Markets and operations

This article reviews developments since the Autumn Quarterly Bulletin *in sterling financial markets, UK market structure and the Bank's official operations.*(1)

- *Short-term nominal interest rates fell, reflecting falls in both implied inflation expectations and real interest rates. In effective terms, sterling depreciated.*
- *Real interest rates also fell in other countries, notably in the euro area and the United States. This could be consistent with financial market participants having perceived weaker near-term global economic activity.*
- *However, UK (and global) equity prices increased over the review period. Some of this increase may have reflected lower real interest rates, but such a marked increase is difficult to reconcile with investors having perceived weaker economic activity and commodity price pressures having remained strong.*
- *Longer-term market-based measures of inflation expectations remained well anchored in line with the Monetary Policy Committee's target of 2.0% for CPI inflation.*
- *The Bank of England issued a second consultative paper on fundamental reform of its operations in the sterling money markets. The paper set out detailed proposals for the new framework.*

Short-term sterling market interest rates have fallen since the Autumn *Quarterly Bulletin* (Table A). Such declines could have occurred in response to global factors — for example, a slowing of world activity in the wake of persistently high oil prices. Weaker-than-expected outturns for output growth in the third quarter in a number of countries may have increased market participants' perceptions that the recent slowdown in the global recovery might persist for longer than previously thought. At the same time, domestic factors also seem to have played a part — some of the biggest falls in short-term sterling interest rates followed UK-specific data releases. For example, investors in sterling assets may have revised downwards their expectations for domestic consumption growth as a result of data showing a slowdown in the UK housing market.

Table A
Summary of changes in market prices

	3 Sep.	26 Nov.	*Change*
Three-month sterling Libor (per cent)			
December 2004	5.10	4.85	*-25 bp*
June 2005	5.21	4.73	*-48 bp*
Sterling nominal forward rates (per cent)(a)			
Three-year	5.03	4.53	*-50 bp*
Ten-year	4.84	4.53	*-31 bp*
Equity indices			
FTSE 100	4551	4742	*4.2%*
FTSE All-Share	2256	2362	*4.7%*
Exchange rates			
Sterling effective exchange rate	103.4	101.8	*-1.5%*
€/£ exchange rate	1.47	1.43	*-3.1%*
$/£ exchange rate	1.78	1.89	*6.6%*

Columns may not correspond exactly due to rounding.

Sources: Bank of England and Bloomberg.

(a) Three-month forward rates, derived from the Bank's government liability curves. Estimates of the UK curve are published daily on the Bank of England's website at www.bankofengland.co.uk/statistics/yieldcurve/main.htm.

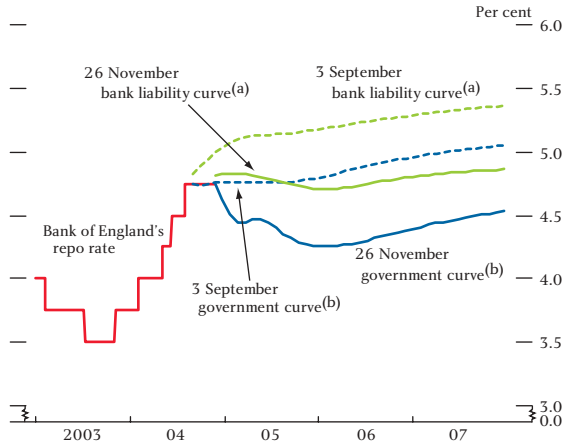
Short-term interest rates

The United Kingdom's Monetary Policy Committee (MPC) maintained the official repo rate at 4.75% over

(1) This article focuses on sterling markets. The reader is referred to 'Risks in the international financial system', Chapter 2 of the Bank of England's *Financial Stability Review* (December 2004) for a broader review of international financial markets. The period under review in this article is 3 September (the data cut-off for the previous *Quarterly Bulletin*) to 26 November.

the review period. Market participants revised downwards their views about the future path of sterling interest rates, with short-term forward rates falling by around 45 basis points at the one and two-year horizons (Chart 1).

Chart 1
Sterling official and forward market interest rates

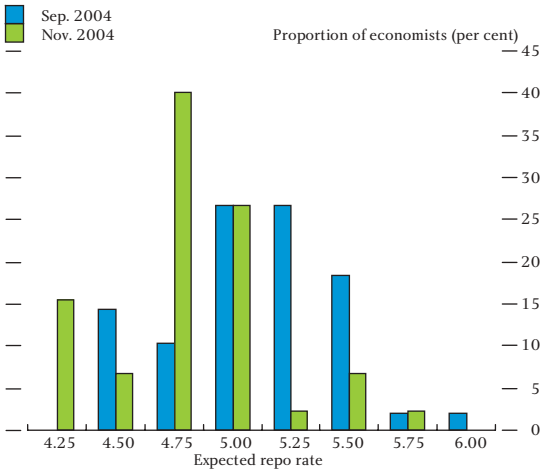


Sources: Bank of England, Bloomberg and LIFFE.

(a) Two-week nominal forward rates implied by a curve fitted to a combination of instruments that settle on Libor.
(b) Two-week nominal forward rates implied by GC repo/gilt curve.

A downward revision to the path of expected short-term interest rates was also evident in survey data. According to a regular survey of UK economists' views conducted by Reuters, the mean expectation for interest rates at end-2005 fell from 5.10% at the time of the September poll to 4.81% in November.(1) Over the same period, the proportion of economists reported as expecting the policy rate to remain unchanged or decrease during 2005 had risen (Chart 2).

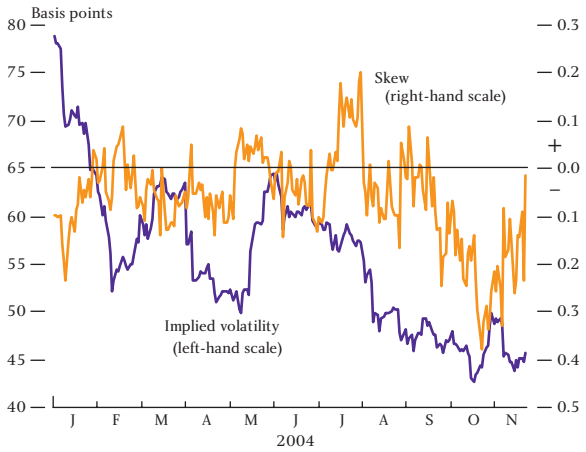
Chart 2
Economists' forecasts for the Bank of England repo rate at end-2005



Source: Reuters.

Information from options prices suggests that the perceived risks to near-term sterling interest rates returned to being broadly balanced, having been skewed to the downside for much of the review period (Chart 3). At the same time, implied volatility from interest rate options fell slightly, consistent with reduced uncertainty surrounding market participants' expectations of the future path of short-term interest rates.

