Markets and operations

This article reviews developments in financial markets, including the Bank's official operations, between the 2012 Q3 *Quarterly Bulletin* and 26 November 2012.[1] The article also summarises market intelligence on selected topical issues relating to market functioning.

Financial markets

Overview

Over the review period as a whole, financial market sentiment showed signs of improvement. That was, in part, due to the European Central Bank's (ECB's) announcement of a prospective programme of Outright Monetary Transactions (OMTs) in September. Many contacts thought that the announcement of this programme had eliminated the risk of a disorderly unwind of euro-area imbalances in the short term. Markets were calmed further by the Federal Open Market Committee's (FOMC's) announcement that it would continue its large-scale purchases of agency mortgage-backed securities (MBS) until the labour market showed tangible signs of recovery, contributing to a further reduction in volatility across a range of asset classes. As a result of these measures, investors appeared to become more willing to bear risk and there was a significant improvement in conditions in wholesale funding markets.

Later in the review period, worries over the sustainability of debt positions and the possibility of a disorderly unwind of external imbalances in the euro area resurfaced. And tensions rose further due to concerns over the US 'fiscal cliff', with speculation in markets that political negotiations may fail to produce an agreement on the speed and composition of deficit reduction. This led to some reversal of earlier asset price rises. Shortly after the data cut-off, confidence was boosted by signs of progress toward a resolution of near-term difficulties surrounding Greek debt, with a corresponding rally in asset prices.

There was an improvement in borrowing conditions in capital markets for the most vulnerable sovereigns in the euro area, with the Italian and Spanish governments each taking the opportunity to issue longer-maturity debt. At the same time, there was a slight rise in the yields of sovereign debt issued by countries viewed in markets as 'safe havens', such as Germany, the United States and the United Kingdom. Increased willingness to hold risky assets also encouraged issuance of debt by European banks and corporates. In the United Kingdom, the Funding for Lending Scheme (FLS) also contributed to the reduction in bank funding costs. As of 3 December, 35 banks and building societies had signed up to the Scheme, representing 82% of the stock of lending to the domestic economy. See the article by Churm *et al* on pages 306–20 in this *Bulletin* for further details.

Despite the decline in bank borrowing costs, UK lenders were largely absent from public funding markets over the review period. Contacts suggested that this was likely to be because the large UK banks had completed the bulk of their planned public wholesale long-term debt issuance earlier in the year.

This article concludes with a section that sets out market intelligence relating to implementation of the G20 requirement that all standardised over-the-counter (OTC) derivatives be cleared through central counterparties (CCPs). Separately, it explores a recent trend for repo market transactions to move away from CCPs.

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. The additional £50 billion of asset purchases announced following the July policy meeting was completed by the end of October, taking the stock of asset purchases to £375 billion. The MPC left the stock of assets to be purchased unchanged at the November policy meeting.

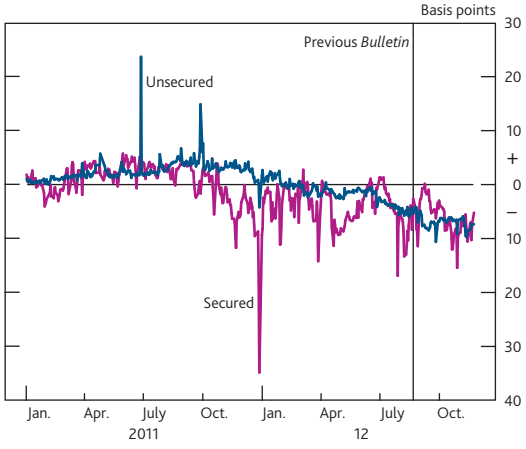
On 9 November, the Government and Bank of England announced that net cash held by the Asset Purchase Facility (APF) would be transferred to the Exchequer. Since the start of the asset purchase programme in 2009, the gilts held by the APF have accumulated regular coupon payments, expected to sum to a current net cash position of around £35 billion by March 2013. This cash will be transferred to the Exchequer on an incremental basis, with an initial £11 billion to be transferred during the 2012/13 financial year and a further £23.8 billion over the course of 2013/14. Any subsequent cash surplus will be transferred on a quarterly basis from 2013/14.[2] In line with MPC communications, contacts noted that the change in APF cash arrangements implied a monetary stimulus.

(1) The data cut-off for the previous *Bulletin* was 24 August 2012.
(2) For further details, see www.hm-treasury.gov.uk/press_109_12.htm.

A Reuters poll of economists conducted shortly after the review period indicated that expectations for further asset purchases had fallen. The median of economists' central expectations was for asset purchases to remain at £375 billion, £50 billion lower than reported in the previous survey. Contacts cited various factors that may have lowered their expectations of the total amount they expected the MPC to spend on asset purchases.

As in the previous review period, sterling overnight market interest rates remained below Bank Rate (**Chart 1**). Possible reasons for this are discussed in the box on page 292. Forward sterling overnight index swap (OIS) rates also remained below Bank Rate out to maturities of two years, perhaps because market participants expect the weakness of overnight market interest rates to persist. But sterling forward OIS rates rose materially during the review period (**Chart 2**). Few contacts placed much weight on the possibility of a cut in Bank Rate by the time of the data cut-off, citing, among other factors, the discussion of the potential impact of such a move contained in the November MPC minutes. Consistent with this, the Reuters poll of economists conducted just after the review period showed that the median expectation was for no change in Bank Rate over the horizon of the poll, which runs until mid-2014.

Chart 1 Spread to Bank Rate of weighted average sterling overnight interest rates

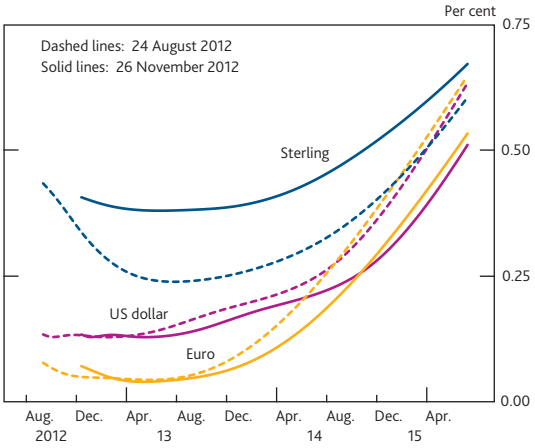


Sources: Bloomberg and Bank calculations.

Elsewhere, the ECB kept its main interest rates unchanged. The subdued pace of economic growth led contacts to expect that very low interest rates would persist for some time. After the review period, comments at the December ECB press conference led contacts to place increased weight on the possibility of a further reduction in policy rates.

In the United States, the FOMC agreed in September that it would purchase additional agency MBS at a rate of US$40 billion per month. Together with its existing policies of reinvesting principal payments of agency securities and

Chart 2 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.

extending the maturity of its asset holdings, the FOMC estimated that this would increase the Federal Reserve's holdings of longer-term securities by about US$85 billion each month. The FOMC stated that it would continue to undertake additional asset purchases and employ its other policy tools as appropriate until, in the context of price stability, the outlook for the labour market had improved substantially. The FOMC also expected that economic conditions were likely to warrant exceptionally low levels for the federal funds target rate until mid-2015, six months later than anticipated at the end of the previous review period.

