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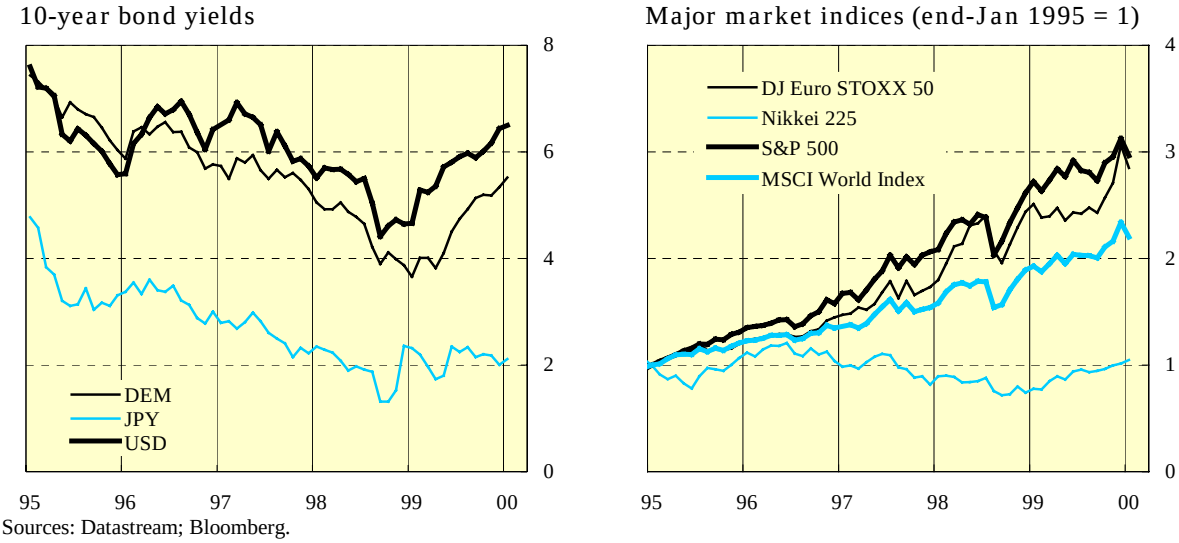
I. Overview of global financial developments: Are markets reassessing the soft landing?

Regaining a measure of calm after an autumn of turmoil in 1998, international financial markets in 1999 turned their attention to prospects for the future. For much of the year, bond prices fell in Europe and the United States while equity prices rose in most of the world. This was in marked contrast with the pattern of most of the 1990s, in which rises in equity prices were generally supported by declining bond yields. The unusual market behaviour appears to have reflected new expectations about the global economy. Not only did market participants see improved growth prospects in most regions, they also seemed assured about the ability of central banks to keep inflation in check without pushing the economies into recession. Japan saw a significant stock market rally and flat bond yields, suggesting expectations of stable monetary policy in the context of an incipient recovery and some confidence in corporate and financial restructuring.

The weeks surrounding the turn of the year highlighted how quickly market sentiment can change. During the fourth quarter of 1999, stock and bond markets seemed to be brimming with confidence about the ability of monetary policy to engineer a soft landing in the United States and support non-inflationary growth in Europe. The month of January 2000 found the very same markets wavering in their views. European and US long-term yields climbed sharply on news of rising oil prices and evidence of continued tightness in the US labour market. The prospect that monetary tightening might be more forceful than initially anticipated led to a sell-off in the US stock market and increased volatility in other equity markets.

The fourth quarter was also marked by declining credit premia for both corporate and sovereign borrowers. The more favourable premia, however, did not prevent a slowing of international issuance of notes and bonds. An easing of spreads on interest rate swaps was especially notable, because

Global stock and bond markets



Sources: Datastream; Bloomberg.

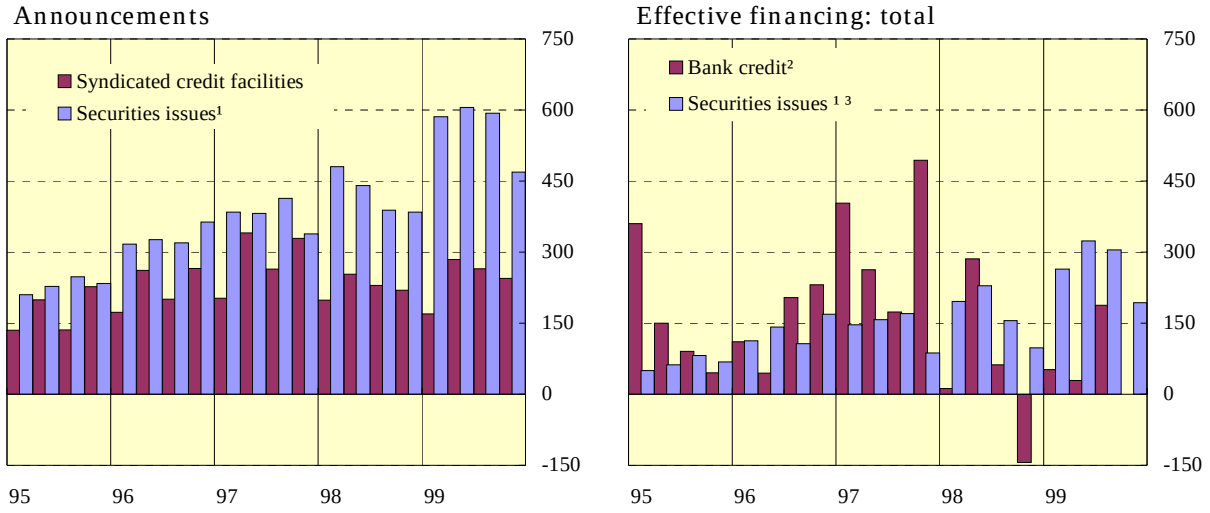
hedging activity associated with an earlier surge in fixed income securities issuance had served to inflate such spreads during the summer of 1999. These swaps had tended to displace government securities as hedging instruments, but the market did not seem to be ready to accommodate the additional demand. Part of the difficulty seemed to derive from a front-loading of issuance in the first three quarters of the year as borrowers tried to avoid possible problems around the turn of the millennium. Swap spreads resumed their declining trend in the fourth quarter as issuance slowed.

