

Markets and operations

This article reviews developments in sterling financial markets, including the Bank's official operations, between the 2012 Q1 *Quarterly Bulletin* and 31 May 2012.⁽¹⁾ The article also summarises market intelligence on selected topical issues relating to market functioning.

Sterling financial markets

Overview

Financial market sentiment deteriorated markedly over the review period amid renewed concerns about the vulnerabilities associated with the indebtedness and competitiveness of several euro-area economies. Concerns had intensified after inconclusive Greek elections on 6 May reignited fears of a disorderly resolution of euro-area tensions and as a result of increased investor worries about the resilience of certain euro-area banking systems.

The deterioration in financial market sentiment led to falls in the prices of assets considered most risky, and flows into government bonds of countries considered to be relatively safe. Yields on bonds issued by Germany, the United States and the United Kingdom fell to historically low levels. By contrast the yields on sovereign bonds of euro-area economies perceived by markets to be particularly vulnerable rose considerably. Against this backdrop, the euro depreciated. This accounted for most of sterling's appreciation over the review period.

Debt issuance by banks slowed as measures of longer-term funding costs increased. In contrast, gross issuance by non-financial corporates remained stronger than in recent years.

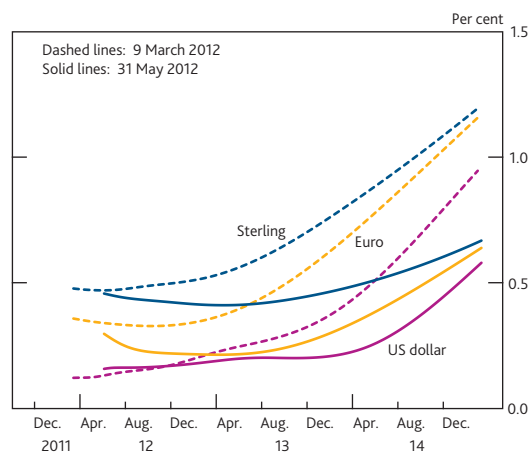
After the end of the review period, the Bank announced that it would activate the Extended Collateral Term Repo Facility launched in December 2011 as a contingency liquidity facility designed to respond to actual or prospective market-wide stress of an exceptional nature.⁽²⁾ And the Governor of the Bank of England announced that the Bank and the Treasury are working together on a 'funding for lending' scheme that would provide funding to banks for an extended period of several years, at rates below current market rates and linked to the performance of banks in sustaining or expanding their lending to the UK non-financial sector during the present period of heightened uncertainty.⁽³⁾

Monetary policy and short-term interest rates

The Bank of England's Monetary Policy Committee (MPC) maintained Bank Rate at 0.5% throughout the review period. In early May, the Bank completed the extra asset purchases announced by the MPC in February 2012, taking the stock of purchased assets to £325 billion. The MPC voted to maintain the size of its asset purchase programme at this level at each of its meetings during the review period. The asset purchase programme is described in the box on pages 102–03.

According to contacts, market participants pushed back their expectations for the timing of an increase in Bank Rate and placed some weight on the possibility that Bank Rate might be cut below 0.5%. Consistent with this, sterling short-term overnight index swap (OIS) rates fell over the review period (**Chart 1**). Contacts attributed the moves largely to a combination of weaker UK economic data and the implications for the UK economy of growing concerns about the outlook in the euro area.

Chart 1 Instantaneous forward interest rates derived from OIS contracts^(a)



Sources: Bloomberg and Bank calculations.

(a) Instantaneous forward rates derived from the Bank's OIS curves.

(1) The data cut-off for the previous *Bulletin* was 9 March 2012.

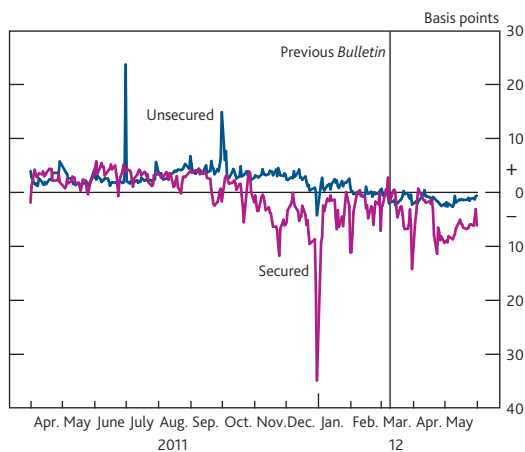
(2) Further details are available at www.bankofengland.co.uk/markets/Documents/marketnotice120615.pdf.

(3) See the speech by Sir Mervyn King at the Lord Mayor's Banquet for Bankers and Merchants of the City of London at the Mansion House on 14 June 2012 available at www.bankofengland.co.uk/publications/Documents/speeches/2012/speech587.pdf.

A Reuters poll released at the end of the review period showed that a majority of the economists surveyed did not expect the MPC to expand the stock of asset purchases beyond £325 billion. The same poll continued to indicate that the median expectation was for no increase in Bank Rate over the period covered by the survey, which ended in 2013 Q4.

Overnight sterling interest rates, most notably secured rates, lay slightly below Bank Rate for most of the review period (**Chart 2**). Contacts continued to attribute the downward pressure on secured interest rates to elevated demand for high-quality collateral, as well as an ongoing structural shift towards secured lending. The Bank's operations within the Sterling Monetary Framework and other market operations are described in the box on pages 106–07.

Chart 2 Spread to Bank Rate of weighted average sterling overnight interest rates



Sources: Bloomberg and Bank calculations.

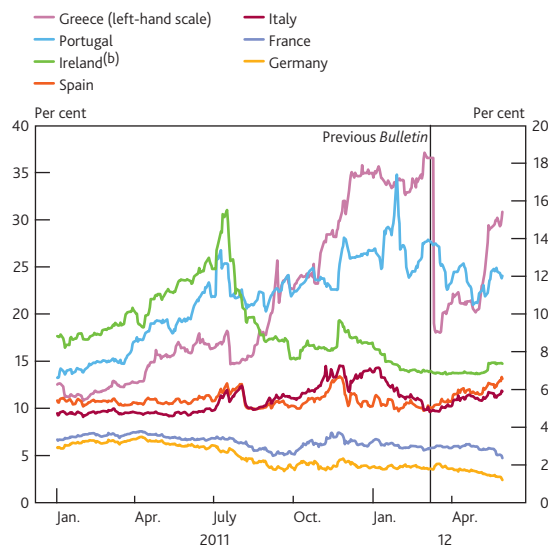
Elsewhere, the Governing Council of the European Central Bank (ECB) kept its main policy rate at 1% throughout the review period. The reintensification of concerns about the vulnerabilities associated with the indebtedness and competitiveness of several euro-area economies, however, led to market participants lowering their expectations for future policy rates. Consistent with that, forward euro OIS rates fell at all maturities (**Chart 1**).

In the United States, the Federal Open Market Committee (FOMC) continued to indicate that economic conditions were likely to warrant exceptionally low levels for the federal funds rate at least until late 2014. At their April meeting, FOMC participants lowered their projections for economic growth in 2013 and 2014. Consistent with that changed outlook, and continuing strains in global financial markets, forward US dollar OIS rates fell at longer horizons. The Federal Reserve continued to extend the average maturity of its holdings of securities and to reinvest principal payments from its holdings of both agency mortgage-backed securities and agency debt into agency mortgage-backed securities.

