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- A change to the Monetary Policy Committee’s (MPC’s) monetary policy communication schedule took effect in August, with the simultaneous release of the August MPC policy decision, minutes and the Inflation Report.

- There were recurring bouts of financial market volatility, particularly in Chinese equities, with some spillover to developed-economy equity prices and exchange rates.

- Corporate credit spreads continued to rise, particularly US high-yield spreads, reflecting the impact of a further fall in the price of oil on the energy sector.

- Both short-term and long-term market interest rates in the United Kingdom and United States declined over the review period, reflecting concerns about the outlook for global growth.

### Overview

A change to the Bank’s monetary policy communication schedule took effect in August, with the simultaneous release of the August MPC policy decision, minutes and Inflation Report. There was considerable interest ahead of the change, but in the event, the market reaction to the policy decision and accompanying communications was muted.

The review period as a whole was coloured by a number of episodes of heightened financial market volatility. The volatility was initially confined largely to Chinese equity prices, with the authorities there enacting a range of measures to halt declines in the domestic stock market. But further falls in Chinese equity prices in August led to a rise in risk aversion and declines in share prices in developed markets. Both the FTSE All-Share and the S&P 500 ended the period materially lower than at the start.

The sterling exchange rate index ended the period over a per cent higher than at the start. But there were some significant moves in a number of exchange rate pairs during that time, particularly around the period of peak volatility in equity markets, which contacts suggested was at least partly due to the rapid reversal of cross-border trades that had been funded in euros and yen.

UK and US short-term market interest rates fell over the review period as a whole, with the market-implied timing of the first rate rise being pushed out by several months in both countries. Contacts attributed this primarily to international developments that had increased fears of a slowdown in global growth, with particular concerns about the prospects for China. These worries were evident in commodity prices, with the oil price falling to new post-crisis lows. Nevertheless, some market contacts continued to think that the Federal Open Market Committee (FOMC) might raise rates in 2015. At the time of going to print, the attention of market participants was focused keenly on the outcome of the 17 September policy meeting of the FOMC.

Concerns about the outlook for international growth and inflation also pushed down on long-term interest rates. And there was a decline in medium-term market-implied inflation expectations in the United Kingdom, United States and euro area. There was also a material drop in long-term measures of inflation expectations in the United States, but these remained resilient in the United Kingdom. That was thought to partly reflect relatively price-insensitive demand for inflation compensation from UK pension funds and insurers.

In euro-area fixed-income markets, sentiment improved following the successful resolution of negotiations over the release of the final tranche of funds under the Greek bailout programme. As a result, there was a further decline in periphery government bond spreads over bunds.
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 3 June and 3 September 2015. The second section describes the Bank’s own operations within the Sterling Monetary Framework.

Monetary policy and interest rates
A change in the Monetary Policy Committee’s (MPC’s) communication strategy took effect in August, as the Committee moved to a schedule in which it released the minutes of its policy meeting and the policy decision on the same day. The Bank also published the August Inflation Report to coincide with the policy decision. Contacts looked ahead to the first policy decision under the new schedule with anticipation, with some suggesting that the change might lead to higher volatility on such days relative to the past, but lower volatility on other days. In the event, the market reaction was muted compared with the response to many past Inflation Reports (Chart 1).

UK and US short-term market interest rates declined over the review period as a whole (Chart 2). Much of that fall occurred in August, following considerable global financial market turbulence, which some contacts thought was likely to delay the timing of rate increases. Subsequent commentary from Federal Open Market Committee (FOMC) members at Jackson Hole, anticipating a pickup in inflation, was thought by contacts to have left open the possibility that the Federal Reserve might still raise rates in 2015. At the time of going to print, the attention of market participants was focused keenly on the outcome of the 17 September policy meeting of the FOMC.

Heightened concern about the prospects for global growth also pushed down on long-term government bond yields in the United States and United Kingdom (Chart 3) and there were sharp falls in a range of commodity prices. A number of commodity prices fell to multiyear lows, with the Brent front-month oil contract declining to US$43 per barrel in August — the lowest since 2009. Contacts suggested that the latest drop in commodity prices was a reflection of slowing global demand. That was in contrast to the decline observed in the price of oil towards the end of 2014 and into the first half of this year, which was typically attributed to supply-side factors, including the decision of members of the

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**Chart 1** One-year, one-year forward overnight index swap (OIS) rate intraday reaction to Inflation Report publication(a)

**Chart 2** Instantaneous forward interest rates derived from OIS contracts(a)

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

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(a) These changes were introduced following Kevin Warsh’s review of the MPC’s transparency practices and procedures, available at www.bankofengland.co.uk/publications/Pages/news/2014/168.aspx.
Organization of Petroleum Exporting Countries not to reduce supply in order to keep prices stable.

