
Markets and operations

This article reviews developments in international and domestic financial markets in the second quarter of 1999, and describes Bank of England market operations.

- *In the United States, market interest rates rose and the dollar appreciated, in response to stronger-than-expected economic growth and signs of a build-up of price pressures. All other major financial markets were influenced by these developments.*
- *The upward shift in US market interest rates was underpinned by the Federal Open Market Committee's adoption of a bias to tighten monetary policy on 18 May, followed by a 25 basis point rise in the federal funds target rate on 30 June.*
- *The European Central Bank cut its refinancing rate by 50 basis points in early April, while the Bank of Japan maintained its policy of keeping the call money rate close to zero. Nevertheless, both the euro-area and Japanese yield curves shifted upwards over the quarter, influenced by higher US interest rates and signs of stronger domestic economic growth.*
- *In the United Kingdom, the Bank of England's repo rate was reduced by 25 basis points on two occasions in Q2, ending the quarter at 5.0%. But the interest rate profile implied by the futures and swap markets rose, and developed a hump at the two to five-year horizon.*
- *Globally, non-government bond issuance rose significantly in the first half of 1999, suggesting that the market strains and credit concerns which had surfaced last year had receded further in Q2.*
- *US, European and Japanese equity prices rose by 6% or more in Q2, while the FT-SE 100 index was little changed over the quarter.*
- *On 30 July, the Bank of England announced a major extension to the range of securities eligible for use in its repo operations.*

International markets⁽¹⁾

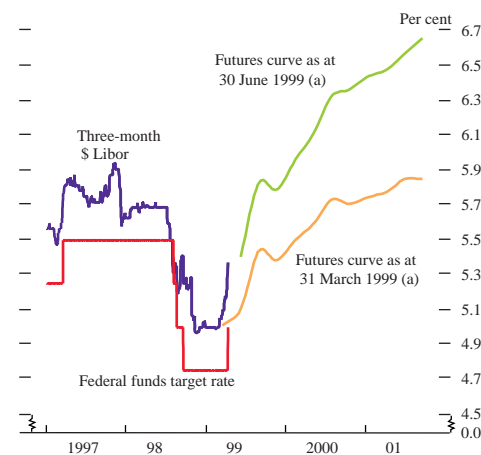
US developments

During the second quarter, US developments were an important influence on international financial markets. Short and long-term interest rates in the United States, which had fallen during the international turbulence of summer and autumn 1998, continued to rise. Eurodollar interest rate futures rose by 25–40 basis points for 1999 contracts, and by 65–70 basis points for 2001 contracts (see Chart 1). At the end of June, the futures market priced the federal funds rate to rise to an average of 5.4% in December 1999.⁽²⁾ In the Treasury market, the ten-year yield rose by around 40 basis points during the quarter to 6.0%, nearly 170 basis points above its October 1998 low point, and the yield on the long bond increased

(1) A more detailed discussion of international economic developments can be found in 'The international environment' article on pages 253–62.

(2) This expectation is derived from the December 1999 federal funds futures contract traded on the Chicago Board of Trade exchange.

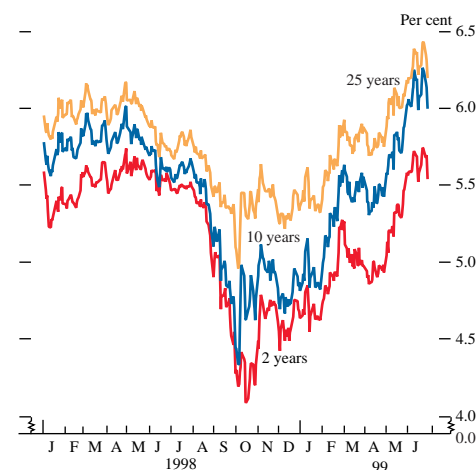
Chart 1
US official and market interest rates



Source: Bloomberg.

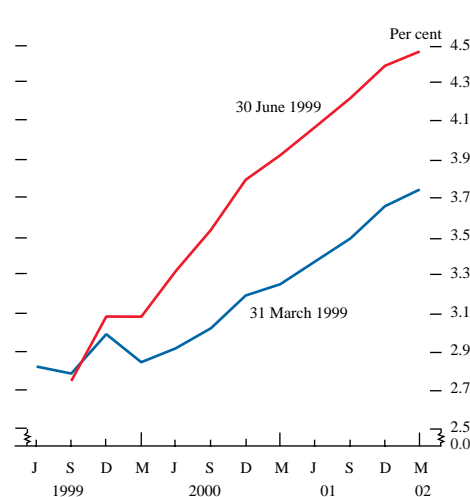
(a) Interest rates implied by the eurodollar futures contracts at the two dates specified. From July 1999, dates on the x-axis relate to contract expiry dates.

Chart 2
Nominal US Treasury bond yields^(a)



(a) Derived from Svensson par yield curve.

Chart 3
Euribor implied interest rates^(a)



Source: Bloomberg.

(a) Interest rates implied by the euribor futures contracts at the two specified dates. The x-axis relates to contract expiry dates.

by some 30 basis points (see Chart 2).⁽¹⁾ Swap market rates rose by slightly more than Treasury yields.

The upward move in the yield curve mainly reflected developments in the US economic conjuncture, and the market interpretation of their implications for future monetary policy. Interest rates eased early in the quarter, continuing the correction of the sharp increase in market rates that occurred in February and early March. Though March inflation data (released in the first half of April) remained benign, financial market participants became increasingly concerned that price pressures might intensify. Most forecasts of US economic growth were revised upwards, as a series of unexpectedly strong sentiment surveys and economic data emerged in April and the first half of May. Market concerns about price pressures were reinforced by the larger-than-expected increases in the first-quarter GDP deflator, the import price data for April, and the April consumer price index.

Following these developments, on 18 May the Federal Open Market Committee (FOMC) announced that it had ‘adopted a directive that is tilted toward the possibility of a firming in the stance of monetary policy’. This statement underpinned the substantial rise in bond yields that had already taken place, and led to a sharp upward shift in the shorter end of the yield curve. At its next meeting on 30 June, the FOMC announced a 25 basis point rise in the target federal funds rate to 5.0%. The accompanying press statement noted that ‘the FOMC has chosen to adopt a directive that includes no predilection about near-term policy action’. This came as a surprise to most market participants; Treasury yields generally fell by 10–15 basis points on the day.

In the equity market, the Standard and Poor’s 500 (S&P 500) index rose by more than 6% in Q2, outpacing the first quarter’s gain, but failing to keep pace with the rise in the Dow Jones Industrial Average index. After reaching an all-time high on 20 May, equity prices fell back, as expectations of a rise in the federal funds target rate grew. During June, the S&P 500 index began to rise again. It was helped in the middle of the month by the release of benign consumer price data and by the Federal Reserve Chairman’s 17 June Congressional testimony. The latter was interpreted by markets as indicating that monetary policy might not be tightened solely in response to higher equity prices.

Euro-area developments

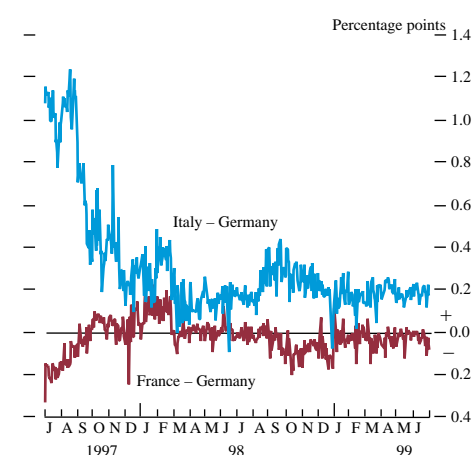
On 8 April, the European Central Bank (ECB) announced a 50 basis point reduction in its two-week repo rate to 2.5%. Although there had been a growing market expectation of a cut, the reduction was larger than had been expected. Immediately following the cut, both short and long-term euro interest rates eased, with no further changes to the repo rate being expected over the short term. However, as the quarter progressed, interest rates at all but very short maturities began to rise and the yield curve steepened. The implied rate for December 1999, derived from the futures market, rose by nearly 10 basis points in Q2 to 3.08%, while the implied rate for March 2002 rose by 72 basis points to 4.46% (see Chart 3). Two and ten-year Bund yields were about

(1) Unless stated otherwise, all note and bond yields in this section of the *Quarterly Bulletin* are Svensson par yields. A detailed explanation of the Svensson curve fitting technique is given in the August 1994 *Quarterly Bulletin*, page 232.

