Markets and operations

- International monetary policy diverged over the review period, with the Federal Reserve bringing an end to 'tapering', while the European Central Bank and the Bank of Japan both announced further loosening.
- Long-term interest rates declined somewhat, continuing the downward trend observed since the start of the year. Contacts attributed the fall to a combination of changes in both the expected path of policy and the level of long-run real rates, as well as reductions in term premia.
- Moves in exchange rates were broadly in line with developments in the outlook for the international economy and central bank policy. There was a modest pickup in volatility in the foreign exchange market.
- In October, worries about low growth contributed to a period of heightened volatility in a number of markets, with the turbulence thought to have been exacerbated by low market liquidity. Some risky asset prices fell during the episode but subsequently recovered much of the lost ground.

Overview

UK short-term market interest rates fell significantly over the review period. That reflected both domestic data and a weakening in the outlook for the international economy — and the resulting expectation among market participants that monetary policy tightening was likely to occur later than previously thought.

There was also a decline in UK long-term interest rates over the review period, in line with movements overseas. Contacts pointed to a number of drivers, placing significant weight on the slowing in the expected pace of monetary tightening and lower expected long-run policy rates. Contacts also thought that the term premium required to hold long-maturity assets had fallen.

In the United States, the Federal Reserve stopped increasing the stock of assets held under its quantitative easing programme, bringing to an end its 'tapering' of asset purchases. In contrast, reflecting rising concerns about the outlook for domestic growth and inflation, both the European Central Bank and the Bank of Japan announced further material loosening in monetary policy.

Divergence in the outlook for growth and the path of monetary policy in different countries caused movements in major currency pairs and there was a rise in exchange rate volatility over the review period. The sterling effective rate index declined around 1%, consistent with revised market expectations for the path of monetary policy tightening in the United Kingdom.

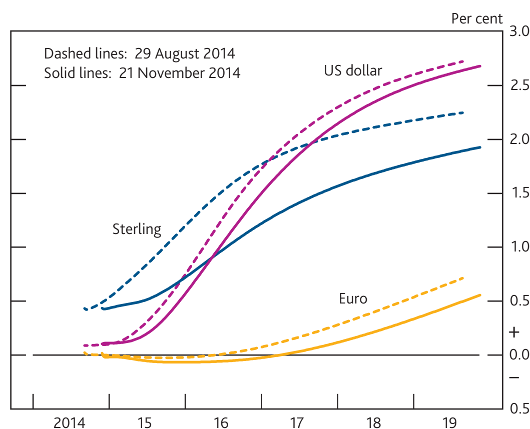
Worries about the outlook for international growth — with contacts citing various risks, ranging from geopolitical tensions to concern about the possible spread of the Ebola virus — led to falls in risky asset prices and a sharp rise in volatility across asset classes in the middle of October. Much of the sell-off in equity prices later unwound, but corporate bond spreads increased over the period as a whole.

In discharging its responsibilities to ensure monetary and financial stability, the Bank gathers information from contacts across a range of financial markets. Regular dialogue with market contacts provides valuable insights into how markets function and provides context for the formulation of policy, including the design and evaluation of the Bank's own market operations. The first section of this article reviews developments in financial markets between the 2014 Q3 *Quarterly Bulletin* and 21 November 2014. The second section describes the Bank's operations within the Sterling Monetary Framework.

Monetary policy and interest rates

In the United Kingdom, there was a material decline in short-term market interest rates over the review period (**Chart 1**). The fall in short-term interest rates reflected both domestic data and a weakening in the outlook for the international economy. As a result, the expected timing of the first increase in Bank Rate, as implied by market interest rates, was pushed out substantially, and the expected pace of subsequent Bank Rate rises slowed. US and euro-area short-term interest rates also fell over the review period.

Chart 1 Instantaneous forward interest rates derived from overnight index swap (OIS) contracts[(a)]



Sources: Bloomberg and Bank calculations.

