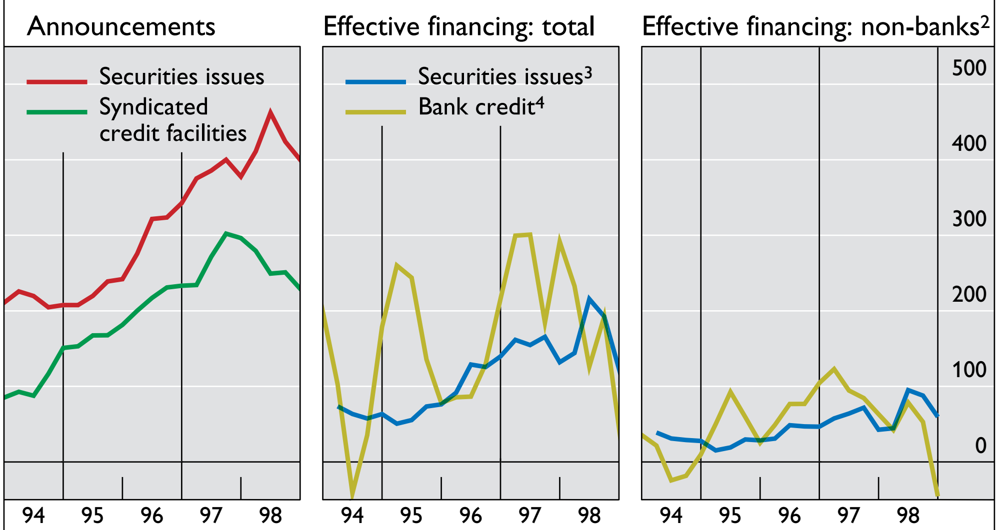
VII. International financial markets

Highlights

The Russian debt moratorium announced in August 1998 was a watershed event for international financial markets. Admittedly, recurrent strains since the onset of the Asian crisis in July 1997 had already had a considerable impact on overall market conditions. But, until last summer, expansionary factors generally remained sufficiently strong to offset growing concerns about exposures to credit risk. Prime among these supportive elements were the search for higher returns in a favourable monetary environment, the partly related international diversification of portfolios, the wave of mergers and acquisitions in the industrial world and the gradual emergence of a pan-European financial market. The unexpected Russian decision led to a dramatic loss of market confidence, which was compounded in September by revelations concerning the size of exposures faced by Long-Term Capital Management (LTCM). Issuing conditions tightened abruptly for all but the most creditworthy borrowers, new financing through international banking and securities markets was severely curtailed and secondary market trading plunged for all risky instruments. Although the easing of official rates brought a measure of calm and breathed new life into primary and secondary markets, concerns remained about the soundness of the global financial system.

Activity in international financial markets[1]

In billions of US dollars



[1] Two-quarter moving averages. [2] Excluding non-bank financial institutions for securities issues. [3] Gross issues minus repayments. [4] Exchange-rate-adjusted changes in gross international bank claims.

Sources: Bank of England; Capital DATA; Euroclear; *International Financing Review* (IFR); International Securities Market Association (ISMA); national data; BIS. Graph VII.1

Estimated net financing in international markets[1]

	1993	1994	1995	1996	1997	1998	Stocks at end-1998
	in billions of US dollars						
Total cross-border bank claims[2]	316.4	274.9	680.1	532.7	1,142.6	331.0	9,665.4
Local bank claims in foreign currency	–0.9	0.2	–36.0	71.4	42.1	12.1	1,382.8
minus: Interbank redepositing	*115.5*	*85.1*	*314.1*	*184.1*	*719.8*	*228.1*	*5,563.2*
A = Net international bank claims[3]	200.0	190.0	330.0	420.0	465.0	115.0	5,485.0
B = Net money market instruments	–6.2	3.3	17.4	41.1	19.8	7.4	194.5
Total completed bond and note issues	..	504.1	536.8	859.6	1,014.0	1,167.8	
minus: Redemptions and repurchases	..	*253.8*	*291.0*	*363.4*	*460.5*	*497.5*	
C = Net bond and note financing	194.9	250.3	245.8	496.2	553.5	670.3	4,121.6
D = A + B + C = Total international financing	388.7	443.6	593.1	957.3	1,038.3	792.7	9,801.1
minus: Double-counting[4]	*113.7*	*38.6*	*48.1*	*197.3*	*163.3*	*227.7*	*1,456.1*
E = Total net international financing	275.0	405.0	545.0	760.0	875.0	565.0	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] Banks in the G10 countries plus Austria, Denmark, Finland, Ireland, Luxembourg, Norway, Spain, the Bahamas, Bahrain, the Cayman Islands, Hong Kong, the Netherlands Antilles and Singapore, and the branches of US banks in Panama. [3] Excluding, on an estimated basis, redepositing between reporting banks. [4] International debt securities purchased or issued by the reporting banks, to the extent that they are included in the banking statistics as claims on non-residents.

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS. Table VII.1

On the face of it, and despite the significant losses experienced by some key players, the international interbank market seems to have withstood fairly well the massive unwinding of leveraged positions and the abrupt shift in investor preference towards safe and liquid assets. Meanwhile, financing through the international securities market continued to be supported by longer-term influences, with highly rated borrowers even stepping up their issuance in a context of fierce competition between underwriters. Finally, derivatives markets once again accommodated the reconsideration of existing positions and strategies. Nevertheless, the resilience of markets should not obscure the fact that both market participants and the authorities were caught by surprise by the extent of the turnaround, which revealed serious deficiencies in existing risk management systems and regulatory oversight, as well as in market transparency.

The international banking market

In the area of syndicated loan facilities, mergers and acquisitions in North America and Europe maintained activity at a fairly high level in 1998, but total announcements nevertheless declined by 16% (to $957 billion). Facilities arranged for emerging market names nearly halved (to $68 billion) and decreased further in the first quarter of 1999. The Asian crisis that erupted in mid-1997 had already rendered the environment much less favourable to borrowers. The retreat of Japanese and other Asian banking groups led to a further tightening of lending conditions. In that sense, the Russian moratorium merely reinforced banks' reconsideration of exposures and risk management

The Russian moratorium ...

methods. The growing presence of institutional investors and investment banks, and more active secondary market trading, brought pricing more into line with that prevailing in the international securities market. At the same time, the increasing use of credit derivatives provided some scope for a more rapid adjustment of exposures, although the global financial crisis highlighted a number of deficiencies in that market segment (see the section on derivatives markets).

The deterioration in the financial environment in the course of 1998 was more clearly apparent in the detailed BIS international banking statistics, which refer to actual lending rather than announced facilities. Thus, while banks cut their exposure to Asian emerging market economies by a record amount in the first quarter of the year, their retrenchment subsequently spread to other regions of the developing world. Then, in the third quarter, at the height of the Russian crisis, the retreat by banks reached the industrial world. There was, in particular, a sharp cutback in new loans to non-bank customers located in financial centres which are host to hedge funds. Parallel sales of securities by reporting banks also provided evidence of the unwinding of collateralised borrowing. Although the retrenchment from emerging economies moderated in the final quarter, deleveraging and investors' flight to safety reached a climax, leading to an absolute contraction in international bank credit aggregates. Meanwhile, non-bank depositors displayed a strong preference for placing funds with banks perceived to be less exposed to the financial upheaval.