30 and 40 basis points higher than at the end of March, rising to 3.3% and 4.6% respectively by the end of the quarter.

The upward shift in the US yield curve was probably the most significant influence on euro-area interest rates in Q2. During the quarter, the 30-day rolling correlation between the daily change in the yield on the ten-year US Treasury bond and the same-dated Bund remained positive, and rose significantly. Tentative signs of stronger growth in Germany and the other large euro-area economies, which emerged towards the end of the quarter, also contributed to higher interest rates. In particular, March retail sales, first-quarter GDP, and April industrial production data for Germany were all stronger than expected.

Chart 4
Ten-year European government bond yield spreads^(a)



(a) Derived from Svensson par yield curve.

National fiscal developments had some impact on trading in the euro-area markets during the second quarter, as market concerns about the process of policy coordination between the euro-area member governments may have dampened investor sentiment. News that Italy's planned fiscal deficit to GDP ratio for 1999 would be higher than expected tended to put upward pressure on rates. Markets feared that the relaxation of the Italian budget deficit target might lead to a more widespread relaxation of the terms and conditions of the European Union stability and growth pact. This had little lasting impact on yield spreads, however (see Chart 4). Furthermore, there was little immediate market reaction to Germany's announcement of spending cuts for next year's federal budget.⁽¹⁾

According to market reports, some long positions in euro-denominated debt instruments that had been built up by foreign investors in the second half of 1998 were liquidated in 1999 Q2. In this way, investors reduced risk exposures and stopped accumulating losses as the euro depreciated. Such transactions could help to explain the coincidence of rising euro bond yields and the depreciation of the euro exchange rate.

Table A
International equity performance

Percentage price changes from earlier period, local currencies

Index	1998	1999	
	Year	Q1	Q2
United States			
S&P 500	26.7	4.6	6.8
Dow Jones 30	16.1	6.6	12.1
Euro area			
Dow Jones Euro Stoxx 50	32.0	6.5	6.4
Dax (Germany)	17.7	-2.4	10.1
CAC 40 (France)	31.5	6.5	8.1
Japan			
Nikkei 225	-9.3	14.4	10.7

Source: Bloomberg.

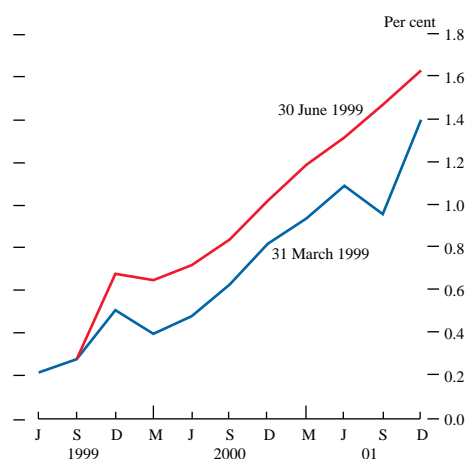
Euro-area equity prices rose at a similar rate to those in the United States during the second quarter; both the Dow Jones Euro Stoxx 50 index (which covers 50 blue-chip stocks across the whole euro area) and the S&P 500 rose by around 6% (see Table A). Specific European factors that helped equity prices to rise included: the lowering of the ECB's repo rate; increased merger and acquisition activity; hopes that the Kosovo peace deal would lift European business and consumer confidence; and the upward revision to euro-area growth forecasts. At the national level, price gains tended to be greatest in Germany and France; consolidation was more evident in other countries, following sharp price increases during 1998.

Japanese developments

Japanese short-term interest rates remained extremely low during the second quarter, as the Bank of Japan (BoJ) maintained its policy of keeping the uncollateralised call money rate as close to zero as possible. Over the quarter as a whole, the profile of future three-month euroyen interest rates implied by futures contracts expiring in 2000 and 2001 shifted upwards by around 25 basis points. At the end of June, the rates implied for December 1999,

(1) See 'The international environment' article on pages 253-62 for further details.

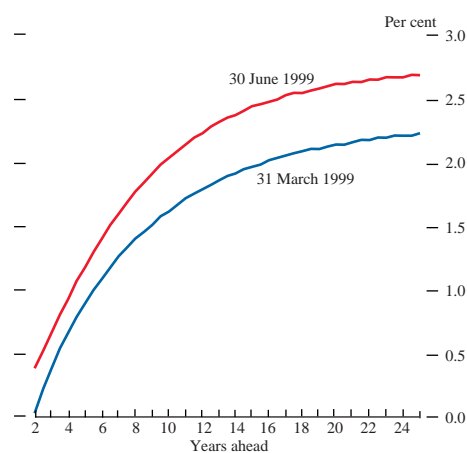
Chart 5
Euroyen implied interest rates^(a)



Source: Bloomberg.

(a) Interest rates implied by the euroyen futures contracts at the two specified dates. The x-axis relates to contract expiry dates.

Chart 6
Japanese government bond yield curve^(a)



(a) Derived from Svensson par yield curve.

Table B
Non-government international bond issuance by currency

\$ billions	US\$	Sterling	Euro	Other	Total
1996	261	51	153	108	573
1997	334	63	148	86	631
1998	342	78	209	65	693
1998 Q1	116	28	73	23	240
Q2	96	14	61	17	188
Q3	58	14	41	14	128
Q4	71	21	34	11	137
1999 Q1	131	24	122	20	297
Q2	118	28	138	18	303

Notes: Includes internationally targeted German mortgage bond (pfandbrief) issuance. Quarterly figures may not sum to annual totals because of rounding.

Source: CapitalData Bondware.

December 2000, and December 2001 were 0.68%, 1.02%, and 1.63% respectively (see Chart 5).

Longer-term interest rates fell during the first half of the quarter, reflecting growing market confidence that the BoJ would keep policy unchanged and that any additional fiscal stimulus package would be small (implying minimal changes to the Japanese government bond supply schedule). There were signs during the quarter of stronger demand for longer-dated Japanese government bonds (JGBs): the bid-to-cover ratio for the auction on 7 April of 20-year JGBs rose to 1.94, up from 1.62 at the previous auction. The yield fell sharply on the day of the auction and in the days that followed (by around 25 basis points). The JGB auction on 21 April was also well covered.

In the second half of the quarter, however, JGB yields started to rise. This reflected the increase in US Treasury yields and signs of improved growth prospects for the Japanese economy. In particular, JGB yields rose after the publication on 10 June of the estimated increase in Q1 GDP which, at 1.9%, was much larger than expected. In the light of these signs of stronger growth, market participants questioned how long the BoJ would maintain its policy stance. Over the quarter as a whole, two and ten-year JGB yields increased by around 10 and 40 basis points, to 0.39% and 2.04% respectively (see Chart 6).

Stock market prices strengthened sharply during Q2, with the Nikkei 225 index rising by more than 10%. Market participants reported increased foreign demand for equities, which may have reflected some improvement in the economic outlook, growing signs that the worst of the banking sector problems were over, the maintenance of very low interest rates, and improved progress on corporate restructuring.

International bond issuance

The credit concerns and other market strains which had emerged in the summer of 1998 receded further in Q2. Globally, non-government bond issuance rose to \$600 billion in the first half of this year.⁽¹⁾ This represents a significant increase, both from the depressed level of issuance in the second half of last year and relative to the first half of 1998 (see Table B). About 85% of this year's new issues were denominated in euros and dollars (in roughly equal amounts), 9% in sterling, and the remainder in other currencies. The euro has, therefore, already become a popular currency for issuers. The value of euro-denominated bond issuance in the first half of this year has virtually doubled from the amount issued in the legacy currencies in the first half of 1998.

Foreign exchange markets

Major overseas currencies

The US dollar's effective exchange rate index continued to rise during the second quarter, as the dollar appreciated against the other major currencies (see Chart 7). In the six months to the end of June, the dollar rose by more than 5% in effective terms (see Chart 8). This appreciation largely reflected the continued strong

(1) Non-government international bond issuance is defined as all international bond issuance, excluding that by central governments, local authorities, public finance and state/provincial authorities. The euro category includes issuance in the eleven legacy currencies and the Ecu prior to 1999.

