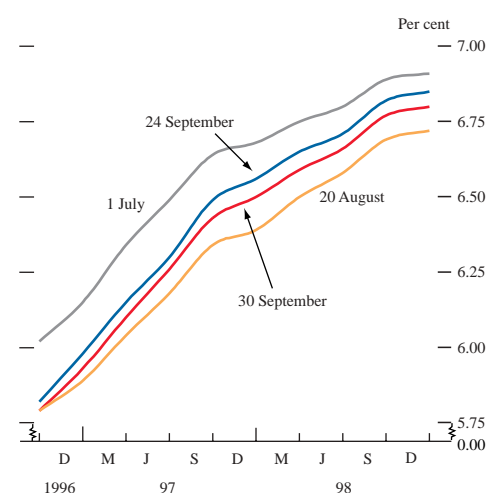


# The operation of monetary policy

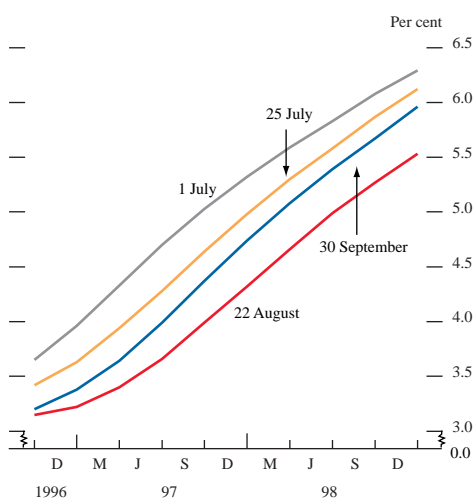
- *There was no change in UK official interest rates, which remained 5<sup>3</sup>/<sub>4</sub>% throughout the period from July to September.*
- *Sterling ended the period stronger, at its highest level on the effective exchange rate index (87.0) since March 1995.*
- *Gilt sales of £11.2 billion were made in the period, bringing total gilt sales for the fiscal year to date to £22.3 billion.*

**Chart 1**  
Eurodollar futures<sup>(a)</sup>



(a) 90-day eurodollar rates implied by traded futures contracts.

**Chart 2**  
Euromark futures<sup>(a)</sup>



(a) 90-day euromark rates implied by traded futures contracts.

## Market developments

The main influences on international financial markets were the continuing uncertainty about inflationary pressure and, consequently, the path of monetary policy in the United States, and, in Europe, the unexpectedly large easing of German monetary policy in August. The Bundesbank's cut in its money-market repo rate on 22 August gave a number of other EU countries scope to reduce their own official interest rates. Financial markets appear to have taken the view that monetary easing, by improving the outlook for activity in a number of EU countries, would increase the probability that these countries would meet the Maastricht criteria—particularly the fiscal criteria—for participation in European Monetary Union (EMU). They took further encouragement for this view from the budget plans unveiled by a number of EU countries in September.

### *The dollar and US markets*

In the United States, movements in short-term implied interest rates in this period contrasted with those in the first half of the year, when implied rates had risen on the basis that the economy was growing strongly, and at a rate which financial markets believed would result in inflationary pressure requiring a tightening of monetary policy. Financial markets worldwide watched the monthly US labour statistics—in particular the headline change in non-farm payrolls figure—extremely closely. But markets revised down their expectations when the Federal Open Markets Committee (FOMC) left policy unchanged.

Interest rates implied by the shorter-dated three-month Eurodollar futures contracts accordingly fell by 20–25 basis points over the period as a whole. By end-September, the term structure of forward interest rates was lower but slightly steeper. Ten-year Treasury bond yields fluctuated between 6.5% and 7.05% as expectations of the path of US monetary policy waxed and waned; bond volatility data indicate that uncertainty about the cash price of ten-year Treasuries in December 1996 increased slightly. Medium/long yields and nominal forward rates fell towards the end of the period as bond markets worldwide rallied following the FOMC's 'no change' decision at its 24 September meeting, together with the subsequent publication of benign US economic data. Ten-year yields ended the period at 6.75%, little changed from

**Table A**  
Interest rates, gilt yields and exchange rates; selected dates<sup>(a)</sup>

1996	Interest rates (per cent per annum)				Short sterling future (d)	Gilt yields (b) (per cent per annum)			Exchange rates			
	Sterling interbank rates (c)					Conventionals	Index-linked		ERI	\$/£	DM/£	
	1 month	3 months	6 months	12 months			Short	Medium				Long
1 July	5 <sup>3</sup> / <sub>4</sub>	5 <sup>49</sup> / <sub>64</sub>	5 <sup>25</sup> / <sub>32</sub>	6 <sup>1</sup> / <sub>32</sub>	5.90	7.38	7.91	8.22	3.85	86.5	1.5557	2.3698
10 July	5 <sup>47</sup> / <sub>64</sub>	5 <sup>45</sup> / <sub>64</sub>	5 <sup>45</sup> / <sub>64</sub>	5 <sup>61</sup> / <sub>64</sub>	5.77	7.32	7.89	8.20	3.80	86.5	1.5535	2.3688
22 August	5 <sup>23</sup> / <sub>32</sub>	5 <sup>45</sup> / <sub>64</sub>	5 <sup>45</sup> / <sub>64</sub>	5 <sup>61</sup> / <sub>64</sub>	5.70	7.13	7.78	8.12	3.70	85.1	1.5485	2.3162
30 September	5 <sup>27</sup> / <sub>32</sub>	5 <sup>55</sup> / <sub>64</sub>	5 <sup>61</sup> / <sub>64</sub>	6 <sup>3</sup> / <sub>16</sub>	5.98	7.09	7.66	7.99	3.64	87.0	1.5640	2.3854

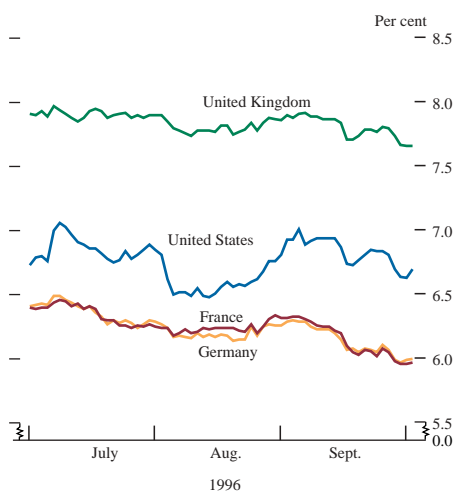
(a) Close-of-business rates in London.

(b) Gross redemption yield. Representative stocks: short—7% Treasury 2001; medium—7½% Treasury 2006; long—8% Treasury 2015; index-linked—2½% Index-Linked Treasury 2016 (real yield assuming 5% inflation).

(c) Middle-market rates.

(d) Implied future rate: December 1996 contract.

**Chart 3**  
Ten-year government bond yields<sup>(a)</sup>



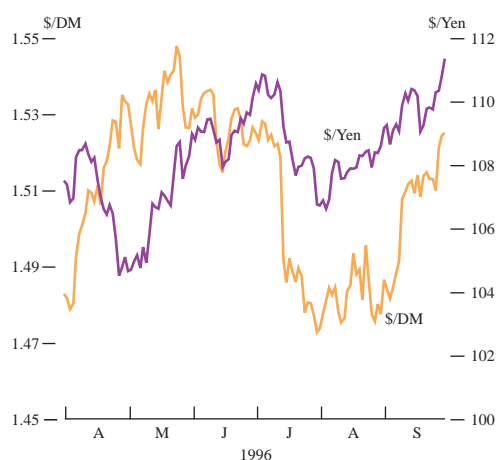
(a) Gross redemption yields on a semi-annual basis.

three months earlier. In contrast, as discussed below, government bond yields in the United Kingdom, Germany, France and many other EU countries declined over the period as a whole.

The dollar's effective exchange rate rose by 0.3 points to 97.5 in this period. Its movements were influenced in the main by uncertainty concerning the prospects for German and (to a lesser extent) Japanese, as well as domestic US, monetary policy. Having weakened during July, it subsequently recovered, supported by the official rate reduction in Germany and a perception that the US economic conjuncture remained benign.