Long-term interest rates

Concerns about euro-area developments also affected longer-term interest rates. Sovereign bond spreads over German government bond yields rose in Spain and Italy (**Chart 3**). Contacts attributed this in part to the effects of a further deterioration in growth prospects on fiscal positions, and concerns about the Spanish banking sector. Greek sovereign bond spreads fell sharply at the start of the review period following agreement on private sector involvement in debt restructuring, but rose subsequently reflecting political uncertainty after inconclusive elections in May.

Chart 3 Selected euro-area ten-year spot government bond yields^(a)



Source: Bloomberg.

(a) Yields to maturity on ten-year benchmark government bonds.
(b) Yield to maturity on the nine-year benchmark government bond.

During the review period international authorities acted to increase the resources available for financial assistance. At the end of March, euro-area Finance Ministers (the Eurogroup) agreed to raise the combined lending ceiling of the temporary European Financial Stability Facility (EFSF) and the permanent European Stability Mechanism (ESM) from €500 billion to €700 billion. And on 20 April, the IMF and the G20 made a joint statement announcing that there were firm commitments to increase the resources available to the IMF by more than US\$430 billion. These resources would be available for the whole membership of the IMF, and were not earmarked for any particular region. Contacts noted a muted reaction to these announcements in financial markets.

Against the backdrop of increased uncertainty about euro-area developments, demand for sovereign bonds that were perceived as more liquid or carrying less credit risk — including those of the United Kingdom, United States and Germany — increased. This contributed to significant declines in the yields of those bonds, which reached historically low levels (**Chart 4**).

Asset purchases⁽¹⁾

During the review period, the Bank completed the purchases of gilts mandated by the Monetary Policy Committee (MPC) in February 2012 to increase the size of the programme from £275 billion to £325 billion.⁽²⁾ The MPC voted to maintain the size of the asset purchase programme, financed by the issuance of central bank reserves, at £325 billion at each of its meetings during the review period.

Purchases of high-quality private sector assets financed by the issuance of Treasury bills and the Debt Management Office's (DMO's) cash management operations continued, in line with the arrangements announced on 29 January 2009.⁽³⁾

Table 1 summarises asset purchases by type of asset.

Gilts

Prior to the current review period, on 9 February 2012, the MPC had decided to increase the scale of the programme of asset purchases from £275 billion to £325 billion. On 12 April 2012, the Bank announced that, in light of ongoing sales of assets from the Asset Purchase Facility's corporate bond portfolio, originally financed by the issuance of central bank reserves, the size of the gilt purchase operations during April and early May would be adjusted to ensure that the MPC's target for asset purchases of £325 billion was met by its May meeting. Consequently, total gilt purchases since the February MPC meeting were £51.5 billion, rather than £50.0 billion. The Bank completed these purchases on 2 May 2012.

There were 22 gilt auctions between 9 March 2012 and 2 May 2012. Cover in these auctions varied, and averaged 2.5 in the 3–7 year maturity auctions, 2.5 in the 7–15 year maturity auctions and 2.2 in the auctions for gilts with a maturity greater than 15 years.⁽⁴⁾

In line with previous APF gilt purchases, the Bank continued to exclude gilts in which the Bank held a large proportion (more than 70%) of the free float.⁽⁵⁾

The total amount of gilts purchased since the start of the asset purchase programme in March 2009 in terms of the amount paid to sellers was £325 billion, of which £85.6 billion of purchases were in the 3–7 year residual maturity range, £106.8 billion in the 7–15 year residual maturity range and £132.4 billion with a residual maturity greater than 15 years (Chart A).

Gilt lending facility⁽⁶⁾

The Bank continued to offer to lend some of its gilt holdings via the DMO in return for other UK government collateral. In the three months to 30 March 2012, a daily average of £497 million of gilts was lent as part of the gilt lending facility. This was below the average of £1,640 million in the previous quarter.

Corporate bonds

The Bank continued to offer to purchase and sell corporate bonds via the Corporate Bond Secondary Market Scheme, with

Table 1 Asset Purchase Facility transactions by type (£ millions)

Week ending ^(a)	Secured commercial paper	Gilts	Corporate bond		Total ^(b)
			Purchases	Sales	
8 March 2012 ^{(c)(d)}	0	291,270	400		291,670
15 March 2012	0	4,500	0	30	4,470
22 March 2012	0	3,000	0	11	2,989
29 March 2012	0	4,500	0	10	4,490
5 April 2012	0	4,500	0	0	4,500
12 April 2012	0	3,000	0	0	3,000
19 April 2012	0	4,500	0	3	4,497
26 April 2012	0	4,800	0	12	4,788
3 May 2012	0	4,685	0	18	4,667
10 May 2012	0	0	0	22	-22
17 May 2012	0	0	0	16	-16
24 May 2012	0	0	0	2	-2
31 May 2012	0	0	0	0	0
Total financed by a deposit from the DMO ^{(d)(e)}	–	–	67		67
Total financed by central bank reserves ^{(d)(e)}	–	324,753	194		324,947
Total asset purchases ^{(d)(e)}	–	324,753	261		325,014

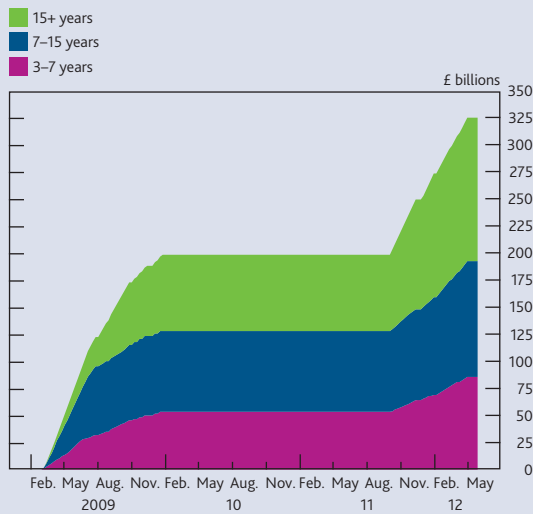
(a) Week-ended amounts are for purchases in terms of the proceeds paid to counterparties, and for sales in terms of the value at which the Bank initially purchased the securities. All amounts are on a trade-day basis, rounded to the nearest million. Data are aggregated for purchases from the Friday to the following Thursday.

(b) Weekly values may not sum to totals due to rounding.

(c) Measured as amount outstanding as at 8 March 2012.

(d) In terms of proceeds paid to counterparties less redemptions at initial purchase price on a settled basis.

(e) Data may not sum due to assets maturing over the period and/or due to rounding.

Chart A Cumulative gilt purchases^(a) by maturity^(b)

(a) Proceeds paid to counterparties on a settled basis.
 (b) Residual maturity as at the date of purchase.

purchases financed by the issue of Treasury bills and the DMO's cash management operations. The Scheme continued to serve a backstop role, particularly during periods of market uncertainty.

