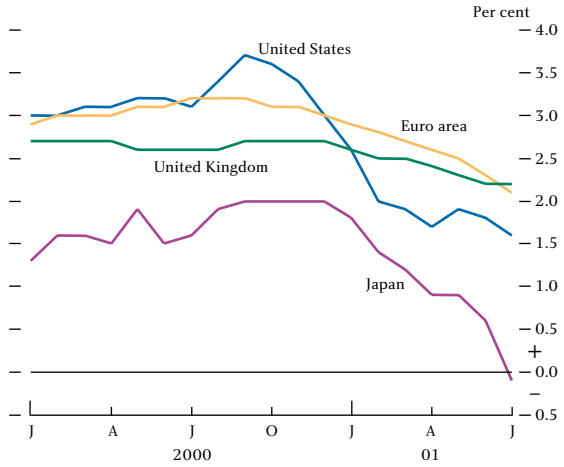
Markets and operations

- *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 May to 3 August 2001.*
- *Private sector forecasts for short-term growth prospects in the G7 countries were revised down further during the review period and world equity prices fell.*
- *Official interest rates were lowered by 75 basis points in the United States, by 50 basis points in the United Kingdom and by 25 basis points in the euro area. There was no change in the stance of Japanese monetary policy.*
- *Short-term interest rate expectations fell sharply in the United States and the euro area. In contrast, they rose and then fell back again in the United Kingdom and were broadly unchanged in Japan. Uncertainty about the outlook for short-term interest rates generally remained at higher-than-average levels.*
- *Long-dated government bond yields were quite volatile in all the major markets. Over the period as a whole, yields fell in the United States and the euro area but were broadly unchanged in the United Kingdom and Japan.*
- *Exchange rate movements were relatively small over the period as a whole; the dollar appreciated despite greater falls in US interest rates than elsewhere.*

Changes in the macroeconomic environment

Financial markets were particularly sensitive to economic data releases during the review period as market participants looked for evidence about the likely severity of the slowdowns in the United States and Europe and for indications about whether Japan had entered a recession. Overall, activity data for the G7 economies released during the period were mixed, with a slightly greater proportion of data announcements coming in weaker than expected. Broadly speaking, industrial production and manufacturing output data tended to be weaker than market participants had been anticipating, while retail sales and consumer confidence indicators were slightly stronger than had been expected. Reflecting these developments, most private sector forecasts for 2001 and 2002 GDP growth in the major industrialised countries were revised down between May and July. The largest such revisions were for Japan (see Chart 1). By contrast, most private sector forecasts for UK GDP growth in 2001 and 2002 were broadly unchanged during the period.

Chart 1
Forecasts for GDP growth in 2001(a)



Source: Consensus Economics.

(a) Means of survey samples.

Between May and July, consumer price inflation forecasts for 2001 were revised up for the United States, the United Kingdom and the euro area. In each case, the revisions reflected higher-than-expected inflation outturns during the period. By contrast, there was a continued expectation of deflation in Japan (see Table A).

Table A
Forecasts for consumer price inflation

Per cent; percentage points in italics

	2001 forecasts			2002 forecasts		
	May	July	*Change* (a)	May	July	*Change* (a)
United States	3.1	3.2	*0.1*	2.5	2.4	*-0.1*
Euro area	2.3	2.7	*0.4*	1.8	1.9	*0.1*
United Kingdom	1.9	2.1	*0.2*	2.3	2.4	*0.1*
Japan	-0.3	-0.4	*-0.1*	-0.3	-0.4	*-0.1*

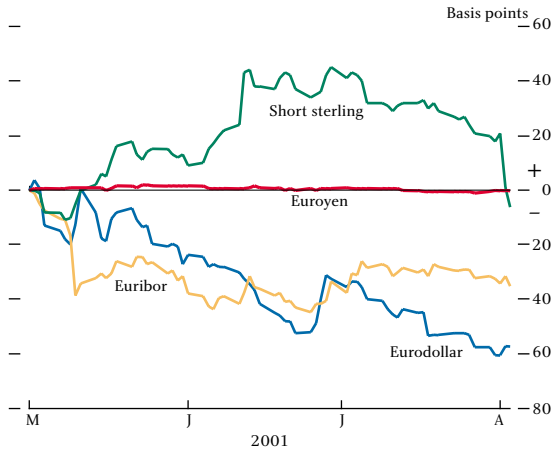
Source: Consensus Economics.

(a) Changes between May and July 2001.

Short-term interest rates

In the United States, the Federal Open Market Committee (FOMC) reduced its Federal funds target rate by 75 basis points during the period; reductions of 50 and 25 basis points were announced on 15 May and 27 June respectively, lowering the official rate to 3.75%. In the United Kingdom, the Monetary Policy Committee (MPC) reduced the Bank of England's repo rate by 25 basis points on 10 May and by an additional 25 basis points on 2 August,(1) taking it to 5%. The European Central Bank (ECB) reduced its policy rate by 25 basis points on 10 May, lowering the official refinancing rate to 4.5%. There were no changes in the stance of Japanese monetary policy between May and the beginning of August.

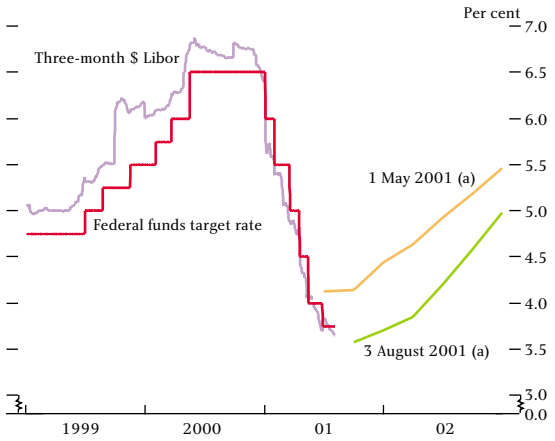
Chart 2
Cumulative changes in short-term interest rate expectations since 1 May(a)



Source: Bloomberg.

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

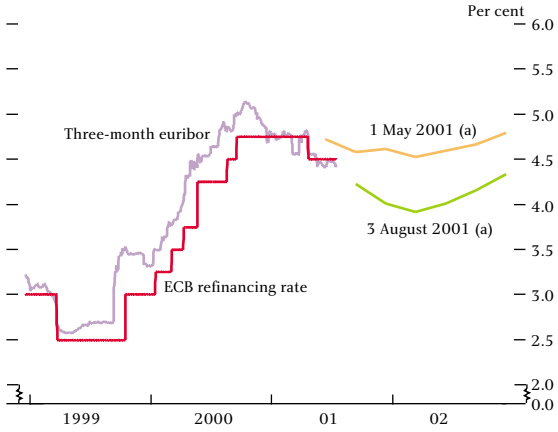
Chart 3
US interest rates



Source: Bloomberg.

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

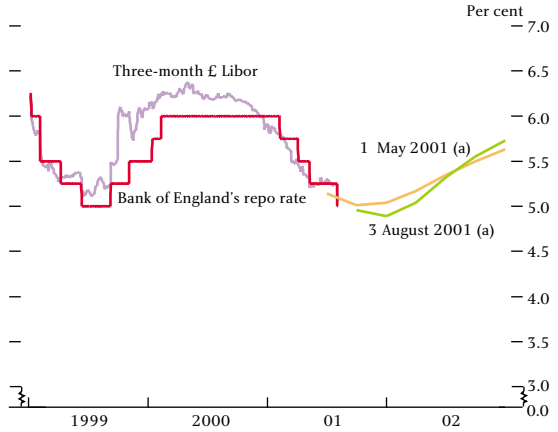
Chart 4
Euro-area interest rates



Source: Bloomberg.

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

Chart 5
UK interest rates



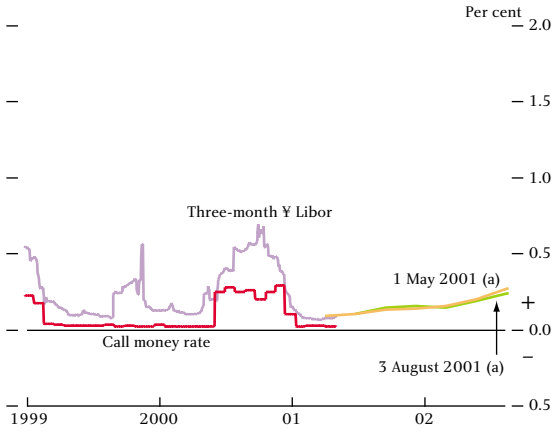
Source: Bloomberg.

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

(1) For further details, see *Monetary Policy Committee Minutes and Press Notices*, August 2001.

Movements in short-term interest rate expectations in the dollar, euro, sterling and yen markets were not well synchronised during the review period (see Chart 2), and correlations between the daily changes in short sterling, eurodollar and euribor futures contracts were relatively low by recent historical norms. Domestic considerations were, therefore, the dominant influences on rate expectations in each case. Between 1 May and 3 August, rates implied by eurodollar, euribor and short sterling futures contracts expiring in 2001 fell by about 55 to 75, 35 to 60 and 5 to 15 basis points respectively (see Charts 3, 4 and 5). In contrast, Japanese short-term interest rate expectations ended the period little changed (see Chart 6).

