
Markets and operations

- *The Bank's repo rate was left unchanged in the third quarter.*
- *Implied interest rates given by the December short sterling contract fell by around 90 basis points.*
- *Long-dated gilt yields fell to their lowest levels since the late 1950s.*
- *UK equities fell back to around their end-1997 level after reaching a record peak in July.*
- *Sterling fell during the period as the markets expected the UK repo rate to be reduced.*
- *International developments had a greater influence on the markets from the middle of the quarter.*

Overview

During the early part of the third quarter, the UK financial markets focused on domestic developments and their implications for monetary policy; market participants thought that official interest rates might be raised. But less robust economic figures, and survey evidence suggesting prospective economic weakness, largely dispelled this view by early August.

The focus of UK financial markets shifted from domestic to international developments halfway through the third quarter. International conditions changed sharply in mid August, as the rouble depreciated and Russia announced a rescheduling of its debt obligations. Confidence in several other emerging markets in Asia and Latin America subsequently weakened, against a background of doubt about how quickly IMF resources would be replenished. The news that several major financial institutions in the United States and Europe had suffered losses on their exposure to Russia brought fresh falls in equity markets in the major industrial countries.

Investors consequently reassessed their risk, moving away from the liabilities of emerging market countries, banks, and equities, and favouring the most liquid government bond and money-market sectors. These trends were difficult to distinguish from the effects of a change in the markets' view of the likely course of monetary policy, as forecasts for world growth were revised downwards. The US hedge fund Long Term Capital Management was believed to have large short positions in a number of assets that subsequently came into demand. Long-dated gilt yields fell to their lowest levels since the late 1950s, alongside a sharp fall in bond yields for the main industrialised economies. Fixed-income credit and swap spreads widened sharply, beyond the levels reached during the Asian crisis in autumn 1997. After peaking in July, largely in tandem with US equities, UK share prices fell over the next six weeks, leaving the market near its end-1997 level. By the end of September, Japan and the United States had eased monetary policy, and markets were discounting a cut in UK official interest rates

Chart 1
Rouble versus the US dollar

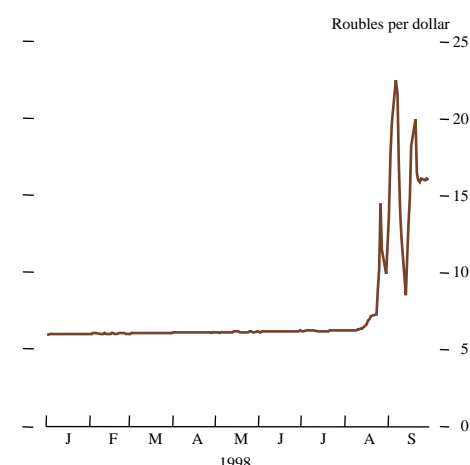
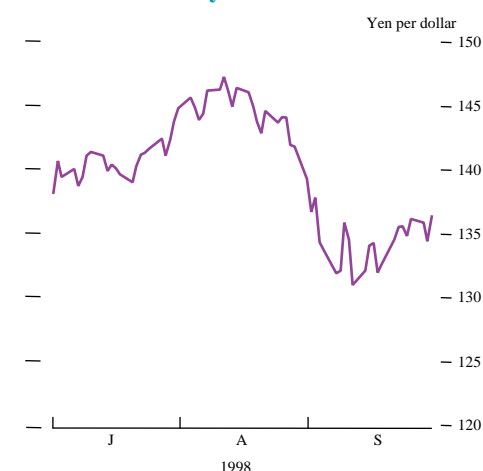


Table A
Emerging market currencies versus the US dollar

	1997		1998		Percentage changes between 30 June and 30 Sept. 1998 (a)
	1 July	31 Dec.	30 June	30 Sept.	
Indonesian rupiah	2,432	5,550	14,800	10,700	38.3
Thai baht	24.5	47.1	42.2	39.6	6.7
Korean won	888	1,695	1,373	1,390.8	-1.3
Philippine peso	26.37	40.50	41.70	43.75	-4.7
South African rand	4.53	4.87	5.97	5.95	0.3
Brazilian real	1.08	1.12	1.16	1.18	-2.3
Mexican peso	7.93	8.07	8.97	10.28	-12.7
Venezuelan bolivar	487.30	504.30	553.00	573.50	-3.6

(a) A positive number represents local currency appreciation.

Chart 2
US dollar versus yen



within the next two months. Implied short-term interest rates and gilt yields fell over the quarter, and sterling fell by 3½% in effective terms.

Market developments

Foreign exchange

(i) International background

Developments in the foreign exchange markets were dominated by the turmoil in emerging markets. This started with the announcement on 17 August of, in effect, a devaluation of the Russian rouble and a moratorium on Russian debt repayments. Having traded at around six roubles to the US dollar until early August, the rouble depreciated sharply (see Chart 1). It reached a low of more than 20 roubles to the dollar in early September on the official exchanges, but was even lower in unofficial trading. The dismissal of the Russian Prime Minister and the rest of the Cabinet in the second half of August, and subsequent uncertainty about who would succeed them, contributed to market volatility. Imposition of capital controls in Malaysia on 1 September raised concerns that other emerging market economies would follow suit.

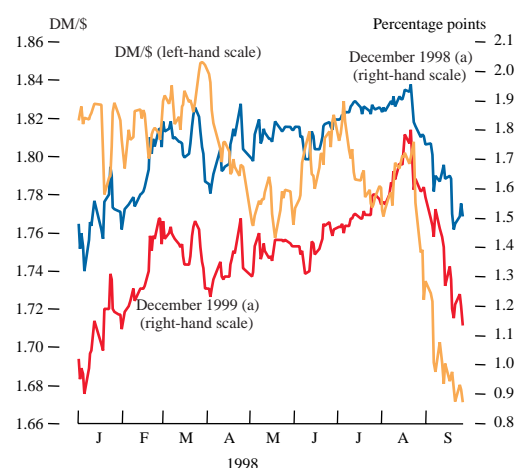
The Russian turmoil spread to other markets through a number of channels: debt exposure; a review of the risk of default in other emerging markets; and equity prices. The first of these initially most affected German banks (and therefore the Deutsche Mark) because of their relatively large exposure to Russia, though much of this was backed by official guarantees; non-German banks also announced losses on account of their exposure to Russia.

The general review of default risk contributed to exchange rate turbulence in many emerging markets, particularly in Latin America (see Table A). As asset prices fell in emerging markets, financial institutions sought to meet margin calls by booking profits from previous portfolio positions. Unwinding of long dollar positions against the yen ('carry trades') helped to account for the appreciation of the yen against the dollar in late August/early September (see Chart 2), despite the easing in Japanese monetary policy. The Bank of Japan guided the overnight call rate down by 25 basis points to 0.25% on 9 September, and stated that it would provide the necessary funds to maintain the stability of the financial markets.

Falls in equity prices in industrialised countries (see later section, page 308) added to the probability of lower world growth through wealth effects. The weaker prospects for world growth, in turn, added further downward pressure to commodity prices, which affected the exchange rates of many major commodity exporters. Both the Canadian and Australian dollars hit historic lows against the US dollar during the third quarter.

