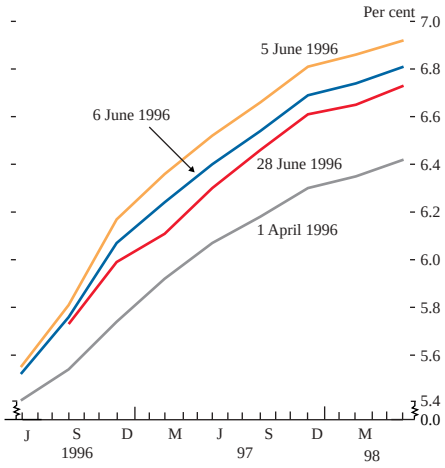
The operation of monetary policy

- *UK official interest rates were cut once during the April-June quarter, by 25 basis points to 5¾% on 6 June, three months after the previous cut.*
- *Future rates implied in UK markets also fell during the quarter, most clearly at the short end of the money market, and by diminishing amounts through medium maturities in the gilt market.*
- *The spread of UK bond yields over those in other major markets declined, and sterling appreciated, though these movements were largely reversed soon after the quarter's end.*
- *Gilt sales of £11.1 billion were made.*

Chart 1
Eurodollar futures(a)



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

International bond and money markets

The fall in the short sterling curve over the period as a whole was in contrast to the movements of the comparable curves in the major overseas economies. The main features of the second quarter were uncertainty regarding the timing of any interest rate increases in the United States and Japan (where growth in the first quarter turned out to have been higher than had been expected); uncertainty as to whether rates in Germany had reached their low point; and a climate of monetary policy easing in some other European countries. (See 'The international environment' on page 264.)

Financial markets displayed some concern over prospects in the United States, in particular the sustainability of strong economic growth, a tight labour market and low retail price inflation. The possibility that the Federal Reserve might, in these circumstances, tighten monetary conditions was reflected in interest rate expectations (see Chart 1). The rate on the September three-month eurodollar deposit contract increased by about 20 basis points during the quarter to 5.73% on 28 June. The cumulative increase since 1 January 1996 amounted to 75 basis points.

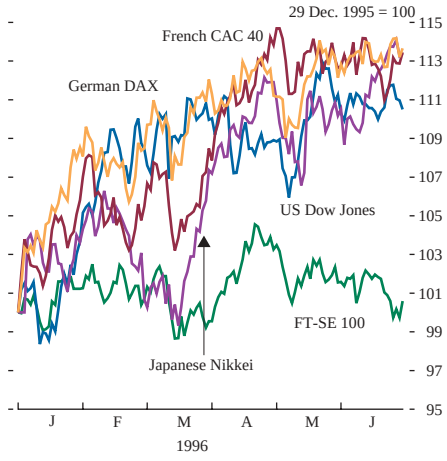
Since early 1996, the markets have often been surprised by the strength of US labour market data, particularly for non-farm payrolls. In the second quarter, publication of the March and May

Table A
Interest rates, gilt yields and exchange rates; selected dates(a)

	Interest rates (per cent per annum)					Gilt yields (b) (per cent per annum)				Exchange rates		
	Sterling interbank rates (c)				Short sterling future (d)	Conventionals			Index-linked			
1996	1 month	3 months	6 months	12 months	3 months	Short	Medium	Long	Long	ERI	£/$	£/DM
1 April	5 63/64	6 3/64	6 3/32	6 11/32	6.23	7.63	8.10	8.30	3.79	83.6	1.5255	2.2623
5 June	6 1/64	6 1/32	6 7/64	6 23/64	6.16	7.58	8.05	8.28	3.86	86.4	1.5487	2.3683
6 June	5 13/16	5 55/64	5 61/64	6 3/16	5.91	7.49	7.98	8.24	3.83	86.1	1.5412	2.3580
28 June	5 49/64	5 49/64	5 51/64	6 3/64	5.90	7.36	7.89	8.20	3.86	86.3	1.5537	2.3644

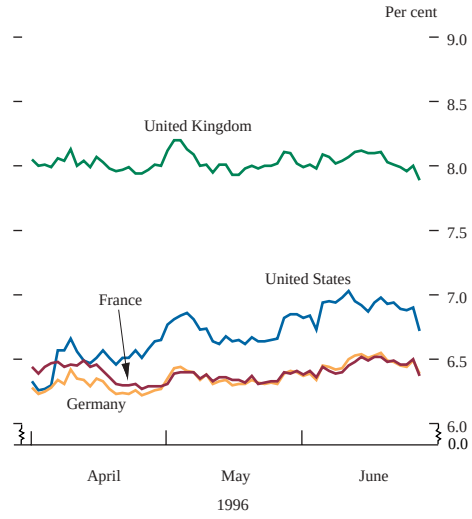
(a) Close of business rates in London.
(b) Gross redemption yield. Representative stocks: short—7% Treasury 2001; medium—7½% 2006; long—8% Treasury 2015; index-linked—2½% Index-linked Treasury 2016 (real yield assuming 5% inflation).
(c) Middle-market rates.
(d) Implied future rate: September 1996 contract.

Chart 2
Major equity indices(a)



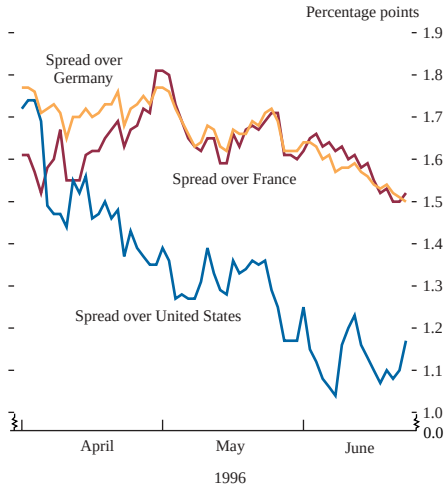
(a) Rebased on 29 December 1995.