Chart 7
US dollar exchange rates

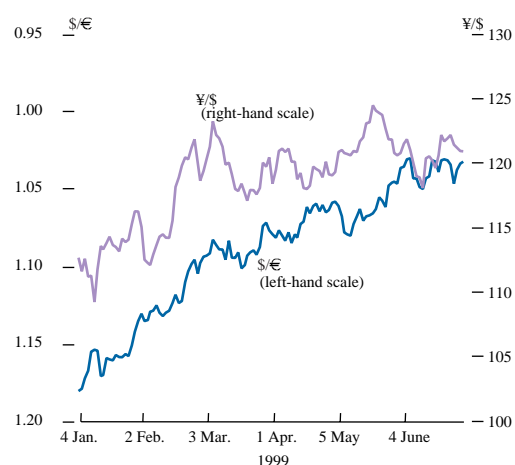
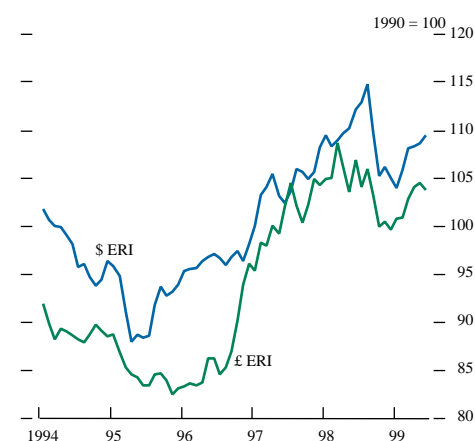


Chart 8
US dollar and sterling effective exchange rates



performance of the US economy, and the growing expectation that the FOMC would raise official interest rates. The dollar strengthened moderately after the release on 14 May of stronger-than-expected consumer price data for April, and continued to appreciate following the FOMC's adoption of a bias to tighten monetary policy on 18 May. But expectations of higher interest rates did not always lead to dollar strength during the quarter. At times, the market was concerned about the possible negative impact on US economic activity of a significant monetary policy tightening. It was perhaps for this reason that the dollar appreciated, following the announcement of the FOMC's adoption on 30 June of a directive including no predilection about near-term policy action.

Over the quarter, the dollar appreciated by 2.2% against the yen. In April, there was speculation about a possible supplementary Japanese fiscal stimulus, with some market participants expecting a package to be announced in early May. This led the yen to appreciate, with the dollar-yen rate falling below ¥119 at the end of April. In the event, there was no announcement of a fiscal package, and the yen rose back to ¥121.

During June, upward revisions to forecasts of Japanese economic growth and the stronger-than-expected official estimate of first-quarter GDP increased the demand for yen. The BoJ was reported to have intervened to limit this appreciation, selling yen against both the dollar and the euro. In addition, there was a decline in the implied volatilities of yen exchange rates derived from options markets—against the dollar, in particular—and risk reversals became less heavily in favour of yen calls, suggesting that the reported intervention had succeeded in reducing the probability that the market attached to yen appreciation.⁽¹⁾ Nevertheless, the underlying demand for yen remained firm, reflecting Japan's continued current account surpluses and the repatriation of foreign currency denominated assets by Japanese investment institutions.

The euro weakened over the quarter, by 3.9% against the dollar, 2.2% against the yen and 2.2% against the pound. In addition to the factors listed above, the euro-dollar and euro-yen exchange rates were also influenced by market participants' concerns about economic growth in the largest euro-area countries, the conflict in Kosovo, and comments from European officials about the level of the exchange rate.

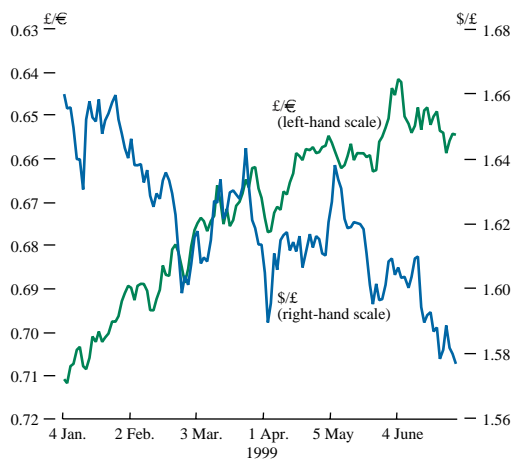
Towards the end of the quarter, there were some indications of an improvement in sentiment towards the euro. The euro-dollar exchange rate rallied by more than one cent following the release of the stronger-than-expected estimate of German first-quarter GDP growth on 8 June. The euro was also lifted at this time by news that the G8 had agreed a draft UN Security Council resolution on Kosovo. The euro stood at \$1.04 and ¥124.9 at the end of the quarter.

Sterling

Sterling's effective exchange rate index (in which the euro has a 65% weight) appreciated by 1.1% over the quarter (see Chart 8).

(1) Risk reversals can be used to assess how the market sees the balance of risks between an appreciation and a depreciation of the exchange rate. When the risk reversal is large and positive, it suggests that higher probabilities are attached to appreciations (of the yen in this case), and when it is large and negative, it indicates expectations skewed in favour of a depreciation.

Chart 9
Sterling exchange rates



Within this overall movement, sterling appreciated by 2.2% against the euro and depreciated by 2.3% against the dollar (see Chart 9).

Sterling depreciation against the dollar mainly reflected expectations about relative interest rate movements. Sterling weakened in the days following the Monetary Policy Committee's (MPC's) statement on 6 May linking a possible further easing of interest rates to the strength of the pound. But it rose, temporarily, on 10 June after the MPC's decision to reduce the Bank repo rate by 25 basis points, as some market participants viewed this as possibly the last interest rate cut in the current cycle. However, the weaker-than-expected retail price and average earnings data in mid June led to speculation about a further rate cut, prompting the sterling-dollar exchange rate to fall decisively below the \$1.60 level. Previously strong demand for sterling had often emerged at rates at, or a little below, this level. But the release of the MPC minutes on 23 June, which showed an 8–1 majority of MPC members voting in favour of the 25 basis point reduction in interest rates announced on 10 June, prompted renewed expectations of further rate cuts and brought the sterling-dollar exchange rate below \$1.58. The rise in the federal funds target rate in the United States—which resulted in parity between US and UK official rates—may also have had a significant effect on sterling's depreciation against the dollar.

Sterling's appreciation against the euro was largely attributable to the negative sentiment towards the euro, to signs of a pick-up in the UK economy, and to the larger rise in implied interest rates in the United Kingdom than in the euro area over the period.

Emerging market currencies

Movements in emerging market currencies had little influence on the major industrial countries' financial markets in Q2, in contrast to developments in the second half of 1998. Most Asian emerging market currencies either appreciated further against the US dollar or consolidated their previous gains, reflecting increased optimism about growth prospects.

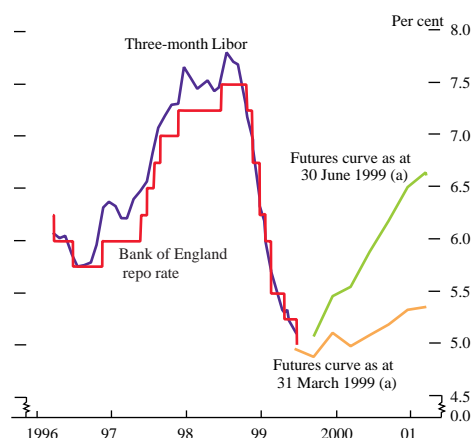
In Latin America, the Brazilian real stabilised following its weakness in the first part of the year. But other currencies did come under some pressure. In Argentina there was concern about the sustainability of the authorities' currency board arrangement; there were doubts whether, with the economy in recession, interest rates could be raised at a time when fiscal pressures were mounting. By the end of the quarter, the forward exchange market for Argentinean pesos was pricing in an increased chance of a devaluation over the next twelve months. In Colombia, the central bank was forced to devalue the peso and widen its intervention bands on 27 June.

