

# Markets and operations

This article reviews developments in global financial markets since the 2009 Q4 *Quarterly Bulletin* up to 19 February 2010. The article also reviews the Bank's official operations.

## Global financial markets

### Overview

The year end passed with few liquidity concerns and the rally in risky asset prices that began in March 2009 was sustained into the first few weeks of 2010. With advanced economies only slowly emerging from recession, monetary policy generally remained exceptionally accommodative although a few central banks tightened policy slightly and the scale of central banks' emergency liquidity support measures continued to moderate.

From mid-January, equity prices fell, corporate credit spreads widened and capital issuance slowed. This was accompanied by a further rise in medium-term government bond yields, especially in those countries with large projected fiscal deficits. It appeared that investors demanded additional risk compensation to hold financial assets, including on government bonds. Although after the data cut-off for this article there were renewed increases in equity prices, perhaps suggesting that equity market risk premia subsequently fell.

Market contacts emphasised three main sources for the increase in risk premia in late January and early February. First, investors became more concerned about the possible impact of a withdrawal of the extraordinary global monetary and fiscal policy stimuli. Second, the size of actual and prospective government borrowing intensified concerns about medium-term fiscal sustainability in a number of countries. This was most acute for Greece and some other economies in the euro area, which contributed to a marked depreciation in the euro. Third, there was increased uncertainty about the potential effects of proposals to change the structure of prudential regulation for financial firms.

Despite the recent period of retrenchment in financial markets, overall market functioning did not materially worsen. There were some signs of renewed activity in securitisation markets, although banks continued to face funding challenges, as did many non-banks.

## Recent developments in international capital markets

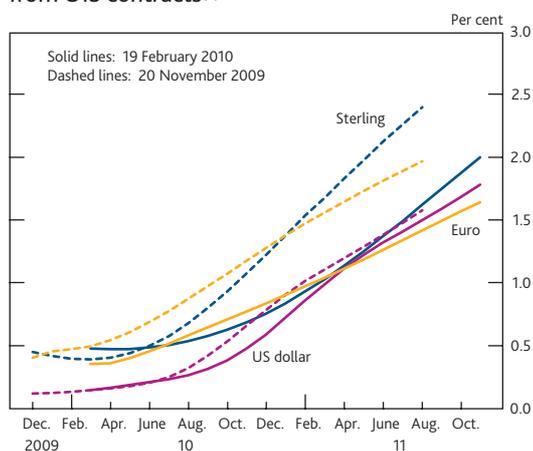
### Monetary policy

While monetary policies generally remained exceptionally accommodative, some divergence began to emerge across countries reflecting the different near-term outlook for their economies. In the United Kingdom, the Monetary Policy Committee (MPC) kept Bank Rate at 0.5% and maintained the size of its asset purchase programme financed by central bank reserves at £200 billion — a level that was reached in late January. More details of the Bank's asset purchases are provided on pages 16–18 of this article.

Similarly, the US FOMC and the ECB Governing Council left key policy rates unchanged. But elsewhere, some central banks increased policy rates (for example, in Australia, Israel and Norway). And the People's Bank of China and the Reserve Bank of India increased their reserve requirement ratios in order to slow lending growth.

Looking ahead, forward interest rates derived from sterling, euro and US dollar overnight index swaps (OIS) fell. This reflected market participants expecting policy rates in the United Kingdom, euro area and United States to increase later than at the time of the previous *Bulletin* (**Chart 1**).

**Chart 1** Instantaneous forward interest rates derived from OIS contracts<sup>(a)</sup>



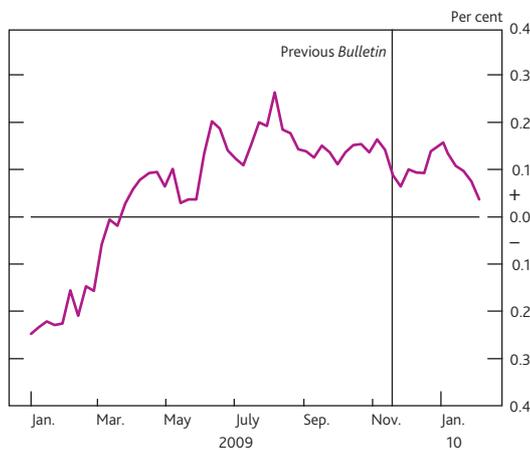
Sources: Bloomberg and Bank calculations.

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

The downward revision to expected policy rates might have reflected a reassessment of market participants' outlook for the pace of global economic recovery. Indeed, according to a Bank of America/Merrill Lynch survey, global fund managers' growth expectations fell slightly in February. In contrast, however, the Consensus Economics survey of economists' expectations showed a gradual improvement in expected real GDP growth for 2010.

An explanation for part of the fall in market interest rates may be that uncertainty about future policy rates declined. This could have lowered term premia embedded in OIS rates. Indeed, a model-based decomposition of the sterling OIS yield curve implied that term premia fell (**Chart 2**).

**Chart 2** Model-derived sterling twelve-month forward interest rate term premia<sup>(a)</sup>



Sources: Euronext.liffe and Bank calculations.

(a) Derived from OIS rates. For more details on how term premia can be estimated, see Joyce, M, Lildholdt, P and Sorensen, S (2009), 'Extracting inflation expectations and inflation risk premia from the term structure: a joint model of the UK nominal and real yield curves', *Bank of England Working Paper no. 360*.

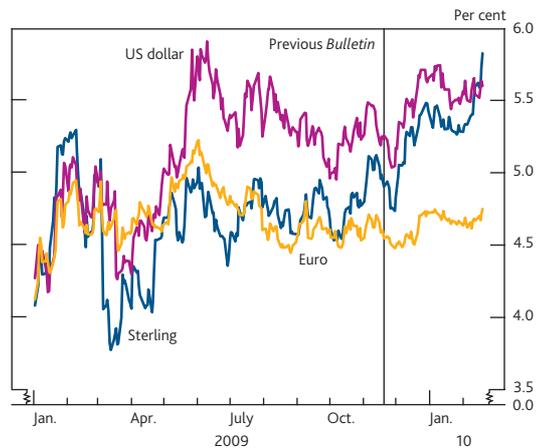
## Government bond markets

At longer horizons, sterling, US dollar and to a lesser extent euro interest rates rose (**Chart 3**). With short-term interest rates falling, these developments led to a steepening in international yield curves (**Chart 4**).

A key influence on government bond markets over the quarter was investor nervousness about fiscal deficits in a number of countries. Specifically, against the background of a relatively slow economic recovery from recession, contacts frequently highlighted concerns about the sustainability of some countries' medium-term fiscal positions. As a result, investors demanded higher yields to absorb the sizable prospective government bond issuance with particularly large increases in yields on bonds issued by some euro-area economies relative to German government bond yields (**Chart 5**).

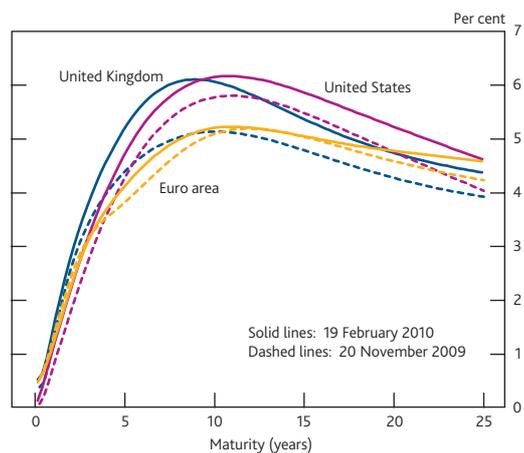
Consistent with this, the cost of protection against default on bonds issued by some European economies — in particular

**Chart 3** International five-year nominal interest rates, five years forward<sup>(a)</sup>



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

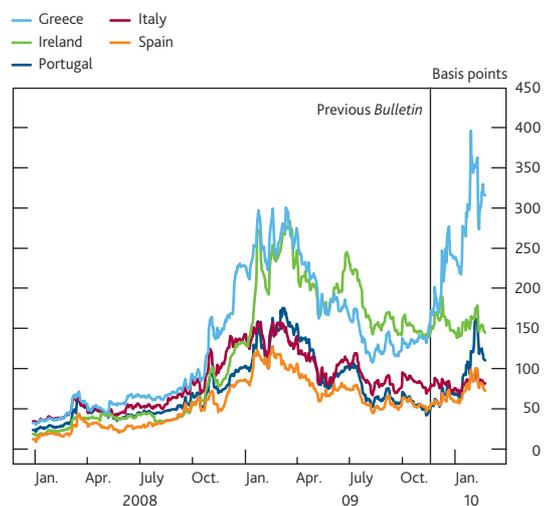
**Chart 4** International nominal government bond yield curves<sup>(a)</sup>



Source: Bank calculations.

(a) Instantaneous forward interest rates.

**Chart 5** Selected European ten-year government bond spreads<sup>(a)</sup>



Sources: Bloomberg and Bank calculations.

(a) Spreads over ten-year German government bond yields.