Chart 6
Japanese interest rates



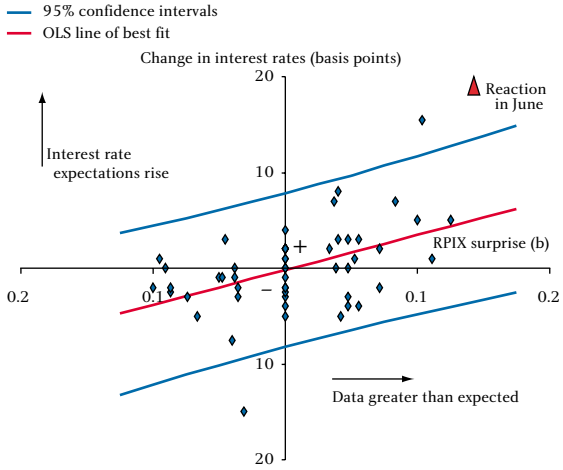
Source: Bloomberg.

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

United Kingdom

Short-term interest rate expectations in the United Kingdom rose during the first half of the period and then fell back in the second half (see Chart 2). As noted above, these movements were largely influenced by domestic news. In particular, the largest daily changes in short sterling futures contracts occurred in response to the RPIX data release on 12 June and the MPC's decision to cut the Bank's repo rate by 25 basis points on 2 August. Interest rates implied by the September 2001 contract rose by 19 basis points on 12 June and fell by 20 basis points on 2 August; these were the biggest such daily changes since March 2000.

Chart 7
Effect of RPIX surprises on interest rate expectations(a)



(a) From January 1997 to May 2001.
(b) The surprise is measured as actual yearly percentage change in RPIX minus the expected value of the RPIX release, divided by the expected value.

The market reaction to the RPIX data in June was large by historical norms. Evidence of this can be seen by comparing the June response (shown as the red triangle in Chart 7) with previous market reactions to RPIX data 'surprises' over the period January 1997 to May 2001 (shown as the blue diamonds). The estimated average reactions to data surprises are indicated by the line of best fit through the origin; this was estimated by regressing daily changes in the front short sterling contracts(1) on the days of RPIX releases against a measure of the surprises in the RPIX data releases, and a constant term.(2) A 95% confidence interval around the expected reaction is also shown. As can be seen, the change in short-term interest rate expectations following the RPIX data release in June was greater than the upper limit of the 95% confidence interval and was thus unusually large.

This sharp change in short-term rate expectations occurred despite the fact that the RPIX inflation data released on 12 June were influenced by a number of temporary factors; the most important of these was a high rate of seasonal food price inflation. Part of the reason for the unusually large interest rate reaction to the data may have been the fact that the inflation figure followed a 3% fall in the sterling effective exchange rate index in early June (for further details see the foreign exchange section on page 274). Together, these two

(1) The most liquid short sterling futures contracts expire in mid-March, mid-June, mid-September and mid-December. The front contract is selected from these four and is the one with the nearest expiry date, except for the months where contracts expire; on the first day of these months, the contract with the next-but-one expiry date is used.
(2) The data surprise term used in the analysis is defined as the RPIX inflation outturn minus the median Bloomberg News survey expectation; this difference is then expressed as a fraction of the median survey expectation. The method used here is similar to that described in 'News and the sterling markets', by Brooke, M, Danton, G and Moessner, R, *Bank of England Quarterly Bulletin*, November 1999.

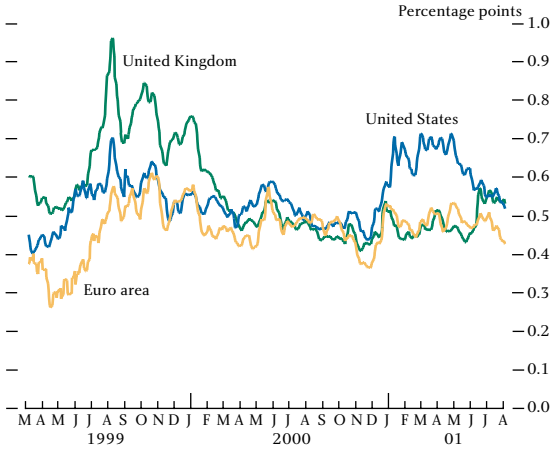
developments may have added to any concerns that market participants had about a near-term increase in inflationary pressures. Factors relating to trading dynamics, such as hedging using the most liquid short-maturity interest rate futures contracts and the use of automated stop loss trading strategies, were said by market participants also to have contributed to the large daily rise in interest rates. The fact that rates implied by short sterling contracts fell back by around 5 basis points over the two days following the RPIX release was cited by some market participants as evidence that the movement on 12 June had been exaggerated.

In the first half of the period, stronger-than-expected US retail sales and US consumer confidence data, stronger-than-expected UK retail sales and average earnings data, and robust UK house price and CIPS services data also contributed to the rise in short-term sterling interest rate expectations. For short sterling contracts expiring in 2001, these movements were then more than reversed in the second half of the period. The fall in rate expectations reflected the MPC's decision to reduce the Bank's repo rate on 2 August, as well as weaker-than-expected UK industrial production and retail sales data, and falling equity prices. For contracts expiring in late 2002, the decline in rate expectations in the second half of the period only partly reversed the rise in the first half of the period. On 3 August, the rate implied by the short sterling contract expiring in December 2002 was 10 basis points higher than its position on 1 May.

The May, June, and July MPC decisions did not surprise market participants and had very little impact in the sterling money markets. On these announcement days, rates implied by the September 2001 short sterling futures contract changed by only 2 to 5 basis points. Ahead of each of these MPC decisions, economists polled by Reuters assigned a mean probability of 70% or more to the outcome that the MPC actually implemented. In contrast, the MPC's 2 August decision to reduce the official rate to 5% was not anticipated by most market participants. Private sector economists polled by Reuters on 24 and 25 July had attached a mean probability of 81% to no change in the Bank's repo rate. Traders in the sterling money markets appear to have adopted a similar view. Consequently, short sterling futures contracts expiring in September and December 2001 fell by 20 and 24 basis points respectively following the MPC's announcement.

In early August market participants attached more uncertainty to the central interest rate expectations implied by the short sterling futures curve. This was reflected in a rise in the standard deviations derived from options on short sterling futures contracts. The implied standard deviations at the six-month horizon increased markedly on 12 June when the May RPIX data were released, temporarily rising above the levels seen in the United States, but then fell back slightly in the second half of the period (see Chart 8). Over the period as a whole, the skewness of interest rate expectations became positive at the six-month horizon, suggesting that market participants attached a smaller downside risk to the interest rate path implied by short sterling futures contracts. By contrast, the skewness of interest rate expectations became more negative at the three-month horizon, suggesting that market participants attached greater downside risks to future interest rate expectations for early November.

Chart 8
Interest rate uncertainty(a)



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

United States

Over the period, short-term interest rates implied by eurodollar futures contracts fell sharply; data releases, monetary policy decisions and policy statements were all important influences.

The decline in rate expectations partly reflected market participants' perceptions that the economic outlook had deteriorated. The mean US growth forecast for 2001 reported by Consensus Economics was revised down by 0.3 percentage points between 14 May and 9 July (see Chart 1). Short-term interest rate expectations fell following weaker-than-expected non-farm payrolls and industrial production data, and weaker-than-expected manufacturing survey evidence from the National

Association of Purchasing Managers. In July, weak equities and concerns about the growth prospects of some of the emerging market economies also contributed to the decline in short-term interest rate expectations. These developments were partly offset, however, by stronger-than-expected retail sales data, University of Michigan confidence data, and some of the weekly initial jobless claims figures.

FOMC decisions during the period also had a significant impact on market expectations. Rates implied by the eurodollar futures contract expiring in September 2001 fell by 10 basis points following the FOMC's decision to reduce its target rate by 50 basis points in May, suggesting that the change had not been fully anticipated by market participants. Following the FOMC's June decision to reduce the Federal funds rate by a further 25 basis points, interest rates implied by eurodollar futures contracts expiring in 2001 and 2002 *rose* by 8 to 15 basis points. The reason for this was that, prior to the announcement, market participants had been approximately evenly divided between expectations of a 25 or 50 basis point reduction. Short-term rate expectations continued to rise quite sharply on the day after the FOMC decision. Later in the period, eurodollar rates fell following Chairman Greenspan's testimony to Congress on 18 July. Market participants were said to have reacted particularly to the comment that the FOMC would lower rates further if the economy continued to falter.

In contrast to the United Kingdom, interest rate uncertainty at the six-month horizon fell during the period in the United States, but it remained higher than during most of 2000 (see Chart 8). The skewness of rate expectations rose in July to become positive, suggesting that market participants thought that the net downside risks attached to the rate expectations implied by eurodollar futures contracts had diminished. On 3 August, a majority of market participants expected the FOMC to reduce the Federal funds target rate by 25 basis points by the end of the year, but then to begin raising the policy rate in Spring 2002.

Euro area

As in the United States, short-term interest rate expectations in the euro area fell sharply over the period. Both economic data and policy statements were influential, but policy decisions generally had a larger effect. The single biggest daily change in rate expectations occurred on 10 May, when the ECB reduced its refinancing rate by 25 basis points. This decision had not been anticipated by market participants and the rate implied by the September 2001 euribor futures contract fell by 22 basis points on the day. Because the decision on 10 May had been unexpected, market participants were particularly sensitive to official policy statements during the rest of the period. In particular, near-term rate expectations rose by 7 to 9 basis points following a statement by ECB President Duisenberg on 3 July indicating that there was little chance of a rate cut by the ECB at their meeting on 5 July.

The fall in short-term rate expectations over the period as a whole also reflected the weakening economic outlook, with most private sector forecasts for euro-area growth in 2001 being revised down (see Chart 1). Interest rate expectations fell following weaker-than-expected German industrial production data and weak purchasing managers' indices for Germany, France and Italy. This decrease was partly offset, however, by reactions to stronger-than-expected data for euro-area M3, German retail sales, and consumer prices in France and Germany.