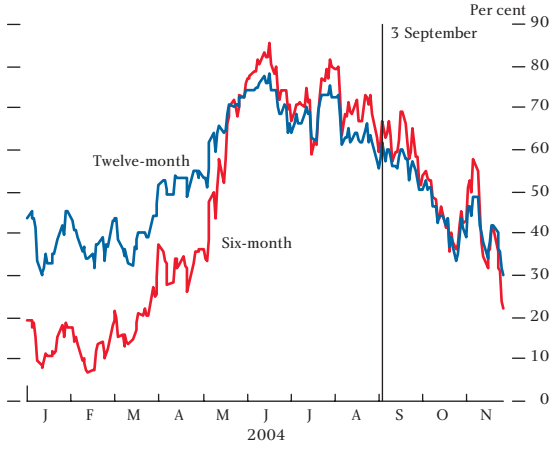
Chart 3
Six-month implied volatility and skew from sterling interest rate options



Sources: Bank of England and LIFFE.

The combined effect of the fall in the implied path of short rates and lower implied uncertainty suggests that, by the end of the period, the market attached a significantly lower probability to increases in policy rates over the coming year than had been the case during the middle of 2004 (Chart 4). Indeed, the forward curve implied by interbank liability rates inverted slightly at short horizons (Chart 1). This suggests that market participants perceived a higher probability of interest

Chart 4
Risk-neutral probability that three-month Libor will lie at or above 5% at different horizons



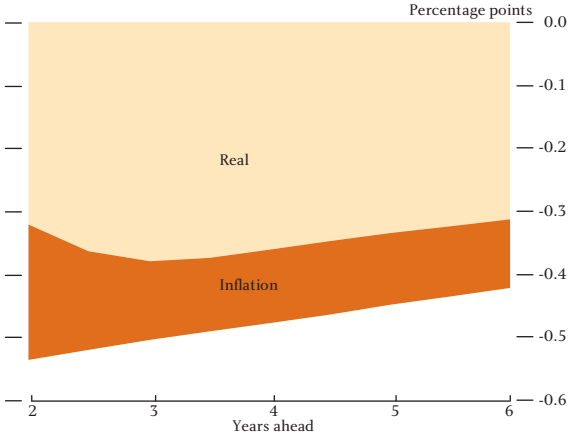
Sources: Bank of England and LIFFE.

(1) The September Reuters poll was conducted between 31 August and 2 September; the November survey was conducted between 26 and 28 October.

rate reductions during 2005 than had been the case at the time of the previous *Quarterly Bulletin*. The inversion was more pronounced in the Bank's government liability curve, but there are good reasons to believe that this curve does not provide a clear guide to near-term policy rate expectations at the current time (see the box on pages 404–05).

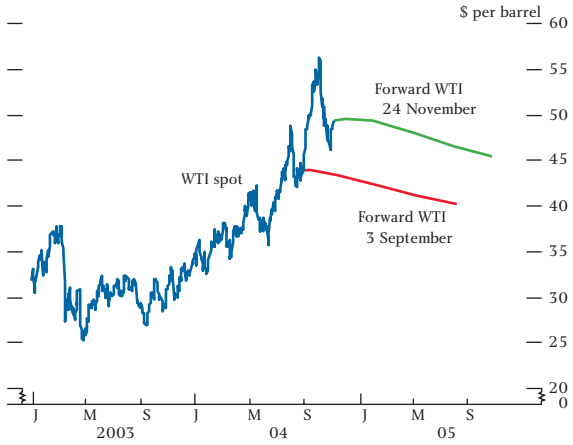
The fall in sterling nominal forward rates can be decomposed into its real and inflation components using yields on index-linked gilts. Chart 5 shows that some of the falls appear to be attributable to lower inflation expectations and/or inflation risk premia. This occurred despite the further increases in oil prices over the review period (Chart 6).

Chart 5
Changes in sterling forward rates since 3 September



Source: Bank of England.

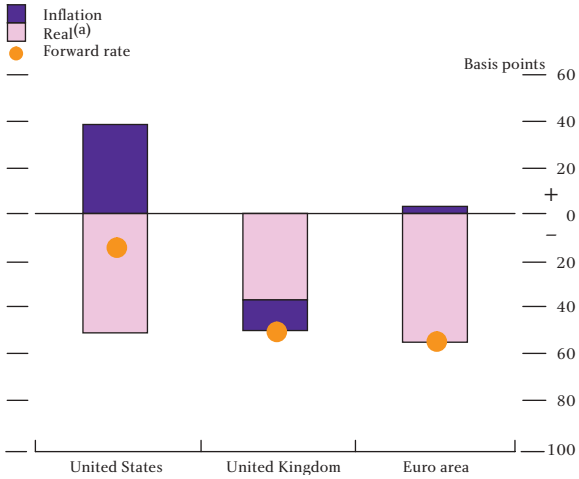
Chart 6
Crude oil spot and forward prices



Sources: Bank of England and Bloomberg.

The decline in nominal sterling forward rates also reflected falls in real interest rates. Part of the fall could be attributed to global factors. Chart 7 decomposes the recent changes in three-year dollar and euro nominal forward rates into their inflation and real components. The euro decomposition is based on data from the growing inflation swaps market; the dollar decomposition is based on information from the market for US Treasury Inflation-Protected Securities (TIPS).(1)

Chart 7
Changes in three-year forward rates since 3 September



Sources: Bank of England and Bloomberg.

(a) Real component of euro rates implied by nominal government bond yields less inflation swap rates, which are not strictly comparable because of credit risk. Sterling and dollar real rates derived from the Bank's government liability curves.

As in the United Kingdom, real forward rates also fell in the euro area. US real rates were also lower than at the time of the Autumn *Quarterly Bulletin*, although they picked up a little towards the end of the review period. Overall, these developments would be consistent with financial market participants having perceived a prospective weakening in global economic activity, possibly related to the persistently high level of oil prices. Rising oil prices create upward pressures on costs and prices in net oil-importing countries, which would tend to reduce real incomes and profits, thereby reducing aggregate demand in those countries. And any increase in demand in net oil-exporting countries would be unlikely to offset fully the negative impact on world activity. Increased uncertainty about the future economic outlook arising from higher energy costs might also discourage spending by households and firms.

Initial estimates of GDP growth in the United Kingdom, the United States and the euro area for 2004 Q3 were

(1) It is difficult to make precise international comparisons of inflation and real interest rate expectations embodied in bond yields. This is because country-specific features are likely to be important influences on the derived series for real and inflation forward rates. For more details see 'Markets and operations' (2004), *Bank of England Quarterly Bulletin*, Summer, pages 124–25.

Market-based measures of interest rate expectations

The Bank uses market interest rates to gauge market participants' expectations of the path of future official interest rates. There is no single traded instrument that corresponds exactly to expected future MPC repo rates. So the Bank uses forward rates from a range of different instruments that are traded.