Sterling markets

Interest rates

The Bank of England's MPC voted to cut the Bank's repo rate by 25 basis points on two occasions in 1999 Q2, taking the rate to 5.0% at the end of the quarter. Nevertheless, short-term cash interest rates were slightly higher at the end of June than the market had expected at the end of March. For example, the June short

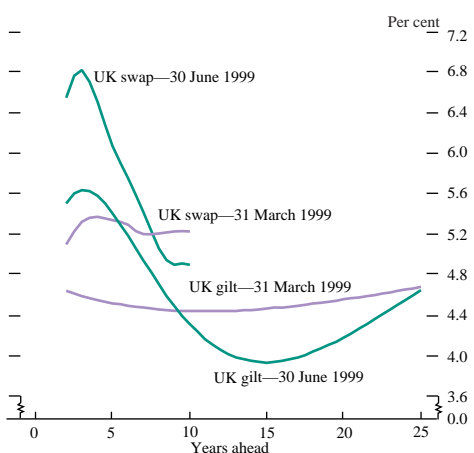
Chart 10
UK official and market interest rates^(a)



Sources: Bank of England and Bloomberg.

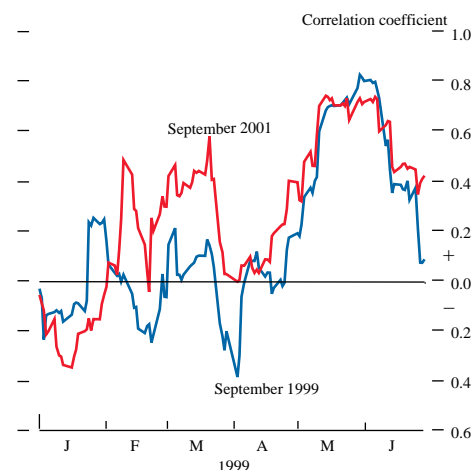
(a) Interest rates implied by short sterling futures contracts at the two dates specified. From July 1999, dates on the x-axis relate to contract expiry dates.

Chart 11
UK gilt and swap six-month forward rates^(a)



(a) Derived using Svensson curves.

Chart 12
Rolling correlations between changes in short sterling and eurodollar interest rate futures^(a)



Sources: Bank of England and Bloomberg.

(a) 20-day rolling correlations of changes in interest rates implied by September 1999 and September 2001 futures contracts.

sterling futures contract settled at an implied level of 5.125% for three-month Libor, having been trading at an implied level of 4.97% at the end of Q1.

The UK short-term interest rate curve implied by short sterling futures contracts on three-month Libor shifted upwards and steepened during the second quarter (see Chart 10). In the swap market, the six-month forward rate increased by 1.2 percentage points at two years and by 0.7 percentage points at five years, to 6.8% and 6.1% respectively. However, swap market forward rates fell beyond seven years. In the gilt market, forward rates also fell at medium maturities, but were little changed at the very long end of the curve (see Chart 11).

Charts 10 and 11 show that the implied future interest rate profile rose for 1999, by increasing amounts for dates in 2000 and 2001, and by gradually smaller amounts for dates from 2002. Thus a hump developed in the profile, with its peak occurring between mid 2001 and mid 2002.

To some extent, this upward shift in the implied interest rate profile reflected the international developments discussed above; the dollar, euro and yen interest rate profiles also shifted upwards. The correlation between daily changes in interest rates implied by short sterling and eurodollar futures was particularly strong in May, and higher than its average over recent years (see Chart 12).

However, the sterling interest rate profile rose by much more than in other countries, reflecting UK-specific influences. Principal among these were further signs of a recovery in domestic economic growth, including increasingly optimistic business survey results and rising house prices. Reflecting the improved outlook for growth, most financial market economists revised their forecasts of the trough in official interest rates upwards during the second quarter (see Table C). At the beginning of July, the modal forecast for the timing of the next rise in official rates was 2000 Q2.

A second UK-specific factor behind the increase in implied interest rates at the two to five-year horizon was some reappraisal by the market of the timing of possible UK adoption of the euro. The likely date is now expected by the markets to be further into the future. On this revised view, there could be another full interest rate cycle before convergence of UK interest rates with those in the euro area.

This change of view had a significant market impact through the unwinding of 'convergence trades'. By undertaking such trades, investors had committed themselves to receiving streams of fixed-rate sterling interest, in many cases through the sterling swap market, in the expectation that sterling interest rates would fall as they converged with euro rates. The shift in expectations about the possible timing of UK entry into the single currency not only altered expectations about the future profile of UK interest rates, but also provoked large portfolio adjustments from those who wanted to unwind convergence trades that they had undertaken. This coincided with a period of repatriation of assets by Japanese investment institutions (as noted earlier).

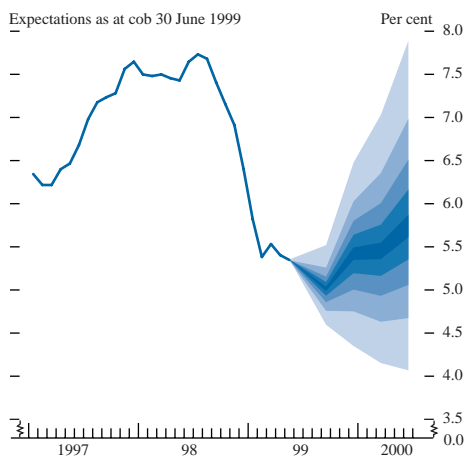
A third, possibly related, factor for the increase in medium-term interest rates was stronger demand in the sterling swap market to

Table C
Economists' interest rate forecasts

Date of survey	Mean	Mode	Lower quartile	Upper quartile
31 March 1999				
Level of trough (per cent)	4.66	4.5	4.5	5
Timing of trough	end 1999	2000 Q1	1999 Q3	2000 Q1
1 July 1999				
Level of trough (per cent)	4.825	5	4.75	5
Timing of trough	1999 Q3	June 1999	June 1999	Nov. 1999
Timing of next rate rise	2000 Q2/ Q3	2000 Q2	2001 Q1/ Q2	2000 Q3/ Q4

Source: Reuters.

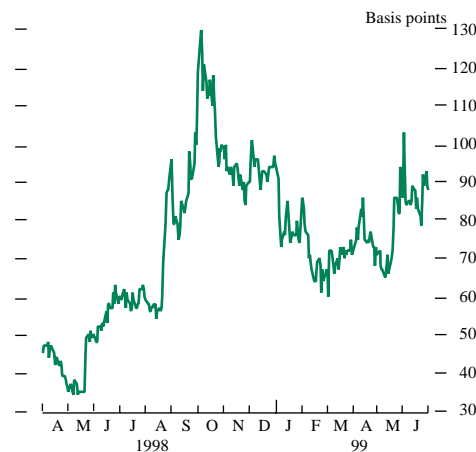
Chart 13
Implied distribution for sterling three-month interest rates^(a)



Sources: LIFFE and Bank of England.

(a) The chart depicts the probability distribution for short-term interest rates and is rather like a contour map. At any given point, the depth of shading represents the height of the probability density function implied by the markets over a range of outcomes for short-term interest rates. The markets judge that there is a 10% chance of interest rates being within the darkest, central band at any date. Each successive pair of bands covers a further 20% of the probability distribution until 90% of the distribution is covered. The bands widen as the time horizon is extended, indicating increased uncertainty about interest rate outcomes.

Chart 14
Sterling five-year market swap spreads



Source: Bloomberg.

borrow at fixed interest rates and receive floating-rate interest. This was true, for example, for domestic lending institutions wishing to hedge fixed-rate mortgage income: the number of new fixed-rate mortgage loans increased in the second quarter. Furthermore, the upward-sloping yield curve may have encouraged some mortgage-lending institutions to seek to undertake such swap transactions in order to hedge fixed-rate mortgages sold in the future.

In summary, the resulting supply pressures in the medium-maturity fixed-income market caused implied future interest rates to rise to levels that probably exceeded most market participants' actual expectations of future rates. In addition, uncertainty about the likely path of short-term interest rates increased during the second quarter. Risk-neutral probability distributions of expected three-month market rates derived from options prices are shown in Chart 13. The width of the probability bands was greater at the end of June than at the end of March, and the skew was larger. At the end of Q2, market participants thought it more likely that the future path of interest rates would be above, rather than below, the modal expectation.

Conventional gilts

Although short gilt yields rose by less than comparable swap rates during the second quarter, the gilt market was influenced by similar factors. By the end of the quarter, a hump in implied forward rates, similar in shape to that present in the swap market, had developed (see Chart 11). The six-month forward interest rate increased by 1 percentage point, to 5.5%, at three years, and by around 80 basis points, to 5.3%, at five years. But the six-month forward rate fell at the ten-year horizon and beyond.

