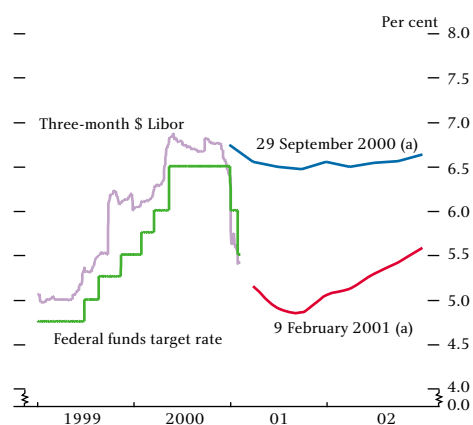


# Markets and operations

This article reviews developments in international and domestic financial markets, drawing on information from the Bank of England's market contacts, and describes the Bank's market operations in the period 1 October 2000 to 9 February 2001.

- Short-term interest rate expectations fell sharply in all the major economies, posting the largest falls since the second half of 1998. Market participants now expect the next changes in US, UK and euro-area official interest rates to be reductions.
- The European Central Bank raised its refinancing rate by 25 basis points at the beginning of October and then left it unchanged for the rest of the review period. By contrast, the Federal Open Market Committee reduced its target rate by 100 basis points in two steps during January. In February, the Bank of England cut its official rate by 25 basis points and the Bank of Japan reduced its discount rate by 15 basis points.
- Uncertainty about the outlook for short-term interest rates increased significantly in the United States but remained relatively low in the United Kingdom and the euro area.
- Government bond yield curves shifted down, with short-dated yields declining by more than long-dated yields.
- Market sentiment towards the euro and the yen changed markedly during the period, with the former appreciating against the other major currencies and the latter depreciating strongly.
- World equity markets weakened further during the period and the volatility of equity prices increased, particularly in the United States.

**Chart 1**  
**US interest rates**



Source: Bloomberg.

(a) Three-month interest rates implied by eurodollar futures contracts at the dates specified. From February 2001 onwards, the x-axis relates to contract expiry dates.

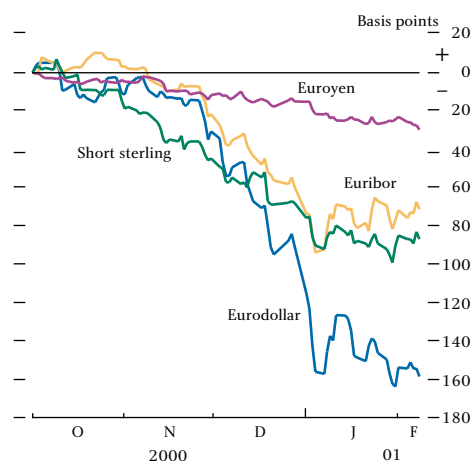
## International markets

### Short-term interest rates

In the United States, the Federal Open Market Committee (FOMC) left its target interest rate unchanged following its October, November and December meetings. But the Federal funds rate was then reduced by 100 basis points in January. A 50 basis point reduction was announced after a teleconference on 3 January (not the date of a scheduled FOMC meeting); this was followed by a further 50 basis point reduction at the FOMC's scheduled 31 January meeting, taking the official rate to 5.5% (see Chart 1).

US interest rate expectations declined gradually in October and November, and then fell more rapidly in December and early January (see Chart 2). Yields implied by eurodollar futures contracts expiring in 2001 were around 140 to 160 basis points

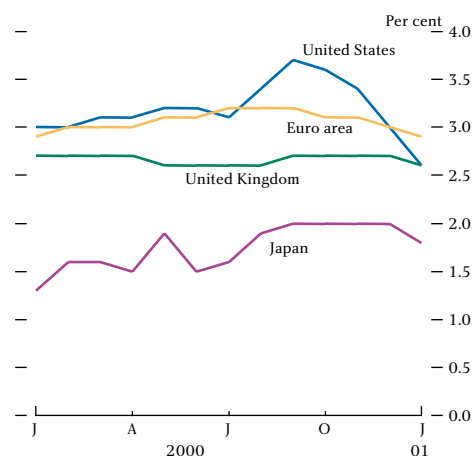
**Chart 2**  
Cumulative changes in expectations of three-month interest rates<sup>(a)</sup>



Source: Bloomberg.

(a) As indicated by changes in rates implied by futures contracts maturing in June 2001.

**Chart 3**  
Consensus forecasts for GDP growth in 2001<sup>(a)</sup>



Source: Consensus Economics.

(a) Means of survey samples.

**Table A**  
Forecasts for consumer price inflation in 2001

Per cent; *percentage points in italics*

	October	January	Change
United States	2.7	2.7	0
Euro area	2.0	2.0	0
United Kingdom	2.3	2.2	-0.1
Japan	-0.1	-0.3	-0.2

Source: Consensus Economics.

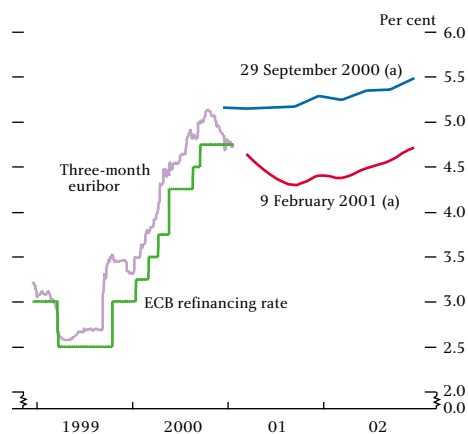
lower by the end of the period. These changes were larger than the declines in short-term money market rates that accompanied the financial market upheaval around the time of Russia's debt default and the collapse of Long Term Capital Management in autumn 1998. The main reason for the downward movements in rate expectations in 2000 Q4 was a series of activity indicators that were much weaker than had been projected by commentators. In addition, market participants also remained closely focused on official policy statements.

US national accounts figures for the third quarter were released on 27 October. They indicated that the quarterly growth rate of GDP had slowed to 0.7% in Q3, 0.2 percentage points below the market's central expectation, and down from 1.4% growth in Q2. This set the tone for most of the US activity releases in the rest of Q4. In particular, short-term interest rate expectations fell sharply in December after weaker-than-expected retail sales, industrial production and consumer confidence data, larger-than-expected increases in jobless claims, and the weakest National Association of Purchasing Managers' (NAPM) index in ten years. These data led to downward revisions to forecasts of US growth (see Chart 3). The mean projection derived from Consensus Economics' January survey of forecasters was for GDP growth in 2001 to be 2.6%, 1 percentage point lower than reported in the October survey. Concerns about the slowdown were further exacerbated by the release of the Q4 national accounts data on 31 January; quarterly GDP growth was reported to have slowed to 0.3%, well below the median market expectation of 0.6%.

In contrast to the sharp slowdown in activity, US price data released during the period were generally in line with market expectations. There was also no change to the mean forecast reported by Consensus Economics for inflation in 2001 (see Table A). On a few occasions, however, short-term interest rate expectations did fall in response to declines in the price of oil. In the third quarter, concern over the adverse impact on demand of higher oil prices had been seen as a significant factor in explaining the fall in interest rate expectations; less attention had been paid to the direct impact of higher oil prices on consumer price inflation. By contrast, market participants generally paid little attention to the impact on activity arising from lower oil prices in Q4; when they did comment on oil, it was largely to note that price falls would help to ensure that US consumer price inflation would remain low in 2001.

As noted above, interest rate expectations also fell in reaction to official policy statements and FOMC decisions. The FOMC's 19 December announcement that it had changed its monetary

**Chart 4**  
**Euro-area interest rates**



Source: Bloomberg.

(a) Three-month interest rates implied by euribor futures contracts at the dates specified. From February 2001 onwards, the x-axis relates to contract expiry dates.

stance from a tightening bias to an easing bias was not fully anticipated by market participants, and the timing of the 3 January decision to reduce the Federal funds rate was even less expected. These announcements led the March 2001 eurodollar futures yield to decline by 12 and 23 basis points respectively. While the rate implied by the March futures contract fell by only 2 basis points after the FOMC's 31 January action, the decision seemed to bring forward market expectations about the timing of further cuts; rates implied by longer-dated futures contracts fell by around 6 to 14 basis points on the day. On 9 February, Federal funds futures contracts implied an expectation that the FOMC's target rate would be reduced to around  $4\frac{3}{4}\%$  by September 2001.

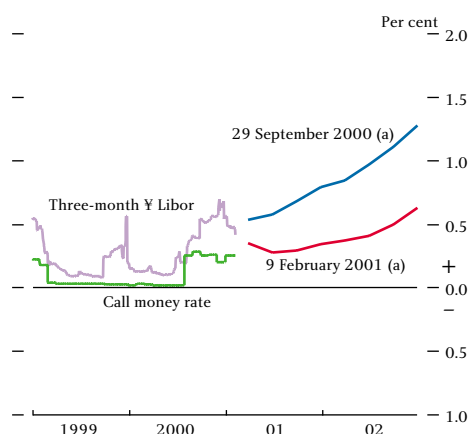
The European Central Bank (ECB) raised its refinancing rate by 25 basis points on 4 October, to 4.75%, and left it unchanged thereafter (see Chart 4). The decisions to maintain the official rate constant in the following four months were widely anticipated by market participants and had little impact on euro-area money market rates.