One difficulty in inferring market expectations of official interest rates is that there are a number of factors that may drive a wedge between forward rates and underlying expectations of the path of policy rates.(1) One factor is the term premium, which may arise to compensate risk-averse lenders or borrowers for the uncertainty surrounding future interest rates. Other factors include differences in credit premia, liquidity and contract specification, which can lead to spreads between implied forward rates from different instruments.(2)

Forward rates estimated from gilt general collateral (GC) repo rates should provide the closest read on expectations of the Bank's repo rate because the Bank lends via reverse repo of high quality government bonds in its sterling money market operations.(3) But GC repo rates are available only at maturities of up to one year, so the Bank combines these rates with those implied by conventional gilts to estimate a forward curve, the Bank's 'government liability yield curve'.(4)

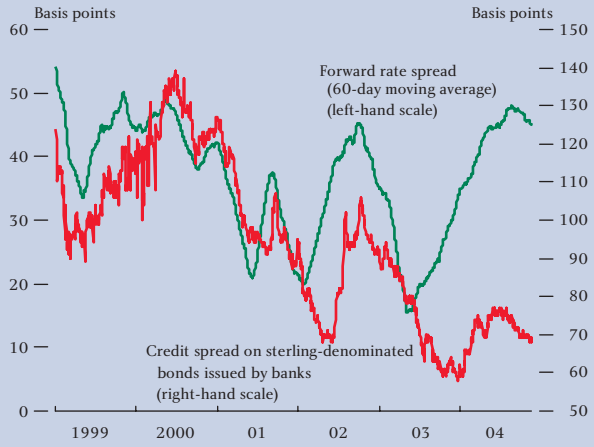
The Bank also estimates a forward curve using rates implied by various money market instruments that settle on Libor (such as short sterling futures, forward rate agreements and swaps), the Bank's 'bank liability curve' (BLC). But Libor is an interbank rate and, as such, it contains a premium reflecting the credit risk of the financial institutions that contribute to the daily Libor fixing.(5) This credit premium means that the forward rates implied by the Bank's BLC tend to lie above expectations of the policy rate, and the size of the premium is unlikely to be constant through time or across maturities.

Comparing alternative measures

Chart 1 in the main text shows that, on 26 November, the shape of the forward curve implied by government liabilities was different from that implied by interbank liabilities. In particular, the government curve suggested a forward rate of around 4.25% at end-2005, some 45 basis points below the forward rate implied by the BLC curve.(6)

To help understand whether the size of this gap is unusual, Chart A plots the spread between the two-week interest rate, one year forward, implied by the BLC and the government liability curve. It shows that the gap has been widening since mid-2003, although it currently remains below levels prevailing occasionally in the past.

Chart A
Spread between one-year forward rates implied by interbank liability and government liabilities versus credit spreads on sterling-denominated bonds issued by banks



Sources: Bank of England and Merrill Lynch.

In theory, one possible explanation for this widening gap could be that the credit standing of UK financial institutions has deteriorated. But alternative measures do not bear this out. For example, the credit spreads on sterling-denominated bonds issued

(1) For more information on term premia, see Peacock, C (2004), 'Deriving a market-based measure of interest rate expectations', *Bank of England Quarterly Bulletin*, Summer, pages 142–52.
(2) For more details, see Brooke, M, Cooper, N and Scholtes, C (2000), 'Inferring market interest rate expectations from money market rates', *Bank of England Quarterly Bulletin*, November, pages 392–402.
(3) Differences in contract specification between Bank and GC repo agreements mean that GC repo rates tend to be slightly lower than the Bank's repo rate, see Brooke, M *et al* (2000), *op cit*.
(4) Estimates of the UK yield curves are published daily on the Bank of England's website at www.bankofengland.co.uk/statistics/yieldcurve/main.htm.
(5) The British Bankers' Association calculates a daily fixing for sterling Libor based on quoted interbank rates from a panel of 16 banks.
(6) The projections published in the November *Inflation Report* were based on the Bank's BLC, with an adjustment to account for the credit premium.

by commercial banks have not increased markedly since early 2003 (Chart A).[7] Furthermore, at very short maturities, GC repo rates do not appear unusually low relative to Libor, consistent with no significant credit developments.

According to market contacts, a more likely explanation is that high demand for short-dated gilts has pushed up the price (thereby reducing the yield) on these instruments. Much of this demand has come from institutional investors, such as pension funds, whose benchmark investment portfolios require them to hold a certain amount of short-dated assets that are free from credit risk. These investors tend to hold the gilts until maturity. Compounding the price effects of high demand, low gilt issuance a few years ago means there are currently relatively few gilts available with maturities of less than two years.

Are low short-dated gilt yields likely to persist?

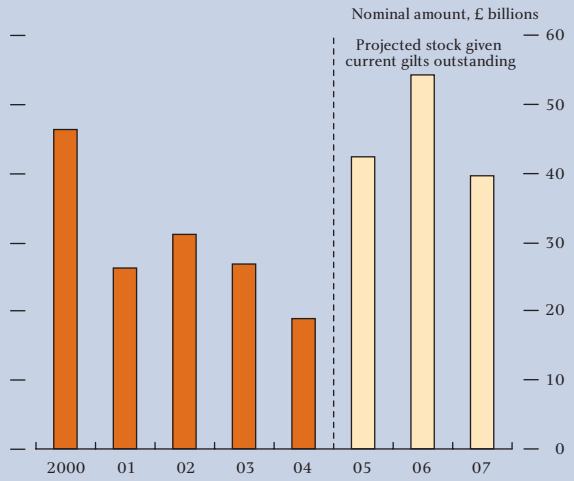
Not all short-dated gilts are being held to maturity by institutional investors. This suggests that bond traders could make positive returns by short-selling expensive gilts that are being actively traded. The usual way a bond trader would execute such a strategy would be to borrow the expensive gilt in the repo market and sell it, expecting to buy it back for a lower price at maturity of the repo agreement.

High demand to short-sell a specific gilt stock can push the cost of borrowing it significantly above the cost of borrowing gilts in general (in the GC repo market). When repo rates on a specific gilt fall significantly below GC repo rates in this way, the gilt is said to be trading 'special' in the repo market.[8] Contacts suggest that repo rates for certain short-dated gilts (for borrowing periods longer than overnight) have been well below equivalent GC repo rates, ie these gilts have been trading 'special'. This increases the cost to dealers of shorting these gilts by reducing the interest earned on the cash leg of the repo trade. At the same time, from the point of view of the holder of the 'special' gilt, the opportunity to borrow cash at a reduced rate may compensate for the lower yield on the gilt.

One reason why the short-horizon forward rates implied by the Bank's government liability curve have recently been low relative to other measures of market expectations for the future path of interest rates is that the Bank's estimation technique takes gilt prices as given.[9] If the prices of a number of gilts around a specific maturity are affected by factors other than interest rate expectations, such as differences in the cost of financing them in the repo market, these factors will be reflected in the implied forward rates.

If institutional demand for short-dated gilts remains strong and bonds remain special in the repo market, yields on short-dated gilts may remain low. However, based on the current stock of outstanding gilts, the nominal value of gilts with less than two years to maturity is set to increase over the coming years, in turn increasing the available supply (Chart B).