… accentuates banks' retreat from the developing world …

… and causes an absolute contraction of credit …

Main features of international banking activity[1]

	1993	1994	1995	1996	1997	1998	Stocks at end-1998
	in billions of US dollars						
A = Claims on outside area countries	11.6	36.6	120.8	141.4	98.6	–29.6	1,200.7
B = Claims on inside area countries	251.4	228.3	506.5	446.2	1,095.0	394.4	9,630.5
(1) Claims on non-banks	*122.7*	*–49.3*	*189.5*	*302.2*	*242.4*	*69.9*	*2,935.1*
(2) International financing of domestic lending	*13.3*	*192.5*	*2.9*	*–40.1*	*132.8*	*96.4*	*1,132.3*
(3) Interbank redepositing	*115.5*	*85.1*	*314.1*	*184.1*	*719.8*	*228.1*	*5,563.2*
C = Unallocated	52.5	10.1	16.8	16.4	–8.8	–21.7	216.9
D = A + B + C = Gross international bank claims	315.5	275.1	644.1	604.1	1,184.8	343.1	11,048.2
E = D – B*(3)* = Net international bank claims	200.0	190.0	330.0	420.0	465.0	115.0	5,485.0
A = Liabilities to outside area countries	–14.8	74.6	96.4	101.8	77.2	–13.2	1,047.9
B = Liabilities to inside area countries	112.5	539.2	338.5	325.0	950.1	337.6	8,728.1
(1) Liabilities to non-banks	*86.2*	*132.8*	*116.7*	*225.7*	*202.8*	*44.0*	*2,053.7*
(2) Domestic funding of international lending	*85.6*	*–64.4*	*18.9*	*–31.7*	*–3.1*	*24.4*	*1,318.2*
(3) Interbank redepositing	*–59.3*	*470.9*	*202.9*	*131.0*	*750.4*	*269.2*	*5,356.2*
C = Unallocated	43.0	47.1	98.0	124.1	188.1	59.8	1,065.1
D = A + B + C = Gross international bank liabilities	140.7	660.9	532.9	551.0	1,215.4	384.2	10,841.2
Memorandum item: Syndicated credits[2]	*279.4*	*477.1*	*697.7*	*900.9*	*1,136.3*	*957.3*	

[1] Changes in amounts outstanding excluding exchange rate valuation effects. [2] Announced new facilities.
Sources: Capital DATA; BIS. Table VII.2

… as the impact of growth factors subsides

Growth factors masked for some time the negative impact of these developments on international banking flows. One was the phasing-in of EMU, which acted as a catalyst for the expansion of cross-border business in Europe. Another was the active role played by banks in securities markets. Indeed, the sharp movement recorded in banks' holdings of certain types of securities in the course of the year illustrated the importance of their proprietary trading transactions in overall activity. An additional supportive influence was the active reshuffling of world liquidity through the international interbank market. These elements, together with the international expansion of some European banking groups, also compensated for the pullback of Japanese banks and the indirect impact of the turmoil on banks with actual or perceived links to major debtors or leveraged investors.

Business with countries inside the reporting area

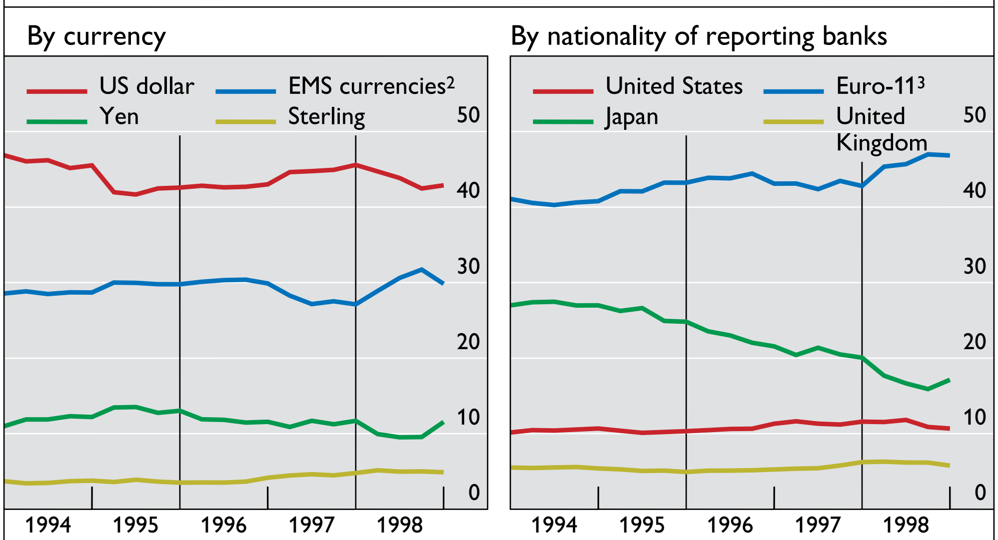
Active inside area lending in the first half of the year …

… facilitates leveraged transactions …

In the first half of 1998, international banking activity was already heavily focused on borrowing entities located in Europe, North America and Caribbean centres, at the expense of Japan and most emerging market economies. This pattern of lending helped delay the widening of risk premia within the group of inside area borrowers other than Japan (see footnote 2 to Table VII.1 for a definition of the BIS reporting area). It may also have indirectly facilitated the financing of leveraged strategies. Of note was the strong build-up in banks' holdings of securities issued by developed country names during this period, although the extent of trading plays associated with it was only revealed in the subsequent unwinding. The abrupt swings in credit availability which took place in the course of the summer were most evident in transactions with the non-bank sector located inside the reporting area.

Currency and nationality structure of international bank lending[1]

Percentage shares, at quarter-end



[1] Cross-border claims and local claims in foreign currency of banks located in industrial reporting countries. [2] Belgian franc, Deutsche mark, French franc, guilder, lira and the ECU. [3] Excluding Portugal.

Source: BIS. Graph VII.2

Banks' external claims on countries outside the reporting area*								
	1996	1997	1998					Stocks at end-1998
	Year	Year	Year	Q1	Q2	Q3	Q4	
	in billions of US dollars							
Total outside area	141.4	98.6	–29.6	– 5.0	– 4.5	–25.7	5.6	1,200.7
Developed countries	22.8	25.2	30.8	9.5	2.3	8.8	10.2	248.2
Eastern Europe	10.8	18.5	– 0.5	6.3	4.6	–10.4	– 1.0	108.8
Russia	*6.8*	*9.8*	*– 6.3*	*3.3*	*2.7*	*–10.7*	*– 1.6*	*54.7*
Developing countries	107.9	54.9	–59.9	–20.8	–11.4	–24.1	– 3.6	843.7
Latin America	28.5	34.1	0.7	12.7	2.0	– 8.0	– 6.1	309.0
Argentina	*5.4*	*7.3*	*– 0.3*	*1.5*	*– 0.2*	*1.2*	*– 2.8*	*46.5*
Brazil	*16.7*	*10.7*	*– 3.9*	*8.1*	*0.6*	*– 8.0*	*– 4.5*	*98.2*
Mexico	*0.1*	*2.3*	*1.5*	*1.3*	*– 0.3*	*– 0.9*	*1.4*	*76.3*
Middle East	–0.1	10.5	23.3	– 0.8	6.2	7.5	10.5	106.6
Africa	–0.4	2.6	– 1.1	0.8	– 1.7	– 0.2	0.0	58.7
Asia	79.8	7.6	–82.8	–33.5	–18.0	–23.4	– 7.9	369.3
China	*13.5*	*11.4*	*– 8.3*	*0.3*	*– 3.3*	*– 6.3*	*1.0*	*82.7*
Indonesia	*9.4*	*5.7*	*–12.7*	*– 5.0*	*– 4.0*	*– 2.1*	*– 1.6*	*50.5*
Korea	*26.6*	*– 4.3*	*–30.1*	*–16.4*	*– 4.2*	*– 4.7*	*– 4.9*	*74.6*
Thailand	*9.5*	*–17.5*	*–24.0*	*– 8.5*	*– 5.3*	*– 4.8*	*– 5.4*	*56.6*

* Changes in amounts outstanding excluding exchange rate valuation effects.
Source: BIS. Table VII.3

While the cutback in the third quarter was limited to entities located in the United States and some of the Caribbean centres (where a number of hedge funds are registered), the retreat turned into a stampede in the fourth. This was reflected in a 9% annualised contraction in the volume of international bank credit extended to inside area non-bank customers.

