

Markets and operations

This article reviews developments in sterling financial markets, including the Bank's official operations, since the 2010 Q3 *Quarterly Bulletin* up to 19 November 2010.⁽¹⁾ The article also summarises market intelligence on selected topical issues relating to market functioning.

Sterling financial markets

Overview

Over the review period, financial market developments were dominated by expectations of further monetary policy measures by some central banks and concerns about the sustainability of fiscal positions in certain euro-area member countries.

In the United States and the United Kingdom, market expectations of further monetary stimulus had been building following weaker-than-expected macroeconomic data and comments by monetary policy makers. Reflecting this, government bond yields initially fell. The US Federal Reserve announced in November that it would increase its purchases of government assets. In the United Kingdom, expectations of further asset purchases receded following a stronger-than-expected third-quarter GDP release and the November *Inflation Report*. Government bond yields subsequently rose.

In the euro area, a deteriorating economic outlook in some member countries and revelations of further losses at certain banks contributed to perceptions of worsening fiscal positions in some vulnerable economies. This was compounded by uncertainty about the future resolution mechanism for sovereign debt crises. During the review period, market participants appeared to differentiate among euro-area sovereign issuers. Following the review period, concerns over sovereign risk in the euro area became more widespread.

Against this backdrop, there seems to have been a secular improvement in bank funding markets; the major UK banks have been able to access a wider range of long-term funding instruments than earlier in the year — although some indicators of stress were beginning to rise towards the end of the review period.

Recent developments in sterling capital markets Monetary policy and short-term interest rates

In the United Kingdom, the Bank of England's Monetary Policy Committee (MPC) maintained a highly accommodative

monetary policy stance. Bank Rate and the stock of asset purchases were left unchanged at 0.5% and £200 billion respectively throughout the review period.

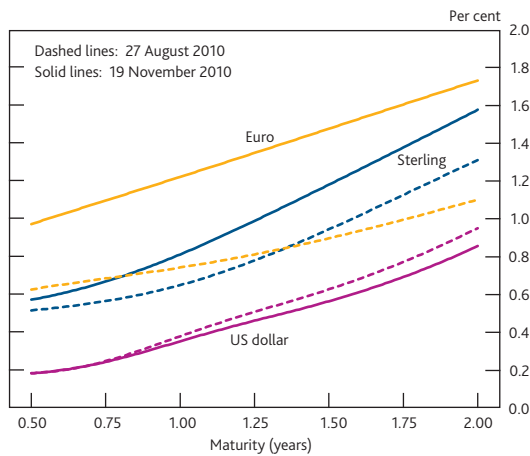
In the United States, the Federal Reserve announced further monetary policy measures to promote a stronger pace of economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate. At its November meeting, the Federal Open Market Committee (FOMC) decided to purchase a further \$600 billion of longer-term US Treasury bonds by June 2011 and to continue to reinvest principal payments from its securities holdings.

A Reuters poll released at the end of October showed that expectations of further asset purchases had also increased in the United Kingdom in the run-up to the November policy meeting; a majority of respondents expected further asset purchases. However, contacts noted that these expectations receded somewhat following stronger-than-expected third-quarter UK GDP data. The probability attached to further asset purchases reportedly continued to decline following the publication of the November *Inflation Report*. Consistent with this, the November Reuters poll showed that only a minority of respondents expected further asset purchases.

Turning to market expectations of future policy rates, UK short-term overnight index swap (OIS) rates fell slightly in the earlier part of the review period. But they rose subsequently to end the period slightly higher (**Chart 1**). Elsewhere, OIS rates fell in the United States on firming expectations of further monetary stimulus. Within the euro area, the euro overnight index average rose as the total level of liquidity supplied by the European Central Bank (ECB) declined. Contacts highlighted a sharp increase in overnight rates following the net maturity of €92 billion at the end of September. And contacts attributed a rise in euro OIS rates to a firming of expectations during the period that the normalisation process started by the ECB in relation to its liquidity operations would continue.

(1) The data cut-off for the previous *Bulletin* was 27 August 2010.

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

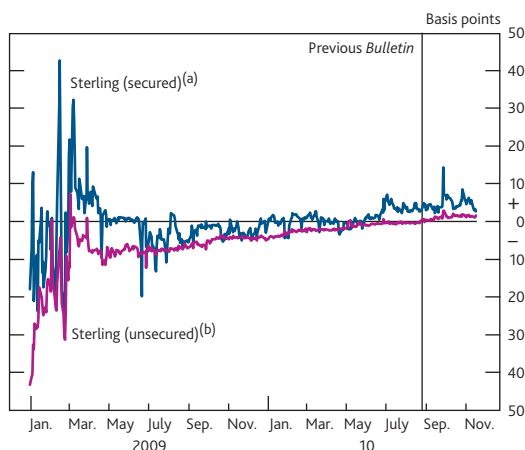


Sources: Bloomberg and Bank calculations.

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

At the very short end of the sterling money market curve, overnight interest rates generally remained close to Bank Rate. However, unsecured overnight interest rates rose gradually over the review period, while volatility in the secured overnight rate increased (Chart 2). Increased volatility in secured overnight interest rates is often seen at times of changes in collateral supply. Secured overnight rates tend to rise with an increased quantity of available collateral as lenders of cash require an additional return to finance the increased collateral supply. Indeed, some contacts suggested that collateral released following maturing ECB operations, especially at the end of September, might have affected the sterling overnight secured interest rate. This would most likely have occurred via displacement on account of the differing quality of collateral maturing from the ECB and the collateral used in sterling overnight secured markets.

Chart 2 Spread to Bank Rate of sterling overnight interest rates



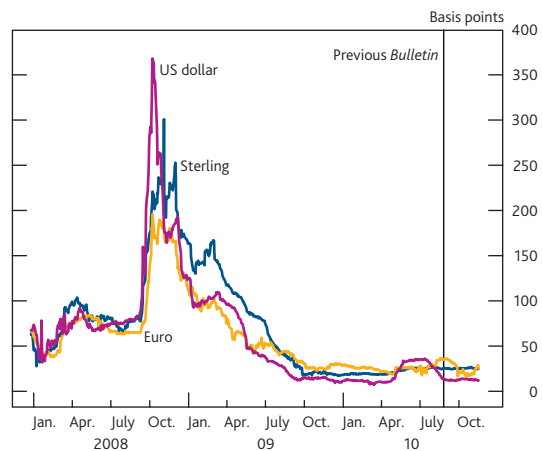
Sources: BrokerTec, Wholesale Market Brokers' Association and Bank calculations.

(a) Spread of weighted average secured overnight rate to Bank Rate.
(b) Spread of weighted average unsecured overnight rate to Bank Rate.

Bank funding markets

The spread of short-term interbank borrowing rates relative to OIS rates, an indicator of bank funding conditions, was little changed since the previous *Bulletin* (Chart 3). Another indicator, the cost of interbank borrowing via cross-currency funding markets, compares the difference in cost between borrowing euro or sterling and swapping the proceeds into US dollars, with funding directly in dollars. These spreads fell over the period as a whole, though the euro-implied spread rose in November as concerns around debt sustainability in some European countries reintensified (Chart 4).