On 3 August, most market participants expected the ECB to lower its official rate by 25 basis points by the end of the year. Over the review period as a whole, the uncertainty surrounding these interest rate expectations decreased at the six-month horizon and the skewness attached to them became less negative.

Japan

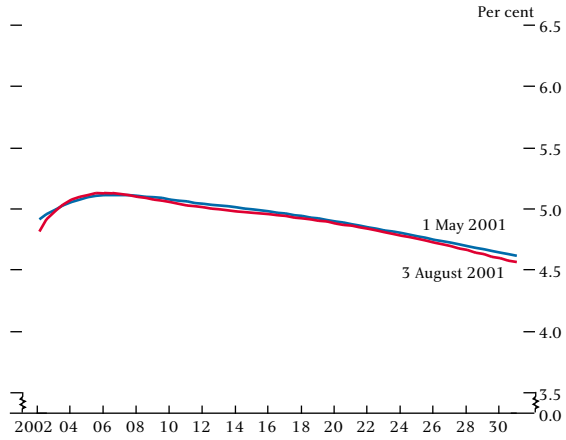
Forecasts for Japanese growth in 2001 and 2002 were revised down sharply during the period. This may have contributed to a fall in interest rate expectations for euroyen contracts expiring in 2003 and 2004, which fell by around 5 to 25 basis points. Continued forecasts for consumer price deflation in 2001 and 2002, together with a further large fall in equity prices, may also have contributed to the decline in rate expectations implied by longer-maturity euroyen contracts.

Long-term interest rates

As highlighted above, short-term yields fell or were broadly unchanged in the United Kingdom and Japan but fell sharply in the euro area and the United States. UK and Japanese long-dated government bond yields ended the period broadly unchanged but moved within a fairly wide range within the period. Euro-area and US long government bond yields fell by around 10 to 15

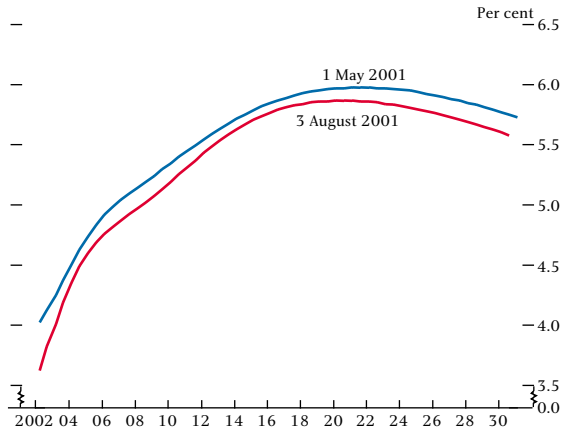
basis points (see Charts 9, 10 and 11). Although the net changes in yield curves were relatively small, the day-to-day volatility of government bond markets was generally higher than in Q1.

Chart 9
UK gilt yield curves(a)



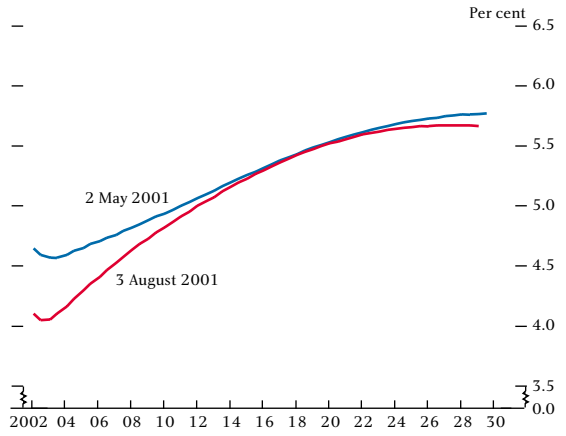
(a) Derived using the Bank's VRP curve-fitting technique. For further details, see Anderson, N and Sleath, J, *Bank of England Quarterly Bulletin*, November 1999.

Chart 10
US Treasury yield curves(a)



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

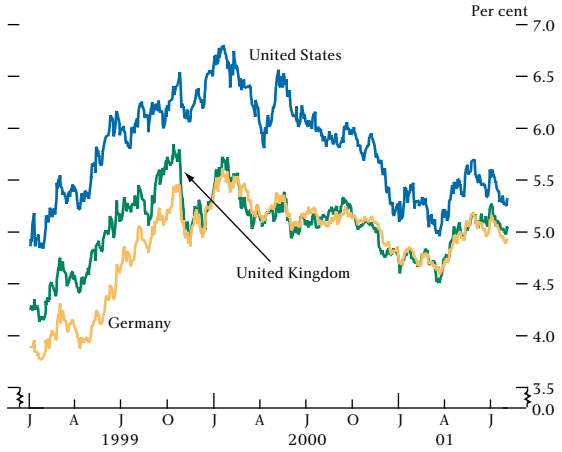
Chart 11
German Bund yield curves(a)



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

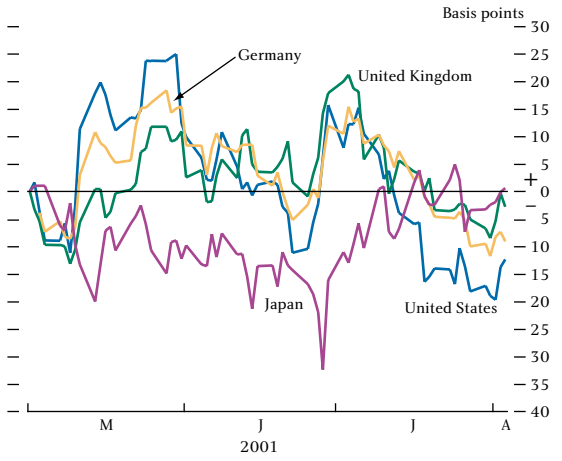
Movements in long-dated UK gilt, US Treasury and German Bund yields lacked a clear direction during the period (see Charts 12 and 13). Nevertheless, correlations between the daily changes in ten-year government bond yields were relatively high by recent historical standards, suggesting that a number of common factors influenced all three bond markets.

Chart 12
Ten-year government bond yields(a)



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

Chart 13
Cumulative changes in ten-year government bond yields since 1 May

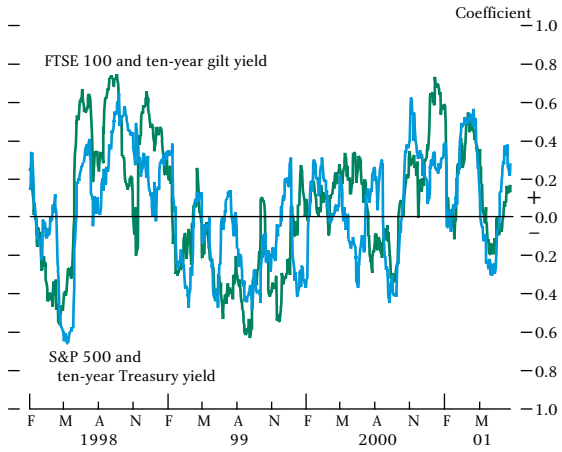


The main common influence on the US and European government bond markets was changing perceptions about the severity of the global economic slowdown. Such short-term cyclical considerations appear to have had an unusually large effect on long bond yields during the period. Stronger-than-expected activity data led to increases in long bond yields in the second half of May and in late June, while weaker-than-expected activity indicators helped long bond yields to decline through most of June and July (see Chart 13). In the United Kingdom, the correlation between movements in

ten-year gilt yields and the rates implied by the December 2001 short sterling futures contracts was unusually high. In the United States, however, the comparable association between the ten-year Treasury bond and the December 2001 eurodollar futures contract was less pronounced.

There were two other common influences on the movements in government bond yields. First, concerns about the financial stability of Argentina, Turkey and a few other emerging market economies may have caused some investors to shift their funds away from these markets and into the major government bond markets. Market commentators noted that while such portfolio shifts had generally been small, they had, on occasion, contributed to increased demand for gilts, Treasuries and Bunds. Second, falls in equity prices may have contributed to portfolio shifts out of equities and into bonds. Over the period as a whole, however, the correlations between changes in government bonds and equity prices were close to zero. This suggests that such portfolio shifts were less marked than in 2000 Q4 and the first quarter of this year. However, as can be seen from Chart 14, the correlation between the percentage daily changes in bond yields and stock prices did pick up in July.

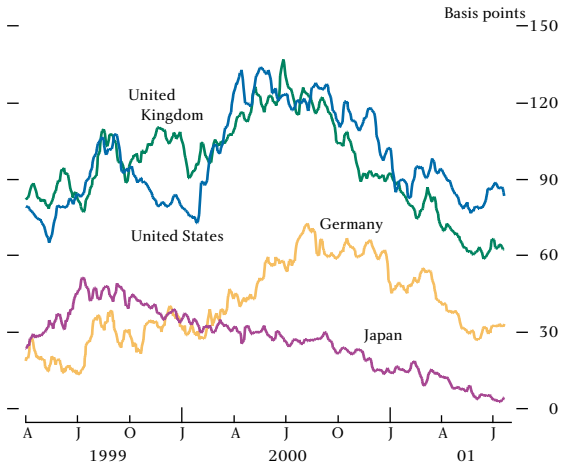
Chart 14
Correlations between equities and bonds(a)



(a) Thirty-day moving averages of the correlation coefficients between the daily percentage changes in the relevant equity index and the relevant government bond yield.