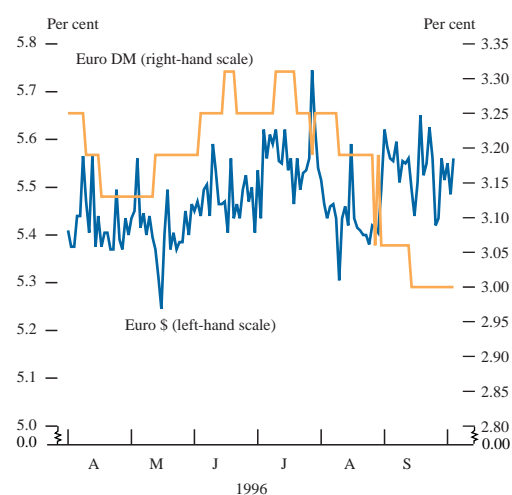
For much of 1996 the dollar has been supported against the other G3 currencies by the development of relative interest rate expectations and by the buoyancy of US capital markets. The spread between expected short-term US and German rates continued to widen in this period, in the main due to the downward movement in the German yield curve which followed the rate reduction. But this failed to lift the dollar which ended the period at DM 1.5252, virtually unchanged from the end of June. In July several events weakened the dollar: the sharp falls in the US stock market on 15/16 July, the Bundesbank's decision to leave rates unchanged at its Council meeting on 25 July, and Japanese official comments interpreted as meaning that monetary policy would be tightened sooner than had been expected. On 16 July, the dollar experienced its sharpest fall since September 1995, from DM 1.5125 to DM 1.4920. It gradually recovered its losses over the remainder of the period. This was helped by the release of a weaker-than-expected Tankan survey, which reduced expectations that monetary policy in Japan would be tightened in the near future; the German interest rate reduction; and US asset markets' favourable reaction to the FOMC's decision to leave official rates unchanged.

**Chart 4**  
Dollar exchange rates



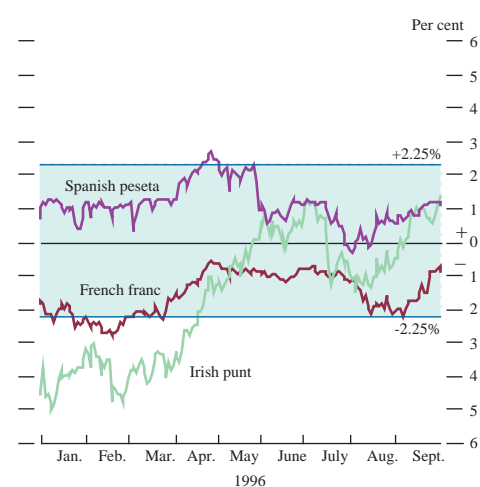
The dollar (and sterling) rose by around 1% against the Deutsche Mark on 10 September, as market expectations of a possible rate rise at the September FOMC grew. The dollar was also supported by the August non-farm payrolls data which showed that the rate of unemployment had fallen further to its lowest level since 1989, and press reports suggesting a majority of regional Federal Reserve presidents favoured a ½% increase in the target federal funds rate. Ahead of the FOMC meeting on 24 September the dollar reached DM 1.5131. In the event, the decision to leave rates unchanged had little lasting impact on the US currency.

**Chart 5**  
Eurodollar and euro-mark implied interest rates<sup>(a)</sup>



(a) Implied by December 1996 futures contracts.

**Chart 6**  
Movements of the French franc, Irish punt and Spanish peseta in the exchange rate mechanism<sup>(a)</sup>



(a) Using the Deutsche Mark as a central rate.

**Table B**  
Ten-year government bond yield differentials against German bunds<sup>(a)</sup>

	1 July	21 August	30 September
United States	33	36	70
United Kingdom	149	159	165
France	-1	8	0
Italy	279	309	244
Ireland	94	106	75
Denmark	85	91	82
Spain	222	251	179

(a) In basis points.

### Continental European Union currencies and markets

The significance of the German easing of monetary policy is best seen in a wider European context. In the first half of 1996, monetary policy had been eased in Germany and in a number of other EU countries. Financial markets appear to have taken the view that the prospects for EMU going ahead had improved. At the beginning of the third quarter, however, expectations emerged of a stronger recovery in the German economy. The Bundesbank Council left interest rates unchanged at its July meeting, which was interpreted by financial markets as making it more difficult for other EU countries to ease their official rates, dampening the prospects for activity and so fulfilment of the Maastricht criteria, particularly the target for fiscal deficits.

Exchange rate tensions briefly re-emerged within the ERM towards the end of July, when the French franc weakened on mounting evidence that the economic conjunctures in France and Germany were markedly different. German manufacturing orders were much stronger than expected, but surveys of both business and consumer confidence in France were gloomy. The franc weakened to above FFr 3.40 for the first time since May on 5 August, and the Spanish peseta weakened to a eight-month low against the Deutsche Mark following the announcement by the Spanish authorities that additional borrowing of more than 0.7% of GDP would be required to finance 'inherited budgetary insufficiencies'.

However, other financial market indicators, such as the differential between German and French expected short-term interest rates beyond 1999 and ten-year bond yield differentials, generally remained convergent. And throughout the period, ERM currencies traded in a fairly narrow band during European trading hours.

The Bundesbank cut its repo rate by an unexpectedly large 30 basis points on 22 August, paving the way for cuts by many other EU central banks in the following days. It was the first of a series of events which appear to have increased the probability the market attached to the achievement of EMU. The passage of a package of spending cuts by the German parliament reassured the markets about Germany's ability to meet the Maastricht fiscal criteria. Many other EU countries unveiled their own budget plans in September, with the common theme of projecting that the fiscal deficit target would be met on time. Financial markets reacted by narrowing spreads over German bunds, and by currency appreciation against the Deutsche Mark. The ten-year spread between Spanish government bonds and German bunds narrowed by 72 basis points from 251 basis points on 21 August, the day before the Bundesbank's rate cut, to 179 basis points by the end of September. The Italian government bond/bund spread narrowed by 65 basis points over the same period (see Table B).

The French franc came under pressure again in the first half of September, ahead of the French budget. However, the evolution of option prices during the period suggested that the bout of volatility was likely to be short-lived (the rise in implied volatility on French franc option contracts was most pronounced at the short end). In the event, the budget was received favourably by financial markets:

the Bank of France cut interest rates shortly afterwards and the French franc recovered.

Uncertainty ahead of the French budget also resulted in a marked rise in the level of money-market interest rates in France relative to Germany. This was reflected in an increase in the French franc's two-year forward rate against the Deutsche Mark which reached FFr 3.4794 on 5 September (3.7% above the French franc's bilateral ERM central rate). However, the depreciation was not expected to continue to any significant degree beyond 1998. The implied differential between French and German interest rates in June 1999 averaged only 0.03% during the third quarter (with a 0.20% range).

*Sterling*

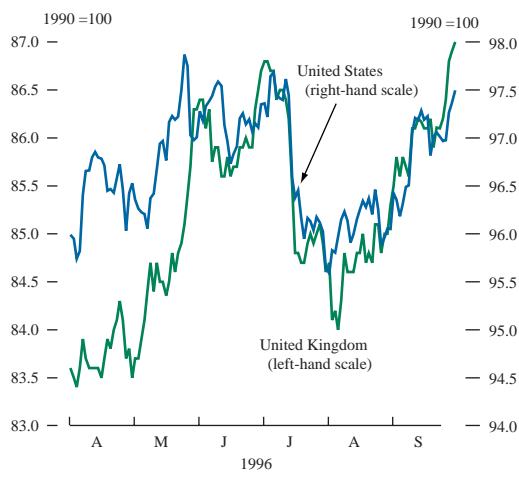
Sterling ended the period stronger, reaching its highest level on the effective exchange rate index (87.0) since March 1995. Once again, sterling's effective exchange rate index tended to track the dollar's. In July and early August sterling weakened with the dollar, only to recover later in the period aided by a variety of factors: the perception that monetary policy in the United Kingdom was likely to be kept on hold in the short term, reductions in continental European interest rates, dollar firmness ahead of the September FOMC meeting, and sterling's general out-performance of non-core ERM currencies towards the end of the period.

Sterling's effective index reached a 1996 high of 86.9 on 3 July (a 17-month high, and a level which was last approached prior to the unexpected UK rate reduction on 6 June). It then remained relatively firm until the dollar's sharp fall on 16 July, when it initially strengthened before what seems to have been profit taking. As a result sterling's fall against the Deutsche Mark was even more pronounced than the dollar's, and it lost over 5 pfennigs between 16 and 17 July, when it closed at DM 2.3012. As the Deutsche Mark strengthened in the wake of the Bundesbank's decision to leave interest rates unchanged on 25 July, sterling fell further to a low of DM 2.2777 and 84.1 on the index by early August.