… which amplify the subsequent turnaround …

On the liabilities side of reporting banks' international balance sheet, new deposits by non-bank investors located in the reporting area appeared sufficient until the summer to offset the loss of deposits from emerging market countries. Signs of strains became apparent in the third quarter, when such depositors showed a preference for holding assets with a select number of banking groups. The imbalance became particularly acute in the fourth quarter, when inside area non-banks withdrew massively and across the board from the international banking market (–22% on an annual basis). This sheds light on the much publicised international credit crunch of last October. With hindsight, it appears that the disruption in international banking intermediation that took place during this period was due as much to banks' reduced ability to attract funds as to their own reluctance to extend credit. This explains the injection of liquidity by the monetary authorities of the major countries, which prevented further systemic repercussions.

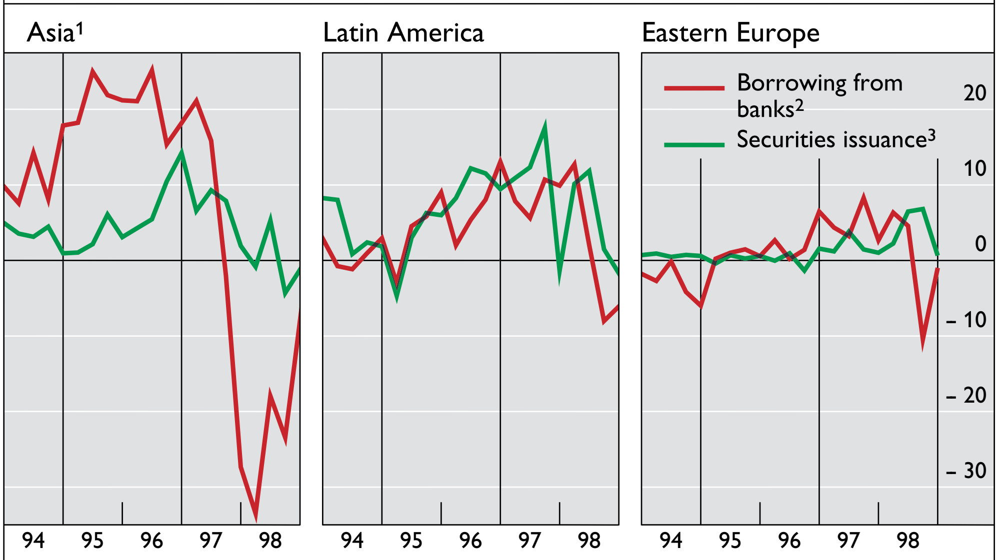
… as does the massive withdrawal of deposits

Business with countries outside the reporting area

There was a sharp turnaround in banks' credit flows to emerging and transition economies in 1998 (to –$60 billion from +$73 billion in 1997), although it varied considerably across regions, in terms of both timing and magnitude. In

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 the respective regions. [3] Net issues of international money market instruments, bonds and notes.

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; national data; BIS. Graph VII.3

Banks' pullback from Asia …

the case of Asia, the crisis that emerged in summer 1997 reached a climax in the first quarter of 1998 as reporting banks sharply reduced their exposures to Indonesia, Korea, Malaysia and Thailand. An improvement in market conditions, especially with respect to Korea, was short-lived as emerging market borrowers bore the brunt of investors' flight to safety after the announcement of the Russian moratorium in August. Reporting banks subsequently continued to reduce their exposure to this group of countries, but they also withdrew from China amidst growing uncertainty concerning the financial situation of local holding companies and the sustainability of the exchange rate (see Chapter III). The widespread retreat among the various nationality groups of lending banks and the high proportion of short-term debt in the total banking exposure to Asia (60% at end-1997 on average) aggravated the disruption to local economies.

… widens in the summer …

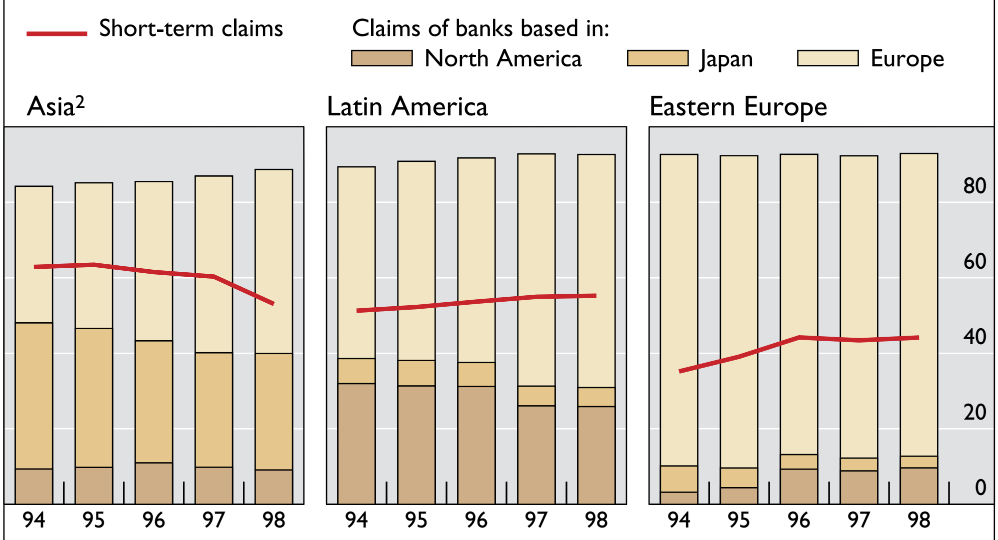
… to include China …

Contagion beyond Asia was contained for some time, but as the year progressed there was evidence of a credit squeeze for other emerging market countries as well. In Latin America, one striking development was the turnaround that took place in banks' credit relations with Brazil between the first and second halves of the year. Record high domestic interest rates and new regulations induced strong inflows of bank funds in the early part of the year. However, the movement was more than fully reversed thereafter as developments in Russia led to a particularly severe reassessment of exposure to Brazil. The impact of the Russian crisis, the unwinding of leveraged positions following the near-collapse of LTCM and the suggestion of enhanced private sector burden-sharing in the context of a precautionary IMF support package for the country probably encouraged creditors to reduce their exposure prior to the devaluation of the real in early 1999. Interestingly, banks' pullback from

… and Brazil

Main features of international banking claims by region

As a percentage of total claims, at year-end[1]



[1] For 1998, end-June. [2] Excluding Hong Kong, Japan and Singapore.

Source: BIS. Graph VII.4

other countries in the continent was more muted, with Argentina retaining some access to the international banking market well into the third quarter and Mexico raising fresh credit in the fourth quarter, albeit at wider spreads.

Contagion elsewhere is muted …

The insulation of Latin America in the first half of 1998 from the crisis originating in Asia has already been noted in Chapter III. The continuing, albeit reduced, ability of Argentina and Mexico to tap the international markets thereafter suggests a greater differentiation of country risk among investors. However, other fundamental factors may have accentuated this tendency. First, the implicit assumption that countries in the region were covered by an international safety net encouraged banks to exploit existing interest rate differentials, thus enabling credit spreads to stabilise (see the last section of this chapter). Second, European and North American banks were keen to further strengthen their presence in Latin America and build up links with local banking systems perceived to have reached a fairly advanced stage of restructuring. Third, with the exception of Brazil, the weight of banking debt falling due in 1998 was considerably lower than in Asia. This alleviated external financing pressures, at least in the short term, the more so as in some instances the needs could be met in the international securities market.

… suggesting greater differentiation of country risk …

In eastern Europe, the BIS international banking data provide evidence of the persistence of bank financing to Russia right up to the decision by the authorities to declare a moratorium on part of the country's debt. This has been attributed to the confidence of creditors in the country's ability to service its obligations or to secure an international support package in the event of servicing difficulties. That event was followed by a massive drop in the dollar value of banks' exposure to Russia, largely through a sharp markdown in the portfolio value of defaulted securities. Indeed, that country accounted for the whole of the decline seen in reporting banks' claims on the region in the

… and notwithstanding the Russian shock

second half of the year. Other eastern European countries do not appear to have been subject to a significant drying-up of bank credit during that period, perhaps owing to a more favourable economic climate and growing links with EU countries.

