

Quarterly Bulletin

2009 Q4 | Volume 49 No. 4



BANK OF ENGLAND





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Foreword

The regular *Markets and operations* report in this edition of the *Quarterly Bulletin* reviews recent developments in sterling capital markets and the Bank's official operations. Echoing developments globally, conditions in sterling markets improved further over the quarter. Despite some temporary bouts of investor nervousness, asset prices continued their recovery from the lows in March and financial market activity picked up somewhat. This is consistent with a gradual improvement in the economic outlook in the United Kingdom and abroad, in which the perceived likelihood of extreme downside economic and financial outturns fell further. The Monetary Policy Committee's asset purchase programme is also likely to have boosted sterling asset prices directly by encouraging investors to rebalance their portfolios away from gilts towards other assets, such as corporate bonds and equities, and so reducing the required risk premia on these assets.

A marked feature of the response of our economy to the current recession is that employment to date has not fallen by as much as we might have feared given the falls in output. This may partly reflect the greater degree of wage flexibility that has been apparent in this recession compared to that in earlier downturns. A substantial element of the workforce appears to have been able to protect their jobs by accepting slower wage growth.

An important component of this slower wage growth has been the recent movements in pay settlements. Average pay settlements have fallen sharply over the past year and many companies have imposed pay freezes. The decline has been broad-based across sectors, although the businesses that have frozen pay have tended to be smaller than average. The decline in settlements likely reflects both the weakening demand for labour and the sharp falls in official measures of inflation. Recent movements in pay settlements are reviewed in this *Bulletin* in a new style of article which aims to give a short description of interesting recent developments in the economic data. This type of article will be an occasional feature of future *Bulletins*.

Slower wage growth and lower employment are just two of the many factors affecting the financial position of British households as a result of the recession. Credit conditions have tightened, financial asset prices have declined, and despite the recent increase, house prices have fallen substantially. But against this backdrop, the UK authorities have taken wide-ranging measures to support the economy. In particular, the Monetary Policy Committee (MPC) has cut Bank Rate to historically low levels, affecting the interest rates faced by many borrowers and savers, and embarked on a programme of large-scale asset purchases. In gauging the effectiveness of this policy response, it is important for the Committee to assess how the financial situation of households has changed over the past year.

This assessment is informed by an annual survey of households' financial situation carried out for the Bank by NMG Financial Services Consulting. The results of the latest survey — which

contributed to the MPC's assessment of the prospects for household consumption and saving in the November *Inflation Report* — are examined in this *Bulletin*. The survey found that a net balance of households had experienced a decline in the income they had available after paying tax, housing costs, bills and loan payments. However, despite the severe recession, the proportion of households who reported difficulties keeping up with bills and credit commitments had fallen slightly compared to last year's survey. This partly reflected the effects of the reduction in interest rates on borrowers' loan repayments. Over half of all mortgagors in the survey reported a fall in their monthly mortgage payments. The survey also asked new questions on how households have responded to these recent shocks by altering their decisions to spend and save. Around a quarter of respondents reported that they had increased or planned to increase the amount of money they save.

Since the start of the financial crisis, sterling has depreciated significantly. Despite this, the UK terms of trade — the price of UK exports relative to imports — have remained broadly unchanged. The terms of trade represent the purchasing power of the economy — the amount of imports a country can buy in exchange for its exports. Changes in our terms of trade can have important implications for both domestic spending and our trade balance. The article in this *Bulletin* explores the link between the exchange rate and the terms of trade and examines how companies' pricing strategies can affect that link. It also decomposes the UK terms of trade data to see if this can help explain what lies behind the recent stability.

In an accounting sense, the stability of the UK terms of trade reflects the fact that sterling import and export prices have risen by similar amounts, and by only a little less than the exchange rate depreciation. This is consistent with a significant proportion of UK exporters initially setting their prices in foreign currency, and enjoying the benefits of the lower currency in the form of higher margins, and a significant proportion of exporters to the United Kingdom setting their prices in their own currency.

