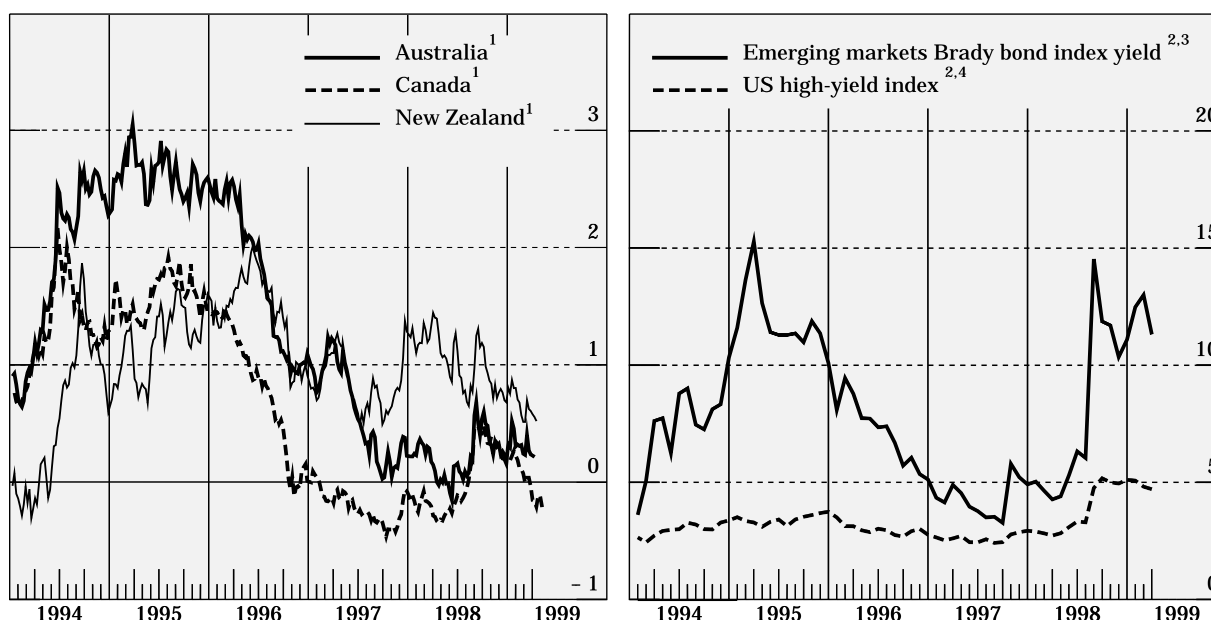




[1] Three-month euromarket interest rates. [2] Yields in annual terms on the basis of 10-year benchmark government bonds. [3] ECU before 1999.

Sources: Datastream; national data; BIS.

Yield differentials vis-à-vis US long-term benchmarks



[1] Weekly averages, in percentage points; 10-year yield less the US 10-year Treasury yield. [2] End-month data, in percentage points. [3] Yield stripped of collateral backing less the US 30-year Treasury yield. [4] Sub-investment-grade corporate bond yield less the US 30-year Treasury yield.

Sources: Datastream; JP Morgan; Merrill Lynch; national data; BIS.

credit spreads, liquidity premia[1] and volatility all remained well above their pre-Russian crisis levels. Finally, fears of a possible loss of confidence in the US currency dissipated as buoyant US economic growth gave rise to anticipations of higher interest rates. In contrast, the initial enthusiasm of investors for the euro rapidly waned owing to the weakness of economic activity in the euro area.

The most striking sign of improved market confidence was in the area of long-term international debt securities. Announced issuance in the first quarter of 1999 surged by 58% from the fourth quarter of 1998, reaching an all-time high of $415 billion. The launch of the euro in January was evidently a factor, with a number of large borrowers seeking to create benchmarks. Primary activity in the new currency posted an 84% gain from the 1998 average in the 11 legacy currencies and the ECU, to $147 billion.[2] Announced US dollar denominated issues also recorded a strong increase, rising by 32% from last year's average to an all-time high of $200 billion. Financial institutions led the upsurge in overall activity, under the combined influence of consolidation and restructuring within the financial industry. The market also saw the return of emerging market names soon after the Brazilian devaluation, albeit at prices more commensurate with perceived risks.

In contrast, the volume of international syndicated loan facilities dropped from $225 billion in the fourth quarter of 1998 to $156 billion, hampered by the tightening of lending conditions. Thus, the heavy capital-raising activity of banks seems to have been due less to a desire to expand than to strengthen balance sheets. The decline in facilities may also have been partly related to the growing

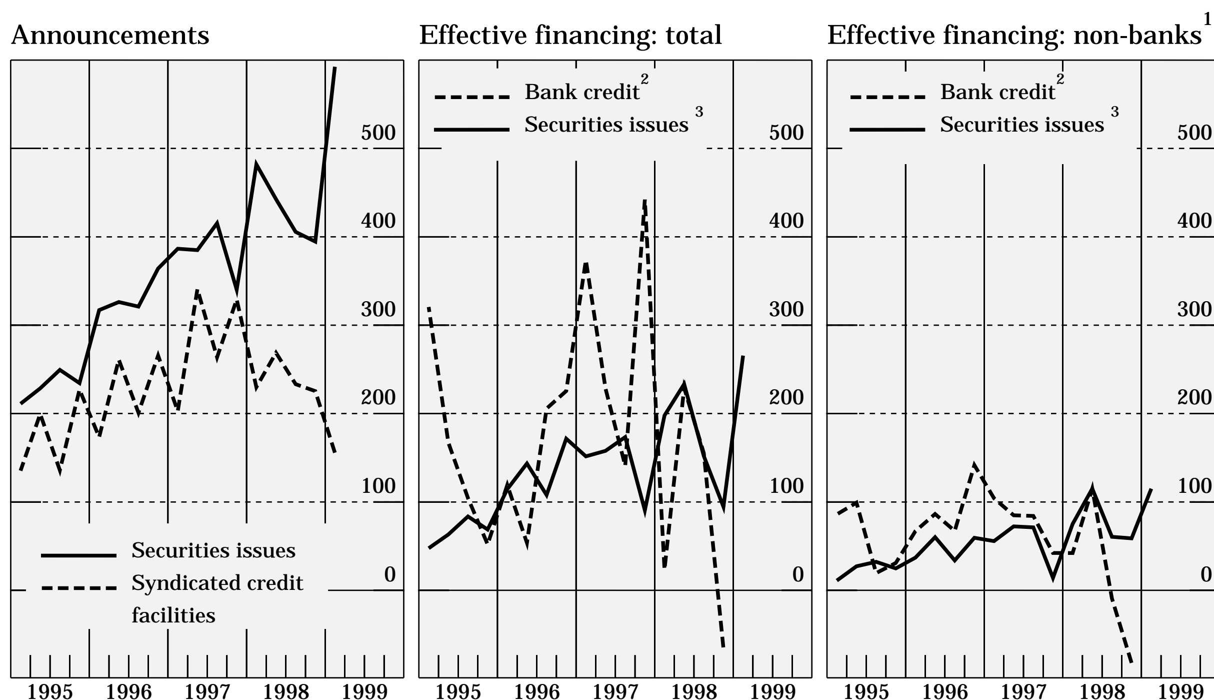
---

[1] For example, the yield differential between "off-the-run" and "on-the-run" US Treasury bond issues in the US fixed income market.

[2] It should be stressed, however, that the creation of the single European currency has further compounded the problem of distinguishing between domestic and offshore issuance, as illustrated by the recent confusion in various published sources over the size and composition of the international securities market (see Part III).

Activity in international bank credit and securities markets

In billions of US dollars



[1] Excluding non-bank financial institutions for securities issues. [2] Exchange-rate-adjusted changes in gross international bank claims. [3] Gross issues minus repayments.

Sources: Bank of England; Capital DATA; Euroclear; International Financing Review (IFR); International Securities Market Association (ISMA); national data; BIS.

use of short-term credit lines, which are less capital intensive, but which are not included in the BIS data on announcements. In addition, wider participation by institutional investors and growing secondary market trading brought banking and securities markets closer together, implying that credit risk and liquidity factors now exert a stronger impact on the availability of funds and pricing conditions than in the past.

Meanwhile, the more detailed BIS statistics on international banking activity available for the *fourth quarter of 1998* revealed a high degree of interdependence between bank lending and the strategies pursued by non-bank investors. There was a $100 billion drop in banks' outstanding loans to non-bank customers located inside the BIS reporting area (which includes the major financial centres), supporting other evidence that banks contributed to the overall market reversal. Interestingly, the even larger withdrawal of international deposits by the same non-banking sources (–$120 billion) shows that the abrupt reappraisal of global exposures in the wake of the Russian moratorium and the LTCM debacle hindered international bank intermediation. This sheds new light on the decision by monetary authorities to inject liquidity in order to avoid a credit crunch, although the advent of the euro possibly added to banks' reluctance to renew existing positions.

In the derivatives industry, the launch of the euro had somewhat contrasting implications for organised exchanges and over-the-counter (OTC) markets in the *first quarter of 1999*. Anticipation of the single currency had given rise in 1998 to a contest of new contracts among exchanges. The bund contract at Eurex and the Euribor contract at LIFFE were the clear winners, as liquidity played in their favour. Liquidity proved more elusive in the OTC market. Trading activity in the new currency was constrained by the lack of adequate references in the pricing of interest rate swaps and forex options. Markets also felt the absence of leveraged investors who had previously provided substantial liquidity. Meanwhile, the trend towards electronic facilities crossing over cash and derivatives markets proceeded apace.

Estimated net financing in international markets[1]

In billions of US dollars

	1997	1998					1999	Stocks at end-Dec. 1998
	Year	Year	Q1	Q2	Q3	Q4	Q1	
Total international[2] bank claims[3]	1,184.8	343.1	23.4	229.1	155.2	– 64.5	..	11,048.2
minus: interbank redepositing	719.8	228.1	– 26.6	129.1	100.2	25.5	..	5,563.2
A = Net international bank claims[3]	**465.0**	**115.0**	**50.0**	**100.0**	**55.0**	**– 90.0**	..	**5,485.0**
B = Net money market instruments	**19.8**	**7.4**	**10.7**	**1.4**	**7.8**	**– 12.5**	**38.4**	**194.5**
Total completed bond and note issues	1,014.0	1,167.8	312.0	323.3	269.4	263.1	386.4	
minus: redemptions and repurchases	460.5	497.5	124.9	91.4	125.3	156.0	159.2	
C = Net bond and note financing	**553.5**	**670.3**	**187.1**	**232.0**	**144.2**	**107.0**	**227.1**	**4,121.6**
D = Total international financing[4]	**1,038.3**	**792.7**	**247.9**	**333.4**	**207.0**	**4.5**	..	**9,801.1**
minus: double-counting[5]	163.3	227.7	87.9	78.4	57.0	4.5	..	1,456.1
E = Total net international financing	**875.0**	**565.0**	**160.0**	**255.0**	**150.0**	**0.0**	..	**8,345.0**

[1] Changes in amounts outstanding excluding exchange rate valuation effects for banking data and euronote placements; flow data for bond financing. [2] Cross-border claims in all currencies plus local claims in foreign currency. [3] Including holdings of securities. [4] A + B + C. [5] International securities purchased or issued by the reporting banks, to the extent that they are taken into account in item A.

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS.

The global financial turmoil of last year prompted a number of initiatives. In February, the Group of Seven industrial countries established the Financial Stability Forum to improve coordination and information exchange among the national authorities, international institutions and international regulatory or expert groupings with responsibilities for questions of international financial stability. The Forum will meet regularly to assess issues and vulnerabilities affecting the global financial system and identify and oversee the activities needed to address them. In the same month, the central bank governors of the Group of Ten countries clarified the role of the Euro-currency Standing Committee. Given its broader responsibilities, the committee was renamed the Committee on the Global Financial System. As a well-established forum for central bank discussions of financial market issues, the committee will monitor global financial market conditions, undertake long-term research on the functioning of financial systems and make policy recommendations. Finally, mention can also be made of the new joint publication introduced in March by the BIS, the IMF, the OECD and the World Bank on external debt as part of longer-term efforts to improve market transparency.[3] It is to be hoped that the return to calmer financial conditions will not weaken the incentives for improved risk management and market oversight.

[3] The statistics cover the external debt of 176 developing and transition countries. They draw mostly from creditor and market sources, but also include data provided by debtor countries, with particular emphasis being placed on debt falling due within one year. The data are available at www.bis.org/publ/r_db9901.htm.

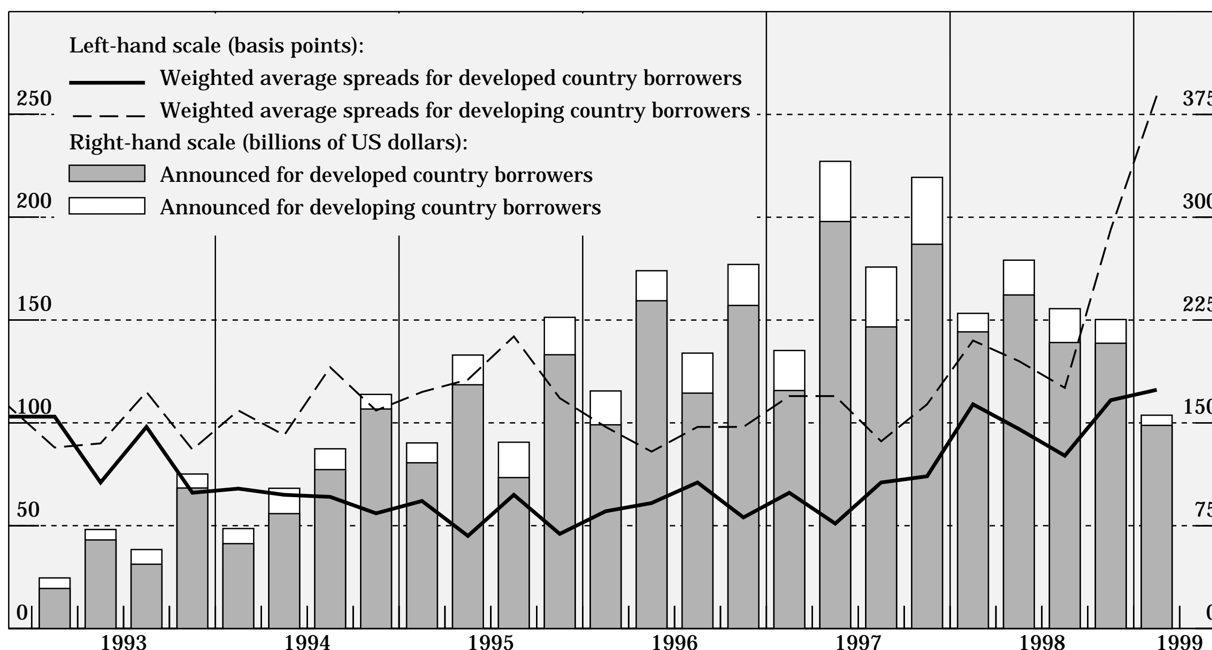
II

The international banking market

Overview

In the *first quarter of 1999*, the total volume of international syndicated loan facilities declined substantially (to $156 billion, from $225 billion in the fourth quarter of 1998). With concerns about credit and liquidity risks still very much in evidence, pricing conditions tightened further for all categories of borrowers. Most affected were emerging market names, for which transactions fell to a low of $6 billion. A few large deals (including one of $7 billion for a US telecommunications company) accounted for a significant share of the total, reflecting the growing ability of the market to attract non-bank funds. At the same time, a secondary market for syndicated loans is taking root in Europe. Although the focus remains on par or near-par loans, trading in distressed loans has also shown signs of expanding.[4] The multiplication of problem loans in the wake of the Russian crisis, the closing of a major Chinese investment corporation, the currency crisis in Brazil and debt restructuring in Asia have boosted interest in such business as a simpler alternative to outright securitisation. In addition to favouring large and liquid transactions, a more mature secondary market also means that prevailing conditions are more quickly reflected in the terms of new deals.