## The sovereign credit default swap market

Sovereign credit default swaps (CDS) allow investors to insure against events of default on government debt. The market for CDS that reference advanced economy governments has grown over the past year and come under greater focus from market commentators and policymakers. This box provides an overview of the sovereign CDS market and reviews factors that influence traded market prices.

### Sovereign CDS contracts

Sovereign CDS are similar to other CDS contracts — for example, those referencing corporate issuers — and can be viewed akin to an insurance contract.<sup>(1)</sup>

Specifically, one counterparty (the ‘protection seller’) agrees to compensate another counterparty (the ‘protection buyer’) if the reference entity experiences a so-called credit event. For the life of the CDS contract (sovereign CDS commonly have maturities of five or ten years), the protection buyer pays the seller a premium every three months. If, however, a credit event occurs then either party can terminate the contract, prompting a payment from the seller to the buyer. This payment compensates the CDS buyer for impairments to the value of the relevant government debt.<sup>(2)</sup> Buyers and sellers can choose to settle what they owe either using relevant sovereign debt obligations or via equivalent cash payments.

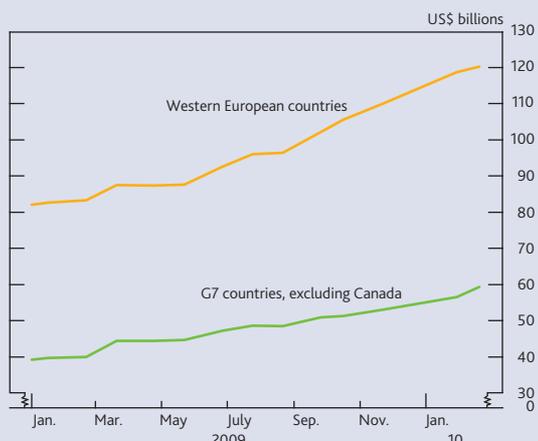
For sovereign CDS referencing advanced economies, a credit event is broadly defined as the default on, or restructuring of, a government’s debt obligations. There are three principle credit events: (i) failure to pay coupons or principal; (ii) debt restructuring; and (iii) a government official disclaiming the validity of debt obligations or imposing a moratorium or standstill, which precedes a failure to pay or restructuring.

### The market for sovereign CDS

Exposures to sovereign CDS are very small relative to the size of government bond markets. That remains the case despite a notable growth in turnover in sovereign CDS over the past year (Chart A), a period in which there has been increasing attention on public finances in a number of countries.

Sovereign CDS are traded by a wide variety of market participants, including banks, asset management firms and hedge funds. Their motives vary. For example, hedge funds, banks and asset managers often operate on both sides of the market, selling or buying protection when they believe prices are attractively high or low. Market contacts report that UK asset managers have been notable sellers of UK sovereign CDS protection over recent months. It is also common to trade the relative prices of sovereign CDS on different countries; for example, selling protection on one country and

Chart A Net notional dealer exposures to sovereign CDS contracts<sup>(a)</sup>



Sources: DTCC and Bank calculations.

(a) The Western Europe series includes the fifteen members of the Markit iTraxx SovX Western Europe Index, excluding Portugal and Norway.

simultaneously buying protection on another country to benefit from changes in the relative creditworthiness of sovereign issuers.

Buyers of sovereign CDS protection are commonly seeking to hedge risk exposures, although often not simply trying to hedge the risk that government bonds in their portfolios default. For example, large banks use sovereign CDS to hedge derivative exposures to sovereign and quasi-sovereign entities (such as central banks or supranational bodies) which do not offer collateral against changes in the value of derivative trades. In addition, some asset managers use sovereign CDS as an approximate hedge against changes in a country’s macroeconomic outlook. For example, a fund manager may seek to hedge risks on a large portfolio with exposure to bonds, equities and currencies using sovereign CDS. This hedge does not require an event of default to prove useful — if CDS prices change the position can be closed at a profit or loss by trading an offsetting CDS contract.

### Factors that determine prices of sovereign CDS contracts

Similar to corporate CDS, sovereign CDS prices should in principle reflect investors’ perceptions of the probability of a credit event by the referenced sovereign and the expected recovery rate if this occurs. Indeed, if the possibility of default was zero a CDS contract’s price should be zero. An implied probability of default can be calculated directly from CDS prices by assuming what investors’ recovery rate would be in the event of default and that investors are risk-neutral. For example, based on this simplistic approach, a five-year CDS spread of 100 basis points and a recovery rate of 40%, would give an implied (risk-neutral) probability of default that is roughly 9% over the five years.

Other factors are likely, however, to have a bearing on the price of sovereign insurance. To the extent that these factors affect the market price, they may cause default probabilities calculated in the simplistic way outlined above to be overestimated.

First and foremost, buyers of protection are likely to be risk-averse rather than risk-neutral. If so, uncertainty about the probability of default and/or the likely recovery rate in an event of default would typically increase the price of sovereign CDS (and other types of CDS). That is because risk-averse CDS buyers would pay extra to protect against this uncertainty.<sup>(3)</sup>

A factor particularly relevant to sovereign CDS is the likely depreciation of the sovereign's domestic currency that would accompany a credit event. This possibility would also tend to inflate prices because sovereign CDS are usually denominated in a different currency.<sup>(4)</sup> So the expected domestic currency pay-off is larger if the exchange rate is expected to depreciate by more.

There are also some technical issues that may influence traded CDS prices:

- The number of securities that can be used to settle CDS may be positively related to the insurance premium because the protection buyer can choose which debt obligations are used. This option has value as the cheapest bond can be used; thus increasing the expected pay-off. The option is difficult to price, but it may be higher for sovereign CDS than other CDS if there are more eligible securities.

- If the creditworthiness of the protection seller and the underlying sovereign are highly correlated, there may be a low chance of the seller meeting its obligations in the event of a sovereign default. This would reduce the value of the insurance. For this reason, however, investors avoid buying sovereign protection from banks that are domiciled in the reference country.
- CDS prices may also be affected by the number of active participants and liquidity in the relevant market. This could bias traded prices either up or down.

Market contacts suggest that some of these factors are difficult to price and that, in practice, many traders do not explicitly take account of all of them when trading sovereign CDS.

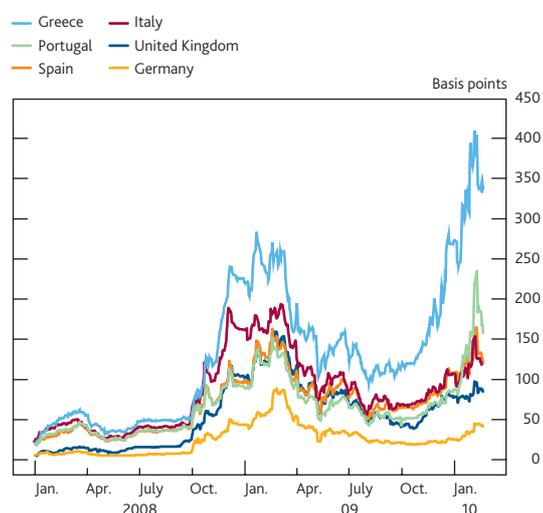
- (1) For more details on CDS see Bank of England *Financial Stability Review*, June 2001, pages 117–40.
- (2) In broad terms, it is determined by the difference between the cost of purchasing a debt obligation of the referenced issuer and the debt's so-called par value — what the issuer was due to pay the bondholder at the maturity of the bond. This is determined via an auction process, which provides a price, or 'recovery rate' that applies to all CDS contracts. The process is overseen by the International Swaps and Derivatives Association.
- (3) A more detailed exposition of the impact of uncertainty about default probabilities and recovery rates can be found in Pan, J and Singleton, K (2008), 'Default and recovery implicit in the term structure of sovereign CDS spreads', *The Journal of Finance*, Vol. 63, No. 5, October.
- (4) Sovereign CDS are often denominated in US dollars, although CDS referencing US government debt tends to be denominated in euro.

Greece — rose sharply (Chart 6). However, as explained in the box on pages 8–9 premia on sovereign credit default swaps (CDS) may reflect factors other than changes in the perceived probability of default.

Larger public sector deficits might, other things equal, in theory be expected to push up on real interest rates or future expected inflation (and/or compensation for uncertainty around those components of nominal returns). Over recent months, medium-term forward real interest rates rose internationally, particularly for sterling (Chart 7). In contrast, UK and US forward inflation rates (implied from the difference between nominal and index-linked yields) were little changed.