Chart B
Stock of conventional gilts with less than two years to maturity[(a)(b)]



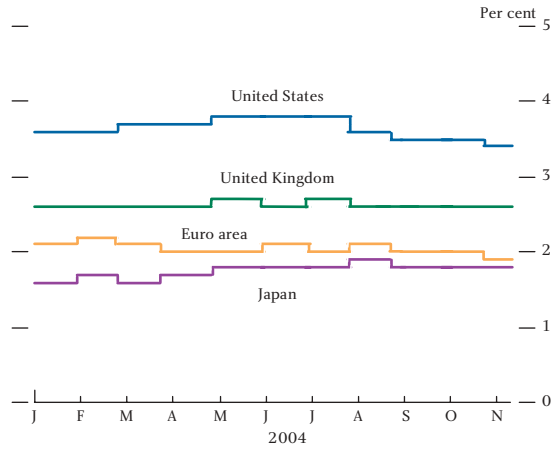
Source: DMO.

(a) Totals exclude issues where nominal amounts outstanding are less than £1 billion.
(b) Stocks outstanding at end-November of each year.

(7) The coverage of the credit spread index is wider than the 16 banks contributing to the Libor fixing. As a result, the comparison should be seen as purely indicative.
(8) For more information on bonds trading 'special' in repo markets, see 'Markets and operations' (2002), *Bank of England Quarterly Bulletin*, Winter, page 360.
(9) For more details, see Anderson, N and Sleath, J (1999), 'New estimates of the UK real and nominal yield curves', *Bank of England Quarterly Bulletin*, November, pages 384–92.

lower than had been expected by market participants. And Consensus forecasts for GDP growth in 2005 were revised down slightly for the United States and the euro area, although they remained largely unchanged for the United Kingdom (Chart 8).

Chart 8
Expected real GDP growth for 2005



Source: Consensus Economics.

But these global factors were not the only influence on short-term sterling interest rates. Indeed, some of the biggest falls followed UK-specific data releases, including the publication of the *Minutes* from the September and October meetings of the MPC, the publication of the November *Inflation Report* and data releases relating to the UK housing market.

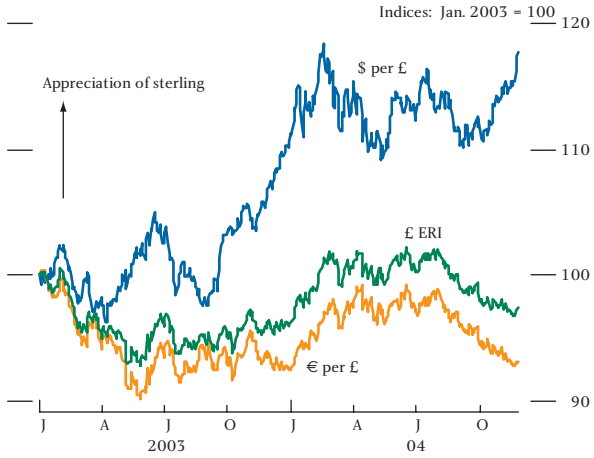
Even though the association between house prices and consumption may have been weaker over recent years than in the past,(1) financial market investors may nonetheless have placed weight on a sharp slowdown in the UK housing market adversely affecting future consumption growth.

Exchange rates

Lower sterling interest rates were accompanied by a 1.5% decline in the sterling effective exchange rate index (ERI) over the review period (Chart 9). Much of this decline was accounted for by a sterling depreciation against the euro.

Sterling's recent depreciation against the euro could be related to investors responding to a potential slowdown in the UK economy — sterling appeared to have fallen in response to indicators of weaker domestic demand. Market participants might also have become more

Chart 9
Sterling exchange rates



Sources: Bank of England and Bloomberg.

concerned about the sustainability of the UK trade deficit, which has averaged more than 3% of GDP during the first three quarters of 2004.

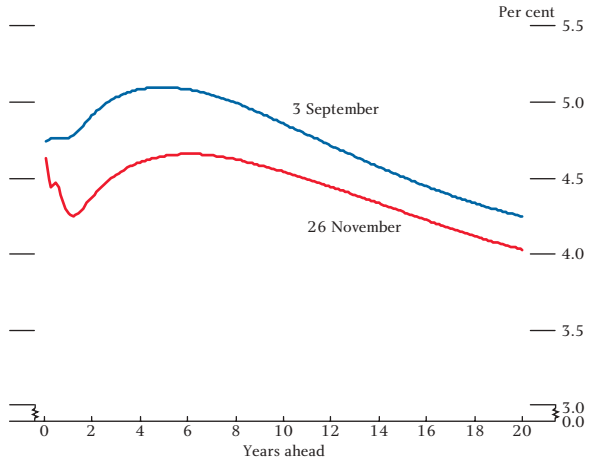
Sterling, along with other freely floating currencies, appreciated against the US dollar. The depreciation of the dollar seems to have reflected investors focusing on the long-run sustainability of the US current account deficit.

Longer-term interest rates

Further along the yield curve, sterling forward rates also fell, though the most pronounced falls were at short to medium horizons (Chart 10). At horizons between three and ten years, sterling forward rates fell by between 30 and 50 basis points.

Long-term inflation expectations have remained well anchored around the target rate. The forward-looking

Chart 10
Sterling nominal forward rates

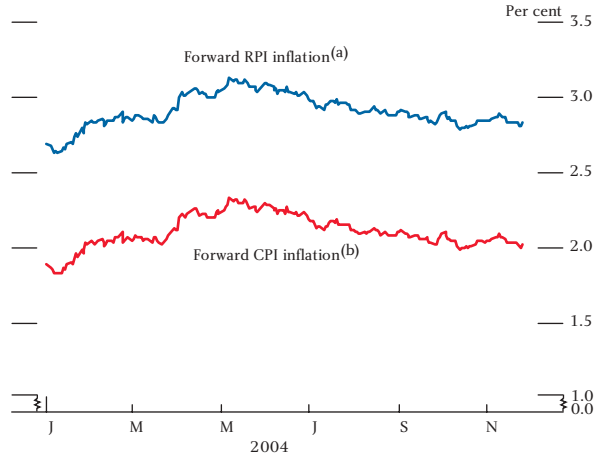


Source: Bank of England.

(1) This issue is discussed in the box 'House prices and consumer spending' in the November 2004 *Inflation Report*, pages 12–13.

measure of implied inflation, derived from the difference between yields on nominal and index-linked gilts, corresponds to changes in the UK RPI. Adjusting these implied inflation rates to derive an estimate closer to the CPI measure indicates that inflation expectations remained close to 2% (Chart 11).