Chart 3
Ten-year bond yields(a)



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

Chart 4
Ten-year bond yield differentials of the United Kingdom over France, Germany and the United States(a)



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

non-farm payrolls data had a significant impact on yields. During the second quarter, the yield on ten-year Treasuries reached a high of about 7% in mid-June, but then decreased steadily as expectations of an imminent tightening were reduced over the rest of the quarter. Financial market expectations of US growth and corporate earnings could be seen in the decoupling of bond and equity markets. Despite the generalised rise in US interest rates, the major US equity indices rose strongly in the first half of 1996. The Dow-Jones Industrial Average rose by 11% and the Standard & Poor's 500 index by 9%. In Japan, exceptional growth in the first quarter partly reflected public investment. The monetary authorities suggested that the stance of monetary policy was unlikely to be altered until economic growth became self-sustaining. However, financial markets remained sensitive to stronger-than-expected economic data. Japanese bonds ended the quarter largely unchanged, despite falling in April amid concerns of an imminent rise in the Official Discount Rate.

In Germany in the second quarter, the markets came to see a further slowdown in economic activity as less likely, even though the Government's forecast for growth in 1996 was lowered. The Bundesbank reduced its discount and Lombard rates by 50 basis points each on 18 April to 2.50% and 4.50% respectively and kept its repo rate at 3.30% throughout the quarter. Thereafter the market tended to the opinion that the Bundesbank might not cut official interest rates again, particularly in view of the strong growth of M3, which had been above target since January 1996. This was reflected in the futures price of three-month euro-Deutsche Mark deposits contracts. By the end of June, the rate implied by the September contract was back up to its January level, while the December and March 1997 contracts indicated slightly higher interest rates. In the second quarter, the September contract yield initially declined but ended the period slightly higher, while the December and March 1997 contract yields remained unchanged. The German fixed-income market outperformed US Treasuries during the second quarter. The yield on ten-year bunds nevertheless increased 11 basis points to 6.39% in the second quarter.

An easier monetary policy in Germany facilitated reductions in official interest rates in a number of European countries. In France, official rates were cut following the continued strength of the French franc, low inflation and weak domestic demand. In Sweden, the strength of the krona and continued progress towards the inflation target were factors in the lowering of official rates. Financial markets rallied in Italy and Spain following the elections. In the former, the spread against bunds narrowed considerably and, with the lira trading back at its late 1995 levels, there was some expectation that the currency might return to the ERM. Official interest rates were also cut in all other EU countries except Italy.

Foreign exchange markets

During the second quarter, the dollar again appreciated against both the Deutsche Mark and Japanese yen, as expected short-term interest differentials continued to move in favour of the US currency. Over the five months to the end of June, the expected differential between US and German three-month interest rates in September 1996 had widened from 136 basis points in favour of the dollar to 237 basis points and the dollar had risen from DM 1.4875

Chart 5
Dollar exchange rates

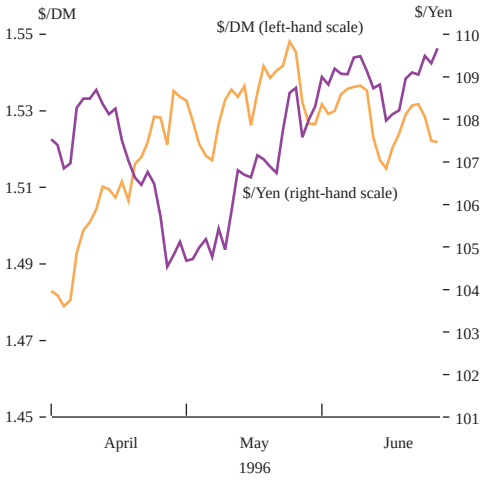
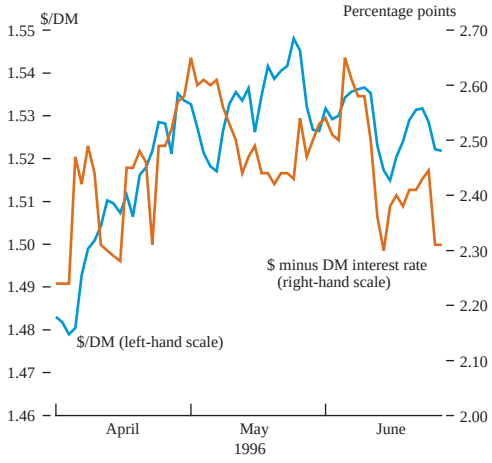
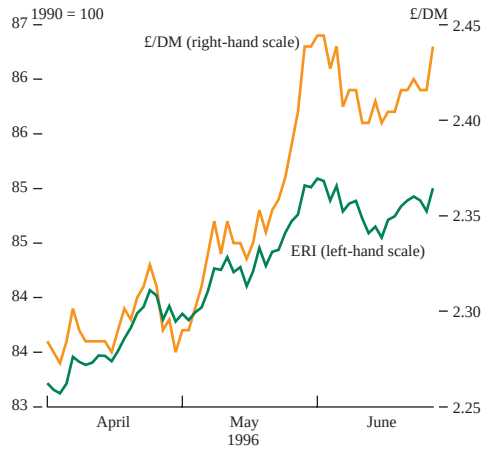


Chart 6
$/DM rate and expected three-month interest differential(a)



(a) September 1996 contract.

Chart 7
Sterling effective exchange rate and £/DM exchange rate



to a high of DM 1.5489 on 28 May. Although key official interest rates in the United States (the target federal funds rate) and Germany (the repo rate) remained unchanged, the expected differential continued to widen, mainly due to the release of US economic data, which suggested that the US economy was operating closer to capacity constraints than had earlier been thought. In contrast, although the evolution of the dollar/yen exchange rate was also influenced by expectations about short-term interest rates, market attention generally focused more on the prospects for monetary policy in Japan as opposed to the United States. The yen briefly strengthened in the second half of May, in part due to comments from Japanese officials attributing the 1980s so-called bubble economy to the low level of interest rates. But the yen subsequently weakened again as this upward shift in Japanese interest rate expectations was unwound, when the Bank of Japan's stance remained accommodative and it became clear that no early change in monetary policy was likely.