At the same time, notwithstanding the combined impact of contagion and falling oil prices, international banking funds continued to flow to the Middle East. In particular, Saudi Arabia and the United Arab Emirates continued to capitalise on their high credit standing to tap the banking market on a large scale.

The international securities market

A record volume of securities issuance …

Despite the trend rise in repayment flows and the drying-up of business in money market instruments, net new financing through international debt securities reached a new record in 1998 ($678 billion). Issuing conditions varied markedly in the course of the year. Brisk activity in the first quarter reflected both issuance that had been delayed by the deepening of the Asian financial crisis in late 1997 and the more accommodative monetary stance that followed.

Main features of international debt securities issues[1]

	1993	1994	1995	1996	1997	1998	Stocks at end-1998
	in billions of US dollars						
Total net issues	188.7	253.6	263.1	537.3	573.3	677.7	4,316.1
Money market instruments[2]	– 6.2	3.3	17.4	41.1	19.8	7.4	194.5
Bonds and notes[2]	194.9	250.3	245.8	496.2	553.5	670.3	4,121.6
Developed countries	114.8	205.5	228.4	411.0	449.0	570.2	3,506.2
Europe[3]	147.7	167.1	159.8	243.2	257.9	279.6	2,029.2
Japan	–52.1	–5.9	–2.9	16.3	–0.4	–19.8	318.1
United States	– 4.0	22.9	56.3	131.8	176.9	282.6	845.0
Canada	19.2	16.6	8.7	8.8	10.1	21.5	207.4
Offshore centres	10.2	7.2	1.7	16.3	14.5	11.6	61.0
Other countries	27.6	32.5	22.1	88.2	89.2	40.9	377.5
International institutions	36.2	8.5	11.0	21.8	20.6	55.1	371.3
US dollar	28.6	66.5	69.0	261.7	332.0	411.1	1,971.9
Yen	29.3	86.0	81.3	85.3	34.6	–29.3	487.5
Euro area currencies	82.6	80.2	84.3	135.8	139.0	220.3	1,173.8
Other currencies	48.3	20.9	28.5	54.4	67.8	75.5	682.9
Financial institutions[4]	51.4	136.1	167.9	346.9	360.0	368.3	2,022.6
Public sector[5]	130.7	103.1	73.3	118.5	89.0	182.1	1,273.2
Corporate issuers	6.6	14.4	22.0	71.9	124.3	127.2	1,020.0
Memorandum item:							
Announced bonds and notes	*534.6*	*492.5*	*534.5*	*861.1*	*1,010.9*	*1,172.7*	

[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. Table VII.4

The climate soured in August, when the Russian moratorium closed market access to all but the best names. A round of official interest rate reductions brought a measure of calm and allowed a resumption of activity, although anxiety concerning credit and liquidity risk strongly affected the composition of issuance, at the expense of emerging market names. Data available for the first quarter of 1999 show that such borrowers were able to return to the international securities market soon after the Brazilian devaluation in January (which had been widely anticipated). However, market indicators suggest that last autumn's global reassessment of risk had a more lasting influence on credit and liquidity risk premia, which remained above their long-term average.

… shows market resilience …

Nevertheless, the market proved resilient to recurring turbulence. While the expansion of the investor and issuer bases and the widening range of structures on offer were important supportive factors, other long-term influences were present, of which three stand out. First, restructuring within the industrial and financial sectors resulted in a wave of acquisition-related issuance. Second, the improved fiscal stance in the industrial world (except for Japan) created a window of opportunity for a broad range of highly rated borrowers. Third, the impending introduction of the single European currency added momentum to cross-border flows, with issuers' desire to establish ECU/euro-denominated benchmarks leading to a shift away from certain domestic markets.

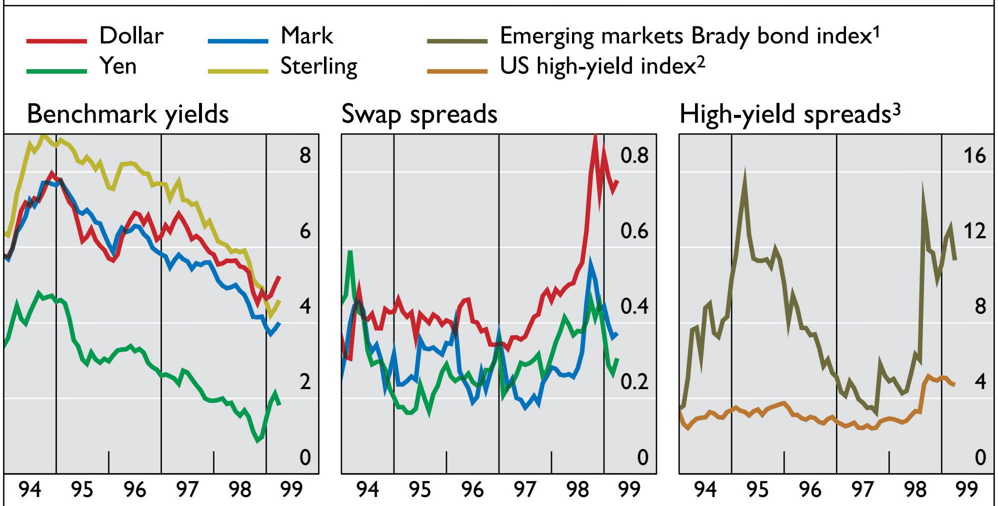
… in a context of restructuring …

… adjustment to the euro …

Higher market volatility accentuated the concentration among intermediaries. US underwriters maintained their lead, using the strength of their balance sheets to win mandates for large dollar-denominated supranational and public sector issues. European-based dealers capitalised on their distribution power in European currencies and on the imminence of the euro to make new gains in market share. In contrast, the low volume of Japanese-originated and yen-denominated business led to a further decline in the market

Long-term interest rates

In percentages and percentage points



[1] Yield stripped of collateral backing. [2] Sub-investment-grade corporate bond yield. [3] High-yield bond rate less the 30-year US Treasury bond yield.

Sources: Bloomberg; Datastream; JP Morgan; national data; BIS. Graph VII.5

… and fierce competition among underwriters

standing of Japanese intermediaries. Meanwhile, growing competition squeezed underwriting margins, prompting some banking groups to scale back their ambition of becoming global players.

Type and nationality of issuers

Investors shift to liquid paper …

The turbulence in financial markets had an impact on the mix of borrowers accessing the international securities market. The strength of investor demand for highly rated and liquid securities encouraged public sector entities in the industrial world and supranational agencies to step up issuance (by 59% and 44% year on year respectively). This was reflected in a sharp increase in the average size of transactions, with deals in excess of $1 billion accounting for 27% of issues compared with 10% in the previous year. Financial institutions continued to account for the largest single share of issues (54%), despite concerns created by their exposures to emerging market countries and leveraged investors. The focus of investors on large benchmark issues and doubts about the strength of the non-financial private sector hampered issuance by this group.