Supply considerations appear to have had only a small impact on long government bond yields over the period. Consensus Economics forecasts for the UK Public Sector Net Cash Requirement in fiscal years 2001–02 and 2002–03 remained broadly unchanged between May and July, suggesting that most market participants did not revise their expectations about future gilt issuance. Chart 15 shows that spreads between ten-year swap rates and gilt yields were broadly unchanged. This tends to support the conclusion that changes in expectations about the future supply of gilts had little effect on gilt yields in May, June and July. Similarly, the amount of sterling-denominated non-government bonds issued during the period was broadly unchanged from Q1 and is therefore unlikely to have affected long bond yields.

Chart 15
Ten-year swap spreads(a)



Source: Bloomberg.

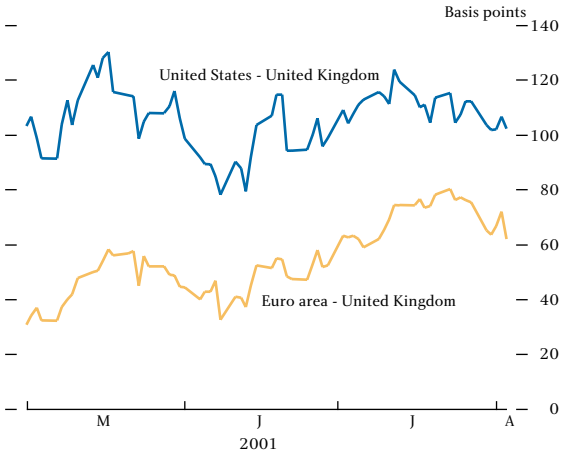
(a) Five-day moving averages of yield differences between ten-year swap rates and ten-year government bond yields.

Speculation that the United Kingdom might apply for full membership of the European Monetary Union (EMU) earlier than market participants had previously thought also contributed to the movements in gilt yields during the period. Discussion of this issue by market participants picked up prior to the general election on 7 June. Around this time yield spreads between long-dated sterling and euro-area bonds narrowed as a number of market participants were said to have entered into speculative trades that anticipated a future convergence in UK bond yields on euro-area yield levels. Reflecting these developments, forward short-term interest rates (derived from the gilt yield curve) three, ten and fifteen years ahead rose towards comparable Bund forward rates at the end of May and in early June. Chart 16 shows that the spreads between UK and euro-area ten-year-ahead forward rates narrowed at around this time. However, these effects were short-lived and towards the end of the period the spreads were back to their pre-election levels.

US Treasury yields fell at all maturities over the period as a whole mainly due to the signs of weakening

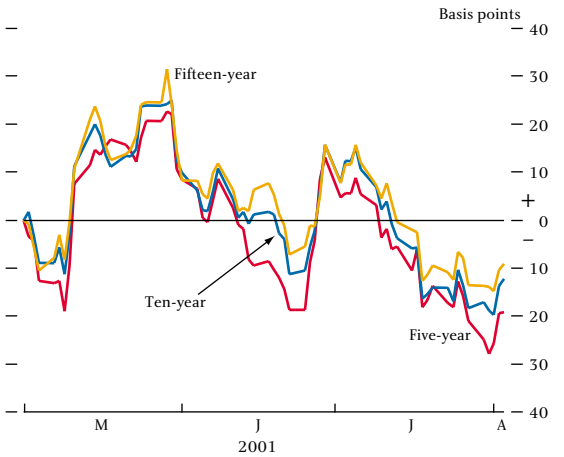
economic activity. As with the gilt market, however, US government bond yields did not decline consistently through the period. In particular, bond yields rose in the second half of May (see Chart 17). Much of this increase reflected market participants' reactions to the 50 basis point cut by the FOMC on 15 May. This rate reduction was larger than had been anticipated by market participants and sparked some fears that it might increase inflationary pressures in the short to medium term, especially given the stronger-than-expected activity data released at around the same time. Both nominal yields and break-even inflation rates derived from inflation-linked US Treasury securities (TIPs) rose after the FOMC policy move. Towards the end of the period, however, a string of lower-than-expected price data reassured market participants that the FOMC's action was unlikely to increase inflationary pressures. As a result the ten-year break-even inflation rate derived from TIPs fell back by around 30 basis points over the month of June

Chart 16
Forward three-month spreads, ten years ahead(a)



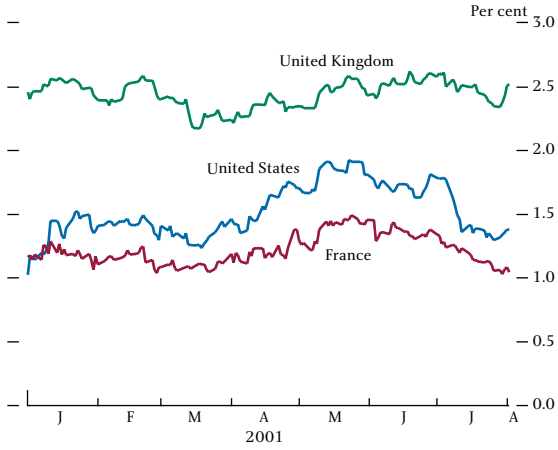
(a) Spread between three-month forward rates ten years ahead derived from swap curves.

Chart 17
Cumulative changes in Treasury yields since 1 May



(see Charts 17 and 18). Conventional Treasury yields also fell.

Chart 18
International ten-year break-even inflation rates



Supply considerations appear to have had relatively little impact on Treasury yield movements during the period. The Consensus Economics forecast for the US Federal budget balance declined, suggesting an expected increase in issuance that might have put upward pressure on Treasury yields. However, these forecast revisions for the budget surplus were relatively small and probably did not contribute very much to the changes in yields observed in May, June and July. Further evidence of this can be seen from the fact that spreads between swap rates and comparable-maturity Treasury yields were broadly unchanged over the period as a whole (see Chart 15).

In the euro area, government bond yields fell following concerns about slowing domestic growth. Bond market participants appeared concerned about the deterioration in euro-area industrial production, which was reflected in a string of weaker-than-expected activity data. Most of the decline in yields occurred at short and medium maturities. At the long end of the yield curve interest rates were largely unchanged, possibly reflecting little change in the expected issuance of government bonds in Germany, France and Italy for the next two years.

Japanese government bond yields were largely unchanged over the period as a whole but were quite volatile within the period. Yield movements reflected the weaker outlook for the domestic economy, speculation about the possibility of an increase in the Bank of Japan's outright purchases of Japanese government bonds (Rinban operations), and volatile Japanese equity prices.

Equity markets

On 3 August, the FTSE 100 index stood at 5547, 6.4% below its level at the beginning of May. All of the other major share price indices also declined (see Table B). Consequently, the S&P 500 and the FTSE 100 indices both ended the period around 20% below last year's peak levels, while the Topix and DAX indices were around 30% down on their 2000 peaks (see Chart 19). On 25 July the FTSE 100 fell to a 33-month low of 5275. Daily volatilities increased until the end of July but remained below the peaks seen earlier in the year.

Table B
International equity market performance

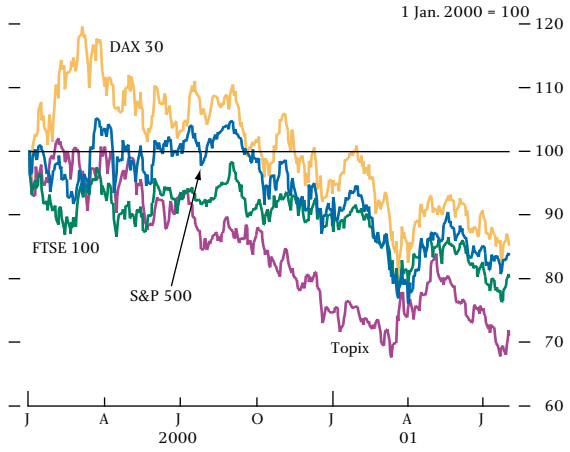
Percentage changes from previous period, in local currencies

	2000	2001	
	Year	Q1 (a)	Q2 (b)
United States			
S&P 500	-10.1	-12.1	-4.1
Wilshire 5000	-11.9	-12.6	-3.6
Europe			
CAC 40	-0.5	-12.6	-10.8
DAX 30	-7.5	-9.4	-8.4
FTSE All-Share	-8.0	-9.1	-6.1
FTSE 100	-10.2	-9.5	-6.4
Japan			
Topix	-25.5	-0.5	-13.6
IT indices			
Nasdaq Composite	-39.3	-25.5	-4.7
FTSE techMARK 100	-32.2	-24.8	-22.9
Neuer Markt	-40.1	-38.9	-34.8

Source: Bloomberg.

(a) 1 January to 30 March 2001.
(b) 1 May to 3 August 2001.

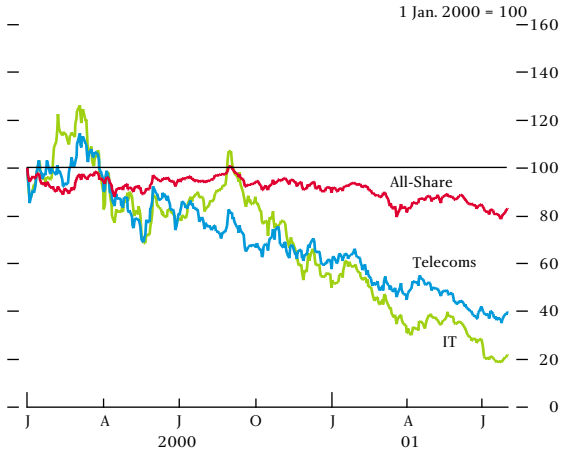
Chart 19
International equity indices(a)



(a) In local currencies.