Over the second quarter, sterling rose from 83.4 to 86.3 on the effective exchange rate index. In contrast to exchange rates among the three largest economies, shifts in relative short-term interest rate expectations over the period as a whole fail to provide a straightforward explanation of sterling's appreciation: interest differentials indeed moved against sterling, which might have triggered a depreciation. Bond market developments may however have been influential. During the second quarter gilts outperformed US Treasuries, in part due to the growing perception that the economic conjuncture in the United Kingdom and United States was much less synchronised. Sterling was aided by this background and by reports suggesting that international fund managers were aiming to increase the proportion of sterling assets in their portfolios. Towards the end of May, sterling breached important technical levels against the dollar, which had presented strong resistance in the past, and this may have triggered a reassessment of whether sterling's link with the dollar would be as close as in the recent past. As sterling began to show signs of breaking out of its familiar trading range against the dollar, it experienced a period of independent strength. On an effective basis it rose by 2% between 24 May and 4 June (rising against all the currencies in the basket over this period). Although sterling weakened slightly following the UK rate cut on 6 June, it recovered its poise towards the end of the quarter, with the technical and portfolio factors noted above remaining supportive.

Within the ERM, currencies continued to trade close to their central rates throughout the second quarter. European bond yield differentials narrowed further (with ten-year French bond yields converging on German yields) which would be consistent with more weight being placed on the probability that EMU would take place. An examination of implied forward interest rates showed that short-term interest rates in France and Germany were expected to converge before January 1999. The market perception that both the Swedish krona and Italian lira might enter the ERM during 1996 helped both currencies to reach their highest levels against the Deutsche Mark since December 1992 and July 1994 respectively. The Finnish markka also performed strongly, for similar reasons, reversing the depreciation which occurred in the first quarter.

As noted above, US employment data continued to have a strong influence on markets in the second quarter. Indeed the key event

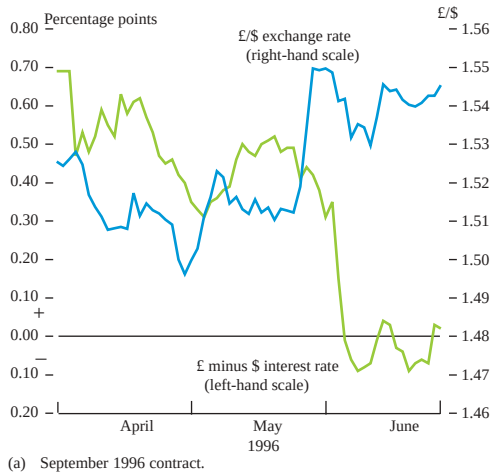
for the dollar was the release of US non-farm payrolls data for March on 5 April, which showed job growth to be twice as high as market expectations. The dollar rallied strongly when markets reopened after the Easter holidays, rising back above DM 1.50. The dollar had approached this important level on several occasions since August 1995, but had failed to strengthen beyond that rate. It subsequently consolidated its gains above DM 1.50, aided by the Bundesbank's rate reduction on 18 April, and the dollar finished April at DM 1.5363. Sterling was generally on the sidelines during April, but the background of a stronger dollar aided the currency and, on an effective basis, it rose from 83.4 on the index to a high of 84.0 on 30 April.

At the beginning of May, the dollar received some support from the release of US Q1 GDP data, which was stronger than forecast, but it did not make significant gains until concerns about incipient inflationary pressures were assuaged by the release of better-than-expected core US producer price inflation data on 10 May. It reached a 1996 high at DM 1.5489 on 28 May; but it weakened subsequently against a range of currencies and ended May at DM 1.5267. Comments from Federal Reserve officials regarding inflationary pressures in the United States and the Bundesbank's announcement of another fixed-rate repo at 3.30% (whereas lower rates had been thought possible) were both factors which caused the dollar to weaken from its 1996 high.

The volatility of the sterling/US dollar exchange rate increased during May and implied volatility on short-dated sterling option contracts also rose (albeit from low levels). It is often difficult to account for short-term exchange rate movements in terms of economic fundamentals and chartist expectations may have influenced the evolution of the sterling/US dollar exchange rate during May. Sterling had traded in a well-defined downtrend against the dollar since early 1995 but chartists might more recently have revised their expectations of the short-term path of the sterling/US dollar exchange rate. The key event from this perspective was the breach of sterling's 100-day moving average against the dollar on 30 May (a level which had presented resistance on several occasions); this may have triggered buy orders, which helped sterling to a 1996 high at $1.5568 on 3 June. Earlier in the month, sterling had come under speculative selling pressure when it weakened to a two-year low at $1.4903 on 2 May, but strong buying interest was apparent at these levels and the currency recovered before it reached its main downtrend support line against the dollar: a positive development from a technical perspective.

Another factor which aided sterling towards the end of May was gilts' outperformance of other markets and in particular the success of the long gilt auction on 29 May. The currency rose from 85.1 to a high of 86.6 between 29 May to 4 June over a period when the spread between ten-year gilts and US Treasuries and Bunds narrowed significantly. The currency weakened slightly ahead of the Chancellor/Governor meeting on 6 June. And it fell further following the announcement of the rate reduction, closing at 86.1, a fall of 0.3 points on the day. Sterling subsequently drifted lower to 85.6 on the index by 13 June, with the release of better-than-expected UK PPI and RPI data triggering a further movement of expected short-term interest rate differentials against the currency. But sterling rallied against the dollar towards the end

Chart 8
£/$ rate and expected three-month interest differential(a)



(a) September 1996 contract.

of the month, as the US currency was undermined by the Bundesbank's decision to leave rates unchanged on 27 June and comments from officials were interpreted as implying that the Deutsche Mark correction was at an end. Sterling continued to trade in a firm manner thereafter and by 2 July it had recovered to a new 1996 high at 86.7 on an effective basis.