Announced facilities in the international syndicated credit market and weighted average spreads*



* Spreads over Libor on US dollar credits.

Sources: Capital DATA; BIS.

---

4 Distressed corporate loans, which are a separate category from par and near-par loans, are defined as those trading below 65% of par. Activity in Europe should benefit from the introduction in March by the Loan Market Association (LMA) of a code of practice for the trading of distressed loans. The LMA proposals cover a variety of issues such as trade confirmation, settlement period, interest payments and transfer of documentation, and are aimed at increasing market transparency and liquidity.

Main features of international claims of BIS reporting banks[1]

In billions of US dollars

	1997	1998	1997	1998				Stocks at end-Dec. 1998
	Year	Year	Q4	Q1	Q2	Q3	Q4	
Claims on outside area countries	**98.6**	**– 29.6**	**– 2.9**	**– 5.0**	**– 4.5**	**– 25.7**	**5.6**	**1,200.7**
Claims on inside area countries	**1,095.0**	**394.4**	**457.2**	**28.1**	**234.0**	**202.1**	**– 69.8**	**9,630.6**
Claims on non-banks	242.4	69.9	26.0	28.2	103.2	8.3	– 69.7	2,935.1
Banks' borrowing for local onlending[2]	132.8	96.4	54.1	26.6	1.8	93.6	– 25.6	1,132.3
Interbank redepositing	719.8	228.1	377.1	– 26.6	129.1	100.2	25.5	5,563.2
Unallocated	**– 8.8**	**– 21.7**	**– 12.2**	**0.2**	**– 0.4**	**– 21.2**	**– 0.3**	**216.9**
Gross international bank claims	**1,184.8**	**343.1**	**442.1**	**23.4**	**229.1**	**155.2**	**– 64.5**	**11,048.2**
Net international bank claims[3]	**465.0**	**115.0**	**65.0**	**50.0**	**100.0**	**55.0**	**– 90.0**	**5,485.0**
Memorandum item: Syndicated credits[4]	**1,136.3**	**957.3**	**329.1**	**229.9**	**268.8**	**233.2**	**225.4**	

[1] Changes in amounts outstanding excluding exchange rate valuation effects. [2] Estimates of international borrowing by reporting banks, either directly in domestic currency or in foreign currency, for the purpose of local onlending in domestic currency (see also notes to Table 1 of the statistical annex). [3] Defined as total international claims of reporting banks minus interbank redepositing. [4] Announced new facilities.

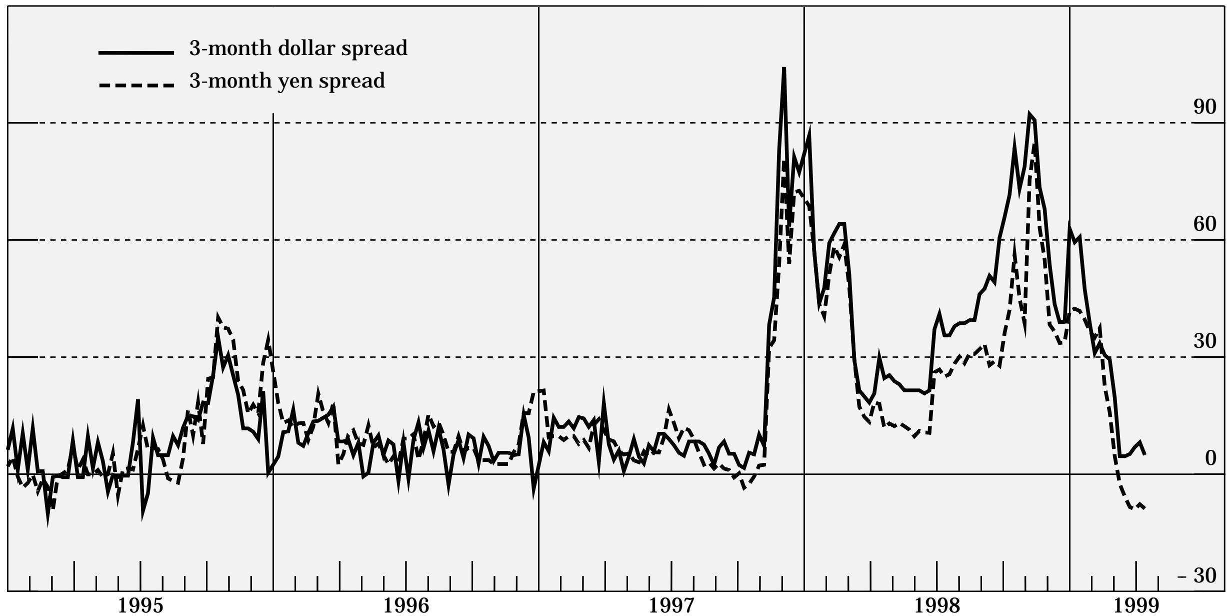
The detailed BIS international banking statistics available for the *fourth quarter of 1998* shed light on the extent of the reappraisal in global exposures which took place in the wake of the Russian moratorium and the LTCM debacle. Despite some easing of the credit squeeze faced by emerging market borrowers, there was an absolute decline (–$65 billion) in the stock of international bank credit outstanding, the first recorded in a fourth quarter since 1992. Non-bank entities located inside the reporting area bore the brunt of the adjustment, with a $70 billion drop in claims vis-à-vis such customers (including both cross-border claims and local claims in foreign currency). Nevertheless, in view of the sharper decline in the volume of deposits originating from the same source (–$119 billion), it can be argued that the disruption to international bank intermediation in the fourth quarter was due as much to the reduced ability of banks to attract funds as to their own reluctance to extend credit. Allowance for these developments on both sides of banks' balance sheets puts into a somewhat broader perspective the decision by the monetary authorities of the major countries to inject liquidity.

At the same time, the reallocation of funds through the international interbank market helped alleviate fears concerning the potential shortage of liquidity faced by certain banking groups. This was particularly significant in the case of Japan. There were large net exports of foreign currency by the Japanese banking system in the period under review ($68 billion; see Annex Table 2C), which can be directly attributed to the inter-office funding of Japanese banks. Meanwhile, the parallel build-up of yen-denominated claims on Japan by other reporting banks gives substance to earlier market reports of Japanese banks' extensive use of the foreign exchange market as a substitute for dollar borrowing. The counterparties rechannelled the yen thus received to Japan mainly through purchases of government paper. The very low yields on such paper add credence to anecdotal evidence of the profits made by these banks on forex swaps or on yen deposits (given that these paid negative interest rates).[5]

[5] This strategy, which involved Japanese banks raising funds in yen and selling them for dollars in the spot market to foreign banks while simultaneously entering into forward sales of dollars (mainly through forex swaps), was discussed in the previous issue of this commentary (Part V).

US dollar and yen spreads of Tibor over Libor

Weekly data, in basis points



Sources: Reuters; BIS.

In addition to being confronted with a significant drying-up of funding in the fourth quarter of 1998, the international interbank market had to face the impending introduction of the euro and the disappearance of forex business in its legacy currencies. In fact, many European banking groups appear to have reduced the scale of their foreign exchange activity well in advance of the deadline. Uncertainties surrounding the transition could have added to the reluctance of banks and their customers to renew existing positions. These factors may have been responsible for the fall in the international balance sheet of French banks. In contrast, German banks pursued their global growth strategy, benefiting from enhanced demand for Deutsche mark assets by foreign non-bank investors. Of note in this context was the further increase in German banks' holdings of European securities and their expansion of ECU/euro business.

Business with countries inside the reporting area

The reported $70 billion fall in reporting banks' international exposure to inside area non-bank entities masked an even larger cut in credit lines to such customers (–$100 billion), partly offset by securities purchases ($30 billion).[6] In addition to acquiring Japanese securities ($22 billion), notably government paper, reporting banks added to their holdings of European securities (French in particular), possibly to exploit the new arbitrage opportunities offered by the exceptionally strong investment demand for German benchmark paper.[7] Excluding securities business, the sharp reduction in credit lines to non-bank customers mainly affected entities located in offshore centres (–$50 billion), the United States (–$21 billion) and the United Kingdom (–$20 billion). The involvement of centres which are host to a number of hedge funds was already reported in the third quarter, but the fact that the cutback increased considerably in depth and scope in the fourth quarter shows how widespread the retrenchment became.

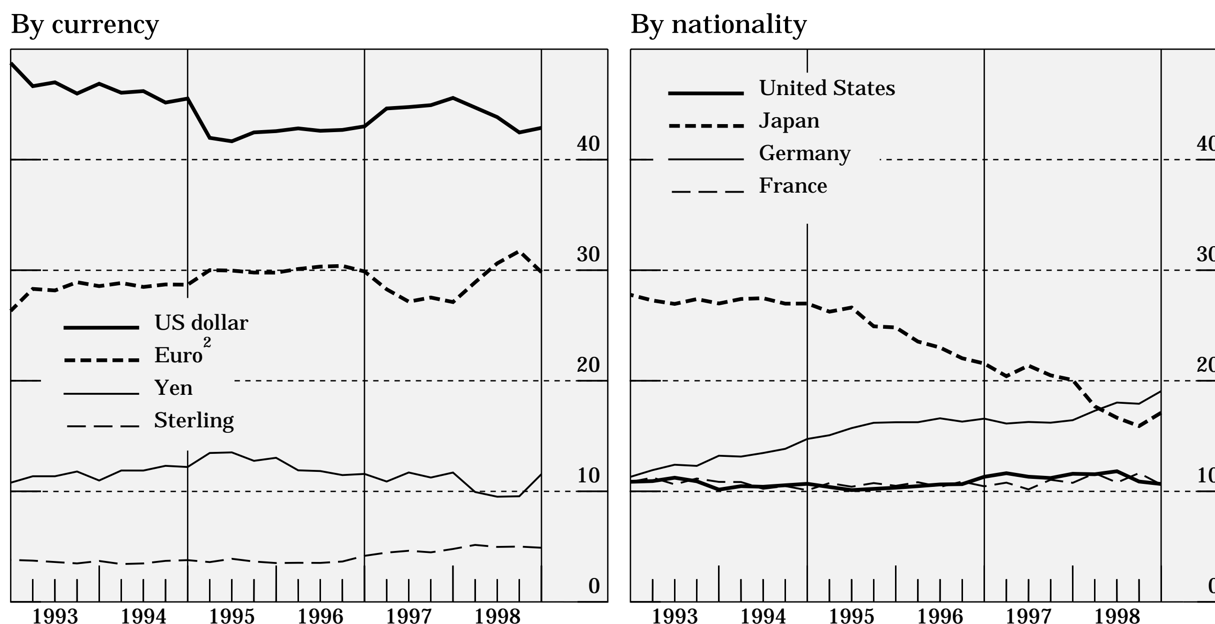
---

[6] The figure includes both cross-border holdings and local holdings of foreign currency securities. The geographical breakdown of the cross-border component can be inferred from Annex Tables 6B (total assets) and 7B (loans only).

[7] Recent regulatory amendments reducing the relative capital cost of trading positions may have contributed to the growth in the securities component of banks' balance sheets.

Currency and nationality structure of international bank lending[1]

Percentage shares, at end of quarter



[1] Cross-border claims and local claims in foreign currency of banks located in industrial reporting countries. [2] Belgian franc, Deutsche mark, ECU, French franc, guilder and lira only.

Source: BIS.

There was also some anecdotal evidence that reporting banks pared credit lines to their own non-bank subsidiaries located in Caribbean centres, which may have reflected a reconsideration of proprietary trading positions and strategies.

This abrupt reallocation of claims, away from loans and towards securities (with possibly a preference for public sector debt), supports other evidence that banks played a major role in the market reversal of the fourth quarter. Inadequate credit risk analysis of counterparties and of collateral assets may have unwittingly allowed excessively large and concentrated exposures by internationally active banks. In relying increasingly on capital markets to meet shortfalls in their traditional sources of funding in recent years, banks may have become complacent about the availability of liquidity. In the fourth quarter of 1998, the cool reception met with by financial institutions in the international securities market, combined with substantial withdrawals of non-bank deposits (with a $83 billion decrease in deposits by non-bank investors located in the reporting area), revealed the fallacy of such an assumption.

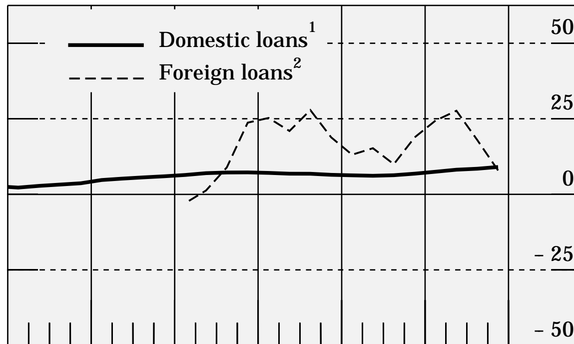
Business with countries outside the reporting area

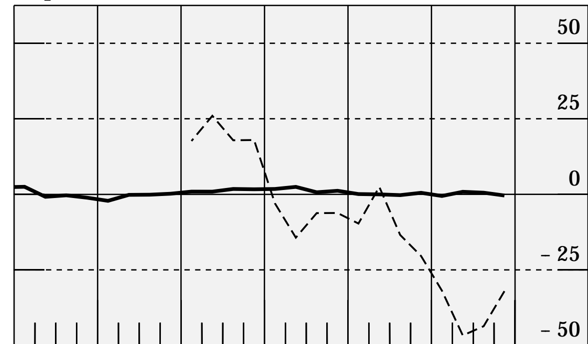
The general credit squeeze faced by emerging market borrowers continued in the fourth quarter, but there seems to have been an easing of pressure, accompanied by selective lending to certain countries. Thus, despite a further overall decline in banking exposure to Asia and Latin America, countries such as Mexico, the Philippines and Taiwan received modest amounts of fresh funds. The resumption of lending so soon after the imposition of the Russian debt moratorium seems to point to a greater willingness among lenders to differentiate between emerging market names and to provide financing when yields are deemed commensurate with risks.

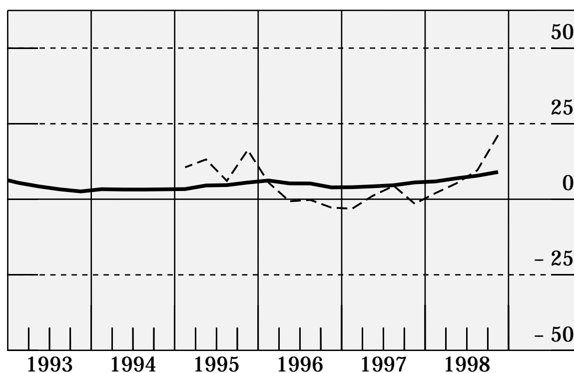
In Asia, Thailand and South Korea continued to shoulder the heaviest repayment burden (about $5 billion each). In both countries, however, the fall in interest rates, the stability of the currency and the rebound in the stock market (especially in Korea) suggest large imports of capital on other accounts. Indonesia and Malaysia faced their fifth consecutive quarter of repayments, but

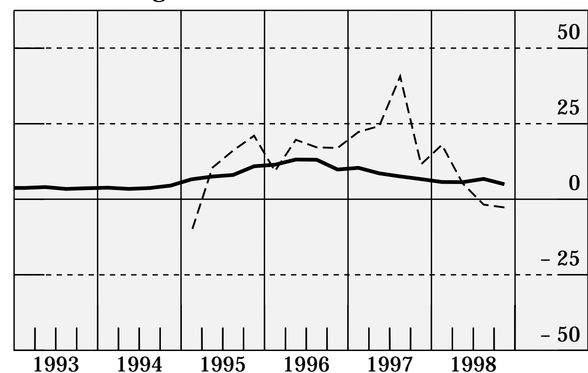
Loans to non-banks

Annual percentage changes









[1] Credit to the private sector only. [2] Credit to domestic non-banks by banks located outside the country (excluding securities). [3] Excluding Luxembourg and Portugal.