A model-based decomposition suggests that most of the recent rise in sterling long-term forward interest rates might reflect increased real term premia — that part of the overall

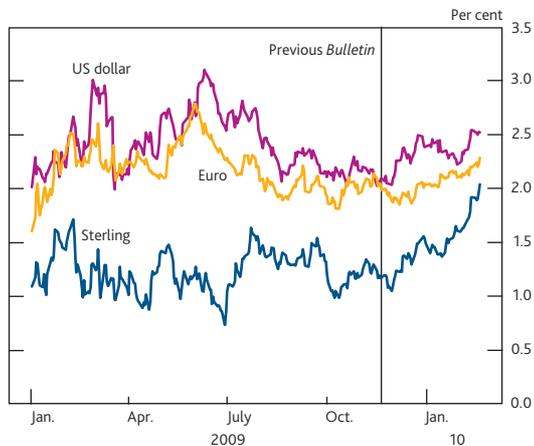
**Chart 6** Selected European five-year sovereign CDS premia



Source: Markit Group Limited.

return required by investors to compensate them for uncertainty about future real rates (Chart 8).<sup>(1)</sup>

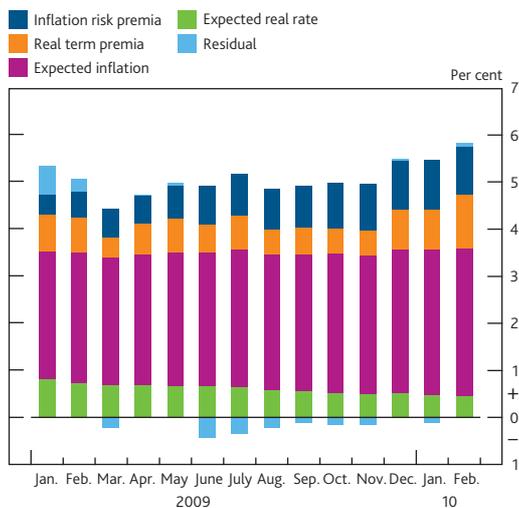
**Chart 7** International five-year real interest rates, five years forward<sup>(a)</sup>



Source: Bank calculations.

(a) US dollar and sterling rates derived from the Bank's government liability curves. Euro rates derived using the Bank's inflation swap and government liability curves.

**Chart 8** Decomposition of sterling five-year interest rates, five years forward<sup>(a)</sup>



Source: Bank calculations.

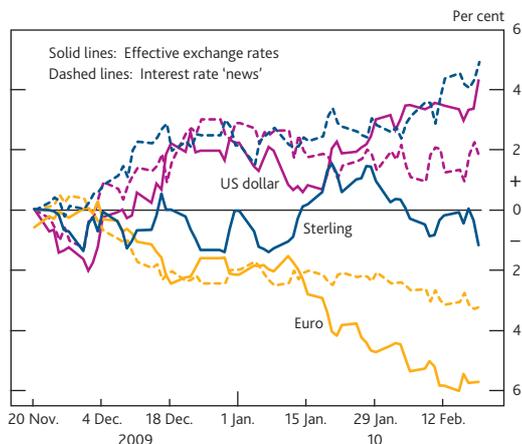
(a) For more information on the methodology used to decompose interest rates, see Joyce, M, Lildholdt, P and Sorensen, S (2009), 'Extracting inflation expectations and inflation risk premia from the term structure: a joint model of the UK nominal and real yield curves', Bank of England Working Paper no. 360.

**Foreign exchange**

Over the quarter, the largest change among the major exchange rates was a 6% depreciation of the euro. Since mid-January, relative interest rate movements could not account for the variations in the major effective exchange rates, suggesting that other factors were influential (Chart 9). In particular, sterling and the euro depreciated by more than suggested by changes in interest rate differentials.

Concerns about the sustainability of some euro-area economies' medium-term fiscal positions may have led

**Chart 9** Implied contribution of interest rate 'news' to cumulative changes in selected ERIs since the previous Bulletin<sup>(a)</sup>

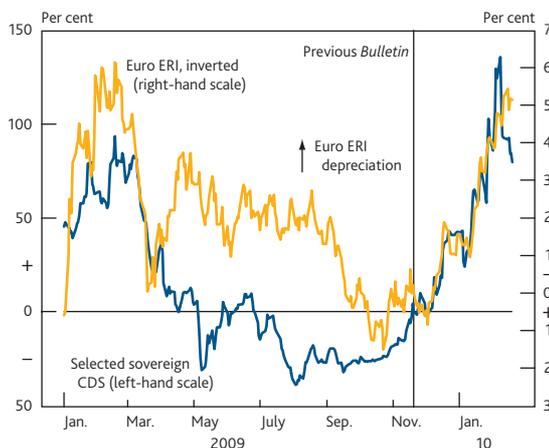


Source: Bank calculations.

(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 rate parity condition', Bank of England Quarterly Bulletin, November, pages 377-89.

investors to demand higher risk premia on assets denominated in euro. Consistent with this, the increase in CDS prices for securities issued by these governments seemed to broadly coincide with the depreciation in the euro (Chart 10).

**Chart 10** Cumulative changes in selected European countries' CDS premia<sup>(a)</sup> and euro effective exchange rate index (ERI) since the previous Bulletin



Sources: Bloomberg and Bank calculations.

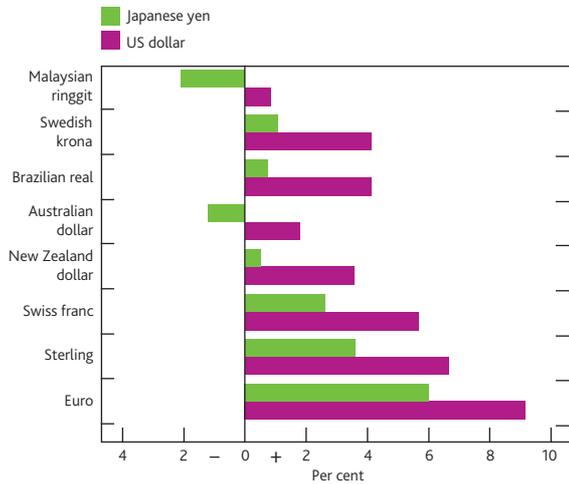
(a) The sovereign CDS premium is calculated as the average of the sovereign CDS premia of Greece, Portugal, Spain and Italy.

Over the period, the US dollar and to a lesser extent the Japanese yen appreciated. Market contacts suggested that these moves could have been amplified by some unwinding of US dollar and yen-funded investments in other currencies. This could be consistent with the appreciation of the US dollar

(1) For more details of this model, see Joyce, Lildholdt and Sorensen (2009), 'Extracting inflation expectations and inflation risk premia from the term structure: a joint model of the UK nominal and real yield curves', Bank of England Working Paper no. 360.

and the Japanese yen against a broad spectrum of both advanced and emerging market currencies since the previous *Bulletin* (Chart 11).

**Chart 11** Percentage changes in selected US dollar and Japanese yen bilateral exchange rates since the previous *Bulletin*



Sources: Bloomberg and Bank calculations.

## Equities

The rally in equity prices that began in March 2009 was initially sustained into the first weeks of 2010. But the major indices fell from mid-January 2010 when equity markets were caught up in a general period of risk retrenchment, primarily related to increased uncertainty about the sustainability of government debt in a number of countries (Chart 12). Similar moves occurred in other risky asset markets; for example, many commodity prices also fell and speculative positions in commodity markets were reduced. This suggested that a generalised increase in the risk premia demanded by investors in risky assets may have accounted for the falls in equity prices.

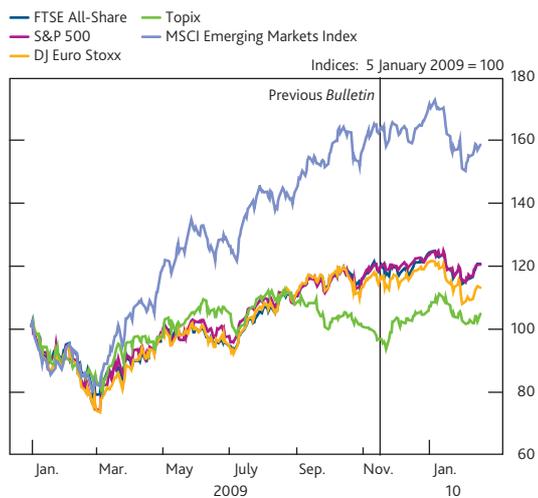
The observed rise in government bond yields might, other things equal, have also exerted some downward pressure on equity prices via a rise in the rate at which expected future cash flows are discounted. The relationship between moves in government bond yields and equity prices is discussed in a separate article on pages 24–33 of this *Bulletin*.

On the other hand, an increase in expected dividend growth could have supported equity prices and helped them end the period broadly unchanged. Indeed, dividend swap prices did strengthen slightly since the previous *Bulletin* (Chart 13).

## Corporate credit markets

Consistent with developments in equity markets, investor appetite for corporate credit instruments continued to strengthen through December 2009 and early January 2010 before weakening as concerns about sovereign borrowers increased. Nonetheless, secondary market spreads on

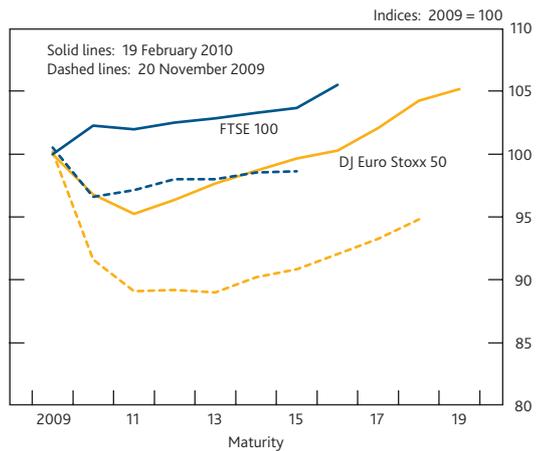
**Chart 12** International equity indices<sup>(a)(b)</sup>



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.