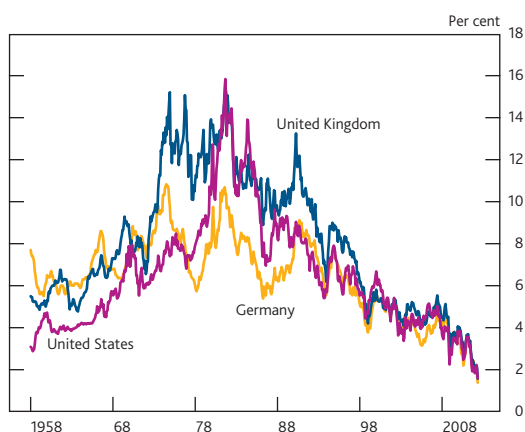
Net sales of corporate bonds increased during the review period. As of 31 May 2012, the Bank's portfolio totalled £261 million, in terms of amount paid to sellers, compared to £400 million at the end of the previous review period. The

increase in net sales reflected market conditions: the Bank's market contacts reported that continued end-investor demand for corporate bonds and a low level of inventories held by dealers had resulted in demand to purchase bonds from the Corporate Bond Scheme.

Secured commercial paper facility

The Bank continued to offer to purchase secured commercial paper (SCP) backed by underlying assets that are short term and provide credit to companies or consumers that support economic activity in the United Kingdom.⁽⁷⁾ The facility remained open during the review period but no purchases were made.

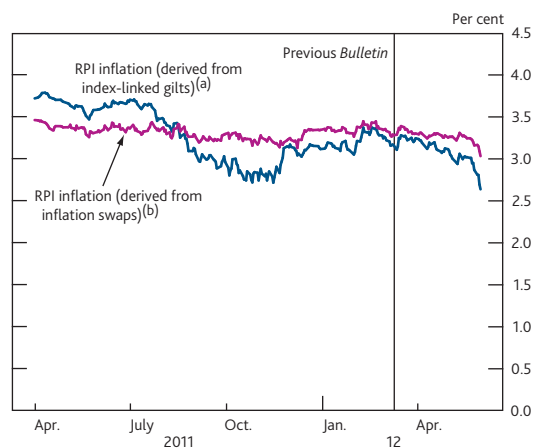
- (1) For further discussion on asset purchases see the *Asset Purchase Facility Quarterly Report* available at www.bankofengland.co.uk/publications/Pages/other/markets/apf/quarterlyreport.aspx.
- (2) For further information, see the 9 February Market Notice, available at www.bankofengland.co.uk/markets/Documents/marketnotice120209.pdf.
- (3) The APF was initially authorised to purchase private sector assets financed by Treasury bills and the DMO's cash management operations. Its remit was extended to enable the Facility to be used as a monetary policy tool on 3 March 2009. All purchases of assets between 6 March 2009 and 4 February 2010 were financed by central bank reserves. All purchases of private sector assets since 4 February 2010 have been financed by the issuance of Treasury bills and the DMO's cash management operations. All purchases of gilts since 10 October 2011 have been financed by central bank reserves. The Chancellor's letter is available at www.hm-treasury.gov.uk/d/chx_letter_090212.pdf.
- (4) Further details of individual operations are available at www.bankofengland.co.uk/markets/Pages/apf/gilts/results.aspx.
- (5) The 8% 2021 gilt was excluded from all operations over the period for this reason.
- (6) For more details on the gilt lending facility see the box 'Gilt lending facility' in the *Bank of England Quarterly Bulletin*, Vol. 50, No. 4, page 253.
- (7) The SCP facility is described in more detail in the Market Notice available at www.bankofengland.co.uk/markets/Documents/marketnotice090730.pdf.

Chart 4 International nominal government bond yields^{(a)(b)}

Source: Global Financial Data.

(a) Month-end observations.
 (b) Yields to maturity on ten-year benchmark government bonds.

In the United Kingdom, where nominal gilt yields fell across all maturities, contacts also attributed part of this fall to both the Bank's gilt purchases and a deterioration in the economic outlook. For most of the review period changes in nominal yields were largely accounted for by changes in real yields. But towards the end of the review period measures of

Chart 5 UK implied five-year RPI inflation rate, five years forward

Source: Bank calculations.

(a) Derived from the Bank's government liability curve.
 (b) Derived from the Bank's inflation swap curve.

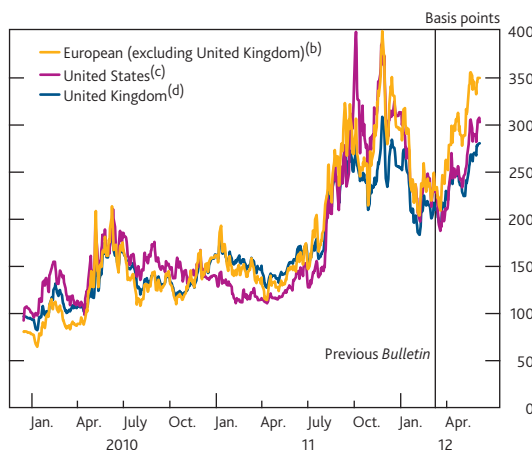
UK breakeven inflation rates also fell markedly (**Chart 5**).

Contacts attributed this to a number of factors mostly specific to the index-linked gilt market, rather than a reassessment of UK inflation prospects. Consistent with that, the fall in implied inflation derived from swaps was more muted.

Bank funding markets

Bank funding markets were also affected by concerns about euro-area developments. For example, banks' CDS premia — a measure of longer-term wholesale funding costs for banks — rose markedly over the review period, approaching the levels they had reached in late 2011 prior to the ECB's longer-term refinancing operations (LTROs) (Chart 6).

Chart 6 Selected international banks' CDS premia^(a)



Sources: Markit Group Limited and Bank calculations.

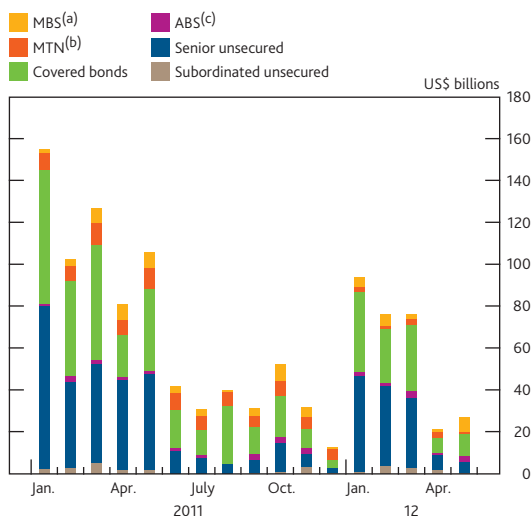
- (a) Unweighted averages of five-year, senior CDS prices.
- (b) Average of Banco Santander, BBVA, BNP Paribas, Crédit Agricole, Credit Suisse, Deutsche Bank, Société Générale, UBS and UniCredit.
- (c) Average of Bank of America, Citi, Goldman Sachs, JPMorgan Chase & Co. and Morgan Stanley.
- (d) Average of Barclays, HSBC, Lloyds Banking Group, Nationwide, Royal Bank of Scotland and Santander UK.