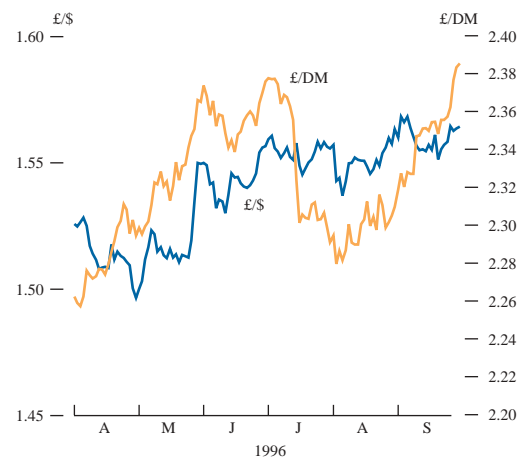
However, sterling began to recover from 7 August in a movement that coincided with the publication of the Bank's *Inflation Report*, which said that the Bank's latest view on inflation two years ahead showed a central projection for RPIX inflation a little above the 2½% target, and that a tightening of monetary policy would be necessary at some point to establish a better-than-even chance of achieving the target. Sterling rose by 1% on the index on 7 and 8 August. On 25 August it recovered back above DM 2.30 following the Bundesbank's interest rate cut; however, it remained well below what market chartists reported as key 'technical' resistance levels at around DM 2.3440. These levels were not regained until 10 September, when sterling and the dollar both rose by around 1% against the Deutsche Mark.

Although the decision to leave UK interest rates unchanged at the UK monetary meeting on 23 September was not unexpected, it did remove a downside risk to sterling, which rose from 86.1 to 86.9 on the effective exchange rate index between 24 September and 29 September, and finished the period up 0.5 points at 87.0.

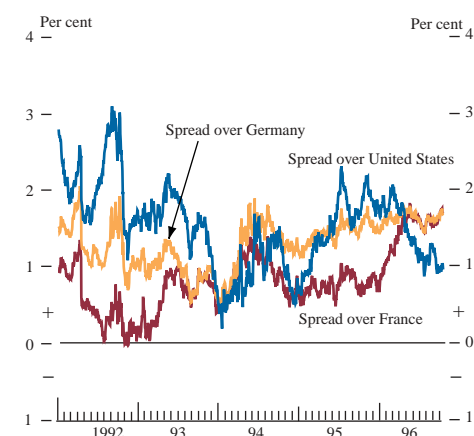
**Chart 7**  
Effective exchange rates



**Chart 8**  
Sterling exchange rates

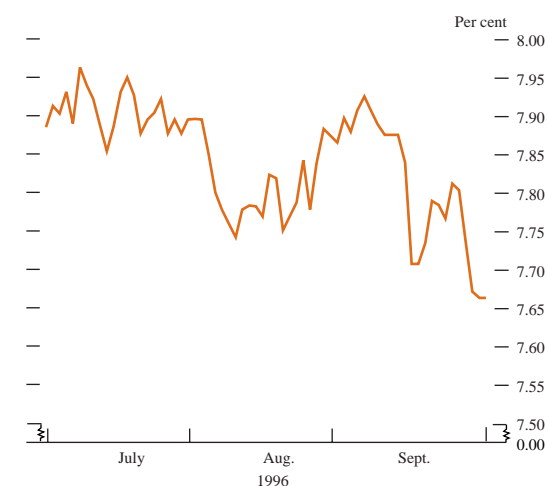


**Chart 9**  
**Ten-year government yield differentials**  
**of the United Kingdom over France,**  
**Germany and the United States<sup>(a)</sup>**



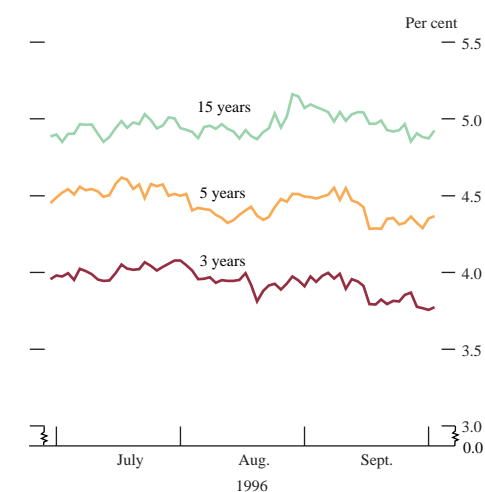
(a) Based on benchmark stocks; gross redemption yields on semi-annual basis.

**Chart 10**  
**Yield on ten-year gilt-edged stock<sup>(a)</sup>**



(a) Gross redemption yield on a semi-annual basis.

**Chart 11**  
**Inflation expectations at 3, 5, and 15 years<sup>(a)</sup>**



(a) Implied annualised inflation in the six-month period beginning 3, 5 and 15 years ahead.

### Gilt yields

UK bond yields fluctuated with the changing sentiment over the path of US monetary policy, and shared in the strong rally in world bond markets at the end of September. Nominal gilt yields fell sharply: the ten-year yield ended the period at 7.66%, 23 basis points below the end-June level. The spread against ten-year US Treasuries narrowed by 21 basis points to 96 basis points by the end of the period. However, the spread over German bunds and French OATs widened by 15 and 17 basis points respectively. The gilt market also underperformed Italian and Spanish government bonds, where yields fell markedly towards the end of the period as financial markets attached a higher probability to their joining EMU.

A market perception that UK official interest rates might be reduced further saw the yield curve steepen during August, with the spread between five and 20-year yields reaching a peak of 99 basis points on 30 August. However, market expectations were subsequently revised, particularly following publication on 18 September of the minutes of the 30 July Monetary Meeting, which reported the Bank's preference for higher interest rates and the Chancellor's preparedness to raise rates pre-emptively if necessary. As a result, and with UK official rates unchanged following the Monetary Meetings on 4 and 23 September, the yield curve began to flatten again; the five to 20-year spread fell slightly to 90 basis points by the end of the period, still 6 basis points higher than at end-June.

### Inflation expectations

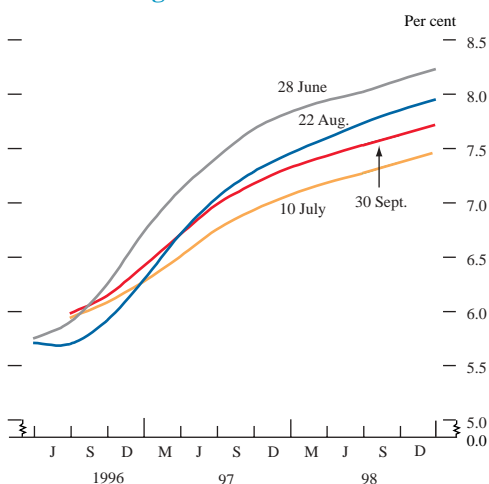
The possibility which the market attached to a further easing of UK monetary policy resulted in a rise in implied forward inflation rates, as derived from the yields on index-linked and conventional gilts. Inflation expectations at the 15-year maturity rose to a peak of 5.16% at the end of August. Towards the end of the period, inflation expectations at all maturities fell: probable explanations include the apparent absence of inflationary pressures internationally, the perception that UK official interest rates were less likely to be reduced further, and, perhaps, the comfort the market appeared to take from the party conferences that risks would not be taken with policy. At the end of September, inflation expectations, as derived, stood at 3.78%, 4.37% and 4.93% at 3, 5 and 15 years respectively. At 15 years this was slightly higher than at the end of June, but was 9 basis points lower at three years and 18 basis points lower at five years.

### Sterling money markets

There was no change in UK official interest rates during the period and—for the most part—there was no strong expectation in the sterling money markets that there would be any change. The September short sterling contract reached its lowest implied rate early in the period (5.69% on 10 July), having rallied strongly from the time of the last, unexpected interest rate reduction on 6 June when official interest rates were reduced by 25 basis points to 5<sup>3</sup>/<sub>4</sub>%.

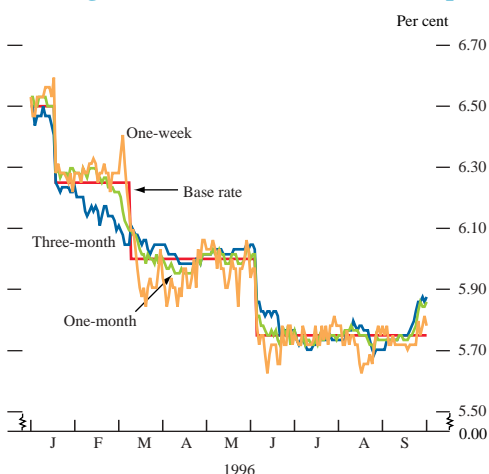
By the end of the period the December contract implied a three-month rate of 5.98%, 8 basis points higher than at the end of June; the September contract had expired on 18 September at an

**Chart 12**  
Short sterling futures rate curves<sup>(a)</sup>



(a) Three-month Libor rates implied by short sterling futures contracts.