**Chart 13** Dividend swap prices<sup>(a)</sup>



Sources: Bloomberg and Bank calculations.

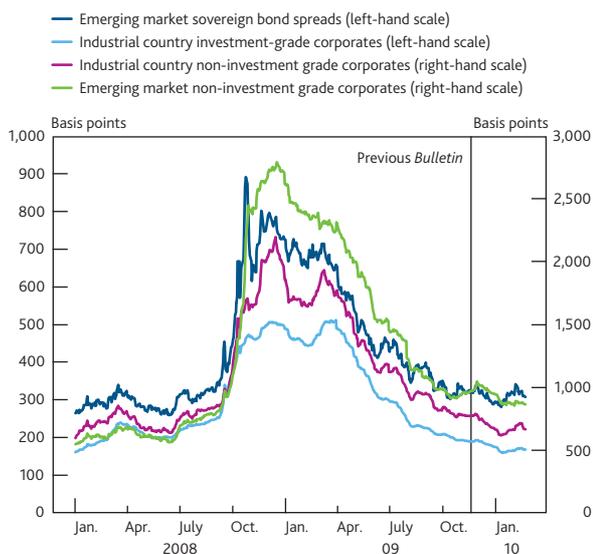
- (a) From exchange-traded futures contracts. For more information on dividend swaps, see box on page 30 of this *Bulletin*.

corporate bonds ended the period narrower (Chart 14). And although the cost of insuring against company defaults generally picked up in February, corporate CDS prices remained close to levels in late November 2009, and increased by less than sovereign CDS prices (Chart 15).

In primary markets, corporate bond issuance was lower than previous quarters and from mid-January the premia charged on new issues relative to secondary market spreads widened slightly. Contacts said this might partly reflect the extent to which firms intentionally raised more funds than they required in 2009. Over the quarter, a larger share of global bond issuance was by lower-rated companies (Chart 16).

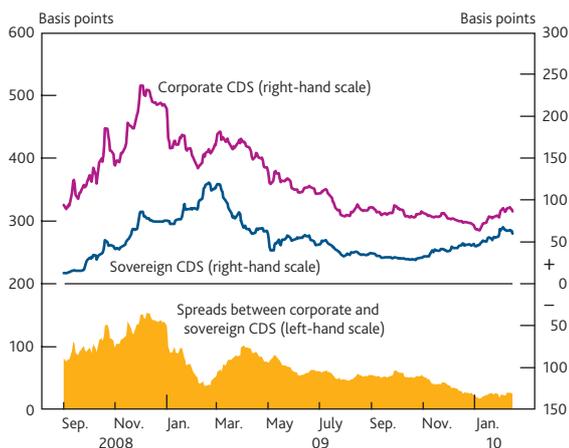
Contacts also noted that companies continued switching out of shorter-dated credit instruments, such as commercial paper,

**Chart 14 International bond spreads**



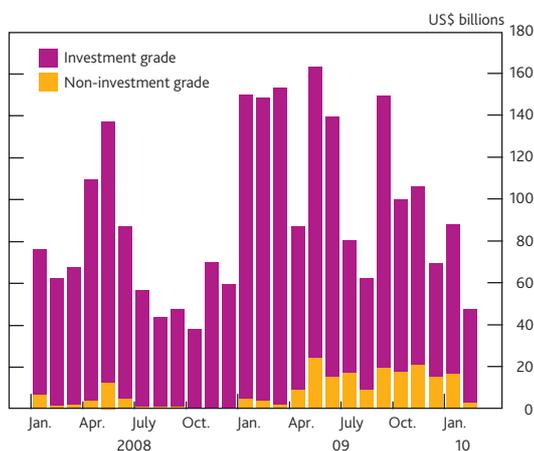
Sources: JPMorgan and Merrill Lynch.

**Chart 15 Sovereign and corporate CDS spreads(a)**



(a) The corporate CDS line is calculated as the weighted average of five-year corporate CDS for French, German, Dutch and UK iTraxx IG index constituents. The sovereign CDS line is the average of French, German, Dutch and UK five-year sovereign CDS, weighted using the iTraxx IG corporate index.

**Chart 16 Global non-financial corporate bond issuance(a)**

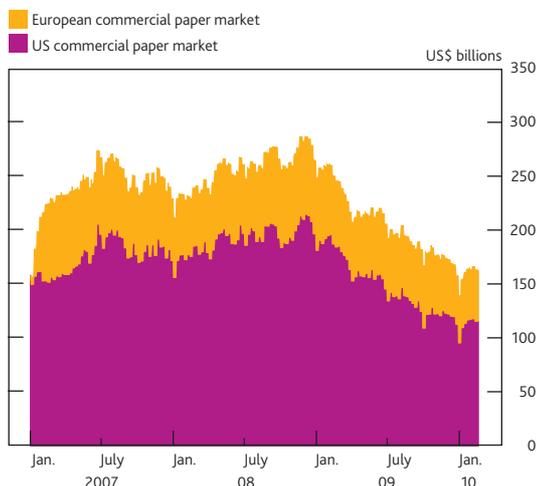


Sources: Dealogic and Bank calculations.

(a) Data for February 2010 include issuance until 19 February.

in favour of longer-term capital market funding (Chart 17). And demand to issue sterling commercial paper to the Bank's purchase facility also fell further, as described on page 17.

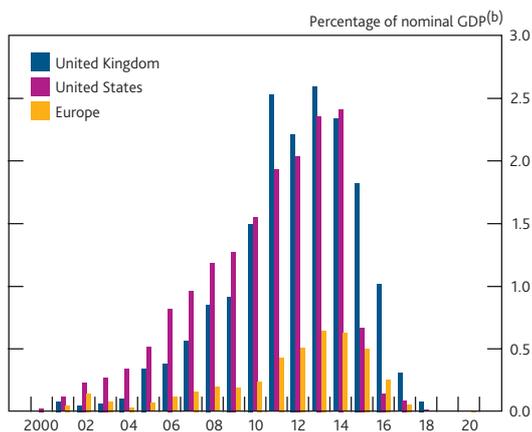
**Chart 17 Private non-financial European and US commercial paper outstanding**



Sources: Dealogic, US Federal Reserve and Bank calculations.

Activity in commercial loan markets remained subdued, despite the projected scale of loan refinancings falling due over the coming years — particularly for sub-investment grade firms (Chart 18).

**Chart 18 Maturity profile of sub-investment grade term loans(a)**



Sources: Dealogic, IMF and Bank calculations.

(a) Based on data for dollar, euro, and sterling sub-investment grade term loans issued by US, UK and European corporates between January 2000 and February 2010. Europe refers to corporates from Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Poland, Portugal, Spain and Switzerland.  
 (b) GDP data from 2009–14 is based on the IMF's October 2009 *World Economic Outlook*. For the period between 2015 and 2020, the average growth rate over the previous ten years is used.

Anecdotal evidence from the Bank's recently published *Trends in Lending* and reports from the Bank's Agents suggested a modest improvement in credit conditions facing borrowers, although the availability of credit improved more for larger companies than for smaller firms and, overall, credit conditions

## Non-banks and the corporate loan market

Companies can access finance through a number of sources. For example, they can issue equity, or raise debt finance from both the bank and non-bank sectors. But contacts report there have been relatively few non-bank entrants to the UK loan market over the past couple of years. And that is despite relatively wide prospective lending margins and a potential advantage over competitors who are facing increasing impairments on their existing loans.

The Bank has discussed the impediments to entering the loan market faced by non-bank lenders with its market contacts. This box outlines the information the Bank received.

In summary, contacts suggested a range of interwoven impediments do exist in the United Kingdom, as described below. HM Treasury — working closely with the Bank — launched a Discussion Paper on non-bank lending in January 2010.<sup>(1)</sup>

### Impediments to entry in the UK corporate loan markets

Companies can raise debt finance either through loan agreements or by issuing debt. Most UK lending is provided by the banking sector. But it could also be supplied by other non-bank institutions, such as pension funds, insurance companies and fund managers. For example, in the United States there is a well-developed market for non-banks to lend to firms via private placements. In addition, non-bank loan funds existed in the United States prior to the increased involvement of collateralised loan obligations (CLOs) funds, notable participants from the late 1990s. UK and European markets had little non-bank involvement before CLOs developed. So with the role of CLOs now diminished somewhat, European markets are left with less well-developed non-bank involvement.