Operations in the money markets

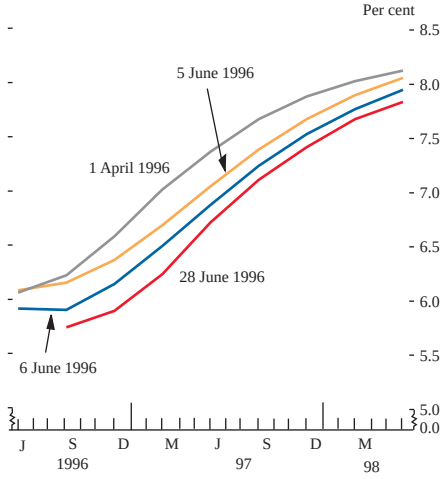
The reduction in official rates on 6 June was unexpected by the markets. Despite sterling's initial weakness in the immediate days following this cut, the reduction was accepted without significant disturbance in the domestic markets, coming as it did against a background of economic data which the markets considered reassuring. The response of the short sterling curve in the course of the following days was to lower implied rates for contracts out to December 1996, by up to $^{5}/_{16}$%, with some limited market expectations of a further reduction in rates by the autumn. But over the entire short sterling curve there was a significant steepening, as rates implied for 1998 and 1999 were little changed; the spread between the first and last contracts widened by around 45 basis points in the two weeks following the move. Thus, the steepening of the curve suggested that the markets expected the cut to be reversed later. Chart 9 shows the rates implied by short sterling futures contracts. By the end of Q2, compared with the beginning, smaller changes in three-month rates were expected over the next two quarters, but a slightly greater increase in three-month rates from the second quarter of 1997 onwards.

There were several technical modifications to the Bank's operational techniques during the quarter, which were intended to assist the Bank in meeting its objective of delivering a broadly stable pattern of short-term interest rates around the prevailing level of base rates.

On 25 April the money-market shortage was forecast to be £2,100 million and the Bank took the opportunity presented by the largest liquidity shortage for two years to re-introduce bill repurchase agreements to the daily operational menu. There had been no necessity to offer bill repos for over a year, as shortages had on the whole been satisfactorily dealt with through the purchase of bills on an outright basis only. But the size of that day's shortage—resulting in part from settlement of the previous day's gilt auction—and a view that it would assist the Bank's objective for short-term interest rates if bill repos were to become once again a normal feature of the daily operations, made it opportune to reintroduce this technique. The threshold at which bill repos were included on the operational menu was progressively reduced from the initial £2,100 million to £950 million towards the end of the quarter, as use of the technique again became familiar in the market.

A further modification was introduced on 18 June when it was announced that, in future, invitations to repo bills in the money-market operations would incorporate the option to repo holdings of HM Government's floating-rate gilts (FRG). This innovation was made in response to suggestions from market participants, on the basis that the trading characteristics of FRGs, where the coupon is based on the price of three-month

Chart 9
Short sterling futures(a)



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

Table B
Influences on the cash position of the money market

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

	1995/96	1996/97		
	Apr.–Mar.	Apr.	May	June
CGBR (+)	35.5	0.6	4.0	4.1
Net official sales of gilts (-) (a)	-26.6	-4.0	-1.7	-3.6
National savings (-)	-5.1	-0.7	-0.6	0.5
Currency circulation (-)	-1.7	1.2	-1.7	-0.1
Other	-1.7	1.1	0.9	-0.4
Total	**0.4**	**-1.8**	**0.9**	**0.5**
Increase (+) in the stock of assistance	2.3	1.7	0.9	-0.3
Net increase (-) in £ Treasury bills in market (b)	-2.7	0.2	-1.8	—
Increase in bankers' balances at the Bank	0.1	0.1	—	-0.4

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

money-market rates, are similar to the assets that the Bank had hitherto been prepared to accept in its operations. With the 1999 FRG, the pool of assets available for use in the Bank's operations was increased by about 20%, from about £30 billion (of which Treasury bills were about one third and eligible bank bills about two thirds) to nearly £36 billion. And it was further increased after the auction of £3,000 million FRG 2001 on 27 June. Experience so far suggests that this has been a valued technical change and has allowed a wider range of market participants access, through the discount market, to the Bank's daily operations in the money market.

The twice-monthly gilt repo facility remained an important element of the Bank's operations, with nearly 70 institutions signed up for participation and an average amount outstanding in the facility of around £3,000 million during the quarter. This facility is intended to complement the Bank's daily operations in the money market and, as appropriate, to provide a core amount of liquidity at the authorities' desired level of interest rates. While the Bank welcomes regular participation in this facility, it also favours a degree of stability in participation from one rollover to the next, since it is not helpful to the purpose the facility serves if there are large reductions in participation by individual institutions over a short period; institutions have generally felt able to participate on this basis. Applications were only scaled back once during the quarter, on 8 May, when around 64% of the amount applied for was allotted, taking the amount outstanding from £2.3 billion to £3.2 billion. One technical change to the conduct of this facility was announced on 19 June with the introduction of phased provision and return of funds over the three days following application, in order to smooth the supply of funds to and from the money markets.

During the period, the Bank was also able to moderate its scaling back of assistance during the course of each day and to reduce the market's recourse to late lending operations by the Bank. This was done in response to periodic tightness in short-term interest rates, but was also made possible by the technical adjustment to the Bank's bill dealing rates in the previous quarter (aligning the Bank's intervention rate more closely with the aim for interbank rates), which allowed for more effective management of market interest rates. In addition, the Bank reduced the size of the weekly Treasury bill tender to £600 million by the end of the period in the light of forward projections for the outstanding stock of assistance over the period immediately ahead.