Secured and unsecured bank debt issuance in public markets has fallen since the end of 2012 Q1 (Chart 7). The period did, however, see the first AA-rated RMBS issuance in the UK public market since 2007; contacts noted that issuers had hitherto considered the cost of issuing RMBS below AAA as prohibitive. During the review period, there was also the first issuance under the Government National Loan Guarantee Scheme (NLGS).⁽¹⁾

Contacts noted a number of factors, that had contributed to the slowdown in public debt issuance. In addition to the deterioration in market conditions in response to growing concerns about euro-area developments, contacts emphasised that many institutions were ahead of their funding plans for the year following strong issuance in the first quarter. Banks were also expected to raise less term wholesale funding than in 2011 given plans to reduce the size of their balance sheets and increase their reliance on retail deposits. Against that backdrop, contacts expected banks to have greater freedom to issue debt opportunistically in response to market conditions.

While bank debt issuance in public markets slowed over the review period, contacts noted that private issuance, which is an important source of funding for banks, had remained robust. Contacts thought that this reflected the bespoke nature of the private market, which allows issuers and investors to tailor debt instruments to match their preferences.

Chart 7 Term issuance by European (including UK) lenders in public markets

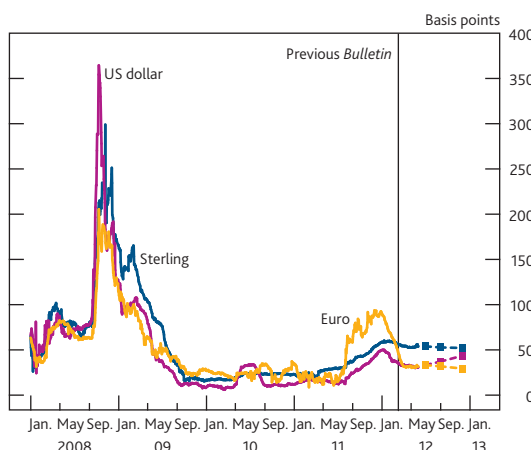


Sources: Dealogic and Bank calculations.

- (a) Commercial and residential mortgage-backed securities.
- (b) Medium-term notes.
- (c) Asset-backed securities.

One measure of conditions in short-term funding markets is the spread of the London interbank offered rate (Libor) over OIS rates of a similar maturity. Recent trends in Libor-OIS spreads differed across currencies, for example, euro spreads continued to fall back from the highs they had reached in the second half of 2011, but sterling spreads remained little changed, at somewhat higher levels than observed in early 2011 (Chart 8).

Chart 8 International three-month spot and forward Libor-OIS spreads^{(a)(b)}



Sources: Bloomberg, British Bankers' Association and Bank calculations.

- (a) Three-month Libor-OIS spreads derived from Libor fixings and OIS rates.
- (b) Forward spreads derived using data as at 31 May. The squares are implied forward spreads using forward Libors derived from forward rate agreements, and forward OIS rates derived from the OIS curve.

(1) The NLGS allows banks to issue guaranteed unsecured debt to enable them to lend to small businesses at a lower cost than would otherwise be the case. More detail on the NLGS can be found at www.hm-treasury.gov.uk/nlgs.

Contacts cited a number of possible explanations for the divergence between sterling and euro Libor-OIS spreads. In particular, contacts pointed to the impact of the ECB's two LTROs, which had markedly increased the supply of euros in the market. But the subdued volume of interbank lending in the sterling market was also thought to be a factor. In addition, pricing in foreign exchange swap markets implied that banks that could borrow in either euro or sterling faced similar short-term unsecured funding costs in either currency. Nonetheless, contacts recognised that these factors may not provide a full explanation for the persistently elevated level of sterling Libor-OIS spreads.

On 15 June 2012, after the end of the review period, the Bank announced that it would activate the Extended Collateral Term Repo Facility, providing sterling liquidity with a term of six months against collateral pre-positioned for use in the Bank's Discount Window Facility. The minimum bid rate in these auctions would be a spread to Bank Rate of 25 basis points. The first operation would be held on 20 June 2012.⁽¹⁾ Immediately following the announcement, forward sterling Libor-OIS spreads fell.

Conditions in short-term US dollar funding markets for European banks improved a little further: the difference between the cost of raising US dollar funding by borrowing in euro and swapping via the foreign exchange market and the cost of direct US dollar borrowing fell by 10 basis points.

During the review period, credit rating agencies downgraded a number of bank ratings. Many of these downgrades were part of Moody's previously announced banking sector review. The immediate response in financial markets was relatively muted. Contacts thought this in part reflected the fact that Moody's reviews had been pre-announced, banks had taken mitigating actions and that some investors and asset managers were expected to respond to the downgrades by adapting their internal ratings criteria.

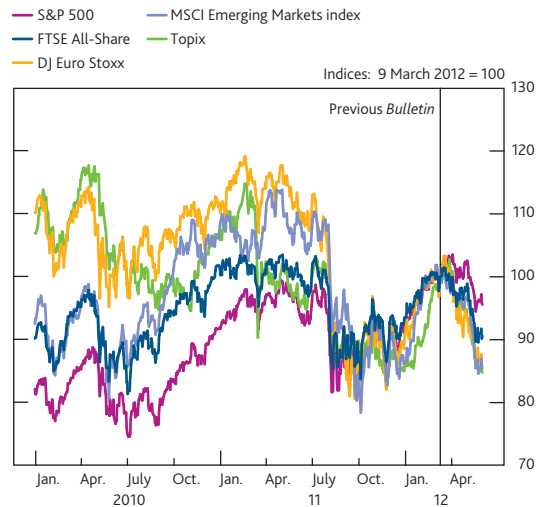
At the end of the review period, Moody's review of banks with global capital market operations, which included several UK and US banks, had not been concluded.

Corporate capital markets

International equity indices fell substantially over the review period, reversing many of the increases observed earlier in the year (Chart 9). There were, however, differences across regions, with the S&P 500 falling by less than other indices.

According to contacts the falls in equity prices reflected a reduction in risk appetite and a downward revision in growth prospects associated largely with the renewed concerns about euro-area developments. Contacts reported that, relative to elsewhere, US equity prices had been supported by US economic data.

Chart 9 International equity indices^{(a)(b)}



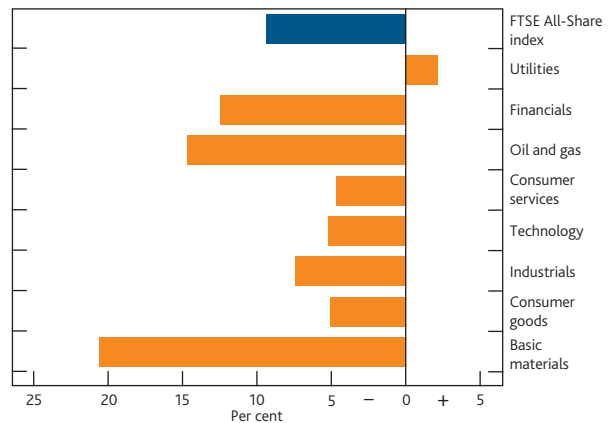
Sources: Bloomberg and Bank calculations.

(a) Indices are quoted in domestic currency terms, except for the MSCI Emerging Markets index, which is quoted in US dollar terms.

(b) The MSCI Emerging Markets index is a capitalisation-weighted index that monitors the performance of stocks in emerging markets.