**Chart 13**  
Sterling interbank interest rates (4.30 pm)<sup>(a)</sup>



(a) Middle-market rates.

**Table C**  
Probability of the sterling three-month interest rate implied by the December 1996 short sterling futures contract being less than or equal to 5<sup>3</sup>/<sub>4</sub>% on specified dates<sup>(a)</sup>

Per cent	Expected rate (b)	Probability of the rate implied by the contract being 5 <sup>3</sup> / <sub>4</sub> % and below
1 July (5.86%) (c)	5.90	41.27
10 July (5.81%) (c)	5.77	53.10
7 August (5.81%) (c)	5.84	45.40
22 August (5.81%) (c)	5.70	59.70
3 September (5.81%) (c)	5.73	55.45
30 September (5.95%) (c)	5.98	17.40

- (a) See the August 1996 *Quarterly Bulletin* and the *Inflation Report* for explanations of the use of probability distributions of future asset prices implied by options prices.  
 (b) The expected rate is, for the date specified, the interest rate implied by the price of the December 1996 short sterling futures contract.  
 (c) Sterling three-month market interest rate on the date specified.

implied rate of 5.87%. Further along the short sterling curve implied rates were generally around 30–50 basis points lower than three months earlier. The structure of implied interest rates at the end of September was consistent with a very low expectation of any further reductions in official rates, coupled with reduced expectations of the extent of the eventual tightening in official rates. Within the period, some of the sharpest movements in implied interest rates in the United Kingdom were directly related to shifts in interest rate expectations and to changes in official interest rates elsewhere. The reduced probability financial markets came to attach to a tightening of US monetary policy, and the round of official interest rate reductions in continental Europe, resulted in lower implied rates in the United Kingdom. Domestically, the publication of the Bank's *Inflation Report* on 7 August, and on 18 September of the minutes of the 30 July Monetary Meeting, resulted in sharply higher implied rates.

Table C shows, for specified dates, the three-month market interest rate; the interest rate implied by the price of the December 1996 short sterling contract; and the probability the market attached to the three-month interest rate implied by the contract being less than, or equal to, 5<sup>3</sup>/<sub>4</sub>%. The table is consistent with the market having revised upward its expectation of the path of interest rates over the period as a whole. Within the quarter, the table shows the change in sentiment between the publication of the *Inflation Report* on 7 August and the Bundesbank's rate cut on 22 August, when expectations of the path of UK rates were revised down sharply. However, by the end of the period, the market attached a much lower probability to the December short sterling contract settling at an implied rate of 5<sup>3</sup>/<sub>4</sub>% or less.

### Bank's operations in the sterling money markets

It had been expected that the future profile of daily shortages<sup>(1)</sup> would rise during July, because of a forecast negative central government borrowing requirement—CGBR—(on account of the concentration of tax receipts in this month) and settlement of the dual gilt auction held at the end of the month. Accordingly, the Treasury bill tender had been reduced twice in June, by £200 million on each occasion, to £600 million. In the event, the inflows to the Exchequer were larger than expected, which resulted in relatively large daily shortages in July and tight technical conditions. A further reduction in the Treasury bill tender took effect from 16 September, against the prospect of a further rise in shortages (with another dual auction and large tax receipts, in October, likely to be important influences).

Against this background, participation in the twice-monthly gilt repo facility reached a peak of £4.6 billion after the rollover on 7 August. This demonstrated the operation of the facility as a safety valve reducing pressure on the daily operations. During the period the Bank introduced phased provision and return of funds via the facility over the three days following application, as had been announced in June.

### The evolution of the Bank's operating techniques

This continued as a period of evolution in the Bank's operating techniques, reflecting changes in the sterling money markets and

(1) See the box in the February 1995 *Quarterly Bulletin* for an explanation of the factors influencing the daily shortages.

**Table D**  
**Influences on the cash position of the money market**

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

	1996/97		1996/97	
	Apr.–June	July	Aug.	Sept.
CGBR (+)	8.7	-1.6	5.8	3.6
Net official sales of gilts (-) (a)	-9.3	-4.4	-2.6	-2.9
National savings (-)	-1.8	-0.4	-0.4	-0.5
Currency circulation (-)	-0.6	0.9	-1.5	1.5
Other	2.6	-0.4	-0.8	0.3
<b>Total</b>	<b>-0.4</b>	<b>-5.9</b>	<b>0.4</b>	<b>2.1</b>
Increase (+) in the stock of assistance	2.2	3.9	-2.1	-2.1
Net increase (-) in £ Treasury bills in the market (b)	-1.6	1.8	1.8	0.9
Increase in bankers' balances at the Bank	0.2	-0.3	0.1	0.8

(a) Excluding repurchase transactions with the Bank.

(b) Excluding repurchase transactions with the Bank (market holdings include Treasury bills sold to the Bank in repurchase transactions).

the framework for monetary policy introduced in September 1992, after sterling's withdrawal from the ERM. The market has come to expect that changes in official rates will be made only as a result of a Monetary Meeting, as the new framework for monetary policy has become more familiar. This has not altered the Bank's aim in implementing monetary policy, which remains to achieve and to maintain a structure of market short-term interest rates consistent with the level of official interest rates. But there have been evolutionary changes to the Bank's operating techniques designed to maximise the Bank's influence over the general pattern of short-term market interest rates and to achieve greater stability in very short-term rates.

One key change was the introduction of the twice-monthly gilt repo facility, which has enabled a wide group of market participants—banks (including discount houses), building societies, and gilt-edged market-makers—to mobilise gilts to obtain central bank funds. It has proved a very useful operating instrument alongside the Bank's daily operations in the bill market, the growth of which has not kept pace with bank balance sheets in recent years. One effect has been a pronounced fall in the volatility of very short maturity market interest rates.

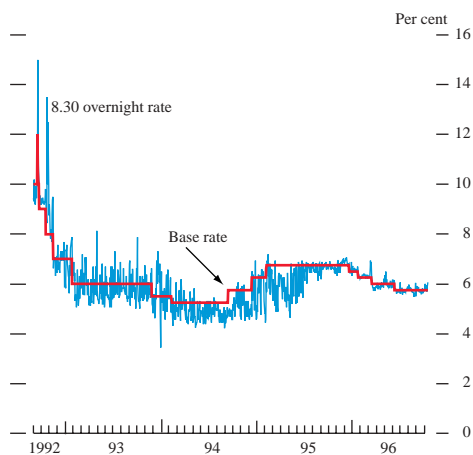
On 19 June 1996, the Bank announced a technical change to the operation of the gilt repo facility with the introduction of phased provision and return of funds over the three days following application. This change smooths the flow of funds to and from the money market, and so reduces the potential for large increases or decreases in participation to have a disruptive impact.

Over recent months, the Bank has made a number of other technical changes with the same general aim of promoting more stable money-market conditions. On 25 April 1996 the Bank re-introduced bill repurchase agreements in its daily operations against a forecast money-market shortage of £2.1 billion. Prior to this, for over a year there had been no necessity to offer bill repos, as shortages had, in general, been adequately relieved through the purchase of bills on an outright basis only. In the succeeding months, the Bank offered bill repos in its daily operations on progressively smaller forecast shortages as the technique again became familiar to the market.

On 18 June 1996 the Bank announced that, in future, invitations to repo bills in its daily operations would be extended to incorporate repo of Floating Rate Gilts (FRG), on the basis that the trading characteristics of FRGs are similar to the assets that the Bank already accepted. This change increased the pool of assets available for use in the Bank's daily operations by around £9 billion, and allowed a wider range of market participants access, via the discount market, to the Bank's operations. FRGs comprised 23% of repos, and 6.5% of all liquidity provided in the daily operations between July and September. At its peak, between 30 August and 4 September, the amount of FRG held by the Bank on repo was over £2.4 billion.

The Bank has also continued to manage actively the pace at which it provides money-market liquidity during the day in order to ensure that it has the maximum impact on the market rates which it aims to influence. In the last few years, the Bank has found this aim is best

**Chart 14**  
**Clearing bank base rates and the interbank overnight interest rate<sup>(a)</sup>**



(a) Middle-market rate at 8.30 am.

achieved by ensuring that it is able to operate throughout the day. More recently, however, the Bank has been able to reduce the market's recourse to its late lending operations. This was done in response to periodic tightness in short-term interest rates, but the ground had been laid by the technical adjustment to the Bank's bill dealing rates at the time of the interest rate reduction on 8 March 1996. This aligned the Bank's bill dealing rates more closely with its desired level for interbank rates, and so allowed for more effective management of market interest rates.