During the period much of the fall in the FTSE All-Share index was once again attributable to the IT and telecommunications sectors (see Chart 20). Share price declines were frequently linked to weak profit announcements by firms in these sectors, with the impact of the negative announcements by Marconi and Nokia being particularly marked. These developments

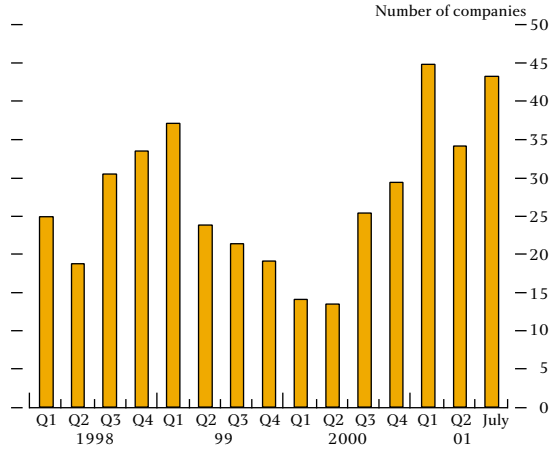
Chart 20
Components of the FTSE All-Share index



were mirrored in other European stock markets but the declines in the S&P 500 and Topix indices were related to falls in a broader range of sectors.

The overall number of profit warnings issued by UK firms fell back in the second quarter from the levels observed in Q1 but remained relatively high (see Chart 21). The decline from Q1 appears to have been due to reduced adverse effects both from foot-and-mouth disease and from poor weather conditions. More than a quarter of the 102 profit warnings issued by UK firms in Q2 were from IT companies. However, as can be seen from Chart 21, the number of profit warnings picked up again in July.

Chart 21
Profit warnings by UK companies(a)



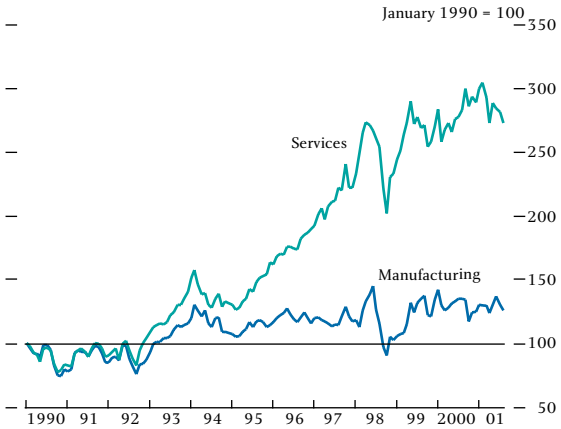
(a) Monthly average number of firms listed on the FTSE All-Share index to issue a profit warning or negative trading statement.

During the reporting period, correlations among the daily movements of the major international share price indices were broadly in line with recent historical norms. However, the correlation between the FTSE 100 and the S&P 500 indices was higher than in Q1, suggesting that

US developments may have had more influence on UK share prices in recent months. There was also a rise in the proportion of UK companies citing US developments as a contributory factor for their profit warnings. This increased association contrasts with the low correlation between movements in US and UK short-term interest rate expectations noted above.

The ongoing divergence between the activity levels of the manufacturing and service sectors of the UK economy(1) was evident in profitability indicators and in equity prices. In the first quarter, the manufacturing sector had a net rate of return on capital employed of 5.3%, below its average level since 1995 of 8.7%; whereas the service sector had a rate of return of 15% in Q1, close to its average since 1995. Reflecting these developments, share prices of firms from the general industrials and basic industries sectors of the UK stock market have risen much less rapidly since 1995 than the share prices of firms in the cyclical services and financial sectors (see Chart 22).

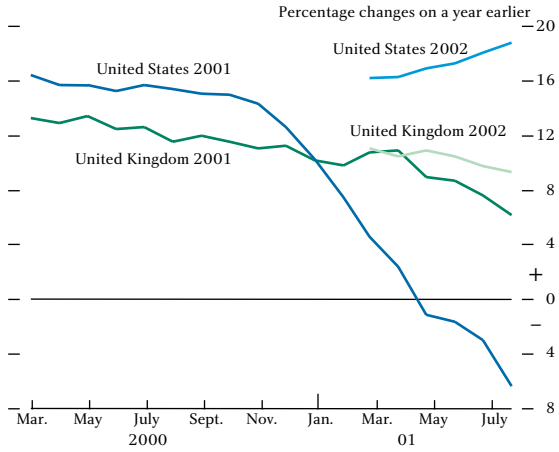
Chart 22
Manufacturing and service sector components



The continued relatively high numbers of profit warnings in both the United States and the United Kingdom have led earnings projections to be revised down since April (see Chart 23). In the United States, forecasts for the annual growth of earnings per share in 2001 became more negative, but forecasts for growth in 2002 have been revised up. In contrast, estimates for the growth of UK earnings per share in 2001 and 2002 were both revised down during the period and now stand at 6.1% and 9.3% respectively.

Uncertainty about the future path of the FTSE 100 index, derived from the implied volatility statistics

Chart 23
Earnings per share forecasts



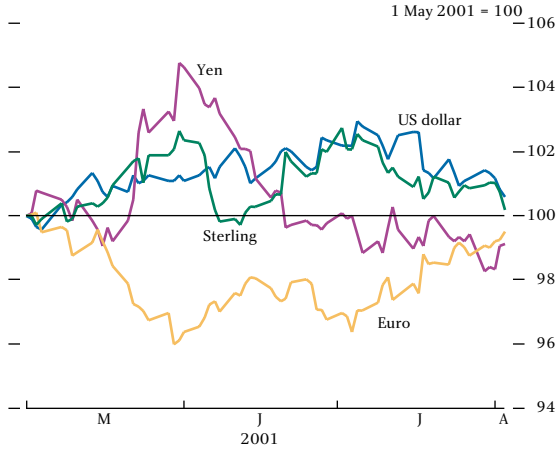
Source: Datastream-First Call-I/B/E/S.

associated with options on equity futures contracts, rose until the end of July, while the associated skew statistic was little changed. Consequently, the probability attached to a further 10% fall in the FTSE 100 increased during the period. The uncertainty relating to the S&P 500 index fell slightly while the skew was little changed.

Foreign exchange markets

Among the major currencies, exchange rate movements were relatively small over the period as a whole (see Chart 24) and historic volatilities were generally lower than during much of the first quarter of the year. Between 1 May and 3 August, the dollar trade-weighted exchange rate index (ERI) appreciated by 0.6% while the euro and yen ERIs depreciated by 0.5% and 0.9% respectively. The sterling ERI was broadly unchanged, rising by just 0.2%.

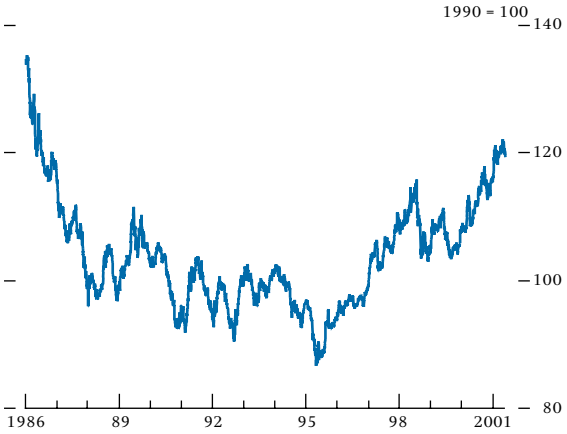
Chart 24
Effective exchange rate indices



(1) See the August 2001 *Inflation Report* for further details about the current sectoral divergences between the manufacturing and service sectors.

The appreciation of the US dollar was broadly based, although relatively small in magnitude when compared with its appreciation in the first three months of this year. Between 1 May and 3 August it rose by 0.6% against the euro, by 1.1% against the yen and by 0.2% against sterling. In effective trade-weighted terms the dollar reached a new fifteen-year high on 5 July (see Chart 25).

Chart 25
US dollar effective exchange rate index



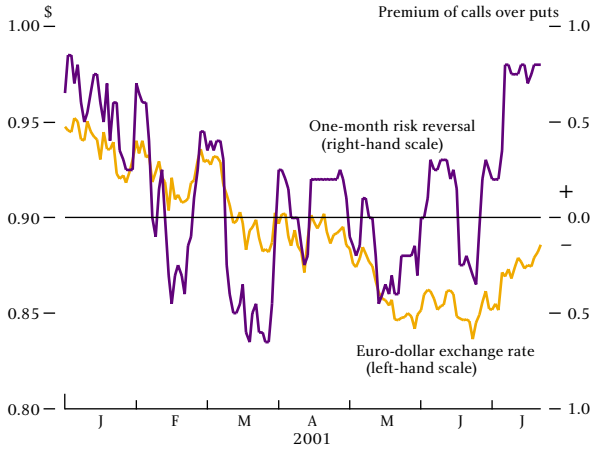
Foreign exchange market participants have continued to find it difficult to rationalise movements in dollar exchange rates. Changes in interest rate differentials during May, June and July did not provide a particularly useful guide. US interest rates out to ten years ahead generally fell by more than in the United Kingdom and Japan over the period which might have been expected to accompany a depreciation of the dollar against sterling and the yen. US interest rates fell by more than comparable euro-area rates at short maturities, but by less than euro-area rates at two to ten-year maturities.

Market participants generally rationalised the dollar's appreciation against the euro in terms of relative growth prospects. In particular, they highlighted the fact that most forecasts continued to indicate that US GDP growth is expected to outperform euro-area GDP growth in 2002. Less attention was paid to the fact that US growth in 2001 is forecast to be lower than euro-area growth. As noted above, 2001 growth forecasts for the United States were revised down by slightly less than for the euro area; this may help to explain the dollar's appreciation against the euro during the review period. Similarly, forecasts for Japanese growth in 2001 and 2002 were revised down more sharply than comparable forecasts for US growth, consistent with the dollar's appreciation against the yen. In contrast, forecasts for UK growth were revised down by less than forecasts for US growth; this might have been expected to support an appreciation of sterling against the dollar.