The US dollar depreciated against the Deutsche Mark during September, as expectations of an imminent cut in US interest rates became more widespread. That partly reflected concern about the spread of emerging market turmoil to Latin America, which has greater trade and investment links with the United States than with other major economies. It may have also reflected a view that falls in domestic equity prices would have a larger impact

Chart 3
US and German interest rate differential and exchange rate



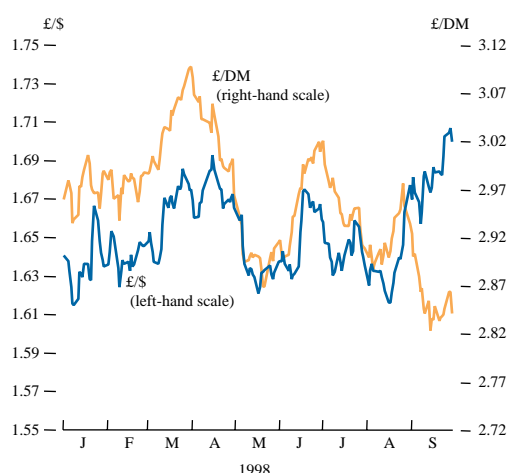
(a) Difference in three-month interest rates implied by futures contracts of specified dates.

Table B
European currencies and interest rates during the third quarter

Basis points; percentages in *italics*

	Change versus DM	Change in official interest rates	Change in government bond spread versus Germany
French franc	<i>0.0</i>	0	+10
Italian lira	<i>-0.4</i>	0	+17
Greek drachma	<i>-2.1</i>	-300	+140
Danish krone	<i>0.2</i>	+100	+53
Norwegian krone	<i>-4.3</i>	+350	+60
Swedish krona	<i>-6.2</i>	0	+63
Finnish markka	<i>-0.2</i>	0	+26

Chart 4
Sterling exchange rates



on the US economy than on others, because of the greater prevalence of personal share holding in the United States. Chart 3 shows that the dollar's depreciation against the Deutsche Mark coincided with downward revisions to the expected path of US interest rates relative to German rates during the rest of 1998 and 1999.

On 29 September, the Federal Reserve lowered the official target for the fed funds rate by 25 basis points, to 5.25%. This had been largely anticipated by the markets, but there was some disappointment that the reduction was not larger, and was not accompanied by a lowering of the discount rate; immediately following the reduction, the dollar held up reasonably well, but the move was seen as acknowledging that economic growth was slowing.

The cross-exchange rates of countries signed up to join the single currency were largely unchanged during the third quarter (see Table B). But other European currencies were more volatile. The Norwegian krone, for example, fell by around 8% against the Deutsche Mark between the end of June and the end of August, despite four rises in official Norwegian interest rates (from 6½% to 10%), but then recovered. The Swedish krona depreciated by around 6% during the same period. Though the Danish krone did not move much against the Deutsche Mark, there were signs of pressure, and official interest rates were raised by 1 percentage point in mid September to defend the currency. By contrast, in Finland, a 'euro-in', official interest rates were unchanged during the third quarter, and government bond yield differentials with Germany widened less than in other Scandinavian countries.

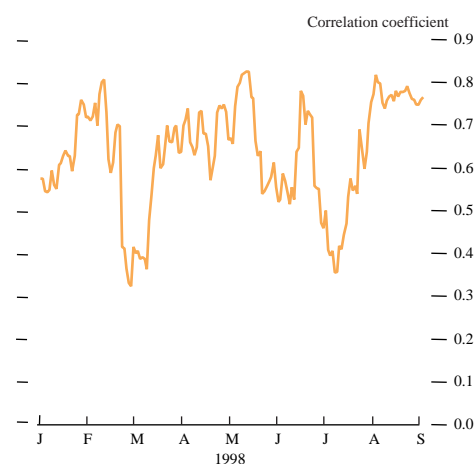
(ii) Sterling

The sterling effective exchange rate fell by 3½% during the third quarter to 103.3 on 30 September. Sterling initially depreciated steadily against the Deutsche Mark, as further signs of UK economic slowdown emerged. But then the news from Russia contributed to sterling's rise by around 8 pfennigs, as 'safe-haven' flows initially avoided Germany because of its relatively large exposure to Russia. Thereafter, the pound fell against the Deutsche Mark, ending the quarter at around DM 2.85 (see Chart 4).

The fall in sterling against the Deutsche Mark later in the quarter partly reflected the dollar's weakness. The correlation between daily changes in sterling and the dollar was unusually high in September (see Chart 5). That close correlation probably reflected similar changes in expectations for US and UK short-term interest rates. In turn, this was influenced by market perception of the similarity in the two countries' cyclical positions, and in statements made by their monetary authorities in September.

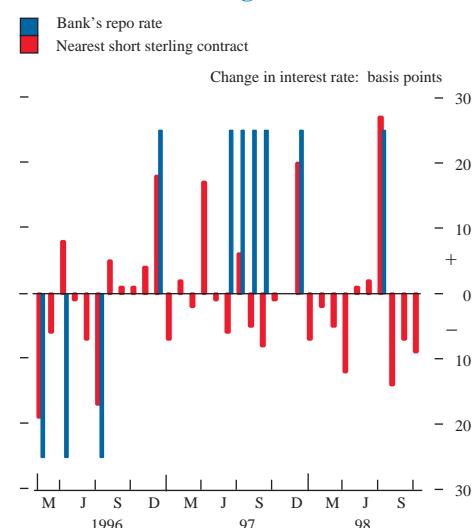
Sterling appreciated immediately after the MPC's decision in September to leave interest rates unchanged. But as the market digested the accompanying statement that the Committee 'recognised that deterioration in the international economy could increase the risks of inflation falling below the target', sentiment shifted, and the pound gradually drifted downwards, ending the day 2 pfennigs lower against the Deutsche Mark. Sterling also moved sharply in reaction to the combination of GDP and current account data for the second quarter, both released on 24 September. The

Chart 5
Correlations between US dollar and sterling^(a)



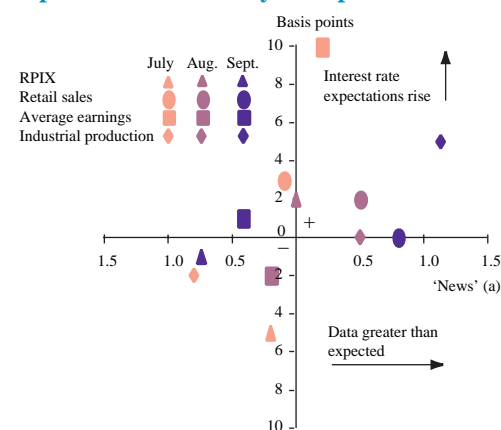
(a) Measured by 20-day rolling window of correlations between daily movements in DM/\$ and DM/£.

Chart 6
Interest rate announcements: change in nearest short sterling contract^(a)



(a) In contract-switching months (March, June, September and December), the contract that expires three months ahead was used.