A further key development in the sterling money markets was the introduction at the beginning of the year of the open gilt repo market. As Chart 14 suggests, its advent appears to have coincided with a further reduction in the volatility of market overnight interest rates. One possible explanation is that, by removing restrictions on the ability to repo, borrow or lend gilt-edged stock, the gilt repo market has made it easier for holders of gilts to fund their inventory by repointing out their stock.

The evolutionary changes the Bank has made in the last four years have achieved a fair degree of success. It is now contemplating changes which might be made to its money-market operating techniques following the introduction of gilt repo trading. In addressing these issues, the Bank is considering the ability of the repo market to provide an effective channel for its operations, as well as the range of instruments in which it might deal and the counterparties with whom it might have a money-market dealing relationship. As the Bank has already indicated, if it should decide that the gilt repo market does give it the opportunity to make further changes, it would first consult market participants. (The development of the repo market is summarised in the accompanying note.)

## Gilt financing

### *Gilt sales and financing requirement*

Gilt sales to the end of September amounted to £22.3 billion, of which £4.3 billion (19%) was raised via index-linked sales and the remainder through conventional gilt sales. Within conventionals, the distribution of sales was slightly skewed towards long-dated gilts, which accounted for 40% of conventional sales as opposed to around 30% each for short and medium-dated gilts. This reflects the fact that in the first six months of the fiscal year three auctions of long-dated gilts were held, compared with two each in the short and medium-dated areas. As in the previous quarter, auctions accounted for the vast bulk of conventional sales: conventional taps raised less than £500 million to end-September, consistent with the aim of reserving such issues for market management purposes.

Gilt sales to end-September more than kept pace with the rising funding target for the year. During the period, the gilt sales target rose from £34.9 billion to £39.9 billion. £4 billion of this increase related to the upwards revision to the CGBR forecast in the Treasury's Summer Forecast, published on 9 July.<sup>(1)</sup> The remainder arose through the authorities' decision, announced on 26 July, to call the 6<sup>3</sup>/<sub>4</sub>% 1995–98 stock for redemption on 1 November; such double-dated or 'callable' stocks give the authorities the option to

**Table E**  
**Official transactions in gilt-edged stocks**

£ billions: *not seasonally adjusted*

	1996/97		1996/97	
	Apr.–June	July	Aug.	Sept.
Gross official sales (+) (a)	11.1	4.4	2.6	4.2
Redemptions and net official purchases of stock within a year of maturity (-)	-1.8	0.0	0.0	-1.3
Net official sales (b)	9.3	4.4	2.6	2.9
of which net purchases by:				
Banks (b)	-0.1	0.2	0.7	0.7
Building societies (b)	0.4	-0.3	0.2	0.0
M4 private sector (b)	6.4	4.2	0.8	1.8
Overseas sector	2.1	0.3	1.0	0.5
LAs and PCs (c)	0.5	0.0	0.0	-0.1

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

(b) Excluding repurchase transactions with the Bank.

(c) Local authorities and public corporations.

(1) See Table C in the August 1996 *Quarterly Bulletin* for further detail. Table G shows the financing arithmetic as at end-September.



**Table F**  
**Issues of gilt-edged stock**

	Amount issued (nominal £ millions)	Date	Average price	Average yield	Cover (a) at auctions	Tail (b) at auctions (basis points on yield)	Date exhausted (c) (taps)
<b>Auctions</b>							
8% Treasury 2000	2,000	24.7.96 (d)	102.94	7.20	4.81	0	
8% Treasury 2015	1,500	26.7.96 (d)	97.91	8.21	1.88	2	
7½% Treasury 2006	2,500	29.8.96 (d)	97.16	7.90	2.69	1	
8% Treasury 2021	3,000	26.9.96 (d)	98.44	8.14	1.73	2	
<b>Index-linked Taps</b>							
2½% Index-Linked 2009	200	21.6.96	163.97	3.80 (e)			01.07.96
2½% Index-Linked 2013	200	11.7.96	140.34	3.78 (e)			01.08.96
2½% Index-Linked 2001	150	11.7.96	180.56	3.52 (e)			18.07.96
2% Index-Linked 2006	150	29.8.96	185.72	3.59 (e)			06.09.96
2½% Index-Linked 2020	200	29.8.96	143.81	3.78 (e)			13.09.96
2½% Index-Linked 2003	200	27.9.96	178.97	3.42 (e)			01.10.96
2½% Index-Linked 2016	250	27.9.96	152.34	3.68 (e)			27.09.96
<b>Conventional Taps</b>							
8% Treasury Stock 2002/2006	50	11.7.96	100.66	7.90 (f)			11.07.96
7½% Treasury Stock 2006	200	27.9.96	99.19	7.61 (f)			27.09.96

(a) Total of bids divided by the amount on offer.

(b) Difference in gross redemption yield between the weighted average of successful competitive bids and the lowest accepted competitive bid.

(c) Taps are exhausted when the issue is no longer operating as a tap.

(d) The auction is held on the day before the stock is issued.

(e) Weighted average real rate of return, based on the actual price at which issues were made, assuming 5% inflation.

(f) Gross redemption yield, based on the price at which the issue was made.

**Table G**  
**1996/96 financing requirement**

£ billions

	Original remit	At end-September
CGBR forecast	24.1	28.1
Net change in official reserves	0.0	0.0
Gilt redemptions	11.5	12.5
Under/overfund from 1995/96	0.0	2.1
<b>Financing requirement</b>	<b>35.6</b>	<b>42.7</b>
Assumed contribution from national savings	3.0	3.0
Expected contribution from certificates of tax deposit	0.0	-0.2
<b>Gilt sales required</b>	<b>32.6</b>	<b>39.9</b>

redeem the stock on any day within the date-range, subject to three months notice. At the time of calling the 1995–98 stock, market yields had fallen to the point where cost savings could be made through calling and refinancing the stock.

### Auctions

The second quarter of the fiscal year contained, in July, the first ever ‘double-headed’ auction in the United Kingdom (auctions of two separate stocks held in close succession), together with the first auction held in the holiday month of August since 1992. Both were introduced this year with a view to moderating the size of individual auctions.

As a previously untried venture, the authorities approached the July double auction with caution, scheduling a total of £3.5 billion for sale rather than the maximum £4 billion allowed for such dual auctions under the Bank’s financing remit, and choosing two stocks at opposite ends of the maturity spectrum so as to appeal to a wide investor base and to provide protection against yield curve shifts. The results of the auctions during the period are shown in Table F. Seen as a whole, the double auction passed off comfortably, with weighted cover of 3.6 times. However, this mainly reflected the outcome of the first, short-dated auction. The 4.8 times cover on this auction was a record—even exceeding the 4.5 times cover for the floating-rate gilt in June—and the range of accepted bids was very tight (no tail). It is likely that the sharp widening of the gilt/bund spread from mid-July, in particular at the short end, contributed to interest in the auction. Spreads also widened in the 20-year area—the maturity of the second auction—but more modestly, and cover on this auction (1.9) was below the average for auctions in the first six months of 1996/97. However, the volume of bids was in line with the long-term average cover for auctions (1.95 since 1991) and above the average cover figure for long-dated auctions (1.7 since 1991). The auction was, in duration-weighted terms, twice as large as the short-dated auction two days earlier. There is some evidence that market-makers did not begin to focus on the second auction until the first was out of the way; the stock saw little repo activity and trading during the When Issued (WI) period was concentrated on the day before the auction. This might

have affected the price discovery process, and seems to have led to a higher dispersion of bids (as evidenced by the yield tail of two basis points). This year has seen a trend towards lighter activity in both the auction stock itself and the parent stock (if an existing stock is being re-opened) during the week leading up to the auction, and for this activity to be concentrated towards the end of the WI week (see below).

In August, the authorities auctioned less than the £3 billion maximum allowed for single auctions in the remit, reflecting a cautious assessment of possible demand given the holiday season. Futures market volumes were relatively low, and the decision on the amount of stock was generally welcomed by the market. In the event the auction produced another strong cover statistic (2.7), and below-average tail (one basis point).

In September, the authorities reverted to announcing the maximum £3 billion of stock on offer. Activity in the auction stock, 8% 2021, was subdued ahead of the auction; the market was generally cautious about positioning itself before knowing the outcome of the US FOMC meeting on the afternoon before the auction. However, market strength after the Federal Reserve's decision not to raise rates, together with underperformance by the gilt market *vis à vis* European markets, helped generate interest in the auction, and cover of 1.73 was in line with the long-term average for long-dated auctions.

At the end of September, the quarterly announcement of maturity ranges for the following quarter confirmed that the October auction would be another double-headed auction (with maturity bands of 2001–03 and 2014–16, both intended to be existing stocks). The date for the December (post-Budget) auction was announced as 4 December, and the intended stock as a new issue in the maturity range 2001–03.