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

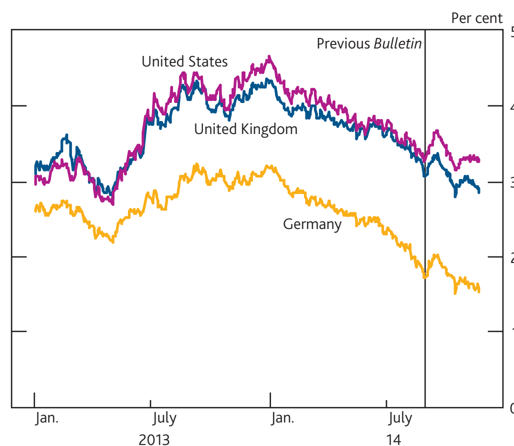
In the United States, the Federal Open Market Committee (FOMC) concluded its programme of asset purchases following the October policy meeting. The FOMC also restated the guidance that it would remain appropriate to maintain the current target range for the federal funds rate for a considerable period of time.

In contrast, the European Central Bank (ECB) and the Bank of Japan (BoJ) both announced further monetary policy easing in the light of growing concerns about growth and weak inflation in those economies. In September, the ECB Governing Council announced a further 10 basis point cut in its benchmark interest rates, and also said that it would commence purchases of asset-backed securities (ABS) and covered bonds. Later in the review period, President Draghi confirmed that the ECB planned to expand its balance sheet significantly. Contacts typically believed that this would require purchases of corporate bonds or sovereign debt in addition to ABS and covered bonds.

At the end of October, the BoJ surprised market participants by extending its asset purchase programme. The BoJ increased its purchases of Japanese government bonds from ¥50 trillion to ¥80 trillion per annum and tripled its purchases of exchange-traded funds (ETFs) and real estate investment trusts (REITs). There was a significant financial market reaction, including falls in Japanese government bond yields and a weakening of the yen. Later in the review period, the Japanese government provided additional support to spending by delaying a scheduled increase in consumption tax.

International long-term nominal interest rates continued to decline (**Chart 2**). In part, contacts thought that this reflected a growing expectation among market participants that the long-run neutral level of interest rates was likely to be lower than in the past. And in the United Kingdom, in particular, there had been a continued shift into bonds by liability-driven investors, such as life insurers and pension funds, causing a decline in the term premium on fixed-income assets.

Chart 2 Selected five-year government bond yields, five years forward[(a)]



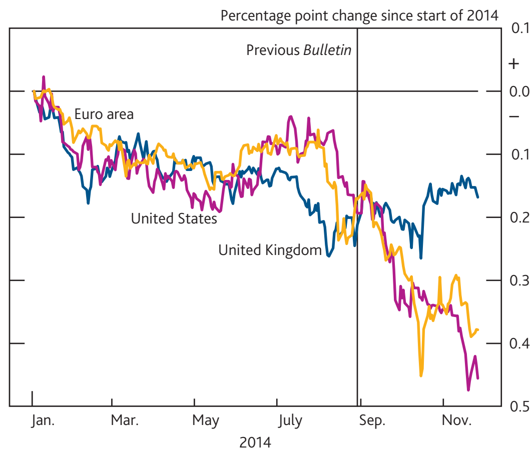
Sources: Bloomberg and Bank calculations.

(a) Forward yields derived from the Bank's government liability curves.

Meanwhile, falls in long-run nominal interest rates in the United States and euro area were, in part, due to lower market-implied inflation expectations. For example, both dollar and euro five-year inflation swaps, five years forward, fell markedly over the review period (**Chart 3**). Contacts attributed this to declines in the price of oil and weakening global growth prospects. In contrast, UK market-implied expectations rose slightly over the review period, which contacts attributed to increased demand from domestic

liability-driven investors for inflation-linked bonds. Contacts also pointed to the fact that the relatively high share of taxation in UK petrol prices tended to lessen the impact of changes in oil prices on headline inflation.

Chart 3 Selected five-year inflation swap rates, five years forward(a)



Sources: Bloomberg and Bank calculations.

(a) Forward swap rates derived from the Bank's inflation swap curves.

Around the middle of October there were sharp falls in international interest rates amid a brief episode of heightened volatility. The proximate cause was a disappointing US data outturn, but this occurred against the backdrop of a steady flow of disappointing data in the euro area since the summer, and contacts noted a growing list of downside risks as being among the contributory factors: geopolitical tensions in Ukraine and the Middle East; slowing growth in China; declining oil prices; and rising concern about the spread of the Ebola virus.