Table C
1996/97 financing requirement

£ billions

	Original remit	Post Summer Forecast
CGBR forecast	24.1	28.1
Net change in official reserves	—	—
Gilt redemptions	11.5	11.5
Under/overfund from 1995–96	—	2.2
Financing requirement	**35.6**	**41.8**
Assumed contribution from national savings	3.0	3.0
Expected contribution from certificates of tax deposit	—	-0.1
Gilt sales required	**32.6**	**38.9**

Gilt financing

Financing requirement and gilt sales

The gilt sales target at the beginning of the financial year was £32.6 billion. This was revised up during the course of the quarter to £34.9 billion as a result of the carry-forward of £2.2 billion of cumulative underfunding from the previous year. On 9 July, the Government published its revised forecast for the central government borrowing requirement which increased the gilt sales target for the year by a further £4 billion to £38.9 billion. At the same time, the Bank of England announced that no change to the auction programme or other aspects of the remit(1) to the Bank had

(1) Reproduced in the May 1996 *Quarterly Bulletin* on pages 136–37.

Table D
Issues of gilt-edged stock

	Amount issued (nominal)	Date	Average price	Average yield	Cover (a) at auctions	Tail (b) at auctions (basis points on yield)	Date exhausted (c) (taps)
Auctions							
7½% 2006	3,000	24.4.96 (d)	95.29 (e)	8.08	2.65	2	
8% 2021	3,000	29.5.96 (d)	96.16 (e)	8.35	2.04	2	
FR 2001	3,000	26.6.96 (d)	99.71 (e)	libid minus 6 basis points (f)	4.51	1	
Index-linked taps							
2½% 2001	150	1.4.96	177.47	3.62 (g)			16.4.96
2½% 2013	200	1.4.96	138.47	3.76 (g)			2.4.96
2½% 2011	200	18.4.96	169.81	3.71 (g)			22.4.96
2½% 2024	250	18.4.96	118.44	3.74 (g)			26.4.96
2% 2006	150	10.5.96	181.78	3.73 (g)			15.5.96
2% 2016	100	10.5.96	147.22	3.83 (g)			15.5.96
2½% 2003	150	17.6.96	173.88	3.78 (g)			18.6.96
2½% 2001	150	17.6.96	167.72	3.89 (g)			17.6.96
2½% 2009	200	21.6.96	163.97	3.80 (g)			1.7.96
2½% 2024	200	21.6.96	117.56	3.84 (g)			2.7.96
Conventional tap							
6% 1999	250	10.5.96	96.53	7.22 (h)			10.5.96

(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 (difference in discount to Libid for the Floating Rate stock).
(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) Gross redemption yield, based on the weighted average of successful competitive bids.
(f) Yield relative to Libid, based on the weighted average of successful competitive bids.
(g) Weighted average real rate of return, based on the actual price at which issues were made, assuming 5% inflation.
(h) Gross redemption yield, based on the price at which the issue was made.

been made.

Gilt sales to end June amounted to £11.1 billion, over 30% of the sales target for the year as a whole, as it stood at the beginning of the quarter. £8.9 billion of this represented sales of conventional gilts, nearly all of which (£8.7 billion) was raised through the three conventional auctions held during the quarter. This is consistent with the authorities' intention, as stated in the remit published at the end of March, that auctions constitute the primary means of conventional gilt sales. Each auction was for the maximum £3 billion of stock indicated by the remit's range for single stock conventional auctions.

Auctions

The results of the auctions in the first quarter of the financial year are summarised in Table D. The maturity bands for the auctions were published on 3 April, and generally caused little surprise; the decision to issue 10 and 25-year gilts built up existing benchmarks and took account of market participants' preferences for longer-dated stock following the fourth quarter of the financial year 1995/96, when two short-dated issues were auctioned. Having created a new 25-year issue in February, it was desirable to increase supply in order to enhance its liquidity. The scarcity premium was evident in the relationship between it and the next longest strippable benchmark, 8% Treasury Stock 2015: following February's auction, the ultra-long issue traded around 7 basis points below the shorter gilt in yield terms, so that there was an inversion of the yield curve at the ultra-long end. By May's auction this inversion had disappeared. The 10 and 25-year issues will be strippable when the planned stripping facility is introduced in the early part of next year, and the auctions took the total value of strippable issues to £41 billion.

The remit published in March had indicated that the authorities might issue floating-rate gilts (FRGs) during the financial year. The first quarter maturity schedule included a short stock for June, which was subsequently specified as Floating Rate Treasury Stock 2001, creating a new five-year instrument to complement the existing 1999 FRG, which had seen consistently good demand since its creation. Demand was enhanced by the Bank's announcement

that floating-rate gilts would be eligible for use in repos in the Bank's daily money-market operations. In the event, the auction elicited bids from a wide range of wholesale investors(1) and was heavily covered.

Floating-rate issuance in June was expected, following the April maturity-band information, which depressed the price of the existing FRG by 4 points. The average price realised in the auction produced a yield margin below Libid of 6 basis points, slightly higher than in auctions of the 1999 FRG (10 basis points below Libid in March 1994 and 7 basis points below Libid in June 1994); these auctions were for smaller amounts. The cover of 4.5 produced in the June auction was, however, the highest ever for a gilt auction.