Chart 7
Effect of data releases on interest rate expectations from July to September 1998



(a) 'News' is measured as data outturn less expected, divided by standard deviation of past surprises. Interest rate expectations are measured by the impact on the nearest short sterling contract. July and August data are for close of business to close of business, whereas September is the ten-minute reaction to the data releases.

upward revision to the level of GDP, and an unexpected shift into surplus on the current account, underpinned sterling, which rose by more than 1/2% on its effective exchange rate index during the day.

Short-term interest rates

Though the MPC left the official repurchase (repo) rate unchanged in the third quarter, short-term interest rates expected by the market fell. Early in the quarter, markets remained nervous about the direction of rates following June's rate rise; macroeconomic data emerging in June were stronger than the market expected. Attention was largely focused on the domestic developments and their implications for monetary policy. As the quarter progressed, the domestic conjuncture seemed less likely to provoke a further increase in interest rates and, after mid August, attention focused more on international developments. Consequently, rate expectations fell.

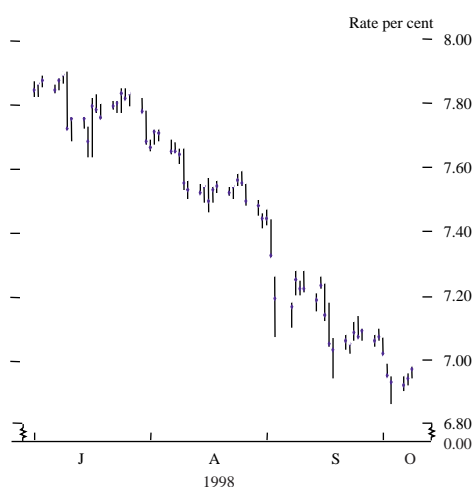
There is evidence that the markets considered that a rate rise was possible at the July and August MPC meetings. Following the announcement that policy had been left unchanged at these two meetings, the rate implied by the nearest short sterling futures contracts fell (see Chart 6).

Economic data released had less impact on market expectations as the quarter progressed. This may partly have reflected the fact that some of the statistics published in August and September were broadly in line with market expectations (see Chart 7), but also reflected the relatively greater emphasis that the market was placing on international developments and equity prices.

By early August, the view that interest rates had peaked was more widespread. Although concern about higher rates was aggravated in early July by the publication of average earnings data, markets soon started to focus on signs that the slowdown in the economy was spreading from the manufacturing to the service sector. These concerns were reinforced by the publication of the CIPS manufacturing and services survey, and the CBI Distributive Trades survey in early August. Towards the middle of August, expectations that further rate rises were unlikely gained ground as lower earnings data emerged.

Interest rate expectations fell sharply after mid August (see Chart 8), in response to the developments in Russia and continuing concerns about Japan. Western stock markets suffered as investors sought 'safe havens'. Investors targeted short-dated US Treasury bills and notes and, to a lesser extent, sterling money-market instruments. By early September, the markets were looking closely for signs that international developments would affect the monetary policy stance in the major economies. Federal Reserve Chairman Greenspan said that it was 'just not credible for the United States to remain an oasis of prosperity unaffected by a world that is experiencing greatly increased stress.' Markets took this as a strong hint that US interest rates would be lowered sooner than previously thought. In early September, the Bank of Japan eased monetary policy. In response to market speculation, it subsequently stated that this was not part of a co-ordinated rate cut planned by the major industrialised economies. But the markets had been surprised by the move, and hopes developed that the round of

Chart 8
Implied rate given by December 1998 short sterling^(a)



(a) The top and bottom of the line and the spot give the traded high, low and close of day respectively.

Chart 9
UK three-month Libor cash and futures markets

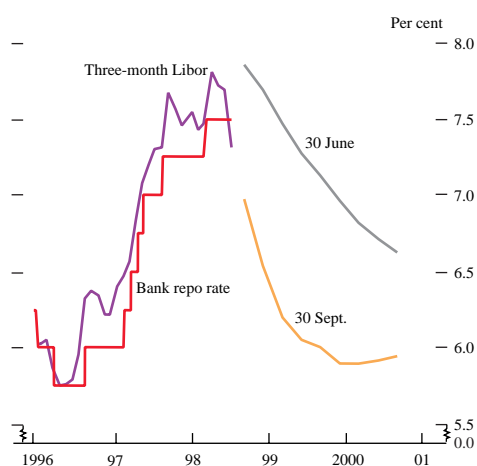
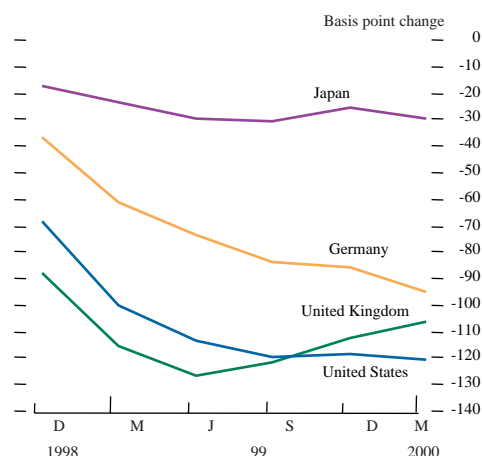


Chart 10
Changes in three-month interest rates implied by futures contracts^(a)



(a) Change between end June and end September.

international financial meetings in early October would produce further interest rate cuts.

Following the MPC's statement at its September meeting there were increased market expectations that official UK interest rates had peaked.⁽¹⁾ Implied three-month rates for December fell by 9 basis points on the day, as measured by short sterling futures. The markets came to expect a larger and more rapid decline in rates than envisaged at the end of the second quarter, as Chart 9 shows.

In late September, the US Federal Reserve reduced the target fed funds rate, helping to convince UK markets that the MPC would act sooner rather than later, and implied interest rates in all the major industrialised economies fell. Against this background, the Bundesbank indicated that German interest rates would remain unchanged. Implied rates for the major industrialised nations fell significantly in the quarter as a whole (see Chart 10).

Long-term interest rates

Long-dated yields in the major international government bond markets fell sharply during the quarter (see Chart 11). Yields were little changed during July, but fell in the following two months, to reach lows at the end of the quarter. For the United States, Germany, Japan, and the United Kingdom, nominal ten-year yields fell by between $\frac{3}{4}$ and 1 percentage point during the quarter.

Long-term yields on government bonds were influenced by much the same factors as short rates. The credit quality and relative liquidity of government debt was seen as attractive, and market participants also expected slower growth and lower inflationary pressures. Technical factors further underpinned government bond markets, after the announcement that a consortium of banks would support Long Term Capital Management (LTCM), with others purchasing bonds in which LTCM was believed to be 'short'.