As noted previously, forecasts for the growth rate of earnings per share for US corporates in 2002 were generally revised upwards during the review period, although earnings per share forecasts for 2001 became more negative. For much of the period, measures of equity capital flows produced by investment banks indicated net flows into the United States, a continuation of the pattern observed in the first quarter; the main source of these flows was the euro area. Both of these factors may have contributed to the dollar's appreciation against the euro. Towards the end of the period, however, there was some evidence that this net flow into the United States may have reversed.

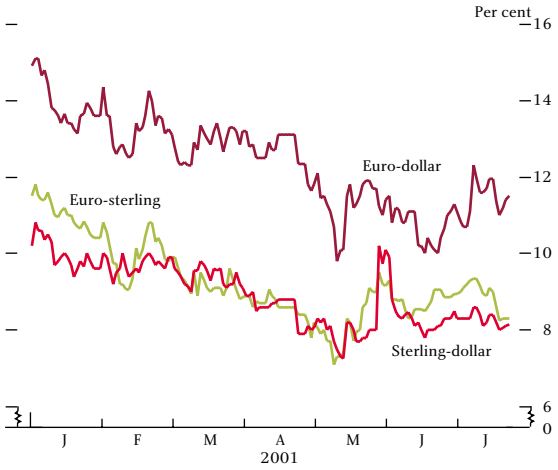
Looking ahead, option prices suggest that there was an increase in the perceived risk of a future depreciation of the dollar against the euro (see Chart 26). Skew statistics derived from eurodollar option contracts (one-month risk reversals) remained close to neutral for most of the period but became strongly positive in mid-July, suggesting that there was an increase in the price of insurance for an appreciation of the euro against the dollar. The short-term uncertainty about future movements in the euro-dollar exchange rate (one-month implied volatilities) remained much higher than for sterling against the euro and the dollar (see Chart 27), although it was broadly unchanged over the period.

Chart 26
Euro-dollar spot exchange rate and risk reversals



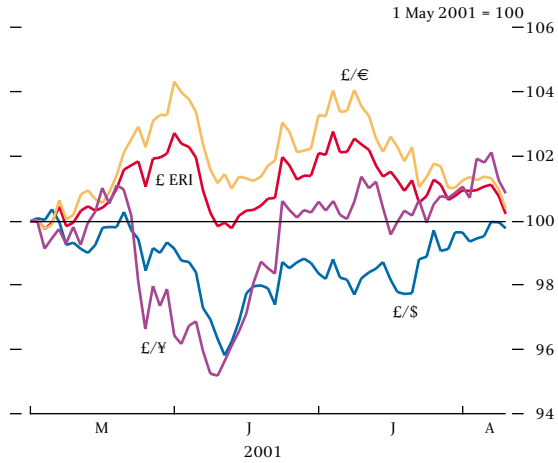
The sterling effective exchange rate index rose by 0.2% between 1 May and 3 August. Appreciations of 0.4% and 0.9% against the euro and yen respectively were partly offset by a 0.2% depreciation against the generally strong dollar (see Chart 28).

Chart 27
Exchange rate uncertainty(a)



(a) One-month implied volatilities derived from foreign exchange option contracts.

Chart 28
Sterling bilateral exchange rates



Sterling's appreciation against the euro was consistent with movements in interest rate markets as UK interest rates increased by more during the period than those in the euro area. However, the relationship between sterling's appreciation against the yen and movements in interest rates was less clear. Nevertheless, sterling's appreciation against both currencies was consistent with changes in relative growth prospects.

In the first four months of the year movements in sterling bilateral exchange rates generally reflected developments outside the United Kingdom, while for much of the May to July period domestic news was significant. Sterling's largest intra-day movements during the review period were caused by speculation that the United Kingdom might apply for full EMU membership earlier than the foreign exchange market had previously expected. Over the two days immediately prior to the UK general election on 7 June, sterling depreciated sharply amid market speculation that a re-elected Labour government with a large majority might call an early referendum on the question of adopting the euro as the national currency. Sterling depreciated in particular against the dollar and the euro, falling to a 15-year low against the dollar of $1.3685 on 8 June. This movement reflected the commonly held assumption in the market that, were the United Kingdom to join the euro area, it would do so at a conversion rate for sterling against the euro that was higher than the £0.59 to £0.62 range within which it had traded for most of the period.

However, the movements in sterling spot and forward exchange rates were not accompanied by changes of a similar magnitude in foreign exchange option prices. Twelve-month implied volatilities for sterling (as derived from sterling-euro and sterling-dollar option contracts) were broadly unchanged over the period as a whole, although they had risen and then fallen back around the time of the euro speculation noted above. If sterling had been expected to depreciate further, volatilities may have been expected to rise over the review period. In addition, the implied correlations between movements in sterling and the euro against the dollar (in other words, the extent to which sterling was expected to move with the euro against the dollar) fell slightly during the period.(1) Thus it is not easy to conclude from these changes in market prices that there was a general shift in the probability attached to an earlier euro-entry date for the United Kingdom. Nonetheless, while sterling subsequently regained most of the depreciation it incurred against the G3 currencies around the time of the general election, the foreign exchange market has remained sensitive to further speculation about the likelihood of full EMU membership for the United Kingdom.

Between May and July, Consensus Economics' forecasts to the end of 2003 were revised down for the value of sterling against the dollar but were revised up for the value of sterling against the euro. Nonetheless, these forecasts continued to indicate an expectation that sterling would appreciate slightly against the dollar and depreciate against the euro over the period to the end of 2003. But any increase in uncertainty within the foreign exchange market about sterling's prospects was

(1) For a discussion of implied correlations, see the article 'Implied exchange rate correlations and market perceptions of European Monetary Union', by Butler, C and Cooper, N, in the November 1997 *Bank of England Quarterly Bulletin*.

Table C
Sterling money markets

Amounts outstanding: £ billions

		Interbank (a)	CDs (a)	Gilt repo (b)	Stock lending (b)	Eligible bills (a)	Commercial paper (a)	Other (c)	**Total**
1998		150	122	95	35	19	10	4	**435**
1999		146	142	99	49	14	14	7	**471**
2000	Q1	156	132	100	51	14	15	6	**474**
	Q2	159	135	124	54	12	16	7	**507**
	Q3	162	125	127	53	12	16	7	**502**
	Q4	151	130	128	62	11	18	9	**509**
2001	Q1	171	141	126	67	13	19	7	**544**
	Q2	177	131	128	67	12	22	6	**543**

(a) Reporting dates are quarter-ends.
(b) Reporting dates are end-February for Q1, end-May for Q2, end-August for Q3, end-November for Q4 and end-year.
(c) Including Treasury bills, sell/buy-backs and local authority bills.

not reflected in option prices; implied volatilities derived from one-month and twelve-month sterling-dollar and euro-sterling option contracts were broadly unchanged at the end of the period compared with the beginning (see Chart 27), having previously fallen in the first four months of the year. The skews associated with exchange rate options, as indicated by one-month and twelve-month risk reversals for sterling against the euro and the dollar, were broadly neutral at the end of the period. This suggests that the perceived risks to sterling were broadly symmetrical.

The sterling money market

The amount outstanding in the sterling money market, which had grown sharply in Q1, was broadly unchanged in Q2 (see Table C). Changes in the amounts outstanding of three of the main components of the market—interbank deposits, certificates of deposit (CD) and gilt repo—were broadly offsetting.

While 'traditional' money market instruments grew little, there was continued anecdotal evidence of growth in the sterling overnight interest rate average (SONIA) swap market. This is related partly to the fact that SONIA swaps make more efficient use of capital and credit lines than interbank or CD activity because, rather than principal exposure, counterparties are exposed only to the difference between the fixed and floating legs of the deal. Also, SONIA swaps are more flexible instruments, which can be tailored more precisely to the user's maturity and funding requirements.

The average daily turnover in short sterling futures and gilt repo contracts increased between Q1 and Q2 (see Table D). This might have been linked to the sharp changes in expectations for official interest rates this year and the associated change in the shape of the sterling money market curve. Turnover in the overnight interbank market (which is linked to activity in the SONIA swap market) continued at its recent higher levels (see Chart 29).(1)

Table D
Turnover of money market instruments

Average daily amount, £ billions

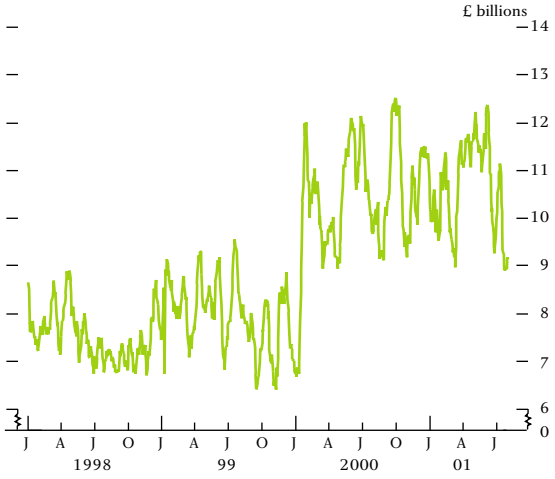
	1999	2000	2001 Q1	2001 Q2
Short sterling futures (a)	53	45	62	69
Gilt repo	13.6	17.8	15.7	17.9
Interbank (overnight)	8.0	10.4	10.3	11.1
CDs, bank bills and Treasury bills	n.a.	n.a.	11.8	12.4

n.a. = not available.