While the ECB's refinancing rate remained stable, euro-area short-term interest rate expectations declined quite significantly during the period. Yields implied by euribor futures contracts fell by around 75 to 90 basis points for contracts expiring in June and December 2001 (see Charts 2 and 4). This appears to have been related more to international developments than to weaker-than-expected euro-area activity or inflation. While consumer and business confidence indicators for the euro-area countries fell slightly during the period, they generally remained at quite buoyant levels. Furthermore, weaker-than-expected euro-area activity indicators released during the period were broadly offset by stronger-than-expected ones. For example, German industrial production data for August and December came in significantly above market expectations, while the data for September and October were weaker than expected and the November figure was in line with market forecasts. A similarly mixed pattern was evident in the French and Italian indicators. Consequently, projections for euro-area GDP growth in 2001 were revised down only slightly during the period and forecasts for inflation were unchanged (see Chart 3 and Table A).

The influence of international developments on movements in euribor futures rates can be seen in Chart 2. Euribor yields decreased broadly in parallel with eurodollar and short sterling futures rates between October and mid-December. However, US interest rate expectations fell much more rapidly than euribor yields in late December and early January. This is likely to have reflected the much smaller downward revisions to most projections for euro-area growth in 2001.

Consumer price inflation in the euro area fell to 2.6% in December, down from 2.9% in November. With December's core inflation figure at 1.5%, declining oil prices in Q4, evidence of weakening US demand, and the appreciation of the euro, market participants became increasingly convinced that the upside risks to inflation were small, and that consequently short-term interest rates in the euro area might have peaked. On 9 February, euribor futures implied an expectation that the ECB would reduce its refinancing rate to somewhere between 4<sup>1</sup>/<sub>4</sub>% and 4<sup>1</sup>/<sub>2</sub>% by the second half of 2001.

**Chart 5**  
Japanese interest rates

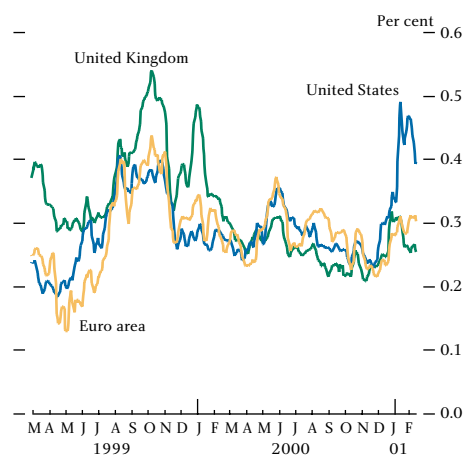


Source: Bloomberg.

(a) Three-month interest rates implied by euroyen futures contracts at the dates specified. From February 2001 onwards, the x-axis relates to contract expiry dates.

Forecasts of Japanese growth in 2001 were revised down only slightly during the period. Nevertheless, short-term interest rate expectations also declined in Japan; euroyen futures yields fell by around 15 to 60 basis points for contracts expiring in 2001 and 2002 (see Chart 5). But movements in euroyen futures yields were not strongly correlated with changes in eurodollar, short sterling, or euribor futures contracts in Q4 (see Chart 2). Domestic considerations were therefore the main influence on Japanese short-term interest rates. In particular, market participants reacted negatively to worse-than-expected corporate profit announcements, signs of increases in bankruptcy rates, and declines in Japanese equity prices, as well as the weaker-than-expected industrial production and household spending data released in November and December. A number of the economic indicators released during the period led market commentators to suggest that Japanese consumption was unlikely to increase in the near future, leaving the economy reliant on business investment and net exports as the main sources of growth.

**Chart 6**  
Interest rate uncertainty<sup>(a)</sup>

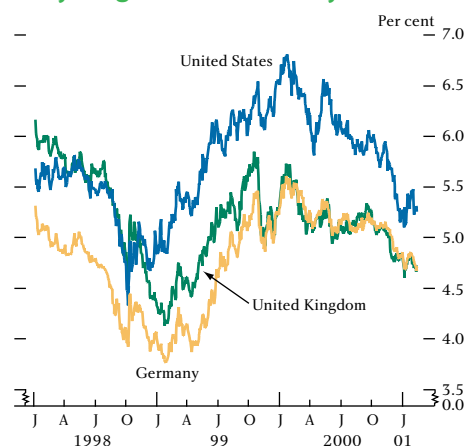


(a) Implied standard deviations of three-month constant-horizon interest rate futures contracts; five-day moving averages.

In January, short-term interest rate expectations were also affected by speculation that the Bank of Japan (BoJ) might return to its zero interest rate policy. The BoJ left its official overnight call rate unchanged at 0.25% throughout the period. However, at its policy board meeting on 9 February, the BoJ announced several measures to enhance its liquidity provision over the financial year-end. The official discount rate was reduced by 15 basis points to 0.35%; a standby lending facility at the official discount rate was introduced; and the BoJ indicated that it would begin to make outright purchases of Treasury bills in March.

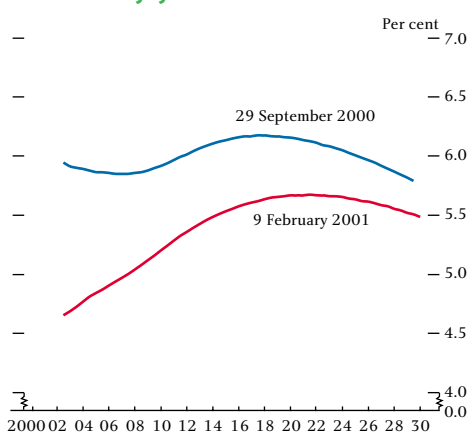
Implied volatilities derived from options on eurodollar futures contracts increased markedly in late December and early January, following the FOMC's unexpected rate cut on 3 January and the weaker-than-expected NAPM data (see Chart 6). Although the degree of uncertainty surrounding the prospects for US monetary policy fell back later in January, it remained high by recent historical standards. In contrast, uncertainty about the short-term outlook for euro and sterling-denominated interest rates increased by a much smaller

**Chart 7**  
**Ten-year government bond yields<sup>(a)</sup>**



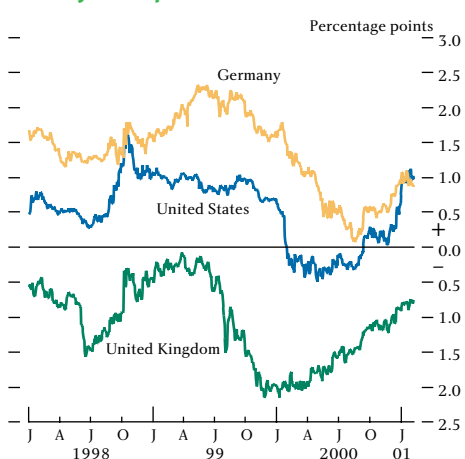
(a) Zero-coupon spot yields derived from the Bank's VRP curve-fitting technique. For further details on this technique, see Anderson and Sleath, *Bank of England Quarterly Bulletin*, November 1999.

**Chart 8**  
**US Treasury yield curves<sup>(a)</sup>**



(a) Derived using the Bank's VRP curve-fitting technique.

**Chart 9**  
**Twenty-year minus two-year government bond yield spreads<sup>(a)</sup>**



(a) Derived using the Bank's VRP curve-fitting technique.

extent and then returned to relatively low levels by mid-January. Similarly, uncertainty about the future course of Japanese monetary policy remained relatively low.

**Long-term interest rates**

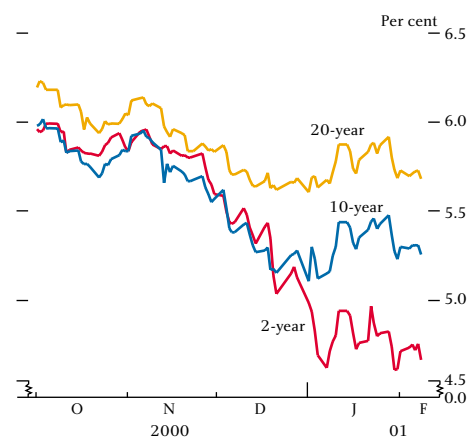
Over the period, declining expectations about US economic growth led to a decrease in government bond and interest rate swap yields at all maturities in the major fixed-income markets, as expectations for future short-term interest rates were revised downwards (see Chart 7). US Treasury yields fell substantially at all maturities, and more so at short than at long maturities, causing the yield curve to steepen (see Charts 8 and 9).

Between 29 September and 9 February, yields fell by around 130, 70 and 50 basis points at the 2, 10 and 20-year maturities respectively. Yields were little changed until the last week of November, and then declined sharply through until the end of the first week of January (see Chart 10).

As noted previously, forecasts of US inflation in 2001 were unchanged over the period (see Table A). This suggests that much of the fall in nominal Treasury yields was related to a sharp fall in real interest rates. However, other considerations relating to the supply of, and demand for, Treasury securities may also have been influential. In particular, the decline in equity prices may have led to portfolio shifts out of equities and into government bonds. This is likely to have reflected both the observed declines in equity prices and downward revisions to expectations of future returns from holding equities. As Table B shows, daily returns of the S&P 500 index and changes in Treasury yields were positively correlated during the review period, as equity and bond prices tended to move in opposite directions.

Hedging of mortgage prepayment risk by investors in mortgage-backed securities was also said to have led to greater demand for Treasuries during the period. Fixed-rate home mortgages with penalty-free prepayment options are common in the United States. These mortgages are often pooled and traded as mortgage-backed securities (MBS). As interest rates for new mortgages fall, it becomes increasingly advantageous for home-owners to exercise their option of prepaying all or part of their mortgage, either out of other savings or by remortgaging at a lower fixed rate. This early repayment of the loan principal forces investors in MBS to reinvest their capital at lower yields, decreasing the return on their portfolio. Between October and January, the duration of Merrill Lynch's Mortgage Master index, which can be seen as a proxy for the MBS market, declined by about 1 year (see Chart 11). Ideally, MBS investors would like to buy other options with offsetting characteristics to hedge against this prepayment risk. But such contracts are not always readily available at acceptable prices.