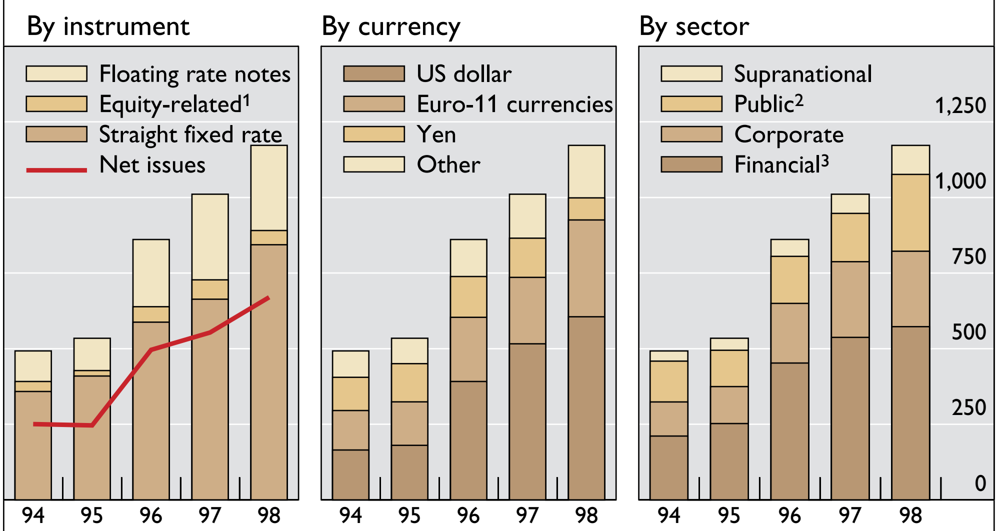
… of prime US and German issuers …

US and German borrowers were particularly active, accounting for 26% and 13% respectively of total gross issuance of debt securities. While US semi-public financing agencies capitalised on the reduced supply of US Treasury paper to create large international benchmarks, highly rated German banking institutions pursued an active diversification of funding through exceptionally large Deutsche mark issues. In contrast, gross financing for Japanese borrowers dropped sharply as banks faced widening risk premia and corporate entities turned to the domestic bond market. At the same time, emerging market borrowers bore the brunt of investors' flight to safety. Thus, gross issuance by such names declined by 36% from the record volume of 1997 (to $95 billion).

… at the expense of emerging market names

Main features of the international bond and note markets

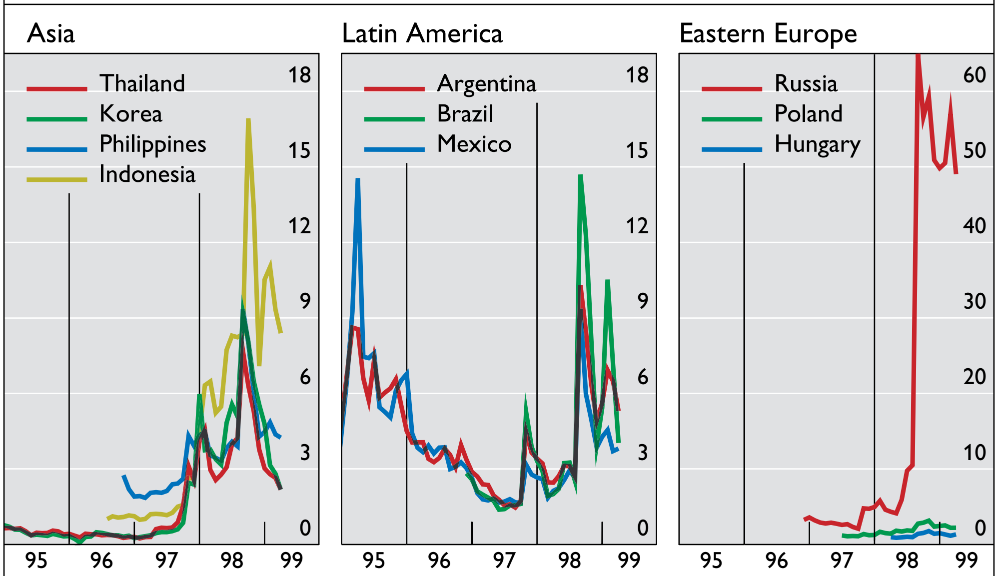
Announced issues, in billions of US dollars



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

Sources: Bank of England; Capital DATA; Euroclear; IFR; ISMA; BIS. Graph VII.6

Average spread of US dollar sovereign international bonds *



* Over 10-year US Treasury bonds, in percentage points.
Source: Bloomberg. Graph VII.7

Although investors demonstrated a preference for Latin American and eastern European issuers in the first half of the year, activity in this market segment dried up following the Russian moratorium. A few sovereign borrowers nevertheless managed to launch sizable issues, but margins were much higher and maturities shorter. Furthermore, a number of issues included "sweeteners" to enhance their marketability.

Type and currency of issues

Issuance of short-term paper drops …

Financing through *money market instruments*, comprising eurocommercial paper (ECP) and other short-term euronotes, decelerated further in 1998. The crisis in emerging markets accounted for some of the reduction, but much of the decline resulted from the repayment of debt by a narrow group of European sovereign borrowers and Japanese financial institutions. This subdued pattern of activity contrasted sharply with the robust expansion of the US commercial paper market. Although the dollar remained by far the most actively used currency in the ECP market, a number of European governments have positioned themselves in anticipation of the emergence of a large and liquid European short-term debt market by announcing the introduction of new facilities denominated in euros.

… but demand for liquidity boosts fixed rate issuance

In the *longer-term segments* of the market, the increase in the gross issuance of *straight fixed rate paper* more than offset the drop in floating rate notes and equity-linked securities. While the volatility of bond yields and swap rates in the second half of the year often made it difficult to launch fixed rate paper, investors' demand for liquidity and the rush by borrowers to introduce large benchmarks ahead of EMU provided overall support in that segment. The persistence of wide swap spreads in some of the key currencies (the dollar and sterling in particular) also enabled highly rated borrowers to offset the negative impact of less attractive margins on new issues. However, faced with weak demand for complex structures, supranational agencies and the largest public sector issuers used a variety of liquidity-enhancing features, including fungibility of tranches and repurchase facilities.

Credit risk hinders FRN issuance

Although the evolution of global interest rates and the volatility of asset prices whetted investors' appetite for defensive instruments, wide swap spreads reduced the attractiveness of issuing *floating rate notes*. The global financial crisis also raised doubts about the creditworthiness of financial institutions, the main users of this market segment. There was a sharp reduction in the volume of *equity-linked issues* in 1998, following an exceptionally strong year in 1997. The poor performance of Japanese equity markets meant that Japanese companies were nearly absent from a segment in which they were once the dominant force. The situation was different for borrowers based in Europe, where industrial restructuring and the growing emphasis on shareholder value continued to induce firms to unwind cross-shareholdings through tax-efficient exchangeable issues (allowing the debt of one company to be exchanged for the equity of another). It should be noted that the dearth of standard equity-linked transactions belies the extent of activity in that market segment since a growing number of issues have been synthetically structured on the basis of equity derivatives. The primary market for *international equities* was somewhat livelier, with a new record volume of issues ($125 billion) launched mainly by recently privatised European and Japanese telecommunications companies.

Equity-linked issues are subject to conflicting influences …

A number of developments illustrated the variety of influences bearing on the international securities market. For example, there were signs in the first half of the year that investors were becoming more favourably disposed towards corporate debt, as illustrated by the expansion of European high-yield ("junk") issuance. But such activity dried up almost entirely thereafter, reflecting the flight to quality. At the same time, *asset-backed securities* benefited from investment demand for highly rated paper, notwithstanding some credit tiering as well as concerns about the liquidity and financial solidity of such structures. These factors did not prevent the development of securitisation in a number of European countries, as illustrated by the origination of the first mortgage-backed issues in Italy and Switzerland. The pressures faced by European banks in boosting capital efficiency and returns on equity have also encouraged the transfer of the credit risk of corporate loan portfolios through collateralised loan obligations (often in combination with credit derivatives). However, the European market for asset-backed securities remains hampered by the wide variety of regulations and conventions and the existence of competing financing channels (such as publicly guaranteed mortgage instruments).

… as are high-yield instruments

US dollar issues predominate …

The US dollar continued to account for about one-half of gross issues of international securities. The flight to quality and liquidity favoured bonds issued by US agencies and securitisation vehicles (including global bonds, which tend to be marketed to US residents). However, the impending introduction of the euro led to an increase in the share of euro area currencies (from 19% to 24%) and the ECU/euro (from 1% to 6%). There was also a sharp increase in activity in sterling, owing in part to favourable swap opportunities. In

… despite the surge in euro-related business …

contrast, technical and liquidity factors hampered business in smaller European currencies to the benefit of the Deutsche mark. Offshore yen business was hindered by the high cost of issuance faced by Japanese entities, the lack of attractive cross-currency swap opportunities and the rapid development of domestic corporate issuance. Lastly, the impact of the turmoil seen in emerging markets on issuance in high-yielding currencies was partly offset by the recovery in some Asian countries and the introduction of new currencies.