Long-term interest rates

There was a significant improvement in sentiment following the announcement of a prospective programme of OMTs by the ECB in September. Contacts viewed the announced measures as a credible backstop for the Spanish and Italian bond markets and believed that they had removed a source of near-term tail risk. Spanish and Italian government bond yields fell on the day of the announcement, while there was a rise in the yields of government bonds perceived to carry the least credit risk, including Germany, the United States and the United Kingdom (**Chart 3**).

Other events also contributed to the improvement in market sentiment, such as the German Constitutional Court ruling that the country would be able to participate in the European Stability Mechanism. And in mid-October, there was further tightening in the spread between Spanish and German government bond yields following Moody's unexpected decision to leave the investment-grade credit rating of Spanish government debt unchanged.

Spanish and Italian governments took advantage of improved funding market conditions by increasing the size of their bond auctions and extending the maturity of issues. Their combined

Recent moves in sterling overnight interest rates

Since March 2009, the Bank has implemented the MPC's Bank Rate decisions via a 'floor system' in which all central bank reserves are remunerated at Bank Rate.(1) Only banks with reserves accounts at the Bank can hold reserves and so earn Bank Rate. Because reserves account holders are unlikely to be willing to lend these reserves at below the rate they can obtain by depositing them with the Bank, the overnight lending rate of reserves account holders should not fall below Bank Rate.

The overnight money market includes participants other than reserves account holders, however. Overnight interest rates measured by indices of brokered trades(2) include a significant amount of overnight lending to banks from non-bank institutions that are not reserves account holders, such as corporates and money market funds. Without the option of depositing reserves with the Bank, non-bank institutions may be willing to lend cash overnight at rates below Bank Rate.

If overnight rates are below Bank Rate, banks with reserves accounts can earn a small profit by borrowing overnight and depositing reserves with the Bank of England to earn Bank Rate. Overnight rates would be bid upward towards Bank Rate if reserves account holders were willing to compete for cash from non-banks to obtain this profit.

In recent months, brokered overnight interest rates have tended to be below Bank Rate (**Chart 1**). Contacts report that reserves account holders have been less willing to compete for overnight cash for two reasons.

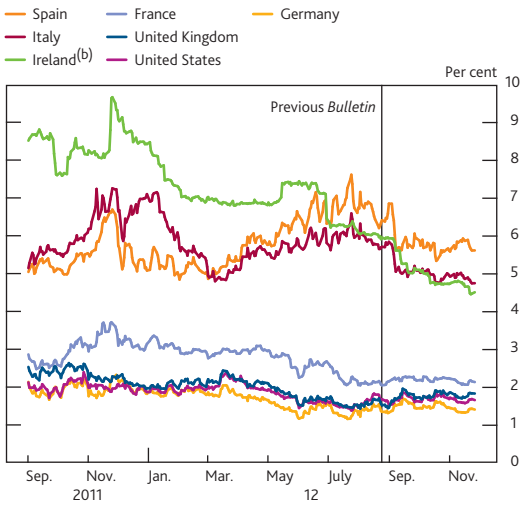
First, UK banks' demand for overnight liquidity has fallen since June 2012, reducing the rate they are willing to pay for overnight deposits. Contacts note that, in part, this reflects some banks recommencing efforts to reduce their reliance on short-term wholesale funding in general. In 2012 Q2, heightened concerns about spillovers from the euro-area crisis and the implications of Moody's banking sector ratings review had led banks to pause in their pursuit of this longer-term goal. In addition, adjustments to the Financial Services Authority's liquidity guidelines and the activation of the Extended Collateral Term Repo Facility reduced banks' desire to borrow overnight.

A second reason banks cite for being less willing to compete for overnight cash is their increased sensitivity to the impact of this borrowing on the size of their balance sheets. At a time when banks are focused on ways to use their balance sheets more efficiently, some reserves account holders report that they had become less inclined to exploit small arbitrage opportunities. For example, some contacts report that they might need a 10 basis point spread before they start to take advantage of the arbitrage opportunity — that is a much larger spread than in the past.

Looking ahead, contacts expect banks to begin to arbitrage deviations of overnight rates from Bank Rate should rates fall much below the level observed during the 2012 Q4 review period.

(1) In March 2009, the Bank suspended its previous system of 'reserves averaging' for implementing Bank Rate. For further details, see 'The Red Book', www.bankofengland.co.uk/markets/Pages/sterlingoperations/redbook.aspx.
(2) The unsecured overnight interest rate is measured by the sterling overnight index average (SONIA). The secured overnight interest rate is measured by the repurchase overnight index average (RONIA). Both indices are provided by the Wholesale Markets Brokers' Association. For further details, see www.wmba.org.uk.

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



Source: Bloomberg.

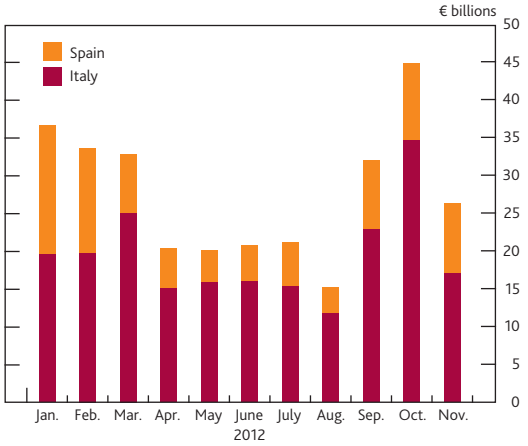
(a) Yields to maturity on ten-year benchmark government bond.
(b) Yield to maturity on eight-year government bond.

monthly issuance in October was the highest in the year to date (**Chart 4**). The Spanish government successfully issued a 20-year bond — the longest-maturity bond it has issued since May 2011. Despite these positive developments, the levels of Spanish and Italian bond yields remained well above those of some other euro-area countries.

Towards the end of the period, investor optimism was curbed by prolonged negotiations over the Greek debt restructuring plan and concerns surrounding Spanish indebtedness. Subsequently, after the end of the review period, euro-area Finance Ministers agreed on a package of measures aimed at reducing the Greek debt burden, which cleared the way for the disbursement of €43.7 billion of financial aid. There followed an immediate but short-lived reduction in periphery government bond spreads over bunds.

In the United States, over the review period as a whole, yields on Treasuries were broadly unchanged. But early in the review

Chart 4 Gross monthly proceeds from government bond issuance by Italy and Spain



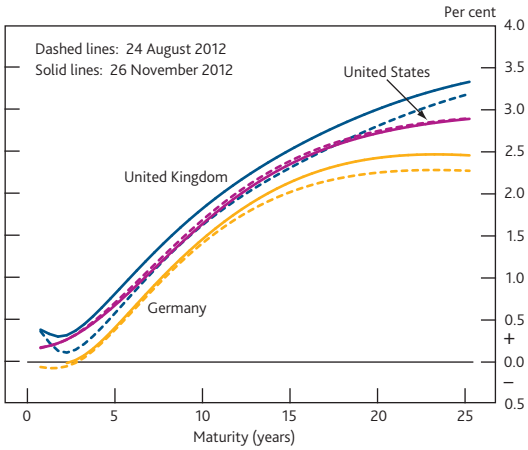
Sources: Dealogic and Bank calculations.

period, the September FOMC announcement of additional monetary stimulus via purchases of agency MBS caused long-dated government nominal yields to rise. Market-implied inflation expectations initially picked up as well, before subsequently falling back. Contacts scaled back expectations of further government bond purchases following the change in policy.

Later on in the review period, the US presidential election result on 7 November was followed by a fall in US Treasury yields. According to contacts, investors thought that the re-election of President Obama was likely to make the upcoming fiscal negotiations more difficult, and that could, in turn, depress US growth.