In the euro area, the European Central Bank (ECB) continued its programme of large-scale asset purchases. Following the market volatility in August, comments from ECB policymakers were thought to have increased expectations that the ECB would loosen policy further, for example by extending its asset purchase programme. At the end of the review period, the ECB Governing Council announced that the limit for purchases would be increased from 25% to 33% of each individual security. Separately, following a period of heightened uncertainty in late June and early July concerning Greece’s fiscal position, a deal was reached between Greece and its creditors, enabling disbursement of the next tranche of funds under the Economic Adjustment Programme. This helped to lift sentiment in the euro area and allay fears of Greek exit from the eurozone. After rising sharply, Greek sovereign spreads to bunds ended the review period lower and there was limited contagion to other European periphery bond spreads (Chart 4).

Chart 4 Selected ten-year European periphery government bond spreads to bunds

There was a decline in implied medium-term inflation expectations across advanced economies, which contacts attributed to falling commodity prices and fears of slowing global growth. Spot five-year inflation swap rates finished the review period markedly lower in the United Kingdom, United States and euro area. But while US five-year, five-year forward inflation swap rates also declined, those of the United Kingdom and euro area remained largely unchanged (Chart 5).

Contacts continued to attribute the relative resilience of UK long-term inflation expectations to the hedging activities of liability-driven investors such as insurers and pension funds. A large proportion of net issuance of inflation-linked bonds in the United Kingdom is held by such investors, while there is less structural demand for long-term inflation protection in the United States and euro area.

Foreign exchange

The sterling exchange rate index (ERI) rose by 1.4% over the period as a whole. There was a broad-based appreciation of sterling over the first part of the review period, with the sterling ERI reaching its highest level since March 2009 (Chart 6). The appreciation was in large part due to a rise against the euro (Chart 7), which fell following the resolution of negotiations between Greece and its creditors. Contacts reported that reduced uncertainty about the position of Greece within the single currency, coupled with very low interest rates in the euro area relative to some other countries, had encouraged a ‘carry trade’ whereby investors borrow in euro to finance investments in other countries (with yields sufficiently great to offset the borrowing costs, plus perceived foreign currency risks associated with this strategy). Much of that carry trade later reversed after a very sharp pickup in volatility in equity prices in late August, which lowered the risk-adjusted returns from the strategy (see the box on pages 302–03 for further discussion of volatility in equity and foreign exchange markets). Sterling also declined against the dollar toward the end of the review period, following stronger US activity GDP data.

Elsewhere, the People’s Bank of China (PBoC) announced a change in the methodology for setting the daily renminbi exchange rate, linking the currency explicitly to the previous day’s closing price, with allowances to take account of supply and demand factors. The change was seen by contacts as a further step towards liberalisation of the renminbi exchange
Recent economic and financial developments
Markets and operations

Some speculated that the move was also a means of slightly weakening the exchange rate to improve competitiveness. But the depreciation since the shift in methodology has been relatively modest, the renminbi falling by approximately 3.8% versus the dollar (Chart 8). Commentators suggested that data on Chinese foreign exchange reserves pointed to continuing large-scale intervention by PBoC to support the currency in the period that followed the announcement.

There were depreciations of a number of emerging market currencies against the dollar and the pound, which intensified following the PBoC’s change in the renminbi exchange rate fixing methodology. Measures of emerging market exchange rate volatility implied by option prices rose to levels last seen during the ‘taper tantrum’ in 2013 (Chart 9). Currencies of commodity exporters came under particular pressure due to falling commodity prices.