In describing the United Kingdom's situation, contacts cited the following impediments to non-banks providing more loans:

- **Loan pricing:** Many banks provide a suite of products to businesses, enabling them to cross-subsidise individual products. A range of contacts said that corporate lending rates were often subsidised by 'ancillary business lines' and that this made it difficult for non-bank entrants, without the full suite of products, to compete on the loan component alone.
- **Infrastructure:** Some contacts noted that the stability in the bank-orientated nature of loan provision in the United Kingdom for a number of years may have lessened the impetus to invest in a more efficient loan market infrastructure. Contacts noted the absence of benchmark loan indices and third-party credit ratings, both of which exist in some form in the United States. They thought that the presence of both would make it easier for non-bank institutions that invest via third-party mandates to enter the corporate loan market. Additional impediments mentioned included an outdated paper-based settlement process and the treatment of loans by many non-bank institutional investors as part of an 'alternative investment' asset class. Some contacts identified UK pension fund trustees' reliance on investment consultants as impeding investments in loans as an asset class.
- **Diversification:** Many contacts reported a need to invest across European loans if the asset class was to offer sufficient diversification of risks. But this was said to be impeded by differences in legal standards across Europe, particularly bankruptcy frameworks and the uncertainties across jurisdictions around the treatment of senior creditors.

Evaluating the current impact of the cited impediments, and carefully assessing the costs and benefits of change is a significant task — the impediments are interrelated and there are a wide variety of stakeholders in both the private and public sector. The Treasury Discussion Paper on non-bank lending brought together these loan-specific issues, with related questions about access to public capital markets. The Treasury will lead the ongoing work on this issue, but the Bank will remain closely involved and will continue to feed in intelligence gathered from its market contacts.

(1) [www.hm-treasury.gov.uk/fin\\_non\\_banking.htm](http://www.hm-treasury.gov.uk/fin_non_banking.htm).

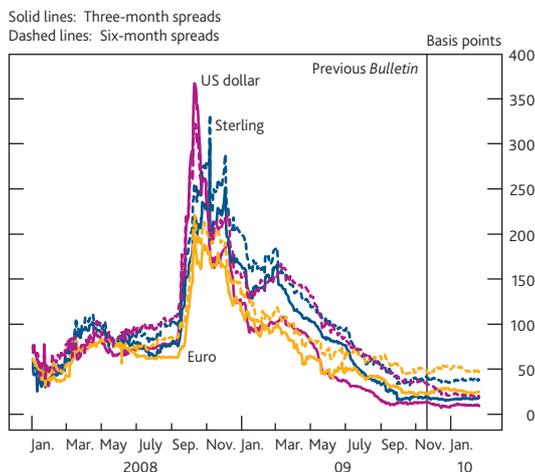
remained tight. In addition, contacts noted that both the supply of and demand for syndicated and regular loans remained anaemic. Moreover, despite elevated lending margins, there continued to be few non-bank entrants to the corporate lending market, which is discussed in the box on page 13.

Contacts in loan markets noted that the volume of restructurings and insolvencies remained lower than expected. They attributed this largely to the effects of low monetary policy rates on floating-rate coupon payments, as well as the strength of alternative sources of funding for companies. But they also highlighted some forbearance by lenders, as evidenced by a rise in the number of so-called amend and extend deals, where borrowers agree to a maturity extension in return for a fee and higher coupon payments.

### Bank funding markets

Conditions in short-term money markets remained broadly unchanged. Three-month Libor-OIS spreads remained stable, at levels just a little above their long-term averages and well down on their peaks over recent years (Chart 19). Libor spreads at six months and beyond remained a little more elevated, however, indicating an extra premium to borrow for longer maturities.

**Chart 19** Three and six-month Libor relative to expected short-term interest rates<sup>(a)</sup>



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

(a) Spread of Libor to equivalent-maturity OIS rates.

According to contacts, a number of factors continued to affect the cost of money market lending. The significant injection of central bank liquidity over the past year has led to reduced bank demand for funding at short maturities. Furthermore, UK-regulated entities now have a preference to fund at maturities greater than three months following the Financial Services Authority's new liquidity regime published in 2009 Q4. Contacts noted in particular that the resulting

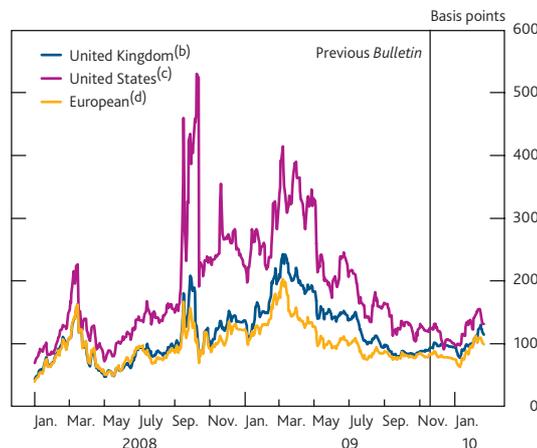
demand for longer-dated funds may have supported six-month Libor-OIS spreads.

Some of the emergency liquidity support measures adopted by central banks expired and others approached the end of their lifespan over the quarter. For example, central bank liquidity swap lines expired (see page 20 for more details of the Bank's swap line with the Federal Reserve) and the Term Asset-Backed Securities Loan Facility in the United States is due to close on 31 March 2010. Market contacts continued to expect a further gradual reduction of liquidity support from central banks. The US Federal Reserve's decision to increase its discount rate on 19 February strengthened these expectations.

There were, however, some renewed signs of stress in cross-currency funding markets. This seemed to be related to risk aversion associated with increased worries about sovereign default risk in Europe, and Greece in particular. In early February the cost of swapping funds raised in euro and sterling to US dollars via cross-currency swaps rose, although in the context of changes over the past year the increase was small.

The general increase in perceived sovereign risk from mid-January was also accompanied by higher CDS premia on bank debt (Chart 20). This was reportedly because banking systems still rely on support (both actual and contingent) from governments. Contacts also noted concerns about the potential for banks to make losses on holdings of Greek government debt, as well as potential difficulties for banks using these securities as collateral with the ECB should there be a further downgrade to Greece's sovereign debt rating. Separately, and in contrast, contacts noted some positive news about the UK commercial property sector, as described in the box on page 15.

**Chart 20** Selected international banks' CDS premia<sup>(a)</sup>



Source: Markit Group Limited.

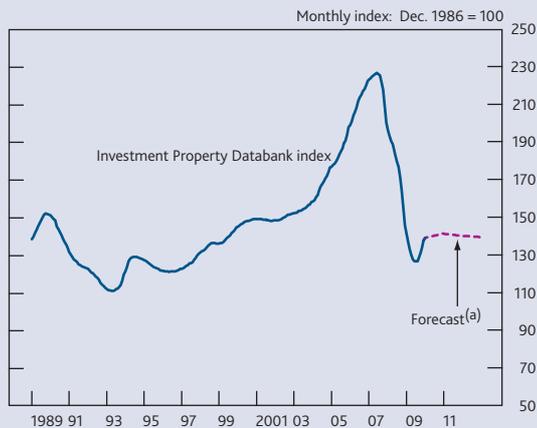
(a) Unweighted averages of five-year, senior CDS prices.  
 (b) Average of Barclays, HSBC, Lloyds Banking Group, RBS and Standard Chartered.  
 (c) Average of Bank of America, Citi, Goldman Sachs, JPMorgan and Morgan Stanley.  
 (d) Average of BBVA, BNP Paribas, Cr dit Agricole, Credit Suisse, Deutsche Bank, Santander, Soci t  G n rale, UBS and UniCredit.

## UK commercial property

The Bank has previously flagged exposure to the commercial property sector as a potential risk for UK banks.<sup>(1)</sup> This box provides an update of some recent developments.

In the United Kingdom, the Investment Property Databank all-property capital value index rose by 1% in January 2010, bringing cumulative growth since its trough in July 2009 to about 10% (Chart A).

**Chart A** UK commercial property capital values



Sources: Investment Property Databank, Morgan Stanley, Thomson Datastream and Bank calculations.

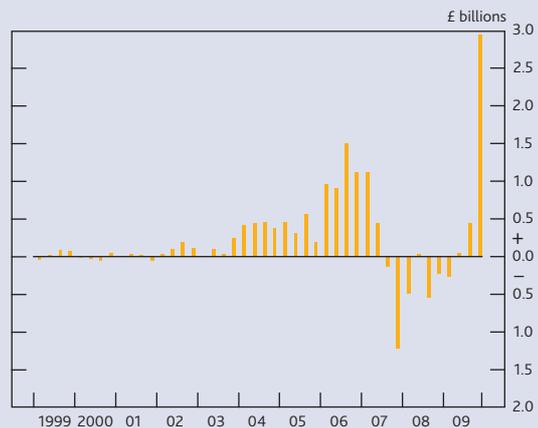
(a) Dashed line is implied property price forecast on 15 February, calculated by adjusting the value of derivatives contracts for total returns for income returns, which are assumed to revert to their long-run average over the next three years.

At longer horizons, banks face a challenge to secure funding to replace government-sponsored schemes which will expire over the next couple of years. As part of their strategy to address this funding gap, banks issued a significant amount of senior debt over recent months (Chart 21). This included record issuance from UK banks in January, although issuance was markedly weaker in February. And while many government-guarantee schemes continued, some banking sectors reduced their dependence on these.