Concerns that the millennium date change might disrupt market functioning overshadowed market activity in the fourth quarter, leading to a broad decline in trading volumes and financing activity. Some borrowers had already accelerated their issuance schedules, thereby provoking the strains in the swaps market noted above, while others postponed issues to the coming year in spite of the improvement in credit spreads. Central banks generally responded by taking operational steps to ensure that sufficent liquidity would be available if and when required. In the event, the new millennium arrived without major disruption to markets or increased liquidity demands.

Despite the apparent fall-off in fourth quarter international fund raising, throughout 1999 global capital markets proved successful in channelling funds to countries with large current account deficits. Foreign direct investment, much of it related to mergers and acquisitions, was the most prominent source of such deficit financing, especially for the United States and Latin America. As illustrated in the graph below, the composition of international debt flows continued to shift from bank loans to securities. In spite of rising interest rates and the fall in fourth quarter activity, international issuance of bonds and notes set a record for the year, and the euro's weakness did not prevent net issuance in the currency from outpacing that in US dollars. With reduced supplies of US Treasury securities, debt inflows into the United States largely took the form of agency and corporate issues. Most emerging economies that needed financing found access to securities markets, albeit at high borrowing costs. In fact, many such countries tended to avoid bank debt as a matter of policy, a tendency that applied to Asian countries with large surpluses as well as to Latin American countries with deficits.

Activity in international bank credit and securities markets

In billions of US dollars

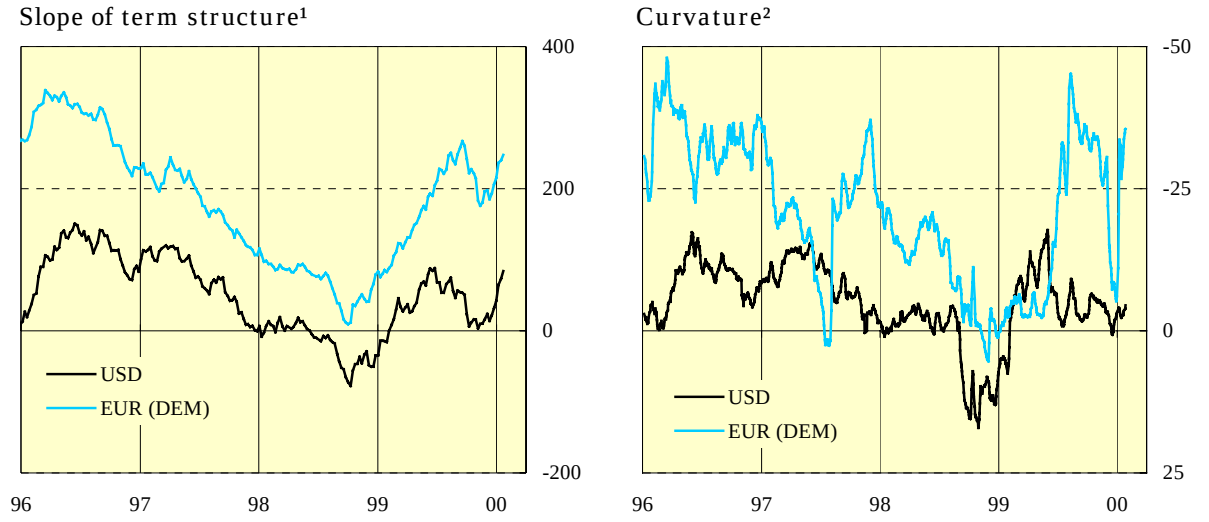


¹ Includes both money market instruments and long-term bonds and notes. ² Exchange-rate-adjusted changes in gross international bank claims. Data for bank credit are available only up to 1999 Q3. ³ Gross issues minus repayments.

Sources: Bank of England; Capital DATA; Euroclear; International Securities Market Association (ISMA); Thomson Financial Securities Data; national data; BIS.

The yield curve

In basis points



¹ Ten-year bond yield less the three-month interest rate. ² Calculated as the average yield on a two- and 10-year bond (weighted to equal the duration of a five-year note) less the yield on the five-year note.
Sources: Reuters; BIS calculations.

Currency, bond and stock markets: the new year brings a shift in sentiment

In the closing months of 1999, market participants saw evidence of accelerating growth in virtually every region of the world. The IMF projected global GDP expansion in 2000 to reach 3.5%, with 2.5% growth in industrial countries and 4.8% in emerging economies. The OECD increased its forecast for growth among member countries in 2000 from 2.5% to 2.9%. Most of this increase was attributed to the United States, where the economy's unrelenting strength reduced the jobless rate to 4.1%. In Europe, monthly indicators suggested that the German economy was catching up with the rest of the euro area. In Japan, a slowdown in industrial production in October initially raised concerns that the recovery might be stalling, but a rebound in November appeared to confirm a certain momentum for growth.

Currency markets in the fourth quarter of 1999 seemed to respond selectively to news about cyclical shifts. While data about US growth lifted the dollar against the euro, market participants appeared to disregard positive macroeconomic releases about France and Germany, seeming to focus instead on signs that governments on the continent might be lacking determination in implementing structural policies. On 27 January 2000, the euro breached dollar parity, falling the next day to a level that would correspond to the exchange rate of DM 2.01 to the dollar last observed in 1989. This depreciation of the euro prompted a change in market sentiment. For the first time in months, risk reversals suggested concerns about further weakness in the euro. At the same time, the appreciation of the dollar coincided with the sell-off in the US equity market, defying the view that US stock prices drive the dollar.