In the United Kingdom, falls in equity prices were broad-based, but most pronounced in the basic materials and oil and gas sectors (Chart 10). In part, this reflected falls across a range of commodity prices, with, for example, Brent crude oil prices falling by 17.3% in sterling terms.

Chart 10 Percentage changes in FTSE All-Share sectoral indices since previous Quarterly Bulletin



Sources: Bloomberg and Bank calculations.

In corporate bond markets, the yields on investment-grade non-financial corporate bonds were little changed, while those on non-investment grade corporate bonds rose (Chart 11). Contacts largely attributed this rise to a reduction in investors' risk appetite.

Gross issuance by UK private non-financial corporations (PNFCs) in corporate bond markets remained stronger than in

(1) Further details are available at www.bankofengland.co.uk/markets/Documents/marketnotice120615.pdf.

Operations within the Sterling Monetary Framework and other market operations

The level of central bank reserves continued to be determined by (i) the stock of reserves injected via the Asset Purchase Facility (APF), (ii) the level of reserves supplied by long-term repo open market operations (OMOs) and (iii) the net impact of other sterling ('autonomous factor') flows across the Bank's balance sheet. This box describes the Bank's operations within the Sterling Monetary Framework over the review period, and other market operations. The box on pages 102–03 provides more detail on the APF.

Operational Standing Facilities

Since 5 March 2009, the rate paid on the Operational Standing Deposit Facility has been zero, while all reserves account balances have been remunerated at Bank Rate. Reflecting this, average use of the deposit facility was £0 million in each of the maintenance periods under review. Average use of the lending facility was also £0 million throughout the period.

Indexed long-term repo OMOs

As part of its provision of liquidity insurance to the banking system, the Bank conducts indexed long-term repo (ILTR) operations. The Bank offers reserves via ILTRs once each calendar month; typically, the Bank will conduct two operations with a three-month maturity and one operation with a six-month maturity in each calendar quarter. Participants are able to borrow against two different sets of collateral. One set corresponds with securities eligible in the Bank's short-term repo operations ('narrow collateral'), and the other set contains a broader class of high-quality debt securities that, in the Bank's judgement, trade in liquid markets ('wider collateral').

The Bank offered £5 billion via three-month ILTR operations on both 13 March and 10 April, and £2.5 billion via a six-month operation on 15 May (Table 1).

The stop-out spread — the difference between clearing spreads for wider and narrow collateral — is an indicator of potential stress in the sterling short-term money market. The stop-out spread reached a new low for three-month operations in the March and April ILTRs, falling to 6 basis points in both operations. In the May six-month operation, there were no bids against narrow collateral, hence the clearing spread for wider collateral — 15 basis points — was the stop-out spread. This was also the lowest stop-out spread in any six-month ILTR operation to date.

The cover ratios — also a potential indicator of stress in the sterling short-term money market — continued to fall, setting a new low of 0.07 for three-month operations in the March

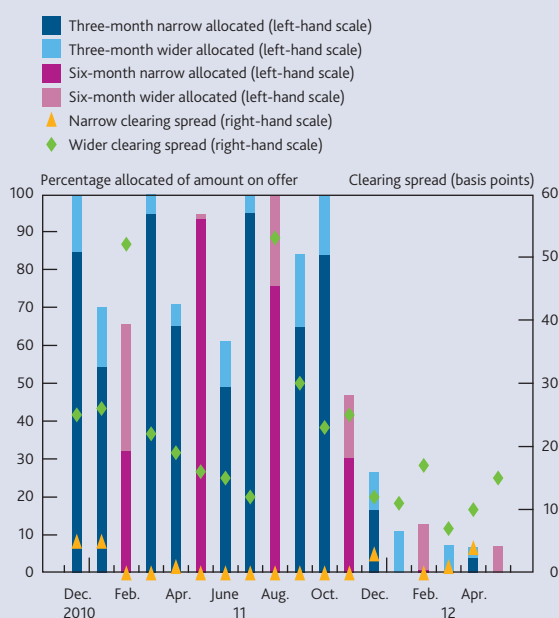
Table 1 Indexed long-term repo operations

	Total	Collateral set summary	
		Narrow	Wider
13 March 2012 (three-month maturity)			
On offer (£ millions)	5,000		
Total bids received (£ millions) ^(a)	365	5	360
Amount allocated (£ millions)	365	5	360
Cover	0.07	0.00	0.07
Clearing spread above Bank Rate (basis points)		1	7
Stop-out spread (basis points) ^(b)	6		
10 April 2012 (three-month maturity)			
On offer (£ millions)	5,000		
Total bids received (£ millions) ^(a)	435	200	235
Amount allocated (£ millions)	335	200	135
Cover	0.09	0.04	0.05
Clearing spread above Bank Rate (basis points)		4	10
Stop-out spread (basis points) ^(b)	6		
15 May 2012 (six-month maturity)			
On offer (£ millions)	2,500		
Total bids received (£ millions) ^(a)	600	0	600
Amount allocated (£ millions)	175	0	175
Cover	0.24	0	0.24
Clearing spread above Bank Rate (basis points)		n.a.	15
Stop-out spread (basis points) ^(b)	15		

(a) Due to the treatment of paired bids, the sum of bids received by collateral set may not equal total bids received.

(b) Difference between clearing spreads for wider and narrow collateral.

Chart A ILTR allocation and clearing spreads



ILTR. The cover ratio of 0.24 in the May operation equalled the low set in the previous six-month operation in February (Chart A).

There are a number of possible reasons for the low demand seen from banks for three and six-month liquidity via the ILTR

operations. First, short-term secured market interest rates remain below Bank Rate, making repo markets a potentially cheaper source of liquidity. Second, the APF asset purchase programme and the ECB's three-year longer-term refinancing operations (LTROs) supplied liquidity to the banking system, which may have reduced the need for counterparties to use the ILTR operations to meet their short-term liquidity needs.

Reserves provided via ILTRs during the review period were more than offset by the maturity of loans provided in previous ILTR operations. Consequently, the stock of liquidity provided through these operations declined.

Discount Window Facility

The Discount Window Facility (DWF) provides liquidity insurance to the banking system by allowing eligible banks to borrow gilts against a wide range of collateral. On 3 April 2012, the Bank announced that the average daily amount outstanding in the DWF between 1 October and 31 December 2011, lent with a maturity of 30 days or less, was £0 million. The Bank also announced that the average daily amount outstanding in the DWF between 1 October and 31 December 2010, lent with a maturity of more than 30 days, was £0 million.

The Bank encourages banks to pre-position collateral for potential use in the DWF, so that there would not be a need to assess the collateral at short notice in the event of a sudden and unexpected request to borrow from the DWF. The Bank reported that banks had pre-positioned collateral with a total lendable value of around £160 billion in the DWF as of 29 March 2012.⁽¹⁾

Extended Collateral Term Repo Facility

The Extended Collateral Term Repo Facility is a contingent liquidity facility, designed to mitigate risks to financial stability arising from a market-wide shortage of short-term sterling liquidity.⁽²⁾ As of 31 May 2012, no operations under the Facility had been announced.