The unwinding of EMU convergence trades and the hedging of mortgage income in Q2 occurred mainly in the swap market. At the same time, liquidity concerns relating to the approach of the Millennium led gilts to be more highly valued.⁽¹⁾ Consequently, at times, the spread between the five-year swap rate and gilt yield spiked higher (see Chart 14). Over the quarter as a whole, the five-year market swap spread over the gilt par yield increased by some 10 basis points to around 85 basis points.

Long-dated gilt par yields increased by 20 basis points during the quarter, to 4.65%. However, they continued to be restrained by strong demand for long gilts from pension funds and insurance companies. These institutions have regulatory and actuarial incentives to hold long gilts, such as the increasing maturity of pension funds and the Minimum Funding Requirement (MFR), applied under the Pensions Act 1995 to pension funds since 1997.

Some market participants have suggested that gilt market liquidity has decreased recently. This is said to reflect reduced gilt supply, a decrease in risk appetite (with much less activity apparent from leveraged players, such as hedge funds), and the introduction in early April of electronic trading for the long gilt futures contract traded on the London International Financial Futures and Options Exchange (LIFFE). A reduction in market liquidity could be reflected in wider bid-offer spreads, or a decrease in the average

(1) This reflects their eligibility for use in the Bank's repo operations, and the fact that banks can hold them as sterling stock liquidity to comply with supervisory requirements.

Table D
Gilt market turnover

£ billions nominal value

	1997	1998				1999	
	Quarterly average	Q1	Q2	Q3	Q4	Q1	Q2
Gilts							
Conventional	475	451	406	411	347	368	354
Index-linked	11	9	11	7	7	7	7
Total	486	460	417	418	354	375	360
Futures							
Long gilt futures contracts (a)	245	246	316	419	241	262	231

Sources: London Stock Exchange and Bloomberg.

(a) Relates to the front two contracts traded in the quarter.

size of transactions, but such measures are difficult to obtain. Turnover data, which are more readily available, suggest that the largest reduction in liquidity occurred last year (see Table D). The nominal value of gilts⁽¹⁾ traded in the second quarter of this year was 4% lower than in Q1, and 14% down on a year earlier. On LIFFE, the nominal value of long gilt futures contracts traded during Q2 was around £230 billion. This was 12% lower than the volume of contracts traded in Q1 and 27% down on a year earlier.

There were two conventional gilt auctions during the second quarter, both of which were well covered, with bid-to-cover ratios exceeding 2 (see Table E). When the Debt Management Office (DMO) announced the details of the 2004 auction, in mid June, it also gave notice of its intention to offer holders of 9½% Conversion 2004 the opportunity to convert into 5% Treasury 2004; details and terms of this conversion were made available on 1 July. On 30 June, the DMO announced that there would be one auction of conventional gilt-edged stock in Q3: 5¾% Treasury 2009 on 28 September.

Activity in the strips market remained subdued in the second quarter, with average weekly turnover of around £80 million, equivalent to only 0.2% of average weekly turnover in the conventional and index-linked markets (see page 249 for further details about the use of strips as collateral in market operations).

Other sterling bond issues

Total fixed-rate issuance (other than gilts) was £12.6 billion in Q2, slightly higher than in the previous two quarters and twice the level of issuance in 1998 Q2 (see Chart 15). Issuance was skewed toward longer maturities, with mediums (over 7 years) and longs (over 15 years) totalling £5.1 billion and £4.3 billion respectively, while shorts (under 7 years) amounted to £3.2 billion.

There were several reasons for the heavy issuance over the quarter. Alongside DMO auctions of 30-year and 5-year gilts in Q2, demand for longer-dated non-government sterling bonds remained high, as low gilt yields encouraged institutional investors to seek higher yields elsewhere (the 'crowding in' effect of low gilt supply). This demand was augmented by heavy cash inflows into PEP bond funds ahead of the April deadline.

Investors' appetite for a yield spread over gilts encouraged issuers from across the credit spectrum. As well as a number of large issues from well-known UK and overseas corporates, the period also saw several sub-investment grade ('high-yield') issuers tap the market. Expectations that interest rates may rise over the next 18 months (and possibly concerns that market liquidity might deteriorate ahead of the year-end because of Year 2000

Chart 15
Fixed-rate sterling non-government bond issuance

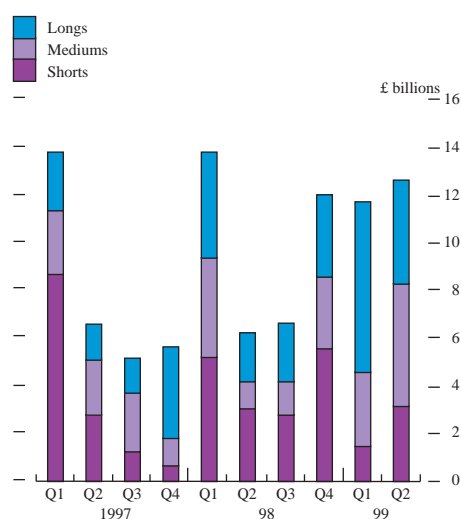


Table E
Gilt auctions

Date	Stock	Nominal amount issued (£ millions)	Total cover	Yield at common accepted price
28.04.99	4¼% Index-linked Treasury Stock 2030	500	0.94	1.97% (assumed inflation 3%)
26.05.99	6% Treasury Stock 2028	2,500	2.24	4.72%
22.06.99	5% Treasury Stock 2004	2,500	2.01	5.30%

(1) The nominal value is based on each gilt being priced at par (£100), which is often very different from the market value. Because gilt prices have risen, the market value of gilts traded will have fallen by less than the nominal value.

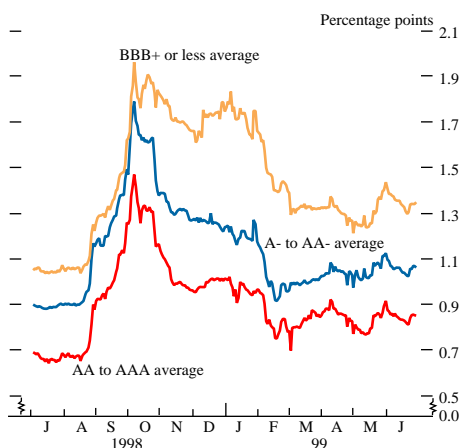
Table F
Sterling bond issuance in Q2

	Number of companies	Amount (£ billions)			
		Total	By credit rating:		
			AAA	AA/A	BBB and below
Fixed-rate issues					
UK corporates	19	4.5	0.0	2.8	1.8
UK financials	11	2.4	0.5	1.5	0.3
Overseas corporates	5	1	0.5	0.1	0.4
Overseas financials	15	4.6	3.9	0.3	0.4
Overseas public sector	1	0.1	0.1	0.0	0.0
Total	51	12.6	5	4.7	2.9
Floating-rate issues					
UK financials	14	4.3	1.5	1.6	1.2
Overseas corporates	1	0.2	0.2	0.0	0.0
Overseas financials	5	0.7	0.2	0.3	0.2
Total	20	5.2	1.9	1.9	1.4

Note: Credit rating figures may not sum to sector totals because of rounding.

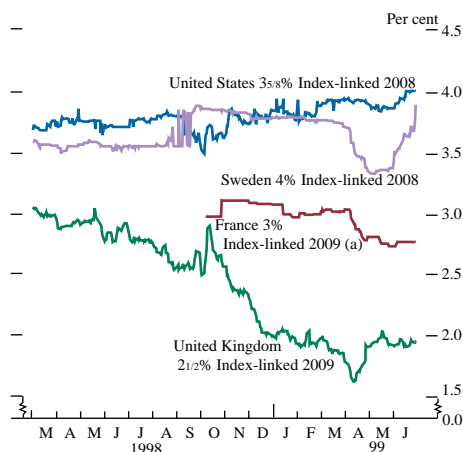
Sources: Bank of England, credit ratings from Moody's and Standard and Poor's.

Chart 16
Average yield spreads: UK corporates vs benchmark gilts



Sources: Bank of England and Bloomberg.

Chart 17
Real yields on index-linked government bonds



Source: Bloomberg.