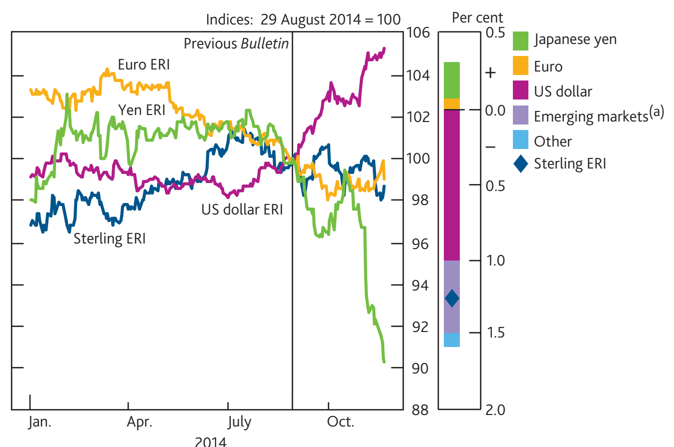
Notably, during the most volatile period there were signs of illiquidity in the market for US Treasuries — usually thought to be one of the deepest and most liquid financial markets. And many contacts found the magnitude of the declines in bond yields surprising. Contacts suggested that the price moves may have been made more abrupt due to the rapid closure of positions that investors had taken in anticipation of increases in US interest rates. Contacts also thought that volatility may have been exacerbated by a reluctance of traditional market makers to provide liquidity during the episode.

Euro-area periphery sovereign bond yields meanwhile rose during the period of heightened volatility as investors demanded higher returns for holding riskier assets. For most of these countries, however, yields fell back down over the following weeks and ended the review period relatively unchanged. Greek sovereign bond yields increased by more than those of other countries and remained elevated, which contacts attributed to political uncertainty there.

Foreign exchange

Sterling had been a focus of foreign exchange markets for much of the past year due to strong economic data and the expectation that monetary policy tightening would occur in the United Kingdom before other G10 economies. But weaker-than-expected domestic data pushed out market expectations for the timing of the first rise in Bank Rate. This caused much of the speculative interest in further sterling appreciation to dissipate. Contacts also reported that the shift in focus away from sterling was also partly driven by uncertainty related to the Scottish referendum. Sterling declined over the review period as a whole, with the sterling ERI falling by 1.3% (**Chart 4**).

Chart 4 Selected exchange rate indices (left-hand side) and contributions to changes in the sterling ERI since 29 August 2014 (right-hand side)



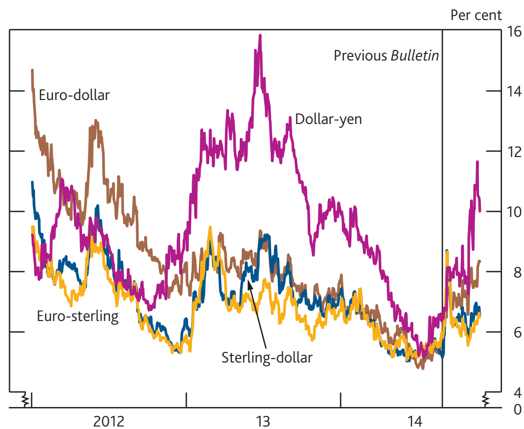
Sources: Bloomberg, European Central Bank, Thomson Reuters Datastream and Bank calculations.

(a) The emerging market currencies in the narrow sterling ERI are: Chinese renminbi, Czech koruna, Indian rupee, Polish zloty, Russian rouble, South African rand and Turkish lira.

Contacts reported that participants in the foreign exchange market were now placing particular emphasis on the macroeconomic and policy divergence between the United States on the one hand, and the euro area and Japan on the other. Consistent with that view, the US dollar ERI increased by around 5% over the review period, due to both strong economic data and further moves towards normalisation of monetary policy. Meanwhile, the yen ERI fell by nearly 10% over the review period, and the yen reached new seven-year lows against the US dollar (**Chart 4**).