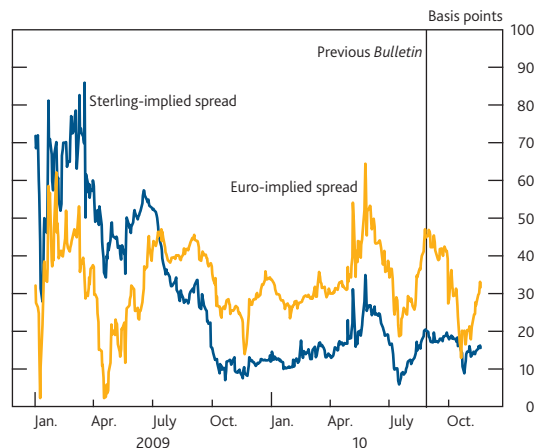
Chart 3 Three-month Libor-OIS spreads^(a)



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

(a) Three-month Libor-OIS spreads derived from Libor fixings.

Chart 4 Spread of foreign exchange implied cost of three-month US dollar funding over US dollar Libor^(a)

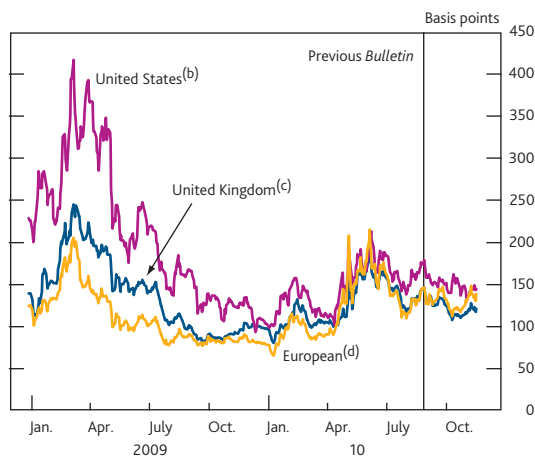


Sources: British Bankers' Association, Reuters and Bank calculations.

(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.

Measures of longer-term funding costs for UK banks fell in early October, but rose subsequently to end the period slightly lower. Consistent with this, five-year UK bank credit default swap (CDS) premia, one indicator of long-term funding costs, declined somewhat (Chart 5).

Chart 5 Selected international banks' credit default swap premia^(a)



Source: Markit Group Limited.

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

Contacts suggested that two main factors had contributed towards a continued improvement in sentiment towards banks internationally earlier in the period. First, the time permitted for banks to comply with new international bank regulations (the so-called Basel III rules) was longer than previously expected. Second, bank earnings in the third quarter of 2010 were generally higher, and loss provisions lower, than analysts' expectations. Later in the period, however, concerns about debt sustainability in some European countries re-emerged, which put upward pressure on longer-term funding costs.

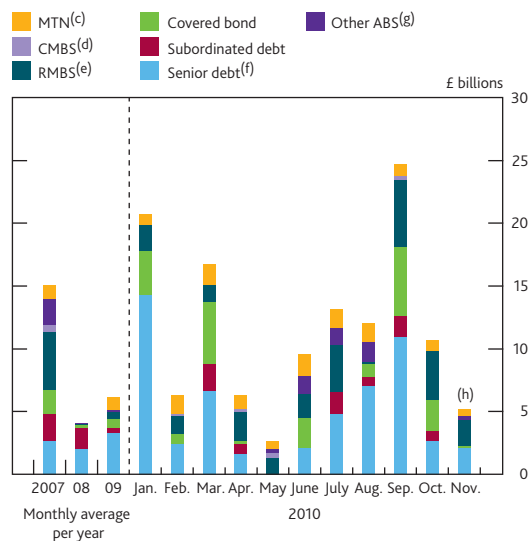
In the United Kingdom, investors' assessment of UK banks' funding positions reportedly improved following the disclosure that banks had already repaid a large share of their borrowing under the Special Liquidity Scheme. The box on pages 246–47 shows that banks have incorporated a gradual repayment of their borrowing under the scheme into their funding plans. In contrast, in the United States, sentiment towards some banks was diminished somewhat by concerns over mortgage origination, servicing and foreclosure practices.

Against this backdrop, UK banks' debt issuance was particularly strong earlier in the period (**Chart 6**). Banks issued over £15 billion senior debt and were able to issue around £20 billion of covered bonds and residential mortgage-backed securities (RMBS) over the period as a whole. Signs of renewed activity in asset-backed securities were tempered by the small number of investors in these transactions. The forthcoming *Financial Stability Report* will discuss these issues, including the funding requirements for UK banks, in more detail.

Long-term interest rates

During the earlier part of the review period, international long-term nominal interest rates approached historically low levels. Expectations of further asset purchases by the

Chart 6 Major UK banks^(a) issuance in term public^(b) markets by debt instrument

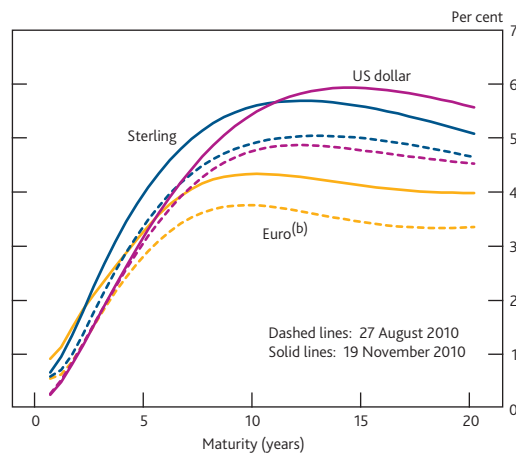


Sources: Bank of England, Dealogic and Bank calculations.

- (a) The major UK banks are defined as Banco Santander, Barclays, Co-operative Financial Services, HSBC, Lloyds Banking Group, Nationwide and RBS.
 (b) This refers primarily to issuance in excess of 18 months in public markets.
 (c) Medium-term notes.
 (d) Commercial mortgage-backed securities.
 (e) Residential mortgage-backed securities.
 (f) Excludes senior debt issued under HM Treasury's Credit Guarantee Scheme.
 (g) Asset-backed securities.
 (h) Data up to 19 November.

US Federal Reserve and the Bank reportedly contributed to these falls. Following the FOMC's announcement of further purchases in November and stronger-than-expected macroeconomic data, these expectations receded somewhat. This reportedly contributed to the subsequent rise in bond yields. Overall, during the review period, international forward yield curves shifted higher, most notably in the United States (**Chart 7**).

Chart 7 International nominal government bond yield curves^(a)



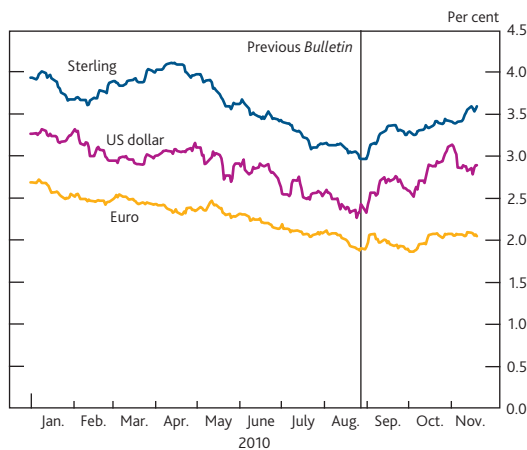
Source: Bank calculations.

- (a) Instantaneous forward rates derived from the Bank's government liability curves.
 (b) Derived from government bonds issued by France and Germany.

Nominal interest rates can be decomposed into movements in real forward interest rates and a forward inflation rate.

Market-based measures of medium-term inflation expectations derived from index-linked bonds rose during the review period, particularly in the United States (Chart 8). Contacts suggest this may have been exacerbated by an increase in demand for inflation protection in a relatively less liquid market, thereby lowering real yields relative to nominal yields. Indeed, equivalent measures derived from UK inflation swaps rose by less over the review period.