The evidence of growth, as well as rising energy prices, apparently led monetary authorities in Europe and the United States to judge that the balance of risks lay on the side of inflationary pressures. In Europe, the European Central Bank (ECB) raised its policy rates by 50 basis points on 4 November in the light of the acceleration of M3 growth, strong credit expansion, rising oil prices and improved prospects for economic activity. In the United States, the Federal Reserve increased its target for the federal funds rate by 25 basis points on 16 November. As the third such increase since June, the action served to restore the target rate to the level prevailing before the eventful autumn of 1998. The US trade deficit and the continued strength of the labour market may have been important factors in the timing of this tightening. On 2 February, the Federal Reserve raised its target rate again by 25 basis points and indicated that the risks were weighted towards inflationary pressures. The following day,

rapid monetary growth and risks to price stability in the euro area led the ECB to raise interest rates by 25 basis points, and several other central banks also raised policy rates.

For much of 1999, market expectations of monetary moves such as these had driven up long-term yields in Europe and the United States. At the same time, the behaviour of yield curves suggested something new about expectations regarding the *timing* of monetary policy actions and their effectiveness. In particular, the slopes of the yield curves tended to be relatively steep near the short end and relatively flat towards the long end, thus producing a hump around the intermediate maturities. As indicated by the measure of curvature shown in the right-hand panel of the graph on page 3, this hump tended to be most pronounced for the United States during the spring of 1999 before the Federal Reserve started raising rates in June. The curvature suggested that bond market participants thought that rate increases would tend to be pre-emptive rather than heralding a prolonged period of further tightening. Moreover, markets appeared to regard these monetary actions as sufficiently adept to forestall inflation without an economic slowdown.

On balance, such benign expectations continued to prevail in the fourth quarter. In October, yield curves based on government debt might have been less informative than usual, because some market participants were apparently hesitant to take positions in US Treasuries to reflect their views. These positions would typically have involved borrowing Treasury securities through repurchase agreements, but there were concerns about the reliability of such transactions in the face of possible Y2K disruptions. By mid-November, however, those fears seem to have dissipated, and government yield curves fully priced in the consensus of market expectations. By year's end, the flatness of the curves in Europe and the United States suggested a fairly benign view of interest rate prospects. Bond market participants evidently felt that only modest further tightening would be needed in the coming quarter. In Japan, a sense of optimism led to the view that the policy of zero interest rates might not last much longer than a year.

The first few weeks of January 2000 marked a change in market sentiment. The release of the US employment report on 7 January was a turning point in the bond markets. The report revealed an addition of 315,000 jobs to the US economy in December, well in excess of analysts' predictions. In the US Treasury market, intermediate and long-term yields started to climb. When European markets

Stock market performance in selected countries

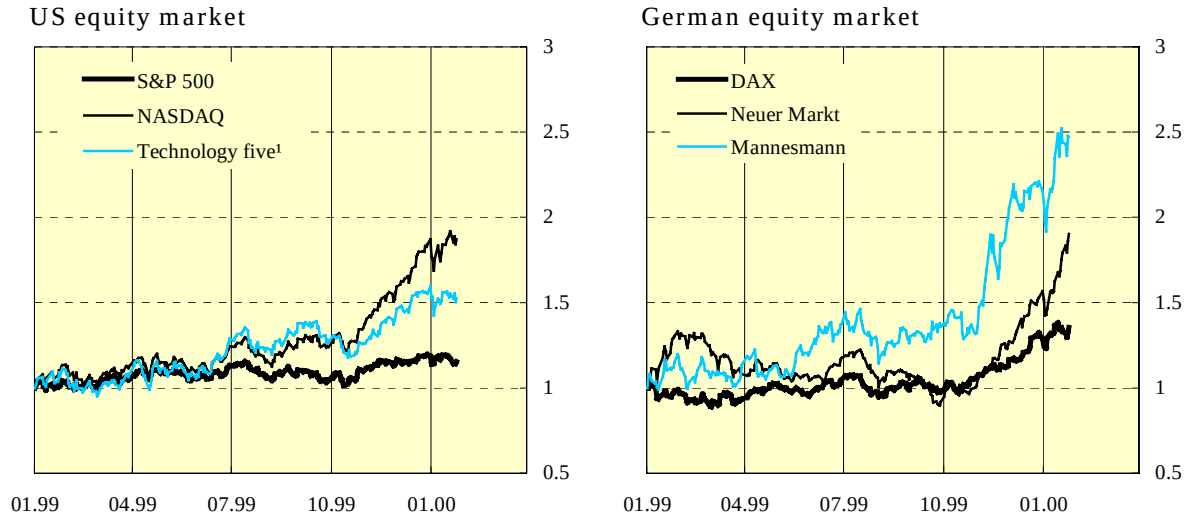
Percentage gain in US dollars and local currency

	In US dollars		In local currency	
	1999	**1999 Q4**	**1999**	**1999 Q4**
Turkey	126.6	72.6	183.8	86.8
Russia	96.2	55.6	123.2	62.9
Korea	72.3	26.3	67.9	18.8
Indonesia	66.8	25.8	55.5	17.1
Mexico	58.4	32.1	54.8	32.0
Japan	57.8	16.6	46.0	13.4
Singapore	54.9	18.5	55.9	16.5
Hong Kong	52.0	28.6	52.4	28.7
Brazil	51.2	49.8	95.9	40.9
Sweden	45.3	29.9	50.6	34.0
South Africa	44.5	17.7	49.1	20.3
France	25.9	20.1	41.3	26.1
United States	17.8	13.6	17.8	13.6
MSCI Emerging market	50.8	22.1	53.9	20.9
MSCI World	22.7	15.7	24.9	16.5
STOXX	18.3	20.7	33.3	26.7

Sources: International Finance Corporation; national data.

US and German stock markets

Index values (end-Jan 1999=1)



[1] Cisco, IBM, Intel, Lucent and Microsoft.