International yield curves changed shape in the quarter, reflecting the changed outlook for monetary policy. The United States began the third quarter with a flat yield curve,⁽²⁾ which turned mildly upward-sloping as short-dated yields fell most, reflecting the market view that official rates would be lowered significantly. Although inverted, the yield curve in the United Kingdom behaved in a similar way, flattening slightly as the fall in short-dated yields outpaced that of long-dated bonds, on the market view that monetary policy would be progressively eased (see Chart 12). In contrast to this, ten-year yields in Germany and Japan fell by more in absolute terms than two-year yields, as it was thought that the scope for lower official interest rates in each of these economies was limited. The shortage of deliverable ten-year Bunds in the September 1998 futures contract relative to open interest helped to drive long-dated yields lower. For some time in Germany, increasing use of Bund futures to hedge positions in government bonds of the other 'euro-in' countries was noted in the market.

For ERM countries, some limited signs of strain emerged at the end of the third quarter. Ten-year government spreads of 'euro-ins' versus Germany widened, but by limited amounts compared with

(1) See the November *Inflation Report* for details.
 (2) Defined as the ten-year yield less the two-year yield.

Chart 11
International ten-year yields

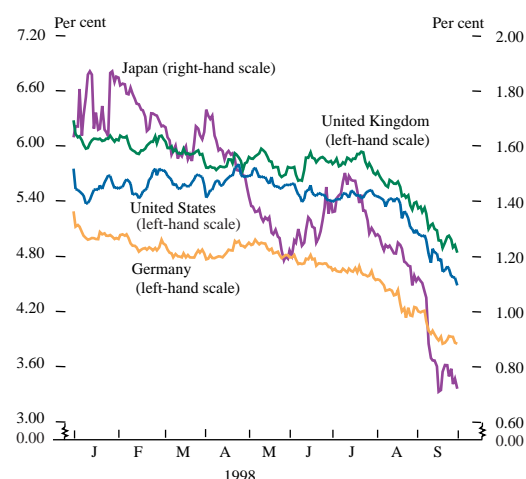
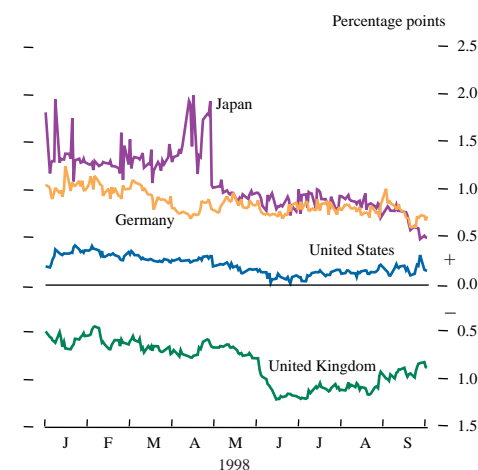


Chart 12
International bond yield gaps^(a)



(a) The yield gap is defined as the spread between ten-year and two-year government bonds.

Table C
Official transactions in gilt-edged stocks

£ billions: not seasonally adjusted

	1998/99	1998		
	Apr.–June	July	Aug.	Sept.
Gross official sales (+) (a)	3.8	2.4	0.2	0.0
Redemptions and net official purchases of stock within a year of maturity (-)	-1.8	0.0	0.0	-0.8
Net official sales (b)	1.9	2.4	0.1	-0.8
of which net purchases by:				
Banks (b)	1.6	0.1	0.7	2.4
Building societies (b)	-0.1	0.0	-0.1	0.0
M4 Private sector (b)	-3.4	1.2	-1.1	-1.7
Overseas sector	2.9	0.9	0.6	-1.4
LAs & PCs (c)	0.9	0.1	0.0	0.0

(a) Gross official sales of gilt-edged stocks are defined as official sales of stock with more than one year to maturity, net of official purchases of stock with more than one year to maturity, apart from transactions under purchase and resale agreements.

(b) Excluding transactions under purchase and resale agreements.

(c) Local Authorities and Public Corporations.

the non-EMU Scandinavian markets (see Table B). The 1 January 1999 launch date for the euro, when switching among the eleven government bond markets in the euro area will hold no foreign exchange investment risk, helped to prevent further widening of spreads.

Gilt-edged market

Gilt yields at all maturities fell in the third quarter. By the end of the quarter, yields were around 1 percentage point lower, with longer-dated gilt yields approaching their lowest levels since the late 1950s.

In the three-month period the absolute fall in gilt yields was generally larger in the United Kingdom than in other G7 government bond markets. Gilt yields fell more than German Bunds and Japanese government bond yields. This was especially true at the short end of the market, and largely reflected the markets' assessment of the relative scope for monetary easing in the G7. But in the liquid five and ten-year areas, US Treasury yields fell by slightly more than UK yields.

The fall in gilt yields gathered momentum as the quarter progressed and as the perception grew that the next move in the repo rate would be downwards. The belief that monetary policy would soon be eased in the world's largest economies also supported gilts. This, together with 'safe-haven' flows, stimulated a strong gilt market rally. Gilt yields tended to fall when equity prices were declining (see Chart 13). Broadly, the change in the market view on monetary policy had its strongest influence at the short end, and this reduced the degree of inversion.

On 29 July, the Debt Management Office (DMO) auctioned £2.5 billion of 5³/₄% Treasury Stock 2009, with the expectation that this would develop into the ten-year benchmark for 1999. Some £2.9 billion nominal of 11³/₄% Treasury Stock 2003–07 was converted into £3.4 billion of 6¹/₂% Treasury Stock 2003 on 22 July. The aim was three fold: to build up the pool of strippable stock; to enhance liquidity in the five-year benchmark; and to eliminate a smaller, less liquid stock. On 7 August, the DMO tapped £150 million of 4³/₈% Index-linked 2004. Excluding the July conversion, a total of £2.65 billion was issued during Q3, down from £3.45 billion in Q2. This relatively low issuance reflected the Government's lower need for funds this fiscal year, given the Central Government Net Cash Requirement of £3.5 billion, as published in the June *Economic and Financial Strategy Report*. Early in the quarter, there was some market concern about gilt supply, following the publication of a larger-than-expected public sector net cash requirement for June. The Government's Comprehensive Spending Review, completed in July, also raised the possibility, in the markets' perception, that borrowing could be higher in the medium term. However, the Government's financial position in the current year subsequently improved further.

A number of changes to gilt market trading conventions have taken place this year.⁽¹⁾ All were favoured by the majority of respondents

(1) For further information on these changes, see the March 1998 joint paper issued by the Bank and HM Treasury entitled 'Changes to Gilt Market Trading Conventions'. Copies are available from the Bank or the DMO.