Chart 8 International five-year implied inflation rates, five years forward^{(a)(b)}



Source: Bank calculations.

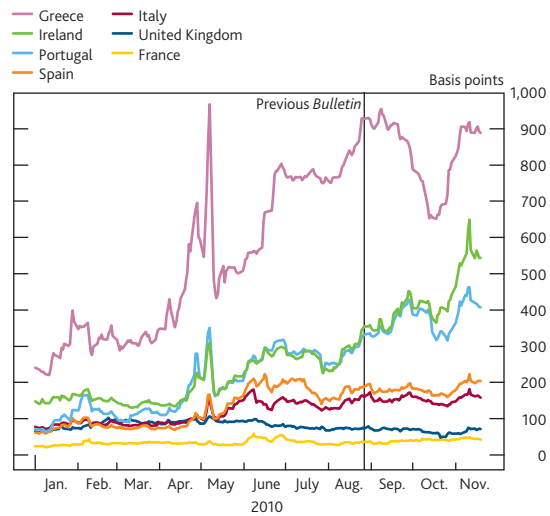
- (a) Sterling forward inflation rates are derived from instruments that reference RPI inflation, while US dollar and euro forward inflation rates are derived from instruments referencing CPI inflation.
 (b) Sterling and US forward inflation rates derived from the Bank's government liability curves. Euro forward inflation rates derived using the Bank's inflation swap curve.

In the euro area, concerns about the sustainability of the fiscal position of some member countries, notably Ireland and Portugal, reintensified during the review period. Contacts noted in particular the difficulties in the approval process of austerity measures in Portugal and further revelations about the impact of banking sector losses on public finances in Ireland. After the end of the review period, the Irish authorities requested the use of European Union support facilities, provided in conjunction with the International Monetary Fund. The estimated financing need would be up to €85 billion until the end of 2013, with a potential total external assistance of €67.5 billion.

Yields on Irish and Portuguese government bonds rose markedly relative to German government bond yields (Chart 9). Toward the end of the review period, LCH.Clearnet Ltd increased the margin requirement on Irish government bonds. Contacts noted that this might have amplified some of the widening in the spread of Irish bonds.

Contacts thought that market participants increasingly differentiated between sovereign credits. Indeed, in contrast to earlier periods when yield spreads of vulnerable euro-area government bonds to German government bonds tended to move together, Italian and Spanish government spreads ended the period little changed. Following the review period,

Chart 9 Selected European ten-year government bond spreads^(a)



Sources: Bloomberg and Bank calculations.

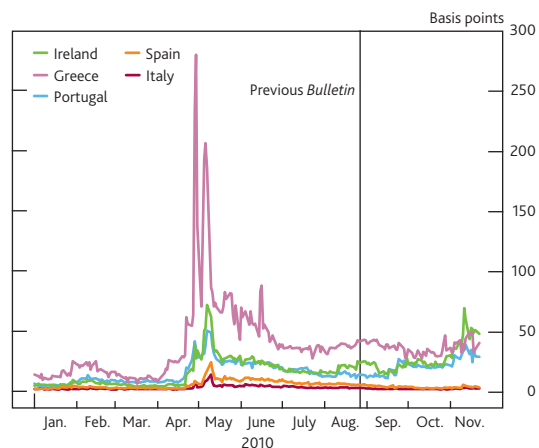
- (a) Spread over ten-year German government bond yield.

however, concerns over sovereign risk in the euro area became more widespread.

In explaining the recent widening of euro-area spreads, contacts put some weight on proposals put forward for a permanent resolution mechanism of sovereign debt crises. Contacts noted that yield spreads widened more for those sovereigns potentially more likely to be affected by such a mechanism.

The liquidity of those sovereign bond markets, as measured by bid-offer spreads, deteriorated (Chart 10). In order to facilitate the functioning of these markets, the ECB stepped up its sovereign bond purchases somewhat through its Securities Markets Programme, after a period of limited activity since mid-July.

Chart 10 Bid-offer spreads on selected euro-area ten-year government bonds



Source: Tradeweb.

Operations within the sterling monetary framework

The level of reserves continued to be determined by (i) the stock of reserves injected via asset purchases, (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. The box on pages 248–49 provides more detail on the Asset Purchase Facility (APF). This box describes in more detail the Bank's operations within the sterling monetary framework over the review period.

Operational Standing Facilities

Since 5 March 2009, the rate paid on the Operational Standing Deposit Facility has been zero. 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

The Bank also offers liquidity insurance to the banking system via long-term repo (LTR) operations. The Bank recently redesigned these operations to provide a permanent and more effective liquidity insurance facility, against a wide range of collateral. The new operations, which are indexed to Bank Rate, replace both the three-month wider collateral operations and the narrow OMO collateral six, nine and twelve-month operations.⁽¹⁾

The Bank offered £5 billion via three-month indexed long-term repo (ILTR) operations on both 14 September and 12 October, and £2.5 billion via a six-month operation on 16 November. Cover was similar to earlier ILTR operations (**Table 1**).

The proportion of the three-month operations allocated to wider collateral in September and October fell compared to those held in June and July from an average of 17% to 12%. The stop-out spread (the difference between clearing spreads for wider and narrow collateral) fell to 20 basis points in October, compared to 25–26 basis points in the three previous three-month ILTR operations (**Chart A**). This primarily reflected a fall in the wider collateral clearing spread.

The six-month operation held on 16 November produced a stop-out spread of 48 basis points. This was similar to the previous six-month operation in August, where the stop-out spread was 49 basis points. The proportion of funds allocated against wider collateral in November rose to 26%, from 24% in August.

Reserves provided via ILTRs were more than offset by the maturity of the previous LTR operations. Consequently, the

Table 1 Indexed long-term repo operations

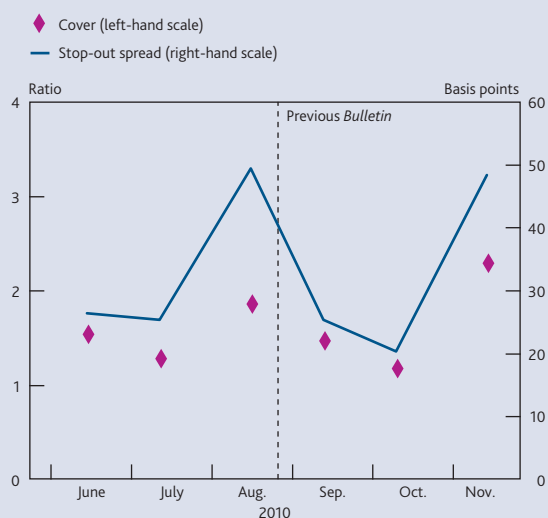
	Total	Collateral set summary	
		Narrow	Wider
14 September 2010 (three-month maturity)			
On offer (£ millions)	5,000		
Total bids received (£ millions) ^(a)	7,346	6,586	760
Amount allotted (£ millions)	5,000	4,440	560
Cover	1.47	1.32	0.15
Clearing spread above Bank Rate ^(b)		1	26
Stop-out spread ^(c)	25		
12 October 2010 (three-month maturity)			
On offer (£ millions)	5,000		
Total bids received (£ millions) ^(a)	5,905	5,260	645
Amount allotted (£ millions)	5,000	4,355	645
Cover	1.18	1.05	0.13
Clearing spread above Bank Rate ^(b)		1	21
Stop-out spread ^(c)	20		
16 November 2010 (six-month maturity)			
On offer (£ millions)	2,500		
Total bids received (£ millions) ^(a)	5,713	4,920	793
Amount allotted (£ millions)	2,500	1,857	643
Cover	2.29	1.97	0.32
Clearing spread above Bank Rate ^(b)		2	50
Stop-out spread ^(c)	48		

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

(b) Amounts shown in basis points.