Sources: National data; BIS.

these outflows slowed to a trickle in the fourth quarter. The Philippines, which has been less affected by the credit squeeze, received some $1.7 billion of new funds from reporting banks, allowing the country to recoup the losses of the third quarter. Surprisingly, the default by the Guangdong International Trust and Investment Corporation (GITIC) in October does not seem to have been associated with a withdrawal of banking funds from China in the fourth quarter. However, the $1 billion increase in reported claims on the country was more than accounted for by the bookkeeping operations of one major Chinese bank with its foreign affiliate, affecting both sides of its balance sheet. After allowing for this temporary factor, claims on China may have been reduced by more than $3 billion during this period, following a $6.3 billion fall in the third quarter.

In Latin America, the growing financing difficulties faced by Brazil following the outbreak of the Russian crisis were reflected in a further $4.5 billion cut in banks' exposure to the country (following one of $8 billion in the preceding quarter). Although the Russian debt moratorium served as the catalyst for the outflows, there was subsequently a more far-reaching reassessment of Brazil's economic and financial prospects.[8] Contagion ensnared Argentina in the fourth quarter, triggering $2.8 billion of repayments to reporting banks, but better fundamentals enabled the country to tap the

[8] In December, a refusal by the Brazilian Congress to ratify fiscal reform measures brought about the collapse of the São Paulo stock market. Further financial difficulties led the government to abandon the exchange rate regime in January and float the real.

Banks' business with countries outside the reporting area*

In billions of US dollars

	1997	1998	1997	1998				Stocks at end-Dec. 1998
	Year	Year	Q4	Q1	Q2	Q3	Q4	
Total assets	**98.6**	**– 29.6**	**– 2.9**	**– 5.0**	**– 4.5**	**– 25.7**	**5.6**	**1,200.7**
Developed countries	25.2	30.8	4.4	9.5	2.3	8.8	10.2	248.2
Eastern Europe	18.5	– 0.5	2.7	6.3	4.6	– 10.4	– 1.0	108.8
Developing countries	54.9	– 59.9	– 9.9	– 20.8	– 11.4	– 24.1	– 3.6	843.7
Latin America	34.1	0.7	9.9	12.7	2.0	– 8.0	– 6.1	309.0
Middle East	10.5	23.3	7.2	– 0.8	6.2	7.5	10.5	106.6
Africa	2.6	– 1.1	0.3	0.8	– 1.7	– 0.2	0.0	58.7
Asia	7.6	– 82.8	– 27.4	– 33.5	– 18.0	– 23.4	– 7.9	369.3
Total liabilities	**77.2**	**– 13.2**	**8.9**	**28.3**	**0.5**	**– 19.9**	**– 22.1**	**1,047.9**
Developed countries	18.3	– 8.3	– 1.5	– 0.7	5.8	– 3.7	– 9.7	193.9
Eastern Europe	9.4	– 11.8	– 3.3	– 2.4	2.4	– 8.1	– 3.7	45.6
Developing countries	49.4	6.9	13.7	31.4	– 7.8	– 8.1	– 8.6	808.4
Latin America	23.4	– 12.6	– 2.8	16.1	– 8.9	– 20.0	0.1	239.1
Middle East	– 5.9	17.0	0.2	6.0	– 3.6	17.3	– 2.7	230.6
Africa	7.2	– 1.9	– 1.0	1.4	– 0.2	– 2.0	– 1.2	54.0
Asia	24.8	4.5	17.3	7.9	5.0	– 3.5	– 4.9	284.8

* Changes in amounts outstanding excluding exchange rate valuation effects.

international securities market (see Part III of this commentary). Mexico appears to have escaped the crisis relatively unscathed, benefiting from tight trade links with a persistently strong US economy. As a sign of international investor confidence, the country's non-bank sector attracted $2.1 billion of new bank financing during the fourth quarter. The public sector also launched a few international bonds in the first quarter of this year, although credit spreads were wider than before the crisis.

Following a record $10 billion fall in the third quarter, outstanding claims on eastern Europe tended to stabilise in the fourth (–$1 billion). The apparent pullback of reporting banks vis-à-vis Russia in the earlier period reflected in large measure a repricing of defaulted government securities denominated in roubles.[9] Having been implemented quickly, this accounting effect seems to have no longer played a role in the fourth quarter, whereas bank loans to Russian entities fell by a further $2.2 billion (see Annex Tables 6A and 7A). In the absence of actual repayments, the decline was possibly due to secondary market sales by reporting banks as prospects for a speedy resolution of the Russian crisis remained elusive. Failure to secure an agreement with the IMF in December and a souring of relations with international creditors over the restructuring of Soviet-era debt added to confusion.[10] As a result, the rouble weakened further in the fourth quarter and there was some evidence that capital flight continued unabated.[11]

---

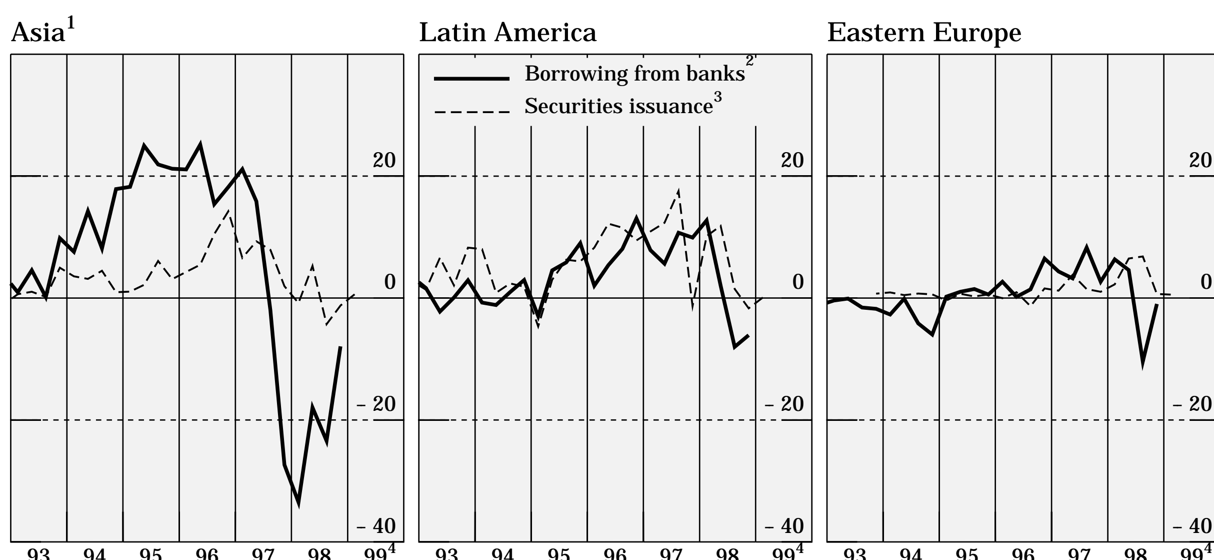
[9] For further details, see *BIS Quarterly Review,* March 1999.

[10] On 29 March 1999 the Russian finance ministry released further details of its proposal to restructure outstanding rouble-denominated debt. Foreign creditors, currently holders of about one-third of this debt, who choose to participate in the deal and repatriate rouble proceeds will pay a premium of up to 20% to buy dollars at special central bank auctions. The introduction of this premium has further irritated international creditors.

[11] Foreign exchange reserves fell by about $1 billion in the fourth quarter of 1998 and an estimated further $1 billion in the first quarter of 1999. In the absence of foreign debt repayments and given the country's trade surplus, this suggests that capital flight remains a problem.

International bank and securities financing by region

In billions of US dollars



[1] Excluding Hong Kong, Japan and Singapore. [2] Exchange-rate-adjusted changes in BIS reporting banks' claims vis-à-vis Asian, Latin American and eastern European countries. [3] Net issues of international money market instruments, bonds and notes. [4] Data on bank borrowing are not yet available for the first quarter of 1999.

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; national data; BIS.

Elsewhere in eastern Europe, generally favourable exchange rate and interest rate developments in the Czech Republic, Hungary and Poland suggest a greater willingness by international investors to differentiate between countries. The small volume of new bank credit to Poland and the Czech Republic, together with the decline in Hungary's external banking debt, should therefore be seen in relation to the strong inflows recorded by these countries on other accounts (equity investment in particular). Indeed, the $0.2 billion rise in claims vis-à-vis the Czech Republic masked a $0.5 billion decline in flows to non-bank entities, reflecting voluntary debt repayment by restructured Czech companies. In addition, in spite of the overall stagnation of claims on Hungary, the appetite of reporting banks for Hungarian securities intensified in the fourth quarter (Annex Table 6A minus 7A). Expectations of a convergence of inflation to EU levels led to a shift of external financing from short-term to longer-dated Hungarian securities at significantly narrower spreads than at the height of the Russian crisis. International and domestic securities issues by Polish entities were also well subscribed by foreign investors.

Finally, although contagion may have added to a reconsideration of lending strategies to countries as diverse as Turkey and South Africa, business in the Middle East continued to thrive. It should be stressed, nonetheless, that the further acceleration of credit to the region was due in large measure to active interbank transactions within the area itself and involving Bahrain as a regional centre.

Structural and regulatory developments

In January, a working group of the Basel Committee on Banking Supervision published two reports dealing with banks' interaction with highly leveraged institutions (HLIs).[12] The first report focuses on three primary objectives: evaluating the potential risks resulting from the activities of HLIs; assessing the deficiencies in banks' risk management practices with respect to HLIs; and evaluating alternative

---

[12] See *Banks' interactions with highly leveraged institutions* and *Sound practices for banks' interaction with highly leveraged institutions*, Basel Committee on Banking Supervision, Basel, January 1999.

policy responses for addressing these risks. Among the most glaring weaknesses, the report notes that banks did not appear to possess effective policies or guidelines for managing exposures to some HLIs consistent with their overall credit standards. The analysis of HLIs' creditworthiness was constrained by the limited availability of financial information; credit decisions were to some degree based on non-systematic assessments of risks and on the reputation and perceived risk management capabilities of the HLIs concerned. These shortcomings compromised the rigour of subsequent stages of the credit process. The report also noted that banks lacked a framework for the accurate estimation of secondary market exposures and that they did not conduct stress tests on their exposures to HLIs.

The working group considered the desirability of indirect and direct regulatory and supervisory responses. The indirect approaches included the promotion of sound practices through the supervisory process, a review of possible distortions in existing regulatory and supervisory measures (in the context of an overall review of the Capital Accord) and an improvement in transparency through a review of the adequacy of public disclosures. The group said that, where indirect measures and enhanced transparency proved insufficient, direct regulatory action might be considered (such as licensing requirements, fit and proper tests and minimum standards for capital and risk management). Since such measures would have to extend to offshore centres in order to be effective, a political initiative going beyond the sole purview of bank supervisors would be required.

The second report, which sets out standards for sound risk management practices, aims at encouraging the development of prudent approaches to the assessment, measurement and management of exposures to HLIs. While the first report highlights several deficiencies in some banks' risk management practices with respect to HLIs, the working group notes that most institutions appear to be tightening their standards following the events of last autumn. Hence, a key motivation for the issuance of sound practices is to ensure that improvements in credit standards and risk management processes are locked in over time and that the lessons are applied to the management of counterparty credit relationships more generally.

The LTCM debacle also led to a number of other public and private sector initiatives in the United States. New guidelines for counterparty credit risk management systems were issued by the Office of the Comptroller of the Currency and the Federal Reserve Board in January and February respectively. In January, 12 commercial and investment banks established a "Counterparty Risk Management Policy Group" which aims to develop flexible standards for better risk management practices. The Group set up three working parties to look at internal risk management practices, the reporting of information (internally, to counterparties and to the authorities) and the possible undertaking of industry-wide initiatives (such as changes to bankruptcy laws and netting).

Recent developments in the international banking business of Hong Kong[1]

Since the transfer of sovereignty at the beginning of July 1997, the international banking assets of Hong Kong have shrunk by 22%. While the crisis in East Asia, which began with the devaluation of the Thai baht on 2 July 1997, has played a role, the decline has been far more pronounced than in Singapore (10%), suggesting that other factors have been at work. The accompanying table, which shows the changes in external assets and liabilities of Hong Kong vis-à-vis selected countries since mid-1997, highlights the main countries involved in this contraction.

Hong Kong's international banking activity has been affected first and foremost by the financial crisis in Japan. The retrenchment of Japanese banks from international lending in the past two years has hit Hong Kong harder than any international financial centre outside Japan. As shown in the first column of the table, claims on Japan represented 56% of all external bank claims booked in Hong Kong at end-June 1997 (compared with less than 10% on average for other BIS reporting centres). In part, Japanese banks were drawn to Hong Kong to circumvent regulation. Funds "round-tripped" from Japan to Hong Kong, in the form of liabilities to banks, and back from Hong Kong to Japan, mostly in the form of loans to non-bank customers. As a result of this role of Hong Kong as an extension of the domestic intermediation of the Japanese banking system, 60% of the international assets of banks in Hong Kong were held by Japanese banks' affiliates.

The weakness of loan demand in Japan and the drive by Japanese banks to improve their capital ratios led to a decline in the amount of offshore yen loans to corporations in Japan. Furthermore, costly dollar funding, as expressed in the so-called Japan premium, led Japanese banks to trim dollar lending. Thus, over the six quarters from mid-1997 to end-1998, Hong Kong-booked claims on non-banks in Japan fell by $115 billion.[2] A corresponding amount ($108 billion) of interbank liabilities was paid back to Japan. The pressure of the Japan premium also led to a $24 billion reduction in interbank advances from Hong Kong to Japan.

In comparison, the impact of the withdrawal of bank credit from the five emerging Asian economies most affected by the crisis was modest. Thus, claims on banks and corporations in Korea, Indonesia and Thailand booked in Hong Kong fell by $20 billion in the six quarters to end-1998 (with claims on Malaysia and the Philippines changing only marginally). This was only one-fifth of the decline of $108 billion in the claims recorded by all BIS area banks on this group of countries. Meanwhile, claims on China fell by $8 billion.

This brief review of international banking business in Hong Kong sheds light on the $179 billion drop in BIS area banks' net claims on Hong Kong in the six quarters to end-1998 (see the memorandum items in the table). This amount is reduced to $64 billion once the funding counterpart to $115 billion of loan repayments by Japanese non-bank customers is deducted. A further $28 billion corresponded to reduced claims on the five Asian emerging markets most affected by the crisis and China. The balance of $36 billion reflected both recession in Hong Kong and a cutback in credit to the Hong Kong offsprings of foreign entities, especially those of Chinese parentage. It is worth noting, however, that while the interbank liabilities of banks in Hong Kong fell sharply in this period, deposits by foreign non-banks fell only marginally, suggesting no heightening in the perception of Hong Kong-specific risk.

[1] Contributed by Robert McCauley and Y K Mo of the BIS Representative Office for Asia and the Pacific. [2] The yen/dollar rate at end-1998 was within 1 percentage point of that at mid-1997, so the valuation effects from this source were negligible.

External assets and liabilities of banks in Hong Kong

In billions of US dollars

		Assets			Liabilities		
		Total	**Bank**	**Non-bank**	**Total**	**Bank**	**Non-bank**
World	mid-1997	645	337	308	634	553	81
	end-1998	501	319	182	447	367	80
	Change	**– 144**	**– 18**	**– 126**	**– 187**	**– 186**	**– 1**
Japan	mid-1997	364	128	236	311	307	4
	end-1998	225	104	121	203	199	4
	Change	**– 139**	**– 24**	**– 115**	**– 108**	**– 108**	**0**
Indonesia, Korea, Malaysia, Philippines and Thailand	mid-1997	53	35	18	19	14	5
	end-1998	33	22	11	21	16	5
	Change	**– 20**	**– 13**	**– 7**	**2**	**2**	**0**
China	mid-1997	50	41	9	40	38	2
	end-1998	42	35	7	37	35	2
	Change	**– 8**	**– 6**	**– 2**	**– 3**	**– 3**	**0**
Memorandum items	***BIS reporting banks' positions vis-à-vis Hong Kong***						
	mid-1997	*504*	*478*	*26*	*296*	*233*	*63*
	end-1998	*324*	*304*	*20*	*295*	*240*	*55*
	Change	***– 180***	***– 174***	***– 6***	***– 1***	***7***	***– 8***

Sources: Hong Kong Monetary Authority, *Monthly Statistical Bulletin;* BIS.