Equity markets
There was considerable volatility in Chinese stock markets during the summer, with the Shanghai Stock Exchange Composite Index falling by 36% by the end of the review period (Chart 10). The decline occurred over two distinct episodes. The first, which began in June, saw equities fall by 29%. Sharp moves in prices caused a large number of shares to be suspended, with trading in over half of the shares on the Shanghai exchange halted at one point. Contacts attributed the drop in Chinese equity prices to a range of factors, including short-term tightness in money markets, and efforts by the Chinese authorities to limit the extent to which retail investors could take on debt to leverage their positions in stocks. The Chinese authorities subsequently introduced a number of measures to support the market.
Equity and foreign exchange market volatility

Volatility in the Chinese equity market spilled over to equity prices in developed markets, in light of growing concerns about the prospects for the economic outlook in China, and the possible impact on the rest of the world. There were also sizable moves in various currency pairs. But while there was thought to be some news in developments in China, the extent of the volatility in developed markets on 24 August was greater than might have been expected. Contacts suggested that the extent of the disruption was likely to have been due, at least in part, to market structural factors.

Equity market volatility

The peak period of equity market volatility occurred on Monday 24 August. The S&P 500 fell 3.7% on the day (Chart 2), while the FTSE All-Share suffered its worst one-day decline since March 2009, dropping by 4.5%. The Euro Stoxx also fell a considerable distance. There were also large moves in equity derivatives markets. The VIX index — a measure of 30-day implied volatility on the S&P 500 — recorded the largest two-day increase in its history and reached an intraday high of 53%, a level not seen since March 2009. The implied volatility of the VIX (the VVIX) rose to its highest ever level (Chart A).

While the precise trigger for the large drop in the S&P remains unclear, contacts thought that it might have stemmed from a large drop in the price of the S&P futures contract — which trades nearly continuously around the clock — shortly before the US market open. That then caused trading in the futures contract to be halted. According to contacts, the suspension of trading in the future created uncertainty about where US stocks would open, and led a number of firms to reduce the amount of capital committed to market-making. The extent of the move also released market makers from the obligation to post indicative prices, adding to uncertainty. At the same time, the fall in the S&P future caused some ‘stop-loss’ orders to be activated automatically. Those orders then had to be executed at the prevailing market price, putting immediate downward pressure on equities at the open. The combination of sell orders, reduced market-making capacity, uncertainty, and, perhaps, the additional influence of electronic trading systems, resulted in rapid price falls and heightened volatility.

In fact, price moves were sufficiently large that they led to the activation of circuit breakers — introduced after the 2010 ‘flash crash’ — which suspended trading in a number of shares. The New York Stock Exchange saw over a thousand pauses in the trading of individual securities and exchange-traded funds on the day, compared with around ten on a typical trading day.

Halts in trading of stocks and the S&P future also meant that options prices could not be priced accurately, as there was no underlying price for the options to reference. Many market makers stopped quoting prices on certain options during the period of greatest instability, and those that continued to provide quotes widened the bid-offer spreads significantly.

Spillovers to the foreign exchange market

Contacts reported that the intraday volatility in equity markets on 24 August prompted a wave of risk reduction, particularly affecting carry trades that had been financed in yen and euro (which contacts note has grown in use as a funding currency over the past year). Consistent with a material decline in euro and yen-funded carry trades, net short speculative positioning in both the euro and the yen versus the US dollar fell sharply in the week to 25 August. And data from Emerging Portfolio Fund Research show sizable outflows from US equity funds in the week ending 26 August.

It is also likely that many speculative investors would have purchased carry funding currencies very quickly once equity volatility picked up, in anticipation of the reversal of carry trades, adding to the upward momentum in those currencies. And contacts added that relatively thin summer markets, along with nervousness related to the timing of lift-off in the United States, were likely to have contributed to the ensuing volatility. The strengthening of the Japanese yen versus the US dollar on 24 August was especially marked, with the value of the dollar against the yen falling from ¥122 to ¥116 — a nearly 5% intraday decline. There was considerable volatility in a number of other currency pairs as well.
Explaining the size of the moves, contacts have often noted in the past that market makers have become less willing to provide liquidity. And that would be even more the case during a period of volatility, in which the market was becoming increasingly ‘one-way’. Contacts also thought that liquidity on electronic matching platforms had disappeared very rapidly, as participants withdrew. However, there were not widespread reports that platforms had closed, in contrast with what occurred during the period of volatility that followed the removal of the floor on the Swiss franc versus the euro earlier in the year. Instead, platforms quickly shifted to indicative pricing or much wider bid-offer spreads.

Consistent with a rapid reduction in liquidity, contacts noted that there was ‘gapping’ in various currency pairs, with market prices jumping to new levels with no trades in between. That was evident even in euro-dollar and dollar-yen exchange rates, two of the most heavily traded pairs. Contacts suggested that such pricing dynamics were likely to be a more frequent occurrence in foreign exchange markets compared with the past, in light of ongoing structural changes.