(c) Difference between clearing spreads for wider and narrow collateral in basis points.

Chart A Cover and stop-out spread



stock of liquidity provided through longer-term operations declined.

Discount Window Facility

The Discount Window Facility (DWF) is a permanent facility to provide liquidity insurance to the banking system. It allows eligible banks to borrow gilts against a wide range of collateral. On 5 October, the Bank announced that the average daily amount outstanding in the 30-day DWF between 1 April and

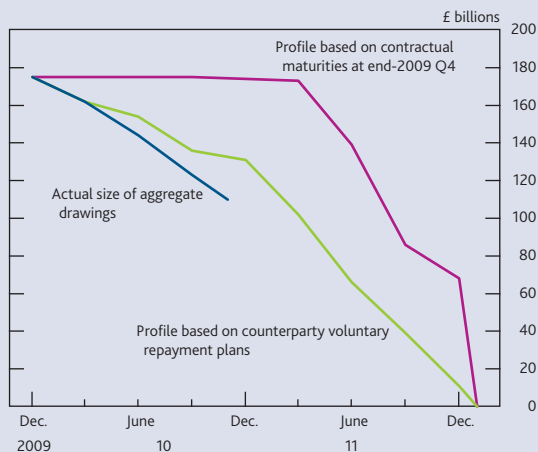
30 June 2010 was £0 million. The Bank also announced that the average daily amount outstanding in the 364-day DWF between 1 April and 30 June 2009 was £0 million. For information on the changes to the collateral accepted in the DWF, see the box on page 251.

Other operations Special Liquidity Scheme

The Special Liquidity Scheme (SLS) was introduced in April 2008 to improve the liquidity position of the banking system by allowing banks and building societies to swap their high-quality mortgage-backed and other securities for UK Treasury bills for up to three years. The Scheme was designed to finance part of the overhang of illiquid assets on banks' balance sheets by exchanging them temporarily for more easily tradable assets.

At the end of January 2009 (when the drawdown period for the SLS closed), £185 billion of UK Treasury bills had been lent under the SLS. In order to prevent a refinancing 'cliff' the Bank held bilateral discussions with users of the Scheme to ensure that there were credible funding plans in place to reduce their use of the Scheme in a smooth fashion. The impact of these expected repayment plans are shown in aggregate in **Chart B**, along with the repayment profile based on counterparties' contractual repayment obligations. Some £75 billion had already been repaid by end-November.

Chart B Aggregate SLS repayment profiles



US dollar repo operations

In response to renewed strains in the short-term funding market for US dollars, from 11 May the Bank, in concert with other central banks, reintroduced weekly fixed-rate tenders with a seven-day maturity to offer US dollar liquidity. As of 19 November 2010, there had been no use of the facility.

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, eg in the Bank for International Settlements and European Central Bank, 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 £4.1 billion of gilts and £0.6 billion of other debt securities. Over the period from 20 August 2010 to 18 November 2010, gilt purchases were made in accordance with the quarterly announcements on 1 July 2010 and 1 October 2010.

(1) For further details see 'The Bank's new indexed long-term repo operations', in the 2010 Q2 *Bank of England Quarterly Bulletin*, pages 90–91.

Asset purchases

The Bank did not undertake any Asset Purchase Facility (APF) gilt purchases over the review period. As a result, the stock of gilts held by the APF in terms of the amount paid to sellers remained at £198.3 billion.⁽¹⁾ 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.

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

Table 1 summarises operations under the APF over the review period by type of asset.

Gilt lending facility

In the three months to 30 September 2010 a daily average of £279 million of gilts were lent as part of the gilt lending facility. This was down from an average of £2.12 billion in the previous quarter. The box on page 253 provides more detail on the gilt lending facility.

Corporate bonds

In order to improve the functioning of the sterling corporate bond market, the Bank continued to offer to purchase and sell corporate bonds via the Corporate Bond Secondary Market Scheme.

Over the review period, activity in the Bank's auctions continued to be driven by broader market conditions, which were little changed since the previous *Bulletin*. The level of participation in both the purchase and sales operations (in terms of the level of transactions with the Bank) fell. As of 18 November 2010, the Bank portfolio totalled £1,516 million, compared to £1,571 million at the end of the previous review period on 26 August 2010, as the Bank sold more bonds than it purchased. Market contacts suggested that this reflected the limited scale of new issuance in the wider market.

Reflecting the improved conditions in the corporate bond market since the Scheme was introduced in March 2009, the Bank announced on 15 November that it would adapt its reserve prices to permit relatively more sales of corporate bonds in the future. The Scheme will continue to offer to buy and sell corporate bonds to serve a useful role as a backstop, particularly during periods of market uncertainty.

Commercial paper

The Bank continued to offer to purchase sterling-denominated investment-grade commercial paper (CP) issued by companies that make a material contribution to UK economic activity.

Spreads on sterling-denominated CP were little changed during the reporting period. Therefore, the majority of primary spreads remained below the spreads at which the APF offers to purchase CP. Accordingly, the stock of APF purchases fell to £0 million on 3 September, and remained at that level for the

Table 1 APF transactions by type (£ millions)

Week ending ^(a)	Commercial paper	Gilts	Corporate bond		Total ^(b)
			Purchases	Sales	
26 August 2010 ^{(c)(d)}	120	198,275	1,571		199,966
2 September 2010	0	0	5	2	3
9 September 2010	0	0	0	0	0
16 September 2010	0	0	0	4	-4
23 September 2010	0	0	7	0	7
30 September 2010	0	0	4	2	2
7 October 2010	0	0	0	0	0
14 October 2010	0	0	0	12	-12
21 October 2010	0	0	0	2	-2
28 October 2010	0	0	0	16	-16
4 November 2010	0	0	0	6	-6
11 November 2010	0	0	3	1	2
18 November 2010	0	0	0	11	-11
Total financed by a deposit from the DMO ^{(d)(e)}	0	–	341		341
Total financed by central bank reserves ^{(d)(e)}	0	198,275	1,175		199,451
Total asset purchases ^{(d)(e)}	0	198,275	1,516		199,792

(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 26 August 2010.

(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.

remainder of the reporting period. On 15 November, the Bank provided twelve months' notice of its intention to withdraw this scheme, reflecting improvements in the market.

Over the review period, the stock of CP issued by UK corporate and non-bank firms fell to around £2.2 billion, down from £2.5 billion at the time of the previous *Bulletin*.

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.⁽²⁾

While there had been no use of the facility during the review period, the Bank announced on 15 November that it had recognised the eligibility of a programme for this facility. This programme has subsequently drawn on the facility.

Credit Guarantee Scheme

The Bank did not make any purchases of bank debt issued under the Credit Guarantee Scheme from the secondary market over the period under review.

On 15 November, the Bank announced the withdrawal of this Scheme, reflecting the improvements in market functioning over the past year.