III

The international securities markets

Overview

There was an unprecedented volume of international securities issues in the first quarter of 1999. Although market conditions were somewhat unsettled in January by the Brazilian crisis and thereafter by some tightening of global liquidity conditions, activity was boosted by a partial movement of investors away from equity markets, the ongoing wave of mergers and acquisitions, the re-entry of emerging market borrowers and the introduction of the single European currency. The last element had a notable impact on the extent of overall activity and the mix of borrowers.

The introduction of the euro accelerated structural transformation in Europe. First, the constraints on foreign investment faced by certain categories of institutional investors have been partly removed. Second, in their search for higher yields, European institutional investors have accepted a wider range of credit risk. This was illustrated by the strength of demand for corporate issues, subordinated bank

Main features of international debt securities issues[1]

In billions of US dollars

	1997	1998					1999	Stocks at end-March 1999
	Year	Year	Q1	Q2	Q3	Q4	Q1	
Total net issues	**573.3**	**677.7**	**197.9**	**233.4**	**152.0**	**94.5**	**265.6**	**4,446.3**
Money market instruments[2]	19.8	7.4	10.7	1.4	7.8	– 12.5	38.4	228.9
Bonds and notes[2]	553.5	670.3	187.1	232.0	144.2	107.0	227.1	4,217.5
Developed countries	449.0	570.2	161.4	190.7	136.3	81.7	242.9	3,635.1
Europe[3]	*257.9*	*279.6*	*95.9*	*93.3*	*68.3*	*22.1*	*127.4*	*2,065.8*
Japan	*– 0.4*	*– 19.8*	*– 3.8*	*– 9.3*	*– 4.3*	*– 2.4*	*– 0.2*	*308.5*
United States	*176.9*	*282.6*	*59.8*	*98.2*	*65.4*	*59.2*	*111.1*	*946.0*
Canada	*10.1*	*21.5*	*6.0*	*7.4*	*3.9*	*4.2*	*0.2*	*204.9*
Offshore centres	14.5	11.6	2.3	5.4	3.3	0.5	7.3	67.7
Other countries	89.2	40.9	10.9	28.1	3.1	– 1.4	2.8	375.0
International institutions	20.6	55.1	23.2	9.0	9.2	13.7	12.6	368.6
US dollar	332.0	411.1	122.2	148.3	85.1	55.6	138.4	2,110.3
Yen	34.6	– 29.3	– 6.8	– 8.6	– 4.1	– 9.8	– 11.8	457.9
Euro area currencies	139.0	220.3	61.3	70.5	58.8	29.6	113.1	1,192.9
Other currencies	67.8	75.5	21.1	23.1	12.2	19.1	25.9	685.2
Financial institutions[4]	360.0	368.3	122.8	118.3	91.4	35.7	150.6	2,103.2
Public sector[5]	89.0	182.1	51.8	56.6	34.7	38.9	54.9	1,287.5
Corporate issuers	124.3	127.2	23.2	58.2	25.9	19.9	60.0	1,055.3

[1] Flow data for international bonds; for money market instruments and notes, changes in amounts outstanding excluding exchange rate valuation effects. [2] Excluding notes issued by non-residents in the domestic market. [3] Excluding eastern Europe. [4] Commercial banks and other financial institutions. [5] Governments, state agencies and international institutions.

Sources*:* Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS.

Main features of the international bond and note markets

In billions of US dollars

	1997	1998					1999
	Year	**Year**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**
Announced issues	**1,010.9**	**1,172.7**	**339.3**	**310.2**	**260.7**	**262.5**	**414.6**
Floating rate issues	283.3	281.6	69.0	82.1	75.3	55.2	99.4
Straight fixed rate issues	663.7	843.8	257.2	214.8	175.4	196.5	303.3
Equity-related issues[1]	63.9	47.2	13.1	13.4	9.9	10.8	11.9
US dollar	516.1	605.6	167.1	174.8	134.9	128.9	199.9
Yen	129.7	73.0	20.5	13.5	19.0	20.0	17.8
Euro area currencies	219.7	320.1	101.3	83.2	69.6	66.0	147.3
Other currencies	145.4	173.9	50.3	38.7	37.3	47.7	49.6
Financial institutions[2]	537.4	572.8	174.8	149.9	134.3	113.8	213.6
Public sector[3]	223.3	350.1	101.9	78.2	78.4	91.5	103.6
Corporate issuers	250.3	249.6	62.6	81.9	48.0	57.1	97.4
Completed issues	**1,014.0**	**1,167.8**	**312.0**	**323.3**	**269.4**	**263.1**	**386.4**
Repayments	**460.5**	**497.5**	**124.9**	**91.4**	**125.3**	**156.0**	**159.2**

[1] Convertible bonds and bonds with equity warrants. [2] Commercial banks and other financial institutions. [3] Governments, state agencies and international institutions.

Sources*:* Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS.

debt, asset-backed securities and low-rated sovereign bonds.[13] Third, activity has benefited from the drive by European supranational and public sector entities to create large and liquid benchmarks, as well as from the efforts of smaller European sovereigns to improve the distribution of their debt through international syndicates (rather than auctions). Lastly, pressures on European banks to reduce capital charges and regulations that have made it more economical for them to hold tradable assets than traditional bank loans[14] have further encouraged securitisation, adding to the impact of the new currency. The introduction of the euro will contribute to the emergence of a pan-European capital market as a possible substitute to the US dollar market.

The advent of the euro has also created significant measurement problems in the international market. Over the years, some of the conceptual relevance and distinctive features of the euromarket (which used to refer to offshore issuance) have been progressively eroded by the liberalisation of underwriting and trading practices.[15] The creation of the single currency has further compounded the difficulty of distinguishing between domestic and offshore issuance. This was illustrated by the recent confusion over the size and composition of the international market, with some commercial databases, for example, incorporating into the data European issues that have traditionally been regarded as domestic (such as Pfandbrief securities). A similar problem has existed for some time in the US dollar segment, where international activity has been biased upwards by the inclusion of global issues that are in

[13] The development of a more sophisticated credit culture was also illustrated by the growing interest shown by European borrowers in the granting of a credit rating.

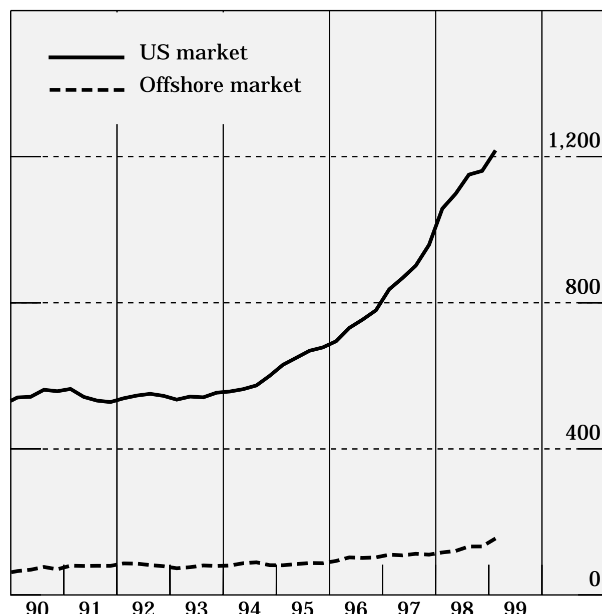
[14] Such as the European Capital Adequacy Directive.

[15] See "What is left of the traditional distinction between eurobonds, foreign bonds and domestic bonds?", *International Banking and Financial Market Developments*, February 1997.

Commercial paper outstanding

In billions of US dollars

All issuers



Non-US issuers

Sources: Euroclear; Federal Reserve Board; BIS.

practice largely marketed to US residents.[16] An accurate comparison of activity in the euro and dollar segments of the international market will require the development of a consistent statistical and analytical framework.

The other major development of the quarter was the financial crisis faced by Brazil in January following the devaluation of the real. While the resulting turbulence reignited the flight to highly rated securities, the repercussions were far less severe than after the imposition of the Russian moratorium, as the event had been well anticipated. Although issuance was at first restricted to the best names, financing did not dry up to the same extent. The climate improved substantially in the following weeks, thus enabling lower-rated issuers to return in force. This was particularly true for emerging market names, for which the period of market closure was shorter than in earlier comparable episodes of market stress.

Money market instruments

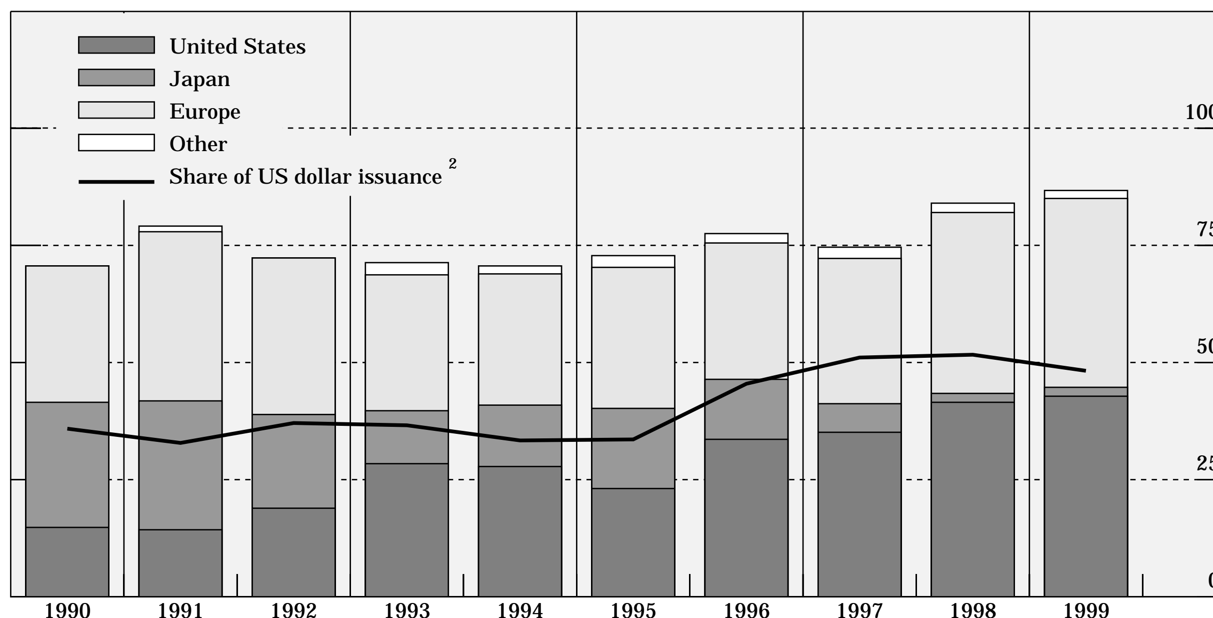
Net issuance of commercial paper and other short-term notes rebounded sharply in the first quarter of 1999 (with the stock rising by $34 billion, to $229 billion). While the increase largely reflected the surge in euro-denominated issuance by financial institutions, the euro also drew new participants and instruments. For example, the short-term market has recently seen the launch of cash management funds for corporate sector entities, as investment alternatives to traditional Libid-based interbank deposits. Moreover, banks have recently helped establish a number of credit arbitrage vehicles that issue commercial paper in order to invest in longer-term instruments on a hedged basis. As is the case with the issuance of asset-backed securities, the participation of banks in such funds is advantageous since it allows them to generate new revenues at a low cost in regulatory capital.

---

[16] A global bond issue is offered and traded simultaneously in different markets.

Share of international bond issues of the top 20 bookrunners[1]

In percentages



[1] Includes global, offshore, foreign and eligible foreign-targeted domestic bonds, but excludes equity-related transactions. 1999 figures based on first-quarter data. [2] Share of announced US dollar bonds and notes in total issuance.

Sources: IFR; BIS.

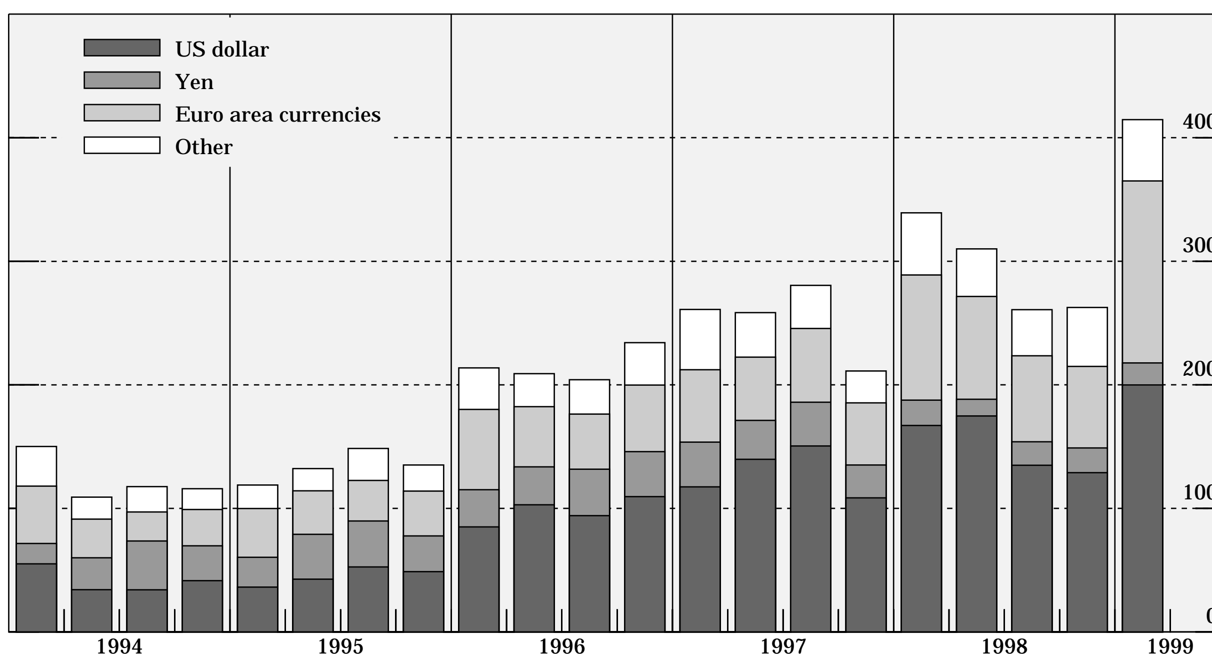
Longer-term international securities

In the longer-term segment of the market, the volume of gross issuance was unprecedented (+60%, to $415 billion). There was a sharp expansion in euro-denominated debt issuance (by 123% relative to that in its legacy currencies and in the ECU in the fourth quarter of 1998). The initial enthusiasm of European institutional investors for the new currency and the eagerness of European borrowers to introduce pricing benchmarks largely offset the lack of favourable swap arbitrage opportunities (see the section on derivatives markets). Liquidity created by the consolidation of the legacy currencies allowed the floating of exceptionally large issues, even as the euro began to experience downward pressure in the foreign exchange market. Growth in the US dollar segment proceeded at a slower pace (by 55%), but activity reached a new record in absolute terms, enabling the currency to maintain its predominance (48%, against 36% for the euro). Swap rates were highly conducive to swap-related dollar issuance, but other favourable elements, such as the high volume of merger-related facilities, were also present.