Table D
Gilt issuance

Auctions

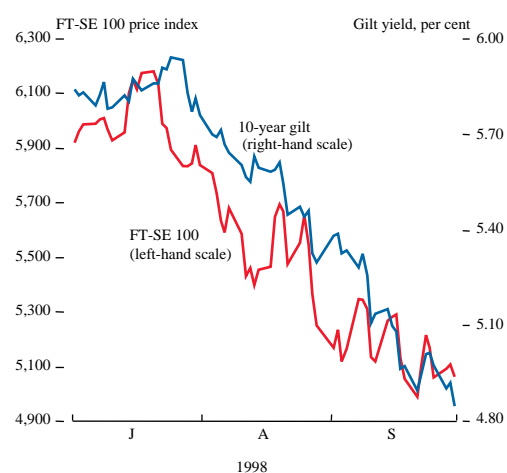
Date	Stock	Amount issued (£ millions)	Cover	Tail (basis points)	Yield at lowest accepted price
29.7.98	5¾% Treasury Stock 2009	2,500	2.93	1	5.73%

Taps

Date	Stock	Amount issued (£ millions)	Issue price	Price at exhaustion	Yield at exhaustion
7.8.98	4¾% Index-linked 2004	150	128.3125	128.3125	2.91%

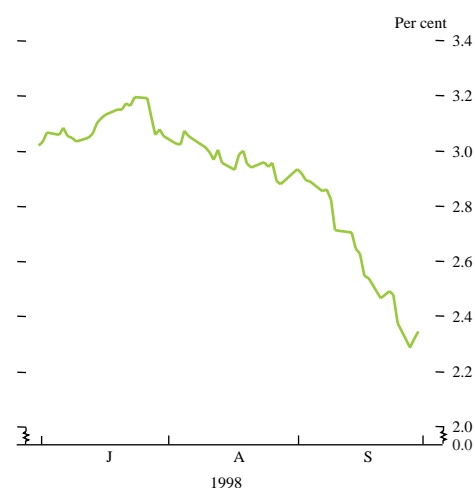
Note: Real yields are calculated using a 3% inflation assumption.

Chart 13
FT-SE 100 index and ten-year gilt yield^(a)



(a) The yield of the 7¼% Treasury Stock 2007 has been used as the ten-year yield.

Chart 14
Yield spread between 8% Treasury Stock 2013 and 2½% Index-linked 2013



to a consultation on gilt market conventions last year. The implementation dates for the changes were announced in February and March: 31 July for the abolition of special ex-dividend arrangements, and 1 November for changes to the calculation of accrued interest and decimal pricing for gilts.⁽¹⁾

Index-linked yields and inflation expectations

Along with other fixed-income government markets, index-linked gilt yields fell in the third quarter, but by less than conventional gilt yields. For instance, the yields on 8% Treasury Stock 2013 and 2½% Index-linked 2013 fell by 86 and 19 basis points respectively during the quarter. This lowered the break-even inflation rate, the gap between the two bonds, from 3.01% at the start of the quarter to 2.34% by end September (see Chart 14). Break-even inflation rates fell across the yield curve, continuing the longer-term trend. At the end of September, the implied inflation curve lay below 2.5% (see Chart 15).

The volatile and illiquid conditions toward the end of the quarter mean that the fall in implied inflation expectations should be interpreted with care. During the period of turbulence, investors favoured the liquidity of conventional gilts, so that index-linked bonds tended to underperform conventionals. The prospective start of the index-linked auction programme in the autumn was also said to be affecting the index-linked sector relative to conventionals. The implication is that changes in gilt yields in the third quarter may have overstated the perceived fall in inflation expectations.

The DMO announced that, with effect from 14 September, eight firms had been recognised as specialist index-linked gilt-edged market makers (IG GEMMs). The IG GEMMs have undertaken to provide liquidity in index-linked gilts ('IGs'). GEMMs that are not IG GEMMs will no longer have an obligation to make markets in IGs, and will not enjoy the corresponding facilities. These arrangements have been put in place ahead of the first auction for IGs. Other participants will be able to submit bids in IG auctions through the IG GEMMs. Also with effect from mid September, the DMO published details of its holdings of IGs on its wire service pages. These stocks were available to the IG GEMMs either for switching or outright purchase, as described in the DMO's *Operational Notice* (issued in July 1998). On 30 September, the DMO announced that the first index-linked gilt auction, which had been planned for 28 October, would be delayed to 25 November to

(1) See 'Gilt-edged and sterling money markets: developments in 1997', February 1998 *Quarterly Bulletin*, page 60 for details.

Chart 15
UK implied inflation curve

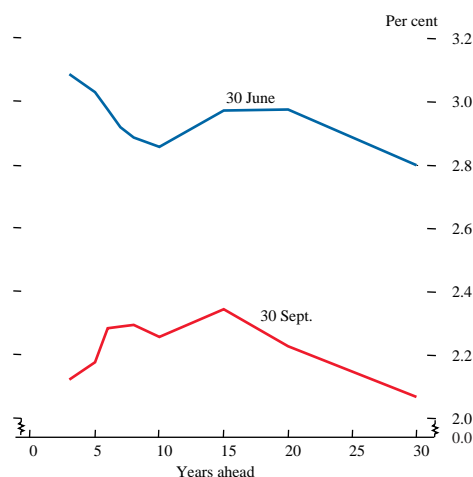


Chart 16
Real yields on index-linked securities

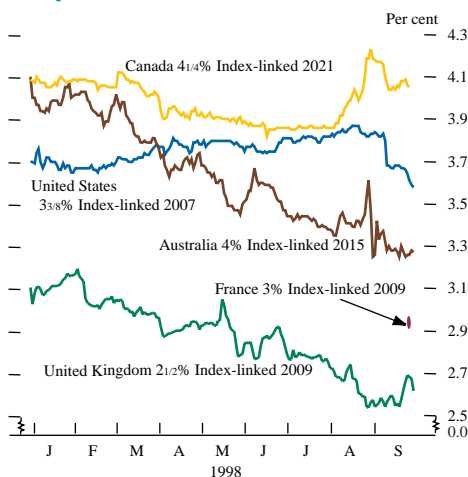
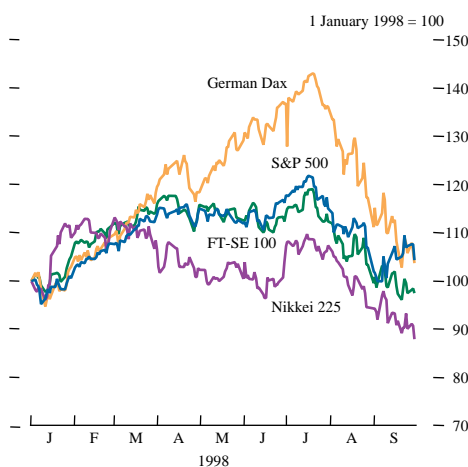


Chart 17
Equity indices (in local currencies)



avoid clashing with the *Pre-Budget Report* subsequently announced for 3 November.

In early September, the French Trésor issued 24 billion francs of its first index-linked debt. The bond has a 3% coupon, matures in 2009, and was initially sold to the market at 2.98%. The issue reportedly sold well, and the yield swiftly fell to 2.95% (see Chart 16). This is closer to real yields prevailing in the UK index-linked market than to those in the US market; however, because of its illiquidity, the French index-linked yield is seen as indicative rather than definitive. Earlier in the quarter, the US Treasury auction of \$8 billion of 30-year index-linked bonds went smoothly, at a yield close to 3.7%.