Source: Bloomberg.

opened on 10 January, rates on two-year to 10-year German bunds also rose. By the end of January, the US two-year and five-year yields had both increased by 30 basis points. Rising oil prices seemed to reinforce the upward trend. The US 30-year yield, however, initially rose sharply but eventually settled back to almost where it had started. This flattening of the yield curve at the long end may suggest that, while market participants expected more monetary tightening than before, they still saw the policy as pre-emptive and likely to be effective against inflation. However, a refunding announcement about the 30-year bond in the first week of February seemed to catch some market participants by surprise and inverted the long end of the curve.[1]

In contrast to bond investors, equity investors bid up stock prices strongly towards the end of the year. The two groups of market participants, however, shared essentially the same expectations of continued economic expansion. As shown in the table on page 4, rallies occurred in stock markets in a broad range of countries. The US stock market rose 14% during the last quarter alone and achieved an unusually lofty market-wide price-earnings multiple of 33. Yet in relative terms the US market was among the least buoyant major markets in 1999. The stock markets in continental Europe were stronger, and even larger gains were recorded by such emerging markets as Turkey, Russia, Brazil, Mexico, Hong Kong and Korea in the fourth quarter.

The strength of broad national indices hid marked differences in performance across industry sectors. Actually, slightly less than half of the companies in the S&P 500 index posted positive returns for the year, though the fourth quarter welcomed 271 advancing stocks. As shown in the graph above, the US rally was led by producers of computer and communications equipment and by firms perceived to have a head start in offering products and services over the internet. In Europe, rallies seemed to be more broadly based, though telecommunications and software firms that were the targets of takeovers tended to do especially well. In both cases, markets for smaller, newer companies performed much better, on average, than did the established ones.

Some of the best performing emerging markets served to reward governments that were taking decisive steps for economic reform and macroeconomic stability. In Turkey, the stock market surged

[1] The US Treasury announced that the amount to be auctioned the following week would be $5 billion less than anticipated and that there would be a further reduction in the August auction. The 30-year yield fell 14 basis points that day.

87% in local currency terms during the quarter, with investors encouraged by tax, banking and agricultural reforms that were instituted before an IMF agreement in December. In Brazil, the stock market gained 41%, as it became increasingly clear that the government would exceed its fiscal target for 1999 on the back of unexpectedly strong growth.

In the fourth quarter, the equity markets seemed to share the same sanguine expectations that prevailed in the bond markets. When the ECB and the US Federal Reserve raised policy rates in November, the equity markets welcomed the moves. However, subsequent data releases gave no sign of moderating growth. In the first weeks of 2000, these rallies stalled amid concerns about the sustainability of stock-price levels in the face of expectations of tighter monetary policy. The uncertainty led to large swings in prices, with the daily change in the S&P 500 index averaging 1.2% in absolute value, as compared with a 0.6% average over the 1990s.

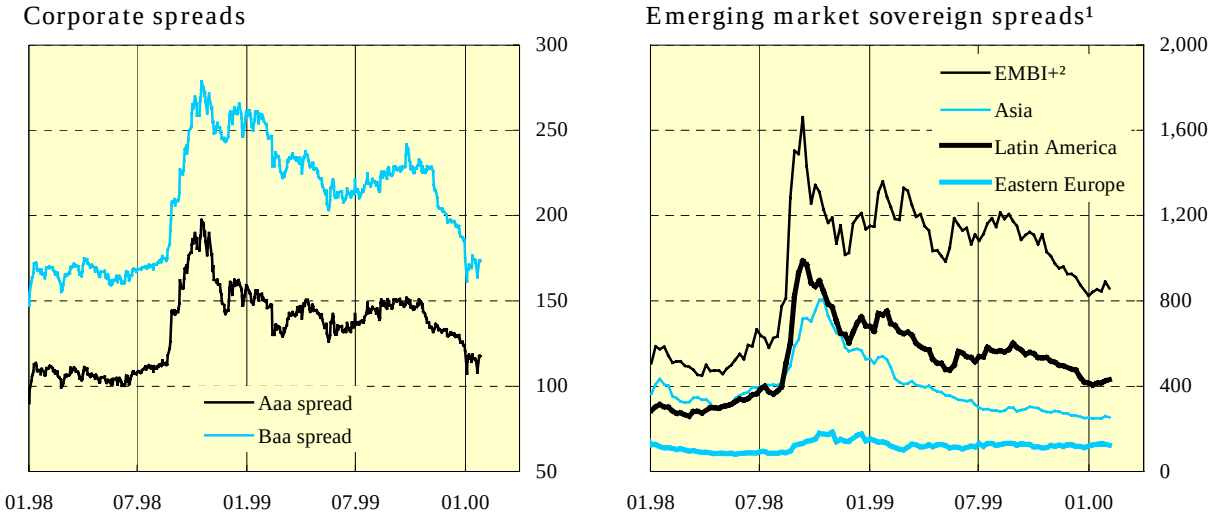
Credit premia and liquidity: pressures amid structural change

In line with the relatively sanguine expectations underpinning equity and bond markets in the fourth quarter of 1999, spreads on most long-term corporate debt instruments over relevant government benchmarks resumed their decline from the heights of 1998 after a pause during the summer of 1999. Nonetheless, investment grade issuers still faced rising borrowing costs, since base benchmark yields rose more than the spreads receded. As shown in the graph below, the narrowing of credit spreads was most pronounced for emerging market debt, reflecting a perception of markedly healthier repayment prospects. In the case of Latin American sovereign issuers, in particular, the improved spreads more than offset the rise in the base benchmark yields and thus reduced borrowing costs for those coming to the market. Spreads on Brady issues, too, improved in late 1999 relative to the summer, when perceived risks for the market had worsened amid concerns over Ecuador's ability to meet its obligations.