A second period of volatility occurred in August. Although there was no obvious immediate driver, there had been a growing expectation that the PBoC would lower the reserve requirement ratio for banks around that time. And contacts thought that those expectations reached a peak in the days immediately prior to the crash. Contacts suggested that it was the absence of such a change that led to a reassessment of the willingness of the authorities to loosen policy to support growth. In turn, that resulted in a material drop in the Shanghai Composite Share Index on 24 August and further declines in the following days. Against this backdrop, the PBoC subsequently reduced both the reserve requirement ratio and its main policy rate on 25 August.

The August volatility in Chinese equity markets was associated with falls in advanced-economy equity prices although some of these moves subsequently reversed (see the box on pages 302–03 for a discussion of equity market volatility). The FTSE All-Share and S&P 500 ended the review period down 11% and 8% respectively (Chart 11).

Corporate bonds and bank funding markets
In contrast to the volatility in equity markets, advanced-economy corporate bond spreads rose comparatively modestly over the review period. In the US market, contacts attributed rising spreads to particularly strong debt issuance to finance mergers and acquisitions and share buybacks. It was also suggested that some US dollar issuance had been brought forward in anticipation of prospective policy tightening by the Federal Reserve later in the year.

US high-yield bond spreads also widened materially (124 basis points) over the review period (Chart 12). Contacts noted that US high-yield energy spreads continued to be closely correlated with oil price movements, rising as energy prices fell. But contacts thought that the risk of spillover to the wider US high-yield bond market was lower than it had been a year ago, as many fund managers had reduced their exposure to the energy sector since then.
Against the backdrop of Greece-related uncertainty early in the review period, primary corporate bond issuance by European firms was weak and there was a marked pickup in new issue premia. Contacts also reported that uncertainty around Greece had weighed on primary issuance by banks, with a number of deals having been postponed. But contacts were generally fairly sanguine about the pause, noting that European banks did not have a pressing need to raise funds, due to readily available medium-term funding facilities from the ECB. And UK banks remained well-funded, given proactive issuance before and after the general election. The subsequent resolution of negotiations over the Greek bailout programme resulted in a flurry of issuance in European and UK bank funding markets. Senior unsecured spreads continued to edge higher, although there was no obvious spillover during the period of extreme volatility in some other markets (Chart 13).

**Operations**

*Operations within the Sterling Monetary Framework and other market operations*

This section provides an update of the Bank’s operations within the Sterling Monetary Framework (SMF) over the review period, as well as its other market operations. Collectively, these operations help implement the Bank’s monetary policy stance and provide liquidity insurance to institutions when deemed necessary.

The aggregate level of central bank reserves is closely monitored by the Bank, as it affects monetary conditions in the UK economy. The level of central bank reserves is affected by (i) the stock of assets purchased 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 flows across the Bank’s balance sheet. Over the review period, aggregate reserves rose to a high of £319 billion, largely reflecting the larger-than-usual injections of reserves through the Bank’s Indexed Long-Term Repo (ILTR) operations (discussed below).

**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, there is little incentive for reserves account holders to use the deposit facility. Reflecting this, the average use of the deposit facility was £0 million in the three months to 9 July 2015.\(^{(1)}\)

The rate charged on the Operational Standing Lending Facility remained at 25 basis points above Bank Rate. However, given the large aggregate supply of reserves, there was no demand from market participants to use the lending facility. The average use of the lending facility was also £0 million over the quarter to 9 July 2015.

**Indexed Long-Term Repo operations**

The Bank conducts regular ILTR operations as part of its provision of liquidity insurance to banks, building societies and broker-dealers. During the review period, the Bank offered a minimum of £5 billion via six-month repos in each of its ILTR operations on 9 June, 7 July and 11 August 2015 (*Table A*).

Participation in, and usage of, ILTR operations has continued to remain higher than last year, although the total amount allocated in each operation remained below the minimum

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\(^{(1)}\) Operational Standing Facility usage data are released with a lag.
£5 billion on offer (Chart 14) and is somewhat lower than usage in the previous quarter. This continued to reflect usage of the ILTR by some participants as a source of term repo liquidity. Over the review period, with £2.1 billion of ILTRs maturing, the increased participation in ILTR operations resulted in a net addition of £4 billion of central bank reserves. This was in addition to the existing supply of aggregate reserves which were provided largely through the Bank’s APF operations.