… as the role of the yen declines

Global derivatives markets

Changing interest rate and exchange rate expectations, new highs reached by equity markets and the sharp reversal of leveraged positions in the latter part of the year stimulated activity in derivatives markets in 1998. Exchange-traded business soared in the third quarter as investors withdrew from risky assets and shifted their exposure towards highly rated and liquid government securities. Competition between exchanges remained intense, particularly in Europe, where the imminence of the euro and the inexorable advance of automated exchanges challenged the dominance of established marketplaces. Moreover, exchanges continued to face competition from the rapidly growing over-the-counter (OTC) markets, forcing them to offer a wider range of services to make up for the loss of their franchises. The sharp increase in OTC outstanding positions in the second half of the year showed that the need for a massive reversal of exposures following the Russian moratorium more than offset the dampening impact of increased concerns about liquidity and counterparty risks. Nevertheless, the turbulence and related losses revealed the weaknesses of existing risk management systems in periods of extreme volatility and vanishing liquidity, prompting market participants to reconsider their risk models and internal control procedures.

Activity in derivatives soars …

… especially in the third quarter …

… as investors reverse their exposures

Markets for selected financial derivative instruments

	Notional amounts outstanding at year-end					
	1993	1994	1995	1996	1997	1998
	in billions of US dollars					
Exchange-traded instruments	7,771.2	8,862.9	9,188.6	9,879.6	12,202.2	13,549.2
Interest rate futures	4,958.8	5,777.6	5,863.4	5,931.2	7,489.2	7,702.2
Interest rate options	2,362.4	2,623.6	2,741.8	3,277.8	3,639.9	4,602.8
Currency futures	34.7	40.1	38.3	50.3	51.9	38.1
Currency options	75.6	55.6	43.5	46.5	33.2	18.7
Stock market index futures	110.0	127.7	172.4	195.9	211.5	321.0
Stock market index options	229.7	238.4	329.3	378.0	776.5	866.5
OTC instruments[1]	8,474.6	11,303.2	17,712.6	25,453.1	29,035.0	50,997.0
Interest rate swaps	6,177.3	8,815.6	12,810.7	19,170.9	22,291.3	..
Currency swaps[2]	899.6	914.8	1,197.4	1,559.6	1,823.6	..
Interest rate options[3]	1,397.6	1,572.8	3,704.5	4,722.6	4,920.1	..

[1] Data collected by ISDA. [2] Adjusted for reporting of both currencies; including cross-currency interest rate swaps. [3] Caps, collars, floors and swaptions.

Sources: Futures Industry Association; ISDA; various futures and options exchanges; BIS calculations.

Table VII.5

Exchange-traded instruments

Interest rate business dominates on exchanges …

The aggregate turnover of financial contracts monitored by the BIS expanded further in 1998 (by 9%, to $388 trillion). Interest rate products, which remained by far the most actively traded, experienced a sustained increase in activity (by 8%, to $350 trillion). Uncertainty over the course of monetary policy in Europe and North America supported trading in short-term interest rate contracts for much of the year, while the flight towards highly rated and liquid government paper boosted activity along most of the yield curve in the second half. There was, however, a decline in turnover towards year-end owing to the calming effect of lower official rates, the withdrawal of leveraged investors and the paring-down of positions ahead of EMU. Contracts on equity indices continued to record much faster growth than interest rate products (+16%, to $34 trillion) as new indices were introduced and bouts of downward market pressure and volatility prompted investors to seek protection. In contrast, the wide fluctuations seen in the major currency pairs were not

… but equity indices attract growing interest …

Financial derivative instruments traded on organised exchanges

	Turnover in notional amounts						Notional amounts at end-1998
	1993	1994	1995	1996	1997	1998	
	in trillions of US dollars						
Interest rate futures	177.3	271.7	266.3	253.5	274.6	294.8	7.7
On short-term instruments	138.9	222.1	218.2	204.8	223.2	239.9	7.3
of which:							
Three-month eurodollar rates	*70.2*	*113.6*	*104.1*	*97.1*	*107.2*	*119.3*	*2.9*
Three-month euroyen rates	*24.6*	*44.2*	*46.8*	*34.7*	*29.9*	*23.5*	*1.2*
Three-month euro-DM rates	*12.9*	*18.5*	*18.4*	*23.9*	*25.3*	*31.4*	*1.2*
Three-month Pibor	*10.4*	*12.0*	*15.9*	*13.7*	*12.3*	*4.4*	*0.1*
On long-term instruments	38.5	49.6	48.2	48.7	51.4	54.9	0.4
of which:							
US Treasury bonds	*8.0*	*10.1*	*8.7*	*8.5*	*10.1*	*11.3*	*0.1*
Japanese government bonds	*14.2*	*13.8*	*16.2*	*12.3*	*10.6*	*9.0*	*0.1*
German government bonds	*5.1*	*8.9*	*9.3*	*12.3*	*14.5*	*19.5*	*0.1*
French government bonds	*3.2*	*4.6*	*3.4*	*3.4*	*3.1*	*2.2*	*0.0*
Interest rate options[1]	32.8	46.7	43.3	41.0	48.6	55.5	4.6
Currency futures	2.8	3.3	3.3	3.0	3.5	3.1	0.0
Currency options[1]	1.4	1.4	1.0	0.9	0.7	0.4	0.0
Stock market index futures	7.1	9.4	10.6	12.9	16.4	20.8	0.3
Stock market index options[1]	6.3	8.0	9.2	10.1	13.0	13.2	0.9
Total	227.8	340.5	333.9	321.5	356.7	387.7	13.5
In North America	*113.1*	*175.9*	*161.1*	*154.2*	*182.7*	*199.5*	*7.3*
In Europe	*61.4*	*83.9*	*87.5*	*100.1*	*114.9*	*134.6*	*4.4*
In Asia[2]	*53.0*	*77.8*	*81.1*	*63.8*	*56.3*	*51.3*	*1.8*
Other	*0.4*	*2.9*	*4.2*	*3.4*	*2.9*	*2.3*	*0.0*

[1] Calls and puts. [2] Including Australia and New Zealand.

Sources: Futures Industry Association; various futures and options exchanges; BIS calculations.

Table VII.6

accompanied by an overall upturn of activity in currency-related contracts (–17%, to $3.5 trillion). Aside from the continuing dominance of OTC business in the management of currency risk, observers attributed this subdued activity on exchanges to the stability of European cross rates and investors' reluctance to take positions in emerging market currencies.