**Chart 10**  
**US Treasury yields<sup>(a)</sup>**



(a) Zero-coupon spot yields derived using the Bank's VRP curve-fitting technique.

**Table B**  
**Correlations between equities and government bonds<sup>(a)</sup>**

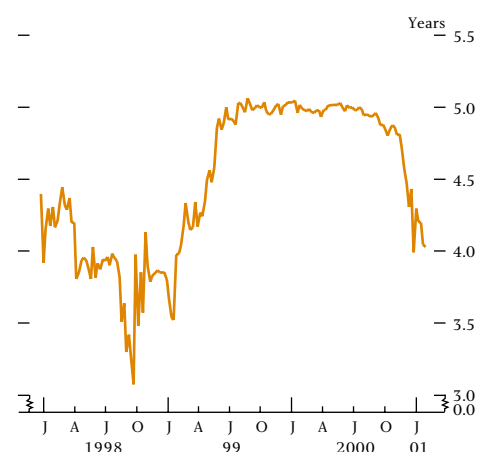
Coefficient

		US Treasuries with S&P 500		German Bunds with DAX	
		2 years	10 years	2 years	10 years
2000	Q1	0.24	0.12	-0.05	-0.01
	Q2	0.35	0.29	0.01	-0.02
	Q3	-0.11	-0.17	0.00	-0.17
Oct. 2000 to Jan. 2001		0.25	0.38	0.34	0.31

Sources: Bloomberg and Bank of England.

(a) Correlations between daily returns on the identified equity indices and daily yield changes in government bond yields of 2 and 10-year maturities.

**Chart 11**  
**Duration of dollar-denominated MBS portfolios<sup>(a)</sup>**



Source: Bloomberg.

(a) Derived using Macaulay duration from Merrill Lynch's Mortgage Master index.

Consequently, MBS investors often adopt an alternative hedging strategy of buying US Treasuries or receiving fixed-income payments in the interest rate swap market. Significant amounts of such transactions are said to have taken place in Q4, putting downward pressure on yields. Most of this hedging activity was said to have taken place at maturities between 5 and 10 years and was mainly undertaken in December because of the sharp fall in mortgage rates during the month.

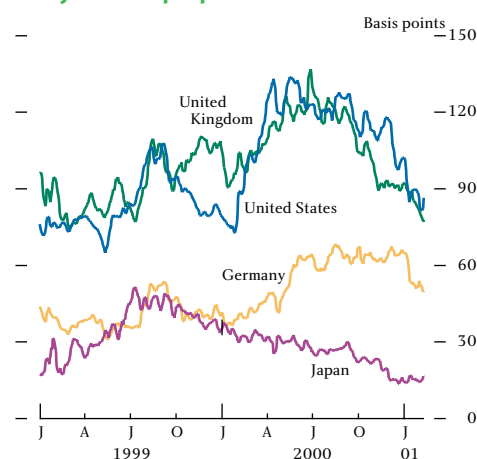
US swap spreads narrowed in December and January, falling by around 20 basis points at the 10-year maturity for the period as a whole (see Chart 12). The strategy of hedging mortgage prepayment risk by MBS investors was said to have put more downward pressure on swap rates than on Treasury yields, thereby helping to narrow swap spreads.

On the supply side, US government budget surpluses have led to lower-than-expected issuance of long-dated Treasuries and to a program of buy-backs of long-dated bonds. In Q4, \$7.75 billion was bought back by the US Treasury between these maturities, \$0.5 billion more than in Q3. Acting in the opposite direction, market commentators also noted that the new administration was planning to implement wide-ranging tax cuts, potentially reducing future budget surpluses and the need for Treasury buy-backs. Despite these plans for tax cuts, forecasts for the US government's budget surplus in fiscal year 2000/01 were revised upwards during the period, according to surveys by Consensus Economics. This suggests an increase in the scarcity premium priced into long-maturity government bonds and helps to explain part of the fall in long-dated US Treasury yields between October and January.

The Bund yield curve also shifted down and steepened over the period, but by less than for comparable US Treasury stocks. Bund yields fell by around 65, 45 and 25 basis points at the 2, 10, and 20-year maturities respectively (see Chart 13). As with US Treasuries, Bund yields were broadly stable until the last week of November, and then declined sharply in December and early January. Short-maturity Bund yields and euro-area money market rates fell for the same reasons.

The decline in Bund yields happened despite euro-area economic data releases being broadly in line with market forecasts. This suggests that the Bund market was largely influenced by international considerations during the period. Between October and January, the correlation between daily changes in 2-year Bund and US Treasury yields was 0.63, a higher correlation than during the rest of 2000. This may have been partly because safe-haven flows out of equities and into government bonds pushed down government bond yields in both countries (see Table B). However, longer-term Bund yields

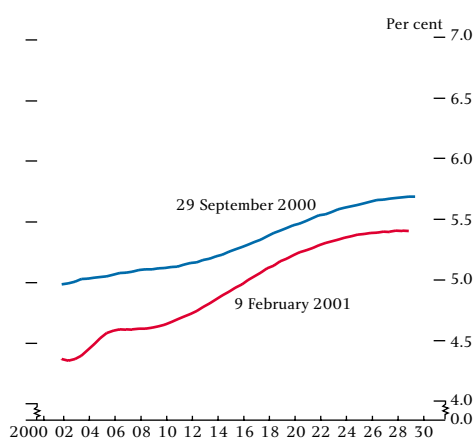
**Chart 12**  
Ten-year swap spreads<sup>(a)</sup>



Source: Bloomberg.

(a) Five-day moving averages of yield differences between 10-year swap rates and 10-year government bond yields.

**Chart 13**  
German Bund yield curves<sup>(a)</sup>



(a) Derived using the Bank's VRP curve-fitting technique.

**Table C**  
Correlations between 10-year government bond yields<sup>(a)</sup>

Coefficient

	Treasuries and Bunds	Treasuries and gilts	Bunds and gilts
2000 Q1	0.48	0.47	0.82
Q2	0.40	0.41	0.81
Q3	0.47	0.22	0.73
Oct. 2000 to Jan. 2001	0.45	0.17	0.65

Sources: Bloomberg and Bank of England.

(a) Correlations between daily changes in 10-year government bond yields.

had a similar correlation with US Treasury yields over the review period as during the rest of 2000 (see Table C).

Supply factors help to explain the smaller decline in Bund yields than in US Treasury yields during the review period. In contrast to US developments, forecasts for the German government's 2001 budget deficit were revised up by around DM 5 billion, according to surveys by Consensus Economics. This revision amounts to about 2% of annual gross issuance and 10% of net issuance of German government bonds. It may, therefore, have put some upward pressure on Bund yields during the period.

Euro swap spreads at the 10-year maturity declined by about 20 basis points over the period (see Chart 12). This may have been partly related to the upward revisions to German budget deficit forecasts described above. Alternatively, it may have been related to reduced credit risk concerns, as worries about banks' exposures to the telecommunications sector lessened somewhat. US and euro swap spreads decreased, in spite of 27% and 15% declines in dollar and euro-denominated corporate debt issuance in Q4 compared with the previous quarter.

In Japan, weaker-than-expected domestic economic data, combined with concern about a global economic downturn, led to a fall in Japanese government bond (JGB) yields during the period. In contrast to US and euro-area developments, JGB yields fell by more at longer than at shorter maturities. Consequently, forward short-term interest rates declined even at dates beyond ten years into the future. This may indicate that market participants revised down their assessments of Japanese long-term growth prospects.

### International equity market developments

Major equity market indices declined further in Q4 and ended 2000 significantly lower than a year earlier (see Table D). On 29 December, the FTSE 100 index was 1.1% below its level at the end of Q3 and 10.2% down on the year, its worst annual performance since 1994. Declines in US and continental European equity indices were somewhat larger in the fourth quarter, but were broadly similar for the year as a whole. Reflecting these declines, an increasing number of the fund managers surveyed by Merrill Lynch came to believe that the major equity markets were undervalued in January 2001. Although the largest proportion of respondents to the survey continued to think that the US and European equity markets were fairly valued, the balance between assessments of overvaluation and undervaluation shifted towards the latter during the review period, particularly in the United States (see Chart 14).

**Table D**  
**International equity market performance**

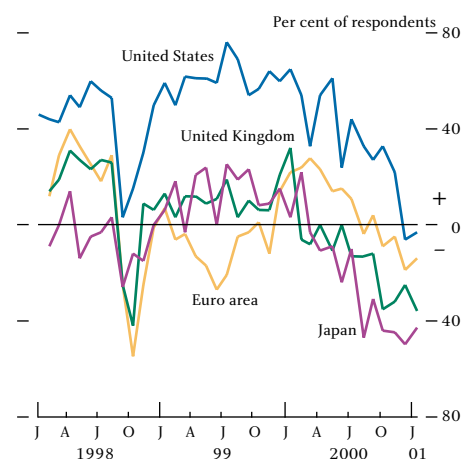
Percentage changes from previous period, in local currencies

	2000		2001
	Q4	Year	Jan.–Feb. (a)
<b>United States</b>			
S&P 500	-8.1	-10.1	-0.4
Wilshire 5000	-10.6	-11.9	-0.4
<b>Europe</b>			
CAC 40	-5.4	-0.5	-3.6
DAX 30	-5.4	-7.5	1.0
FTSE All-Share	-1.5	-8.0	-0.2
FTSE 100	-1.1	-10.2	-0.9
<b>Japan</b>			
Topix	-12.7	-25.5	-1.4
<b>IT indices</b>			
Nasdaq Composite	-32.7	-39.3	0.0
FTSE techMARK 100	-31.4	-32.2	0.9
Neuer Markt	-43.7	-40.1	-7.4

Source: Bloomberg.