Contacts also reported that banks were increasingly looking to securitisation and covered bond markets to raise funds. Covered bond issuance continued to increase; including from banks whose issuance was not eligible for ECB purchase. Prospects for issuance of mortgage-backed securities also reportedly improved. Total issuance in the first months of 2010 remained limited (Chart 22), despite individual issues by, for example, Lloyds Banking Group and Co-operative Bank. Other banks were reported to be preparing for future issuance, however, including the possibility of issues that do not give the investor an option to sell back the debt.

According to contacts, this principally reflected an increase in demand for prime properties by foreign investors as well as by domestic institutional and retail investors. Indeed, at £2.9 billion, data from the Association of Real Estate Funds show that net inflows into UK commercial property funds reached a record high in 2009 Q4 (Chart B).

**Chart B** Net inflows into UK unlisted pooled property funds

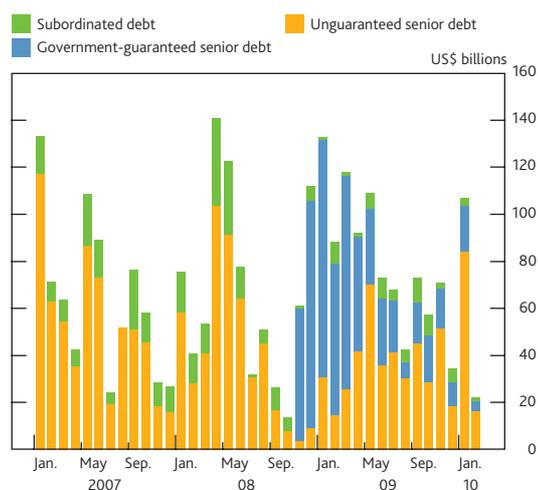


Sources: Association of Real Estate Funds and Bank calculations.

Despite the recent increases, UK commercial property values remain well below their peak in June 2007 and derivatives appear to price in little capital gain over the next few years.

(1) For a detailed description see the box on pages 24–25 of the December 2009 *Financial Stability Report*.

**Chart 21** Global bank debt issuance<sup>(a)</sup>



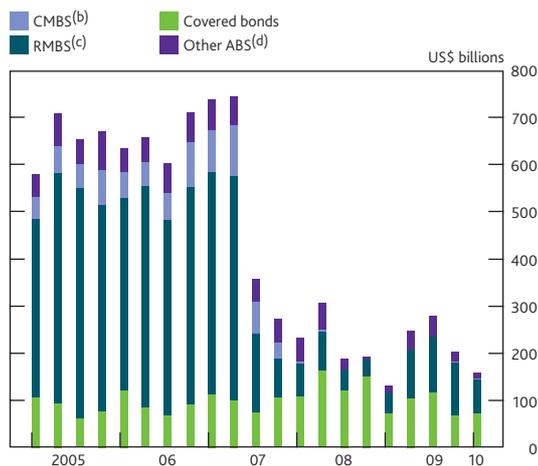
Source: Dealogic.

(a) Issuance with a value no less than US\$500 million equivalent and original maturity greater than one year.

However, despite recent debt issuance, contacts highlighted that for many banks the combined pace of long-term funding was not yet sufficient to meet refinancing needs without some corresponding reduction in assets. And while capital markets

remained open for banks to issue subordinated debt, contacts noted that banks may have little incentive to issue such securities in light of the uncertainty about prospective changes to prudential regulation. Specifically, the Basel Committee on Banking Supervision released a consultative document that raised questions about whether new issuance would be counted as capital going forward.

**Chart 22** Global issuance of asset-backed securities<sup>(a)</sup>



Sources: Dealogic and Bank calculations.

- (a) Only includes non-retained issuance, proxied by issuance that is eligible for inclusion in underwriting league tables.  
 (b) Commercial mortgage-backed securities.  
 (c) Residential mortgage-backed securities.  
 (d) Asset-backed securities.

## Bank of England operations

The Bank's balance sheet continued to expand, increasing from £235 billion at the end of the previous review period to £247 billion at the end of the current review period. This expansion principally reflected purchases of public sector assets under the Asset Purchase Facility (APF) following the MPC's decision on 5 November to increase the size of the programme of asset purchases financed by the issuance of central bank reserves by £25 billion to £200 billion. Over the review period, the stock of long-term repo open market operations (OMOs) fell, reflecting reduced demand for liquidity insurance.<sup>(1)</sup> The remainder of this section describes the Bank's operations over the review period in more detail.

### Asset purchases<sup>(2)</sup>

In the week prior to the February 2010 MPC meeting, the Bank met the target set by the MPC of purchasing £200 billion of private and public sector assets financed by the issuance of central bank reserves; a policy first announced on 5 March 2009 and extended on 7 May, 6 August and 5 November 2009. On 4 February 2010, the MPC voted to maintain the stock of asset purchases financed by the issuance of central bank reserves at £200 billion. The Bank announced that it would continue to purchase high-quality private sector assets

financed by the issue of Treasury bills and the Debt Management Office's (DMO) cash management operations, in line with the arrangements announced on 29 January 2009.

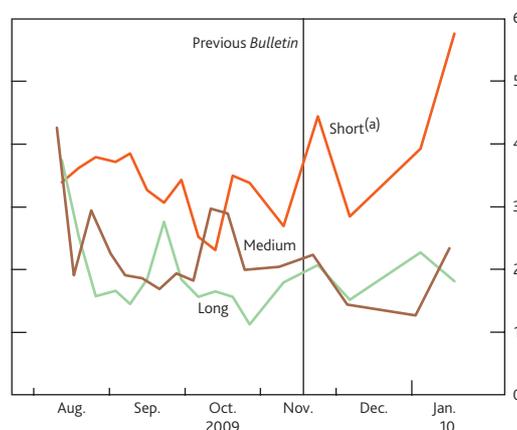
**Table A** summarises asset purchases over the review period by type of asset.<sup>(3)</sup>

### Gilts

Following the MPC's decision on 5 November to increase the scale of the programme of asset purchases from £175 billion to £200 billion, 15 auctions of £1.7 billion were conducted according to a two-week cycle. Gilts with a residual maturity of 10–25 years and 3–10 years were purchased on the Monday and Wednesday of the first week and gilts with a residual maturity greater than 25 years were purchased on the Tuesday of the following week. With the exception of the final two weeks of December, where no purchases were made, this cycle was repeated in subsequent weeks until the final week in January.

Cover in the auctions varied over the review period, averaging 4.2 in the 3–10 year auctions, 1.8 in the 10–25 year auctions and 1.9 in auctions for gilts with a maturity greater than 25 years (**Chart 23**).

**Chart 23** Cover ratios in APF gilt auction



- (a) On 6 August 2009, the short-maturity bucket changed from 5–10 years to 3–10 years. The medium and long-maturity buckets are 10–25 years and greater than 25 years respectively.

By the end of January 2010, £198.3 billion of gilts had been purchased under the asset purchase programme, of which £88.6 billion were in the 3–10 year residual maturity range, £84.8 billion in the 10–25 year maturity range and £24.8 billion had a maturity greater than 25 years (**Chart 24**). These gilt purchases took place over 92 auctions which varied in size up to a maximum of £3.5 billion.

- (1) See Cross, M, Fisher, P and Weeken, O (2010), 'The Bank's balance sheet during the crisis' on pages 34–42 in this *Bulletin*, for a detailed description of the Bank's operations and how the Bank's balance sheet has expanded during the crisis.  
 (2) The data cut-off for this subsection is 18 February.  
 (3) The objectives and operation of the APF are described in more detail in the 2009 Q2 *Quarterly Bulletin*.

**Table A** APF transactions by type (£ millions)

Week ending <sup>(a)</sup>	Commercial paper	Gilts	Corporate bonds		Total <sup>(b)</sup>
			Purchases	Sales	
19 November 2009 <sup>(c)(d)</sup>	588	177,875		1,522	179,985
26 November 2009	224	3,400	5	0	3,629
3 December 2009	0	1,701	4	0	1,705
10 December 2009	125	3,400	2	0	3,527
17 December 2009	190	1,700	0	0	1,890
24 December 2009	0	0	0	0	0
31 December 2009	25	0	0	0	25
7 January 2010	25	3,400	0	0	3,425
14 January 2010	30	1,700	10	76	1,664
21 January 2010	275	3,400	29	19	3,685
28 January 2010	200	1,700	0	8	1,892
4 February 2010	25	0	3	18	10
11 February 2010	0	0	12	2	10
18 February 2010	0	0	8	12	-4
Total financed by a deposit from the DMO <sup>(d)(e)</sup>	–	–		12	–
Total financed by central bank reserves <sup>(d)(e)</sup>	279	198,275		1,455	200,009
Total asset purchases <sup>(d)(e)</sup>	279	198,275		1,467	200,009

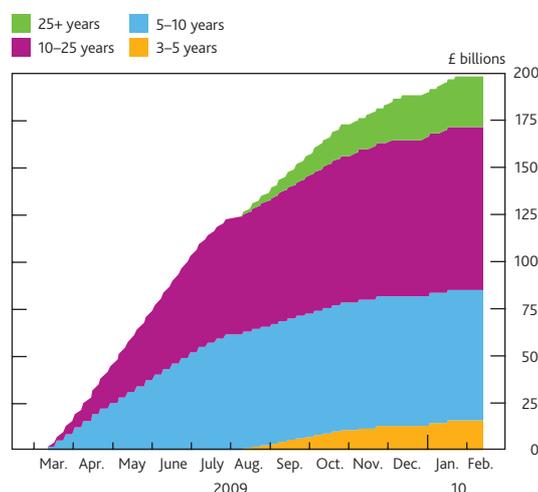
(a) Week-ended amounts are for purchases in terms of the proceeds paid to counterparties, and for sales in terms of the value at which the Bank initially purchased the securities. All amounts are on a trade-day basis, rounded to the nearest million. Data are aggregated for purchases from the Friday to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

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

(c) 19 November 2009 measured as amount outstanding as at 19 November 2009.