… while currency-related activity continues to lag

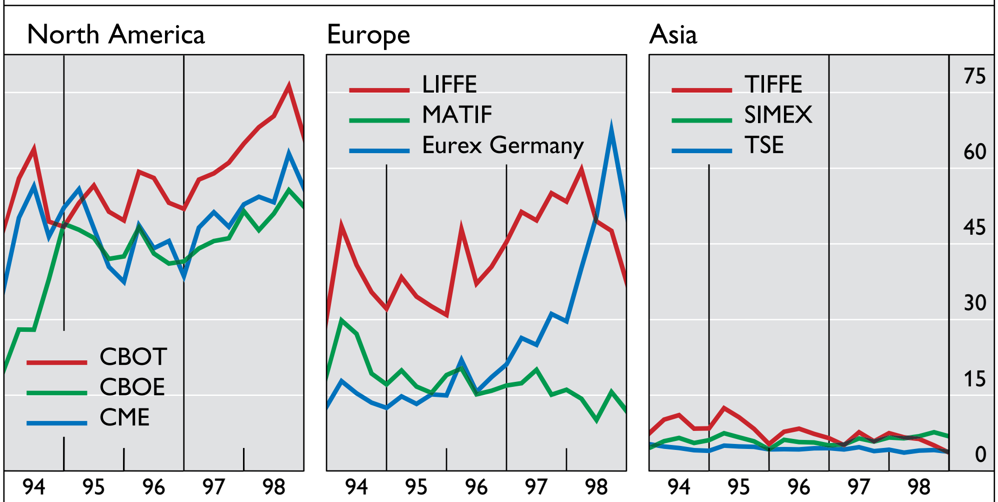
The CBOT remained the largest exchange in the world (with a 16% increase in the number of contracts traded, to 281 million), owing to the sharp rise in the turnover of US Treasury contracts and the growth of new equity index products. The CME and the CBOE, the next largest US exchanges, also reported an increase in activity (by 13% and 11% respectively, to 227 million and 207 million contracts). In Europe, Eurex Germany (formerly the DTB) posted a new record (+87%, to 210 million) and overtook LIFFE as the third busiest marketplace in the world. The flight to quality in the second half of the year propelled its bund futures contract into third position in the interest rate category after US Treasury bond and eurodollar contracts. However, the squeeze which occurred in German government bonds at the time of the turmoil created concerns that the underlying market might not be sufficiently large to support futures trading in periods of stress. Meanwhile, overall activity on LIFFE declined (by 7%, to 194 million), as increases in the area of short-term interest rate products and in some equity-related products were more than offset by a contraction in government bond instruments. In particular, the exchange's bund contract dried up as trading migrated to Eurex's cheaper electronic system. Despite strong advances in technology, trading on MATIF fell sharply (–31%, to 52 million contracts), in a context of reduced relative movements between continental European interest rates.

Eurex overtakes LIFFE …

… as bund trading migrates to Frankfurt

Derivatives turnover on major exchanges *

In millions of contracts per quarter



CBOT = Chicago Board of Trade; CBOE = Chicago Board Options Exchange; CME = Chicago Mercantile Exchange; LIFFE = London International Financial Futures and Options Exchange; MATIF = Marché à Terme International de France; TIFFE = Tokyo International Financial Futures Exchange; SIMEX = Singapore International Monetary Exchange; TSE = Tokyo Stock Exchange.

* 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. Graph VII.8

Euro-compatible contracts are introduced …

… as are pan-European equity products …

The anticipated consolidation in European interest rate instruments spurred the introduction of a plethora of euro-compatible contracts, creating concerns that, in the drive to innovate, liquidity might suffer. Another notable development in Europe was the significant increase in the trading of equity-related products, which benefited from attempts to introduce a variety of new pan-European equity indices and contracts, as well as the reduction in the unit value of certain options. Activity in the Pacific rim was generally subdued, particularly in Japan, where, despite some trading opportunities provided by the "Japan premium", the record low level of interest rates (except for a short period at year-end) reduced the demand for interest rate hedging. There was a tentative recovery in other Asian markets due to more active trading of equity-related contracts. Nevertheless, activity in Asian and other emerging markets remains a fraction of that in industrial countries in value terms.

… driven by competition …

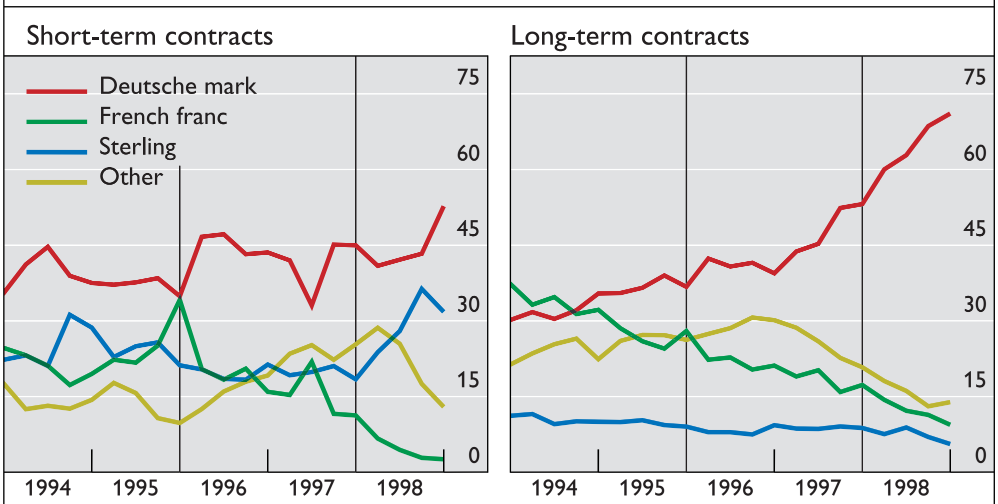
… consolidation …

… and new technologies

The battle for European market share took a dramatic new turn as exchanges that had been based primarily on open outcry, such as LIFFE and MATIF, surrendered to the relentless expansion of screen-based trading. The agreement between the Deutsche Börse (DB) and the London Stock Exchange in early July, while focusing on the cash trading of securities, also accentuated pressures for consolidation and for new regional links. US exchanges, for their part, entered into a number of joint ventures with wholesale market brokers and specialised IT firms to introduce electronic facilities for the joint trading of government securities and related derivatives. With the rapid development of trading technology, the battle for supremacy is gradually shifting from the listing of new contracts to the technological arena, to the benefit of a small number of cost-efficient hubs. In this respect, it is worth noting that the proprietary systems of core electronic exchanges are already being challenged by "new generation" trading systems that permit the interconnection of different exchange-traded and OTC facilities (in particular, via the internet). The growing

Turnover in European interest rate derivative contracts by currency denomination and maturity

Percentage shares



Sources: Futures Industry Association; BIS.

Graph VII.9

importance of screen-based facilities cutting across product and market segments is creating new challenges for regulators wishing to ensure the soundness and transparency of such systems.

Over-the-counter instruments

OTC business is spurred by the unwinding of positions …

Preliminary data released by the International Swaps and Derivatives Association (ISDA) on activity in swaps and swap-related interest rate options show that, following a pause in 1997, expansion resumed in 1998. Although the reported rise in notional amounts of positions outstanding (76%) was inflated by the increase in the number of reporting dealers, the adjusted rate of growth remained significantly higher than the rise in open interest on exchanges (35% and 9% respectively). In particular, the unwinding of leveraged positions which took place in the second half of the year led to an upsurge in the volume outstanding (since, in contrast to futures markets, existing positions are not extinguished by the writing of opposite contracts). However, concerns about credit risk led to a sharp cutback in credit lines to weaker counterparties towards year-end, thus acting as a damper on overall market expansion.

… led by interest rate swaps …

ISDA did not release further disaggregated data, but other sources suggest that activity in *interest rate products* was the main driving force. Faced with heavy losses, proprietary traders and leveraged funds unwound their positions, inter alia through asset swaps and structured securities. In addition, the unusual evolution of Japanese interbank rates and bond yields towards year-end generated some trading. As Japanese banks faced new upward pressures on their interbank liabilities, western-based banks began to offer negative rates on yen-denominated deposits, prompting a reversal of outstanding yen swaps and some activity in interest rate floors.

… and currency options

In the area of *cross-currency derivatives*, the fairly steady appreciation of the dollar against the yen until August fuelled activity in related options, offsetting somewhat the decline in intra-European business and emerging market currencies (see Chapter VI). Thereafter, the massive deleveraging of positions in dollar-denominated securities was associated with a parallel unwinding of short yen positions, leading to record volatility in the major exchange rates and a drying-up of activity. There was, however, some improvement in non-Japanese Asian business, as the appreciation of local currencies and the recovery of stock markets allowed a gradual relaxation of monetary policy and a partial resumption of trading in forward contracts.

The focus on credit risk management …

… highlights problems with credit derivatives

In the market for *credit derivatives*, the crisis in Asia had already focused the attention of market participants on the issue of credit risk, but its global extension in the second half of last year subjected the market to conflicting influences. On the one hand, concerns about banks' exposure to highly leveraged institutions and emerging market countries created broad interest in instruments offering protection against counterparty risk. On the other hand, the pronounced widening of credit spreads for emerging market names led intermediaries to exhibit caution in providing hedges to lower-rated entities. Moreover, market sources reported that liquidity suffered from doubts about the adequacy of loan documentation, as highlighted by legal disputes between counterparties over hedges arranged on credit exposure to Russia. Buyers of protection faced difficulties in enforcing payment owing to disagreements over the definition of a credit event, the pricing of reference credits and the settlement of contracts.