Other operations

US dollar repo operations

On 11 May 2010, the Bank reintroduced weekly fixed-rate tenders with a seven-day maturity to offer US dollar liquidity, in co-ordination with other central banks, in response to renewed strains in the short-term funding market for US dollars. As of 31 May 2012, there had been no use of the Bank's facility.

On 30 November 2011, the Bank announced, in co-ordination with the Bank of Canada, the Bank of Japan, the ECB, the Swiss National Bank, and the Federal Reserve, that the authorisation of the existing temporary US dollar swap

arrangements had been extended to 1 February 2013, that 84-day US dollar tenders would continue until this time, and that seven-day operations would continue until further notice. It also announced that the central banks had agreed to lower the pricing on the US dollar swap arrangements by 50 basis points to the US dollar overnight index swap rate plus 50 basis points. As a contingency measure, the six central banks agreed to establish a network of temporary bilateral liquidity swap arrangements that will be available until 1 February 2013.

Bank of England balance sheet: capital portfolio

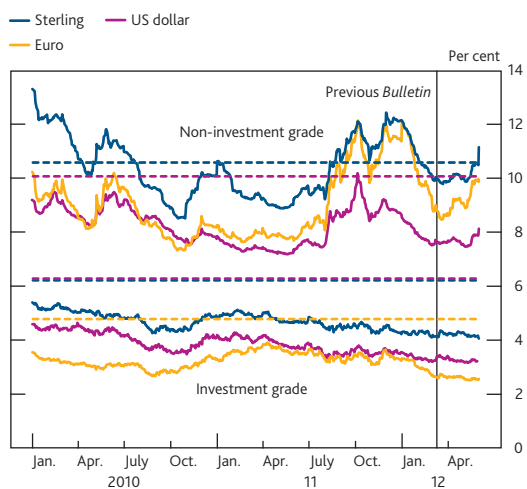
The Bank holds an investment portfolio that is approximately the same size as its capital and reserves (net of equity holdings, for example in the Bank for International Settlements, and the Bank's physical assets) and aggregate cash ratio deposits. The portfolio consists of sterling-denominated securities. Securities purchased by the Bank for this portfolio are normally held to maturity; nevertheless sales may be made from time to time, reflecting for example, risk management, liquidity management or changes in investment policy.

The portfolio currently includes around £3.5 billion of gilts and £0.4 billion of other debt securities. Over the review period, gilt purchases were made in accordance with the quarterly announcements on 3 January and 2 April 2012.

(1) See the speech by Paul Fisher, 'Liquidity support from the Bank of England: the Discount Window Facility', 29 March 2012, available at www.bankofengland.co.uk/publications/Documents/speeches/2012/speech561.pdf.

(2) Further details are available at www.bankofengland.co.uk/markets/Pages/money/ectr/index.aspx.

Chart 11 International non-investment grade and non-financial investment-grade corporate bond yields^(a)

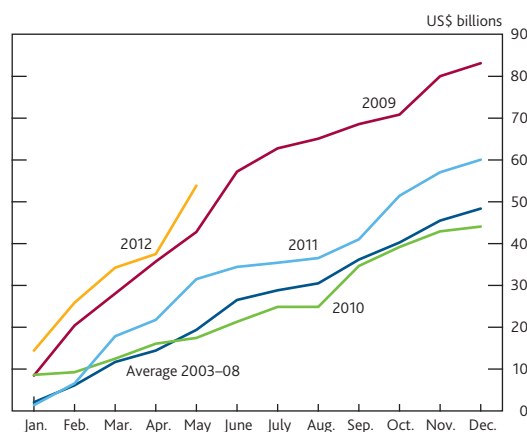


Sources: Bank of America/Merrill Lynch and Bank calculations.

(a) Dashed lines: 1997–2007 averages for investment-grade bonds and 1998–2007 averages for non-investment grade bonds.

recent years, albeit concentrated in the investment-grade segment of the market since the start of April (Chart 12). Contacts noted that corporate bond issuance had been supported by a number of factors. Despite a pickup in corporate bond spreads, the level of yields on investment-grade bonds remained low. Corporates had also reportedly pre-funded upcoming redemptions to guard against the risk that corporate bond issuance became more difficult later in the year and the risk that access to bank credit became scarcer. Meanwhile, PNFCs’ share buybacks continued to outstrip equity issuance.

Chart 12 Cumulative gross bond issuance by UK PNFCs

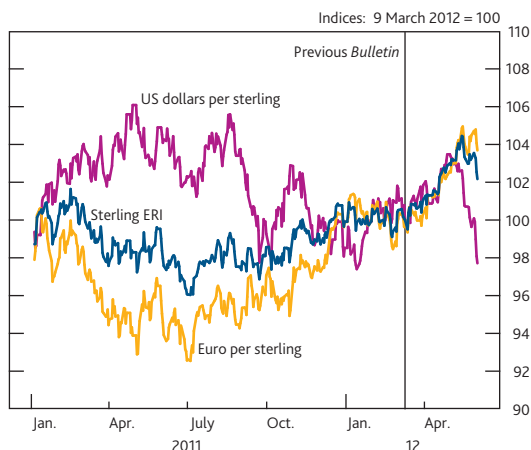


Sources: Dealogic and Bank calculations.

Foreign exchange

The sterling exchange rate index (ERI) appreciated by 2.5% over the review period (Chart 13). Most of sterling’s appreciation over the review period was accounted for by an increase in value against the euro. Against the US dollar sterling appreciated during the first half of the review period

Chart 13 Sterling ERI and bilateral exchange rates



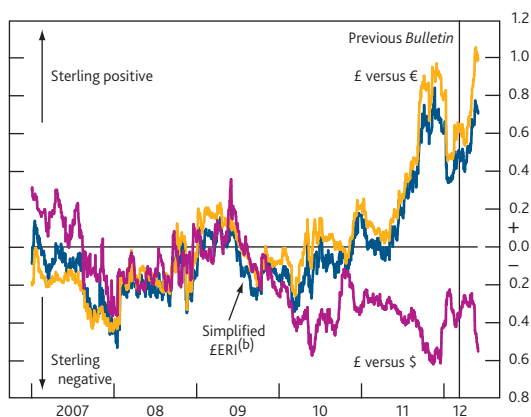
Sources: Bloomberg and Bank calculations.

but subsequently depreciated to end the review period 2% lower.

Contacts suggested that sterling’s appreciation largely reflected market concerns about developments in the euro area, which had resulted in some flows out of the euro and into sterling-denominated assets. Sterling had also responded to perceptions of the future path of UK monetary policy; the sterling ERI rose following the publication of the April MPC minutes, but fell following the release of the May *Inflation Report*. Towards the end of the review period, contacts reported that some investors had sold sterling to realise profits on their trading positions, contributing to the sterling ERI falling back a little.

Market-based measures suggested that the balance of risk to the value of sterling was to the upside; information derived from options markets implied that investors were placing an increasing weight on a large appreciation of sterling against the euro relative to a large depreciation (Chart 14).

Chart 14 Three-month option-implied skewness of foreign exchange returns^(a)



Sources: Bloomberg, British Bankers’ Association and Bank calculations.

(a) Returns are defined as the logarithmic difference between the current forward rate and the spot rate at the maturity date of the contract.
 (b) The simplified sterling ERI places 70% weight on the euro-sterling bilateral exchange rate and 30% weight on the US dollar-sterling bilateral exchange rate.