Gilt strips⁽¹⁾

The total nominal outstanding of potentially strippable stock rose to £95 billion at end July, up from the £89 billion reported in the August *Quarterly Bulletin*. This followed the July conversion and gilt auction. Strippable stock now constitutes about 35% of the total nominal of gilts outstanding. The percentage of stock held in stripped form remained steady in the quarter, at about 3% of outstanding strippable gilts. Weekly strips turnover averaged £153 million in Q3. This is equivalent to about ½% of turnover in the conventional coupon gilts market, and down slightly on the previous quarter.⁽²⁾

Interest rate expectations derived from strips fell across all maturities in the third quarter. Because of the low turnover in strips, interest rate expectations derived in this manner may simply reflect what has been happening in the conventional market (as traders tend to price strips from the coupon curve). But evidence from the amount of gilts stripped and reconstituted suggests that activity has been concentrated in particular parts of the curve.

A common trade has been to switch from the 30-year unstripped gilt (6% Treasury Stock 2028) to its principal strip. Those switching from the principal strip were lengthening the duration of its portfolios—increasing the sensitivity of its value to uniform changes in gilt yields—so increasing the potential benefit if gilt yields continue to fall. By end September, the yield on the principal strip had fallen by around 80 basis points since end June.

Equities

After remaining between 5,700 and 6,100 in June, the FT-SE 100 index rose to 6,179 on 20 July, its record end-of-day peak. Between then and close of business on 30 September, it fell by 18% to 5,064.4, broadly in line with other major equity markets (see Chart 17).

This fall in value partly reflected the ‘flight to quality’ out of investments perceived as risky, including equities, and into government bonds. This can be seen by looking at Chart 18, which shows the real yield on a government bond less the yield on equities falling through the third quarter. International factors were

(1) For further background on gilt strips, see pages 15–18, 58–59, and 66–67 of the February 1998 *Quarterly Bulletin*, pages 119–20 of the May 1998 *Quarterly Bulletin*, and page 201 of the August 1998 *Quarterly Bulletin*.

(2) For an analysis of factors contributing to the levels of activity in the strips market, see page 120 of the May 1998 *Quarterly Bulletin*.

Chart 18
Yield spread: index-linked versus equities
 (2½% Index-linked 2013 yield less FT-SE All-Share dividend yield)

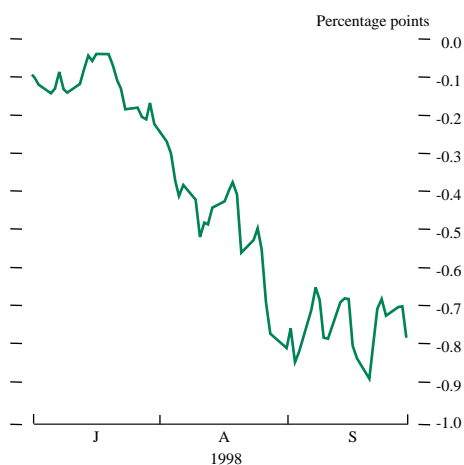
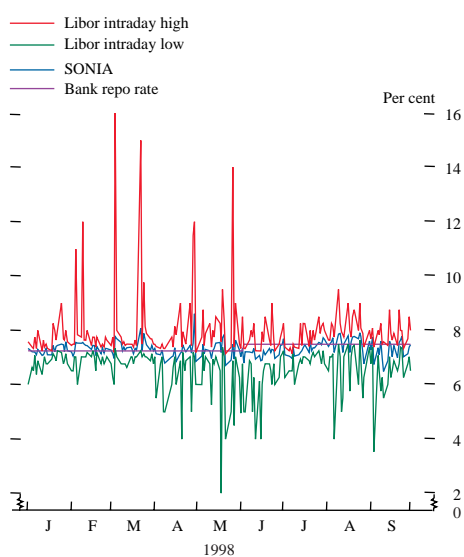


Table E
Average daily money-market shortages

£ millions

1996	Year	900
1997	Year	1,200
1998	Q1	1,600
	Q2	1,200
	July	800
	August	1,600
	September	1,200

Chart 19
Repo rate, SONIA and intraday Libor



the prime reasons cited by market contacts for UK equity price falls, but expectations of slower domestic growth and lower corporate profitability were also thought to have contributed.

The move in UK equity prices varied across sectors. General industrials and mature industry stocks experienced sharp price falls and, as the quarter progressed, consumer goods and service sector share prices were also adversely affected—indicative of a more broad-based slowdown. Prices in the financial sector fell, reflecting the turbulence in international markets. Utility and resource (water) equity prices held up well in the quarter; these two sectors are often seen as ‘defensive’ assets when economic conditions deteriorate.

Open market operations and gilt repo

Operations in the sterling money market

The stock of money-market refinancing held at the Bank of England rose from a low of £5.4 billion at the end of June, to nearly £12.5 billion at the end of August.⁽¹⁾ The stock fell slightly during September, to £9.6 billion at the end of the month.⁽²⁾ The average size of the daily money-market shortage, which had been seasonally low following the coupon payment on strippable gilts due on 7 June, increased during the quarter to around £1.2 billion.

This increased liquidity need was accompanied by firmer money-market conditions during Q3: very short-term market interest rates had been relatively low in June reflecting the low shortages, but rose to more ‘normal’ levels during the quarter.

There are a number of ways to discern the ‘tightness’ of money-market conditions. One way is to look at the two-week interbank rate—the maturity of which coincides exactly with the maturity of the Bank’s two-week refinancing. Highs and lows of the overnight interbank rate are another indicator, though these are only screen-quoted rates and often little trade takes place at these levels. The Sterling Overnight Index Average (SONIA) includes all trades through brokers weighted by the volume of each trade, and so is a better indicator of overnight money-market conditions.

Chart 19 concentrates on the overnight market. It shows that SONIA tended to be below the Bank’s two-week repo rate during most of June and July, but generally traded closer to repo during August and September. The intraday high tended to be lower in Q3 than earlier in the year. This was linked to the introduction of technical changes to the Open Market Operations (OMOs) from 1 June 1998.⁽³⁾ From that date, all Bank OMO counterparties have had access to overnight repo at 3.30 pm without quota restrictions. Previously, as most of the discount houses moved out of transitional arrangements, the capacity to borrow late in the day from the Bank had dwindled, causing occasional late spikes in the overnight rate. Subsequently, such ‘spikes’ have disappeared under the new arrangements, with the overnight rate, in effect, ‘capped’—only very rarely trading higher than the Bank’s late lending rate after the second and final round of two-week OMOs at 2.30 pm.

(1) Excluding foreign exchange swaps and other refinancing.

(2) Including foreign exchange swaps and other refinancing.

(3) The changes were described more fully on page 202 of the August 1998 *Quarterly Bulletin*.