**Table H**  
**Auction participation and results: 1991 to date**

	Long-term average (a)	Average 1995/96	Average April-Sept. 1996
Cover	1.95(b)	1.75	2.9
Tail	1.8(b)	3.3	1.4
GEMMs' competitive own account bids (as percentage of stock on offer)	146(c)	144	182
Customer competitive bids (as percentage of stock on offer)	40(c)	31	100
GEMMs' allotments as percentage of bids	60(c)	62	39
Customer allotments as percentage of bids	55(c)	61	35
<i>GEMMs' cumulative shortening of positions during WI period (as percentage of stock on offer)</i>			
As at close of business two days prior to auction eve	17.5(c)	11.5	5.0
As at close of business day before auction	31(c)	23	17
(a) All averages are unweighted.			
(b) Since April 1991.			
(c) Since January 1993.			

Table H brings together various statistics on auction participation and outcomes, comparing the first six months of 1996/97 with the 1995/96 financial year and with the long-term record. It indicates continuation of a number of developments touched on in the August *Quarterly Bulletin*, some of which may signify a change in the way the market approaches gilt auctions. Cover is significantly higher this year than last year, and than the long-term average. At the same time, yield tails this year have so far, on average, been smaller than last year and slightly smaller than over the long term. The higher cover stems from increased competitive bidding by GEMMs (as well as use of their new, higher, non-competitive allowance) but, more significantly, from an increase in competitive bids submitted by customers via the GEMMs. These have gone from a long-term average of 40% of the stock on offer (and less than that last year) to 100% of the stock on offer. The increase is significant even if the June auction of a floating-rate gilt (which has tended to attract a high level of customer bids) is excluded. Finally, as far as bidding patterns are concerned, although customers still tend to get a smaller proportion of their bids allotted in auctions than do market-makers, the gap between their 'success rate' and that of the market-makers has narrowed slightly (from 5.6 percentage points as a long-term average to 3.9 percentage points in the six months to September).

These developments are to be welcomed. Wider participation by end-investors in auctions is likely to make the auction process more robust. Market-makers should also benefit from widening participation, at least those who see the customer orders, as this is likely to give them better information on the pattern of demand for the stock.

The increased participation by end-investors may in part be a substitution for buying activity which used to take place in the week before the auction. Table H shows that shorting by GEMMS of positions in the auction stock plus parent over the course of this week has declined; on average in the first six months of this year their positions have shortened, up to auction eve, by only 17% of the stock on offer, compared with a long-term average of 31%. In addition, any shortening activity tends to be concentrated on the two days immediately before the auction (over two thirds, compared with less than half on a long-term average basis).

### Conventional taps

Two conventional stocks were tapped during the period: £50 million of 8% 2002–06, issued on 11 July, and £200 million of 7½% 2006, issued on 27 September. The former stock is popular with small retail holders, and at the time of the tap had become exceptionally tight in the repo market; some failures to deliver were reported as the stock became unborrowable. The tap was exhausted in the initial tender at a one-tick premium to the certified price. The second stock was tapped in response to demand and outperformance, evidenced also in the tap being exhausted in the initial tender at a one-tick premium. Financing raised via conventional tap sales in the financial year to end-September amounted to around 2% of total gilt sales.

### Index-linked

Sales of index-linked gilts during the quarter raised £2.1 billion in cash terms, bringing the cumulative total for the first half of the financial year to £4.3 billion—over 70% towards the aim of making approximately 15% of total gilt sales in index-linked stocks on the current financing requirement forecast. The index-linked sector was tapped on three occasions, with six individual stocks issued of between £150 million and £250 million nominal each.

Index-linked yields fell in this period, partly reflecting the general strength of sterling and sterling asset markets (particularly the equity market), but also increased demand for the sector itself. Real yields in Canada and Australia also declined over the period. Shorter-dated index-linked stocks may also have benefited from re-investment of the proceeds from redemption of 2% Index-linked Treasury Stock 1996 on 16 September: the yield on Index-linked Treasury Stock 2001 fell 35 basis points over the period.

The US Treasury announced, on 25 September, plans to auction ten-year Inflation-linked Notes on a quarterly basis, starting on 15 January 1997. Auctions will be in a single-price format; the principal and interest payments on the Notes will be adjusted by changes in the US consumer price index, and the Notes will be repaid at par, even if the consumer price index falls; and the Notes will be strippable, but the coupons will not be fungible.

**Chart 15**  
Yields on index-linked government stock



### *Sectoral investment activity*

With gross gilt sales in the period of £11.2 billion, and with only one relatively small redemption, net purchases by investors remained at the high levels seen in the previous quarter. The M4 private sector (which includes the large domestic institutional investors such as pension funds and insurers) continued to be the largest buyers of gilts, although their share of net purchases during the period (69%) was below their estimated percentage holdings of outstanding gilts as at end-December 1995 (73%). The share of net purchases during the period by both the overseas sector and the monetary sector was higher than their estimated share of holdings as at end-December 1995; in the case of banks and building societies, this was despite the fact that only one of the four auctions in the period was for a short-dated gilt, which the monetary sector generally finds most attractive.

The latest figures from the ONS show that institutions continued to invest heavily in gilts in the period from April to June 1996, with almost £5 billion put into gilts. As a proportion of total net investment, investment in gilts by institutions has exceeded the overall share of gilts in institutional portfolios for the past 19 quarters; this in part reflects issuing patterns, but also a move to increase gilt holdings by pension funds. The increasing maturity of funds is thought to have contributed to this increase.

### *Technical developments*

It was announced on 13 August that all strippable gilts would pay dividends on a gross basis to holders from 7 June 1997 (the date of their first dividend in 1997). As the precise timing of the start of the strips facility has not yet been fixed—it is expected to be operational in the first half of 1997—this announcement clarified for the market the tax status of the strippable gilts for next year. At the end of September, the nominal amount of outstanding gilts which will be strippable when the strips facility starts was £52 billion, or 22% of total conventional gilts.

Also on 13 August, the Bank announced a conversion offer from 13½% 2004–08 into 8½% 2005, with terms to be fixed on 27 August and the operation to be effected on 26 September. This was the first conversion offer since December 1990, and was undertaken with a view to building up the pool of strippable stocks in advance of the start of the official strips facility. Such offers had been foreshadowed in the Bank's financing remit for 1996–97.

The vast majority (92.4%) of the holders of 13½% 2004–08 (by value) accepted the offer, which resulted in nearly £1.5 billion being added to the 8½% 2005 stock, building it up to over £10 billion. The 13½% 2004–08 was reduced to under £100 million in size, putting it on the list of small illiquid stocks for which the Bank is prepared to offer a price to market-makers to ensure that a two-way market can continue for remaining investors.

In September, the timetable of the Central Gilts Office (CGO) settlement service was amended, following a period of notice, to extend the period for delivery-by-value (DBV) transactions; the afternoon period for inputting member-to-member (MTM) transactions was reduced to enable this; DBVs deliver a bundle of

unspecified gilts to a specified value and are used by some participants for general collateral gilt repo transactions and for the provision of collateral against stock loans. The Bank made the change in response to requests from market participants to encourage members to input trades as early in the day as possible and to allow more time for DBVs to be input. The change followed a period of consultation with the market.

## UK Government foreign currency borrowing

### *Government dollar issuance*

During the quarter, the UK Government launched two five-year issues in the international bond market for routine debt management purposes—to refinance the UK \$4 billion floating-rate note issue which matured on 30 September 1996. The first issue, launched on 15 July, was a \$2 billion fixed-rate  $6\frac{3}{4}\%$  bond maturing on 19 July 2001; the issue was underwritten and jointly lead-managed by Goldman Sachs International and SBC Warburg as joint lead managers and a syndicate of other leading international firms. The bond was launched at a spread of 5 basis points above the comparable five-year US Treasury bond. The issue sold out on the day of launch, and the spread immediately tightened to 4 basis points over Treasuries in the days after launch. Most recently the issue has been trading in a range of 1–2.5 basis points above the comparable Treasury. The bond was sold to a wide range of international institutional and retail investors and has been among the most actively traded international bond issues since its launch.

The second issue was a \$2 billion floating-rate note launched on 19 September and maturing in October 2001. The FRN was underwritten by Barclays de Zoete Wedd Limited (bookrunner), HSBC Markets and NatWest Markets as joint lead managers, and a syndicate of other leading investment banks. The FRN was sold at a discount margin of 19 basis points below three-month US dollar Libor and was taken up by a wide range of international investors. The issue sold out on the day of its launch, and has since tightened in margin to trade at between 19 and 20 basis points below Libor.