Chart 11
Sterling ten-year forward inflation rates



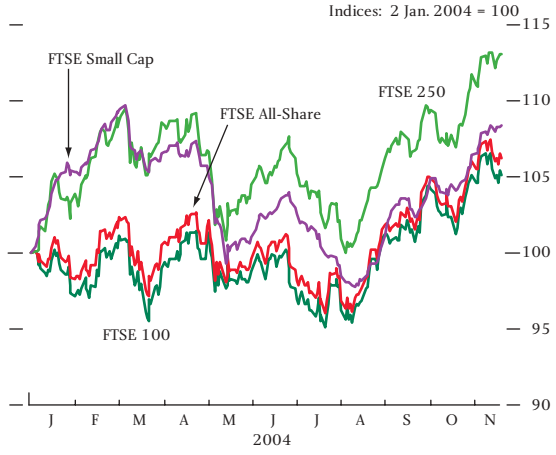
Source: Bank of England.

(a) Ten-year (instantaneous) forward RPI inflation rate derived from the difference between yields on conventional and index-linked gilts.
(b) Ten-year forward RPI inflation rate adjusted by average difference between RPI and CPI inflation outturns since 1989.

Equity markets

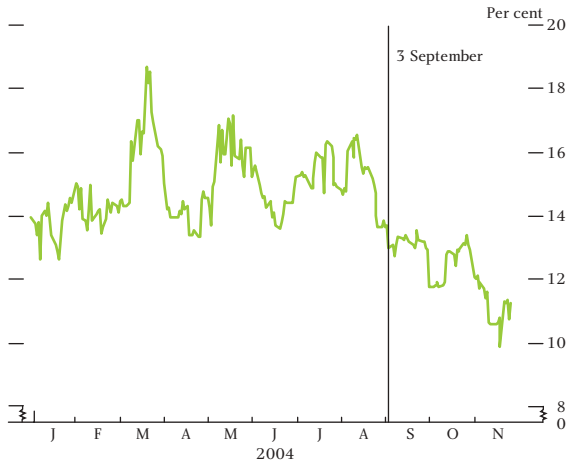
Equity prices increased over the period (Chart 12); the FTSE All-Share increased by 4.7%, at one point reaching its highest level since June 2002. This rise occurred against a backdrop of stronger international equities; in local-currency terms, the Euro Stoxx and S&P 500 rose by 6.3% and 6.2% respectively.

Chart 12
Selected domestic equity indices



Source: Bloomberg.

Chart 13
Six-month FTSE 100 implied volatility

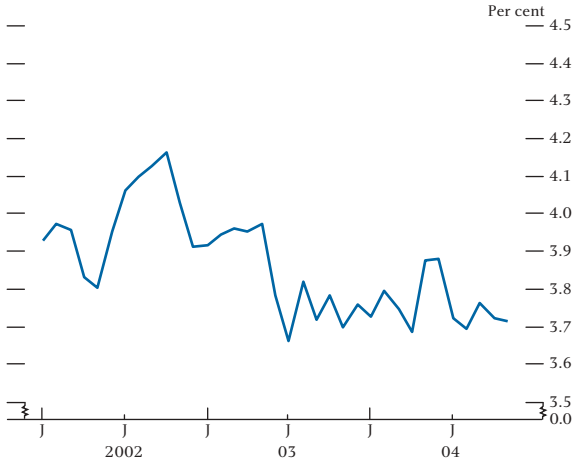


Source: Bank of England.

In principle, equity prices should reflect the discounted value of expected future earnings streams. So the rise in equity prices could be explained by an increase in expected future profit growth. But it is difficult to reconcile this with investors having perceived weaker prospective global activity and commodity price pressures having remained strong. Indeed, IBES survey data did not suggest any significant increase in expectations of long-term growth of earnings per share for FTSE 100 companies.

The rise in equity prices could also be consistent with lower real interest rates, which influence the rate at which investors discount expected future income streams. Alternatively, there may have been a fall in the equity risk premium. Over short horizons, information from options prices suggests that there was a decline in equity price uncertainty, as measured by implied volatility (Chart 13). This fall in expected volatility

Chart 14
Survey-based global equity risk premium(a)



Source: Merrill Lynch.

(a) Based on global survey of fund managers' views of appropriate risk premium with which to assess equity valuations.

might mean investors seeking to smooth their income required a lower risk premium.

The level of implied volatility, however, need not reflect changes in long-term equity risk premia which would affect the long-term discount rate. Indeed, evidence from survey data indicates that investors' perceptions of the appropriate equity risk premium changed little over the review period (Chart 14).

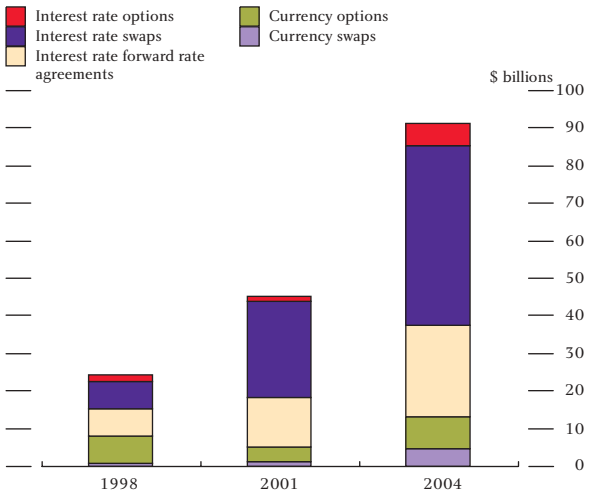
Developments in market structure

BIS survey of foreign exchange and derivatives: sterling markets

The 2004 triennial survey of foreign exchange and over-the-counter (OTC) interest rate and exchange rate derivatives markets showed that foreign exchange turnover involving sterling in the United Kingdom had risen by 71% (in US dollar terms) since the previous survey in 2001.(1) This increase occurred against the background of a 49% rise in total foreign exchange turnover in the United Kingdom. Sterling was involved in 28% of all transactions in the United Kingdom. Average daily turnover of spot transactions involving sterling increased by $17 billion, to $45 billion, and outright forward business rose by $9 billion. Sterling foreign exchange swaps turnover increased by $60 billion, accounting for 68% of foreign exchange activity involving sterling.

Turnover of OTC currency and interest rate derivatives in the United Kingdom more than doubled compared with the previous survey. Average daily turnover of currency swaps involving sterling increased by $3 billion. In percentage terms, this was a similar increase to that for dollar-denominated swaps, but lower than that for euro-denominated swaps. Average daily turnover of currency options involving sterling increased to $8 billion, from $4 billion in 2001, a rate of increase greater than for either dollar or euro options. Total turnover of sterling OTC interest rate derivatives rose by $38 billion, compared with $54 billion and $211 billion for dollar and euro-denominated instruments. Interest rate swaps and forward rate agreements (FRAs) were the main OTC derivative instruments; both have increased significantly over the past few years (Chart 15).

Chart 15
Average daily sterling over-the-counter derivatives turnover by transaction type



Source: Bank of England.

Trading in decimals in the sterling money markets

Following discussions at the Sterling Money Markets Liaison Group, participants at the very short end of the sterling money market (overnight to three-month maturity wholesale loans and deposits) have switched from trading and quoting market interest rates in fractions to trading on the basis of decimals (eg 4.75%).(2) At maturities beyond three months, market interest rates have been quoted in decimals for some time — the gilt market moved to quoting prices in decimals in 1998.