The consolidation of international issuance into a narrower range of currencies and the strategic advantage provided by strong balance sheets in the placement of large issues resulted in a further concentration of underwriting activity. Thus, the share of the 20 largest bookrunners rose further (to 86%). The sharp expansion of euro-denominated issuance enabled European underwriters to maintain their global ranking (40%). However, despite the initial reluctance of US investors to purchase euro-denominated securities, US underwriters preserved their lead (43%). These firms, which have benefited in the past from the global role of the US dollar, are attempting to capitalise on European banks' loss of franchise in legacy currencies to strengthen their position in euro-denominated issuance. Meanwhile, Japanese intermediaries maintained a low profile owing to the subdued volume of

Announced international bond and note issuance by currency

In billions of US dollars



Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS.

Japanese and yen-denominated business.[17] Although the movement by certain European treasuries in the direction of syndicated bond issues provided underwriters with a new source of income, the continuing pressure on underwriting margins is likely to encourage further concentration of the industry.

Type and nationality of issuers. One of the outstanding features of the quarter was the rebound of issuance by financial institutions (by 87%, to $214 billion), which had been hampered in the second half of 1998 by concerns over their exposures to lower-rated and highly leveraged entities. The stabilisation of market conditions made it easier for European and North American financial institutions to arrange acquisition-related financing packages, and to issue subordinated debt and asset-backed securities. The corporate sector also stepped up its recourse to the market (by 81%, to $82 billion) reflecting in large measure acquisition-related transactions and the desire of European corporates to establish euro-denominated benchmarks. The strength of demand for corporate securities was attributed to growing concerns about the overvaluation in equity markets and the repatriation of investment funds to the industrial world following the recent turbulence in developing countries.

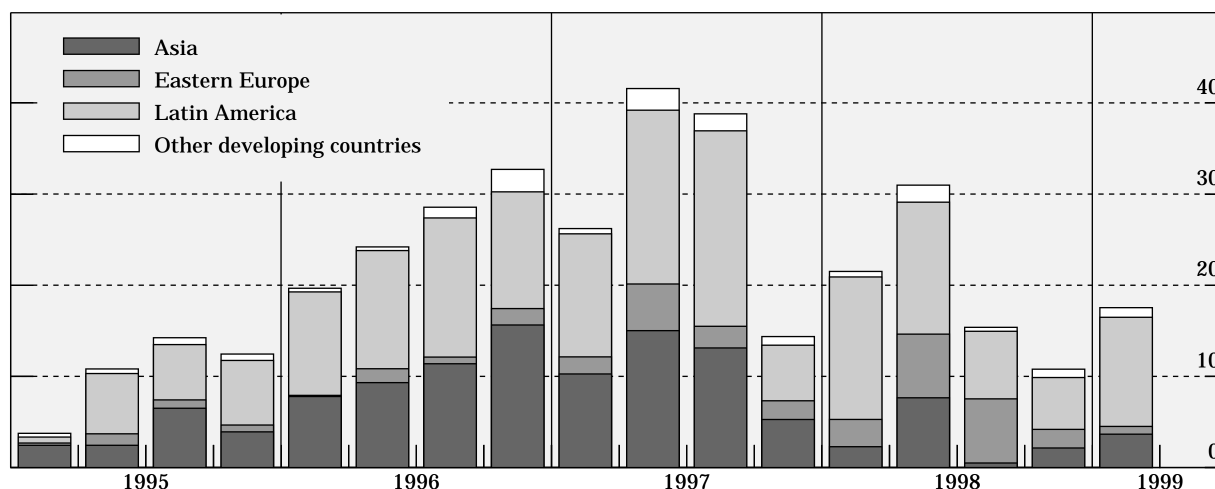
The increase of issuance by public sector borrowers (by 27%, to $82 billion) was largely accounted for by US financing agencies and a few emerging market sovereigns. Following the lead taken by the largest multilateral and US agencies, European public sector entities and the European Investment Bank took steps to reduce their funding costs. In spite of their high ratings, these entities have seen their debt trade at a yield premium relative to government benchmarks because of lower liquidity. In response, they have announced plans for large regular issues at selected points on the yield curve.[18] Some European public sector agencies also began to coordinate their debt issuance with that of central

[17] The recent downgrading of major securities firms will not have helped their situation.

[18] For example, in the first quarter the European Investment Bank introduced a €15 billion debt issuance programme that will bring all future issues under a single umbrella.

International bond and note issuance by emerging market borrowers*

In billions of US dollars



* Announced issues based on the nationality of the borrower.

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS.

governments in order to build consistent yield curves. Supranational borrowers reduced their recourse to the international market (by 19%, to $22 billion), reportedly owing to the lack of arbitrage opportunities in smaller currency segments.

The extent of activity conducted by industrial world borrowers (with a rise of 66%, to $368 billion) led to a slight increase in their share of total issuance (to 89%). US borrowers remained the most active ($132 billion), owing largely to active financing by the corporate sector. However, the most striking development was the unusually sharp increase in activity by German and UK borrowers (to $64 billion and $42 billion respectively), as financial institutions returned to the market. There was a modest recovery in activity by Japanese entities in response to better perception of their credit quality. The significant narrowing of the Japan premium made it easier for Japanese financial institutions to improve their capital bases by issuing asset-backed securities.

The volume of transactions brought by emerging market entities increased by two thirds (to $17.5 billion), albeit from a very low level in the previous quarter. Following the Brazilian crisis and a number of well publicised defaults,[19] there was some evidence that investors were exercising greater discrimination in their credit assessment. Thus, borrowers that have followed rigorous macroeconomic policies[20] were able to launch issues despite the adverse effects of the Brazilian crisis. However, the vast majority of deals were introduced by public sector entities and several borrowers had to incorporate exchange options in order to facilitate the sale of their issues.[21] Two-thirds of the amount raised by emerging market entities was from Latin America. Meanwhile, Asian borrowers maintained a low profile, with the Philippines accounting for more than half of the total ($3.7 billion). Although the region is recovering from a deep recession, investors remain preoccupied by the overhang of non-performing debt, forcing some countries to switch to structures incorporating bilateral or multilateral guarantees. It should be noted that the growing volume of debt amortisation might create significant difficulties for private sector borrowers if their access to capital markets remains limited.

---

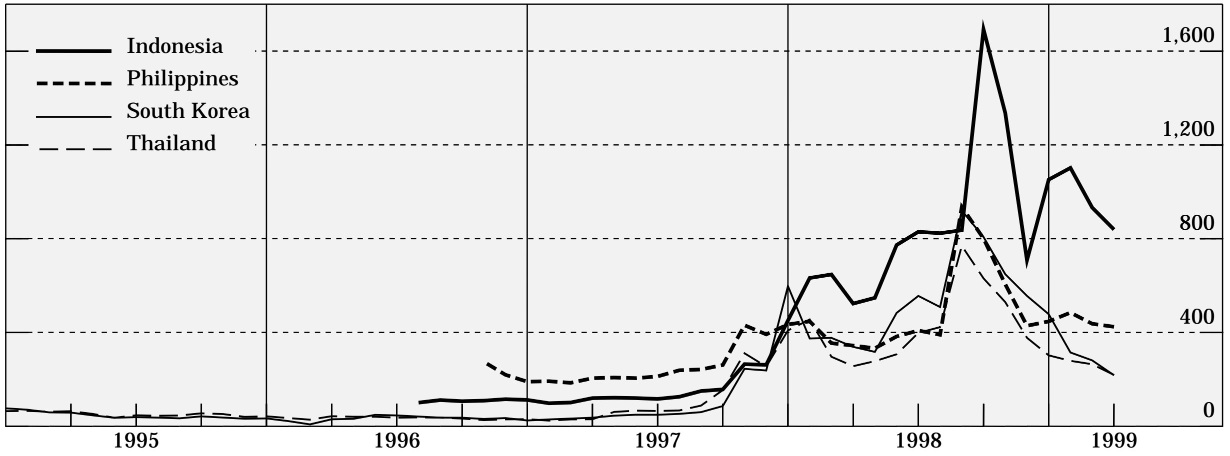
[19] Particularly by GITIC of China and Uneximbank of Russia.

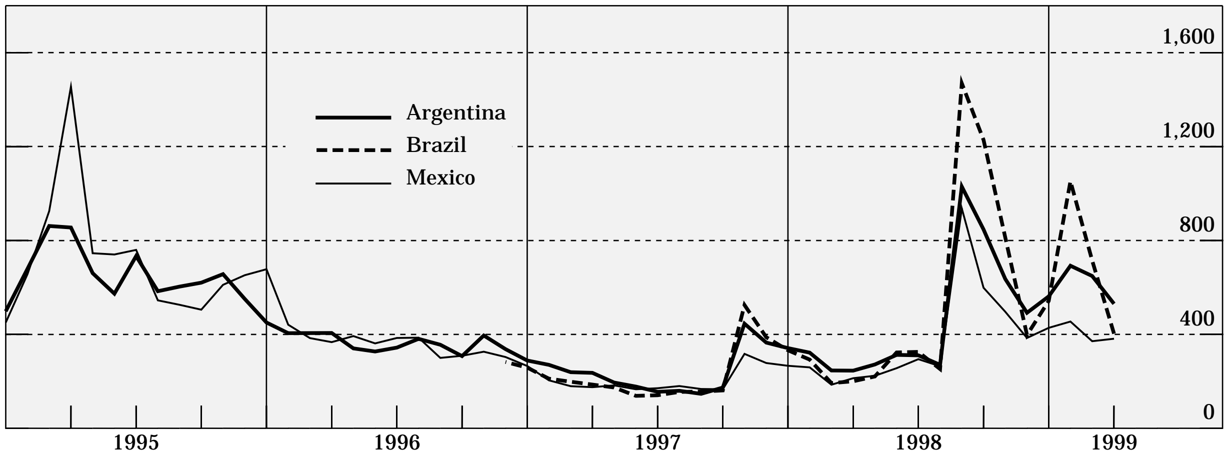
[20] Such as Argentina, Colombia, Hungary and Mexico.

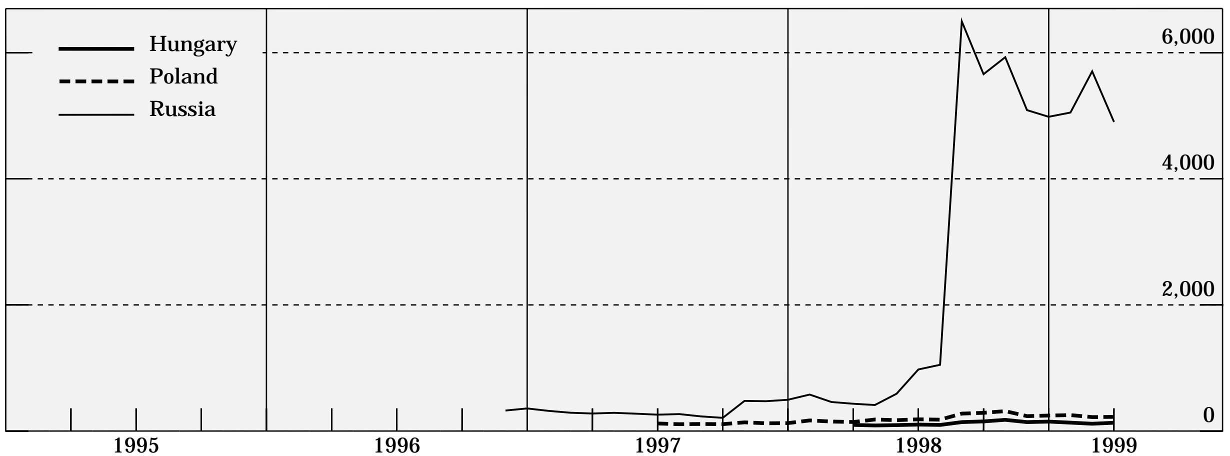
[21] The yield on such issues is higher than that of plain vanilla securities since investors are rewarded with above market coupons for the sale of embedded options. This has masked the true cost of funds and made yield curves less transparent.

Average spread of US dollar sovereign international bonds over 10-year US Treasury notes

In basis points







Source: Bloomberg.

International bond and note issuance in the major currencies

In billions of US dollars

	1995	1996	1997	1998	1999*
US dollar	180.4	391.5	516.1	605.6	199.9
% share of North American borrowers	*38*	*38*	*39*	*54*	*60*
Euro area currencies	143.7	212.2	219.7	320.1	147.3
% share of euro area borrowers	*58*	*57*	*56*	*63*	*67*
Yen	126.4	134.9	129.7	73.0	17.8
% share of Japanese borrowers	*30*	*32*	*34*	*43*	*52*
Other	84.1	122.5	145.4	173.9	49.6
Total	**534.5**	**861.1**	**1,010.9**	**1,172.7**	**414.6**

* First quarter.

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS.

Currency of issuance. The US dollar remained the main currency of issuance in the first quarter of 1999, with 48% of announced transactions. Strong investor demand for dollar assets and the persistence of highly favourable swap opportunities facilitated the launching of very large issues, particularly by US financing agencies, but also by a wide range of US private sector firms. The new European currency found rapid acceptance amongst liability managers, with issues amounting to 36% of announced international bonds and notes.[22] Despite the lack of attractive swap opportunities, European borrowers were keen to demonstrate their commitment to the currency, introducing a large number of benchmark issues.[23] Euro area entities accounted for more than two-thirds of euro-denominated issues, but other borrowers also gradually gained confidence in the ability of that market segment to provide them with fresh funds. Although business in sterling experienced a moderate decline, the currency was nevertheless able to accommodate a wide range of names (including a number of high-yielding issues). The issuance of drachma-denominated securities was boosted by anticipations of interest rate convergence with the rest of the European Union, while the stability of the Swiss franc encouraged activity in that currency. In the Pacific rim, there was a surge of activity in the Australian dollar segment, as issuers capitalised on the window created by a reduced supply of government paper. Finally, issuance in yen remained modest, deterred by the uncertainty associated with the year-end reversal of Japanese fixed income markets.

Type of issues. Issuance of *straight fixed rate paper* rose appreciably in the first quarter of 1999 (by 54%, to $303 billion). Despite the volatility of bond and swap rates in the early part of the quarter, activity received an initial boost from the enthusiasm of investors for euro-denominated securities. As conditions returned to normality, investor demand extended beyond the euro-denominated segment. Stronger demand for dollar assets in a context of limited government issuance encouraged US agency and private sector borrowers to bring very large transactions, including the largest corporate deal ever launched in the international market (a $8 billion multi-tranche acquisition-related package for a US telecommunications company). German financial institutions were also very active users of large fixed rate issues. As a result, the average size of transactions rose to a record $140 million (see the graph on the next page).