(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.

**Chart 24** Cumulative gilt purchases<sup>(a)</sup> by maturity

(a) Data based on settled transactions.

The Bank continued to lend some of its gilt holdings via the DMO in return for other UK government collateral. Between 1 October and 31 December 2009 a daily average of £3.3 billion was lent in this way. Use of the facility continued to generally be concentrated in gilts in which the Bank holds a large proportion of the free float (the total amount of a gilt in issue less those held by the UK Government).

### 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. As of 18 February 2010, APF holdings of CP amounted to £0.3 billion, down from £0.6 billion as of 19 November 2009. Gross purchases over the period were £1.2 billion, compared with redemptions of £1.5 billion, as the Facility primarily acted as a backstop, following temporary reductions in market liquidity. The majority of primary spreads in the market remained below the spreads at which the APF offers to purchase CP.

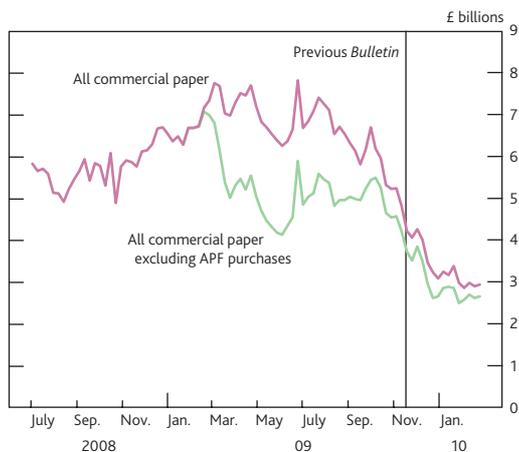
In the wider market, the total amount of sterling-denominated CP outstanding for UK corporate and non-bank financial firms fell over the review period from £4.2 billion to £2.9 billion as issuers continued to raise longer-term issuance in the corporate bond market and CP issuance in other currencies (**Chart 25**).

### Corporate bonds

The Bank's Corporate Bond Secondary Market Scheme aims to facilitate market-making by banks and dealers, to help reduce illiquidity premia and so remove obstacles to corporates' access to capital markets. To fulfil this aim the Bank has offered, since March 2009, to make small purchases of a wide range of high-quality corporate bonds by reverse auctions.

On 3 December 2009 the Bank launched a consultation on proposals for a possible extension to the Scheme through the Bank of England Asset Purchase Facility Fund (BEAPFF) operating as a seller, as well as a buyer, of corporate bonds. The proposals were aimed at improving secondary market

**Chart 25** Sterling commercial paper outstanding for UK corporates and non-bank financial firms



Sources: CP Ware and Bank calculations.

liquidity. The proposals received positive feedback from market makers, other dealers and corporates. Accordingly, on 22 December 2009 the Bank announced that it would commence sale auctions on 8 January 2010, with the new timetable of operations consisting of two purchase auctions and one sale auction each week. The Bank may also sell bonds into tender offers initiated by the issuing firm where such sales are consistent with the overall objectives of the programme, including prudent risk management.

The first corporate bond sale auction received a high level of activity, with counterparties bidding £1.2 billion in total across every bond in the auction. This auction coincided with a period of heightened investor demand for corporate bonds, and, as the first operation of its type, market contacts noted the auction drew an elevated level of interest. Over the proceeding auctions the level of activity moderated, with an average of £157 million bid for by counterparties, and £12 million sold by the Bank, in the subsequent five operations.

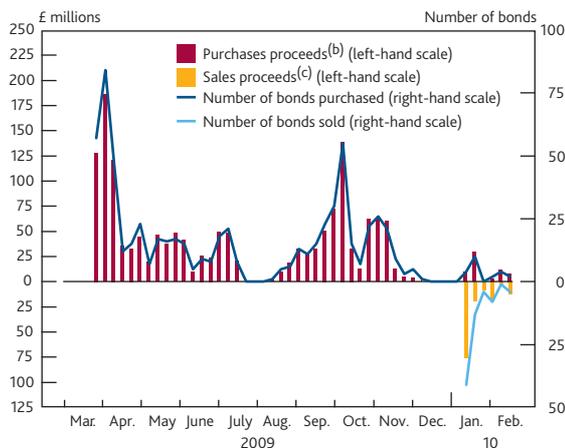
Activity in corporate bond purchase operations fell towards the end of 2009, with four consecutive weeks from mid-December in which the Bank made no purchases. Seasonal factors along with increased investor demand for corporate bonds are likely causes of this fall. Activity increased modestly in the New Year, with an average of £94 million offered by counterparties.

As of 18 February 2010, the Bank portfolio totalled £1,467 million, compared to £1,522 million at the end of the previous review period on 19 November 2009. This fall reflected the effect of corporate bond sales (**Chart 26**).

### Credit Guarantee Scheme

The Bank did not make any purchases of bank debt issued under the Credit Guarantee Scheme from the secondary

**Chart 26** Weekly transactions of sterling corporate bonds<sup>(a)</sup>



(a) Data start on 26 March 2010.

(b) Weekly (Friday–Thursday) amounts in terms of the proceeds paid to counterparties, on a trade-day basis.

(c) Weekly (Friday–Thursday) amounts in terms of value at time of initial purchase, on a trade-day basis.

market, but stands ready to do so should conditions in that market deteriorate.

### 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.<sup>(1)</sup> There has been no use of the Facility to date, and no SCP programmes have so far been deemed eligible. This largely reflects a change in market conditions since the original consultation. Existing asset-backed commercial paper (ABCP) programmes are now able to fund themselves in the US ABCP market, where pricing has largely normalised. There is also sufficient 'spare capacity' in these programmes to fund further assets if required. That means there has not been demand to set up new conduits to be funded by the SCP facility.

### Operations within the sterling monetary framework

During the period under review, the level of reserves was determined by (i) the level of reserves injected via asset purchases, (ii) the reserves supplied in long-term repo OMOs, and (iii) the net impact of other sterling ('autonomous factor') flows across the Bank's balance sheet. Aggregate reserves rose over the review period from £145 billion on 20 November 2009 to £155 billion on 19 February 2010, as the fall in the stock of long-term repo OMOs was more than offset by the increase in reserves injected via asset purchases.

The continued reduction in the outstanding stock of long-term repo OMOs reflected reduced demand for liquidity insurance. Indeed, all three-month extended-collateral long-term repo OMOs over the review period were uncovered (**Table B**).

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

**Table B** Extended-collateral three-month long-term repo operations

<b>1 December 2009</b>	
On offer (£ millions)	5,000
Cover	0.30
Weighted average rate <sup>(a)</sup>	0.500
Lowest accepted rate <sup>(a)</sup>	0.500
Tail <sup>(b)</sup>	0.00
<b>15 December 2009</b>	
On offer (£ millions)	5,000
Cover	0.12
Weighted average rate <sup>(a)</sup>	0.878
Lowest accepted rate <sup>(a)</sup>	0.500
Tail <sup>(b)</sup>	0.38
<b>5 January 2010</b>	
On offer (£ millions)	5,000
Cover	0.32
Weighted average rate <sup>(a)</sup>	0.504
Lowest accepted rate <sup>(a)</sup>	0.500
Tail <sup>(b)</sup>	0.00
<b>12 January 2010</b>	
On offer (£ millions)	5,000
Cover	0.59
Weighted average rate <sup>(a)</sup>	0.540
Lowest accepted rate <sup>(a)</sup>	0.500
Tail <sup>(b)</sup>	0.04
<b>16 February 2010</b>	
On offer (£ millions)	5,000
Cover	0.85
Weighted average rate <sup>(a)</sup>	0.851
Lowest accepted rate <sup>(a)</sup>	0.500
Tail <sup>(b)</sup>	0.35

(a) Per cent.

(b) The yield tail measures, in basis points, the difference between the weighted average accepted rate and the lowest accepted rate.