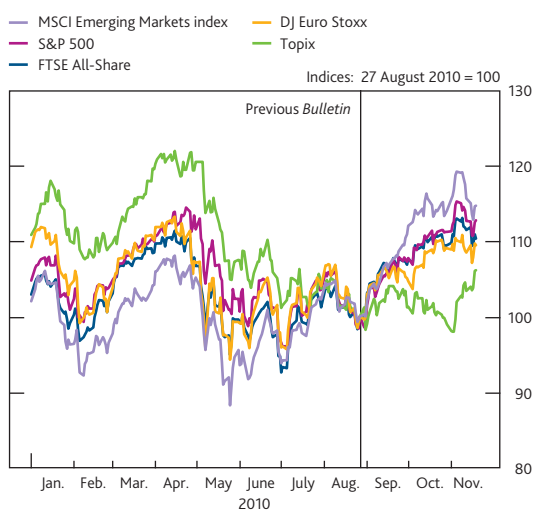
(1) Further details of individual operations are available at www.bankofengland.co.uk/markets/apf/gilts/results.htm.

(2) The SCP facility is described in more detail in the Market Notice available at www.bankofengland.co.uk/markets/marketnotice090730.pdf.

Corporate capital markets

International equity prices rose markedly (Chart 11). These rises reflected at least in part an improvement in corporate earnings expectations. Indeed, third-quarter earnings were generally better than expected, most notably for US companies. Additionally, forward-looking measures of earnings also improved. For example, the November Bank of America/Merrill Lynch Fund Manager survey showed that around 68% of respondents expected global corporate earnings to improve over the coming year, up from just over 50% in August. Furthermore, dividend swap prices rose, perhaps suggesting that market participants revised higher their expectations for future corporate earnings.⁽¹⁾

Chart 11 International equity indices^{(a)(b)}



Sources: Bloomberg and Bank calculations.

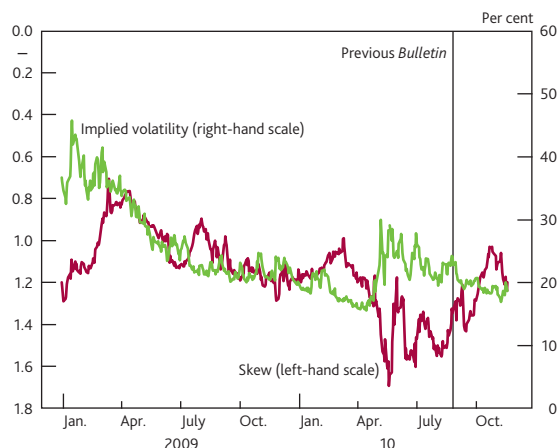
- (a) Indices are quoted in domestic currency terms, except for the MSCI Emerging Markets index, which is quoted in US dollar terms.
 (b) The MSCI Emerging Markets index is a capitalisation-weighted index that monitors the performance of stocks in emerging markets.

According to contacts, firming expectations of further monetary easing led investors to reduce their perceptions of downside risk to equity prices. Perhaps consistent with that, the skews of option-implied probability distributions of equity returns initially became less negative, although they fell back subsequently (Chart 12). Option-implied equity volatilities fell since the previous *Bulletin*. This may reflect a reduction in uncertainty surrounding the financial outlook for businesses. Less negative skews and lower volatilities would be consistent with a fall in the equity risk premium.

The more accommodative stance of US monetary policy reportedly also supported capital inflows in emerging market economies (EMEs). This is likely to have contributed to the sharp increases in EME asset prices over the review period. However, contacts noted that other factors also played a role, including a reassessment by some investors of the expected returns on EME assets relative to developed economies.

Overall, the net effect of lower equity risk premia and higher government bond yields was to lower an indicative measure of

Chart 12 Three-month option-implied volatility and skewness of FTSE 100 returns^(a)



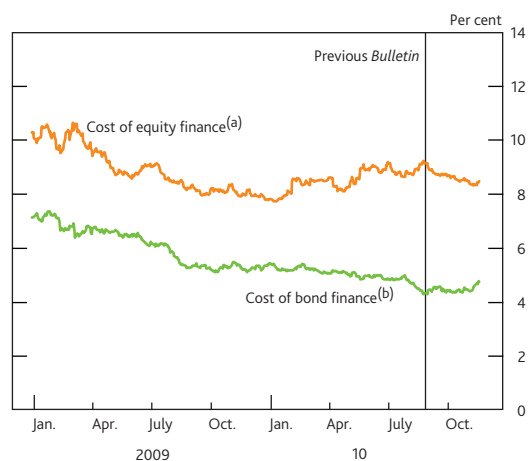
Sources: NYSE Liffe and Bank calculations.

- (a) A negatively skewed distribution is one for which large negative deviations from the mean are more likely than large positive deviations.

the nominal cost of equity finance for UK companies (Chart 13).

Investment-grade, non-financial corporate bond spreads over government bond yields of a comparable maturity were broadly unchanged (Chart 14). Consistent with the substantial improvement in conditions in the sterling corporate bond market since the Bank's Corporate Bond Secondary Market Scheme was introduced in March 2009, the Bank announced changes to the Scheme (see the box on pages 248–49 for details).

Chart 13 Indicative cost of sterling corporate bond and equity finance



Sources: Bank of America/Merrill Lynch, Thomson Reuters Datastream and Bank calculations.

- (a) The cost of equity is measured as a risk-free rate plus an equity risk premium. The risk-free rate is approximated by a ten-year nominal gilt yield and the equity risk premium is inferred from a dividend discount model. For further details of the latter, see Inkinen, M, Stringa, M and Voutsinou, K (2010), 'Interpreting equity price movements since the start of the financial crisis', *Bank of England Quarterly Bulletin*, Vol. 50, No. 1, pages 24–33.
 (b) The cost of bond finance is measured as the average yield-to-maturity on the Bank of America/Merrill Lynch Sterling Corporate Industrials and Utilities indices.

(1) For more details on dividend swaps, see the box 'Dividend swaps' in the *Bank of England Quarterly Bulletin*, Vol. 48, No. 4, page 371.

Changes to collateral accepted in the Bank's liquidity insurance operations

The Bank provides liquidity insurance to the banking system through its Discount Window Facility (DWF) and indexed long-term repo (ILTR) operations. In these operations the Bank accepts a wider range of collateral than it accepts in its short-term repo operations or in the operational lending facility.

On 30 November, the Bank published details of two changes it is making to the collateral that it accepts in these facilities in order to further enhance the Bank's ability to provide short-term liquidity insurance to counterparties, thereby underpinning confidence in the financial system.

In particular, from April 2011 the Bank will widen the pool of collateral eligible for use in the DWF, to include portfolios of loans alongside marketable securities. The Bank has also decided to amend its eligibility criteria to require enhanced disclosure of information relating to certain securities, starting in 2011.

Loan portfolios in the DWF

The DWF enables banks and building societies to borrow gilts against a wide range of collateral. It is intended for sound institutions that need temporary access to liquidity, but not as a source of long-term funding.

To obtain gilts, counterparties can pledge securitisations or covered bonds comprising loans they have originated themselves. However, the process of creating such 'own-name' securities can be costly and time consuming for counterparties. It also introduces added complexity, as securitisations generally include derivative instruments such as swaps, and other structural features, which create risks that the Bank has to manage.

By extending eligibility to portfolios of loans, the Bank intends to allow the main assets of most banks and building societies to be used as collateral in the DWF without the need for securitisation.

The Bank will apply the same standards for eligibility and risk management as for other collateral in the DWF. This means that loan portfolios will be subject to a rigorous approval process including regular reviews. And it will be necessary for counterparties to pre-position loan portfolios with the Bank.

Information transparency for asset-backed securities and covered bonds

Since December 2007 the Bank has accepted asset-backed securities (ABS) and covered bonds in its liquidity insurance

operations. One of the Bank's guiding principles for its market operations is that it must be able to manage risk and value the collateral it accepts. In view of this, the Bank has considered the information that it requires from issuers of ABS in order to be able to risk manage its collateral more effectively and efficiently.