(a) 29 December 2000 to 9 February 2001.

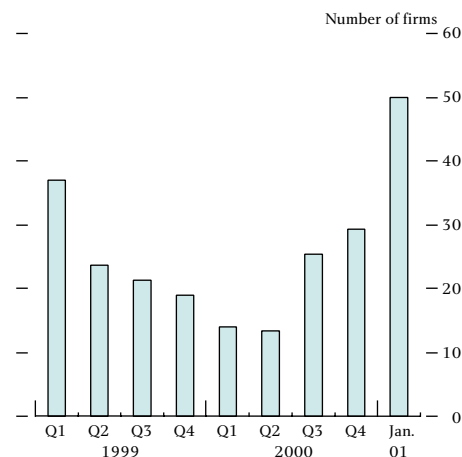
**Chart 14**  
**Equity markets: balance between overvaluation and undervaluation assessments<sup>(a)</sup>**



Source: Merrill Lynch Fund Managers' survey.

(a) Percentage of survey respondents reporting that the given equity market was overvalued, minus the percentage reporting an undervaluation.

**Chart 15**  
**Profit warnings issued by UK companies<sup>(a)</sup>**



(a) Monthly average number of firms listed in the FTSE All-Share index to issue a profit warning.

Correlations between daily changes in the S&P 500, Topix, DAX and FTSE 100 equity indices were relatively high in Q4 (averaging about 0.5). The most significant common influences appear to have been the interconnected effects of worse-than-expected corporate profit announcements (largely from 'new economy' firms in the telecommunications and information technology sectors) and downward revisions to growth prospects, particularly in the United States. The number of profit warnings announced by US, European and Japanese firms rose between Q3 and Q4 (Chart 15 shows figures for the United Kingdom). This, in turn, led fund managers to revise down significantly their expectations about future corporate profits (see Chart 16), causing equity prices to fall.

Share prices of 'new economy' firms declined in response to growing concerns about the impact on future profitability of the higher-than-expected costs for European mobile telephone licences and a growing realisation that earlier forecasts about the demand for IT products and the profitability of Internet-related businesses had been too optimistic. In the United Kingdom, 23 out of the 88 profit warnings announced in 2000 Q4 originated from IT companies, up from 9 out of 71 in Q3.<sup>(1)</sup> Excluding IT and telecommunications firms, the FTSE All-Share index actually increased by around 1% in Q4. In the United States, the S&P 500 index would have been broadly unchanged in the fourth quarter if IT and telecoms firms had been removed.

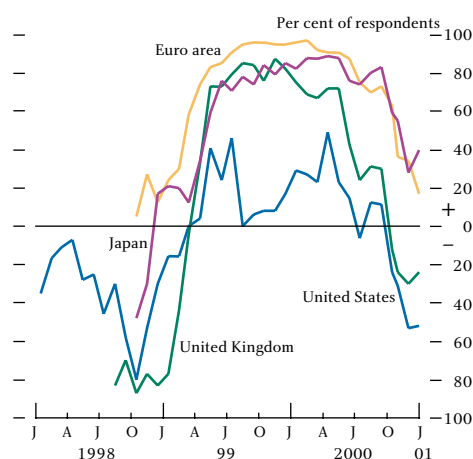
Equity market volatility increased during the period, particularly in the United States. This appears also to have reflected the sharp increase in the number of profit warnings and the rapidity with which expectations about US growth prospects were revised down. In addition, the weighted sum of the implied volatilities of the individual stocks within the S&P 500 index remained significantly higher than the implied volatility derived from options contracts that trade against the S&P 500 index. The difference between these two measures of volatility widened during the period. This is consistent with there having been a shift out of the (relatively small number of) IT stocks and into (the much larger number of) more traditional stocks. At an aggregate level, the fall in the prices of IT stocks would have been partly offset by the increase in the rest of the market, thereby generating somewhat lower volatility. In other countries volatility also increased, but did not return to the highs seen in 2000 Q1.

Equity prices recovered somewhat in January, largely in response to the FOMC's reductions in the Federal funds target rate and some better-than-expected profit announcements. But

(1) See article on pages 104–09.



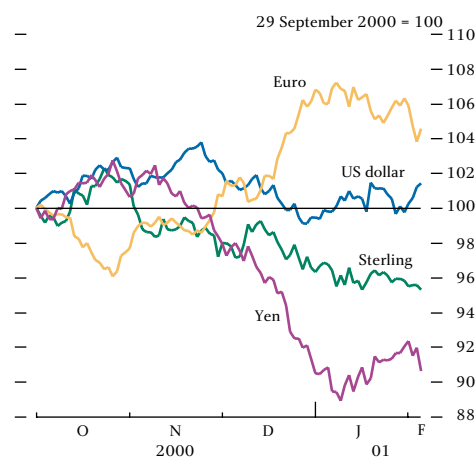
**Chart 16**  
**Profits outlook: balance between favourable and unfavourable assessments<sup>(a)</sup>**



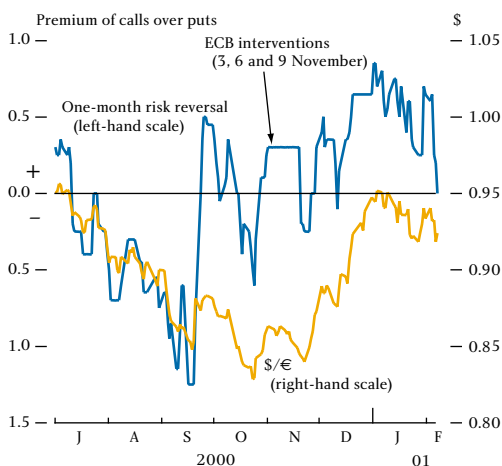
Source: Merrill Lynch Fund Managers' survey.

(a) Percentage of survey respondents reporting a 'favourable' assessment for the twelve-month profits outlook, minus the percentage reporting an 'unfavourable' assessment.

**Chart 17**  
**Effective exchange rate indices**



**Chart 18**  
**Dollar-euro spot exchange rate and risk reversals**



price declines resumed thereafter. On 9 February, the FTSE 100 index stood at 6164, 2% below its level at the end of Q3 and 0.2% down from the start of January.

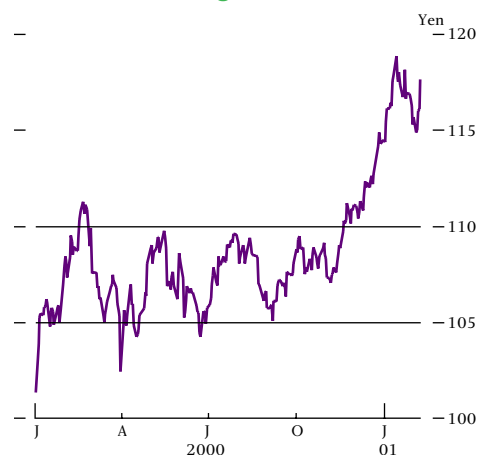
## Foreign exchange markets

Among the major currencies, the yen and the euro experienced the largest exchange rate movements during the period. Their trade-weighted exchange rate indices (ERIs) moved within 14 and 11 percentage point ranges respectively. Between 29 September and 9 February, the yen ERI depreciated by 9.4% and the euro ERI appreciated by 4.5%. The sterling and dollar exchange rate indices moved within smaller ranges; sterling's ERI fell by 4.7% over the period as a whole, while the dollar ERI remained broadly stable (see Chart 17).

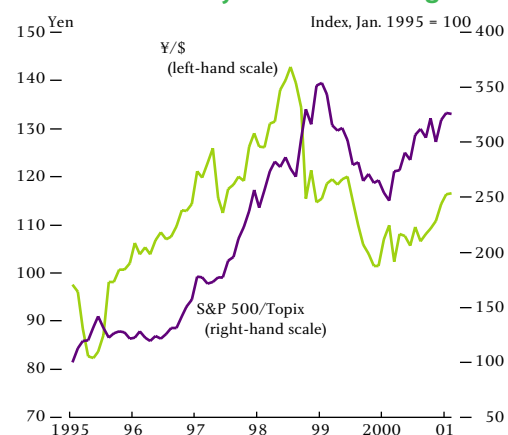
The euro's appreciation against the other major currencies began shortly before unilateral intervention operations by the ECB. Few market participants attributed the euro's appreciation to these interventions, however. The euro moved by much less after the 3, 6, and 9 November interventions than following the co-ordinated intervention by the G7 central banks on 22 September. Nevertheless, the November interventions may have helped to maintain 'two-way risk' in the foreign exchange market. For instance, they appear to have led to a small increase in the risk reversals derived from one-month options on euro-dollar exchange rate contracts (see Chart 18). This implies that market participants had to pay more for options that would be profitable in the event of an appreciation of the euro.