While US Treasury yields were unchanged overall, a partial reversal of safe-haven flows left German and UK sovereign bond yields a little higher than at the time of the 2012 Q3 *Quarterly Bulletin* (**Chart 5**).

Chart 5 International nominal government bond spot yield curves[a]



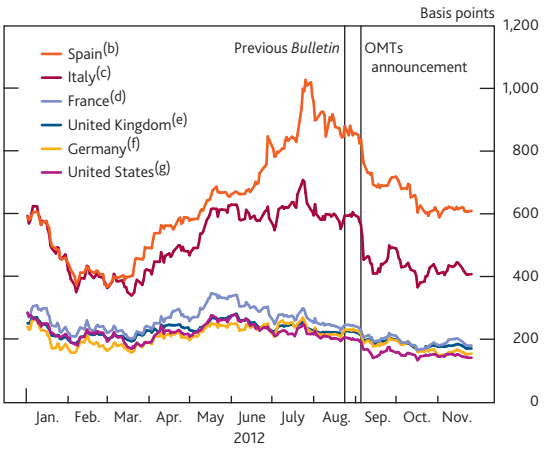
Source: Bank calculations.

(a) Spot interest rates derived from the Bank's government liability curves.

Bank funding markets

Bank funding market conditions improved further over the review period, with declines in indicative measures of wholesale market funding costs, such as bank credit default swap (CDS), in a number of countries (**Chart 6**). This represented the continuation of a trend under way since July.

Chart 6 Selected international banks' CDS premia[a]

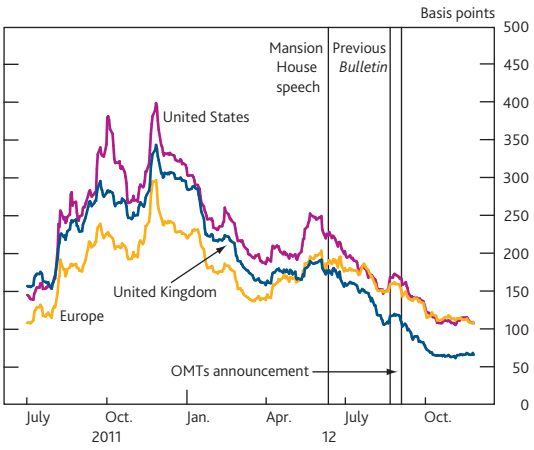


Sources: Markit Group Limited and Bank calculations.

(a) Unweighted averages of five-year, senior CDS prices.
(b) Average of Banco Popular Espanol, Bankia, BBVA, Caixa, Sabadell and Santander.
(c) Average of Banco Popolare, Intesa Sanpaolo, Monte dei Paschi and UniCredit.
(d) Average of BNP Paribas, Crédit Agricole, Natixis and Société Générale.
(e) Average of Barclays, HSBC, Lloyds Banking Group, Nationwide, Royal Bank of Scotland and Santander UK.
(f) Average of Commerzbank and Deutsche Bank.
(g) Average of Bank of America Merrill Lynch, Citi, Goldman Sachs, JPMorgan, Morgan Stanley and Wells Fargo.

UK lenders benefited from positive spillovers as a result of policy announcements in the euro area, and contacts reported that the Bank's FLS had provided a further fillip to investor confidence. For more details, see the article by Churm *et al* on pages 306–20 in this *Bulletin*. On average, funding conditions appear to have improved more for UK lenders compared with those in Europe and the United States (**Chart 7**).

Chart 7 Indicative senior unsecured bond spreads[a]



Source: Bloomberg.

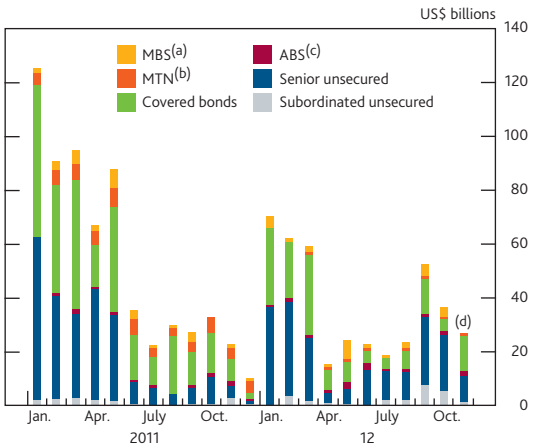
(a) The data show an unweighted average of the spread between euro-denominated senior unsecured bonds and equivalent-maturity swap rates, for a selected bond issued by each of a selection of large banks in the region. The selected bonds have residual maturities of between two and six years.

Despite the improvement in bank funding market conditions over the period, there was little public term debt issuance by UK banks. Contacts attributed the absence of UK banks from the funding market to the fact that many of them had completed their planned public long-term debt issuance earlier in the year. Contacts also cited UK banks' modest funding intentions overall, in the context of limited plans among lenders for balance sheet expansion, and a desire to reduce their reliance on wholesale markets. UK banks also reduced their activity in private funding markets over the review period.

While CDS premia and secondary market bond spreads for UK banks declined during the review period, the absence of primary market activity has created an element of uncertainty around the precise cost of funding facing lenders. That is, in part, because of the lack of observable primary market transactions. Also, contacts reported that secondary market bond spreads had been pushed down by the scarcity of primary market issuance.

In contrast to UK banks, other lenders in the European Union (EU) were active in public term funding markets (**Chart 8**). Notable transactions over the review period included the first Portuguese bank to issue senior unsecured debt without a government guarantee since March 2010, and the first US dollar issuance from a Spanish bank since May 2011. In addition to this issuance by some large lenders, a few 'second-tier' banks from euro-area periphery countries were able to issue in the senior unsecured markets, although some others suspended deals due to insufficient investor appetite.

Chart 8 Term issuance by European (excluding UK) lenders in public markets

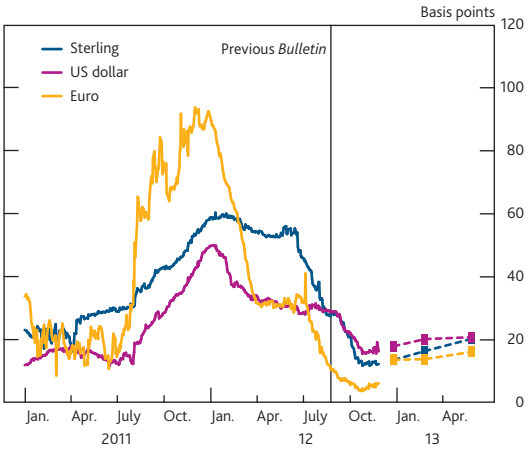


Sources: Dealogic and Bank calculations.

(a) Commercial and residential mortgage-backed securities.
(b) Medium-term notes.
(c) Asset-backed securities.
(d) Data up to 26 November 2012.

The price of funding in short-term money markets continued to fall, with a further decline in the spread between the London interbank offered rate (Libor) — the rate at which banks report that they can borrow on a short-term basis — and OIS — a proxy for the 'risk-free' rate (**Chart 9**). The three-month sterling and euro Libor-OIS spreads both fell to levels not seen since late 2007. According to contacts, these trends reflect a reduced desire by banks to borrow in the money market, combined with lenders demanding less compensation for the credit risk associated with lending to banks at short maturities.