Swap spreads declined from unusual levels during the summer but remained high by historical standards. The previous high levels were a symptom of one of the more interesting developments in

Credit spreads

In basis points

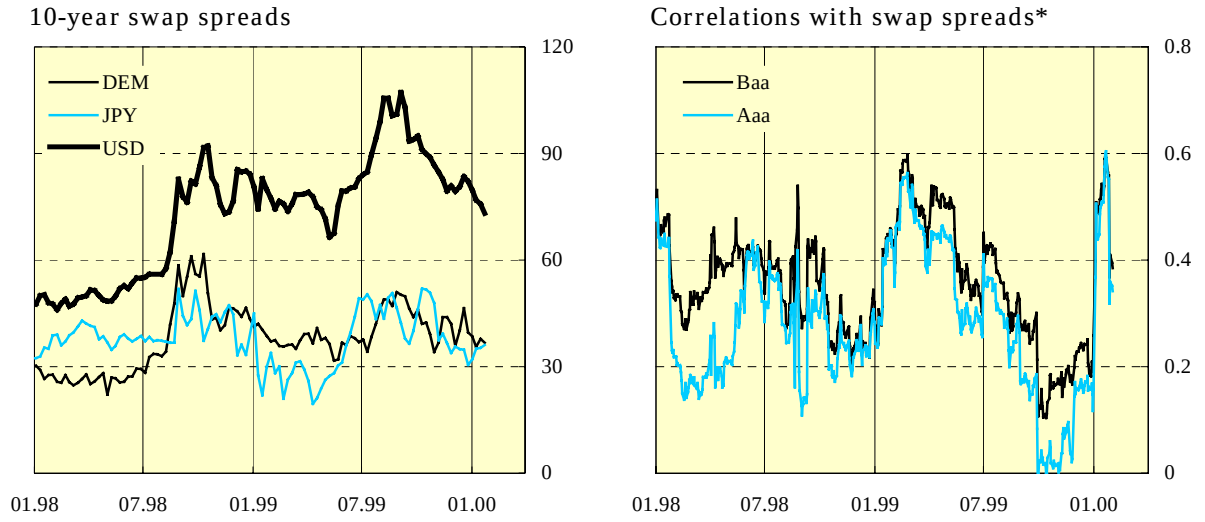


¹ Average of actively traded international bond spreads (one per country). ² Emerging Markets Bond Index.

Sources: Datastream; Bloomberg.

Swap spreads and correlations

In percentage points



* Rolling 90-day correlation of daily changes in 10-year swap spreads versus daily changes in 10-year Baa and Aaa spreads.

Sources: Datastream; BIS calculations.

1999, namely the emergence of a liquidity premium as an important market factor. As shown in the left-hand panel of the graph above, spreads on US dollar interest rate swaps rose sharply during the summer to levels exceeding those reached during the financial turmoil of 1998.

This time, however, there was no apparent credit event explaining the widening. In the corporate bond market, premia on Aaa and Baa issues did widen somewhat during the period, but without revealing any clear tiering of credit risk. Specifically, spreads on relatively low-grade debt failed to rise significantly more than did those on high-grade debt, as is usually the case when market participants change their attitudes towards credit risk. Indeed a broad measure of risk attitude based on the relationship between realised returns and historical volatilities of various assets would suggest an increased willingness by investors to take risk during the period (see the box at the end of this section).

As discussed in the November 1999 issue of the *Quarterly Review*, the inflated swap spreads during the summer apparently reflected liquidity pressures. A record volume of corporate bond issuance sent dealers to the swaps market in a one-sided effort to hedge unusual amounts of inventory. The swaps market was new to such hedging activity and did not seem to possess the market-making capacity to easily accommodate these demands. At the same time, one of the lasting effects of the events of autumn 1998 was the heightened recognition of basis risk in the traditional use of *on-the-run* US Treasury securities for hedging positions in private sector debt.[2] In spite of an unwieldiness in unwinding positions in over-the-counter derivatives, dealers turned to swaps because the correlations between swaps and corporate debt tended to be superior to those between on-the-run Treasury securities and corporate debt (see the graph above).[3] The upsurge in corporate bond issuance might also explain the unusual width of credit spreads, which reflected the difficulty of placing so much new debt with investors. These indicators of credit risk and liquidity tended to improve towards the end of

[2] "On-the-run" securities are the most recently auctioned ones, and these tend to be much more liquid than "off-the-run" securities.

[3] As shown in the right-hand panel of the graph, the correlations between swap spreads and corporate spreads shifted considerably during recent periods. Nonetheless, since these are *spreads over Treasury yields*, the fact that the correlations remained positive indicates a hedging advantage of swaps.

1999 and in the first few weeks of 2000. Swap and credit spreads narrowed as issuance of corporate debt slowed down.

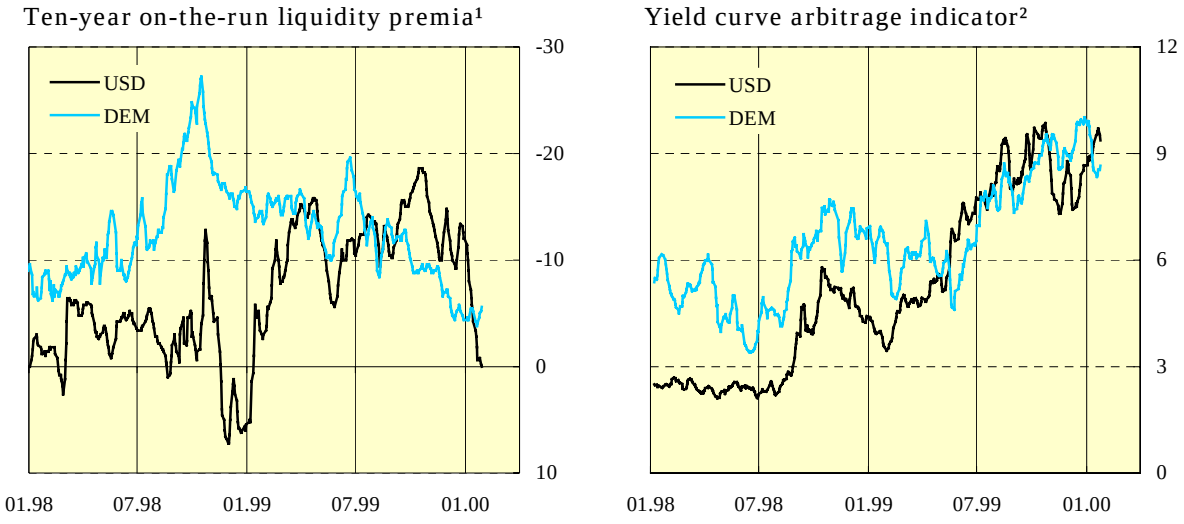
The available evidence also points to a decline in the liquidity of some government bond markets, probably reflecting a combination of the effects of structural changes in the supply of government securities and the lasting effects of the "flight to quality" episode of 1998. As shown in the graph below, despite a broad improvement in these liquidity indicators in 1999, various premia remained significantly above the levels prevailing before August of the year before. One important structural factor has been fiscal consolidation in most of the major industrial countries, with the notable exception of Japan. In an effort to maintain market liquidity, government issuers of domestic debt have increasingly focused on a few large benchmark issues, accompanied by the selective repurchase of non-benchmark securities. While the buyback programmes may have initially reduced the yield premia on off-the-run issues, the ultimately lower liquidity for these issues seems to have caused their premia to rise again.