The main explanation cited by market participants for the euro's appreciation in Q4 was changes to short and medium-term economic prospects. As noted above, weaker-than-expected economic data releases in the United States led to significant downward revisions to US growth forecasts for 2001. By contrast, participants were relatively more sanguine about growth prospects for the euro area and the United Kingdom, with GDP projections being revised down only slightly. In Q4 and early in Q1, most market participants expected the slowdown in US growth to be fairly short-lived and, therefore, to represent a temporary negative shock to world demand. This view is consistent with the fact that the observed declines in short-term interest rates during the review period exceeded the declines in longer-term yields in the United States, the United Kingdom and the euro area. Consequently, movements in yield curves principally reflected lower expectations of short-term interest rates over the next few years. Furthermore, US yields fell by more than elsewhere, reducing the incentive to hold dollar-denominated interest-bearing assets. This is likely to have contributed to the dollar's depreciation against the euro.

**Chart 19**  
Yen-dollar exchange rate



**Chart 20**  
Influences on the yen-dollar exchange rate



It is more difficult, however, to rationalise movements in the other main exchange rates in terms of changes in interest rate differentials. Despite the fact that US Treasury yields fell by more than comparable gilt yields, the dollar actually appreciated against sterling over the period. And sterling's depreciation against the euro occurred despite little change in interest rate differentials between the United Kingdom and the euro area. It is also difficult to rationalise the yen's depreciation in terms of changes in short-term growth prospects. During the review period, downward revisions to projections for Japanese growth in 2001 were in line with revisions to euro-area and UK forecasts and were significantly smaller than the changes to Consensus US forecasts (see Chart 3). Nevertheless, the yen depreciated sharply against the dollar, euro and sterling. Against the dollar, the yen moved out of the ¥105–¥110 range in which it had traded for most of the preceding ten months (see Chart 19).

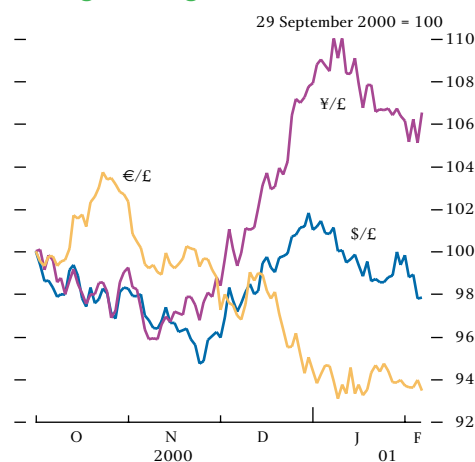
Some market participants have commented that the yen's depreciation reflected increasing concern over medium and long-term Japanese economic prospects. Since market forecasts for long-term growth are less readily available, alternative ways of examining this issue need to be considered. Economic theory suggests that current equity prices could be equal to the present discounted value of all expected future dividend yields. Consequently, movements in broad-based equity indices may provide some indication of changes in market expectations about long-term growth prospects. Chart 20 shows that, since 1995, periods of dollar appreciation against the yen have broadly coincided with periods when the S&P 500 index has risen faster than the Topix. This, therefore, appears to provide some support for the market commentary.

Another potential way of monitoring changes to market participants' expectations for long-term growth is to consider movements in long-dated bond yields. As noted previously, longer-maturity Japanese government bond yields fell by more than short-dated yields during the period. Consequently, forward short-term Japanese interest rates fell both in the near term and for dates beyond ten years into the future. This seems to confirm a more pessimistic assessment of Japan's longer-term growth prospects and may help to explain why the yen depreciated against the other major currencies during the review period.

Flows related to mergers and acquisitions (M&A) activity, which are also likely to be influenced by medium and long-term growth prospects, were much smaller over the period than in 1999 and earlier in 2000. A slowdown in the outflows from the euro area to the United States may have contributed to the euro's appreciation against the dollar. This reduction may have

been connected with a reassessment by euro-area companies of the relative returns available on direct investment in the United States. M&A flows also may have helped to limit the extent of sterling's depreciation against the dollar and the euro around the turn of the year as a few corporates carried out large foreign exchange transactions in sterling around this time.

**Chart 21**  
Sterling exchange rates



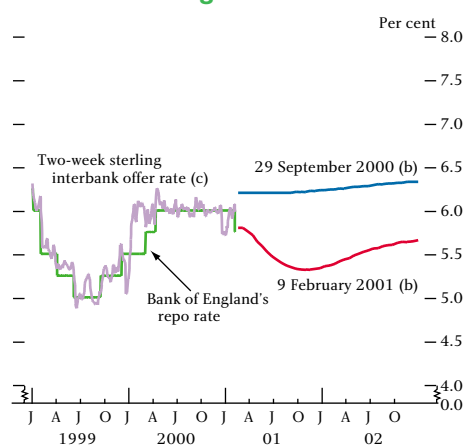
Movements in sterling bilateral exchange rates during the period appear largely to have reflected changes in market sentiment towards the dollar and euro exchange rates. Sterling depreciated by around 6% against the euro over the period (see Chart 21), and tended to depreciate in parallel with the dollar against the euro. As noted earlier, however, it is more difficult to explain why sterling depreciated against the dollar despite the reductions in relative US growth prospects and interest rates discussed above. One explanation might be that market participants expected sterling to recouple with the dollar and to move with the dollar against the euro in the future. However, implied correlations derived from foreign exchange options contracts provide little evidence to support this.

## Sterling markets

### Short-term interest rates

Short-term interest rate expectations implied by sterling money market instruments fell by around 70 to 100 basis points between 29 September and 9 February, and the Bank of England's repo rate was reduced by 25 basis points, to 5.75% (see Chart 22). In line with developments elsewhere, the fall in money market rates was the largest decline over a four-month period since 1998. In contrast to the United States, however, sterling interest rate expectations fell steadily throughout the period. The view that the UK rate cycle had peaked became widespread in December, and by early January most market participants had come to expect a reduction in the Bank's repo rate during 2001 Q1. On 9 February the central expectation derived from money market instruments was that the MPC would reduce the Bank's official rate to around 5<sup>1</sup>/<sub>4</sub>% by September 2001. Similarly, most City economists also reduced their forecasts for the level of the Bank's repo rate—the mean forecast for end-2001 reported in Reuters' monthly polls fell from 6.1% in October to 5.5% in late February.

**Chart 22**  
Two-week sterling interest rates<sup>(a)</sup>



- (a) From February 2001, the x-axis relates to maturity of derived forward rates.  
 (b) Two-week forward rates derived from a curve fitted to Libor-based money market instruments. For further details see [Brooke, Cooper and Scholtes \(2000\)](#), 'Inferring market interest rate expectations from money market rates', *Bank of England Quarterly Bulletin*, November, pages 392–402.  
 (c) Five-day moving average.

The sharp downward revision in expectations of future short-term interest rates was accompanied by a reduction in the probability that economists polled by Reuters attached to a rate rise at each of the five monthly MPC meetings held during the review period, and a parallel increase in the probability attached to a rate cut (see Table E). Nevertheless, the central expectations both of City economists and market traders before

**Table E**  
**Mean probabilities attached to MPC interest rate decisions<sup>(a)</sup>**

		Percentages		
		Rise (25 basis points)	No change	Cut (25 basis points)
2000	October	50	70	0
	November	20	78	1
	December	9	84	7
2001	January	1	74	25
	February	0	35	65

Source: Reuters' polls of City economists.

(a) Figures may not sum to 100% due to rounding.

the October, November, December and January meetings was that the MPC would not change the official rate. The sterling money markets were therefore largely unmoved by each of these policy announcements. By February, market sentiment had changed further—City economists surveyed by Reuters at the beginning of the month attached a 65% probability to a 25 basis point reduction in the Bank's repo rate at the MPC's February meeting. Immediately following the announcement, yields implied by short sterling futures contracts rose by around 4 to 8 basis points, suggesting that some market participants had priced in a small chance of a 50 basis point reduction by the MPC.

During the period, much of the downward pressure on UK short-term rate expectations came from increasing concerns about the implications of slower US demand growth. Six of the ten largest daily falls in the yields implied by short sterling futures contracts were related to US developments. These included the FOMC's decision to adopt an easing bias on 19 December, the sharp fall in the NAPM index on 2 January, and the 50 basis point cut in the Federal funds rate on 3 January. Concerns over US economic prospects, combined with the falls in global equity market indices in November and December and declines in the price of oil in Q4, increasingly led market participants to the view that the downside risks to the United Kingdom's inflation outlook outweighed the upside risks. This, in turn, heightened expectations that the MPC might reduce the Bank's repo rate.

UK data releases had a smaller-than-usual impact on interest rate expectations during the period. As Chart 3 shows, the mean forecast reported by Consensus Economics for UK GDP growth in 2001 was revised down only slightly during the period. This helps to explain why sterling money market rates fell by less than dollar rates. Nevertheless, indicators of UK activity did affect money market rates on a few occasions during the review period. In particular, short-term rate expectations fell following the release of weaker-than-expected indicators of manufacturing and distributive trades activity (in early November), and following the announcement of lower-than-expected Q4 GDP growth (in late January). In addition, interest rate sentiment was also affected on a number of occasions by the announcement by UK firms of weaker-than-expected profit performances.

Indications of changes to the MPC members' interpretations of economic conditions reinforced the downward movements in interest rate expectations. In particular, market participants increasingly focused on any evidence in the minutes of the MPC meetings that appeared to highlight greater downside than upside risks to economic activity. Short-term interest rate

expectations fell immediately following the release of each set of minutes. The immediate market reaction to the January minutes had reversed by the end of the release day, however, as market participants reacted to a stronger-than-expected CBI survey and also paid closer attention to the sections in the minutes highlighting the view of some MPC members that the US slowdown might be short-lived.