Chart 9 International three-month spot and forward Libor-OIS spreads(a)(b)

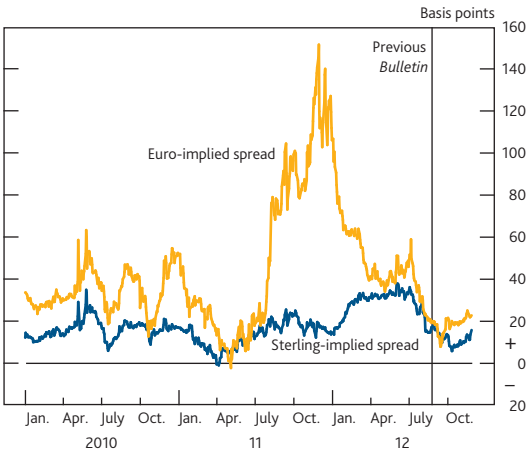


Sources: Bloomberg, British Bankers' Association and Bank calculations.

(a) Three-month Libor-OIS spreads derived from Libor fixings and OIS rates.
(b) Forward spreads derived using data as at 26 November. The squares are implied forward spreads using forward Libor and Euribor derived from forward rate agreements, and forward OIS rates derived from the OIS curve.

Conditions in short-term US dollar funding markets for UK banks also improved, with a reduction in the cost of borrowing directly in dollars, as well as in the cost of swapping sterling into dollars via the foreign exchange market. The cost of raising dollars by swapping out of euro increased over the review period, but remains well below recent peaks (**Chart 10**).

Chart 10 Spread of foreign exchange implied cost of three-month US dollar funding over US dollar Libor(a)



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

(a) Spread of three-month US dollar Libor implied from foreign exchange forwards over actual three-month US dollar Libor. For more details on the construction of these measures see *Bank of England Quarterly Bulletin*, Vol. 48, No. 2, page 134, Chart 26 and *BIS Quarterly Review*, March 2008, pages 73–86.

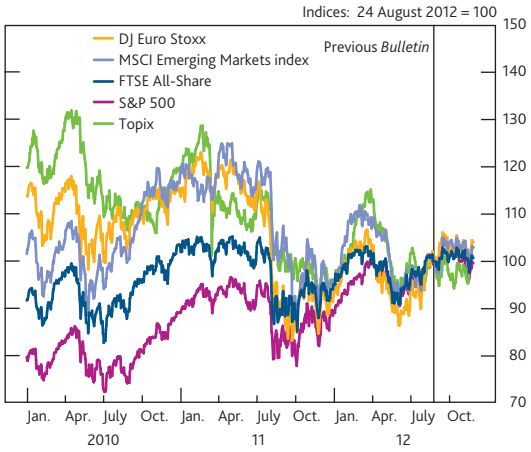
There were positive developments in conditions in subordinated bank debt markets during the review period. In the United Kingdom, there was a large issue of contingent capital by one of the major UK banks. And issuance of Tier 2 capital by other European banks was strong, including the first such transaction from a euro-area periphery issuer in over 18 months.

Contacts noted that the pickup in European issuance was likely to have been motivated by 'grandfathering' arrangements, under which subordinated bonds issued before the beginning of 2013 would not be subject to certain elements of capital rules under Basel III. The exemption makes instruments issued before this deadline more attractive to investors and hence cheaper for banks to issue.

Corporate capital markets

The FTSE All-Share and S&P 500 were broadly flat over the review period, while the DJ Euro Stoxx rose 4% (**Chart 11**). While equity indices had been fairly flat, corporate bond spreads and yields had fallen further during the review period (**Chart 12**). And contacts noted that there had been heavy inflows into European non-investment grade debt from UK pension funds, exchange-traded funds and retail investors, via corporate bond funds. Some contacts suggested that in the context of low yields on less risky assets, in part as a result of policy stimulus, investors had become more prepared to consider investing in riskier assets.

Chart 11 International equity indices(a)(b)

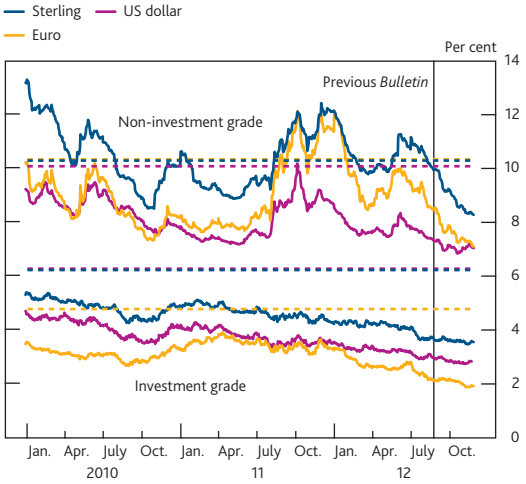


Sources: Bloomberg and Bank calculations.

(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 States, there was a slight decline in corporate bond yields over the review period as a whole. Contacts attributed a recent pickup to high levels of supply of new corporate debt issuance (in some cases from lower credit quality firms) as well as to weaker corporate results than had been expected by markets.

Chart 12 International non-investment grade and non-financial investment-grade corporate bond yields(a)



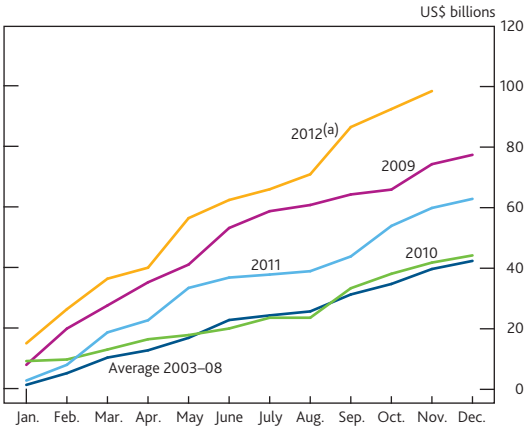
Sources: Bank of America Merrill Lynch and Bank calculations.

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

European corporates continued to take advantage of the positive sentiment in markets by issuing in large volumes. And between September and October, the share of euro-area issuance from corporates based in the euro-area periphery rose from 27% to over 50%. This included the first issue from an unrated periphery corporate since February 2011.

In the United Kingdom, both gross and net corporate bond issuance continued to grow apace (**Charts 13** and **14**). Contacts reported that issuance had been motivated mainly by refinancing, rather than a desire to fund investment. There were further signs of growth in the retail bond market, although the size of the market remains small. During the second half of the year there were several deals from FTSE 350 non-financial companies, often without public ratings, or access to wholesale corporate bond markets. Contacts reported that these deals attracted significant demand from retail investors.

Chart 13 Cumulative gross bond issuance by UK private non-financial corporations



Sources: Dealogic and Bank calculations.

(a) Data up to 26 November 2012.

Operations within the Sterling Monetary Framework and other market operations

This box describes the Bank's operations within the Sterling Monetary Framework over the review period, and other market operations. The level of central bank reserves was determined by (i) the stock of reserves injected via the Asset Purchase Facility (APF); (ii) the level of reserves supplied by indexed long-term repo (ILTR) operations and the Extended Collateral Term Repo (ECTR) Facility; and (iii) the net impact of other sterling ('autonomous factor') flows across the Bank's balance sheet.

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 August, September and October maintenance periods. Average use of the lending facility was also £0 million.

Indexed long-term repo open market operations

As part of its provision of liquidity insurance to the banking system, the Bank conducts ILTR operations. These typically occur once each calendar month. 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'); the other set contains a broader class of high-quality debt securities that, in the Bank's judgement, trade in liquid markets ('wider collateral').