The volatility of most major currency pairs implied by options markets increased in September (**Chart 5**). In the case of sterling, contacts reported that this was partly driven by the uncertainty related to the Scottish referendum. But implied volatility of other currency pairs also picked up around this time, and has remained relatively high compared to earlier in the year. This upward move has been particularly notable in the euro-dollar and dollar-yen exchange rates, reflecting both higher observed volatility and uncertainty about the economic outlook and relative stance of monetary policy.

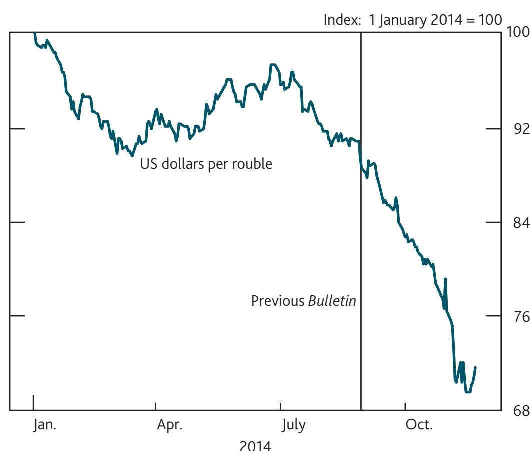
Chart 5 Three-month option-implied volatility of foreign exchange rates



Source: Bloomberg.

Elsewhere, the Russian rouble has fallen by over 19% since the start of the review period (**Chart 6**). A number of factors were said by contacts to have contributed to the currency's decline, including continuing tensions in Ukraine and associated sanctions, and a sharp decline in the oil price, with resultant pressure on the Russian balance of trade. In mid-November, the Central Bank of Russia announced it had abandoned the rouble trading band and would allow the exchange rate to be determined by market factors. It also limited access to its foreign exchange swaps to try to stabilise foreign exchange market conditions.

Chart 6 Russian rouble versus US dollar exchange rate

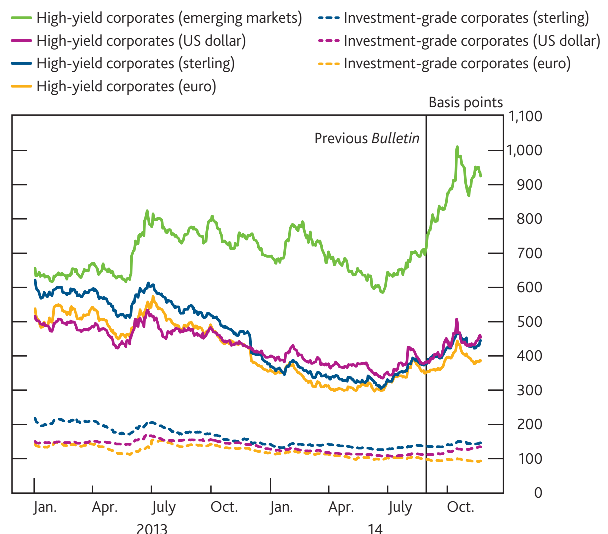


Source: Bloomberg.

Corporate capital markets

Following the usual seasonal summer lull, bond issuance by UK private non-financial corporations picked up significantly in September, and there was further modest issuance over the remainder of the review period. There continued to be a measured repricing under way in advanced-economy high-yield corporate bond markets, with further increases in credit spreads over the review period (**Chart 7**). This was thought by contacts to be in part the result of a gradual rise in the risk premium in the high-yield corporate bond market, which they suggested had become overvalued during the first half of the year. There was also an uptick in UK and US investment-grade corporate bond spreads over the review period. The lack of a corresponding increase in euro-area investment-grade bond spreads was thought to be due to the expectation that the ECB would embark upon some form of corporate or sovereign bond-based asset purchase programme in the near future.

Chart 7 International corporate bond option-adjusted spreads



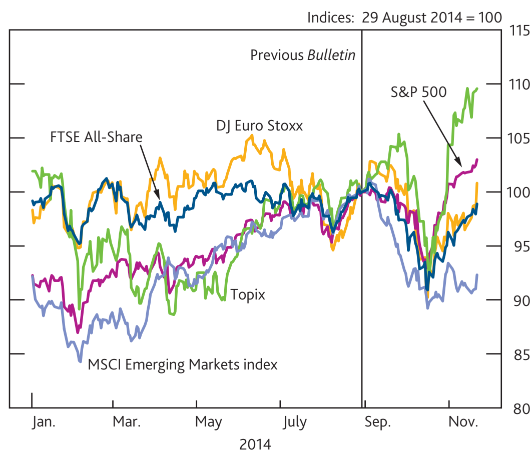
Source: BofA Merrill Lynch Global Research.