UK Debt Management Office consultation on ultra-long and annuity gilts

Following the Pre-Budget Report published on 2 December 2004, the UK Debt Management Office (DMO) issued a consultation paper seeking views on the possible introduction of:

- ultra-long (around 50-year) conventional and index-linked gilts; and
- ultra-long (around 50-year) conventional and index-linked annuity-type gilts.

Pension funds and life assurance companies had made requests for such instruments during informal consultations with the DMO during 2004.

(1) For a full review of the survey see Williams, P (2004), 'The foreign exchange and over-the-counter derivatives markets in the United Kingdom', in this *Bulletin*, pages 470–84.
(2) The Sterling Money Market Liaison Group provides a forum for the Bank to maintain regular contact with market practitioners. The minutes from the September meeting, where the switch to decimals was discussed, are available from the Bank's website at www.bankofengland.co.uk/markets/mmlgsep04.pdf.

Bank of England official operations

Changes in the Bank of England balance sheet

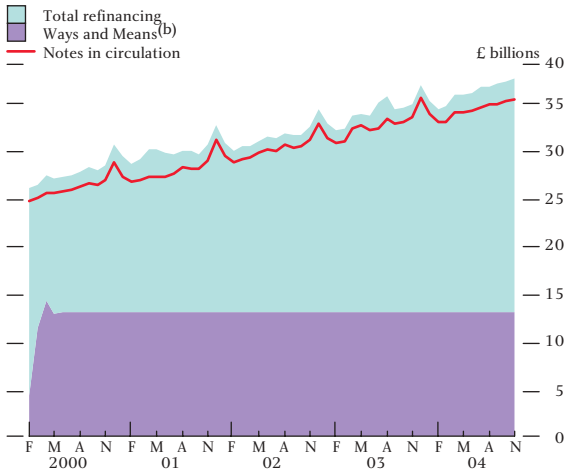
There was little change in the sterling value of the foreign-currency components of the Bank's balance sheet over the review period (Table B). The Bank maintained the value of its three and six-month euro-denominated bills outstanding at €3.6 billion by renewing maturing bills. The average indicative spread to Euribor of three-month issuance widened to 9.8 basis points below Euribor, compared with 8.7 basis points over the previous review period (June-August); for six-month bills, the average issuance spread was little changed at 10.1 basis points below Euribor.

The sterling components of the Bank's balance sheet also remained broadly unchanged. As described in the Autumn *Quarterly Bulletin*, the Bank has changed the way it manages its sterling bond portfolio. Gilt purchases were made on three occasions during the current quarter in accordance with the screen announcement made on 1 September 2004; £16 million of 5% Treasury 2014, £16 million of 4¾% Treasury 2015 and £16 million of 5% Treasury 2012. The screen announcement made on 2 December 2004 detailed purchases to be made in the coming quarter; £16 million of 5% Treasury 2014 and £16 million of 4¾% Treasury 2015.

Bank notes in circulation (the largest sterling liability on the Bank's balance sheet) grew steadily following seasonal effects over the August Bank Holiday period (Chart 16). The part of the stock of refinancing provided by short-term open market operations (OMOs) moved broadly in line with the level of notes in circulation.

The Bank lends against high quality sterling and euro-denominated debt both intraday, in its lending to settlement banks in the sterling RTGS system, and in its

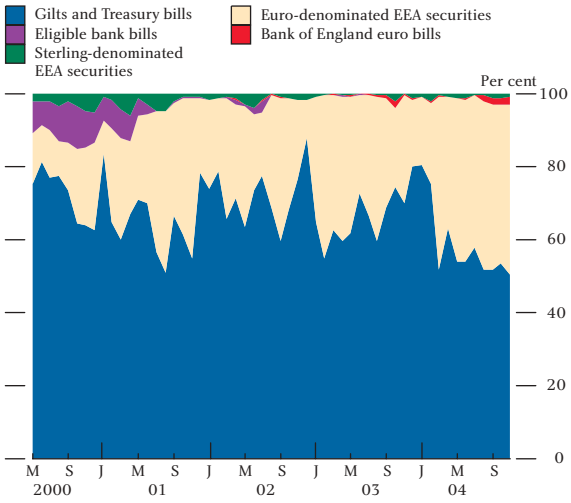
Chart 16
Bank notes in circulation, the stock of OMO refinancing, and 'Ways and Means'(a)



(a) Monthly averages.
(b) An illiquid advance to HM Government. This fluctuated prior to the transfer of responsibility for UK central government cash management to the UK Debt Management Office in April 2000. The Ways and Means is now usually constant.

OMOs. Counterparties participating in the Bank's OMOs continued to make significant use of euro-denominated collateral; the proportion of euro-denominated collateral increased slightly (Chart 17), perhaps reflecting a fall in its relative cost

Chart 17
Instruments used as OMO collateral(a)



(a) Monthly averages.

Table B
Simplified version of Bank of England consolidated(a) balance sheet(b)

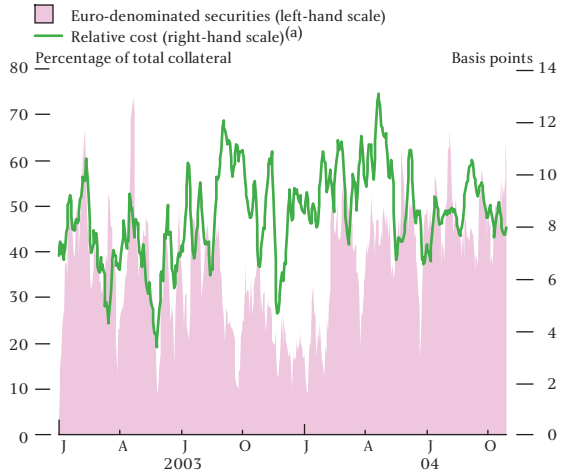
£ billions

Liabilities	26 Nov.	3 Sep.	Assets	26 Nov.	3 Sep.
Bank note issue	40	39	Stock of refinancing	28	27
Settlement bank balances	<0.1	<0.1	Ways and Means advance	13	13
Other sterling deposits, cash ratio deposits and the Bank of England's capital and reserves	8	8	Other sterling-denominated assets	5	4
Foreign currency denominated liabilities	13	11	Foreign currency denominated assets	14	14
Total(c)	**61**	**58**	**Total**(c)	**60**	**58**

(a) For accounting purposes the Bank of England's balance sheet is divided into two accounting entities: Issue Department and Banking Department. See 'Components of the Bank of England's balance sheet' (2003), *Bank of England Quarterly Bulletin*, Spring, page 18.
(b) Based on published weekly Bank Returns. The Bank also uses currency, foreign exchange and interest rate swaps to hedge and manage currency and non-sterling interest rate exposures — see the Bank's 2003 *Annual Report*, pages 53 and 73–79 for a description.
(c) Figures may not sum to totals due to rounding.