(a) Some data interpolated.

considerations⁽¹⁾) may also have encouraged firms to bring forward funding programmes. As a result private, non-financial corporate bond issuance was again high over the quarter. UK firms issued £4.5 billion of fixed-rate sterling bonds, predominantly of more than ten-year maturities, and a further £1 billion was issued by overseas companies (see Table F).

Improved liquidity in corporate bonds following last autumn's market turbulence, historically low interest rates, and the current high levels of mergers and acquisitions activity also appear to have encouraged the greater use of bonds as a corporate financing medium. In particular, mergers and acquisitions were increasingly financed (or refinanced) through securitised debt issuance. Of the £2.4 billion fixed-rate bonds issued by UK financial institutions in the quarter, £1.3 billion were part of asset-backed deals.

There was very little change in average corporate bond spreads during the second quarter (see Chart 16). Wider swap spreads provided fixed-rate borrowers with opportunities to raise cheap floating-rate finance via swaps. Regular supranational and government-backed AAA-rated issuers raised £3.6 billion, and lower-rated overseas financial institutions raised a further £1 billion.

In addition, £5.2 billion of floating-rate notes were issued in the quarter. Of these, £1.8 billion were short-dated, mainly issued by banks and building societies, with the remainder almost exclusively long-dated, securitised issues. The latter included a £1 billion securitisation to finance the purchase of part of the Government's student loan book.

Index-linked gilts

Actuarial and regulatory influences have ensured continued strong institutional demand for index-linked gilts (IGs), keeping their yields below the likely true level of the real interest rate in the wider economy. A comparison with international markets illustrates the low level of UK real interest rates measured in this way (see Chart 17). However, real IG par yields did increase during the second quarter, by some 10–15 basis points.

Liquidity in the index-linked market remained low in the second quarter, although it rose ahead of the DMO's auction of £500 million nominal of 4¹/₈% Index-linked Treasury 2030 on 28 April, when prices eased slightly and real yields rose. The auction was not fully covered, however, and some lower bids were also rejected by the DMO, resulting in a strike price that implied a real yield of 1.97%. Market prices fell following the auction, but remained above the strike price; and although the 25-year real par yield rose to 1.96% for a short while, it had returned to the pre-auction level of 1.85% by the end of the following week. Residual official holdings of 4¹/₈% Index-linked Treasury 2030 were sold on 19 and 20 May, at prices above the auction strike price.

Various explanations have been suggested as to why the auction was not fully covered. First, although the price of the stock fell in the run-up to the auction, real yields remained at historic lows and were unattractive to those investors who did not have a pressing

(1) See 'Financial sector preparations for the Year 2000' on pages 282–84.

Chart 18
UK implied forward inflation rates^(a)



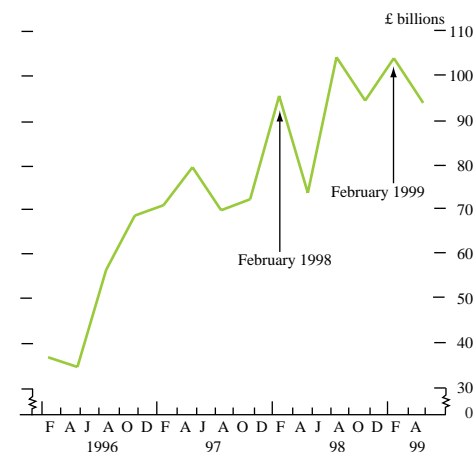
(a) Derived using Svensson curves; ten-day moving average.

Table G
Economists' inflation rate forecasts

	1998			1999	
	Q2	Q3	Q4	Q1	Q2
RPI, percentage change					
<i>Barclays Basix</i> Business economists 12–24 months ahead	2.9	2.4	2.1	2.1	2.2
RPIX, percentage change					
<i>Consensus Forecasts</i> Average 2000	2.7	2.6	2.3	2.2	2.4

Sources: Barclays and Consensus Economics.

Chart 19
Gilt repo outstanding



reason to hold IGs. Second, a long-dated corporate bond issue on the same day as the auction may have diverted institutional attention away from the index-linked gilt market. Third, the rise in the UK equity market in April (see below) may have reduced the need for pension funds to switch into IGs for MFR purposes. Fourth, gilt-edged market makers (GEMMS) may have been reluctant to take positions ahead of the auction; short positions would have exposed them to the risk of prices rising (as happened following the over-subscribed November 1998 and January 1999 IG auctions). GEMMS may also have been unwilling to buy stock in the auction to establish long positions, because of an insufficient level of retail orders. Fifth, some market participants may have thought that the review of the MFR (by the Faculty and Institute of Actuaries Pensions Board) was likely to result in changes that would lessen institutional demand for IGs. The results of this review are expected to be presented to the Department of Social Security in March 2000; any change in legislation is unlikely before 2001.

Over the quarter as a whole, low market liquidity limited the extent to which economic developments that influenced the swap and gilt markets were reflected in the index-linked market. The overall increase in implied forward inflation during Q2, calculated from the conventional and index-linked gilt markets (see Chart 18), increased by around 80 basis points, to 3.9%, at two years. This rise is likely to overstate the actual increase in inflation expectations in the economy as a whole. Evidence of this can be seen in other indicators of inflation expectations: some surveys conducted in the second quarter did suggest a slight pick-up in business economists' expectations of inflation in two years' time, but this rise was not as great as that derived from conventional and index-linked gilts (see Table G).

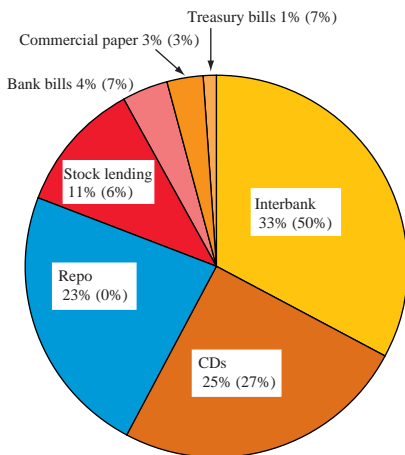
On 30 June, the DMO announced that there would be one auction of index-linked gilt-edged stock in Q3: 2½% Index-linked Treasury 2011 on 28 July.

Gilt repo

The value of gilt repo outstanding fell to £94 billion at the end of May, down from £104 billion at the end of February, as measured by the Bank's regular survey of market participants. As Chart 19 shows, a seasonal pattern in the stock of gilt repo outstanding has developed over the past two years. This is partly related to changes in the Bank's stock of refinancing (the amount of claims on the private sector held in the course of open market operations). The stock was larger in February than in November and May because of the seasonal pattern of the government's cash flow. The larger the money-market shortages which result, the more the Bank's counterparties have to operate in the private repo market to acquire collateral for the open market operations.

Repo outstandings have grown to almost 25% of the sterling money market, following their introduction at the start of 1996 (see Chart 20). This growth in share has mainly been at the expense of the unsecured interbank market, although in absolute terms the interbank market has also increased in size. Stock lending has also grown since 1996, indicating a degree of complementarity between repo and this older form of secured lending. Many gilts enter the

Chart 20
Composition of sterling money markets:
May 1999



Note: Figures in brackets are for December 1995.

repo market through stock lending from the investors to intermediaries, who then repo the gilts out to the core repo market.

The development of central counterparty clearing systems, which allow market participants to benefit from multilateral netting of counterparty exposures, continued to be important. From the perspective of the market, the main perceived advantage of such systems is the reduction in balance sheet exposures that they make possible, although there are other important benefits, such as settlement netting and greater uniformity in operational and risk management procedures. The London Clearing House announced that it was looking to introduce such a system for Bund repo at the start of the autumn, expanding to other euro government bond repo markets and gilts next year. Clearenet^{OTC} in France already offers a similar service for German and French government bonds, and Euroclear and GSCC plan a third system, to be operational in 2000.