During the review period, the Bank offered £5 billion via three-month ILTR operations on both 11 September and 9 October, and £2.5 billion via a six-month operation on 13 November (**Table 1**).

Usage was limited compared with previous quarters, and cover ratios continued to be at very low levels. There are two possible reasons for the low bank demand for three and six-month liquidity via the ILTR operations. First, short-term secured market interest rates remain below Bank Rate — the minimum bid rate in the ILTR operations — making repo markets a potentially cheaper source of liquidity. Second, APF gilt purchases financed by the creation of central bank reserves continued to boost the liquidity of the banking system, which may have reduced the need for counterparties to use the ILTR operations to meet their short-term liquidity needs (**Chart A**).

Extended Collateral Term Repo Facility

The ECTR Facility is a contingent liquidity facility, designed to mitigate risks to financial stability arising from a market-wide shortage of short-term sterling liquidity.[1] In the three months to 21 November 2012, the Bank conducted three ECTR auctions, offering £5 billion in each (**Table 2**).

Table 1 Indexed long-term repo operations

	Total	Collateral set summary	
		Narrow	Wider
11 September 2012 (three-month maturity)			
On offer (£ millions)	5,000		
Total bids received (£ millions)[a]	320	55	265
Amount allocated (£ millions)	220	55	165
Cover	0.06	0.01	0.05
Clearing spread above Bank Rate (basis points)		0	5
Stop-out spread (basis points)[b]	5		
9 October 2012 (three-month maturity)			
On offer (£ millions)	5,000		
Total bids received (£ millions)[a]	5	5	0
Amount allocated (£ millions)	5	5	0
Cover	0.00	0.00	0.00
Clearing spread above Bank Rate (basis points)		1	n.a.
Stop-out spread (basis points)[b]	n.a.		
13 November 2012 (six-month maturity)			
On offer (£ millions)	2,500		
Total bids received (£ millions)[a]	155	5	150
Amount allocated (£ millions)	155	5	150
Cover	0.06	0.00	0.06
Clearing spread above Bank Rate (basis points)		0	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

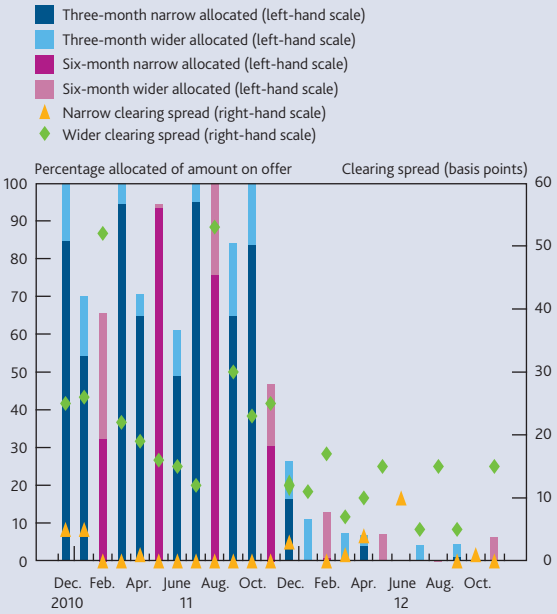


Table 2 ECTR operations

	Total
19 September 2012	
On offer (£ millions)	5,000
Amount allocated (£ millions)	150
Clearing spread above Bank Rate (basis points)	25
17 October 2012	
On offer (£ millions)	5,000
Amount allocated (£ millions)	0
Clearing spread above Bank Rate (basis points)	n.a.
21 November 2012	
On offer (£ millions)	5,000
Amount allocated (£ millions)	0
Clearing spread above Bank Rate (basis points)	n.a.

The September operation cleared at the minimum bid spread to Bank Rate of 25 basis points. There was no usage of the Facility in either the October or November operations. Contacts attributed this fall in demand to a number of factors. These included the ample quantity of liquidity in the banking system, the passing of event risk, and the desire of some banks to retain their collateral for use in the Funding for Lending Scheme (FLS).

On 20 November, the Bank announced that, after the upcoming December operation, the ECTR Facility would remain activated, but that the Bank would review demand for auctions on a monthly basis in consultation with ECTR-eligible institutions. Should the Bank determine that there is sufficient demand, it will hold an auction, normally on the third Wednesday of the month. Auctions will be pre-announced by the Bank on the preceding business day at 4 pm. There would not be an announcement in months when the Bank judges that no ECTR auction is required.(2) The parameters in the Market Notice of 15 June 2012, including the minimum bid rate (25 basis points over Bank Rate) and term of borrowing (six months), will continue to apply to transactions under the ECTR Facility. The Bank will keep the operation of the Facility under review, taking into account market conditions.

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 2 October 2012, the Bank announced that the average daily amount outstanding in the DWF between 1 April 2012 and 30 June 2012, 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 April 2011 and 30 June 2011, lent with a maturity of more than 30 days, was £0 million.

Other operations

Funding for Lending Scheme(3)

The FLS was launched by the Bank and the Government on 13 July. The FLS is designed to incentivise banks and building societies to boost their lending to UK households and non-financial companies, by providing term funding at rates below those prevailing in the market at the time. The quantity each participant can borrow in the FLS, and the price it pays on its borrowing, is linked to its performance in lending to the UK non-financial sector.

The drawdown window for the FLS opened on 1 August 2012 and will run until 31 January 2014. The Bank publishes quarterly data showing, for each group participating in the FLS, the amount borrowed from the Bank, and the net quarterly flows of lending to the UK non-financial sector. On 3 December 2012 the Bank published data showing that a total of 35 groups had signed up to the FLS, and a total of £4.36 billion had been drawn under the FLS as at 30 September 2012.(4)

US dollar repo operations

Since 11 May 2010, the Bank has offered weekly fixed-rate tenders with a seven-day maturity to offer US dollar liquidity, in co-ordination with other central banks, and will continue to do so until further notice. Since 12 October 2011, the Bank has also offered US dollar tenders with a maturity of 84 days. This arrangement is currently scheduled to end on 1 February 2013. As of 21 November 2012, there had been no use of the Bank's US dollar facilities.

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, though sales may be made from time to time, reflecting, for example, risk or liquidity management needs or changes in investment policy. The portfolio currently includes around £3.4 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 2 July and 1 October 2012.

(1) Further details are available at www.bankofengland.co.uk/markets/Pages/money/ectr/index.aspx.
(2) Further details are available at www.bankofengland.co.uk/markets/Documents/marketnotice121120.pdf.
(3) For further detail on the FLS see Churm *et al* on pages 306–20 in this *Bulletin*.
(4) For further details see www.bankofengland.co.uk/markets/Pages/FLS/data.aspx.

Asset purchases(1)(2)

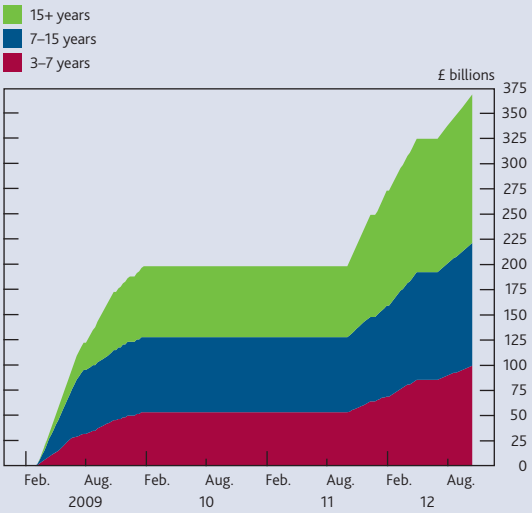
In the week prior to the November Monetary Policy Committee (MPC) meeting, the Bank completed the £50 billion programme of asset purchases — financed by the issuance of central bank reserves — that had been announced by the MPC on 5 July.(3) As of 22 November, outstanding asset purchases financed by the issuance of central bank reserves were £375 billion, in terms of the amount paid to sellers. On 8 November, the MPC voted to maintain the stock of asset purchases financed by the issuance of central bank reserves at £375 billion. **Table 1** summarises asset purchases by type of asset.