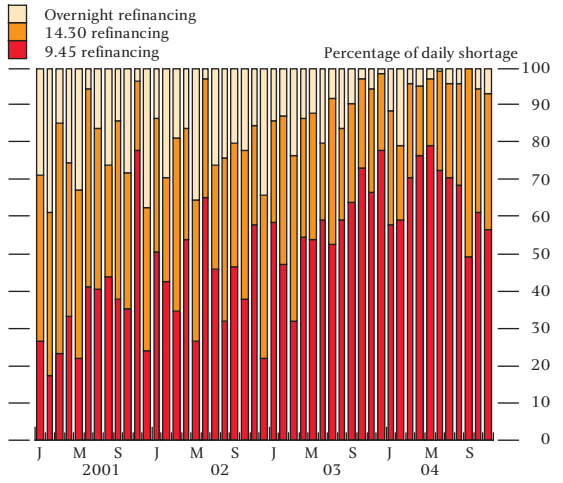
(Chart 18). The majority of OMO financing continued to be provided at the Bank's repo rate (at a two-week maturity) in the 9.45 and 14.30 rounds, rather than at a penalty interest rate in the overnight lending facilities (Chart 19).

Chart 18
Relative cost and use in OMOs of euro-denominated EEA government securities



(a) Relative cost calculated as the difference between one-month BBA repo and Libor fixing spread and one-month European Banking Federation repo and Euribor spread. A wider spread indicates a lower cost of repoing euro-denominated debt relative to repoing gilts.

Chart 19
Refinancing provided in the Bank's open market operations(a)

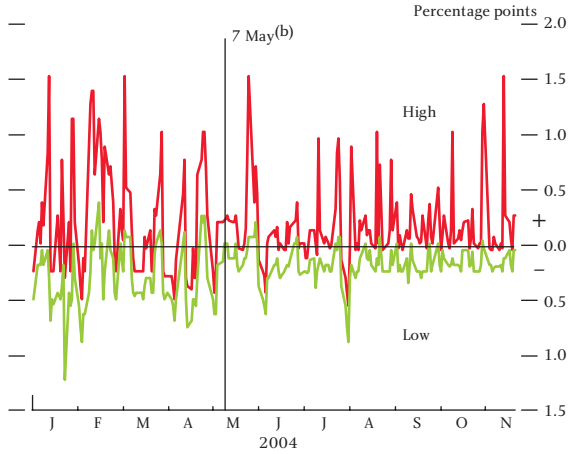


(a) Monthly averages.

Short-dated interest rates

The size of the spread between daily highs and lows in sterling overnight interest rates has tended to stabilise. Volatility in overnight interest rates has remained at the lower level prevailing since the Bank announced in May its objectives for reform of its operations in the sterling money markets (Chart 20). The Bank has since published a second consultative paper setting out the details of the proposed new system (see the box on page 411).

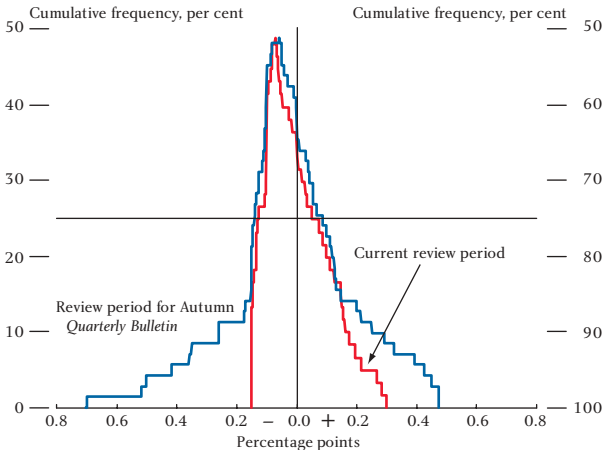
Chart 20
Volatility of sterling overnight interest rate(a)



(a) High and low of the day observed by the Bank's dealing desk as a spread to the policy rate.
(b) On 7 May, the Bank published a consultative paper on the reform of its operations in the sterling money markets.

Chart 21 shows that the distribution of the spread between the sterling secured (gilt GC repo) overnight rate and the official Bank repo rate has narrowed. This narrowing in part reflected the absence of significant rate pivoting ahead of meetings of the MPC. In contrast, pivoting had been significant ahead of the June and August meetings during the previous review period. Given that OMOs span MPC dates, pivoting occurs when market participants perceive a significant likelihood that the MPC will change official rates; speculation about rate increases causes overnight market rates to decline in the run-up to the MPC meeting date, and *vice versa*.

Chart 21
Cumulative folded distribution of sterling secured overnight rates(a)



(a) Distribution of the spread between the GC repo rate and the MPC's repo rate. A negative spread indicates that the market rate is less than the official rate; if more than 50% of the spread distribution is below zero, it has a negative bias.

At the same time, although the distribution of secured rates relative to the official rate was positively skewed, the size of the upper tail decreased, consistent with a

Second consultative paper on money market reform

In October 2003, the Governor announced a review of the Bank of England's operations in the sterling money markets. As part of this review, the Bank consulted extensively with market participants, and studied the operational frameworks of many overseas central banks. In July 2004, the Bank announced that it would adopt a new system, based on averaging of voluntary reserves, with a narrow interest rate 'corridor' formed by standing lending and deposit facilities on the final day of a maintenance period lasting from one scheduled MPC announcement date to another.

On 25 November 2004, the Bank issued a second consultative paper, setting out the new framework in detail, and inviting comments from interested parties.

The Bank believes that it is most likely to achieve its objectives, including primarily for sterling overnight rates to be in line with the MPC's repo rate, with a system in which:

- A wide range of banks and building societies hold reserves at the Bank and/or have access to the standing facilities.
- Aggregate reserve holdings across the banking system are sufficiently large and well distributed, helping to ensure that the averaging mechanism can work effectively to smooth out fluctuations in supply and demand in the money markets over the maintenance period, so that overnight market interest rates remain stable.
- The Bank's arrangements for refinancing the banking system work smoothly so that, in aggregate, the banking system as a whole expects to be — and *ex post* is — able to meet its reserve average target without needing to use the standing facilities, with overnight market interest rates therefore remaining stable and in line with the MPC's repo rate.

The November paper describes the proposed details of the new system, listing the firms that will be eligible to participate and describing the maintenance requirement, open market operations, standing facilities, and end-of-day arrangements. Among the features of the new framework are:

- Settlement banks will automatically become part of the averaging scheme, while all banks and building societies that are required to place cash ratio deposits at the Bank will be eligible to access remunerated reserves and the standing facilities.
- In order to ensure that aggregate reserves are not excessively high, and that reserves are widely distributed across the banking system, each participating bank will have a ceiling on its voluntary reserve target (the higher of a lump-sum or a fixed proportion of its sterling eligible liabilities).
- The Bank is minded to specify reserve targets as narrow bands rather than point targets, in order to absorb errors in the Bank's forecast of the banking system's net liquidity need on the final day of the maintenance period.
- Other than on the final day of the maintenance period, the Bank currently intends that the rates on the standing facilities will be at a spread of +/- 100 basis points to the prevailing repo rate.