At the same time, investment funds and proprietary trading desks at large financial institutions apparently became increasingly reluctant to engage in relative value arbitrage in government bond markets, a hesitation stemming from the events of autumn 1998. The right-hand panel in the graph below shows the average of squared deviations of yields on individual securities from a fitted yield curve. Pricing anomalies that previously tended to disappear quickly now seem to last longer. Moreover, the phenomenon seems to have worsened over time, as reduced supplies of certain securities made arbitrage activity less and less rewarding. The resulting idiosyncratic risk in on-the-run US Treasury securities has apparently made them less attractive for hedging purposes. It is in part for this reason that corporate bond dealers turned to the swaps market.

The unusual behaviour of swap spreads and liquidity indicators raises broader issues of how markets will adjust to the new recognition of liquidity risks and the changing relative supplies of tradable government and private debt. In the short run, the question is whether a lack of market-making and arbitrage capital would allow unexpected movements in securities issuance to unduly affect various yields and spreads. In the long run, the issue is how markets will function in the face of the declining

Liquidity in government bond markets

In basis points



[1] Shown as the spread for the 10-year on-the-run note based on evaluating its cash flows against a fitted zero coupon government yield curve.
[2] Measured as the standard deviation of static spreads for all bonds as valued using a zero coupon yield curve (excluding callable bonds). Shown as a five-day moving average.

Sources: Datastream; BIS calculations.

Estimated debt financing in international markets

In billions of US dollars

	1997	1998		1999				Stocks at end-Sept. 1999
	Year	Year	Q4	Q1	Q2	Q3	Q4	
By instrument								
Interbank loans	911.4	– 4.3	–122.3	–151.0	–158.5	88.5	..	6,499.4
Loans to non-banks	222.9	– 55.0	– 81.1	– 22.6	89.0	17.5	..	2,516.9
Money market paper	14.8	9.8	– 11.5	35.1	– 8.0	22.8	18.7	243.6
Bonds and notes	545.6	668.7	109.3	228.6	331.9	282.0	174.2	4,869.0
Gross issuance	1,005.7	1,137.4	253.0	379.9	443.2	400.5	355.9	
Redemptions and repurchases	460.1	468.7	143.7	151.3	111.3	118.5	181.7	
By location of borrowers								
Developed countries	1,313.0	839.0	1.9	164.6	280.0	466.3	..	11,169.5
Offshore centres	208.5	– 201.8	– 82.6	– 63.6	– 49.1	– 32.0	..	1,242.3
Developing countries	152.9	– 36.6	– 22.4	– 1.2	11.9	– 29.4	..	1,189.2
Other	20.5	18.6	– 2.5	– 9.5	11.6	5.8	..	528.0
Total debt financing	**1,694.8**	**619.2**	**–105.6**	**90.2**	**254.3**	**410.8**	..	**14,128.9**

Sources: Bank of England; Capital DATA; Euroclear; IMF; ISMA; Thomson Financial Securities Data; national data; BIS.

availability of certain government securities. One question, in particular, is how markets will replicate the convenience of government securities in the posting of collateral, in price discovery about future interest rates, and in their use as benchmarks for the pricing of other instruments.