**Table A** Indexed Long-Term Repo operations

<table>
<thead>
<tr>
<th>Collateral set summary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level A</td>
</tr>
<tr>
<td>9 June 2015 (six-month maturity)</td>
<td></td>
</tr>
<tr>
<td>Minimum on offer (£ millions)</td>
<td>5,000</td>
</tr>
<tr>
<td>Total bids received (£ millions)</td>
<td>1,637</td>
</tr>
<tr>
<td>Amount allocated (£ millions)</td>
<td>1,637</td>
</tr>
<tr>
<td>Clearing spread (basis points)</td>
<td>0</td>
</tr>
</tbody>
</table>

| 7 July 2015 (six-month maturity) |
| Minimum on offer (£ millions) | 5,000 |
| Total bids received (£ millions) | 3,090 | 275 | 40 | 2,775 |
| Amount allocated (£ millions) | 2,315 | 275 | 40 | 2,000 |
| Clearing spread (basis points) | 0 | 5 | 15 |

| 11 August 2015 (six-month maturity) |
| Minimum on offer (£ millions) | 5,000 |
| Total bids received (£ millions) | 2,135 | 1,340 | 0 | 795 |
| Amount allocated (£ millions) | 2,135 | 1,340 | 0 | 795 |
| Clearing spread (basis points) | 0 | n.a. | 15 |

(a) The minimum amount on offer is the size of the operation that the Bank is willing to allocate, in aggregate, across all collateral sets at the minimum clearing spreads.

**Contingent Term Repo Facility**

The Contingent Term Repo Facility (CTRF) is a contingent liquidity facility that the Bank can activate in response to actual or prospective market-wide stress of an exceptional nature. The Bank reserves the right to activate the facility as it deems appropriate. In light of market conditions throughout the review period, the Bank judged that CTRF auctions were not required.

**Discount Window Facility**

The Discount Window Facility (DWF) is a bilateral on-demand facility provided to institutions experiencing a firm-specific or market-wide liquidity 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 Bank publishes quarterly data of DWF usage with a lag. The average daily amount outstanding in the DWF in the three months to 31 March 2014 was £0 million.

**Other operations**

**Funding for Lending Scheme**

The Funding for Lending Scheme (FLS) was launched by the Bank and HM Treasury on 13 July 2012. The initial drawdown period for the FLS 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. The quantity each participant can borrow in the FLS is linked to their lending to the UK real economy, with the incentives currently skewed towards supporting lending to small businesses.

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 second quarter of 2015, the number of groups participating in the FLS extension was 34. Of these, eleven participants made drawdowns of £5.1 billion in total. Participants also repaid £0.9 billion, taking total outstanding drawings to £61.4 billion.

**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 seven-day US dollar operations will continue until further notice. The network of bilateral central bank liquidity swap arrangements provides a framework for the reintroduction of further US liquidity operations if warranted by market conditions. There was no use of the Bank’s US dollar facilities throughout 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. 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 £5.5 billion of gilts and £0.2 billion of other debt securities.

**Asset purchases**
Alongside the publication of the *Inflation Report* on 12 February 2014, the MPC 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%. There were no gilts held in the APF that had matured during the review period, and as a result there were no reinvestment operations.

The total stock of gilts outstanding in the APF, measured as proceeds paid to sellers, remained unchanged at £375 billion. The stock of gilts comprised of £77.9 billion of purchases in the 3–7 years residual maturity range, £139.5 billion in the 7–15 years residual maturity range and £157.5 billion with a residual maturity of greater than 15 years (Chart 15).

**Gilt lending facility**
The Bank continued to offer to lend gilts held in the APF via the Debt Management Office in return for other UK government collateral. In the three months to 30 June 2015, the daily average value of gilts lent, as part of the gilt lending facility, was £330 million. The average daily lending in the previous quarter was somewhat higher at £632 million.

**Corporate bonds**
There were no purchases of corporate bonds during the review period. Future purchase or sale operations through the scheme will be dependent on market demand, which the Bank will keep under review in consultation with its counterparties. Reflecting the recent lack of activity, the scheme currently holds no bonds.

**Secured commercial paper facility**
The Bank continued to offer to purchase secured commercial paper backed by underlying assets that are short term and provide credit to companies or consumers that support economic activity in the United Kingdom. No purchases were made during the review period.