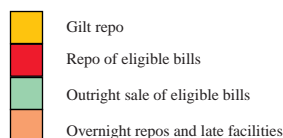
Table F Influences on the cash position of the money market

£ billions; *not seasonally adjusted*
Increase in bankers' balances (+)

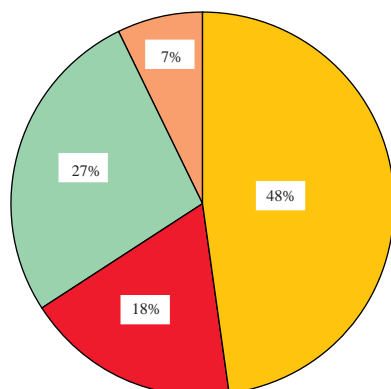
	1998/99	1998		
	Apr.–June	July	Aug.	Sept.
CGNCR (+) (a)	6.6	-5.2	1.8	2.0
Net official sales of gilts (-) (b)	-1.9	-2.4	-0.1	0.8
National Savings (-)	-0.3	-0.2	0.0	-0.1
Currency circulation (-)	-0.6	-2.1	-0.4	2.1
Other	3.2	3.5	-3.9	0.3
Total	7.0	-6.4	-2.6	5.1
Outright purchases of Treasury bills and Bank bills	-1.1	0.0	0.1	0.0
Repos of Treasury bills, Bank bills, and British Government stock and non-sterling debt	-4.8	4.4	2.6	-4.0
Late facilities (c)	-0.3	0.0	0.0	0.1
Total refinancing	-6.2	4.4	2.7	-3.9
Foreign exchange swaps	-0.7	2.0	0.0	-1.4
Treasury bills: Market issues and redemptions (d)	0.1	-0.1	0.0	0.0
Total offsetting operations	-7.0	6.5	2.7	-5.3
Settlement banks' operational balances at the Bank	0.0	0.1	0.1	-0.2

- (a) Central government net cash requirement. Formally known as the CGBR, the CGNCR came into being following the publication of the *Economic and Fiscal Strategy Report* in June. Its definition, however, remains unchanged.
- (b) Excluding repurchase transactions with the Bank.
- (c) Since 3 March 1997, when the Bank introduced reforms to its daily money-market operations, discount houses and settlement banks have been eligible to apply to use the late facilities.
- (d) Issues at weekly tenders plus redemptions in market hands. Excludes repurchase transactions with the Bank (market holdings include Treasury bills sold to the Bank in repurchase transactions) and tap Treasury bills.

Chart 20 OMOs—instrument overview



Percentage shares; July–September 1998



The share of different instruments in the Bank's refinancing during Q3 is shown in Chart 20. There was little change in the relative shares of different instruments, with gilt repo accounting for about one half of the OMOs, and repo of eligible bills about 18%.

The three-month Treasury bill tender remained at £100 million per week during the quarter. The pattern of the stock of refinancing has meant that there has been no need to alter the bill tender for the past year. The low supply of Treasury bills relative to demand led to cover averaging nearly seven times the amount of bills on offer during the quarter.

From 29 January 1998, the Bank introduced foreign exchange swaps as an additional tool through which it could supply liquidity to the sterling money market. Because the money-market shortages were small, there were no foreign exchange swaps outstanding as part of the Bank's money-market operations at the end of June. But as the market's liquidity needs increased during the third quarter, the Bank supplemented its regular OMOs with foreign exchange swaps: £0.6 billion of foreign exchange swaps were outstanding at the end of September.

Gilt repo market

Gilt repo and reverse repo outstandings both rose in the quarter to end August, according to the Bank's regular market survey. The value of repo outstandings was £105 billion at end August, compared with £76 billion at end May and £95 billion at end February. Reverse repo value outstanding stood at £92 billion at the end of August, compared with £69 billion at end May. Two particular factors may lie behind these increases:

- (i) since gilt repo is, in effect, a loan collateralised by government bonds, it is one of the safest forms of lending. So gilt repo may have become a more popular instrument for lending towards the end of August as investors began to retreat from risk; and
- (ii) the Bank's stock of refinancing was slightly higher at the end of August than at the end of May. This may have helped to generate greater repo activity, as counterparties of the Bank sought more gilt collateral from a wider range of market participants and investing institutions.

Market conditions were extremely volatile at the end of the period, and some thought that this would lead to more trading opportunities and a greater volume of business. But this is not supported by the official data. These show that the value of repo turnover in the May–August period fell to £14 billion per day, from £16 billion per day in the previous quarter.

There are signs that the repo market has entered a more mature stage of development, with increasing outstandings at longer maturities. As Table G shows, 11% and 12% of outstanding repo and reverse repo respectively took place in maturities of more than six months in the quarter ending in August. Otherwise, maturity data in the table were broadly similar in May and August, except for a switch in volume between the two shortest-dated periods.

Table G
Maturity breakdown of outstanding repo and reverse repo over time^(a)

		Total (per cent)						Total £ billions
		On call and next day	2-8 days	9 days to 1 month	1-3 months	3-6 months	Over 6 months	
Repos								
1996	May	20	34	23	15	7	1	35
	Aug.	19	33	33	11	4	1	57
	Nov.	19	36	22	19	2	2	69
1997	Feb.	20	29	33	15	3	0	71
	May	27	23	27	18	4	1	80
	Aug.	25	21	24	24	4	1	70
	Nov.	22	22	19	22	11	4	72
1998	Feb.	14	23	25	19	11	7	95
	May	20	24	19	19	12	8	76
	Aug.	27	15	17	18	11	11	105
Reverse repos								
1996	May	20	30	20	23	6	2	34
	Aug.	22	29	29	14	5	1	54
	Nov.	21	34	21	20	3	2	60
1997	Feb.	18	32	26	21	3	0	67
	May	23	21	30	20	6	1	71
	Aug.	17	20	26	26	6	1	63
	Nov.	17	25	17	25	11	5	71
1998	Feb.	14	29	23	19	10	5	94
	May	22	28	17	13	12	10	69
	Aug.	28	20	18	15	7	12	92

(a) From the data reported under the voluntary quarterly arrangements.

Chart 21
Swap spreads for two, five, and ten years
in sterling

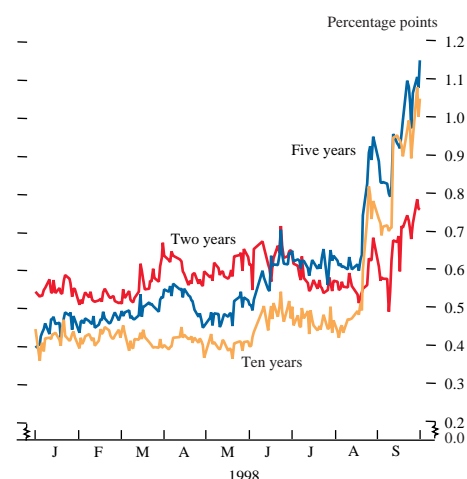
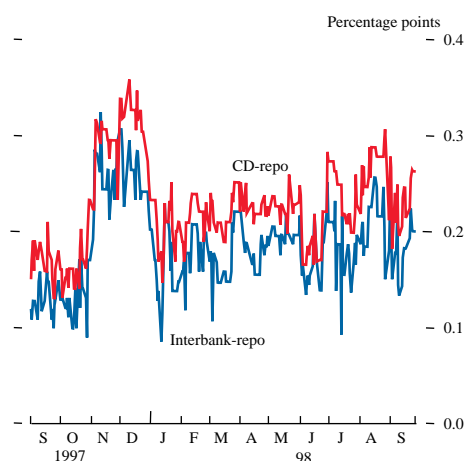


Chart 22
Money-market spreads at three months



Other issues

Credit indicators and spreads

Credit markets were also adversely affected by the turbulence in international markets. The cost of capital to private organisations rose relative to the public sector, and unsecured borrowing rates rose relative to collateralised borrowing.