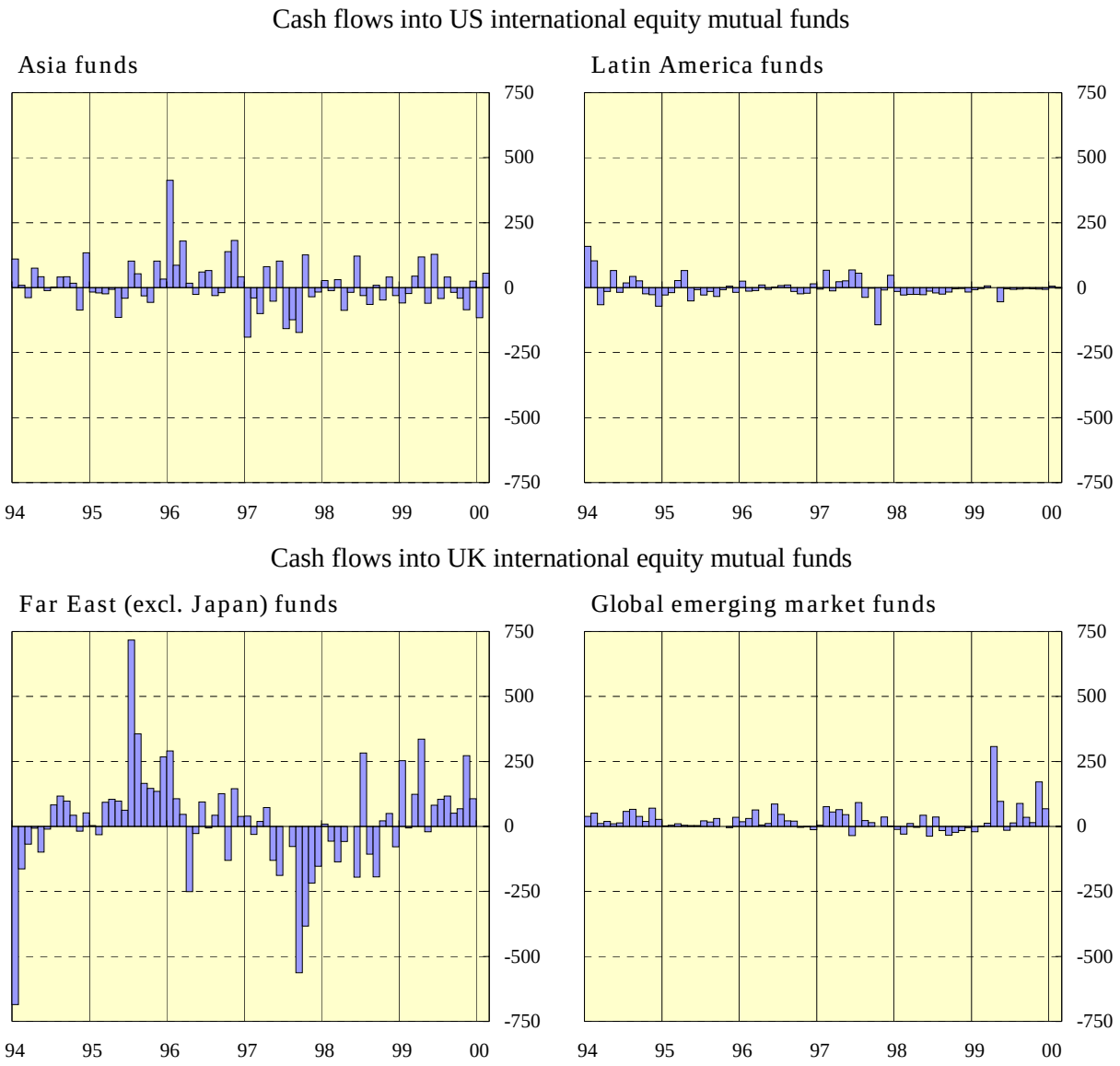
Towards the end of 1999, concerns about the millennium changeover led to a slowdown in certain types of market activity, including the use of the US Treasury market for taking positions on interest rate movements. These concerns seem to have dissipated by mid-November as central banks around the world instituted measures to ensure the availability of liquidity if and when circumstances called for it. These measures included broadening eligible collateral, enlarging the set of counterparties and instituting new credit facilities. A particularly interesting case was the Standby Financing Facility offered by the Federal Reserve Bank of New York, through which dealers could purchase options on overnight repurchase agreements that would allow them to borrow at 150 basis points over the target federal funds rate. Dealers submitted bids for option strips, each of which consisted of a set of options for overnight borrowing for five consecutive days. The clearing price for the 30 December strip fell from 16 basis points at the 3 November auction to 8 basis points at the 10 November auction, indicating an abatement of apprehension. In the event, the turn of the year came and went without significant incident in the markets, and the options were not exercised.

International financing flows: strong activity in 1999 despite a fourth quarter slowdown

Against the backdrop of buoyant stock markets, the world relied heavily on equity flows to reconcile large current account imbalances. These imbalances were characterised primarily by deficits in the United States and Latin America and surpluses in Asia. In 1999 the dominant form of deficit financing was foreign direct investment, much of it related to cross-border mergers and acquisitions. As shown in the table above, international bank lending had contracted in 1998 and recovered only in the third quarter of 1999. Given the reduced supplies of US Treasury securities, debt inflows into the United States increasingly took the form of agency and corporate securities. Emerging market economies tended to avoid bank debt as a matter of policy, a tendency that applied equally to Latin American countries with deficits and to Asian countries with surpluses. Borrowers from emerging markets seemed to favour debt securities, often issuing bonds to repay bank loans.

Portfolio flows to emerging markets by institutional investors

In millions of US dollars



Sources: AMG Data Services; Association of Unit Trusts and Investment Funds; BIS calculations.

Net issuance of bonds and notes on international markets slowed significantly in the fourth quarter but still set an annual record of $1 trillion in 1999 as a whole. Concerns about the millennium turn apparently led to some front-loading that caused activity to peak in the second quarter. The appeal of the euro as a currency for international financial transactions – despite its weakness against the US dollar – was evident in the fact that gross international issuance of euro-denominated bonds and notes rivalled dollar-denominated activity. Reflecting the strong performance of equity markets worldwide, issuance of equities on international markets grew even more strongly than did international bond and note issuance in 1999, albeit from a smaller base. Even as international banking flows dwindled, the syndicated loan segment of the market continued to expand for the year as a whole, drawing support from merger and acquisition deals. Announcements of international syndicated loans reached $964 billion in 1999, a 7% rise from 1998. After the second quarter, however, activity began to decline. Nonetheless, mergers and acquisitions accounted for an unusually large share of the market in the fourth quarter.