Market measures of interest rate uncertainty generally remained at historically low levels during the period. Implied volatilities derived from three and six-month options settling on short sterling futures contracts rose in mid-December but then fell back again in the second half of January. This increase in uncertainty about the future path of sterling interest rates was not as large, or as long-lasting, as the increase in dollar implied volatilities (see Chart 6). Measures of skewness derived from options data became negative during the review period, suggesting that a majority of market participants saw greater downside than upside risks to the central expectation of future interest rates implied by short sterling contracts.

### The sterling money market

The size of the sterling money market<sup>(1)</sup> fell by £4 billion between September and December, to £503 billion (see Table F). The main reasons for this fall were an £11 billion reduction in the size of the interbank market and a £5 billion fall in the amount of gilt repo contracts outstanding (see Chart 23). These declines were partly offset by a £5.7 billion increase in the size of the certificates of deposit (CD) market and a £3.8 billion increase in the amount of stock lending.

Interbank flows can be quite volatile from month to month and the exact reasons for the decline in 2000 Q4 are unclear. Most of the fall occurred in December and might, therefore, have reflected a desire by banks to reduce the amounts of unsecured lending on their balances sheets, relative to secured lending, prior to the year-end. A potential reason for this seasonal

**Table F**  
**Sterling money markets**

Amounts outstanding: £ billions

	Interbank loans (a)	CDs (a)	Gilt repo (b)	Stock lending (b)	Eligible bills (a)	Commercial paper (a)	Treasury bills (a)	Sell/ buy-backs (b)	LA bills (c)	<b>Total</b>
1998	150	122	95	35	19	10	1	2	1	<b>435</b>
1999	146	142	99	49	14	14	4	3	0	<b>471</b>
2000 Q1	156	132	100	51	14	15	4	2	0	<b>474</b>
Q2	159	135	122	54	12	16	4	3	0	<b>505</b>
Q3	162	125	132	53	12	16	2	5	0	<b>507</b>
Q4	151	130	127	57	11	18	3	6	0	<b>503</b>

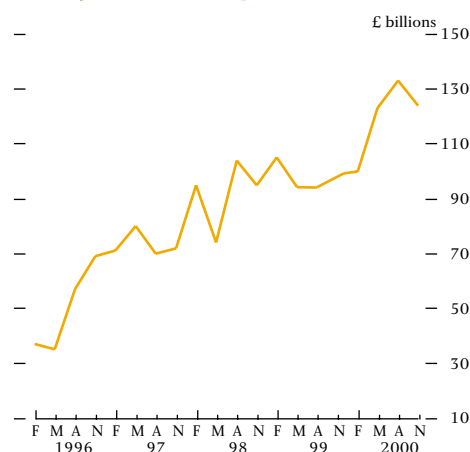
(a) Reporting dates are end-quarters.

(b) Reporting dates are end-February for Q1, end-May for Q2, end-August for Q3, end-November for Q4 and end-year.

(c) Local authority bills.

(1) The sterling money market is defined for this purpose as the sum of the outstanding amounts in the interbank, certificate of deposit, gilt repo, stock lending, sell/buy-back, Treasury bill, eligible bank bill, local authority bill and commercial paper markets.

**Chart 23**  
Gilt repo outstanding



Source: Bank of England gilt repo and stock lending quarterly survey.

reduction in the supply of, and demand for, interbank loans is that rating agencies and shareholders are thought to scrutinise balance sheet accounts more closely at the calendar year-end. At the end of 1999, the interbank market declined by almost £2 billion. At the time, however, this was more than offset by a large increase in the size of the gilt repo market, thereby ensuring that the overall size of the sterling money market increased in 1999 Q4. Furthermore, there was no decline in the size of the interbank market in December 1998. These comparisons suggest that other factors also influenced the interbank market at the end of 2000. As a result of the quarterly fall in 2000 Q4, the annual growth rate of the sterling money market slowed to 6.4% in December, down from 15% in May.

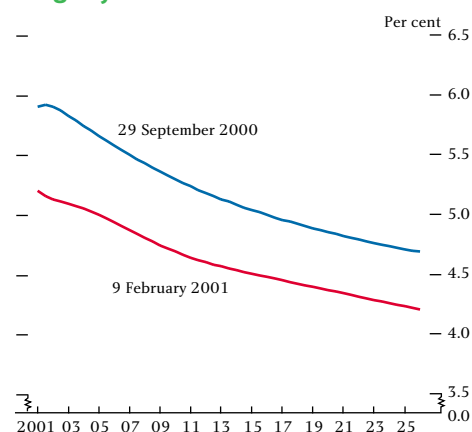
The decline in the gilt repo market was largely due to a £9 billion reduction in the amounts outstanding for 'on call and next day' maturity repos. Turnover in the gilt repo market also fell, averaging £17 billion a day in the three months to end-November, compared with £20 billion a day in the three months to end-August. The recent declines in amounts outstanding and turnover may have been linked to the winding down of the money market operations of Gerrard and King Limited, who had previously been active in the gilt repo market.

Towards the end of December, member-to-member gilt repo transactions involving the  $5\frac{3}{4}\%$  Treasury 2009 stock traded as low as 2% in the overnight market. This was unusually low relative to overnight general collateral (GC) repo rates and reflected the fact that the 2009 stock was the cheapest gilt to deliver into the December long gilt future contract. The Debt Management Office (DMO) was asked to create an additional £1.1 billion of the 2009 stock under the terms of its standing repo facility—the first time that this facility had been used.<sup>(1)</sup>

Spreads between interbank and gilt repo rates at maturities greater than one month narrowed in December by more than 10 basis points and remained at relatively low levels in January. This contrasts with the large widening in spreads between unsecured and secured lending rates that occurred at the end of 1998 and 1999, influenced by concerns over the introduction of the euro and the century date change respectively. The narrowing in unsecured-secured spreads in December primarily reflected larger declines in interbank rates. This suggests, therefore, that the sharp decline in the size of the interbank market observed in December was primarily related to a reduction in the demand for such loans.

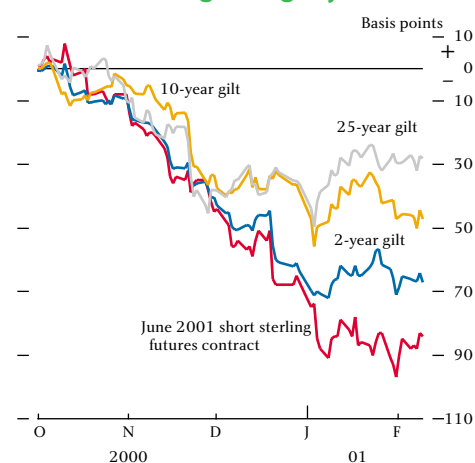
(1) For further details about this facility see 'Response to DMO consultation on 'special' gilt repo operations', on the DMO's web site at [www.dmo.gov.uk/gilts/index.htm](http://www.dmo.gov.uk/gilts/index.htm)

**Chart 24**  
UK gilt yield curves<sup>(a)</sup>

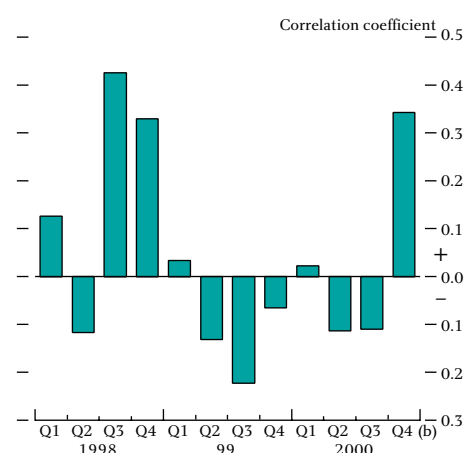


(a) Derived using the Bank's VRP curve-fitting technique.

**Chart 25**  
Cumulative changes in gilt yields



**Chart 26**  
Correlations between the FTSE 100 index and the 10-year gilt yield<sup>(a)</sup>



(a) Quarterly correlations between the daily percentage changes in the FTSE 100 index and the daily changes in the 10-year spot gilt yield.

(b) 29 September 2000 to 9 February 2001.

## Longer-term interest rates

Over the review period gilt yields fell at all maturities and the yield curve continued to disinvert (see Charts 24 and 25). Short yields up to five years' maturity fell by around 50 to 60 basis points, while medium and long-dated yields fell by around 30 to 50 basis points. This continued the declines in yields seen over the first three quarters of 2000. Swap rates fell more sharply during the review period, by around 60 to 75 basis points at all maturities.

The factors that influenced gilt yields at maturities up to around three years were similar to those that affected sterling money market rates (see above). Changes in longer-dated gilt yields were also associated with international developments, but the relative importance of this influence was less than earlier in 2000. In the four months to January, correlations between daily changes in 10-year government bond yields in the United Kingdom, the United States and Germany were relatively low by historical standards (see Table C). Domestic considerations, therefore, had a relatively larger influence on gilt yield changes.

On the demand side, fund managers continued to shift their funds away from equities and into bonds. The correlation between daily yield changes in the 10-year gilt and daily percentage movements in the FTSE 100 index was around 0.3 in Q4, its highest level since the financial crisis of autumn 1998 (see Chart 26). As noted above, similar developments were also evident in the United States and Europe.