Gilts

A total of £29.2 billion of gilt purchases were completed during the review period. These purchases were split broadly equally across the three maturity sectors via 27 gilt purchase auctions for £1 billion each, and two further auctions for £1.1 billion each. 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 £374.9 billion, of which £101.7 billion of purchases were in the 3–7 year residual maturity range, £123.8 billion in the 7–15 year residual maturity range and £149.5 billion with a residual maturity greater than 15 years (**Chart A**).

Cover in the gilt purchase auctions averaged 2.2 in the 3–7 year maturity sector, 3.1 in the 7–15 year maturity sector and 2.1 in the auctions for gilts with a maturity greater than 15 years. This was broadly in line with cover in the previous Asset Purchase Facility gilt purchases.(4) The Bank continued to exclude gilts in which it held a large proportion (more than 70%) of the free float.

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.

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

Week ending(a)	Secured commercial paper	Gilts	Corporate bond		Total(b)
			Purchases	Sales	
23 August 2012(c)(d)	0	345,752		120	345,871
30 August 2012	0	2,000	0	4	1,996
6 September 2012	0	3,000	0	0	3,000
13 September 2012	0	3,000	0	8	2,992
20 September 2012	0	3,000	0	9	2,991
27 September 2012	0	3,000	0	1	2,999
4 October 2012	0	3,000	0	0	3,000
11 October 2012	0	3,000	0	10	2,990
18 October 2012	0	3,000	0	7	2,993
25 October 2012	0	3,000	0	26	2,974
1 November 2012	0	3,200	0	0	3,200
8 November 2012	0	0	0	8	-8
15 November 2012	0	0	0	0	0
22 November 2012	0	0	0	0	0
Total financed by a deposit from the DMO(d)(e)	–	–	13		13
Total financed by central bank reserves(d)(e)	–	374,949	30		374,979
Total asset purchases(d)(e)	–	374,949	43		374,992

(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 22 November 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.

Gilt lending facility(5)

The Bank continued to offer to lend some of its gilt holdings via the Debt Management Office (DMO) in return for other UK government collateral. In the three months to 30 September 2012, a daily average of £225 million of gilts was lent as part of the gilt lending facility. This was a little below the average of £386 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 purchases financed by the issue of Treasury bills and the DMO's cash management operations.

Net sales of corporate bonds were lower during the review period compared with the period before, but this was unsurprising considering the portfolio's diminishing size. At the beginning of the quarter, the Bank's market contacts reported that demand to purchase bonds from the Corporate Bond Scheme had been supported by strong end-investor demand for corporate bonds, combined with low levels of inventories held by dealers. Towards the end of the period, participation in Corporate Bond Scheme sales declined as primary market issuance increased. As of 22 November 2012, the Bank's portfolio totalled £43 million, in terms of amount paid to sellers, compared to £120 million at the end of the previous review period.

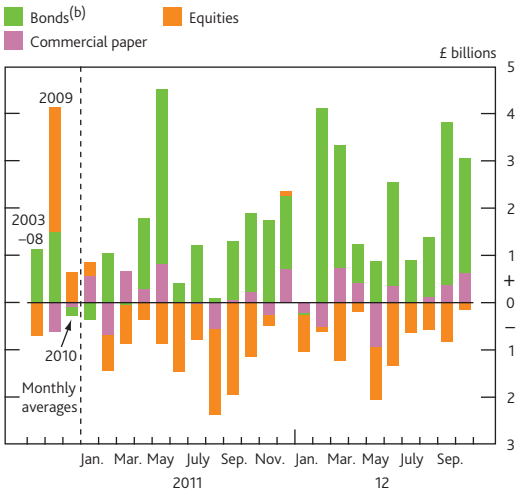
Secured commercial paper facility

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.(6) 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) Unless otherwise stated the cut-off date for data is 22 November 2012.
(3) For further information, see the 5 July Market Notice, available at www.bankofengland.co.uk/markets/Documents/apf/marketnotice120705.pdf.
(4) Further details of individual operations are available at www.bankofengland.co.uk/markets/Pages/apf/gilts/results.aspx.
(5) 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.
(6) The SCP facility is described in more detail in the Market Notice available at www.bankofengland.co.uk/markets/Documents/marketnotice120801.pdf.

Net equity issuance by UK private non-financial corporations (PNFCs) remained negative, due to the continued low level of new issuance, combined with ongoing repurchases of shares (**Chart 14**). Contacts attributed the popularity of equity buybacks to the perceived lack of investment opportunities for many corporates.

Chart 14 Net capital market issuance by UK PNFCs(a)



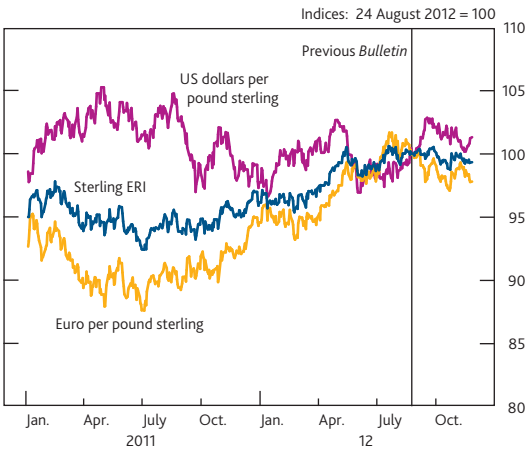
(a) Non seasonally adjusted.
(b) Includes standalone and programme bonds.

Foreign exchange

Activity in the foreign exchange (FX) market was fairly subdued during the review period, reflected in persistently low trading volumes across a range of FX platforms, both in spot and derivatives markets.

The level of the sterling exchange rate index (ERI) was broadly stable, remaining around the upper end of the trading range it has occupied over the past few years (**Chart 15**). But there were offsetting moves against the euro and the US dollar. Contacts cited the reduction in near-term tail risks associated with euro-area sovereign debt problems as the predominant factor behind the 2% appreciation in the euro against sterling by the end of the review period. Working in the other direction, sterling rose by 1.3% against the US dollar, perhaps reflecting further monetary loosening in the United States.

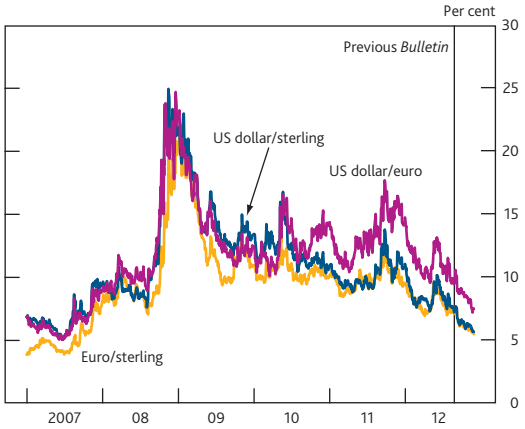
Chart 15 Sterling ERI and bilateral exchange rates



Sources: Bloomberg and Bank calculations.