### *ECU issuance*

The United Kingdom continued to hold regular monthly tenders of ECU 1 billion of ECU Treasury bills during the quarter, comprising ECU 200 million of one-month, ECU 500 million of three-month and ECU 300 million of six-month bills. The tenders continued to be oversubscribed, with issues being covered by an average of 2.2 times the amount on offer, compared to an average of 2.4 times during 1995. Bids were accepted at average yields up to 6 basis points below the ECU Libid rate of the appropriate maturity. There are currently ECU 3.5 billion of UK Government ECU Treasury bills outstanding. Secondary market turnover in the third quarter averaged just over ECU 2 billion per month, unchanged from levels of activity earlier in the year.

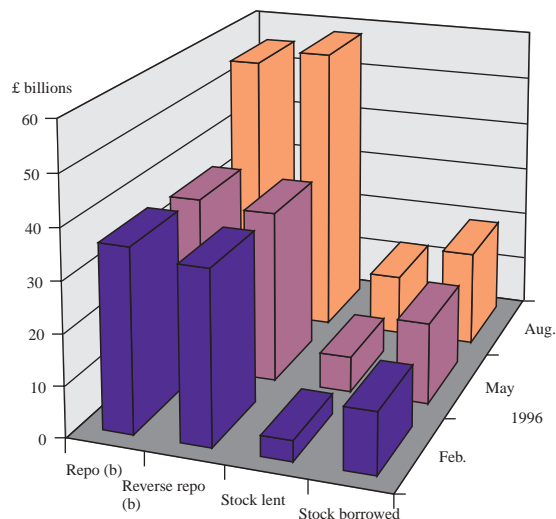
On 16 July, the Bank reopened the United Kingdom's ECU Treasury Note maturing in 1999 with a further tender for ECU 500 million, raising the amount outstanding with the public of this Note to ECU 1.5 billion. There was strong cover at the auction

of three times the amount on offer, and accepted bids were in a tight range of 5.41%–5.44%. The total of Notes outstanding with the public under the UK ECU Note programme thus rose from ECU 5.5 billion to ECU 6 billion.

## Developments in the gilt repo market

There was substantial growth in the overall size of the gilt repo and stock lending market over the summer months, and an increase in specials<sup>(1)</sup> activity. The data collected by the Bank from about 80 institutions, on a voluntary basis, for the three-month period to end-August showed an increase in outstanding repo and stock lending from around £50 billion at end-May to nearly £80 billion.<sup>(2)</sup> Reported repo outstandings accounted for most of this increase, rising from around £35 billion to nearly £60 billion.

**Chart 1**  
Growth in outstanding amounts<sup>(a)</sup>

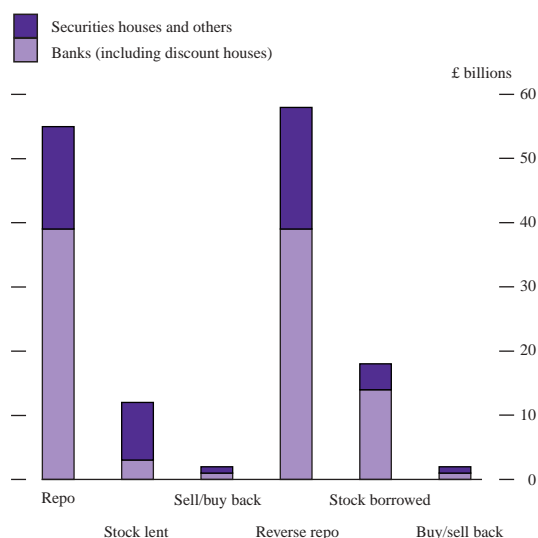


- (a) Transactions entered into, but for which the second leg has not yet settled.  
 (b) Sell/buy back and buy/sell back transactions conducted under an annex to the Gilt Repo Legal Agreement are included under repos and reverse repos respectively.

We cannot know how far the actual market exceeds these reported figures; it is thought that the data for repo activity capture a very substantial share of the market; but stock lenders are poorly represented among the reporting population, accounting for the discrepancy of around £7 billion between reported stock lending and borrowing. Banks, including discount houses, continue to account for a large proportion of reported repo, reverse repo, and stock borrowing activity.

The monetary statistics, compiled by the Bank, give a picture of repo activity in the monetary sector that is consistent with the figures for the overall market. Banks (including discount houses) and building societies recorded £33 billion and £40 billion outstanding of repos and reverse repos respectively. (Like the repo market monitoring data,

**Chart 2**  
Outstanding amounts by practitioner: end-August



these figures exclude gilts repoed to the Bank as part of the Bank's provision of liquidity to the money markets.) Almost all banks with repos or reverse repos in excess of £100 million outstanding now report market monitoring data to the Bank. The differences between the two sets of data can therefore probably largely be accounted for by the fact that the market monitoring data on repos are reported gross, whereas the monetary data may in principle be reported with some repos and reverse repos with the same counterparty netted out. Between May and August, both sets of data showed a sizable increase, though the monetary data do not, of course, capture the large increase in reverse repo activity by non-banks (except to the extent that it may be reported as repos by banks). The end-September monetary statistics show a further increase in outstandings, with repos and reverse repos reported at £35 billion and £43 billion respectively.

### Maturities of outstandings

The market monitoring data provide an end-period snapshot of the residual maturity of outstandings. Between end-May and end-August the residual maturity of trades outstanding lengthened. Repo trades with maturities of between two days and one month now account for about 65% of market outstandings, and maturities of between nine days and three months for about 40%. This lengthening of maturities is observable in both repo transactions and, to a lesser extent,

- (1) 'Special' repos are repos where the rate paid on the cash received in return for repoing out a specific stock is well below that paid on the cash received against a repo of 'general collateral' (GC), ie non-specific stock. The owner of a hard-to-borrow stock could thus earn a net return by repoing out the stock and paying a 'special' low repo rate on the cash received in the repo, and investing this cash in GC repo at the higher rate available against stocks that are *not* hard-to-borrow.  
 (2) For each repo or stock loan transaction there must, by definition, be a reverse repo or stock borrow transaction, even if it is not reported to the Bank, so estimates of market size should always focus on the largest figures.

in stock lending and borrowing transactions, and is consistent with market anecdote of liquidity beginning to extend further out along the curve, and also of a small number of medium to long-term stock loan transactions in hard-to-borrow stocks.

**Table A**  
**Outstanding amounts at end-August by residual maturity**

£ billions

	On call and next day	2–8 days	9 days–1 month	1–3 months	3–6 months	Over 6 months	Total (a)
Repo	10	18	18	6	2	0	55
Stock lent	10	1	1	0	0	0	12
Sell/buy back	0	1	0	1	0	0	1
<b>Total out (a)</b>	<b>21</b>	<b>19</b>	<b>19</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>69</b>
Reverse repo	17	15	15	7	3	1	58
Stock borrowed	14	2	1	1	0	0	19
Buy/sell back	0	0	0	0	0	0	2
<b>Total in (a)</b>	<b>32</b>	<b>17</b>	<b>17</b>	<b>9</b>	<b>3</b>	<b>1</b>	<b>79</b>

(a) Totals may not sum due to rounding.

The maturity discrepancy between reported repos and reverse repos gives a further indication of the extent of underreporting, for example because corporates using repo to borrow funds would be unlikely to be reporting this to the Bank.

## Market liquidity

The repo market monitoring data suggest turnover in gilt repo of at least £15 billion per day in the June-August period, which was more than double the value of daily cash gilt turnover of less than £7 billion a day in the same period; many market participants believe the actual repo market figure to be even higher than this. Turnover by value in cash gilt trades reported to the London Stock Exchange (excluding repo transactions, which are not reportable to the Exchange) increased in the third quarter (to end-September). Reflecting this, and the surge in turnover at the start of the year, the twelve-month rolling average value of daily cash gilt trades rose to a new peak of £7.2 billion in September. The average bargain size of cash gilt trades reported to the Exchange remained at historically high levels, perhaps supported by repo activity. In the general collateral (GC) repo market, trades are commonly £50 million to £100 million, although trade sizes of £500 million or more are not unknown.

The number of transactions settled through the Central Gilts Office (CGO) settlement system (both cash and repo trades) increased substantially in the third quarter. Reflecting this increased throughput, CGO tariffs were reduced in September, for the second time this year. For the first time since the start of the gilt repo market in January 1996, the number of delivery-by-value (DBV) transactions through the system was up on the same period a year earlier, with the growth in GC repo and other transactions more than offsetting the decline caused by the combination of disintermediation of some of the previous intermediaries in stock loans, the switch from stock loans (collateralised by DBVs) to special repos (against cash), and the increase in average transaction size. The growth in DBVs is believed

by participants to be associated with the growth in the size and liquidity of the GC repo market.