Sources: CrestCo, LIFFE, Wholesale Markets Brokers' Association and Bank of England.

(a) Sum of all 20 contracts extant, converted to equivalent nominal amount.

Chart 29
Daily turnover in the overnight interbank market(a)



Source: Wholesale Markets Brokers' Association.

(a) Ten-day moving average of the daily turnover.

Sterling bond issues

The nominal value of the outstanding stock of gilts increased by £4.2 billion in the second quarter, to £286 billion, after decreasing by £3.7 billion in Q1. The contributions of gilt auctions towards this rise are shown in Table E; the inflation uplift effect on the outstanding

(1) There are no comprehensive data on turnover in the term interbank market.

Table E
Sterling bond issuance in 2001 Q2

DMO gilt auctions (£ millions)

Conventional	Date	Amount issued	Stock		
	24.05.01	2,500	5% Treasury Stock 2012		
Index-linked	Date	Amount issued	Stock		
	25.04.01	400	2½% Index-linked Stock 2011		
Switch auction results	Date	Nominal switched	Source stock	Destination stock	Nominal created
	21.06.01	1,400	8½% 2007	5% 2012	1,694

Corporate issuance		Amount (£ billions)			
			By credit rating:		
	Number of issues	Total (a)	AAA	AA/A	BBB and lower
Fixed-rate issues					
UK corporates	39	7.1	2.0	3.2	1.8
UK financials	11	1.6	0.0	1.2	0.4
Supranationals	12	1.0	1.0	0.0	0.0
Overseas borrowers	17	3.3	1.0	1.8	0.5
Total (a)	**79**	**13.0**	**4.0**	**6.2**	**2.7**
FRNs					
UK corporates	9	0.9	0.3	0.3	0.2
UK financials	14	2.1	1.1	1.0	0.0
Supranationals	0	0.0	0.0	0.0	0.0
Overseas borrowers	15	1.7	0.4	1.2	0.1
Total (a)	**38**	**4.7**	**1.8**	**2.5**	**0.3**

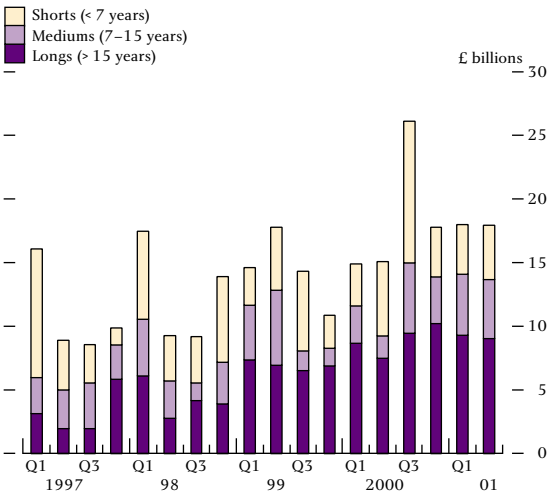
Sources: Bank of England, Debt Management Office, Moody's, and Standard and Poor's.

(a) Totals may not sum exactly due to rounding.

stock of index-linked gilts also added £1 billion. As noted in the long-term interest rate section above, these supply considerations, together with minimal changes to expectations about future gilt issuance, had little effect on gilt yields over the period as a whole.

Issuance of sterling-denominated non-government bonds remained strong in Q2, at £17.9 billion, almost unchanged from Q1 (see Chart 30). The proportions of new issuance between fixed and floating rate and between short, medium and long-dated maturities also remained broadly unchanged. However, the composition of issuers changed markedly in Q2, with issuance by UK corporates rising strongly to 45% (or £8 billion) of total sterling-denominated non-government bond issuance (see Table E), up from 18% in Q1 (£3.3 billion) and 5.1% in 2000 Q4 (£0.9 billion). Although £1.7 billion of the corporate issuance in Q2 was by a single firm—the utility company Welsh Water—the remainder was fairly evenly distributed among 27 other issuers. Furthermore, the proportion of bonds with a credit rating of BBB or lower rose from 9.5% in Q1 to around 17% in Q2, while the share of bonds issued with a AAA credit rating fell to a third.

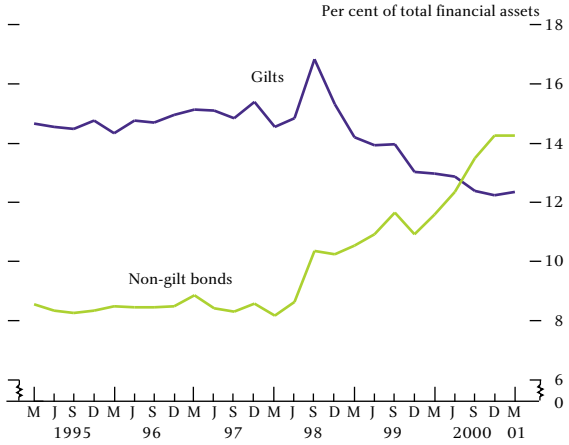
Chart 30
Total (fixed and floating) sterling-denominated non-government bond issuance



The strong increase in issuance by UK corporates in the first half of 2001 is likely to have been influenced by three main factors. First, on the supply side, the relative attractiveness of raising equity-based finance is likely to have diminished due to the recent sharp falls in share prices. Second, medium and long-term sterling bond yields are currently at low levels relative to the experience of the past 30 years, thereby improving the relative attractiveness of raising debt through bond issuance. And third, there has been continued strong demand from pension funds (the largest class of institutional investor in the sterling bond market) for non-government bonds. This demand from pension funds has, in turn, been stimulated by three considerations in particular: first, the gradual increase in the maturity of pension fund schemes (as increasing numbers of members are in retirement); second, the need to hedge guaranteed annuity pension schemes sold

in the late 1970s and early 1980s; and third, anticipation of the demise of the Minimum Funding Requirement and introduction of the FRS17 accounting standard, which have both stimulated a shift in pension funds' demand for fixed-income assets away from gilts and in favour of other bonds. Chart 31 illustrates that the proportion of pension fund and insurance company financial assets accounted for by non-gilt bonds (issued by UK corporates, UK financials and overseas institutions) has increased sharply since 1998, while the share of gilts they hold has declined.

Chart 31
Insurance corporation and pension fund financial asset allocations(a)

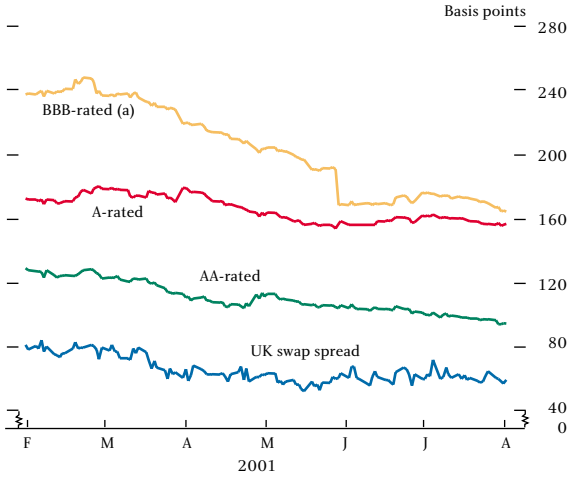


(a) Around 50% to 60% of the premiums received by the long-term funds of insurance corporations relate to pension business.

While bond issuance by UK corporates increased in the first half of this year, sterling-denominated bond issuance by supranationals and other overseas institutions has declined. Market participants have attributed this to a gradual decline in the number of opportunities for such companies to raise finance in the sterling market at lower cost (after swapping the proceeds back into dollars or euros) than in the dollar and euro markets.(1)

Despite the continued relatively high level of profit warnings issued by UK firms in Q2 and in July of this year, spreads between sterling-denominated non-government bond and gilt yields were generally little changed in May, June and July (see Chart 32). This, however, is likely to mask some increase in the costs of bond finance faced by UK firms in the telecommunications and IT sectors. This is because many of these firms have, in the past, preferred to issue

Chart 32
Seven to ten-year sterling bond spreads



Source: Merrill Lynch.

(a) Merrill Lynch's BBB sterling bond index includes seven issues; the step decline in the BBB spread in late May related to a single bond dropping out of the index when its maturity fell below seven years.

in the larger dollar and euro bond markets. Any widening in their bond spreads may not, therefore, appear in the sterling bond spreads shown in Chart 32. Marconi, for example, has outstanding bonds in both the dollar and euro markets but has not issued a sterling-denominated bond. In early July, the yields on its bonds increased by more than 200 basis points following its profit warning announcement.

Open market operations

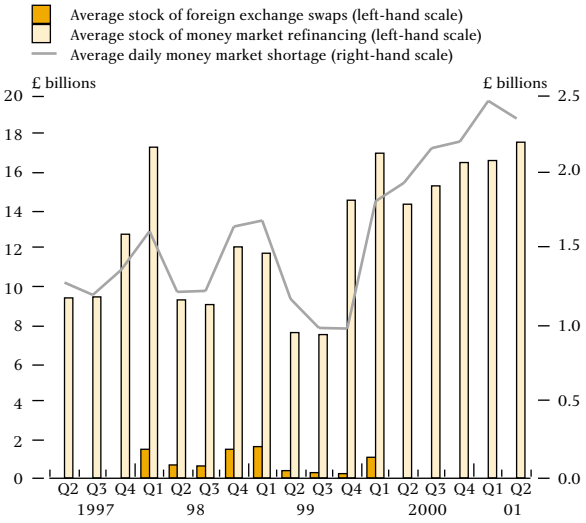
Between May and July, the stock of money market refinancing held on the Bank's balance sheet (which comprises the short-term assets acquired via the Bank's open market operations) averaged £17 billion (see Chart 33). This was unchanged on the previous three-month period; the stock of bank notes in circulation (the principal sterling liability on the Bank's balance sheet) was also unchanged at around £28 billion. Compared with the same period in 2000, however, both the stock of refinancing and the outstanding stock of bank notes in circulation were some £2 billion higher.