The Bank has therefore decided to amend its eligibility criteria to require enhanced disclosure of information relating to these securities. While driven by the Bank's own risk management requirements, the Bank considers it important that this information be provided not only to the Bank but also to market participants to help improve market-wide transparency.

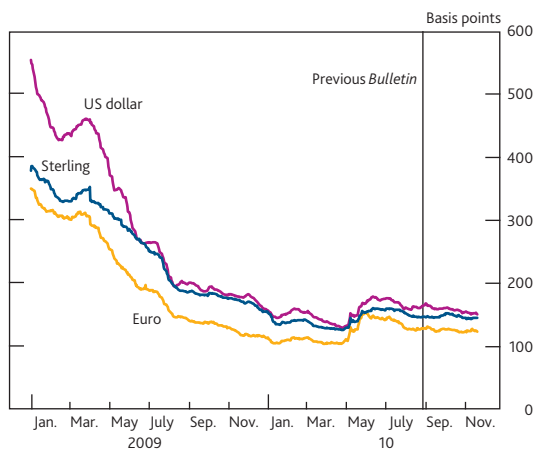
The Bank's new transparency requirements will require banks who originate securities to make the following available to market participants in order for their securities to remain eligible:

- Detailed information about the loans included within the securitisation. For most asset classes this will take the form of loan-level data including details of the borrower, underlying assets and performance of each loan, to be provided on every quarter.
- The prospectus and other key legal documents.
- Monthly reports about the security containing a standard set of minimum information.
- A summary of the structure of individual transactions including the rights of bond or note holders.
- For ABS, a cash-flow model of each transaction which accurately represents how cash flows through the structure to the end-investor.

In order to give participants in the Bank's operations time to fully comply with these requirements, their implementation will be staggered. The publication of the prospectus and other key documents will be required from July 2011 for all asset classes, but the remaining requirements will initially apply from December 2011 to residential mortgage-backed securities and covered bonds backed by residential mortgages. The application of these full requirements will gradually be extended to remaining asset classes by the end of 2012.

The Bank's actions in this area have not been taken in isolation. Other authorities, including the European Central Bank, have indicated that they will impose greater information transparency requirements on ABS, and the new EU Capital Requirements Directive will require investors to undertake their own risk assessment of securities in which they invest. Where possible the Bank has tried to ensure that its requirements will be complementary and consistent with these other initiatives.

Chart 14 International investment-grade, non-financial, corporate bond spreads^(a)

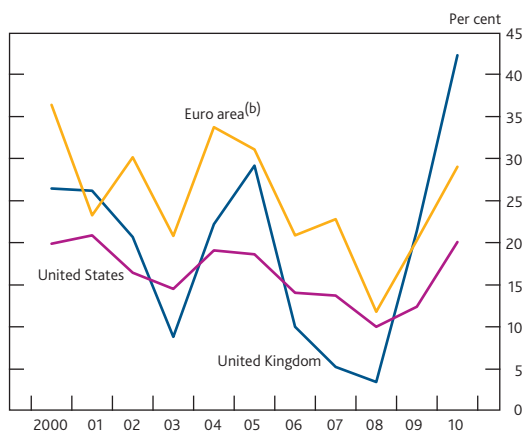


Sources: Bank of America/Merrill Lynch and Bank calculations.

(a) Option-adjusted spreads.

Gross corporate bond issuance by UK private non-financial corporations (PNFCs) picked up in September, following muted issuance in August. In 2010 to date, gross issuance surpassed its annual average over 2000–07 on the back of strong issuance for non-investment grade companies, though it fell short of the exceptional levels seen in 2009. Furthermore, the proportion of corporations issuing bonds for the first time continued to increase in 2010 (**Chart 15**). The majority of the new issuers in the United Kingdom reportedly used the proceeds to repay maturing bank loans. This seems consistent with ongoing disintermediation of banks by UK companies.

Chart 15 Proportion of first-time PNFC bond issuers^(a)



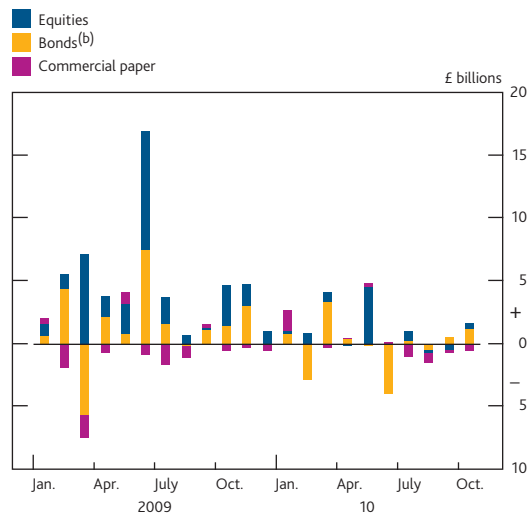
Sources: Dealogic and Bank calculations.

(a) The proportion of first-time bond issuers relative to the total number of bond issuers in a given year, for parent companies based in the United Kingdom, United States and the euro area.

(b) The back data include all euro-area countries as of 19 November 2010.

Notwithstanding relatively strong gross bond issuance, aggregate net bond issuance by UK PNFCs was only mildly positive from August to October. At the same time, equity issuance net of share buybacks was limited (**Chart 16**). Combined with a continued strong net reduction in bank

Chart 16 Net capital market issuance by UK PNFCs^(a)



(a) Non seasonally adjusted.

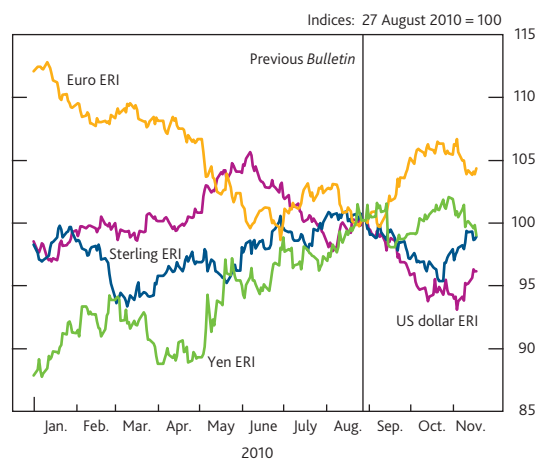
(b) Includes stand alone and programme bonds.

loans, this suggests that, in aggregate, UK PNFCs continued to deleverage their balance sheets in 2010, although at a slower pace than in 2009.

Foreign exchange

Expectations of further monetary policy measures, in particular in the United States, were also reflected in developments in exchange rates. In particular, the US dollar depreciated against the currencies of its major trading partners (**Chart 17**).

Chart 17 International exchange rate indices



Sources: Bloomberg and Bank calculations.

The sterling effective exchange rate index (ERI) depreciated by 1.8% since the previous *Bulletin*. This masked divergent moves against the two largest constituents of the sterling ERI; sterling appreciated 3.1% against the US dollar and depreciated 4% against the euro.

Movements in relative interest rates accounted for most of the developments in the sterling bilateral exchange rate against

Gilt lending facility

The Bank operates a gilt lending facility with the Debt Management Office (DMO) in which it makes available to the DMO a significant amount of gilts purchased via the Asset Purchase Facility (APF) for on-lending to the market. This facility was launched on 7 August 2009 to relieve frictions in the functioning of the gilt repo market arising from the Bank's APF purchases. This box describes the impact of the facility on the gilt repo market and the facility's usage.