There was a short-lived pickup and fall back in corporate bond spreads in October, coinciding with the period of cross-asset volatility (**Chart 7**). However, trading conditions were thought to have remained orderly during the episode. Spreads subsequently resumed their more gradual upward trend.

In common with developments in other markets, there was also a brief fall in international equity prices in mid-October (**Chart 8**). While much of the decline in equity prices subsequently unwound, emerging market stocks remained lower than at the start of the review period, with the MSCI Emerging Markets index down by 7.7%. Contacts attributed this decline to fundamental factors such as weaker earnings growth. In contrast, the S&P 500 index recovered earlier declines and returned to all-time nominal highs, consistent with the stronger perceived economic outlook in the United States compared with other parts of the world. Implied volatility in equity markets across advanced economies picked up in the middle of October consistent with the sell-off in risky asset markets, but has since fallen back to near-record lows (**Chart 9**).

Following strong issuance in the first half of the year, there was a marked slowdown in the overall value of UK initial public offerings (IPOs) (**Chart 10**). The brief episode of

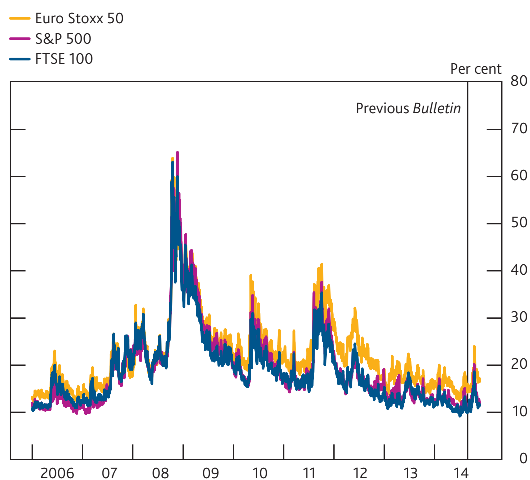
Chart 8 International equity indices(a)(b)



Sources: Bloomberg and Bank calculations.

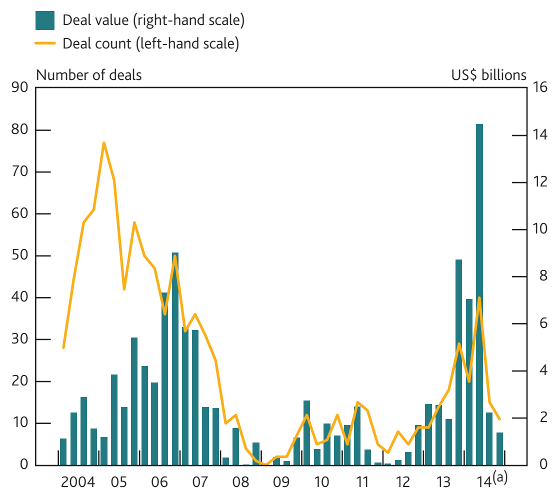
(a) Indices are quoted in domestic currency terms, except for the MSCI Emerging Markets index, which is quoted in US dollar terms.
(b) The MSCI Emerging Markets index is a free-float weighted index that monitors the performance of stocks in global emerging markets.

Chart 9 Three-month forward option-implied volatility in equity markets



Source: Bloomberg.

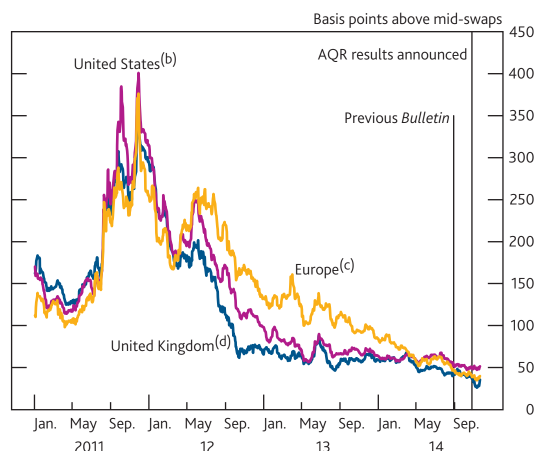
Chart 10 Total value and number of initial public offerings by UK firms



Source: Dealogic.