Developments in market structure

This section describes two recent developments in market structure. First, it describes the development of Standardised Credit Support Annexes used in over-the-counter derivatives transactions, using market intelligence gathered from a wide range of contacts. And second, it describes recent changes to intraday liquidity provision by the Bank of England in the CREST system.

Standardised Credit Support Annexes

Credit Support Annexes (CSAs) relate to derivatives contracts that are agreed and settled bilaterally between two counterparties (rather than via an exchange or trading platform). Such over-the-counter (OTC) derivatives make up the majority of derivatives trades between banks and end-users, such as corporates and asset managers.

Over time, the value of a derivative trade will change as, for example, market prices change. This creates a so-called mark-to-market gain or loss and exposes the counterparty with a positive mark-to-market position to counterparty credit risk. Such counterparty credit risk is usually managed via collateralisation of the mark-to-market position.⁽¹⁾ This requires regular flows of collateral between the two counterparties depending on how the mark-to-market position changes — this is known as margining.

The rules around collateralising OTC derivatives are set out within the CSA which forms part of the International Swaps and Derivatives Association (ISDA) Master Agreement defining the trading relationship between two counterparties. The primary purpose of CSAs is to mitigate counterparty credit risk, through collateralisation. This section describes CSAs, and the remaining challenges a Standardised CSA (SCSA) is designed to address.

Role of CSAs

CSAs outline:

- The type of collateral that each counterparty can provide as security to cover the net mark-to-market position of OTC derivatives.
- How frequently positions are margined.
- Whether thresholds exist for calling additional margin collateral.

Contacts note that there are a wide variety of CSAs in existence because they are negotiated bilaterally between individual counterparties and are tailored to suit specific requirements; often particular to the time the CSA was agreed.⁽²⁾ In many cases, CSAs give the counterparty that has a negative mark-to-market value the option to choose which collateral to deliver from a defined list of several types of collateral.

Challenges with current CSAs

Counterparties are not indifferent when it comes to what collateral they receive. Consequently, the range of collateral defined in the CSA can affect the valuation of OTC derivatives. For example, when a bank trades an interest rate swap with a client it will normally enter into an offsetting trade in the interbank market, to hedge its market risk. This offsetting trade would also usually be subject to a collateralisation agreement. If the interest rate swap has positive mark-to-market value for the bank, the client will have to provide collateral as set out in the CSA. The bank can typically use the collateral it receives from the client to collateralise the offsetting trade, which should have a negative mark-to-market value.

If the collateral on the two trades match, the bank has no additional costs of trading. But if the CSA allows the client to post collateral that the bank cannot use to collateralise its offsetting trade, the bank would need to use repo and/or FX swap markets to convert the collateral received into the collateral it is allowed to deliver.⁽³⁾ This can change the bank's expected profit and loss, and hence the value of the swap.

Where optionality to provide different types of collateral exists it creates uncertainty about the future profit and loss. This uncertainty is most significant where there is an option to provide collateral in different currencies. Estimating the value of this optionality is very complex. It involves forecasting the expected future mark-to-market value of the swap, which collateral will likely be delivered at different points in time, and the estimated future costs of converting collateral in repo and/or FX swap markets.

According to contacts, some banks have tried to address this problem by charging clients for this collateral option. But differences in assumptions and pricing methodology mean that OTC derivatives with different CSAs are not always priced consistently by market participants. This can lead to disputes about the valuation of derivatives, and consequently make it more difficult to cancel a trade or find an external party to 'step in' and take the client's place at an agreed price — so-called 'novation'. Where counterparties cannot agree a value to cancel or novate existing derivatives, they may trade new, offsetting swaps with other counterparties instead. This increases the interconnectedness of the financial system.

A formal industry initiative to deal with the valuation problems created by collateral optionality is under way through ISDA's proposed SCSA.

(1) ISDA undertakes an annual survey providing information on the use of collateral in the OTC derivatives market. Surveys can be found at www2.isda.org/functional-areas/research/surveys/margin-surveys.

(2) CSAs are not always symmetric; in some cases, only one of the counterparties is required to post collateral on positions that are out-of-the-money, so-called one-way CSAs.

(3) Alternatively, the bank could use other CSA-eligible collateral it has available on its balance sheet. But this has an opportunity cost, as that collateral cannot therefore be used for other purposes.

Description of SCSA

Under the SCSA, counterparties collateralise the mark-to-market value of their OTC derivatives daily with cash, rather than securities. The SCSA provides that the two counterparties agree on a single currency to settle the daily cash collateral transfer; a so-called 'transport' currency. The cash to be used as collateral is computed so that it is equal to the mark-to-market value of the OTC derivatives in each currency, before being converted to a net amount in the transport currency. Having a single transport currency eliminates potential foreign exchange settlement risk arising from paying cash margin in different currencies at different times.⁽¹⁾

Interest must be paid on cash collateral. Under an SCSA this interest is paid at the overnight unsecured interest rate for the underlying currency components, rather than the transport currency. Contacts expect both parties will likely want to use the FX swap market to reconvert the transport currency into the individual currencies for which they have derivative positions and upon which they will accrue and pay the overnight interest. Operationalising this, however, is complex given the additional daily trades involved.

Once converted back to the individual currencies, the counterparty has achieved effectively the same cash collateral and interest flows as would have been the case if cash collateral had been provided separately for derivatives in each currency. This replicates the margining process at many central clearing houses, including LCH.Clearnet Ltd, which require that cash be posted as variation margin in the currency of the underlying OTC derivative trade.

Once the cost of the FX swaps is taken into account, the counterparty receiving cash collateral should, in theory, be indifferent between receiving collateral in the individual currencies, or the single transport currency.

Benefits and risks associated with an SCSA

As the collateralisation in an SCSA no longer affects the profit associated with each trade, derivatives should be simpler to value. Pricing should be more transparent. When market participants want to trade OTC derivatives, any difference in pricing between counterparties should therefore largely reflect only the relative competitiveness of each counterparty to win the trade (ie differences in bid-offer spreads).

With more consistent valuation, it is easier to agree on the mark-to-market value of OTC derivatives positions. This in turn makes it easier for counterparties to cancel or novate existing swaps, meaning counterparties are less likely to enter into offsetting trades with third parties. The SCSA should therefore reduce the frictions involved in eliminating offsetting OTC derivatives positions between counterparties and should contribute to reduced gross OTC derivatives exposures. In

turn, this should reduce financial interconnectedness and the potential financial stability fragilities that can arise from this.

Costs associated with an SCSA

While the SCSA offers significant benefits to market participants, it also comes with costs. For instance, contacts expected FX swaps will likely be used to convert the transport currency into the individual currencies, potentially requiring users of the SCSA to devote greater resources to their trading and settlement functions. There may also be greater operational risk stemming from these transactions.

Contacts expect that take-up of the SCSA by non-bank participants will be modest, at least initially. Non-banks often only have small cash balances available, so there may be resource costs involved in setting up new or enlarged FX swap and repo trading functions. Some contacts also believe the added complexity of the SCSA — specifically around the conversion of the transport currency — may deter some non-bank investors from adopting it.