Turnover data reported to the Bank capture the original maturity of repo transactions during the period. These suggest that nearly 70% of repo trades mature on call or next day, of which a substantial proportion may be DBVs. A large proportion of next-day transactions are rolled. Almost one third of repo turnover is in maturities of between two days and one month.

**Table B**  
**Percentage breakdown of turnover in June-August by maturity**

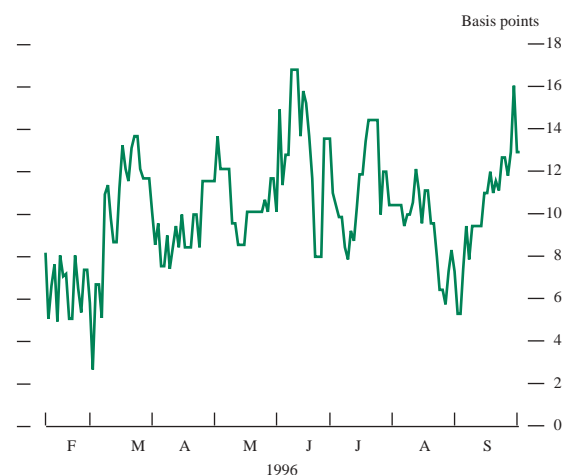
Per cent

	On call and next day	2–8 days	9 days–1 month	Over 1 month	All maturities	Percentage of total (a)
Repo	69	23	6	2	100	87
Stock lent	85	12	3	0	100	12
<b>Total out</b>	<b>70</b>	<b>22</b>	<b>6</b>	<b>2</b>	<b>100</b>	<b>100</b>
Reverse repo	69	23	5	3	100	87
Stock borrowed	88	8	3	1	100	11
<b>Total in</b>	<b>71</b>	<b>21</b>	<b>5</b>	<b>3</b>	<b>100</b>	<b>100</b>

(a) The residuals are accounted for by buy/sell back and sell/buy back transactions.

The Bank also follows developments in the gilt repo market on a daily basis, collecting data on repo and stock lending rates, as well as anecdotal evidence on the development of the market. Chart 3 shows the spread of the interbank rate over the GC rate. Three-month GC repo rates have continued to trade several basis points below the interbank rate, probably reflecting mainly the creditworthiness of gilts

**Chart 3**  
**Three-month interbank rates minus three-month gilt repo general collateral rates<sup>(a)</sup>**



(a) Middle rates at 10.15 am.

as collateral, but also the value to the reverse repoer of owning stock that may potentially go special at some point during the three-month period. Since it is cheaper than unsecured finance for many borrowers, gilt repo can be a valuable financing tool not only for firms with large inventories to finance, but also for firms or banks who find it expensive or difficult to raise sufficient unsecured finance.

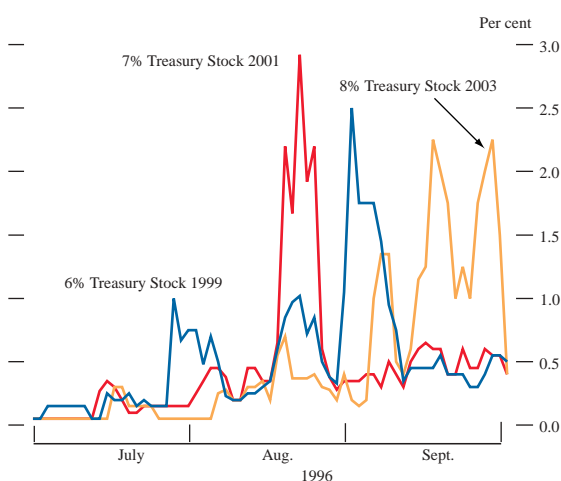


## The specials market

The Bank's data do not differentiate between general collateral (GC) repos and special repos, since stock can move in and out of being special very rapidly, even within minutes; it was decided that to ask for firms to distinguish between outstandings of specials and GC transactions would be both too onerous and too prone to reporting error. But it is clear that the third quarter of the year saw much greater activity in specials than previously.

Chart 4 illustrates the extent to which some stocks have recently traded special. Showing the extent to which the repo rates on special stocks traded 'through' (ie below) the comparable GC rate facilitates comparison of special rates over time, since the prevailing level of GC interest rates should not influence the specialness of the stock (although on days when money-market rates are tight, there tends to

**Chart 4**  
Special rates on short stocks<sup>(a)</sup>



(a) The one week repo rate for selected stocks, expressed in percentage points below the one week general collateral repo rate.

be less specials activity). The relatively high volume of private sector sterling bond issuance over 1996 (see *Financial market developments* in this and previous issues) may have contributed to a number of gilts going special. Underwriters of some of these issues shorted gilts of similar maturities in order to hedge their long corporate bond positions. Demand for interest rate swaps increased with this private issuance, causing demand for certain gilts as a hedge. Traders were also active in taking a view on the spread between swaps rates and gilt yields (mostly of three to seven years' maturity), and between unsecured short-term interbank rates and the repo rate. Long stocks have generally not traded with special value, except on occasion in the run-up to auctions, when traders tend to short the stock in anticipation of its cheapening up relative to the market ahead of the auction.

The Bank has undertaken a preliminary econometric analysis of the relationship between cash market prices and specific repo rates for stocks that have traded special.

This showed a statistically significant positive correlation between changes in a stock's estimated 'deariness' relative to a theoretical yield curve (in other words, the extent to which it has a lower yield than might be expected), and changes in the degree to which a stock trades special. This is what theory would predict; traders maintain short positions which have high associated financing costs only if the anticipated fall in the price of the stock is still large enough to give an expected profit. (One implication is that longer duration stocks would tend to be less dear (expensive) for a given specials premium. This is because their prices are more sensitive to changes in yields and therefore a given rise in yields will give a trader with a short position a higher profit to offset any increase in the cost of repo.)

The analysis suggests that the link between deariness in the cash market and specialness in the repo market can flow in either direction: in some cases changes in deariness have preceded changes in specialness and in other cases the sequence has been the other way round. Both chains of cause and effect can be explained. Sometimes stocks may be perceived as dear (expensive), for example following an auction announcement, because of the anticipated supply effect. This would create a greater demand for short positions, and so greater demand for the stock in the repo market in order to cover these positions. At other times the stock may go tight in the repo market. It would then tend to be bid higher in the cash market as traders sought to close out existing short positions that had become expensive to cover, and also as traders and investors chose to buy it outright, having seen that it would be cheap to finance the stockholding by repoing it out. In both cases, the stock would remain expensive in both repo and cash markets until existing holders took profits by either selling their stock or making it available for repo or lending.

The efficiency with which stock is made available to meet market demand will depend on information flows; if a stock is trading special or with a stock lending premium, a holder of that stock needs to be aware of this before the incentive to release their stock can be realised. Information flows in the gilt repo market so far have reportedly been variable, with stocks at times trading special without all stock holders being aware of the special status, and therefore either unable to respond, or lending the stock without being able to benefit fully from the special rates on offer. As greater specials activity attracts more participants into the gilt repo market, information flows might also improve, further promoting the efficiency of the market.

The increased specials activity in certain stocks has improved the extent to which the demand and supply of gilts in the market, for both outright and temporary purchase, is cleared through the price mechanism. The Bank welcomes this development, to the extent that this arises as a natural result of market supply and demand, while reserving the right for market management purposes to reopen or repo a stock if it were being squeezed by market participants, or if conditions were disorderly.

## Outlook

With the growth in both specials and GC activity over recent months, the gilt repo market has moved on from its phase of consolidation in the late spring, helping to attract new participants into the market. A contributory factor in this recent growth, suggested by some market participants, may be market uncertainty over short-term interest rate prospects, with large 'matched-book' players putting on repos and reverse repos of different maturities in order to take a position on interest rates.

The development of the market has also supported the operation of the Bank's twice-monthly gilt repo facility, which has been providing liquidity at the Bank's dealing rate for fixed terms of between two and five weeks since

1994, and which is used by some of the players who are now active in the gilt repo market. Since June, the Bank has also been willing to accept floating-rate government stock alongside Treasury and eligible bank bills in any repo operations that it conducts as part of its daily operations. (See the main text of *The operation of monetary policy* in this edition of the *Quarterly Bulletin* for a description of recent developments in the Bank's money-market operations.) While the level of gilt repo activity (particularly GC repo), and the volume of applications for the Bank's existing gilt repo facility, will tend to vary over time, depending *inter alia* on interest rate expectations, recent information on the market tends to confirm that it has developed sound and stable foundations, and that gilt repo has already become one of the most actively traded instruments in the sterling financial markets.