Specials activity continued to be concentrated on 9% Treasury 2008, which was the cheapest stock to deliver into the June long gilt futures contract, as it had been for the March contract. 6% Treasury 2028 remained special, because underwriters, who price long-dated corporate bond issues off this gilt, hedged their exposure by going short of the stock, thereby increasing its demand in repos. However, pressure on 6% Treasury 2028 eased somewhat in Q2, following the announcement on 31 March that £2.5 billion of the stock was due for auction in May. Towards the middle of May, the repo market started to see some demand for very short-dated gilts, such as 8% Treasury 2000, 13% Treasury 2000 and 7% Treasury 2002. Gilts are used in the Bank's open market operations, and are held as sterling stock liquidity to comply with supervisory requirements. Banks may prefer to hold short-dated gilts for these purposes, because they carry a lower capital risk.

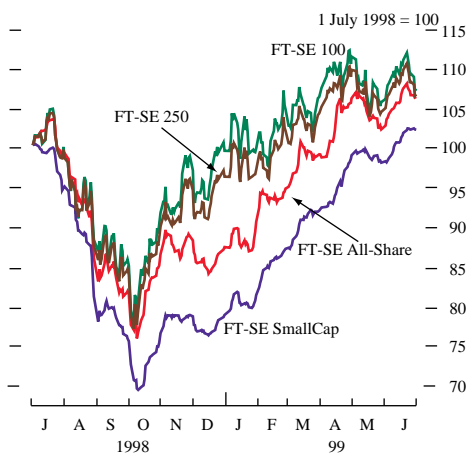
Equities

The FT-SE 100 index of UK equity prices changed relatively little over the second quarter as a whole; by the end of June it stood at 6319, only 0.4% above its end-March level. In contrast, over the same period the FT-SE 250 share price index (which comprises medium-sized firms), rose by 7.0% and the FT-SE SmallCap share price index (which comprises smaller capitalised firms) rose by 10.4%. These indices had underperformed the FT-SE 100 index in previous quarters (see Chart 21).

The outperformance of the FT-SE 250 and SmallCap indices may have reflected a catching-up after their earlier underperformances, as investors reviewed relative values. In addition, it may also have reflected the improvement in UK growth prospects, because the constituent firms in the 250 and SmallCap indices are generally more domestically oriented than the firms in the 100-share index.

UK share prices rose in April, with the FT-SE All-Share price index (comprising FT-SE 100, 250 and SmallCap companies) gaining 4.2%, helped by the cut in UK interest rates, stronger-than-expected indicators of UK economic activity and the ECB's decision to cut official euro-area interest rates by 50 basis points. The FT-SE 100 reached a new high of 6664 on 4 May, but share prices internationally began to fall back in May as fears of a rise in US interest rates grew. The FT-SE 100 index reached its low for the

Chart 21
UK equity price indices



Source: Datastream.

Table H
Average daily money-market shortages

£ millions		
1996	Year	900
1997	Year	1,200
1998	Year	1,400
1999	Q1	1,700
	April	1,200
	May	1,400
	June	900

Chart 22
Stock of money-market refinancing and foreign exchange swaps outstanding (average balance)

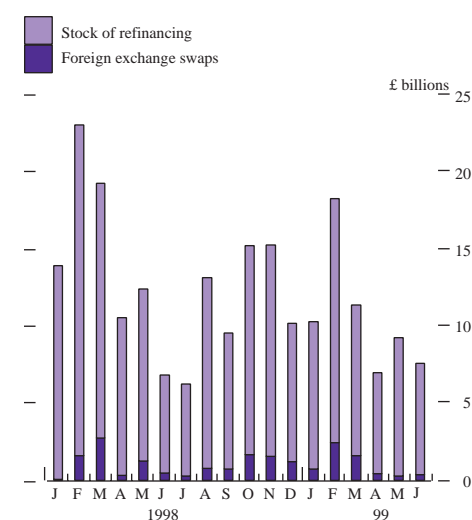
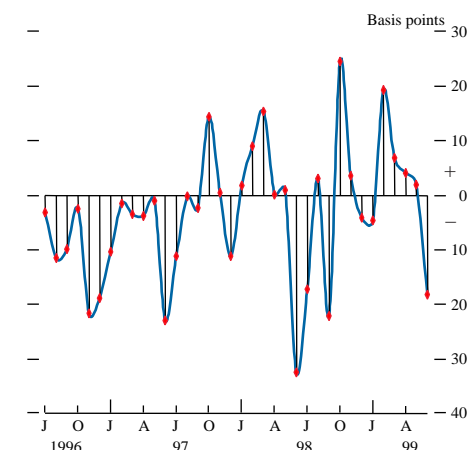


Chart 23
Monthly averages of SONIA minus the repo rate



quarter in mid May, after the FOMC moved to a tightening bias. But from then on, developments in the UK and US equity markets became less closely linked; positive developments in the domestic economy were the dominant influence on the UK equity market, leading to a recovery in prices.

In Q2, the best-performing industrial sector in the FT-SE All-Share index was consumer goods, whose sub-index rose by 14%. The resources and general industrials sectors also performed strongly, rising by 12.1% and 9.8% respectively over the quarter. Many individual share price increases within these sectors were related to mergers and acquisitions activity and the rise in the price of oil.

Market operations

Open market operations and Treasury bill issuance

Daily money-market shortages were somewhat smaller in the second quarter of 1999 than in Q1 (see Table H), reflecting the seasonal pattern of government revenue and expenditure and the pattern of gilt financing and redemptions. The stock of money-market refinancing (excluding foreign exchange swaps) held by the Bank averaged £7 billion in April and £9 billion in May, down from an average of £13 billion in Q1. Furthermore, the stock of refinancing fell in June (see Chart 22), following the large payment of interest on strippable gilts on 7 June. In anticipation of this, the Bank increased the size of the sterling one-month Treasury bill tender by £200 million to £700 million a week from 28 May. This helped to support the size of the money-market shortages at a daily average of £0.9 billion in June, down from £1.2 billion in April and £1.4 billion in May. Short-dated interest rates (as measured by SONIA⁽¹⁾) generally traded below the Bank's repo rate during this period of smaller shortages. This continued the pattern for June observed in previous years (see Chart 23).

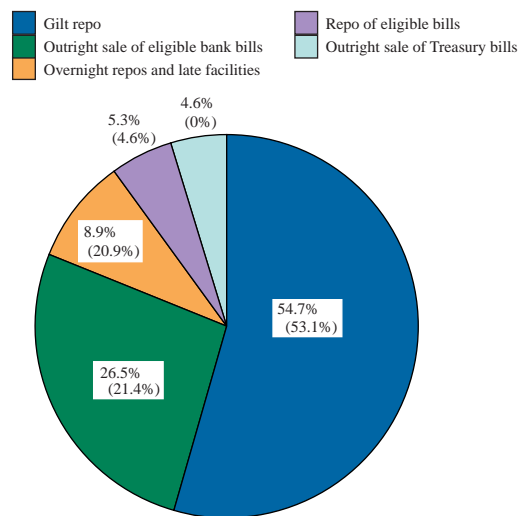
As the period of smaller shortages drew to an end, the one-month Treasury bill tender was reduced again to £500 million a week from 25 June. The three-month tender remained unchanged, at £200 million a week, throughout the quarter. Demand for Treasury bills continued to be strong—cover at the tenders averaged around five times the amount of bills on offer, and the average yields were around 20–30 basis points below Libid.

Foreign exchange swaps are also used by the Bank to supply liquidity to the sterling money market. However, because the daily money-market shortages were smaller than in the first quarter of 1999, less use was made of foreign exchange swaps in Q2. The daily average value of swaps outstanding during the second quarter was £0.4 billion, down from £1.6 billion in Q1 (see Chart 22). The share of the various instruments in the Bank's refinancing during Q2 is shown in Chart 24. Gilt repo continued to account for just over one half of the total refinancing operations, while the shares accounted for by the other instruments were more volatile.

The Bank continued its programme of extending the range of securities eligible for use in its repo operations during the second quarter. Bank of England euro bills and gilt strips in member-to-member deliveries have been eligible as collateral in

(1) SONIA is the sterling overnight interest rate average.

Chart 24
OMOs—instrument overview



Note: This chart shows the share of the various instruments in the Bank's daily open market operations in 1999 Q2. Figures in brackets relate to 1999 Q1.

repo transactions since 15 April.⁽¹⁾ On 28 June, the Bank began to accept a range of bonds issued by other central governments in the European Economic Area (EEA) and the major international financial institutions, where the bonds had been issued directly into the Euroclear and Cedel settlement systems. The Bank accepts these issuers' bonds denominated in sterling,⁽²⁾ and denominated in euro where they are eligible for use in the European System of Central Banks (ESCB) monetary policy operations.⁽³⁾ These new securities have increased the amount of collateral eligible in the Bank's money-market operations by approximately £50 billion. So far, the Bank's counterparties have made only limited use of this new collateral, though the relative prices of some eligible and ineligible collateral were affected.