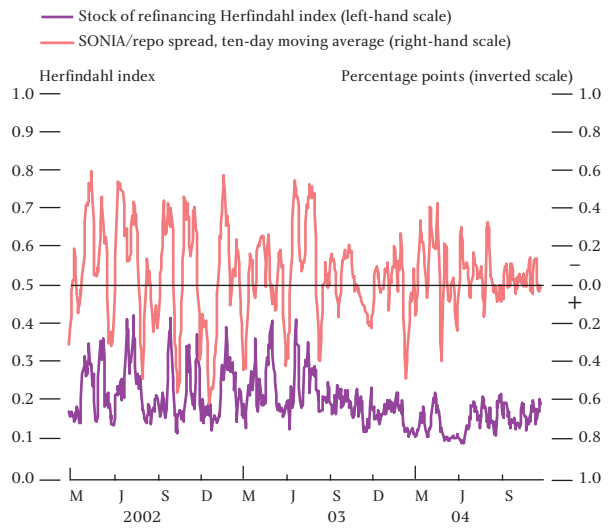
The paper seeks comments from interested parties on a number of specific issues. In the light of comments on this paper and continuing dialogue with market participants, the Bank will issue a further paper outlining its final plans and its timetable for implementation.

high provision of liquidity at the repo rate in the two-week rounds, as opposed to the penal overnight rounds.

Chart 22 shows the spread between the sterling overnight indexed average rate (SONIA) and the official repo rate, and a Herfindahl(1) index that measures the concentration of the stock of refinancing between counterparties. The chart shows that the SONIA/repo spread has narrowed over time and this may have encouraged participation in Bank operations, as evidenced by a decrease in the concentration in

(1) The Herfindahl index is calculated by squaring the share of refinancing held by each counterparty and then summing the resulting numbers. An index of one implies a single counterparty accounted for the entire stock of refinancing, ie high concentration. As the index approaches zero, concentration falls.

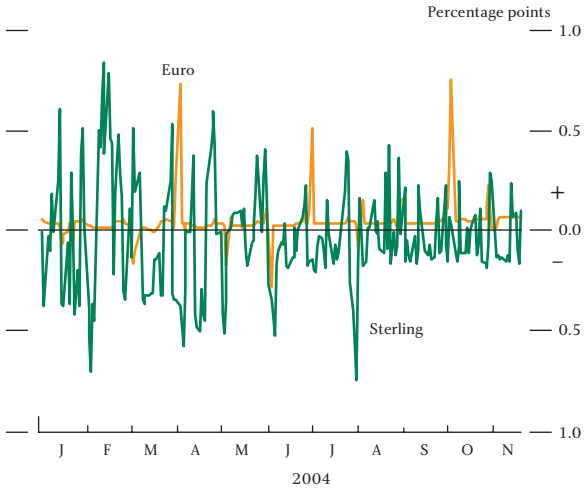
Chart 22
Stock of refinancing Herfindahl index and spread between SONIA and Bank repo rate



holdings of the stock of refinancing (ie more counterparties are participating in operations).

Over recent years, sterling overnight interest rates have tended to be more volatile than euro overnight rates, although this has become less pronounced over recent months. Chart 23 shows that the spread between SONIA and the Bank's official repo rate has exhibited fewer large spikes over recent months, excepting the instances of pivoting in June and August mentioned previously. The spread between the euro overnight index average (EONIA) and the European Central Bank's (ECB's) refinancing rate has remained stable — the relatively few spikes that occurred were generally at the end of the ECB's maintenance period.

Chart 23
Spread between overnight and official interest rates



Forecasting the liquidity shortage

During 2004 Q3, there was an improvement in the accuracy of the Bank's liquidity forecast, despite seasonal volatility attributable to the August Bank Holiday (Table C). During October and November the forecast errors were in line with those observed over previous quarters.

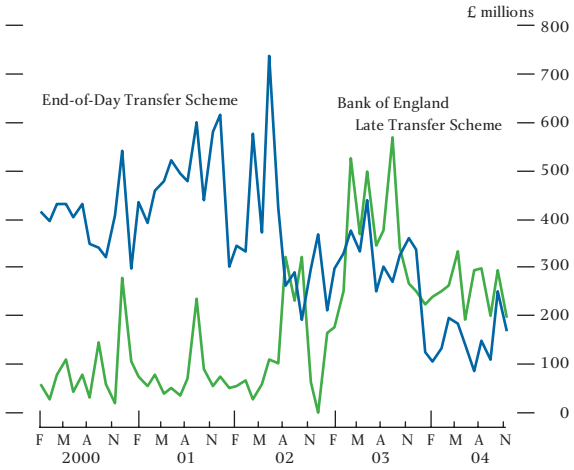
Table C
Intraday forecasts versus actual liquidity shortages

Mean absolute difference (standard deviation), £ millions

	9.45 forecast	14.30 forecast	16.20 forecast
2002	83 (107)	43 (79)	30 (73)
2003	101 (123)	61 (96)	51 (85)
2003 Q2	119 (131)	54 (76)	38 (43)
2003 Q3	118 (170)	92 (154)	85 (150)
2003 Q4	87 (91)	52 (57)	46 (36)
2004 Q1	120 (108)	79 (77)	55 (43)
2004 Q2	115 (123)	58 (78)	61 (74)
2004 Q3	89 (69)	62 (44)	52 (32)
Oct.-Nov. 2004	101 (114)	74 (86)	52 (63)

Flows in the end-of-day schemes for settlement banks were little changed, suggesting little change in settlement banks' forecasting accuracy. But average daily flows in the Bank of England Late Transfer Scheme (BELTS) fell during the period, as did the volatility of these flows. At the same time, both average flows and volatility increased a little in the End-of-Day Transfer Scheme (EoDTS), possibly consistent with counterparties substituting from one scheme to the other (Chart 24).

Chart 24
Bank of England Late Transfer Scheme and End-of-Day Transfer Scheme(a)



(a) Monthly averages.

Operational notice

On 23 November 2004, the Bank published amendments to the Operational Notice that governs its OMOs. The main revisions were as follows:

- With effect from 1 March 2005 there will be a limit on the amount, by market value, of collateral from a single issuer (excluding HM Government and the Bank of England) that a participant can hold with the Bank at any one time. If, at any time, the total collateral provided by a single institution exceeds £1 billion, the institution must ensure that the securities of any single issuer comprise no more than 25%, by market value, of the total securities delivered to the Bank.
- In exceptional circumstances, involving for example stressed conditions in or affecting markets, infrastructure or a counterparty, the Bank will be able to receive marketable US Treasury securities as collateral in its operations, in addition to other securities on its current list of eligible collateral.
- Local authority bills have been removed from the list of eligible securities.