During the review period, daily money market shortages averaged £2.3 billion, compared with £2.4 billion from February to April 2001 (see Table F). This slight fall reflected a slower rate of turnover in the stock of refinancing.(2) Over the review period, the Bank's

(1) For further details about the costs of raising finance in different currencies, see the box 'International funding arbitrage', on pages 130–31 of the May 2000 *Bank of England Quarterly Bulletin*.
(2) Although most of the Bank's open market operations are conducted via two-week reverse repo transactions, the average rate of turnover of the stock is usually around seven to eight working days. This is because the Bank's counterparties can choose to obtain refinancing by selling eligible bills with less than a two-week residual maturity on an outright basis, or can obtain overnight repo refinancing at a penal interest rate if they choose.

counterparties refinanced 84% of the daily money market shortages at the 9.45 am and 2.30 pm rounds of operations (which largely have a two-week maturity) and 16% at the late rounds, on an overnight basis (see Chart 34). In the previous three-month period 20% of the refinancing had been undertaken on an overnight basis.

Chart 33
Stock of money market refinancing and daily shortages(a)



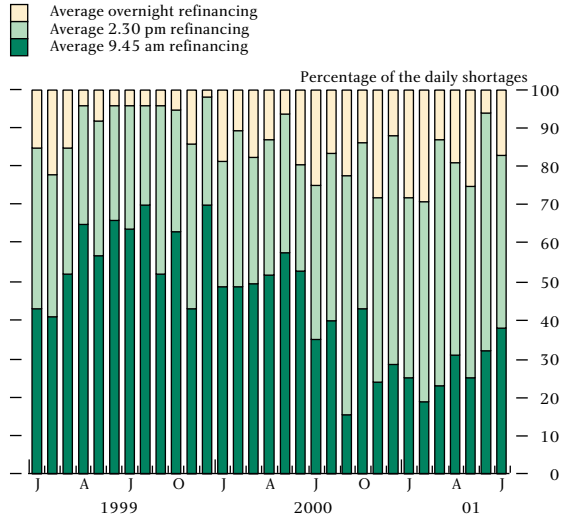
(a) Calendar quarters.

Table F
Average daily money market shortages

£ millions

1996	Year	900
1998	Year	1,400
2000	Year	2,000
2001	Q1	2,500
	April	2,300
	May	2,900
	June	1,800
	July	2,200

Chart 34
Refinancing provided in the Bank's open market operations

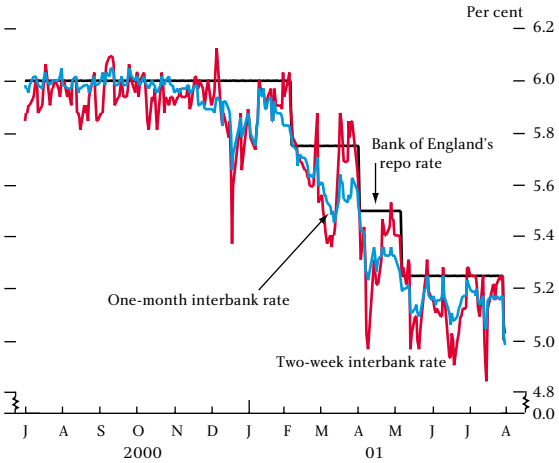


This reduction in counterparties' use of overnight refinancing (and consequent reduction in the average size of the shortage) can largely be explained by the fact that expectations that the MPC would cut interest rates were less strong: as noted on page 268, market expectations of any further reductions in the official rate at the June, July, and August meetings were minimal. When counterparties expect the MPC to reduce the repo rate they choose to take refinancing from the Bank largely on an overnight basis in the days immediately preceding the MPC meeting, even though this might entail a short-term rise in their borrowing costs. This leads to a number of larger daily shortages as refinancing is rolled over from day to day. When counterparties choose to obtain a smaller proportion of the refinancing on an overnight basis, the turnover of the stock of refinancing slows and, consequently, the average size of the shortages decreases.

There was a widespread expectation among market participants that the MPC would reduce the Bank's repo rate at its meeting on 10 May. On the two days prior to this decision the Bank's counterparties chose to take refinancing from the Bank largely on an overnight basis. This produced a record shortage of £8.0 billion on 11 May.

Chart 35 shows various short-dated money market interest rates and the Bank's repo rate. Since December 2000, interbank market rates at a two-week and one-month maturity have become more volatile. Partly in response to these developments, the Bank announced a technical adjustment to its open market operations, by introducing a deposit facility (see the box opposite).

Chart 35
Bank's repo rate and interbank rates



Open market operations deposit facility

With effect from 27 June 2001, the Bank supplemented its open market operations with a daily collateralised liquidity withdrawal facility (in effect, an overnight deposit facility).(1) This was introduced to moderate the extent to which overnight market interest rates trade below the Bank's two-week repo rate. The Bank already had in place an overnight lending facility, which helps to limit the extent to which overnight rates trade above the Bank's repo rate. The deposit facility thus puts the Bank's overnight operations at the end of each day on a more symmetrical basis and should reduce some of the volatility in overnight rates.

The new deposit facility is available to the Bank's counterparties at 3.30 pm every business day. To ensure that the new facility does not discourage active trading between market participants, the interest rate that the Bank pays on overnight deposits has initially been set at 100 basis points below the Bank's repo rate. For similar reasons the interest rate the Bank charges on its existing 3.30 pm lending facility is currently 100 basis points above the Bank's repo rate. In all other respects the Bank's daily open market operations remain unchanged. The new deposit facility therefore provides the market with an additional option, but counterparties are free to determine for themselves whether they use it.

Counterparties used the deposit facility on five days between 27 June and 3 August (on two of these occasions, only small deposits were made with the intention of testing systems). In order to leave the market square by close of business, on each occasion that the facility was used the Bank increased the amount of refinancing available at the 4.20 pm settlement bank late repo facility by the size of the deposit and, on each occasion, the settlement banks borrowed the full amount of refinancing available. On days when sizable deposits were made, the overnight unsecured rate had traded in the market at, or less than, 100 basis points below the Bank's repo rate. In effect, the deposit facility rate provided a 'floor' to the interbank overnight rate. By comparison, in the year before the introduction of the facility, the overnight rate had traded more than 100 basis points below the Bank's repo rate on 48 days.

The Bank will continue to monitor closely the use and effectiveness of the new facility, and will be ready to consider adapting its features in the light of experience and in response to feedback from market participants.

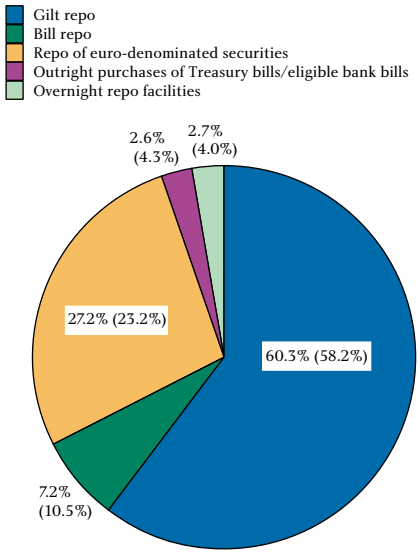
(1) The full technical details are contained in a supplement to the Bank's Operational Notice, which can be found on the Bank's web site at www.bankofengland.co.uk/markets/money/mmopnot.htm

After the introduction of the deposit facility, the Bank adjusted the amount by which it left the market short following the 9.45 am round of operations, even when the available refinancing had been fully bid for by counterparties. Since December 2000, this amount had been £1 billion. On 17 July, this was reduced to £800 million; and on 24 July, it was reduced further to £600 million.

There was one day of money market surplus during the review period (22 May). This was absorbed by a short-maturity gilt repo, executed by a competitive rate tender, at an average interest rate of 4.87%, a rate similar (as on the two previous surpluses in March and April 2001) to the prevailing market GC repo mid rate at the time the operations were conducted.

Gilts accounted for around 60% of the stock of collateral taken by the Bank in its open market operations during May, June and July (see Chart 36). Euro-denominated eligible securities(1) (issued by EU governments and

Chart 36
OMOs—instrument overview(a)



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

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

supranational bodies) accounted for 27% of the collateral, up from 23% in the three months to end-April.

HM Treasury and Bank of England euro issues

The Bank of England continued to hold regular monthly auctions during the period. Each month, €1 billion of bills were 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 period. Each monthly auction continued to be oversubscribed, with auctions being covered an average of 4.8 times the amount on offer. Bids were accepted at average yields of between Euribor minus 14.6 to 7.3 basis points for the relevant maturities.

On 17 July, the Bank reopened (for the second time) the Bank of England Euro Note maturing on 29 January 2004 with a further auction of €500 million, raising the total of this note outstanding with the public to €1.5 billion. The auction was covered 4.9 times the amount on offer and accepted bids were in a range of 4.470% to 4.495%. The final reopening auction of this Bank of England Euro Note is scheduled for 16 October 2001.

UK gold auctions

The programme of gold auctions held by the UK government continued in the period under review. Twenty tonnes of gold were sold at the auction on 15 May; a price of $268.00 per ounce was achieved and the auction was covered 3.7 times. A further twenty tonnes were sold at the auction on 11 July; a price of $267.25 per ounce was achieved and the auction was covered 4.1 times. The next auction in the programme will be held on 12 September 2001.