In addition, on 30 July the Bank announced a major extension to the securities it will accept in its daily repo operations. From 31 August, the list of acceptable securities will be extended to include securities issued by the central governments and central banks of the European Economic Area countries, where they are denominated in euro, eligible for use in ESCB monetary policy operations, and where the relevant central bank has agreed to act as the Bank's custodian under the Correspondent Central Banking Model (CCBM).⁽⁴⁾ All eleven EMU central banks have agreed to act as the Bank's custodian, thereby ensuring that the pool of eligible securities will rise by approximately £2 trillion.

The Bank has also recently made several technical changes to its money-market operations. From 24 May, the yield at which bills may be sold outright to the Bank in its open market operations has been the Bank's repo rate; this replaced the discount rates previously posted for bills. From 28 June, margins on existing eligible collateral, as well as on the new eligible collateral, have been based on four maturity bands.⁽⁵⁾ This allows the setting of more specific margins, and has enabled the Bank to lower its margin requirements in some cases. The four maturity bands are the same as those used for the Real Time Gross Settlements (RTGS) system collateral and those set by the ECB for ESCB monetary policy operations.

HM Treasury and Bank of England euro issues

On 13 April, the Bank of England began taking over from HM Treasury as the issuer of euro bills, as had been announced on 5 January. All bills with maturity dates up to September 1999 continued to be issued as euro Treasury bills, while all bills with maturity dates from October 1999 onwards were issued as Bank of England bills. This meant that the regular monthly auctions of euro bills during the second quarter comprised € 200 million and € 500 million of one-month and three-month Treasury bills, and € 300 million of six-month Bank of England bills. The auctions continued to be oversubscribed, with issues being covered an average of 3.9 times the amount on offer. During the second quarter, bids were accepted at average yields of 10–21 basis points below the Euribid rate for the relevant maturity. At the end of June

(1) Gilt strips have been eligible for use as collateral in the Bank's repo operations through the CGO's Delivery By Value facility since 27 April 1998.
 (2) The new sterling-denominated securities are also eligible for use as sterling liquidity in the Real Time Gross Settlements (RTGS) system.
 (3) Lists of the new sterling and euro-denominated eligible securities are available on the Bank's web site under OMO on the 'Eligible Securities' page (www.bankofengland.co.uk/eligsec.htm).
 (4) The CCBM was set up by the EU member states to facilitate the cross-border use of collateral, and is already used for RTGS and for ESCB operations.
 (5) Additional margin is taken on euro-denominated securities to protect the sterling value of the Bank's collateral against exchange rate fluctuations.

Merger of CGO and CMO with CREST

Following the recommendations outlined in the Securities Settlement Priorities Review, on 18 September 1998, the Bank of England and CRESTCo announced the transfer of ownership and responsibility for the Central Gilts Office (CGO) and Central Moneymarkets Office (CMO) settlement services to CRESTCo.⁽¹⁾ This is a precursor to the full integration of both services into CREST. The merger will deliver a more efficient use of credit and collateral; improve settlement efficiency; reduce development costs both centrally and in members' back-offices; and simplify the settlement interface with other European Security Settlement Systems.

CGO

The transfer of gilts and bulldog securities to CREST has two distinct phases. Phase 1, involving the transfer of ownership and responsibility for the existing CGO service from the Bank to CRESTCo, took effect on 24 May 1999. This involved introducing a number of statutory changes, a re-contracting exercise with all CGO members, and the execution of bilateral agreements between CRESTCo and the Bank. The Bank will, however, continue to operate and support the CGO service until the completion of phase 2. Phase 2 is scheduled to take place in June 2000, and involves the migration of gilts settlement activity to CREST.

Following a detailed analysis, CRESTCo and the Bank concluded that the core functions of the two computer software systems are essentially the same. Nevertheless, there are a number of small differences. These fall into two main categories: aspects of the CGO system which reflect the specific needs of the gilt market (eg stripping and reconstitution facilities), and aspects of the CGO system which reflect different operational arrangements permitted under the Stock Transfer Act 1982.

To ensure that the merged system continues to meet market needs, CRESTCo has undertaken a wide consultation exercise with the market. A consultative paper, 'Gilts settlement in CREST' was issued in May 1999, addressing the operational changes to the system. The results of this exercise, which are also being discussed with external working parties, will be published in August 1999. A further paper has already been issued, addressing the more substantial changes that are proposed to the CREST system to accommodate gilts. It is proposed that these enhancements will be introduced early in 2000, but remain dormant in the CREST system until the completion of phase 2.

Legislative changes will need to be implemented. Holdings and transfers of gilts in CGO are currently governed by the Stock Transfer Act 1982. Legislative changes will be needed in order to bring gilts under the Uncertificated Securities Regulations 1995 (USRs), made under Section 207 of the Companies Act 1989, which govern the holding and transfer of securities in CREST. These changes are currently being taken forward with HM Treasury, and are expected to be put in place during the second quarter of 2000. The Treasury is also consulting on changes to the USRs, to include electronic transfer of title to eliminate the lag between settlement and registration.

CMO

Responsibility for the CMO service will be transferred to CRESTCo on 20 September 1999. The depository function—required because money-market instruments are bearer instruments—will continue to be operated by the Bank on behalf of CRESTCo. In this case, no legislative changes are necessary. Bilateral discussions between the Bank and CRESTCo are now almost complete, and revised membership agreements were issued for execution on 5 July in order to facilitate a re-contracting exercise between CRESTCo and CMO members.

Progress is also being made to facilitate transfer of the CMO system to the CRESTCo site on 25/26 September, and to set up network links between the CMO system and the depository. This will involve CRESTCo building and testing a clone of the current CMO environment, in order to facilitate the secure transfer of the live CMO database. It is expected that the transfer will remain largely invisible to the CMO membership, with minimal impact on the market.

Future developments

When CGO and CMO have both migrated to CREST, a number of further developments are planned. The next step is to integrate the CMO instruments into CREST to create a single unified securities settlement system in the United Kingdom. This forms a key objective of the work currently being conducted by the Money Market Instrument Review Working Group (under the chairmanship of the Bank of England), which is expected to make recommendations later this year. In parallel with this work, CRESTCo is pursuing a series of other initiatives, most notably the construction of cross-border links with other European securities depositories.

(1) CRESTCo is the operator of the CREST settlement system for equities and corporate bonds.

there were € 2.6 billion of UK Government euro Treasury bills and € 0.9 billion of Bank of England euro bills outstanding. By end-September, the final euro Treasury bills will have matured, and the programme will consist entirely of Bank of England euro bills.

On 20 April, the Bank reopened the UK Government euro Treasury note maturing on 28 January 2002 with a further auction for € 500 million, raising the amount of this note outstanding with the public to € 1.0 billion. There was strong cover at the auction of 4.3 times the amount on offer, and accepted bids were in a yield range of 2.67%–2.75%. The total of notes outstanding with the public under the UK euro note programme rose from € 4.5 billion in the first quarter of 1999 to € 5.0 billion in the second quarter. The 2002 note was reopened again in July and a further auction is planned for October 1999.

United Kingdom gold auctions

On 7 May, HM Treasury announced its plans to rebalance the United Kingdom's gold and foreign exchange reserves. The Treasury intends to reduce the amount of gold in the reserves and increase the amount of foreign currency, through the sale of some 415 tonnes of gold over a number of years. Once these sales have been completed, HM Treasury will retain 300 tonnes of gold in the reserves portfolio. During financial year 1999/2000, the Bank of England will conduct a series of five auctions, selling 25 tonnes of gold at each.

The first auction was held on 7 July, and was conducted on a Dutch or common-price basis, in which all successful bidders pay the same price, equal to the lowest accepted bid. This method is used by the US Treasury for government debt auctions, and by the UK Debt Management Office for sales of index-linked gilts. It was substantially oversubscribed, with a cover ratio of 5.2; and the gold was sold at \$261.20 per ounce, just 10 cents below that morning's London fixing, established less than an hour earlier.