For example, though nominal yields on corporate bonds fell in the third quarter, borrowing costs relative to high-rated government bonds rose. In the United States, ten-year bond market credit spreads for AA-rated borrowers typically rose from around 30 basis points over US Treasuries to 85 basis points by the end of the quarter. The UK corporate bond market is much smaller than its US counterpart, so liquidity and pricing are more difficult to interpret (particularly at a time of financial stress). But looking at individual UK corporate bond spreads shows that these widened slightly more than in the United States during Q3. This suggests that investors attached a greater risk to holding corporate debt during the quarter.

The fixed-rate leg of a swap at any maturity and the spread over the gilt curve is mainly a measure of Libor bank and counterparty risks. This is because the floating-rate leg of a swap, for which the payments go in the opposite direction, are typically decided at six-month intervals, using six-month Libor.⁽¹⁾ Interest rate swap spreads widened in the quarter (see Chart 21). The swap spread is the difference between the fixed-rate leg of a swap transaction, and the relevant maturity area of the underlying current-coupon gilt curve.

Credit spreads also increased in the sterling money markets. Chart 22 shows a widening of both the CD-repo and interbank-repo spreads in Q3. It is possible that these spreads understate the extent of risk aversion, because lower-quality names may have withdrawn from the market altogether, preferring to reduce their balance sheets, rather than pay high borrowing premia. A similar development was seen in the United States. The gap between three-month Treasury bill yields and same-dated eurodollar deposits (known as the 'Ted spread') widened during the quarter, and to a greater extent than in the United Kingdom (see Chart 23). This suggests that the market perception of US bank credit deteriorated further than in the United Kingdom.

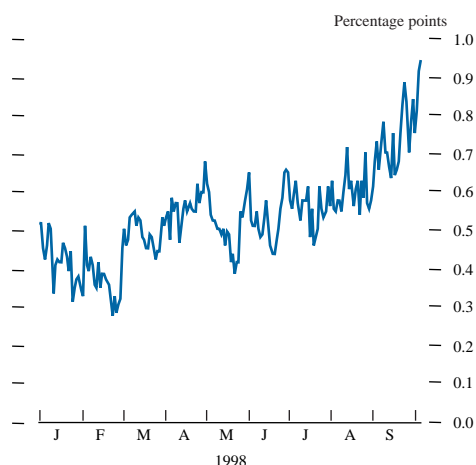
HM Government euro and Ecu issues

On 7 July, the Bank of England published a *UK Government Euro Treasury Bill Information Memorandum*. This changed the denomination of the UK Government Ecu Treasury programme into euro for bills maturing after the start of 1999. The maximum maturity of bills issued is six months, and the timing of the new *Information Memorandum* coincided with the announcement of auction of the first bills maturing in 1999; bills with a maturity date before the end of 1998 will continue to be issued as Ecu bills under the earlier *Ecu Bill Information Memorandum*.

Before the start of 1999, all payments at tender will be made in Ecu at a rate of ECU1:€1. In line with market recommendations,

(1) Note also that both legs are determined with reference to a notional principal amount.

Chart 23
The US Ted spread^(a)



(a) Three-month Libor rate less the rate on the three-month Treasury bill.

principal payments in euro will be made on any due date when TARGET is open. The daycount convention for calculating yields on euro bills will be 'actual/360' days, which is the same as for Ecu bills. This is consistent with market standards for the daycount convention for euro money-market instruments.

The United Kingdom held regular monthly tenders of Ecu and euro Treasury bills during the third quarter, comprising ECU 200 million of one-month, ECU 500 million of three-month and €300 million of six-month bills, each month. The tenders continued to be well oversubscribed, with cover averaging 4.3 times of the amount on offer during the third quarter of 1998, and with bids accepted at average yields of 5–14 basis points below the Ecu Libid rate of the appropriate maturity. Secondary market turnover averaged ECU 1.2 billion a month during the quarter, up from ECU 0.9 billion during Q2. There are currently ECU 3.5 billion of UK Government Ecu Treasury bills outstanding.

On 20 July, the Bank reopened the UK Government Euro Treasury Note maturing on 29 January 2001 with a further tender for €500 million, raising the amount outstanding with the public to €1.5 billion. There was strong cover at the auction, of 5.1 times the amount on offer, and accepted bids were in a range of 4.03%–4.06%. The total of notes outstanding with the public under the UK note programme rose from €5.0 billion in the second quarter to €5.5 billion in the third quarter of 1998.

Sterling bond issues

In spite of the turmoil in the markets, sterling bond issuance remained high in the third quarter. Total fixed-rate issuance in the quarter was £6.6 billion, almost 30% above that in 1997 Q3 and slightly above that in 1998 Q2. Short-dated issues amounted to £2.8 billion; issuance of mediums and longs totalled £1.4 billion and £2.5 billion respectively.

As in 1998 Q2, low prospective gilt supply and relatively high sterling spreads have stoked demand for eurosterling issues. The inversion of the UK yield curve encouraged longer-dated issuance, with a number of corporate borrowers tapping this demand, including ABP, Anglian Water, Asda, BAA and GRE. Italy issued a £300 million 30-year sterling bond in July.

Although there were also a few small high-yield debt issues early in the quarter, the growing supply of such issues had begun to result in widening spreads. Further issuance of high-yield bonds was then halted by the subsequent market turmoil.

By the end of July, with the increasing problems in East Asia and Russia, swap and credit spreads generally began to widen to reflect higher risk aversion and switching to high-quality assets, primarily government bonds. As a result, only higher-rated borrowers (supranationals or sovereign-backed agencies) were able to issue at economic levels in August and September. Although increased risk aversion among investors meant that even AAA-rated issues were brought at higher spreads relative to gilts, wide swap rates allowed supranational borrowers to achieve very attractive floating-rate finance. NatWest were able to bring a £300 million 23-year bond in August, but almost all other issues in the two-month period were

for supranationals (EIB, IADB, IBRD) or public bodies (French CADES, Dutch BNG, and US FNMA).

Liquidity in the primary and secondary markets reduced during the quarter. Risk aversion led to widening credit spreads for all issuers, but particularly for lower-rated credits or those associated with East Asian or emerging markets. The lack of liquidity and sharp movements in the swap markets also meant that further potential swap-driven trades were not completed.

Floating-rate note issuance in the quarter totalled £2.6 billion. Although two UK building societies brought issues, just under £1 billion of these were asset-backed deals, which were collateralised via highly-rated special purpose vehicles and so were less affected by higher credit spreads. The largest deal, however, was a £1 billion swap-driven three-year deal for a German government development agency.