This continued the pattern of high levels of cover seen in the first two auctions of the current financial year and the final auctions of 1995/96. April's ten-year 7½% 2006 auction was covered 2.65 times compared with 1.12 times in the previous December auction of the issue, and 0.99 times in September 1995's auction. May's auction of 8% 2021 was also covered more than twice. These cover statistics compare with an average cover in the last financial year of 1.75 times. The increase may reflect greater appetite for risk from the market-makers having recovered from a series of disappointing auctions in 1995. But there is also an element of 'bidding back' by the market, hoping to pick up cheap stock in the event that general demand at auction is poor. This strategy may be reflected in the relatively high volumes of bids coming via the GEMMs, but made on behalf of clients. Such 'retail' bids amounted to an average of 130% of the stock on offer in the three auctions during the quarter, compared with a 30% average over the course of the previous financial year.(2) Even excluding the auction of the FRG, which in the past has also produced high levels of retail bids, the level of retail bidding in the first two auctions amounted to 80% of the stock on offer.

Transmission of bids from end-investors has been helped by the increase in the number of telephone bids each GEMM can make in the period immediately before the auction close, together with an extension of the period for unlimited bids (from 9.45 am to 9.50 am). These small changes were introduced at the beginning of the financial year. Levels of cover have also been helped at the margin by the expanded non-competitive bidding facility for GEMMs, which was introduced this financial year—GEMMs may now bid for up to 0.5% of the stock on offer at the average accepted price. This facility has been extensively used. Finally, the gilt repo market may have facilitated (and reduced the costs of) GEMMs and end-investors taking short positions and financing holdings, and so encouraged greater participation. The pattern of repo activity for the auction stock parents has varied. But in the case of a stock identifiable as likely to be auctioned by the quarterly maturity announcements—for example the 8% 2021 in May—there has been a substantial increase in the 'specials' premium in the period before the week of when-issued trading. This is evidence of how market participants position themselves in the auction stock.

Yield tails were below average: 2 basis points for the two

(1) The terms of the auction were tailored to the wholesale market: a minimum bid size of £250,000 and no non-competitive facility for the general market, only for the gilt-edged market-makers. As with the 1999 FRG, the stock pays interest gross. It may only be held in CGO.
(2) Figures only include retail bids in amounts of over £10 million. Smaller bids are not reported to the Bank of England.

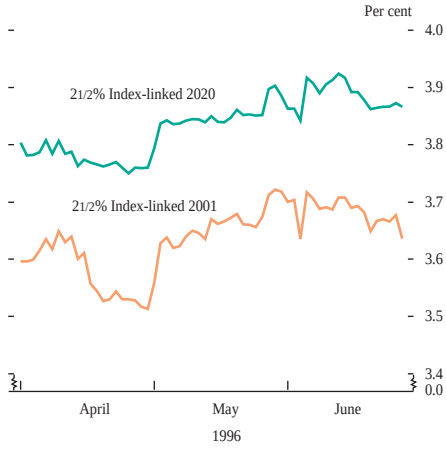
conventional auctions in the last quarter, 1 basis point in the FRG auction. This compares with an average of 3.3 basis points in the last financial year, suggesting that while low bids have become more common, leading to better cover, the dispersion of successful bids has narrowed.

Index-linked gilts

Sales of index-linked gilts (IGs) during the quarter raised £2.2 billion in cash terms—over 40% of the pre Summer Economic Forecast requirement.

The sector was buoyed at the outset of the financial year by the remit announcement, on 27 March, that no index-linked auctions were planned for 1996–97. Some market participants had feared that the possible additional weight of supply resulting from auctions, together with a fixed timetable, would adversely affect IG prices: the news that there would be no such auctions in this financial year boosted prices in the sector by nearly a point, outperforming conventional gilts by 4 basis points on the day.

Chart 10
Yields on index-linked government stocks



The strength of demand for index-linked gilts during the quarter may also have been linked with their relationship with equities. Equity yields have historically been higher than yields on index-linked gilts, with the better credit and lower variance of returns from indexed gilts apparently outweighing the possibility of real dividend growth on equities. However, with stock markets continuing to rally during the quarter, dividend yields on shares fell steadily. The yield spread narrowed from around 30 basis points at the start of 1996, to around zero at the start of the quarter and subsequently became negative, with IGs yielding around 10 basis points more than equities by the middle of May. While the spread returned to zero by the end of June, for most of the quarter switches out of equities and into index-linked gilts may have been regarded as relatively attractive. In these conditions ten individual tap stocks were issued over the quarter, spread across the yield curve. The size of taps was slightly higher than typical in the last financial year: taps have been issued up to £200 million in nominal size, compared with around £150 million previously.

Market participants also broadly welcomed the US Treasury's announcement on 16 May that it plans to issue inflation-linked bonds. There was no discernible impact on UK IG prices, but in general it was seen as a positive development, prospectively leading to greater international familiarity with index-linked instruments and possibly facilitating hedging.

Conventional tap

Only one conventional stock was tapped during the quarter; details are given in Table D. As explained in previous *Bulletin* issues, the authorities retain tapping as a market-management tool, to be used only in conditions of temporary excess demand in a particular stock or when there is an exceptionally sharp general rise in the market. There was evidence of difficulties in buying and borrowing the stock in question, the 6% 1999, its price had tightened relative to other short stocks, it was special in the repo market, and there was anecdotal evidence of a difficult situation. The tap was exhausted in the initial tender.

Sectoral investment activity

The results of the latest (end-December 1995) survey of gilt

Latest developments in the gilt repo market

In order to monitor market developments over time, and to make aggregate information available to market participants, the Bank collects data quarterly on a voluntary basis from major repo and stock lending market players. Because not all market participants report their activity, the coverage is not comprehensive. Nevertheless, the data collected from a relatively stable reporting population should be representative of developments in the repo market as a whole. Figures collected by the Bank from around 70 participants showed that the size of the combined markets, measured in terms of amounts outstanding, grew slightly from the end of February to exceed £50 billion by the end of May. Of this, around £35 billion was in repo, broadly unchanged from end-February, and around £16 billion in stock lending (see Table 1).