On the supply side, the outstanding stock of Government bonds declined by £8.3 billion<sup>(1)</sup> (or 2.6%) during the period. The main reason for this was the redemption of £9.8 billion of the 8% Treasury Stock 2000 on 7 December (see Table G). In addition, the Debt Management Office (DMO) carried out three reverse auctions purchasing a total of £1.7 billion of gilts from the market. These reductions in the debt stock were only partly offset by the issuance of £3.1 billion of new stock. Since both the size and the date of the December redemption were known in advance, gilt yields reacted little to the cash flows themselves. Nevertheless, anticipation of this significant reduction in the stock of outstanding gilts appears to have added to the demand at the DMO's auction of £2.25 billion 4<sup>1</sup>/<sub>4</sub>% Treasury Stock 2032 on 21 November. Gilt yields fell by around 20 basis points during the week following the 2032 stock auction, as the cover ratio (at 2.21) was higher than many market participants had expected prior to the auction. Nonetheless, it is difficult to identify separately the supply-side changes over this period, as other factors mentioned also affected gilt yields at the same time.

(1) Nominal value.

**Table G**  
**DMO gilt auction results**

**Auctions**

Date	Stock	Amount issued (£ millions)	Cover	Yield	Striking price (£)
25.10.00	4 <sup>1</sup> / <sub>8</sub> % Index-linked Treasury Stock 2030	450	2.07	1.87%	189.00
21.11.00	4 <sup>1</sup> / <sub>4</sub> % Treasury Stock 2032	2,250	2.21	4.41%	97.27
24.01.01	2 <sup>1</sup> / <sub>2</sub> % Index-linked Treasury Stock 2016	450	5.16	2.08%	218.75

**Switch**

Date	Source stock	Total nominal amount purchased (£ millions)	Cover	Destination stock	Total nominal amount created (£ millions)
6.12.00	8% Treasury Stock 2015	2,000	1.47	4 <sup>1</sup> / <sub>4</sub> % Treasury Stock 2032	2,686

**Reverse auctions**

Date	Source stock	Total nominal amount purchased (£ millions)	Average accepted price (£)	Average accepted yield (£)
11.10.00	8% Treasury Stock 2003	221	105.41	5.77
	10% Treasury Stock 2003	381	111.17	5.76
	6 <sup>3</sup> / <sub>4</sub> % Treasury Stock 2004	0	n.a.	n.a.
	9 <sup>1</sup> / <sub>2</sub> % Conversion Stock 2005	38	115.42	5.59
23.11.00	7 <sup>3</sup> / <sub>4</sub> % Treasury Stock 2006	0	n.a.	n.a.
	8 <sup>1</sup> / <sub>2</sub> % Treasury Stock 2007	592	118.20	5.22
	9% Treasury Stock 2008	0	n.a.	n.a.
18.01.01	8% Treasury Stock 2003	0	n.a.	n.a.
	10% Treasury Stock 2003	0	n.a.	n.a.
	6 <sup>3</sup> / <sub>4</sub> % Treasury Stock 2004	0	n.a.	n.a.
	9 <sup>1</sup> / <sub>2</sub> % Conversion Stock 2005	430	116.17	5.20

n.a. = not available.

Two other factors that are likely to have influenced the expected future demand for, and supply of, gilts at longer maturities were the Chancellor's Pre-Budget Report (PBR) and the Myners report into institutional investment, both published on 8 November. The Myners report recommended the abolition of the Minimum Funding Requirement (MFR).<sup>(1)</sup> It therefore strengthened the expectation among market participants that changes to the MFR would weaken the link between gilts and the discount factor applied to defined-benefit occupational pension schemes. The PBR was interpreted by market participants as confirming their expectations of some loosening in the stance of fiscal policy over the next few years. This, in turn, led respondents to Consensus Economics' regular surveys to revise down their forecasts for the Government's fiscal surplus in 2001–02. However, the effect of these two pieces of news on gilt yields was very small. This was because much of the content of the Myners report was correctly anticipated by market participants. Furthermore, actual outturns for tax receipts continued to turn out higher than expected, while government transfers continued to be smaller than forecast.

The fall in sterling swap spreads during Q4 occurred mainly in October and early November (see Chart 12), and is thought by market participants to have been related to a period of high issuance by supranational and foreign financial institutions in the sterling non-government bond market. These agents tend to issue fixed-rate bonds and then swap the future stream of fixed-coupon payments for floating-rate liabilities. This process

(1) For more details on the MFR, see the November 2000 *Quarterly Bulletin*, page 334.



creates extra demand for receiving fixed in the swaps market and tends to put downward pressure on swap rates.

### Index-linked gilts

On 9 February, index-linked gilt yields were little changed from their levels at the beginning of the review period. Although the broad profile of movements in medium and long-maturity index-linked yields tracked the conventional gilt market for most of the period, the average size of the daily changes in index-linked gilt yields was about half that of conventional yields.

### Other sterling bond issues

Gross sterling non-government bond issuance was £17.8 billion in 2000 Q4, more than two thirds of which was in fixed-rate bonds. Issuance in Q4 was down from the record level of £26.1 billion in the preceding quarter, but was still relatively high by historical standards.

The Q3 figure appears to have been boosted by a shift in investor demand in favour of non-government bonds in anticipation of possible regulatory reforms that would decrease pension funds' incentives to hold gilts. As noted above, the Myners report, published in early November, recommended abolition of the Minimum Funding Requirement (MFR). This report, together with the publication in September of the Faculty and Institute of Actuaries' review of the MFR, may have prompted institutions to invest more heavily in non-government fixed-interest debt. The second regulatory development in Q4 was the publication on 30 November of Financial Reporting Standard 17 (FRS17). This new standard values pension fund liabilities using the yields on AA-rated corporate bonds, and may, therefore, have further increased the incentive for pension funds to hold non-government debt. From June 2001, firms will have to show that they have the capability to produce accounts that meet FRS17 requirements. However, FRS17 will not become fully effective until June 2003 and so may not have had a large impact on pension funds' asset allocation choices to date.

**Table H**  
**Sterling bond issuance in 2000 Q4**

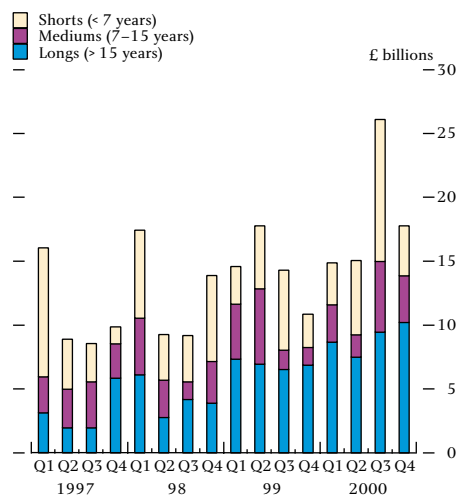
	Number of issuers	Amount (£ billions)			
		Total	By credit rating:		
			AAA	AA/A	BBB and lower
<b>Fixed-rate issues</b>					
UK corporates	6	0.5	0.0	0.3	0.2
UK financials	10	2.2	0.5	1.7	0.0
Supranationals	6	3.8	3.8	0.0	0.0
Overseas borrowers	23	6.4	3.1	3.0	0.3
<b>Total</b>	<b>45</b>	<b>12.9</b>	<b>7.4</b>	<b>5.0</b>	<b>0.5</b>
<b>FRNs</b>					
UK corporates	5	0.4	0.2	0.1	0.1
UK financials	11	2.7	2.3	0.3	0.1
Supranationals	0	0.0	0.0	0.0	0.0
Overseas borrowers	5	1.8	1.6	0.2	0.0
<b>Total</b>	<b>21</b>	<b>4.9</b>	<b>4.1</b>	<b>0.6</b>	<b>0.2</b>

Sources: Bank of England, Moody's and Standard and Poor's.

The trend of strong issuance encouraged by greater demand for non-government sterling debt continued in Q4. Almost two thirds of total issuance over the quarter was of AAA-rated stock (see Table H), reflecting pension funds' and other institutional investors' ongoing demand for high-quality non-government debt to hold as substitutes for gilts. Long-dated issuance was by far the largest maturity category of debt issue in Q4, at £10.2 billion (see Chart 27).

Around £20 billion in redemptions and coupon payments on both gilts and non-government bonds were returned to

**Chart 27**  
**Sterling-denominated non-government bond issuance**



Source: Bank of England.

investors in December. This encouraged a spate of non-government issuance to capitalise on investors' wish to re-invest their funds. For instance, some £1.7 billion was issued on 7 December, to coincide with the gilt redemption date. However, market commentators suggested that most of the redemption receipts flowed into short-term gilts and money market instruments, thereby adding to the downward pressure on short-dated yields in December.

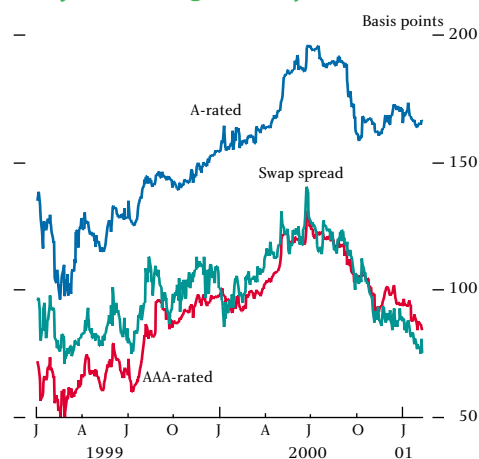
Floating-rate issuance totalled £4.9 billion in Q4, of which some £2 billion was mortgage-backed, including one of Europe's biggest mortgage-backed deals to date, from Abbey National. Securitisations offer investors high-rated assets underpinned by a pool of collateral with reasonably well-known risk characteristics. The review period also saw the first floating-rate note priced against the sterling overnight interest rate average (SONIA), rather than the typical six-month Libor rate. This development is likely to have been stimulated by practices in the euro area, where the euro overnight rate has been widely used as a funding benchmark for some time.