According to contacts, a reduction in tail risks due to policy announcements in the euro area and the United States contributed to a compression in option-implied volatility across the major currency pairs, which were at five-year lows (**Chart 16**).

Chart 16 Three-month option-implied volatility of foreign exchange rates



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

Market intelligence on developments in market structure

In discharging its responsibilities to maintain monetary stability and contribute to financial stability, the Bank gathers information from contacts across a wide spectrum of financial markets. This intelligence helps inform the Bank's assessment of monetary conditions and possible sources of financial instability and is routinely synthesised with research and analysis in the *Inflation Report* and the *Financial Stability Report*. More generally, regular dialogue with market contacts provides valuable insights into how markets function, and gives context for policy formulation, including in the design and evaluation of the Bank's own market operations.

Based on intelligence of this kind, this section describes some of the issues surrounding implementation of the G20 requirement that all standardised over-the-counter (OTC) derivatives be cleared through central counterparty (CCP) clearing houses. It also explores the causes of a recent trend for repo market transactions to move away from CCPs.

Introduction of client clearing to OTC derivatives markets

In September 2009, the G20 agreed that all standardised OTC derivative transactions should be cleared through CCPs. Since then, various jurisdictions have been implementing mandates in local law. In Japan, inter-dealer interest rate swaps and credit default swaps have been mandated for clearing since November. In the United States and the EU respectively, the Dodd-Frank Act and European Market Infrastructure Regulation have become law, paving the way for mandatory clearing to come into force during 2013.

Many inter-dealer interest rate swap and CDS transactions are currently centrally cleared on a voluntary basis in the United States and the EU. But few 'buy-side' entities (such as hedge funds and asset managers) have traditionally cleared their OTC derivatives. The G20 reforms will require that many such buy-side firms start to centrally clear certain standardised derivatives. Contacts are positive about the risk-reduction benefits that the clearing of OTC derivatives will offer, such as netting and improved margining standards. But they also identify challenges that have arisen as the buy-side prepares for this new landscape.

Accessibility

To access central clearing, buy-side firms (also known as 'clients') need to establish relationships with one or more direct clearing members. A clearing member provides a guarantee to the CCP that it will stand behind its clients' cleared transactions. Establishing that relationship requires the clearing member and client to come to an agreement on how costs will be applied and how risks will be distributed. At the end of the review period, the industry was working to agree standardised documentation for OTC derivative client clearing.

Contacts report that there is a divide between the level of preparedness at larger investor institutions, such as major asset managers and hedge funds, and smaller firms. Many large clients have established or are close to finalising relationships with multiple clearing members, and have reportedly done so on favourable terms with respect to pricing and the amount of margin they must provide. But large numbers of smaller clients have reportedly been slow to act. While it is anticipated that some end-users will be exempt from the clearing requirement (such as corporates which primarily use OTC derivatives to hedge liabilities arising from commercial and treasury financing activity), it appears that a sizable proportion of non-exempt smaller clients have yet to establish client clearing relationships. Contacts thought that this may put them in a weaker negotiating position, with little choice but to accept terms offered by clearing members. Some contacts also suggested that a large proportion of client clearing could become concentrated in a small number of clearing members.

Margin

In contrast to common practice in current bilateral (that is, non-centrally cleared) markets, CCPs collect 'initial margin' to provide a buffer of protection against the potential cost of replacing a defaulting participant's positions. As a result, the move to clearing most standardised OTC derivatives is expected to heighten demand for CCP eligible collateral, such as high-quality government bonds. Although significant

uncertainties remain, estimates of the size of that additional demand are large.(1)

Netting is an important driver of collateral efficiency. In bilateral OTC derivatives markets, netting is usually applied to the entire portfolio of OTC derivatives between two counterparties, and any margin is based on the net exposure. One benefit of moving transactions to a CCP is that it introduces multilateral netting — instead of a counterparty having separate exposures to each other counterparty, it has a single exposure to the CCP representing the net of its exposures to the other CCP members. But contacts express concern that similar, naturally offsetting, products may not all be available for central clearing. For instance, were standardised 'plain vanilla' interest rate swaps to be mandated to be cleared, but no CCP available to clear swaptions (OTC options on interest rate swaps), a client could not receive the netting benefit between the two products which serve as natural hedges to each other. That lack of netting would require them to post more margin than if both products were centrally cleared at the same CCP. Many clients and clearing members are therefore keen for CCPs to expand their product offerings.

In addition, CCPs generally accept high-quality collateral only, such as cash and highly rated government bonds.(2) Some types of end-client have large holdings of government bonds which they can post as collateral. But others might not have sufficient eligible collateral and so will need to transform the assets they do hold into assets accepted as collateral by the CCP. This will present costs and risks for clients, particularly those with large transformation requirements. Some banks are reported to be starting collateral transformation businesses in anticipation of such demand.

CCPs also generally require additional 'variation margin' to be posted, in cash, when the market value of clients' derivative positions falls. Whereas, in bilateral markets, any such variation margin may also comprise securities. This will pose some further challenges for entities that typically have small cash holdings.

Portability

'Portability', or the ability to move a position from one clearing member to another, is an important safeguard in the move to client clearing. Clients may wish to 'port' positions because of concerns about the creditworthiness of a clearing member, or in the event of a clearing member defaulting. They may also want to move positions in order to minimise collateral requirements between cleared portfolios at different clearing members.

The terms of portability arrangements have reportedly become a point of contention during negotiation between clients and clearing members. Clients report that they would like to be able to port positions away without notice. But it is in the interests of clearing members to request notice before positions are ported in or out. And they are reluctant to guarantee that they will accept positions ported in, due to the contingent credit and liquidity risks, and potential cost of regulatory capital and liquidity requirements against those risks.

Larger clients are more likely than smaller ones to have established multiple clearing member (and CCP) relationships, which makes it easier to port positions if needed. Smaller clients relying on a single clearing member would need to set up an arrangement with an alternative member quickly in the event of the default of their original clearing member. If a client failed to post its position, the CCP would be likely to protect itself by triggering termination clauses in its transactions with the client.

Regulatory uncertainty

Contacts often report regulatory uncertainty to be an issue in the planning and implementation of client clearing. One area of concern is the lack of final dates for clearing mandates in the EU which makes it difficult to judge the relative merits of short-term versus long-term solutions. Another cause of concern is the uncertainty over extraterritoriality of EU and US rules, and in particular uncertainty over which CCPs will be eligible to meet clearing mandates in which jurisdictions.

Contacts agree that the introduction of client clearing represents a large structural change to the OTC derivatives market and are still working to understand its likely impact on costs, incentives and market structure.

Use of CCPs in European repo markets

A 'repo' transaction typically involves the sale of collateral — often government bonds — and an agreement to buy back equivalent securities at a future date. In practice, repo markets allow institutions to borrow or lend cash on a secured basis, and promote liquidity by allowing market participants to borrow or lend specific securities.

Repo is also widely used by central banks to implement monetary policy and to provide liquidity to banks. For instance, the Bank of England's Extended Collateral Term Repo Facility provides sterling liquidity against collateral pre-positioned in the Bank's Discount Window Facility.