Intermarket linkages and transparency

The global OTC derivatives survey shows …

The triennial central bank survey of OTC derivatives markets at end-June 1998 provides a snapshot of the situation prevailing just before the Russian debt moratorium. Four features are of particular significance in the context of subsequent events. First, notional amounts showed that exposure to changes in interest rates in OTC derivatives markets, which was four times that in exchange-traded markets, was the main source of market risk in the derivatives industry. Such interest-rate-related exposure accounted for two-thirds of the $72 trillion of OTC aggregate notional amounts outstanding reported at end-June 1998 (and for 90% of the $14 trillion reported on exchanges). It should be noted, however, that the development of sophisticated trading strategies, the related expansion of cross-market linkages and regulatory arbitrage may have reduced the meaningfulness of aggregate data on individual market risk categories. For instance, the high capital costs of cross-currency swaps have resulted in their replication through a combination of interest rate and short-term foreign exchange swaps. This means that the build-up of currency exposure is not accurately reflected in data on cross-currency swaps.

… the predominance of interest rate contracts …

Second, the notional amounts of interest rate and currency-related positions in OTC derivatives markets are now comparable to total cash positions in global banking and securities markets. Notional amounts are generally used as a reference to calculate cash flows under individual contracts. As such, they enable a rough comparison of the potential transfer of market risk in cash and derivatives markets, but they do not provide an accurate measure of the gains and losses incurred in such a transfer. A better indicator is the gross market value of OTC contracts, which measures the replacement cost of all outstanding contracts had they been closed on the reporting date. Such replacement costs stood at $2.6 trillion at end-June 1998 (or 3.6% of the reported notional amounts). However, one weakness of existing data collection systems is the lack of similar information for cash instruments, which means that such values cannot be meaningfully used to assess the long and short positions on an overall portfolio basis (taking into account possible offsets between the various types of positions).

… in the transfer of market risk …

Third, financial institutions other than reporting dealers have become an important class of counterparties (accounting for 41% of the total notional amounts), reflecting the rise to prominence of institutional and leveraged investors. Anecdotal evidence abounded, even before the LTCM debacle, that such intermediaries had built up large positions aimed at profiting from the divergence/convergence of yields and volatility in a variety of fixed income instruments. Indeed, as arbitrage opportunities narrowed, the growing pursuit of such strategies led to an ever increasing degree of leverage in order to achieve acceptable returns. One widely favoured strategy was the yen carry trade, which involved taking short positions in the yen money market and long positions in higher-yielding assets in other currencies. The unwinding of

… but the variety of instruments and strategies …

Global positions in OTC derivatives markets by type of risk instrument[1]

	Positions at end-March 1995			Positions at end-June 1998		
	Notional amounts	Gross market values		Notional amounts	Gross markets values	
	US$ billions	US$ billions	as a % of notional amounts	US$ billions	US$ billions	as a % of notional amounts
Foreign exchange contracts	13,095	1,048	8.0	22,055	982	4.5
Outright forwards and forex swaps	8,699	622	7.2	14,658	584	4.0
Currency swaps	1,957	346	17.7	2,324	255	11.0
Options	2,379	71	3.0	5,040	141	2.8
Other	61	10	16.4	33	2	6.4
Interest rate contracts[2]	26,645	647	2.4	48,124	1,354	2.8
FRAs	4,597	18	0.4	6,602	39	0.6
Swaps	18,283	562	3.1	32,942	1,186	3.6
Options	3,548	60	1.7	8,528	126	1.5
Other	216	7	3.2	52	2	4.5
Equity-linked contracts	579	50	8.6	1,341	201	15.0
Forwards and swaps	52	7	13.5	180	22	12.0
Options	527	43	8.2	1,161	180	15.5
Commodity contracts	318	28	8.8	506	39	8.0
Gold	147	10	6.8	228	9	4.4
Other	171	18	10.5	278	30	10.9
Forwards and swaps	120	13	10.8	165	..	..
Options	51	5	9.8	113	..	..
Credit derivatives and other OTC contracts	..	..	..	118	4	3.1
Estimated gaps in reporting	6,893	432	6.3	..	..	..
Grand total	47,530	2,205	4.6	72,143	2,580	3.6

[1] Adjusted for inter-dealer double-counting. In addition to changes in reporting months, differences in the reporting basis (locational reporting in 1995; worldwide consolidated reporting in 1998) and in the number of participating countries (26 in 1995; 43 in 1998) mean that the two series are not fully comparable. [2] Single-currency contracts only.

Source: BIS. Table VII.7

such positions in the wake of the Russian moratorium in August led to large repayments of yen liabilities, and apparently precipitated the very sharp appreciation of the yen in September and early October (see Chapter VI). Although these strategies were widespread, they could not be directly captured by existing statistics owing to the variety of channels used to achieve the required exposure to market and/or credit risk. Nevertheless, the strong growth of forex swaps, yen currency options and interest rate swaps since the 1995 survey suggests that the yen carry trade evolved from an initial focus on the cash market to include a wide range of derivative instruments.

… belies the actual credit risk involved …

Finally, after allowing for the effect of netting arrangements on gross positive market values of contracts, the credit exposure of reporting institutions arising from their undertaking of OTC derivatives positions stood at

$1.2 trillion at end-June 1998. While this was considerably smaller than on-balance sheet exposure, with hindsight it appears that this figure seriously underestimated potential credit risk. The LTCM episode may help illustrate this point. LTCM, whose strategy consisted in exploiting price differentials between a wide variety of financial market assets (see Chapter V), was perhaps the world's single most active user of interest rate swaps. By August 1998, $750 billion of its total notional derivatives exposure of more than $1 trillion was in such swaps with about 50 counterparties around the world, with none being aware of LTCM's overall exposure. This swap exposure represented more than 5% of the total reported to central banks by dealers vis-à-vis "other" financial institutions in the survey. While the current credit exposure of its counterparties was fully collateralised, these had taken no protection against the potential increases in exposures resulting from changes in market values. Only when LTCM's dire situation became known in September did counterparties start to seek additional collateral. The fund's efforts to raise cash by selling its most liquid securities were felt in markets around the world, transmitting the shock wave from low-rated and illiquid securities to benchmark instruments.

… as the LTCM episode illustrates

Thus, even if the Russian default was the trigger, the turmoil of last autumn stemmed primarily from the build-up of excessively large and concentrated exposures to customers who proved to be more vulnerable to market, credit and liquidity risks than had been supposed. The crisis also revealed the inadequacy of information supplied by leveraged investors on the extent of their market risk exposures, the nature of their trading strategies and the validity of their risk management methodologies. While collateral may have provided participants with a sense of protection against the associated credit risk, the unexpectedly high degree of interlinkage between positions and intermediaries destabilised even the most highly rated and liquid securities. This showed that core financial markets are insulated less than ever from crises that appear at the periphery of the system. Since then, lending institutions have begun to review their models' assumptions and to put greater emphasis on stress testing and fundamental analysis.

The lack of transparency at the micro …

… and macro levels …

The events also demonstrated that existing statistical frameworks could not be readily used to arrive at a comprehensive and consistent value of global positions. This difficulty stems partly from differences in measuring market and credit risks across segments; but it also reflects the complex interdependencies between seemingly unrelated markets, created either through the taking of offsetting positions or through the use of instruments as collateral. Efforts are now being made to improve transparency, both at the level of individual institutions and at the macro level (see Activities of the Bank). These include exploring ways to strengthen disclosure standards and develop reporting systems capable of yielding useful measures of market vulnerability. The conceptual and practical challenges involved should not be underestimated. Pending a resolution of these issues, there will have to be continuing reliance on current data sources, with their weaknesses factored into market participants' decision-making processes.

… points to the need for improved ways of identifying risk