Table 1
Outstanding amounts[a] by practitioner

£ billions

	End-May 1996			Reference:
	Banks [b]	Securities houses and others [c]	Total	Total at end-Feb. [d]
Repo	21	14	35	36
Stock lent	4	3	7	4
Sell/buy back [e]	1	—	1	1
Total out	**26**	**17**	**43**	**42**
Reverse repo	24	10	34	34
Stock borrowed	11	5	16	12
Buy/sell back [e]	1	—	1	2
Total in	**36**	**15**	**51**	**48**

(a) Transactions entered into, but for which the second leg has not yet settled. Transactions are reported gross of other, similar transactions with the same counterparty.
(b) Including discount houses, and, in some cases, other parts of the banking group.
(c) Including GEMMs and all other reporters.
(d) Totals may not sum due to rounding.
(e) Sell/buy and buy/sell transactions conducted under an annex to the Gilt Repo Legal Agreement are included under repos and reverse repos.

There was some consolidation after the market's initial growth in January and February. The flatness of the short end of the yield curve and the convergence of views on interest rate prospects around the end of May may have meant that fewer positions would have been taken in repo and other sterling instruments. The outstanding size of the repo market might therefore be expected to show considerable variation over time, depending on market conditions and the spread of interest rate expectations in the market.

The increase in stock lending and borrowing from around £12 billion in February to around £16 billion at the end of May partly reflects an increase in the population of institutions reporting to the Bank. But it is also consistent with market comment that, for many participants, the development of the repo market has contributed to a revitalisation and expansion of the stock lending market.

Monetary statistics published by the Bank show that at the end of June, gilt repos and reverse repos outstanding on banks' and building societies' combined balance sheets were some £25 billion and £32 billion respectively. It is impossible to estimate with certainty the proportion of the rises in M4 and M4 lending that has been caused by the new market, since it is not known to what extent the new business is additional to or substitutes for business that would have taken place in some other form instead (for example unsecured lending). These issues were discussed in the Bank's May 1996 *Inflation Report*.

Average daily turnover (see below) has increased proportionately much more than the reported increase in outstandings. Over time, new participants are entering the market, so that activity is gradually becoming somewhat more widely spread. And brokers are thought to be seeing a rather higher proportion of repo business than in the market's first months.

Table 2 shows the residual maturity breakdown of outstanding transactions, as reported to the Bank; it shows positions as booked at the reporting date, but understates the proportion of short-term transactions compared with the turnover data, which give an indication of daily repo activity. The data on turnover collected by the Bank are less reliable than the comparable figures for

Table 2
Outstanding amounts at end-May 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	7	12	8	5	2	—	35
Stock lent	6	—	—	—	—	—	7
Sell/buy back	—	—	1	—	—	—	1
Total out [a]	**13**	**13**	**9**	**5**	**2**	—	**43**
Reverse repo	7	10	7	8	2	1	34
Stock borrowed	13	1	1	—	—	1	16
Buy/sell back	—	—	—	1	—	—	1
Total in [a]	**20**	**11**	**8**	**9**	**2**	**1**	**51**

(a) Totals may not sum due to rounding.

outstandings, partly because a number of participants are not yet able to report turnover figures.

Average reported daily turnover from March to May 1996 was at least £14 billion per day, which is somewhat below market perceptions, perhaps partly reflecting difficulties in capturing turnover data. Over 70% of turnover in all repo and reverse repo transactions reported during the period was either overnight or on call and a further 20% was up to one week's maturity.

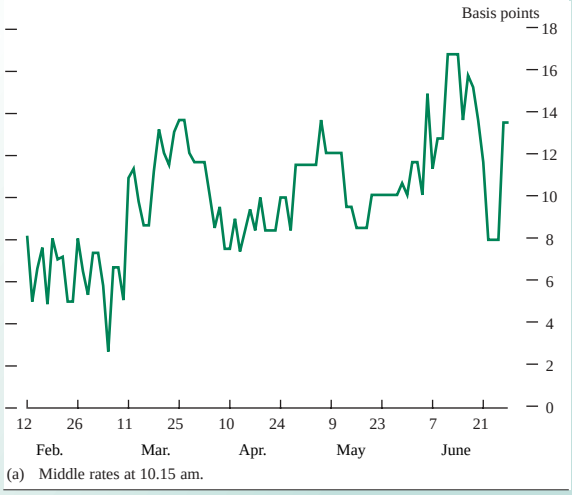
Both member-to-member deliveries of individual stocks and deliveries by value(1) (DBVs) are used to settle repo trades across the Central Gilts Office (CGO) settlement system. Turnover on the CGO to the end of June continued to show an increase over a year earlier in the number of member-to-member deliveries but a slight decline in the number of DBVs. The overall decline in DBVs is believed to be mainly attributable to two factors: reduced matched principal intermediation in the stock lending market—in which DBVs are the usual means of passing collateral—and the reported trend toward larger trades.

Market reports suggest that both larger trade sizes and enhanced liquidity in the cash gilt market may become a permanent benefit of the gilt repo market. For example, market participants report greater ease in effecting trades above £100 million. Further, the average daily turnover in cash gilt trades, excluding gilt repos, reported to the London Stock Exchange was £7.6 billion in the first half of 1996, an increase of 16% over the same period a year earlier, although it is hard to know to what extent this increased cash gilt market activity may be linked to repo activity.

General collateral (GC—the repo of a gilt or a parcel of gilts having no 'special' or premium value) has traded consistently below interbank rates at three months, as shown in the chart, although overnight rates do not show a consistent pattern and occasionally trade above GC rates. In the specials market, stocks 'trading special' (at a premium, ie having repo rates below the GC rate) have included 7¼% Treasury 1998, 6% Treasury 1999, 8% Treasury 2000, 8% Treasury 2003, and 8% Treasury 2021. Special rates have not so far tended to move as low as those found in some repo markets overseas, with the exception of a few very small, illiquid stocks. In May, the Bank became aware of reports of possible attempts to corner a small stock near maturity, 15% Exchequer 1997, causing the stock to trade at up to 500 basis points through (ie below) the GC rate, and inducing failures to deliver. Given the circumstances, the Bank indicated that it was monitoring the situation and was in contact with market participants to ensure that any difficulties were resolved in an orderly manner. The situation was normalised by the end of May. On a separate occasion, different market conditions called for a different response from the Bank, when £50 million of 8% Treasury 2002–06 was created by tap on 11 July, following widespread difficulty in obtaining this small stock which is widely held by non-lenders. The full amount of the tap was sold immediately.