Repo transactions are typically executed on a bilateral basis (for example, dealer-to-dealer), via a tri-party arrangement in which a third-party agent acts as custodian for the collateral, or via a CCP clearing house. In CCP-cleared repo, the CCP

(1) See the box on pages 38–39 of the Bank of England *Financial Stability Report*, June 2012.
(2) Some CCPs have expanded their range of eligible collateral.

becomes a party to both sides of a trade, acting as a buyer to the collateral seller and a seller to the collateral buyer.

During the financial crisis, some repo markets proved to be a less reliable source of liquidity than many had expected. And in September 2010, the BIS Committee on Payment and Settlement Systems Working Group on Repo Market Infrastructure suggested that using CCPs could be one means of making repo markets more resilient.(1) Also, more recently, a consultative document released by the Financial Stability Board (FSB) noted the potential benefits of wider use of CCPs for inter-dealer repo against safe collateral.(2) These arise from the resulting reduction in interconnectedness in the financial system and improved transparency.

Recent use of CCPs in repo markets

The use of CCPs to clear repo transactions declined during the year. The June 2012 International Capital Market Association (ICMA) repo market survey showed that the size of the European repo market fell to €5.7 trillion outstanding, from €6.2 trillion in December 2011. The contraction in European repo activity since December was attributed, in large part, to banks' substitution of some of their repo financing requirements for liquidity taken from the ECB's three-year longer-term refinancing operations. In the context of that overall decline in repo market activity, the proportion of CCP-cleared transactions fell to 26% of the total in the June 2012 survey, down from 32% in December 2011.(3) And market participants expect the size of repo positions outstanding on CCPs to have declined further since June.

But it is difficult to trace where this business has relocated to, if anywhere. Unfortunately, as recognised by the Bank of England chaired Securities Lending and Repo Committee Working Group(4) and the FSB, transparency in the bilateral repo market is poor. Nevertheless, market contacts noted that there had been an increase in the amount of bilateral inter-dealer repo. This was supported by the Money Market Liaison Group (MMLG) Sterling Money Market Survey, which showed a 10% increase in inter-dealer bilateral repo between November 2011 and May 2012.(5)

Drivers of change

CCP margins

In acting as both buyer and seller to a repo transaction, the CCP takes on the associated credit risk. It is very important then, that CCPs take steps to manage this risk. One means by which they do this, is to require the seller of collateral to back this secured borrowing with assets worth more than the value of the loan. This extra collateral is known as margin, and it acts as a buffer against fluctuations in the market value of the assets posted with the CCP.

According to market contacts, the primary reason for the decline in CCP-cleared repo has been an increase in the cost of using CCPs due to these margin requirements. In contrast, the convention in bilateral inter-dealer repo markets is to apply a very low, or zero, margin for certain transactions.

In addition, to protect themselves during periods of higher volatility in the value of collateral, CCPs will tend to raise margin requirements. And contacts report that the decline in CCP-cleared repo has been larger for repos of vulnerable euro-area government bond collateral, in part, for this reason. As CCP margins rose, it became more cost effective for banks to use other sources of liquidity, including the ECB's facilities.

While margin increases are likely to be cyclical and more prominent for repos of more volatile collateral, CCP margin requirements have also increased for higher-quality collateral. For instance, LCH.Clearnet Ltd (LCH) margin requirements for gilt general collateral have risen by 0.7 percentage points (to 4.2%) on average across all maturities over the year. Perhaps as a result, contacts report that the clearing of transactions backed by higher-quality collateral has fallen.

There have also been structural increases in the costs associated with using CCPs. For example, in August 2012, as a further means of reducing its exposure to credit risk arising from clearing repo transactions, LCH established a new ring-fenced default fund of approximately £500 million. Contacts suggest that this will have increased the contributions required from its members.

In addition to the rise in the cost of using CCPs over the course of the year, which result from steps to limit credit risk, perceptions of counterparty credit risk in the bilateral market have fallen recently. As a result, banks have reportedly been more content to lend to each other on a bilateral basis, albeit secured and for short periods.

Other drivers

Contacts cited three additional drivers for the decline of CCP-cleared repo:

First, certain bank treasury departments had refined their internal transfer pricing models, with repo desks now being charged more directly for margin costs. This had incentivised dealers to seek out more cost-effective ways to trade repo.

Second, there had been a structural increase in longer-term repo transactions. Contacts confirmed the findings of the June 2012 ICMA repo survey, which showed that there had

(1) See www.bis.org/publ/cpss91.pdf.
(2) See www.financialstabilityboard.org/publications/r_121118b.pdf.
(3) See www.icmagroup.org/Regulatory-Policy-and-Market-Practice/short-term-markets/Repo-Markets/repo/.
(4) See www.bankofengland.co.uk/publications/Documents/speeches/2012/speech591.pdf.
(5) For background on the MMLG Survey, see www.bankofengland.co.uk/publications/Documents/quarterlybulletin/mo12aug.pdf.

been an increase in structured repo trades with contractual maturities of greater than one year. These trades could not be centrally cleared as CCPs tend to only clear repo trades with maturities up to one year.

Third, there had been a structural increase in repo activity by non-banks with recently established repo operations. These non-banks are typically liability-driven investors, such as pension funds, which tend to hold long-dated collateral. When they deal bilaterally with clearing member banks they raise cash against that collateral. This may have left banks holding a higher proportion of long-dated collateral than in the past. Since CCPs require higher margins on long-dated collateral — for instance, LCH charges 8.7% margin for 30-year (or longer-dated) gilt collateral, as opposed to 1.7% for 3–7 year gilt collateral (irrespective of the term of the repo itself) — this may have induced banks to trade bilaterally with other banks, instead of via CCPs.

Policy implications

A widespread shift in repo activity away from CCPs and into the bilateral inter-dealer market could have negative financial stability implications. It entails a loss of transparency at a time when international efforts, including by the FSB, are under way to make this market less opaque.(1) In addition to the FSB consultation, European central banks are currently assessing the scope for an EU trade repository for securities financing transactions.(2)

International comparison

In the United States, most repo is thought to be done via tri-party arrangements. The Fixed Income Clearing Corporation (FICC) rules require clearing members to report any CCP-eligible trades transacted with other clearing members. This rule is thought to discourage bilateral inter-dealer repos to a certain extent.(3) In Europe, where there are multiple CCPs, there are no European-wide reporting rules, potentially making it easier for CCP-cleared trades to move into the bilateral inter-dealer market.

Outlook

Whether the trend towards conducting repo on a bilateral basis will persist is uncertain. On the one hand, contacts who expect the change to persist note that a number of the drivers outlined above were likely to be permanent — for instance, higher CCP default fund contributions and repo desks being charged more directly for margin costs. And provided that dealers continued to perceive counterparty credit risk to be low, and had already established bilateral netting infrastructure, they might not be prepared to pay CCP margin costs, even if they came down.

On the other hand, contacts identified factors which might incentivise banks to do more repo business via CCPs. First, if volatility in government bond markets retreats from historic highs, CCP margins should start to fall. Second, some contacts expected LCH's new margin model, which was expected to roll out in 2013, to reduce margin requirements for high-quality government bonds. And it is likely to remain the case that some banks will choose not to increase their inter-dealer repo activity, preferring instead to continue to use CCPs due to the benefits of reduced credit exposures via multilateral netting.

(1) See www.financialstabilityboard.org/publications/r_121118b.pdf.
(2) See www.ecb.int/press/key/date/2012/html/sp121203.en.html.
(3) See FICC *Government Securities Division Rulebook*, page 146, available at www.dtcc.com/legal/rules_proc/FICC-Government_Security_Division_Rulebook.pdf.