Banks are initially expected to be the main OTC derivatives participants to use the SCSA. Banks are the largest users of OTC derivatives, and have established platforms for trading FX swaps and repos. Contacts expect that the benefits to banks will likely outweigh the costs involved.

Changes to intraday liquidity provision in the CREST system

In order to facilitate the efficient settlement of payments and securities trades, the Bank provides central bank money to the banking system intraday — known as 'intraday liquidity'. In doing so, the Bank seeks to minimise counterparty credit risk by lending against high-quality collateral and taking prudent haircuts on the collateral. The Bank seeks in addition to limit the expansion of its intraday balance sheet that arises from the provision of intraday liquidity.

This section describes two ways in which the Bank has worked with infrastructure providers and market participants to limit the value of intraday liquidity provided by the Bank to be no more than is necessary to support orderly settlement in CREST.

Intraday liquidity provision for CREST settlement

In the United Kingdom, transactions in gilts, equities and money market instruments are settled in CREST — a securities settlement system operated by Euroclear UK & Ireland Limited (EUI), the central securities depository. Thirteen market participants provide banking services to the rest of the market to facilitate the settlement of trades: these are known as CREST settlement banks.

⁽¹⁾ Counterparties are exposed to FX settlement risk where they make payment on one leg of a foreign exchange transaction before they receive payment on the other leg.

Since 2001, CREST settlement has operated on a simultaneous delivery versus payment (DvP) basis. This means that when a CREST member settles a securities purchase, a simultaneous transfer of central bank money is made from the purchasing member's settlement bank to the selling member's settlement bank. A CREST settlement bank must have access to central bank money in CREST intraday, in order to honour the payment leg of DvP purchase transactions entered into by that settlement bank's clients.

Settlement banks can use central bank money from their reserves accounts at the Bank to meet these intraday CREST liquidity needs. Where additional central bank money is required in order to settle large DvP payment obligations, the Bank is willing to provide intraday liquidity to settlement banks, in pursuit of its financial stability objective.

The provision of intraday liquidity exposes the Bank to counterparty credit risk. While intraday liquidity is collateralised by high-quality assets with prudent haircuts, there is always a residual risk that market prices would move significantly at times of stress and the Bank may not be able to recover the full value of a loan in a timely manner in the event of a counterparty default; this would complicate the Bank's management of its balance sheet.⁽¹⁾

Such risks are small, but as they are not zero it is prudent for the Bank to limit the creation of intraday liquidity to no more than the amount that is required to support orderly settlement.

Removing the automated oversupply of intraday liquidity

The first way in which intraday liquidity provision is being optimised is a recent change to the technical design of the CREST system.

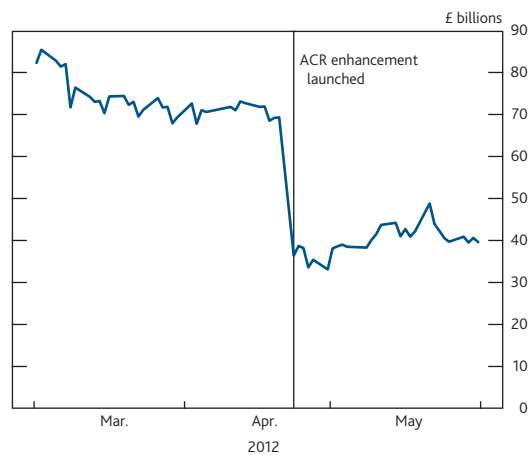
In order to support the settlement of high-value transactions such as Delivery by Value (DBV) — a collateralised cash lending and borrowing product in CREST — a mechanism to automate intraday liquidity provision was introduced in 2001 with the launch of DvP settlement in CREST. This mechanism, known as 'Auto Collateralising Repo' (ACR), is triggered automatically by the CREST system, providing the necessary additional intraday liquidity to settlement banks in real time to fund the cash settlement leg of a DvP transaction. The ACR mechanism ensures that this intraday liquidity is provided via a repo against eligible collateral and is subject to Bank haircuts.⁽²⁾

Until 23 April 2012, the ACR mechanism was triggered automatically even when the purchasing client's settlement bank already had sufficient liquidity wholly or partly to fund the purchase. Consequently, this supply-driven mechanism consistently generated substantially more liquidity in aggregate than was needed to support settlement needs, leading to a greater expansion of the Bank's intraday balance sheet than was necessary.

Technical enhancements launched by EUI on 23 April 2012 mean that the ACR mechanism now only generates intraday liquidity on a demand-driven basis. This change means that intraday liquidity is only provided when a settlement bank would otherwise have insufficient funds to settle the transaction. The oversupply of intraday liquidity inherent in the previous model can therefore no longer occur.

The effect has been a reduction of close to 50% in total ACR liquidity provision to the CREST settlement banks each day (Chart 15), without causing any degradation in securities settlement throughput in CREST. This meets the objective of keeping the supply of intraday liquidity, and associated risks, to a minimum while still supporting efficient settlement.

Chart 15 Daily maximum ACR liquidity provision



Further reducing intraday liquidity provision

The second way in which intraday liquidity provision can be reduced is through growth in the use of Term DBV to settle gilt repo.

The majority of the demand for intraday liquidity in CREST arises from daily cash lending and borrowing in the DBV market.

Until 1 July 2011, irrespective of the term of a repo transaction, each trade needed to be settled as a series of overnight DBVs. Since then, market participants entering into a term repo transaction secured against general collateral have had the option to settle term repo trades either as a series of daily 'overnight' DBVs, or as a single Term DBV. Under the Term DBV settlement model, there are no daily cash flows between the opening and closing dates of the Term DBV. In addition to reducing operational risk inherent in the daily settlement of gilt repo, this reduces directly the daily demand

(1) The Bank's collateral risk management is described in a speech by Paul Fisher, 'Central bank policy on collateral', available at www.bankofengland.co.uk/publications/Documents/speeches/2011/speech491.pdf.
 (2) Gilts, Treasury bills or Bank of England bills.

for intraday liquidity (supplied in practice by ACR), compared with the settlement of daily unwinds and re-inputs under the overnight DBV settlement model.⁽¹⁾

At end-May 2012, approximately 4% of total DBV settlement value in CREST was Term DBV (the remainder being overnight DBV). This suggests that many genuinely term transactions are still being settled as overnight DBVs. Market intelligence suggests an impediment to greater use of Term DBV is that at present no central counterparty service provider can centrally

clear the transactions. LCH.Clearnet Ltd is working with its clients and with EUI to schedule the development of a new centrally cleared Term DBV product. It is expected that the use of Term DBV could rise further when the new product is introduced.

Given the risk-reduction benefits of widespread market adoption of Term DBV, the Bank is supportive of further growth in the use of this method of settlement and the steps that will facilitate this outcome.⁽²⁾

(1) The 'Markets and operations' article in the 2011 Q3 *Quarterly Bulletin* described the introduction of the CREST 'Term DBV' service in July 2011 (pages 197–98).
(2) See the speech by Chris Salmon on 5 July 2011, 'The case for more CHAPS settlement banks', available at www.bankofengland.co.uk/publications/Documents/speeches/2011/speech508.pdf, and the Market Notice, available at www.bankofengland.co.uk/markets/Documents/marketnotice110615.pdf.