The successful interaction of the stock lending and repo markets, in which stocks have generally been supplied smoothly to the market when the returns increase, may help explain why large specials discounts to the GC rate have tended to be short-lived. Some market participants expect that this will change over time, and perceive a trend in the increased specials activity in May-July 1996, compared with earlier months. The Bank of England reserves the right for market management purposes to reopen or repo a stock if it is being squeezed by market participants, but does not discourage activity in special stocks or the development of a specials market.

Three-month interbank rates minus three-month gilt repo general collateral rates(a)



(a) Middle rates at 10.15 am.

(1) A DBV is an overnight bulk delivery through the CGO of one or more stocks to a given value, rather than a delivery of a specified amount of a named security. Equivalent securities are returned automatically the following business day, provided that both parties to the delivery are then able to transfer stock through the CGO system.

holdings in the Central Gilts Office (together with the remaining holdings registered directly) were published in the Bank of England's 'Gilts and the Gilt Market Review 1995–6'.(1) The largest changes in percentage shares of holdings were shown by pension funds (an increase from 17.3% to 20.8%), and the overseas sector (a fall from 18.3% to 14.4%), although the latter is not shown in ONS data for the same period. The increased holdings of pension fund investors are consistent with the ONS figures for calendar 1995 which showed a continuing significant shift into gilts by this sector.

The latest ONS statistics, covering the first quarter of calendar 1996, show that institutional net investment in gilts remained buoyant; at £5.3 billion it was roughly at the same level as in the fourth quarter of 1995. Decreases in the amount of net investment by pension funds and long-term insurers were offset by increases by other types of institutional investor—other insurers and unit trusts. The pension funds and long-term insurers nevertheless continued to be the heaviest net investors in gilts.

For the most recent quarter (April-June 1996), statistics compiled by the Bank of England on the basis of reporting by banks and building societies indicate that the M4 private sector—in which institutions predominate—increased still further its level of net investment in gilts. But, as investment by this sector is calculated as a residual, we do not yet have a breakdown of the investors principally responsible for this. During the quarter as a whole, net investment by banks and building societies was fairly modest relative to the levels seen in the two immediately preceding quarters. However, there was an uneven monthly pattern, with net disinvestment in April and May being offset by large-scale investment in June. The June investment is likely to reflect the appeal to the monetary sector of the June auction stock—a floating-rate gilt. Finally, the overseas sector made significant net purchases in the latest quarter, continuing the recovery in investment levels from overseas seen in the first quarter of 1996. Purchases were concentrated particularly in April, perhaps reflecting the attractions of the gilt market spread over other European markets during that month.

Inflation expectations

UK bond yields were little affected by the unexpected cut in UK rates. Indeed they were very stable throughout the quarter, with a slight fall in nominal yields, most clearly perceptible at the shorter maturities.

At the end of June, inflation expectations, as derived, stood at 3.96%, 4.45% and 4.89% at 3, 5 and 15 years respectively. While they declined 37 basis points, 30 basis points and 13 basis points respectively from the levels at the end of the previous quarter, inflation expectations remained in well established ranges for most of the quarter.

Technical developments

On 14 June, the Bank of England issued an Operational Notice, 'Official Operations in the Gilt-Edged Market'. The new Operational Notice brought together the large number of changes

(1) Published on 16 July and available from Michelle Morris, Gilt-Edged & Money Markets Division, Bank of England, Threadneedle Street, London, EC2R 8AH.

Table E
Official transactions in gilt-edged stocks

£ billions: *not seasonally adjusted*

	1995/96	1996/97		
	Apr.–Mar.	Apr.	May	June
Gross official sales (a)	30.7	4.0	3.5	3.6
Redemptions and net official purchases of stock within a year of maturity	-4.1	—	-1.8	—
Net official sales (b)	26.6	4.0	1.7	3.6
of which net purchases by:				
Banks (b)	5.4	-0.6	-0.7	1.6
Building societies (b)	1.0	0.1	0.1	0.2
M4 private sector (b)	14.2	3.0	2.3	1.0
Overseas sector	5.8	1.4	—	0.8

(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 transactions under purchase and resale agreements.

Chart 11
Inflation expectations at 3, 5 and 15 years(a)

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

that have been made in recent years to the mechanics of the operations which the Bank undertakes in the gilt-edged market in its role as debt manager to the government. In addition to covering changes that had already been announced and described in other publications, it set out the operational framework for the Bank's transactions in the secondary market. These are separate from auctions and taps and are undertaken only on a very small scale. In order to ensure that any such transactions are effected in a way that promotes the liquidity and efficiency of the market, from 1 July the Bank is publishing on its screens a list of all the conventional stocks for which it is available to be bid in an outright sale or switch of stock (the 'Shop Window').

In May, the Bank published a Gilts Strips Update, setting out further decisions on the planned gilt strips facility and seeking views on some technical issues. Both the Operational Notice and the Gilts Strips Update are available from Lucy Clary, Gilt-Edged & Money Markets Division, Bank of England, Threadneedle Street, London, EC2R 8AH, telephone 0171-601 3677.

During the quarter, the Bank published further details of the upgrade to the Central Gilts Office (CGO). New features will facilitate stripping and reconstitution of gilts, allow repos to be processed more efficiently, effect automatic reporting to the SFA and Stock Exchange, offer more flexible membership and account management arrangements and allow better control by settlement banks of any residual risk in the settlement process.