(a) Data up to 21 November 2014.

Chart 11 Indicative senior unsecured bank bond spreads(a)



Sources: Bloomberg, Markit Group Limited and Bank calculations.

(a) Constant-maturity unweighted average of secondary market spreads to mid-swaps of banks' five-year senior unsecured bonds, where available. Where a five-year bond is unavailable, a proxy has been constructed based on the nearest maturity of bond available for a given institution and the historical relationship of that bond with the corresponding five-year bond.
(b) Average of Bank of America, Citi, Goldman Sachs, JPMorgan Chase & Co., Morgan Stanley and Wells Fargo.
(c) Average of Banco Santander, BBVA, BNP Paribas, Crédit Agricole, Credit Suisse, Deutsche Bank, ING, Intesa, Société Générale, UBS and UniCredit.
(d) Average of Barclays, HSBC, Lloyds Banking Group, Nationwide, Royal Bank of Scotland and Santander UK.

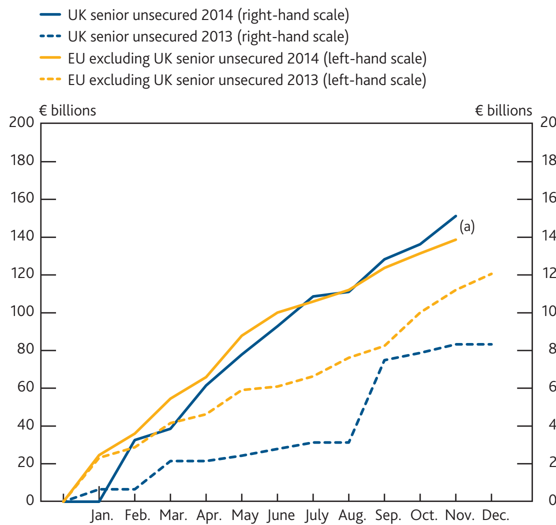
volatility in October caused a number of IPOs to be cancelled or postponed, as flotations typically require calm market conditions to proceed. Contacts did not expect the pace of IPOs to increase over the rest of the year. In contrast, US IPOs picked up significantly, which was attributed by contacts to the relative resilience of the US market, which is considerably deeper than in Europe. There were 49 US IPOs in October and November alone, worth a total of US$16 billion.

Bank funding markets

In the secondary market, spreads on European and UK bank debt declined a little further (**Chart 11**). Lenders also continued to issue both senior unsecured (**Chart 12**) and covered bonds in the primary market. Bank funding markets were subdued in October, thought to be because issuers were waiting until after the publication of the results of the ECB's asset quality review (AQR).

Market participants viewed the outcome of the AQR and stress tests as generally positive and more credible than previous exercises and felt the review provided some assurance about the quality of European banks' assets. In the case of the UK banking sector, contacts continued to look ahead to the upcoming results of the Bank of England's stress test of UK lenders, due to be published in mid-December. There was little market reaction to the Financial Stability Board's announcement of its proposal for banks to hold a minimum level of total loss-absorbing capacity (TLAC).

Chart 12 Senior unsecured bond issuance by UK and European (excluding UK) lenders in public markets



Sources: Bloomberg and Bank calculations.

(a) Data to 21 November 2014.