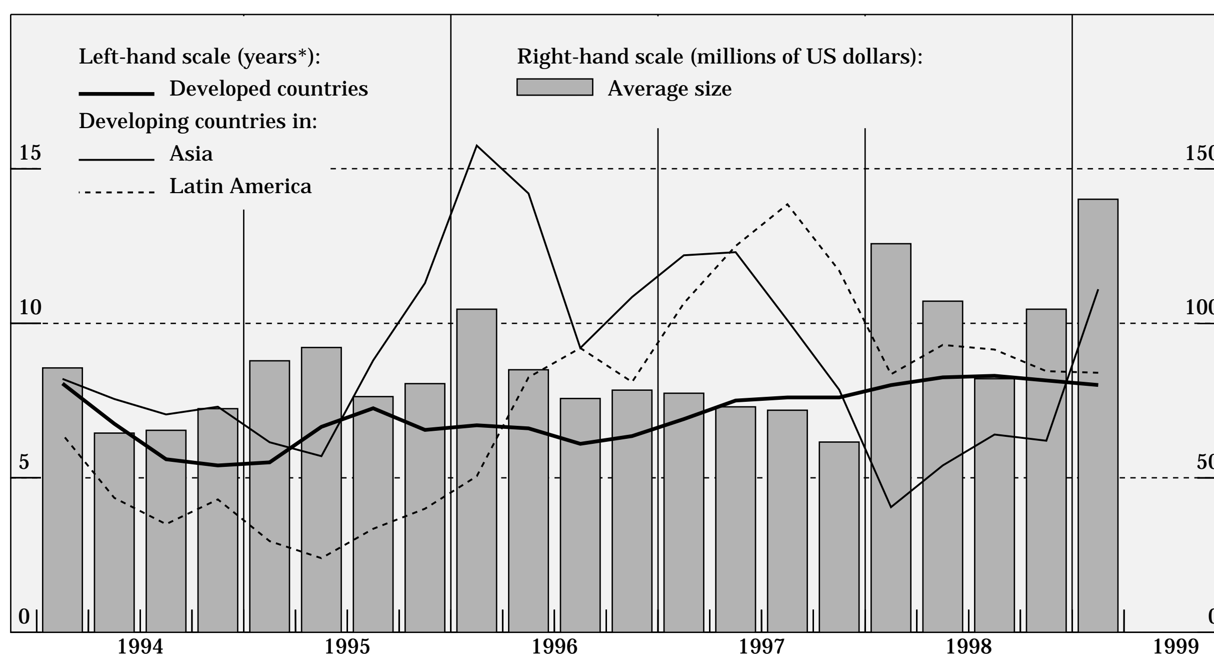
The rebound in announcements of *floating rate notes* in the first quarter of 1999 (by 80%) resulted in a record volume of business ($99 billion). While interest rate uncertainty and the heavy flow of

---

[22] This was not a record share, however, since issuance in legacy currencies accounted for 40% of international issuance in the first quarter of 1992.

[23] This was reported to have put downward pressure on swap spreads.

Average size and maturity of announced straight fixed rate international bonds and notes



* Two-quarter moving average weighted by size.

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS.

repayments provided underlying investment demand, the placement of issues launched by financial institutions was facilitated by the easing of worries over their exposure to emerging market and leveraged borrowers. The issuance of *equity-related bonds* increased slightly (by 10%, to $11.9 billion). All the activity took the form of convertible securities. French entities accounted for 63% of issues, illustrating the intensification of industrial restructuring in that country. The upward swing in Asian equity markets and reduced concerns about credit risk in Asia led to a modest recovery of issuance from that region. The market for convertibles is expected to benefit in 1999 from high equity market valuations, privatisation programmes, divestment of corporate cross-holdings (through exchangeable issues)[24] and the development of new means of altering the risk and return profile of issues (notably through credit derivatives). Lastly, the market for international equities expanded further (by 8%, to $33 billion).

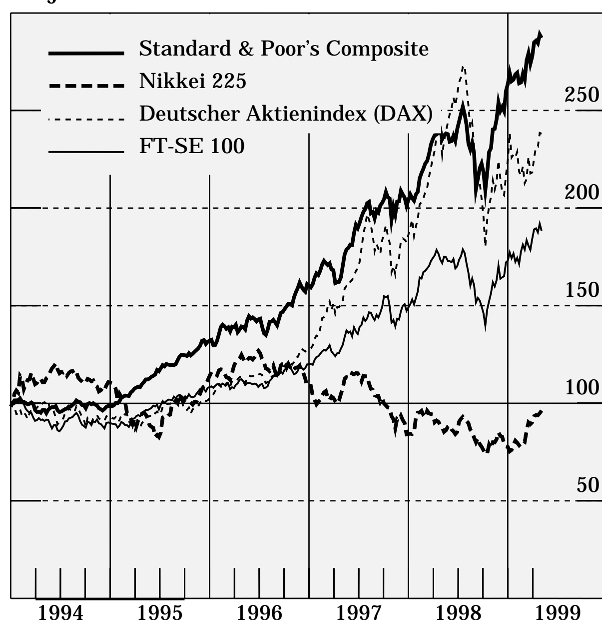
According to partial data, the volume of business in *mortgage-backed and other asset-backed securities* (ABSs) rebounded sharply from the depressed levels of the second half of 1998 (by 51%, to $50 billion). Reduced spreads on new issues enabled US and UK entities to conduct more active fund raising. German and Japanese financial institutions also took advantage of recent market liberalisation to use ABSs as a means of diversifying their funding sources or to improve their capital bases. Of note, two large commercial banks in Germany launched collateralised loan obligations, while other intermediaries engaged in the active marketing of Pfandbrief issues. The variety of ABSs on offer has led the rating agencies to warn investors of the complexity and hidden risks of such securities.

---

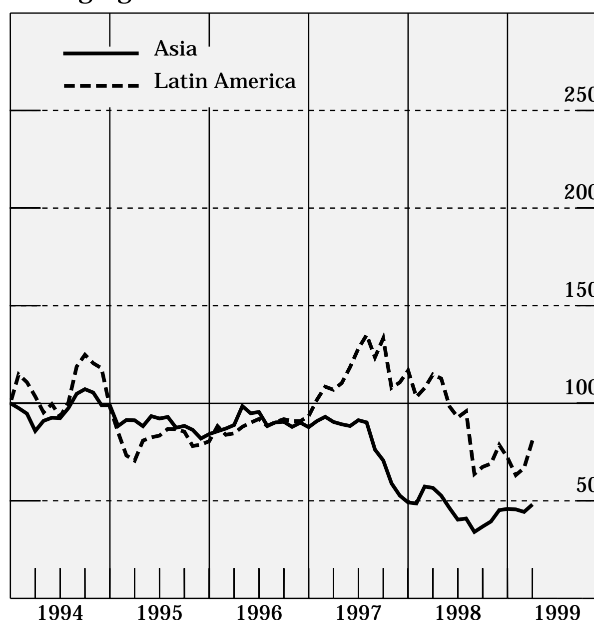
[24] Exchangeable securities accounted for the largest share of convertible issues in 1998. They allow for divestment of cross-holdings at a premium and enable capital gains tax to be deferred.

Equity market developments

Major indices [1]



Emerging market indices [2]



[1] Weekly averages. Indexed to the average for the first week of 1994. [2] IFC indices in US dollar terms. Indexed to the month-end observation for December 1993.

Sources: International Finance Corporation (IFC); BIS.

Structural and regulatory developments

The quarter saw several initiatives that should in due course improve the infrastructure of domestic and international securities markets as well as their interlinkages. This was particularly evident in Europe, where the introduction of the euro and the growing integration of markets have increased pressures to improve cross-border trading and settlement. In the area of clearing, Clearnet[25] said that as of January it would extend its operations in French government bonds and repos to German securities, while the London Clearing House announced that it would introduce a service for the clearing of European repos in the second half of 1999. In March, Brussels-based Euroclear publicised an alliance with the Government Securities Clearing Corporation (GSCC) of the United States to provide netting services for cash and repo transactions. The service will initially be limited to euro-denominated bonds, but could be extended to other securities and currencies. Euroclear also announced the forthcoming launch of a real-time settlement platform as part of its plan to establish itself as a European clearing hub following the introduction of the euro. In March, EuroMTS Ltd received approval from the UK authorities for the introduction of an electronic system for the cash trading of benchmark euro-denominated government bonds. The exchange, which is the first pan-European market to emerge since the introduction of the single currency, began its operations in April with the most liquid French, German and Italian securities. It intends to extend its operations to government securities of other euro area countries.

[25] The clearing house owned by the Société des Bourses Françaises (SBF).

The impact of debt restructuring on emerging market bonds

The markets for emerging market bonds were affected in the first quarter of 1999 by the possibility of debt restructuring in some countries. One significant development was the reported suggestion by the Paris Club and the IMF that Pakistan include outstanding international bonds in the restructuring of its external debt,[1] along with the perception of market participants that major creditor countries were increasingly in agreement on the principle that private creditors share in the losses of any future debt restructurings. Fears that such a principle could also be applied to Russian securities sparked a wider sell-off in emerging market bonds.

Sovereign defaults on loan obligations have been widespread over the past few decades, but there have been very few cases of such defaults on international bonds. Until the early 1980s, much of the financing flow to less developed countries had taken the form of bank loans. Reschedulings did not pose insuperable problems in view of the small number of banks involved. The picture has changed considerably in the 1990s, with securities accounting for the largest share of private credit to emerging market countries. According to press reports, the Paris Club would now insist on a comparability of terms from all creditors (official and private) on all types of instruments (loans and bonds). Eurobonds are not senior to other debt obligations, but they have in practice enjoyed a privileged status that has excluded them from reschedulings.

The idea of "bailing in" bondholders in sovereign debt rescheduling was addressed at length in a 1996 report by a working group of the G10 countries.[2] The group noted in particular that there should not be a presumption that any type of debt would be exempt from payment suspensions or restructurings and that a market-led process to develop contractual provisions facilitating cooperation between debtors and private creditors would be desirable. The issue was also discussed in a 1998 report of the Willard Group (of 22 developed and developing countries) as part of efforts aimed at reforming the structure of the global financial system.[3] There is a belief in the official sector that the preferential treatment given to eurobonds has created pricing distortions, leading to excessive debt accumulation in certain countries. Some have come to the conclusion that the issue of moral hazard can only be addressed by requiring private investors to share in the burden of debt problems.

However, since there is currently no mechanism for an orderly restructuring of international bonds, a default by Pakistan on such liabilities would have a number of implications. First, depending on the documentation used, including bonds in a rescheduling could trigger a series of cross-default clauses.[4] Second, investors could attempt to pursue their claims in court. Third, conducting a bond rescheduling could be difficult since it would require the agreement of a large number of individual holders of bearer securities. For all these reasons, bailing-in would probably require the introduction of new contractual provisions that would reduce the incentive for a small number of dissident creditors to disrupt, delay or prevent agreement. These could provide for the collective representation of debt holders in the event of a crisis and allow for qualified majority voting to alter the terms and conditions of contracts.

Fearful of losses on holdings of emerging market bonds and reduced revenues in that business sector, intermediaries have generally been opposed to the idea.[5] They have argued that efforts to enforce a private sector bail-in would only lead to a drying-up of funds and greater pressures on the official sector for more financing. At the same time, debtor countries have been concerned that the introduction of comparable treatment could increase the risk premia on their international securities and, as a consequence, reduce their access to external financing.[6] The proponents of reform have noted, however, that risk premia were widely regarded as being too low before the emergence of the Asian crisis, which itself encouraged the unsustainable build-up of debt by emerging market countries. If the removal of the perceived immunity of international bonds were to result in a better pricing of risk, debt accumulation might be less subject to bubble-type growth and financial stability might be improved, to the actual benefit of creditors and debtors.

[1] The Paris Club, which is an informal forum of creditor governments involved in sovereign debt reschedulings, requires similar terms from private creditors when it reschedules a country's debt. [2] See *The Resolution of Sovereign Liquidity Crises*, Group of Ten, Basel and Washington, May 1996. [3] See *Report of the Working Group on International Financial Crises*, Willard Group, October 1998. [4] A legal provision is normally included in most debt obligations whereby default on one obligation by a borrower automatically triggers a default or acceleration clause in other debts. The purpose of such a clause is to protect a creditor from actions favouring another. [5] It could also change the yield relationship between issues such as between Brady bonds and eurobonds. [6] However, it should be noted that bailing-in would only affect sovereign issuers in financial distress with a relatively large amount of Paris Club debt.

IV

Derivatives markets

Overview

One of the distinguishing features of derivatives markets in the first quarter of 1999 was the different effects EMU had on exchange-traded as opposed to over-the-counter (OTC) activity. While consolidation into a few instruments reduced the number of products offered on exchanges, this appears to have been more than compensated for by enhanced liquidity in benchmark interest rate contracts. In contrast, liquidity in OTC instruments proved more elusive, being hampered by the absence of leveraged investors, difficulties in pricing euro-denominated swaps and the disappearance of bilateral OTC trading in European legacy currencies. At the same time, growing demand for consistent, cost-efficient and low-risk technology for cross-market trading and clearing added to pressure for consolidation. It is also worth noting that the proprietary systems of core electronic exchanges are being challenged by "new generation" trading systems that permit the interconnection of different exchange-traded and OTC facilities (in particular via the internet).

Exchange-traded instruments

The aggregate turnover of exchange-traded financial derivative contracts monitored by the BIS rose marginally in the first quarter of 1999, to an estimated 315 million contracts (from a revised figure of 314 million in the fourth quarter of 1998).[26] Despite divergent expectations concerning the evolution of fixed income and equity markets in Europe and North America, and the uncertainty created by the Brazilian financial crisis, the overall climate in financial markets was considerably calmer than in the autumn of 1998. As in recent quarters, options continued to grow more rapidly than futures, reflecting the increasing popularity of trading strategies based on volatility.

In the area of *interest rate instruments*, the increase in European business was not sufficient to compensate for the drops observed in North and South America, leading to a slight decline in transactions (to 195 million contracts). The higher level of activity in European interest rate contracts largely reflected the concentration of trading into a narrow range of highly liquid euro-denominated instruments, despite the consolidation resulting from the introduction of the euro. Meanwhile, the drop in US interest rate business seems to have been related to the return to stability in US financial markets in the wake of the Russian moratorium. The lack of consensus about the valuation of *equity markets* kept their volatility at a fairly high level, but there was no increase in "real" turnover since the growth in business (4%, to 112 million contracts) essentially reflected the reduction in the unit value of contracts traded on French exchanges. Finally, there was a sharp drop in the trading of *currency-related instruments*. Aside from the continuing dominance of OTC markets in the management of currency risk,[27] this overall contraction reflected a variety of influences, including the caution of

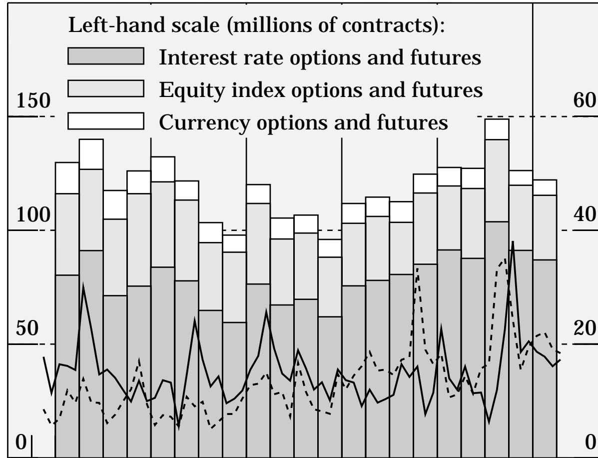
---

[26] However, the statistical measure of activity, which is based on the number of contracts traded, was affected to some extent by EMU-related changes in the denomination of contracts. For example, the euromark contracts saw an increase in value (from DM 1 million to €1 million), while the unit value of the bund contracts was reduced (from DM 250,000 to €100,000). As a result, exchanges have tended to put greater emphasis on the value of transactions as a measure of activity.

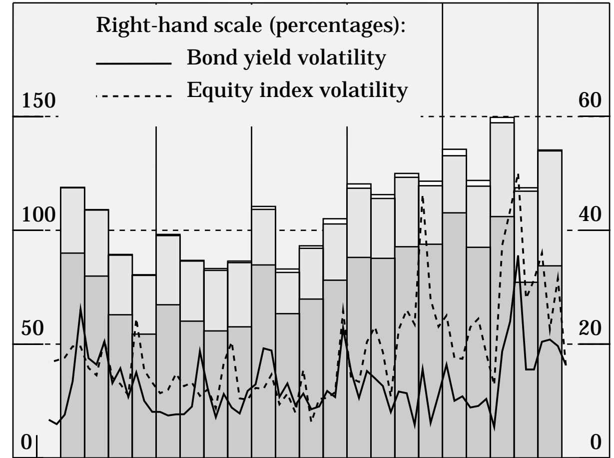
[27] This was one of the features highlighted in the triennial *Central Bank Survey of Foreign Exchange and Derivatives Market Activity 1998*, whose preliminary findings were released by the BIS on 19 October 1998 and final results on 10 May 1999.