Causes of frictions in the gilt repo market

Frictions can appear in the gilt repo market when particular gilts are in short supply relative to their demand. This can occur when institutions — including pension funds, central banks or sovereign wealth funds — have significant holdings that, for a variety of reasons, they may be unwilling to lend out during periods of uncertainty and short supply.

The impact of the gilt lending facility

In March 2009, the Monetary Policy Committee announced a programme of asset purchases financed by the issuance of central bank reserves (commonly known as quantitative easing). Asset purchases were spread across a range of gilts but, by August 2009, the APF gilt purchase operations had contributed to shortages of certain gilts in the open market.

Market participants suggested the impact could be most clearly seen in the repo rates for four bonds (the 5% 2014, 4¾% 2015, 5% 2018 and 4¾% 2020). By July and August, the weighted average overnight repo rate for each of these bonds was consistently around 30 basis points above the weighted average general secured overnight repo.

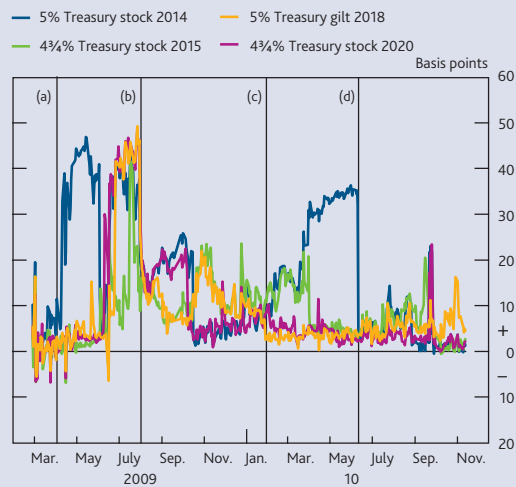
Consequently, market participants would have had to lend cash at a rate significantly below the general secured overnight rate in order to obtain any of these specific bonds (**Chart A**).

The Bank responded by launching the gilt lending facility in August 2009. The DMO may lend the gilts for a term of up to one week.⁽¹⁾ In return for the loan of specific APF gilts, the DMO delivers to the Bank UK government securities of equivalent value. Therefore, the APF's holdings of UK government securities are unaffected. There is also no net impact on the DMO's cash management operations.⁽²⁾

Immediately upon launch of the facility, repo rates stabilised on these bonds and, by the second day of the facility being available, spreads fell below 20 basis points. Subsequently, spreads have largely remained below the heightened levels seen previously.

The gilt lending facility also triggered a fall in usage of the DMO's Standing Repo Facility and Special Repo Facility. In the month prior to the introduction of the gilt lending facility, usage of the DMO's facilities had been around £2 billion daily, the vast majority of which involved the four bonds in **Chart A**.

Chart A Spread to general collateral overnight rate of gilts impacted by lending facility



Source: BrokerTec.

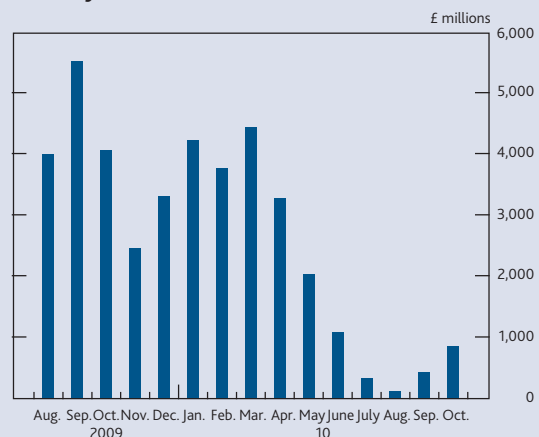
- (a) First APF gilt purchase operation.
- (b) Launch of gilt lending facility.
- (c) Pause of APF gilt purchases.
- (d) Issuance of £4.4 billion of the 5% 2014.

In the twelve months subsequent to the launch, usage has fallen to a daily average of around £4.7 million.⁽³⁾

Usage of the gilt lending facility

The gilt lending facility was used heavily after it was launched (**Chart B**). As expected, usage has been concentrated in gilts in which the Bank holds a large proportion of the free float: the total amount of a gilt in issue less the amount held by the UK Government. In the past two quarters, usage of the facility has reduced significantly as new DMO primary issuance has resulted in higher private sector holdings of gilts that had previously been in short supply.

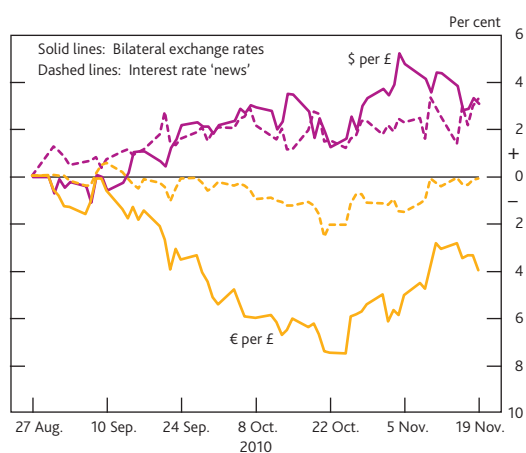
Chart B Average daily aggregate value of gilts lent through the APF gilt lending facility to the DMO on a monthly basis



- (1) The Bank makes available at least 10% of the APF's holdings of each stock, and more where the APF's holding is greater than 50% of the 'free float' (total issuance size less government holdings).
- (2) In addition, the Bank is prepared to make the APF's gilts available for use in the DMO's Standing Repo facility (this facility allows any gilt to be borrowed overnight at a current rate of 0.10%, with a simultaneous reverse repo trade executed at Bank Rate).
- (3) The Special Repo Facility was suspended on 28 August 2009. It had operated in a similar way to the Standing Repo Facility except that certain terms — such as the maturity, price or eligibility of gilts — could vary.

the US dollar (**Chart 18**). In contrast, the depreciation of sterling against the euro appeared to reflect other factors. For example, during the first half of the review period, contacts suggested that asset managers had increased their holdings of euro-area assets as concerns over the sustainability of fiscal positions of some European countries subsided. This perhaps suggested that changes in relative risk premia accounted for some of the developments in the sterling-euro exchange rate. However, these concerns reintensified towards the end of the period.

Chart 18 Implied contribution of interest rate 'news' to cumulative changes in sterling bilateral exchange rates since the previous *Bulletin*^(a)



Source: Bank calculations.

(a) For more information on the analytics required to isolate the impact of interest rate 'news' on exchange rates, see Brigden, A, Martin, B and Salmon, C (1997), 'Decomposing exchange rate movements according to the uncovered interest parity condition', *Bank of England Quarterly Bulletin*, November, pages 377–89.

Option-implied volatility, a market-based measure of uncertainty, increased for a number of currency pairs. Contacts have cited a number of factors contributing to a rise in uncertainty in currency markets. These included market participants revising their expectations of further unconventional monetary policy measures in some countries; the challenge faced by a number of EMEs in managing the consequences of large-scale capital inflows; the prospects of taxes on capital flows or capital controls; and official intervention in the currency markets by a number of countries.

Market intelligence on developments in market structure

In discharging its responsibilities to maintain monetary 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 about how markets function, which provides context for policy formulation, including the design and evaluation of the Bank's own market operations. And the Bank conducts occasional market surveys to gather additional quantitative information on certain markets.

Emergence of long-dated funding

Funding pressures continue to encourage innovations in the funding instruments used by banks. Some of these instruments were discussed in the previous *Quarterly Bulletin*. This section summarises recent market intelligence on the emergence this year of long-dated secured funding transactions.