Operations

Operations within the Sterling Monetary Framework and other market operations

This section describes the Bank's operations within the Sterling Monetary Framework (SMF) over the review period, and other market operations. The Bank widened access to its SMF to accept broker-dealers and central counterparties (CCPs) on 5 November 2014.(1)

The level of central bank reserves is determined by (i) the stock of reserves injected via the Asset Purchase Facility (APF); (ii) the level of reserves supplied by operations under the SMF; 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. As a consequence, 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

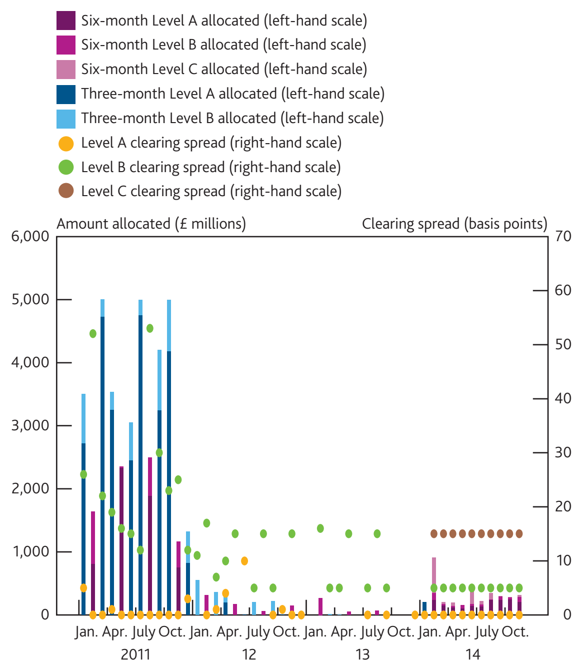
The Bank conducts Indexed Long-Term Repo (ILTR) operations as part of its provision of liquidity insurance to banks, building societies and broker-dealers. These typically occur once every calendar month. During the review period, the Bank offered a minimum of £5 billion via six-month ILTR operations on 9 September, 7 October and 11 November 2014 (**Table A**).

Over the quarter, and in line with recent quarters, the aggregate level of reserves supplied by the Bank through quantitative easing (QE) remained in excess of the level that would otherwise be demanded by market participants. Usage of the ILTR therefore remained limited (**Chart 13**).

Table A Indexed Long-Term Repo operations

	Total	Collateral set summary		
		Level A	Level B	Level C
9 September 2014 (six-month maturity)				
Minimum on offer (£ millions)	5,000			
Total bids received (£ millions)	299	245	49	5
Amount allocated (£ millions)	299	245	49	5
Clearing spread (basis points)		0	5	15
7 October 2014 (six-month maturity)				
Minimum on offer (£ millions)	5,000			
Total bids received (£ millions)	288	250	33	5
Amount allocated (£ millions)	288	250	33	5
Clearing spread (basis points)		0	5	15
11 November 2014 (six-month maturity)				
Minimum on offer (£ millions)	5,000			
Total bids received (£ millions)	317	205	87	25
Amount allocated (£ millions)	317	205	87	25
Clearing spread (basis points)		0	5	15

Chart 13 ILTR reserves allocation and clearing spreads(a)



(a) Where there has not been any allocation to a collateral set, no clearing spread is marked.

Contingent Term Repo Facility

The Contingent Term Repo Facility (CTRF) is a contingent liquidity facility, designed to mitigate risks to financial stability arising from a market-wide shortage of short-term sterling

(1) Further details are available at www.bankofengland.co.uk/publications/Pages/news/2014/144.aspx.

liquidity.[1] The Bank judged that, in light of market conditions, CTRF auctions were not required in the review period.

Discount Window Facility

The bilateral on-demand Discount Window Facility (DWF) is aimed at institutions experiencing a firm-specific or market-wide shock. It allows participants to borrow highly liquid assets in return for less liquid collateral in potentially large size and for a variable term. The average daily amount outstanding in the DWF in the three months to 30 June 2013, lent with a maturity of more than 30 days, was £0 million.

Other operations

Funding for Lending Scheme

The Funding for Lending Scheme (FLS) (henceforth 'the Scheme') was launched by the Bank and HM Treasury on 13 July 2012. The initial drawdown period for the Scheme ran from 1 August 2012 until 31 January 2014. The drawdown period for the FLS extension opened on 3 February 2014 and will run until 29 January 2016.[2] The quantity each participant can borrow in the FLS is linked to their lending to the UK real economy, with the incentives skewed towards supporting small business lending.[3]

The Bank publishes quarterly data showing, for each group participating in the FLS extension, the amount borrowed from the Bank and the net quarterly flows of lending. During the three months ending 30 September 2014, eleven of the 38 groups participating in the FLS extension made drawdowns totalling £2.0 billion. Participants also repaid £0.1 billion from the first stage of the FLS. This took outstanding aggregate drawings under the Scheme to £47.6 billion.[4]

US dollar repo operations

On 23 April 2014 in co-ordination with other central banks and in view of the improvement in US dollar funding conditions, the Bank ceased the monthly 84-day US dollar liquidity-providing operations. The current timetable for the seven-day operations will continue until further notice. The network of bilateral central bank liquidity swap arrangements provides a framework for the reintroduction of US liquidity operations if warranted by market conditions.[5] There was no use of the Bank's US dollar facilities during the review period.