Turnover of derivative financial instruments traded on organised exchanges and bond yield and equity index volatilities[1]

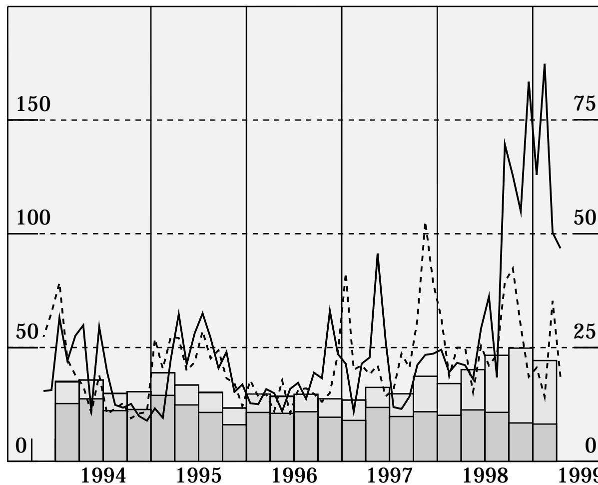
North America



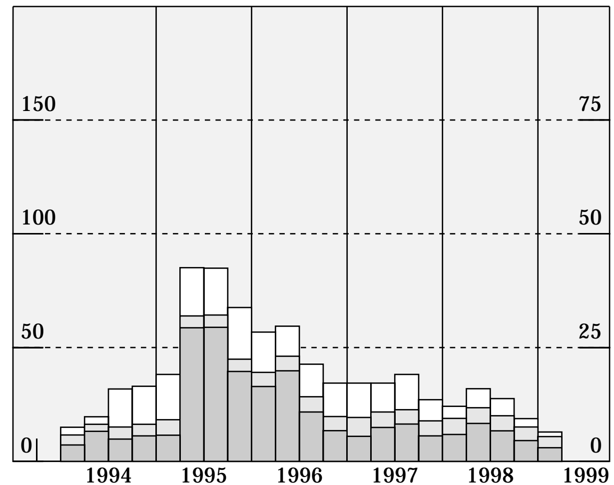
Europe



Asia[2]



Other



[1] Annualised standard deviation of daily percentage changes in 10-year government bond yields and equity indices of US, German and Japanese markets for North America, Europe and Asia respectively. Data for the first quarter 1999 are partly estimated. [2] Including Australia and New Zealand.

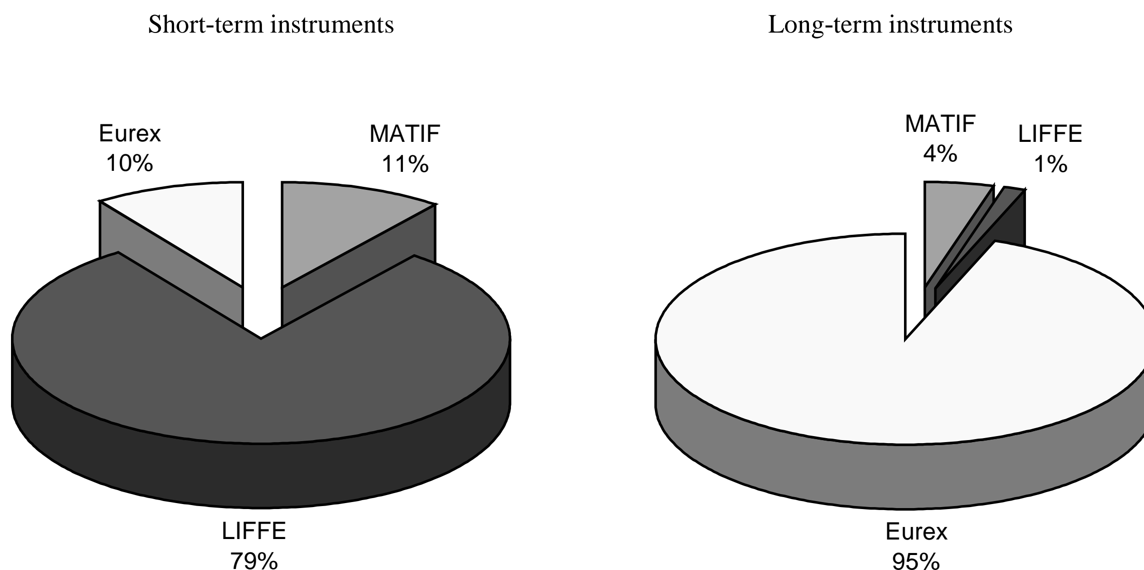
Sources: Futures Industry Association; BIS.

investors following the introduction of the euro, the disappearance of a number of contracts on European cross rates and reduced activity in small-denomination contracts traded on eastern European exchanges. Meanwhile, the financial crisis faced by Brazil in January appears to have been associated with lower liquidity in currency instruments involving the real.

The introduction of the single European currency led to a consolidation of activity in a narrow range of *interest rate instruments*, despite attempts to broaden the range of products being offered. In the long-term area, the bund contract traded on Eurex saw its European benchmark status confirmed as market participants focused on the large underlying stock of German government securities. Contracts on German government bonds traded on Eurex accounted for 95% of turnover in long-term euro area instruments in the first quarter, compared with 4% for those traded on MATIF. In the short-term area, investors expressed an overwhelming preference for Euribor contracts traded on LIFFE, which

Euro-denominated interest rate derivatives

Share of trading in the first quarter 1999



Sources: Eurex; LIFFE; MATIF.

accounted for almost 80% of the total.[28] Nevertheless, the offering of attractive financial incentives and the pool of business drawn from remote access enabled MATIF and Eurex to garner additional business in money market products. Such trading rose relative to the previous quarter, with the former achieving second position (11%) and the latter third (10%). In the area of *equity contracts*, MATIF and Eurex saw brisk activity in contracts based on DJ Stoxx indices, but trading in euro area indices remained modest relative to that based on domestic benchmarks. Meanwhile, LIFFE hedged its bets by introducing contracts based on the MSCI indices[29]. Finally, with respect to *currency contracts*, exchanges that had been active in this area attempted to counter the loss of intra-European business by launching a raft of euro-related products. Although market participants initially proved cautious, they slowly became more receptive to them.

Consolidation into the euro had a corresponding impact on the global standing of European exchanges. Thus, despite the delisting of Eurex's jumbo Pfandbrief futures (due to the lack of liquidity of the underlying), the market's preference for the bund contract enabled the exchange to register a new trading record (an increase of 39%, to 84 million contracts). In the process, Eurex overtook the CBOT (with growth of 4%, to 69 million) as the most active marketplace in the world. The level of activity on other large exchanges was mixed, with the CME seeing a significant decline (by 9%, to 51 million) and the CBOE experiencing an increase (5%, to 55 million). Business on LIFFE declined by 11%, reflecting a switchover to larger euro-denominated short-term contracts.[30] In the case of MATIF, the

---

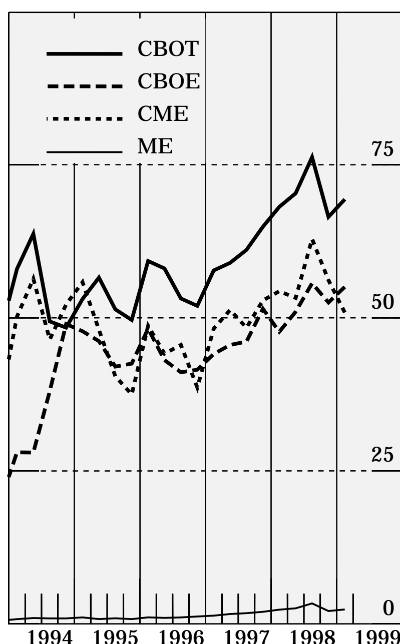
[28] The exchange was able to ensure a smooth transition to euro-denominated instruments by conducting a mandatory conversion of legacy contracts into euro-denominated contracts and by arranging auctions enabling market participants to choose their preferred index (either Euro Libor or Euribor).

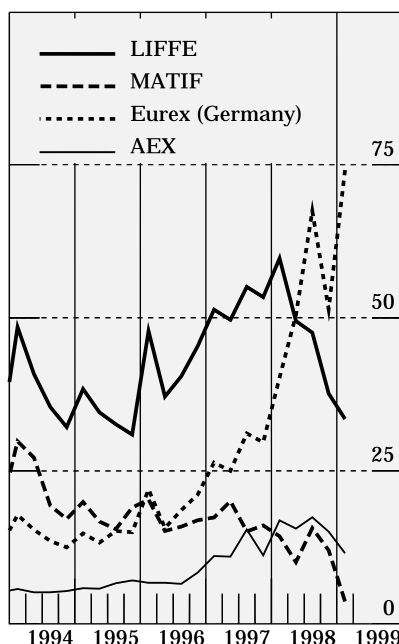
[29] Morgan Stanley Capital International.

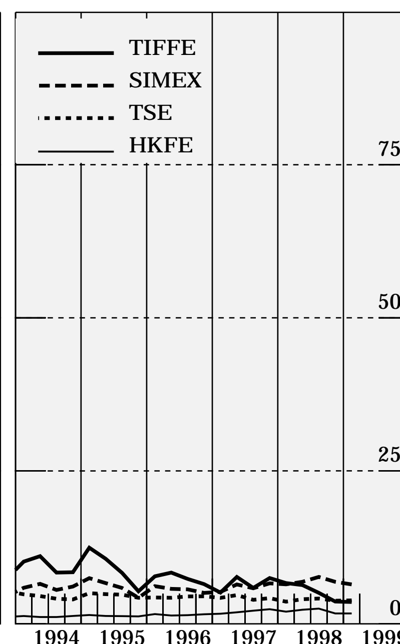
[30] At the same time, its swap-related contracts failed to gain market acceptance owing to their complexity and the reluctance of dealers to trade products that could potentially undercut their business. However, the exchange's continued success might depend more on the smooth introduction of LIFFE Connect, its new electronic trading system, and the expansion of remote access than the creation of new contracts.

Derivatives turnover on major exchanges*

In millions of contracts, quarterly data







* Includes all types of derivative instruments traded on exchanges (i.e. including commodity products and options on single equities).

Sources: Futures Industry Association; major exchanges; BIS.

ability to draw customers from exchanges participating in the recently established Euro-Globex alliance[31] helped to improve turnover in money market contracts and partly compensate for the loss of business in the long-term area. MATIF also attempted to counter the competitive challenge represented by the rapid development of Eurex by expanding the range of the deliverable basket of its bond contracts to non-French securities.[32]

Meanwhile, competition for market share continued to encourage the formation of alliances,[33] but practical difficulties and competitive pressures resulted in a number of setbacks. Thus, the proposed linkage agreement between the CBOT and Eurex, and the merger between the CBOE and the PE were abandoned. As a result, exchanges seem to have put greater emphasis in their competitive strategies on electronic trading systems and remote access (which is likely to grow with the approval by the US Commodity Futures Trading Commission of non-US electronic terminals). While this approach was particularly evident in Europe, US exchanges continued to invest in technology to enhance traditional

---

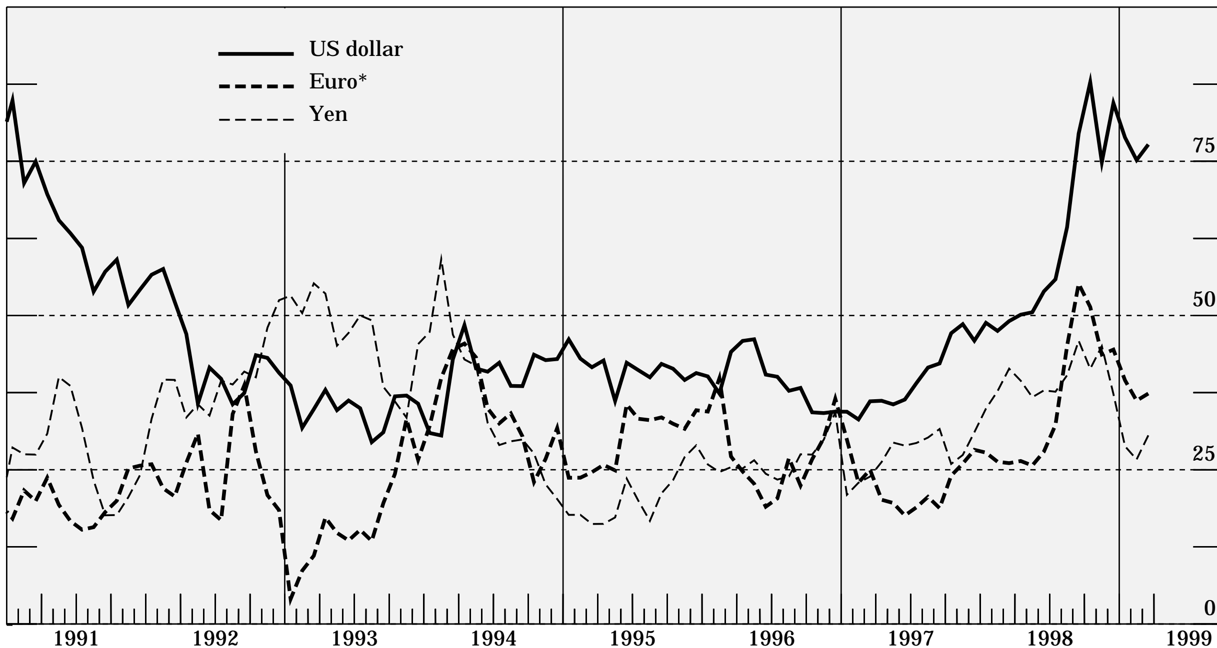
[31] Which also includes the MEFF RF and MIF.

[32] MATIF also reduced the coupon on its “notionnel” contract in order to allay concerns about basis risk between French and German securities.

[33] For example, the Frankfurt and London stock exchanges began operating an electronic trading link as a first step in the creation of a European trading platform. The French and Swiss stock exchanges agreed to form a similar strategic alliance, while each of the Benelux bourses opened its facilities to the others’ market participants.

Interest rate swap spreads over 10-year government bond yields

Monthly averages, in basis points



* Deutsche mark before 1999.

Source: Datastream.

open outcry. However, participants remain divided over whether such a "third way" will be sufficient to stave off fully computerised facilities. Of note in this respect was the increased popularity of the electronic facilities introduced last year for the cash and derivatives trading of US Treasury instruments. Another element of competitive strategies continued to be the creation of national, regional or international trading hubs crossing over products and market segments. For example, SIMEX announced its participation in the Euro-Globex alliance, which would enable markets to jointly list contracts covering the largest money markets (dollar, euro and yen), while the stock and futures exchanges located in Hong Kong agreed to seek greater efficiency through a merger of their facilities.