Much of the supply of top-rated sterling non-government debt came from overseas borrowers issuing in sterling (see Table H). Of the £11.5 billion of AAA-rated issuance in Q4, only £3 billion came from UK corporates and financial institutions. UK firms made up a bigger share of debt issues in the lower credit rating categories, though smaller sums were involved. Larger UK corporates often prefer to issue in foreign currency and swap the proceeds back into sterling. For example, BT issued \$10 billion of bonds in Q4 (the single biggest dollar corporate bond issue ever), and was thought to have then swapped the dollars for sterling. Had this issue been made in sterling, its effect on sterling corporate bond yields would have been proportionately greater than its impact on the larger dollar corporate debt market.

The sterling non-government index-linked debt market continued to grow in Q4, with around £0.5 billion of new issuance—all at AAA rating, with the bulk coming from the supranational institutions. Here again, the prospect of regulatory reform has encouraged investors to consider switching out of index-linked gilts and into index-linked corporate debt. The European Investment Bank announced its intention to build up some of its index-linked bonds to £0.5 billion outstanding, in the hope that this would encourage some banks to act as market-makers for the stocks.

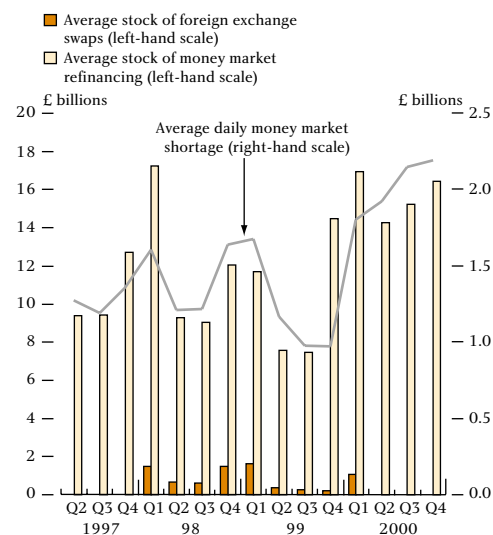
Credit spreads on AAA and AA-rated debt narrowed in the early part of the review period on strong investor demand for high-quality non-government debt. In contrast, however, A-rated spreads failed to narrow to the same extent (see

**Chart 28**  
Ten-year sterling bond spreads<sup>(a)</sup>



(a) All spreads shown relative to 10-year gilt yields.

**Chart 29**  
Stock of money market refinancing and daily shortages



**Chart 30**  
Bank's repo rate, 2-week and 1-month interbank mid rates

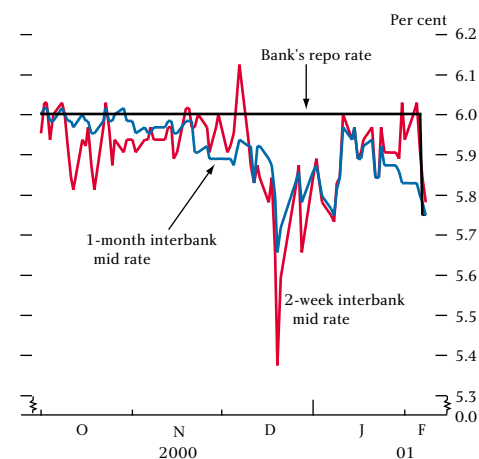


Chart 28). Supply of A-rated debt was reasonably strong, partly due to telecoms companies' issuance. Demand for A-rated debt did not strengthen in line with demand for the highest-rated securities. Investors exhibited growing risk aversion, fuelled by worries about equity market weakness and concerns about high-yield debt markets in the United States.

### Market operations

#### Open market operations

The stock of money market refinancing held on the Bank's balance sheet averaged £16 billion over the period from October 2000 to January 2001 (see Chart 29), some £1 billion higher than in Q3, reflecting the growth of the note circulation at Christmas. Daily money market shortages averaged £2.3 billion.

On a number of occasions, short-dated money market rates traded further below the Bank's repo rate than recent historical norms. The Bank continued to respond to these developments by varying the scaling factor used in its open market operations. The scaling factor is the amount by which the Bank leaves the market short after its 9.45 am round of operations, even when the available refinancing is fully bid by market participants. A progressive series of increases culminated in a scaling factor of £1 billion being applied from 21 December to the end of the period.

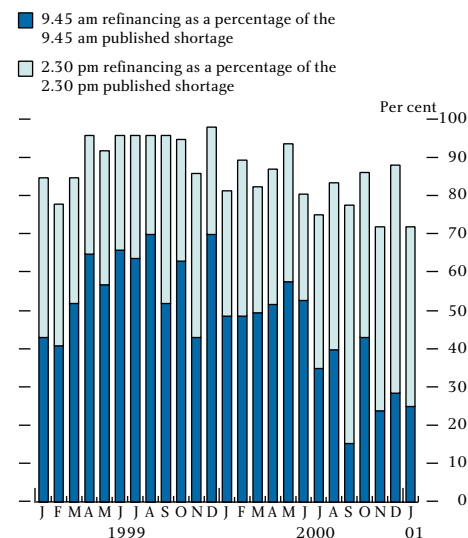
Chart 30 shows various short-dated money market rates and the Bank's repo rate. From mid-December to mid-January, these market rates traded below typical levels, a feature often observed at the year-end.

Over the period from October 2000 to January 2001, the Bank's OMO counterparties refinanced 30% of the daily money market shortages at the 9.45 am round, compared with a long-run average of around 55% (see Chart 31).

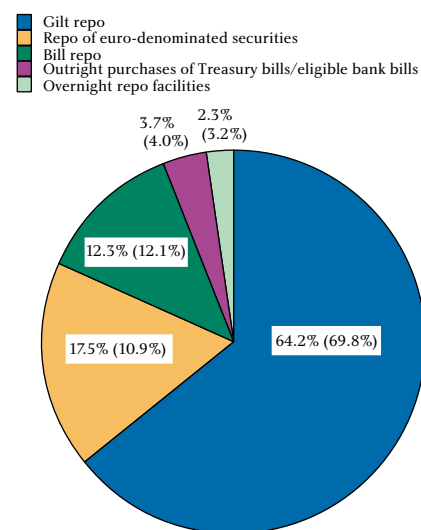
Counterparties' greater-than-average reliance on the late operational rounds is demonstrated by the fact that only 79% of the shortage was refinanced by the conclusion of the 2.30 pm round, compared with a long-run average of 90%.

On 23 January, the list of securities eligible to be used as collateral in the Bank's open market operations was expanded to include €90 billion (nominal) of Greek government debt. This action followed Greece's full membership of the European Monetary Union at the beginning of 2001 and the associated eligibility of Greek government debt to be used as collateral in the ECB's monetary policy operations. This raised the total value of eligible collateral to around £2,420 billion. Gilts accounted for around 64% of the collateral taken by the Bank in its open market operations in the review period, and

### Chart 31 Refinancing provided in the Bank's open market operations



### Chart 32 OMOs—instrument composition<sup>(a)</sup>



(a) This chart shows the average shares of the various instruments held by the Bank as collateral for open market operations from October 2000 to January 2001. Figures in brackets relate to 2000 Q3. Figures may not sum to 100% because of rounding.

euro-denominated eligible securities<sup>(1)</sup> accounted for 18% (see Chart 32).

### HM Treasury and Bank of England euro issues

The Bank of England continued to hold regular monthly auctions of euro-denominated bills during 2000 Q4, and switched to using the electronic Bloomberg Auction System to receive bids in January 2001. Each month, €1 billion of bills was auctioned, comprising €200 million of one-month, €500 million of three-month and €300 million of six-month Bank of England bills. The stock of euro bills outstanding was therefore maintained at €3.5 billion throughout the quarter. The auctions held between October and January continued to be oversubscribed, with issues being covered an average of 4.9 times the amount on offer. During the review period, bids were accepted at average yields of 1 to 12 basis points below euribid for the relevant maturity.

On 17 October, the Bank reopened (for the final time) the UK Government Euro Treasury Note maturing on 28 January 2003 with a further auction of €500 million, raising the total of this note outstanding with the public to €2 billion. The auction was covered at 2.3 times the amount on offer and accepted bids were in a range of 5.13%–5.19%.

The Bank of England took over from HM Treasury as the issuer of three-year euro notes in January 2001. Further details about this issuance programme are set out in the Bank of England Euro Note Information Memorandum published on 9 January 2001. The proceeds from the issue of these notes will be held on the Bank's balance sheet as foreign currency assets. The first Bank of England Euro Note was auctioned on 16 January. The electronic Bloomberg Auction System was used to receive bids for the €500 million of notes being offered. The auction was oversubscribed by 3.1 times the amount on offer and accepted bids were in a range of 4.555%–4.595%. Further auctions of the new Bank of England Euro Note are scheduled for April, July and October 2001.

### UK gold auctions

On 3 March 2000, HM Treasury announced plans for a programme of six gold auctions in the financial year 2000/01, each for 25 tonnes of gold. Two of these auctions took place in the review period. The auction on 7 November 2000 achieved a price of \$264.30 and was covered 3.3 times; the auction on 23 January 2001 achieved a price of \$268.00 and was covered 4.8 times. The last auction in this year's programme will take place on 14 March 2001.

(1) A list of eligible securities is available on the Bank's web site at [www.bankofengland.co.uk/markets/money/eligiblescurities.htm](http://www.bankofengland.co.uk/markets/money/eligiblescurities.htm)