On 8 January 2010, the Bank announced that, with immediate effect, it would reduce the frequency of extended-collateral three-month long-term repo operations from twice monthly to monthly until a new permanent design for long-term repo operations is introduced later in 2010.<sup>(1)</sup>

The Bank continued to set two minimum bid rates for its three-month extended-collateral long-term repo OMOs. The minimum bid rate for bids against routine OMO collateral remained at the higher of the equivalent-maturity OIS rate and Bank Rate. For bids against the wider collateral pool, the minimum bid rate remained 50 basis points higher than that for routine OMO collateral.

Monthly repo operations at six, nine and twelve-month maturities were offered against collateral routinely accepted in the Bank's short-term OMOs and Operational Standing Facilities. In contrast to the repo operations at three-month maturity all these operations were covered (Table C).

**Table C** Long-term repo operations

	Six-month	Nine-month	Twelve-month
<b>15 December 2009</b>			
On offer (£ millions)	750	400	200
Cover	3.07	4.50	5.50
Weighted average rate <sup>(a)</sup>	0.484	0.581	0.721
Lowest accepted rate <sup>(a)</sup>	0.477	0.581	0.721
Tail <sup>(b)</sup>	0.01	0.00	0.00
<b>12 January 2010</b>			
On offer (£ millions)	750	400	200
Cover	2.89	4.50	6.25
Weighted average rate <sup>(a)</sup>	0.507	0.576	0.740
Lowest accepted rate <sup>(a)</sup>	0.491	0.553	0.740
Tail <sup>(b)</sup>	0.02	0.02	0.00
<b>16 February 2010</b>			
On offer (£ millions)	750	400	200
Cover	3.10	3.75	2.60
Weighted average rate <sup>(a)</sup>	0.535	0.575	0.680
Lowest accepted rate <sup>(a)</sup>	0.530	0.570	0.680
Tail <sup>(b)</sup>	0.00	0.01	0.00

(a) Per cent.

(b) The yield tail measures, in basis points, the difference between the weighted average accepted rate and the lowest accepted rate.

### Operational Standing Facilities

As part of the changes to the sterling monetary framework (SMF) introduced on 5 March 2009, the Bank announced that, if Bank Rate was set at 0.5% or below, the rate paid on the Operational Standing Deposit Facility would be zero, while the rate charged on the Operational Standing Lending Facility would continue to be set at 25 basis points above Bank Rate.

As a result of the change to remunerate all reserves balances at Bank Rate and (given the level of Bank Rate) the reduction in the rate paid on the Operational Standing Deposit Facility to zero, average use of the deposit facility was £0 million in each of the maintenance periods under review. Average usage of the lending facility was also £0 million throughout the period.

### Discount Window Facility

In October 2008, the Bank introduced a Discount Window Facility (DWF) as part of the framework for its operations in the sterling money markets. The DWF is a permanent facility to provide liquidity insurance to the banking system and allows eligible banks and building societies to borrow gilts against a wide range of collateral.

On 5 January 2010, the Bank announced that the average daily amount outstanding in the Discount Window Facility between 1 July and 30 September 2009 was £0 million.

(1) The Bank's Consultation Document of October 2008 contains further information on the proposed new operational design for extended-collateral three-month repo operations.

## Other market operations

### Special Liquidity Scheme

The drawdown period for the Special Liquidity Scheme (SLS) closed on 30 January 2009. Although the drawdown window to access the SLS has closed, the Scheme will remain in place for three years, thereby providing participating institutions with continuing liquidity support.

### US dollar repo operations

In concert with other central banks, on 18 September 2008 the Bank announced measures to offer dollar financing to financial institutions funded by a swap with the Federal Reserve. These measures were designed to improve the liquidity conditions in global financial markets.

The Bank initially offered US dollar financing at overnight, one-week, one-month and three-month maturities. In light of reduced demand for these operations the Bank had previously suspended all but the one-week operation. In co-ordination with other central banks, the Bank confirmed on 27 January 2010 that its temporary liquidity swap lines with the Federal Reserve would expire on 1 February 2010. The one-week operation conducted on 27 January 2010 was, therefore, the final US dollar repo operation. Since the previous *Bulletin*, the total stock outstanding has fallen from \$13 million to zero.

### Foreign reserves

As part of the monetary policy framework introduced by the Chancellor of the Exchequer in 1997, the Bank of England holds its own foreign exchange reserves in support of its monetary policy objective. These reserves are separate from the Government's foreign exchange reserves, which the Bank manages as HM Treasury's agent. They are financed with medium-term foreign currency securities issued by the Bank. At the end of the review period, the Bank's foreign exchange reserves comprised £3.9 billion of assets compared to £4 billion at the start of the review period.

### 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.

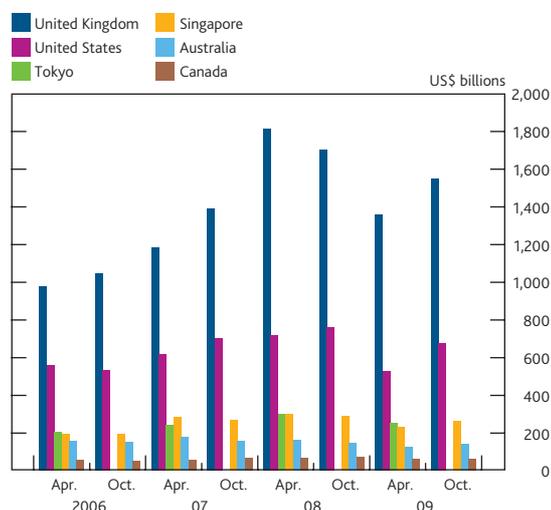
The portfolio currently includes around £3.2 billion of gilts and £0.6 billion of other debt securities. Over the period from 20 November 2009 to 19 February 2010, gilt purchases were made in accordance with the quarterly announcements on 1 October 2009 and 4 January 2010.

## Developments in market structure

### Global foreign exchange turnover

Results of the October 2009 Foreign Exchange Joint Standing Committee survey for the UK foreign exchange (FX) market were published on 25 January 2010, in co-ordination with five other committees publishing similar surveys for other markets. Overall, the results showed that compared with April 2009, foreign exchange turnover increased in all of the main markets. However, turnover remained below levels reported prior to the intensification of pressures in financial markets in Autumn 2008 (**Chart 27**).

**Chart 27** Global foreign exchange average daily turnover<sup>(a)(b)</sup>



Sources: Australian Foreign Exchange Committee, Canadian Foreign Exchange Committee, London Foreign Exchange Joint Standing Committee, New York Foreign Exchange Committee, Singapore Foreign Exchange Market Committee and Tokyo Foreign Exchange Committee.

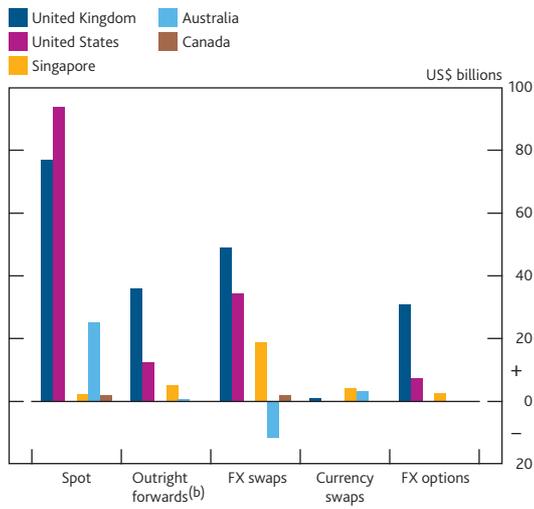
- (a) Turnover figures include spot currency, outright forwards, foreign exchange swaps, currency swaps and foreign exchange options.  
 (b) The Tokyo Foreign Exchange Committee survey is conducted annually, whereas the others are conducted bi-annually.

The United Kingdom remained the largest centre for foreign exchange activity, accounting for 57.6% of reported global turnover. Average daily turnover increased across all products with the most significant increases in spot FX and FX swaps. Spot FX increased by \$77 billion in the United Kingdom compared with \$94 billion in the United States, while FX swaps increased by \$49 billion in the United Kingdom and \$35 billion in the United States (**Chart 28**).

### London Stock Exchange bond trading platform for retail investors

In response to demand from retail investors, on 1 February 2010 the London Stock Exchange launched a new electronic order system for bonds. Similar to arrangements for individuals to deal in shares, the new service offers continuous two-way pricing for trading in increments of as little as £1 for gilts and £1,000 for corporate bonds. Normally these investments would trade in units of £50,000.

**Chart 28** Changes in foreign exchange average daily turnover by instrument between April and October 2009<sup>(a)</sup>



Sources: Australian Foreign Exchange Committee, Canadian Foreign Exchange Committee, London Foreign Exchange Joint Standing Committee, New York Foreign Exchange Committee and Singapore Foreign Exchange Market Committee.

(a) Tokyo is excluded because the Tokyo Foreign Exchange Committee publish their survey annually.  
 (b) Outright forwards data include non-deliverable forwards for the United Kingdom.

Initially, 49 gilts and ten corporate bonds are available for trading including securities issued by a range of large companies and a bond issued specifically for this new service by Royal Bank of Scotland. The new market is supported by dedicated market makers.