Over-the-counter instruments

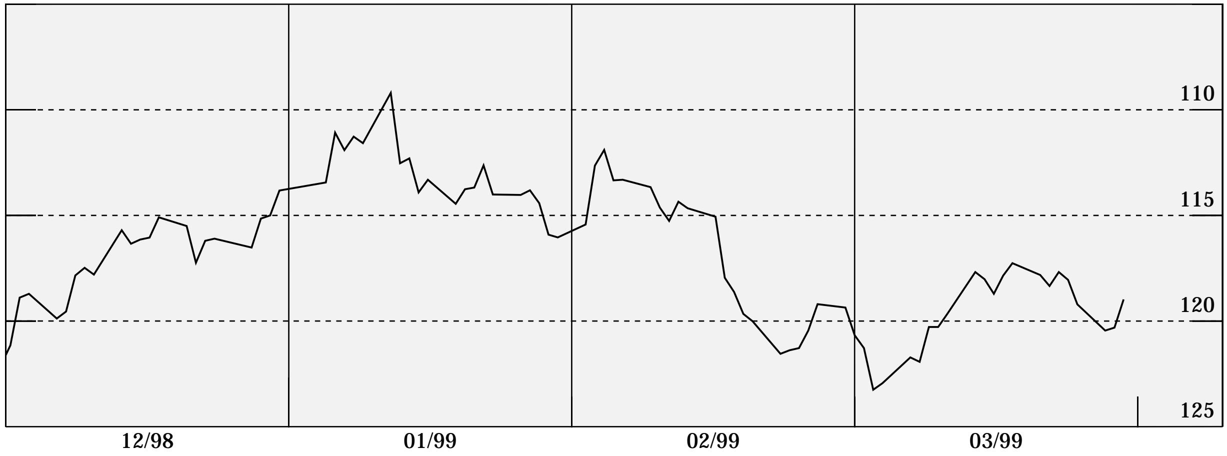
The absence of recent statistical data makes it difficult to assess OTC activity in the first quarter of 1999, but anecdotal evidence suggests that the launch of the euro did not result in greater business in European interest rate derivatives. The currency was introduced at a time of general retrenchment by leveraged investors, inhibiting the creation of a deep and liquid euro-denominated *interest rate swap market*. As a result, euro-denominated swaps were priced in terms of outright yields rather than in spreads over a benchmark curve (as in the dollar market), which constrained activity.[34] In contrast, the

---

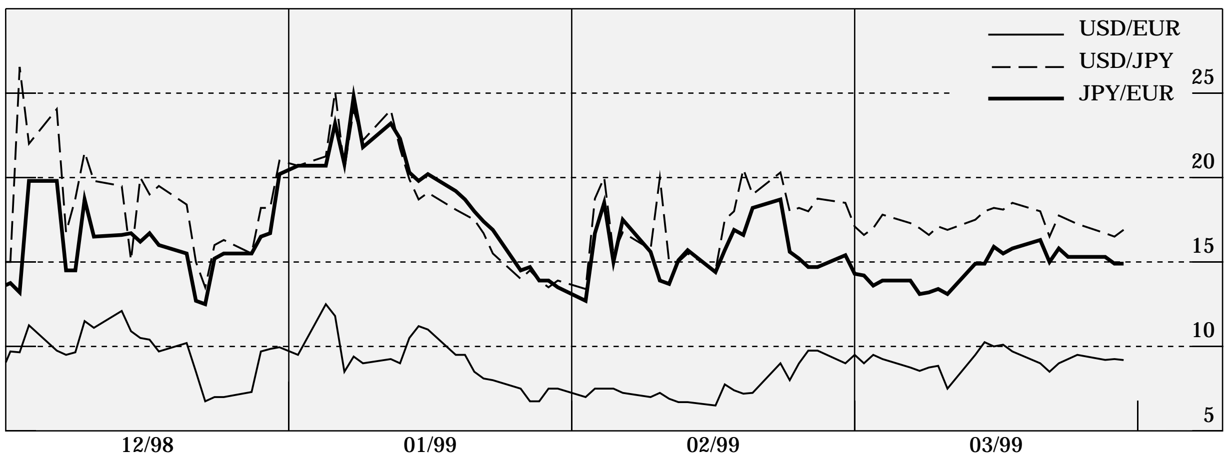
[34] In a further indication of the thinness of the swap market, a single large bank was reportedly able to keep yields at low levels by means of aggressive swap positions for receiving fixed payments. In March, that bank apparently reversed its positions, thus lifting swap yields and providing a window for a few large companies to issue fixed and swap into floating.

Trends in volatility and exchange rates

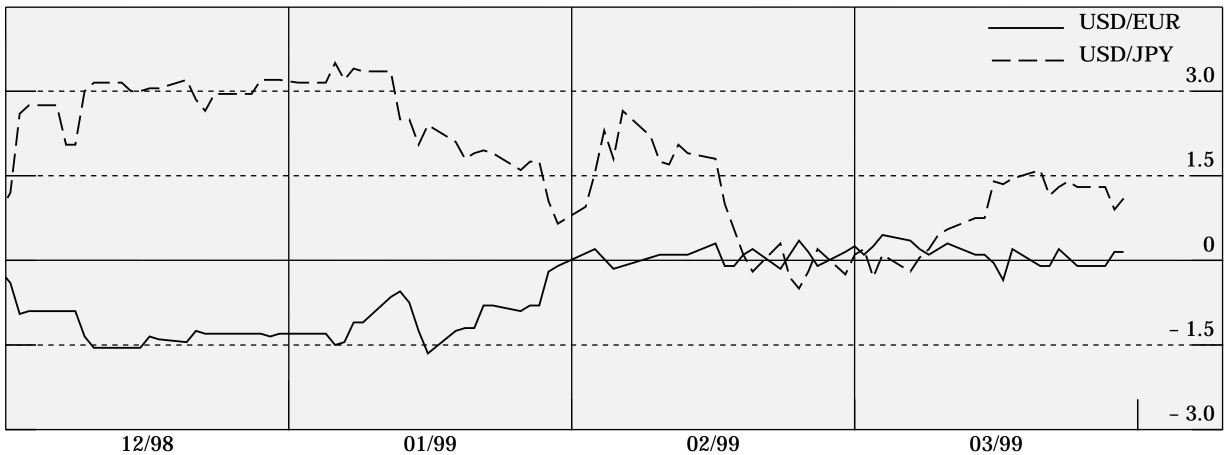
Yen per US dollar



Implied volatilities[1] (1-week in %)



One-month risk reversal[2] (%)



[1] At-the-money foreign exchange options. [2] A positive (negative) value indicates a bias towards yen (dollar) or dollar (euro) strength.

Sources: Reuters; BIS.

US dollar swap market seems to have recovered liquidity fairly quickly, but the amounts traded are likely to have fallen short of pre-crisis levels. Although swap spreads declined somewhat from their peaks of October 1998, they remained at historically high levels. There was also a return of both

interest rate positioning and credit arbitrage. Interest rate positioning responded to new macroeconomic data and largely took the form of demand to pay fixed and receive floating,[35] serving to steepen the US Treasury yield curve. Diverging views concerning the precise extent of yield curve steepening further stimulated trading. Meanwhile, credit arbitrage activity took advantage of wide swap spreads, with several highly rated companies issuing fixed rate bonds and swapping the payments into floating rate ones.

In the market for *currency derivatives*, the year began with a flurry of activity, reflecting uncertainty about the yen rather than about the euro. Position-taking in short-dated currency options, in particular, produced spikes in implied volatilities during the first half of January, with major currency pairs involving the yen showing the largest increases. Coming near the end of a six-week period of gains in the yen, this suggests uncertainty concerning the timing of the exchange rate's turning point. This waned once the yen started to weaken. Indeed, buoyant options trading arose in February from a risk of further yen depreciation in a policy regime perceived to involve little official intervention. Nervousness about the US dollar also generated activity in related currency derivatives during the quarter, particularly in the form of unusually strong demand for out-of-the-money put options. Unlike trading involving the yen, the focus of concern about the dollar was not the timing of a turning point but the possibility of a sharp fall.[36]

The small but resurgent market for *credit derivatives* apparently eased the return of low-rated borrowers to the international securities market. Default swaps have become the dominant instrument in this market, which also includes total return swaps, spread options and credit-linked notes. The active trading of default swaps on large European and Japanese banks resulted in the ready availability of indicative quotes with narrow bid/ask spreads. Swaps on a number of emerging market sovereign signatures also seem to have developed enough liquidity for their prices to move closely in line with that of the underlying securities. During the first quarter, prices of default swaps on Asian and Latin American sovereigns continued to decline, while prices on eastern European credits rose sharply in March in view of developments in the Balkans. In the United States, reference credits for default swaps at first included largely single-A names or better. By the end of the quarter, however, the market had moved to the edge of investment grade with references to triple-B borrowers. Significantly, default swaps began to play an important role in the pricing of new issues, with pre-hedging by investors reportedly helping tighten the credit spreads on bonds issued by Argentina and Mexico.

Structural and regulatory developments

The US Commodity Futures Trading Commission (CFTC) proposed rules related to the installation in the United States of terminals from electronic exchanges based abroad. If the exchanges meet certain standards related to their operations and regulatory environment, they would be exempted from registration with the CFTC as a contract market and US entities would be able to place orders for execution in the foreign market. Currently, Eurex is the only non-US exchange allowed to place trading terminals in the United States. It received a "no action" letter from the CFTC, in which the Commission stated that it would not require registration as an exchange under US law if certain conditions were met. The proposed rule would replace such a "no action" letter with a regulatory

---

[35] The new data led investors to believe that US short-term interest rates would rise. By taking positions in interest rate swaps to pay fixed and receive floating, these investors stood to gain if interest rates were to rise. While this positioning might have tended to widen swap spreads, arbitrage between bond and swap markets would have brought the swap spreads back to normal, while raising long-term yields in the process.

[36] Risk reversal calculations showed that out-of-the-money currency put options on the dollar commanded much higher premiums than the corresponding out-of-the-money call options. Such nervousness had arisen in December when the dollar had started to weaken against the yen. It took a few weeks of dollar strength in January and February before these worries dissipated. By March, risk reversal calculations suggested balanced market expectations about the direction of possible large moves in the dollar.

process. The CFTC's release also covers proprietary automated order routing systems that individual firms use to send orders to foreign exchanges. The proposed rules have generated negative reactions both in the United States and abroad, because of a lack of clarity concerning how the standards would be applied.

In March, the International Swaps and Derivatives Association released a study on the performance of collateralisation and collateral management systems. It noted that the use of collateral had been highly beneficial to financial institutions during the recent global financial crisis. Firms that had covered their counterparty credit exposures with collateral agreements had avoided severe losses last year. However, the episode provided valuable insights into how the use of collateral could be enhanced. It showed that collateralisation should be viewed as a risk mitigation technique complementing credit analysis rather than substituting for it.

Effects of the new millennium on money market interest rates

The end of calendar or financial years is often accompanied by funding pressures in money markets owing to higher demand for cash on the part of the public, reduced willingness to lend on the part of intermediaries and, more generally, "window-dressing" operations.[1] Greater awareness of the potential for computer-related problems on the changeover to 2000 has exacerbated such year-end effects, giving rise to the appearance of premia on certain types of contracts maturing around the end of 1999. Market participants' fear of disruptions to liquidity have triggered, on the one hand, a reluctance to operate on that date and, on the other, hedging or speculative operations in futures markets that have increased implied funding costs. While the biggest intermediaries have devoted considerable efforts to dealing with the problem, concerns remain about the readiness of smaller financial institutions and non-financial firms.

These millennium-related premia, which emerged in several markets in spring 1998, widened sharply in the fourth quarter of 1998. One indicator of these premia is the "millennium spread", which shows the difference between the interest rate implied by the three-month interest rate futures maturing in December 1999 and the average of the rates on similar contracts maturing in September 1999 and March 2000.[2] The graph below shows the existence of small spreads in the eurodollar, euromark and euroyen markets for much of 1998, but sharp increases in November and December. Some market observers suggested at the end of 1998 that the millennium spikes were excessive and that they were offering trading opportunities. Spreads have come down since then,[3] which would have enabled some to generate handsome profits on their positions.

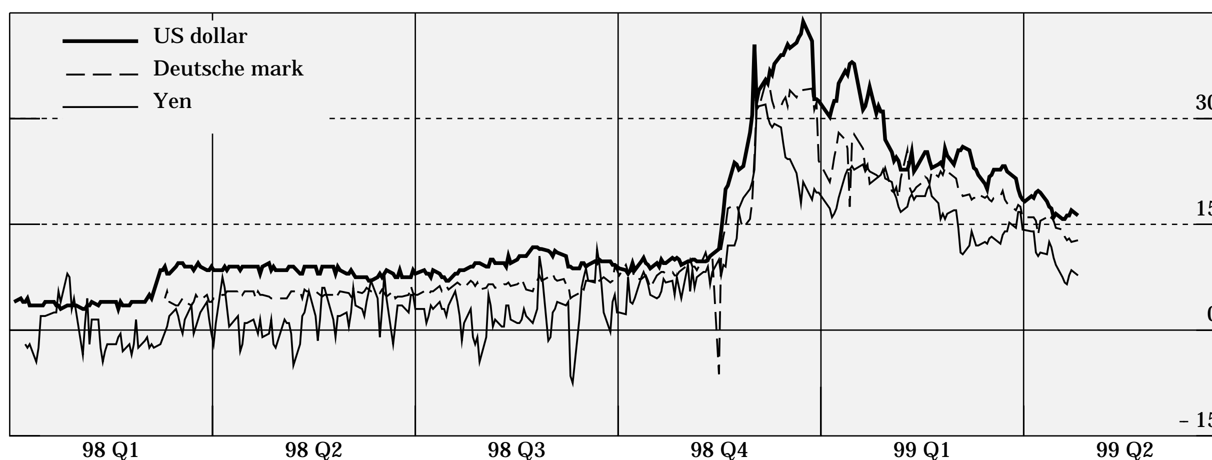
While these margins reflect the price that intermediaries are willing to pay to hedge against year-end funding difficulties, it should be noted that actual millennium spreads are somewhat smaller than those implied by observable rates since seasonal funding pressures usually generate small premia even without the Year 2000 factor. Nevertheless, since these calculations are based on three-month interest rates, the impact of the millennium funding risk would be substantially higher for shorter maturities, where most interbank financing takes place.

The millennium spread can also be traded in the cash and OTC markets. In that context, it is interesting to note that, while the spikes implied by forward rate agreements (FRAs) have been comparable to those prevailing in futures markets, these distortions have been smaller in the forward rates implied by Libid-based deposits. Such differences should in principle be arbitraged away, but some observers have attributed their persistence to the fact that the cash market requires a full investment of principal, while the futures and forward markets trade on the basis of leverage and price differences.

[1] In order, inter alia, to reduce the size of balance sheets, show higher capital ratios or better rates of return. [2] This results in a spread showing the differential between the anticipated December rate and the December rate implied by an interpolation of September and March rates. Although this spread has also been referred to as the "millennium butterfly spread" in the financial press, this is not entirely consistent with standard financial terminology since such spread strategies are usually made up of options with similar expiry dates. [3] This has been attributed by some to the successful launch of the euro, which may have made operators less apprehensive about the ability of the financial system to cope with the technological challenge represented by the new millennium.

The millennium spread*

In basis points



* Spread between the yield on the December 1999 three-month futures contract and the average of the yields of the September 1999 and March 2000 contracts.

Source: Reuters.

ABBREVIATIONS USED FOR EXCHANGES

AEX	Amsterdam Exchanges
AMEX	American Stock Exchange
ASX	Australian Stock Exchange
BM&F	Bolsa de Mercadorias y Futuros
CBOE	Chicago Board Options Exchange
CBOT	Chicago Board of Trade
CME	Chicago Mercantile Exchange
CSCE	Coffee, Sugar & Cocoa Exchange
CX	Cantor Exchange
DB	Deutsche Börse
FINEX	New York Cotton Exchange - Finex Division
HEX	Helsinki Securities and Derivatives Exchange, Clearing House
HKFE	Hong Kong Futures Exchange
HKSE	Hong Kong Stock Exchange
ISE	Italian Stock Exchange
KLOFFE	Kuala Lumpur Options and Financial Futures Exchange
KLSE	Kuala Lumpur Stock Exchange
LIFFE	London International Financial Futures and Options Exchange
LSE	London Stock Exchange
MATIF	Marché à Terme International de France
ME	Montreal Exchange
MEFF RF/RV	Mercado de Futuros Financieros de Renta Fija/Renta Variable
MIF	Mercato Italiano Futures
MONEP	Marché des Options Négociables de Paris
NASD	National Association of Securities Dealers
NYBT	New York Board of Trade
NYCE	New York Cotton Exchange
NYFE	New York Futures Exchange
NYSE	New York Stock Exchange
OSE	Osaka Securities Exchange
PE	Pacific Exchange
SBF	Société des Bourses Françaises
SFE	Sydney Futures Exchange
SIMEX	Singapore International Monetary Exchange
SOFFEX	Swiss Options and Financial Futures Exchange
SWX	Swiss Exchange
TSE	Tokyo Stock Exchange