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 (CRDs). 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 £5.3 billion of gilts and £0.3 billion of other debt securities.

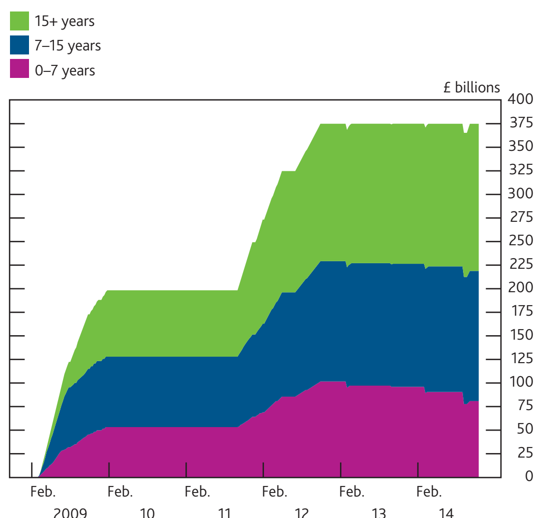
Asset purchases

Gilts

Alongside the publication of the *Inflation Report* on 12 February 2014, the Monetary Policy Committee announced that it intends to maintain the stock of purchased assets, including reinvesting the cash flows associated with all maturing gilts held in the APF, at least until Bank Rate has been raised from its current level of 0.5%.[6] In line with this, the cash flows associated with the redemption of the September 2014 gilt owned by the APF were reinvested. Reinvestment operations took place in the weeks beginning 8 September, 29 September and 6 October. There was a two-week pause in operations in the week of the Scottish referendum and the week after the referendum.

The total stock of gilts outstanding, in terms of the amount paid to sellers, was £375 billion, of which £80.8 billion of purchases were made in the 3–7 years residual maturity range, £138.0 billion in the 7–15 years residual maturity range and £156.1 billion with a residual maturity of greater than 15 years (**Chart 14**).

Chart 14 Cumulative gilt purchases by maturity[a][b]



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

(1) Further details are available at www.bankofengland.co.uk/markets/Pages/money/ctrf/default.aspx.
(2) This is in accordance with the announcement on 2 December 2014. Further details are available at www.bankofengland.co.uk/publications/Pages/news/2014/165.aspx.
(3) Further details are available at www.bankofengland.co.uk/markets/Pages/FLS/default.aspx.
(4) Further details are available at www.bankofengland.co.uk/markets/Pages/FLS/data.aspx.
(5) Further details are available at www.bankofengland.co.uk/markets/Documents/marketnotice140124.pdf.
(6) Further details are available at www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14febo.pdf.

Gilt lending facility[1]

The Bank continued to offer to lend gilts held in the APF via the Debt Management Office (DMO) in return for other UK government collateral. In the three months to 30 September 2014, the daily average aggregate value of £1,693 million of gilts was lent as part of the gilt lending facility. Average daily lending in the previous quarter was £977 million.

Corporate bonds

There were no purchases of corporate bonds during the review period and future purchase or sale operations will be dependent on market demand, which the Bank will keep under review in consultation with its counterparties in the Corporate Bond Scheme.[2] The Scheme currently holds no bonds.

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.[3] No purchases were made during the review period.

(1) 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; www.bankofengland.co.uk/publications/Documents/quarterlybulletin/mo10nov.pdf.
(2) More information can be found in the Market Notice at www.bankofengland.co.uk/markets/Documents/marketnotice130627.pdf.
(3) The SCP facility is described in more detail in the Market Notice available at www.bankofengland.co.uk/markets/Documents/marketnotice120801.pdf.