Characteristics

Long-dated secured funding transactions typically involve banks raising two to seven-year funding against investment-grade asset-backed securities (ABS). UK banks have been particularly active issuers of this funding, with over £15 billion issued in 2010, although this represents a small proportion of banks' overall liabilities. Anecdotal evidence suggested further issuance was possible.

Long-dated secured funding was primarily a funding tool as it does not involve risk transfer nor have capital benefits, as the risks associated with the collateral remained with the bank raising funding.

Structure

There are two main types of long-dated secured funding instruments, although they are economically equivalent. Usage was reportedly fairly evenly split between the two, with some banks funding via both forms.

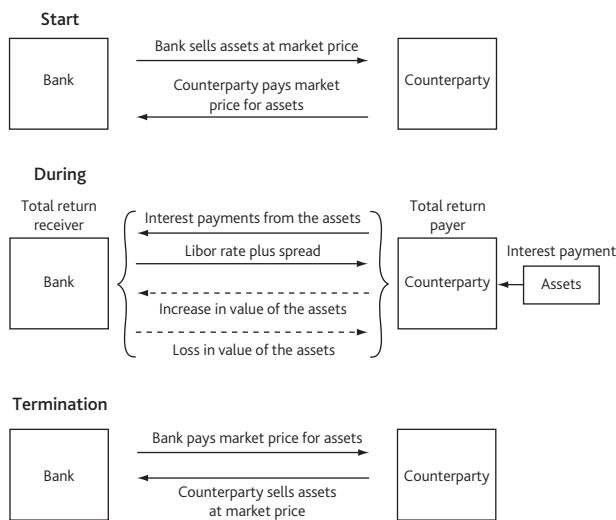
Conventional repo transaction

In a conventional long-dated repo transaction a bank sells an asset in exchange for cash and agrees to buy it back at a later date at a price agreed in advance, with the difference in the selling price reflecting the cost of the funding. This, hence, represents collateralised long-term funding for the bank selling the security.

'Synthetic repo' using total return swaps

A synthetic repo typically combines an outright sale of an asset (and potential repurchase) with a total return swap (TRS) derivatives transaction (**Figure 1**).

The transaction involves a bank selling an asset to a counterparty. At the same time, a TRS is entered into whereby the bank (the TRS receiver) agrees to pay the counterparty (the TRS payer) an interest rate of Libor plus a spread and in return receive any interest payments on the asset. Importantly, as part of the TRS, any change in the value of the asset is transferred (via mark-to-market payments) between the two

Figure 1 Typical synthetic repo structure

parties; falls in its value trigger payments from the bank to the counterparty and *vice versa*. This has the effect of leaving the economic risk of the asset with the bank, as with a conventional repo. In principle, the TRS could be provided by a third party independent of the asset sale, but this is reportedly uncommon.

At the end of the transaction, the counterparty will usually sell the asset; it will have been compensated by the bank for any change in the asset's value through the daily mark-to-market payments.

In most cases, the bank will buy back the asset from the counterparty at the termination of the agreement. This is because, while there is no formal obligation for the bank to buy back the asset, if it is sold to another party, the bank has to recognise any change in value of the asset. The assets used have often been legacy assets issued at a higher price than their current value. This gives banks an incentive to buy the asset back given it will then remain on their banking book and they can then avoid crystallising a loss. For this reason, these transactions are often referred to as 'failed sales' for accounting purposes, as the sale is effectively unwound at the end of the transaction.

A synthetic repo TRS structure might seem a complex way of raising funding when a conventional repo can achieve the same economic outcome. However, some institutions prefer using TRS systems and (ISDA) documentation as they find them more suited to longer-term trades. This is partly because under a TRS, both margin payments and the eventual return of the asset can be in cash equivalent, rather than in asset form. In addition, institutions may prefer to retain available repo lines for short-term funding and investment.

Other ways of a bank raising long-term secured funding are via securities lending or collateral swaps. These allow banks to

source liquid assets (eg gilts), which can then be used to raise funding. While market contacts report this as an area being increasingly explored, they suggest that the transactions thus far have tended to be shorter-dated, and are thus outside the scope of this box.

Cash borrowers/TRS payers

Prior to the crisis, banks could rely on short-dated unsecured borrowing and securitisation markets for funding, with long-dated repos reportedly rare. However, lenders' appetite for unsecured exposures has since reduced and securitisation markets have only partially reopened.

Over the past year, UK banks were thought to have been most active in raising funding via long-dated secured markets. It was reportedly used to refinance collateral that had been placed in the Bank's Special Liquidity Scheme. In addition, these instruments helped banks meet new regulatory requirements that aim to lengthen banks' liquidity and funding profiles.

Banks that operate in euro-area member countries were also thought to have been active in long-dated secured markets partly in anticipation of scheduled changes to the ECB's collateral rules. These rule changes will increase the cost of pledging lower-quality collateral with the ECB.

Lenders/TRS receivers

Long-term secured funding provides counterparties with dual recourse in the event of default — to the borrowing bank and to the underlying collateral. In contrast, senior debt holders had recourse only to the former and residential mortgage-backed securities (RMBS) owners to the latter. This increases the attractiveness of long-dated secured funding for some investors. The increased use may in part also reflect investors looking to extend the maturity of lending in return for higher yields.

So far, most of the counterparties to these transactions (ie the repo cash lenders and TRS receivers) have been liquid banks, which implies that these transactions have mainly recycled liquidity around the banking system. Some modest activity has been reported outside of the banking sector. Contacts thought there were a number of obstacles to wider participation in the market. This included a lack of familiarity with a relatively new market, the lack of a liquid secondary market, and a perception among some potential participants that TRS structures were too complex.

Collateral

The long-dated repo market has emerged to help fund ABS assets that had become illiquid during and after the crisis. Most of the assets being funded are RMBS, but other types of ABS (eg student loans, credit card receivables) and corporate bonds have also been used. There was some interest in

funding newly originated 'own-name' assets, although the bank selling the asset had to provide extra collateral to reflect the potential higher correlation between its credit risk and the value of the asset.

The assets used as collateral generally had a minimum rating of single-A, but market contacts suggested that the majority of the transactions were against triple-A rated ABS collateral. Collateral was generally marked-to-market daily with any related remargining (under a repo) or payment (under a TRS) then being carried out.

There appeared to be no market standard for termination triggers for these transactions, either on the credit rating of the borrower and/or the quality of the collateral, but some form of triggers were used in most transactions.

Pricing

Banks borrowing via long-dated secured transactions were typically paying a rate above that paid on covered bonds, as the latter were generally backed by better-quality collateral and had a more liquid secondary market. But the rate was below that payable on senior debt as this was an unsecured exposure.

Pricing on individual long-dated secured transactions was heavily influenced by the perceived credit risk of the underlying borrower, the term, and quality and diversity of collateral. Typically, the bank selling the asset paid a floating rate between 100–200 basis points over three-month Libor (**Table A**).

Table A Typical characteristics of conventional and synthetic long-dated repos

Market size	UK banks issued over £15 billion in 2010.
Term	2–7 years.
Currency	Sterling, US dollars and euros.
Region	United States, United Kingdom and Europe.
Borrowers	Banks, especially UK banks.
Lenders	Mainly banks, but some asset managers.
Collateral	Investment grade, though not defined as liquid by regulatory standards. Usually ABS.
Pricing	Floating rate of three-month Libor plus 100–200 basis points (depending on collateral and counterparty).