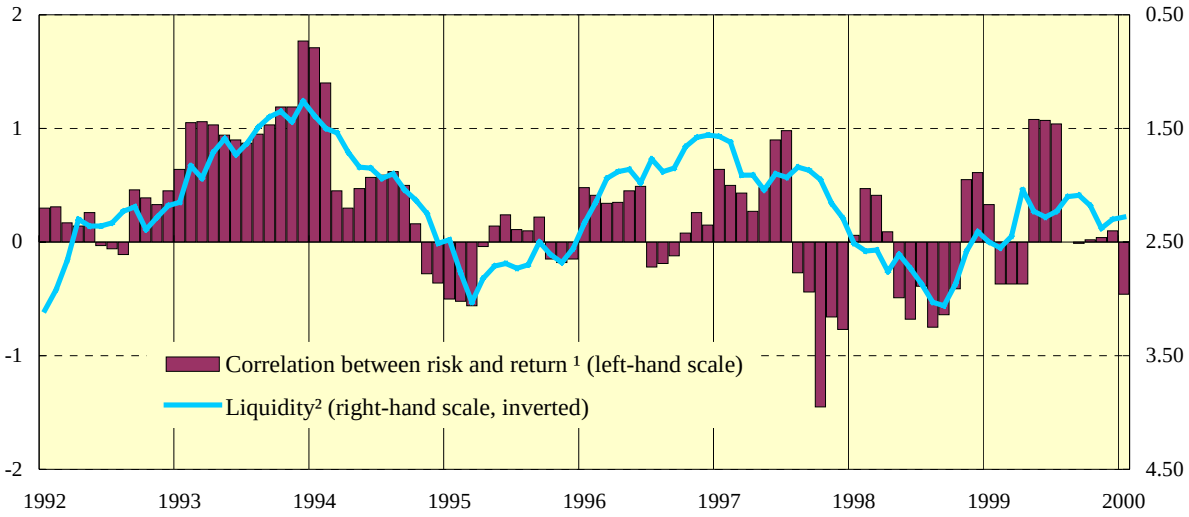
While emerging economies continued their return to international capital markets in 1999, fund-raising remained significantly below levels seen before the 1997–98 crises. In particular, syndicated lending to these borrowers remained subdued in the fourth quarter, making it likely that the slowdown in overall banking flows that occurred in the third quarter of 1999 continued to year-end. However, detailed data now available for the third quarter suggest that this slowdown took different forms in Asia, Latin America and eastern Europe. In Asia, large current-account surpluses in 1999 precluded the need for fresh bank credit. The region also received significant equity inflows, including portfolio flows through US and UK mutual funds (see the graph on page 10). Hence, a $22 billion cutback in bank claims on this region during the third quarter represented largely the repayment of existing debt. The main feature of an $11 billion decline in lending to Latin America in the third quarter was a reduction in lending from creditor banks in the United States and US branch offices operating in offshore centres to the non-bank sector.

An indicator of investors' attitude towards risk

Kostas Tsatsaronis

Market commentary often refers to a non-quantified investor sentiment factor as one of the determinants of financial market conditions. The idea is that market participants' attitude towards risk frequently swings between tolerance and aversion. During periods of relative risk tolerance, investors find it hard to resist the attraction of higher expected returns offered by securities that are also characterised by greater risk. Conversely, in periods of heightened risk aversion, market participants seek cover in asset classes that are traditionally considered as safer, if less rewarding, investments. While gradual shifts in investors' attitude towards risk can be accommodated without a perceptible rise in asset price volatility, episodes of market turmoil have often been associated with abrupt swings from a state of risk tolerance to one of risk avoidance.

Investors' attitude towards risk and liquidity



¹ Slope coefficient of a cross-sectional regression of realised returns on historical volatility for a number of asset classes. ² GDP-weighted average of overnight real rates in the eurocurrency market for the US dollar, yen, euro and sterling.

Sources: Datastream; national data; BIS estimates.

To track investors' changing attitude towards risk, the graph above illustrates an indicator based on observed relationships between the ex ante perceived risk and ex post realised return for an array of financial asset classes. The indicator is based on the notion that short-term movements in asset prices are demand-driven and that investors' interest in a particular asset is determined by a subjective expectation of future cash flows as well as their mutable degree of tolerance for the volatility associated with this expected cash flow. During periods of investor exuberance, an appetite for higher yield easily overcomes tempered concerns about risk. In such periods an increased demand for relatively risky assets tends to support a disproportionate, if only temporary, increase in these assets' prices, and hence their realised returns in relation to less risky asset classes. It should be noted that this increase in price (and consequently short-term returns) does not necessarily reflect an improved outlook on future cash flows but is mainly driven by a more relaxed attitude towards the uncertainty associated with this cash flow. Conversely, realised returns on asset classes that entail greater risk suffer the most when market participants' apprehensions drive them to safety.

More concretely, for each month the value of the indicator corresponds to the slope coefficient in a cross-sectional regression of one-month realised returns on the two-year historical volatility of those returns, which is used as a proxy for risk. The cross section of asset classes includes representative price indices for equity and

fixed income securities in both industrial and emerging markets.* All returns are calculated from the corresponding price index expressed in US dollars in excess of the one-month US dollar eurodeposit rate prevailing at the beginning of the month. Volatility is calculated as the standard deviation of past excess returns. The graph depicts a three-month moving average of the coefficient of the monthly cross-sectional regression between realised return and historical volatility.

The graph shows that periods of market strain have often coincided with precipitous declines in the value of the computed indicator of market sentiment, following a build-up in the value of the indicator. For instance, the bond market turmoil during 1994 and, most notably, the Asian crisis in mid-1997 interrupted extended periods of an increasingly relaxed market attitude towards risk. The severity of the strains experienced by financial markets in the aftermath of the Russian default and the near-failure of LTCM was also related to the fact that these events took place against a background of a prolonged period characterised by a cautious investor attitude.

Clearly, this indicator is by construction descriptive in nature, and as such it cannot fully characterise factors that contribute to the build-up of market confidence or to the dynamics that lead to sharp reversals of investors' attitude towards risk. The apparent co-movement of the indicator with a measure of money market liquidity in major money centres provides some circumstantial evidence that market participants' appetite for higher yield is often whetted by inexpensive leverage opportunities and is frequently reversed when these opportunities disappear. A low interest rate environment is also likely to encourage market participants' discounting of financial risk by its generally flattering effect on portfolio valuations.

* The asset classes used in this graph are:
Equities: G10 countries, Spain, Portugal, Denmark, Finland, Austria, Ireland, Norway, Greece, Turkey, South Africa, Australia, New Zealand, Hong Kong, Korea, Malaysia, Indonesia, Taiwan, Mexico, Argentina, Brazil and Colombia.
Government bonds: G10 countries, Spain, Denmark, Finland, Austria, Ireland, Norway, Australia and New Zealand.
Money market: G10 countries, Spain, Denmark, Finland and Norway.