The rise in sterling export prices will create an incentive for rebalancing within our economy and resources may be reallocated towards the traded sector. The speed with which export prices adjust will be affected by a number of factors, including the responsiveness of demand to changes in price and the perceived persistence of the exchange rate movement. Over time, UK export prices are likely to decline, as export contracts are renewed and new firms are attracted into the UK export sector, causing the UK terms of trade to decline.

This, along with the other issues discussed in this edition of the *Bulletin*, will be among the many that the Monetary Policy Committee will be assessing further in the months ahead.

A handwritten signature in black ink that reads "Spencer Dale". The signature is written in a cursive style with a long horizontal stroke at the bottom.

Spencer Dale

Chief Economist and Executive Director — Monetary Analysis and Statistics.

Research work published by the Bank is intended to contribute to debate, and does not necessarily reflect the views of the Bank or of MPC members.

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The contents page, with links to the articles in PDF, is available at
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Author of articles can be contacted at
forename.surname@bankofengland.co.uk

The speeches contained in the *Bulletin* can be found at
www.bankofengland.co.uk/publications/speeches/index.htm

Except where otherwise stated, the source of the data used in charts and tables is the Bank of England or the Office for National Statistics (ONS). All data, apart from financial markets data, are seasonally adjusted.

Recent economic and financial developments



Markets and operations

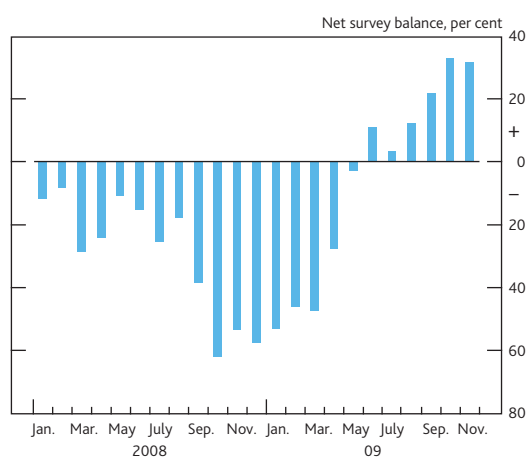
This article reviews developments in sterling financial markets since the 2009 Q3 *Quarterly Bulletin* up to end-November 2009. The article also reviews the Bank's official operations.

Sterling financial markets⁽¹⁾

Overview

Echoing developments globally, conditions in sterling capital markets improved further since the previous *Bulletin*. Despite temporary bouts of investor nervousness, for example following the release of weaker-than-expected Q3 UK GDP data, asset prices continued their recovery from the lows in March. Financial market activity also picked up, including some public issuance in markets that were previously closed, such as the market for UK residential mortgage-backed securities. More generally, liquidity conditions improved according to contacts and survey evidence (**Chart 1**).

Chart 1 Fund manager survey of market liquidity conditions^(a)



Source: Bank of America/Merrill Lynch Global Fund Manager Survey.

(a) Net respondents to the survey question: 'How would you rate liquidity conditions (eg depth of markets, narrowness of bid-offer spreads, ease of execution etc) at this time?'

The increases in asset prices and financial market activity seemed to reflect perceptions of a gradual improvement in the economic outlook in the United Kingdom and overseas. At the same time, continued accommodative monetary and fiscal policies may have underpinned asset prices as worries about the prospects of extreme downside risks, such as a collapse in aggregate demand and/or financial system gridlock, subsided further. Asset purchases by the Bank are also likely to have

boosted asset prices by encouraging portfolio rebalancing towards riskier assets and reducing required risk premia.

Nonetheless, sentiment in financial markets remained fragile. Indeed, after the data cut-off for this article there was a renewed period of market volatility linked to worries about the possible wider implications of the potential default of the Dubai World investment company.

Recent developments in sterling capital markets

Monetary policy

The Bank of England's Monetary Policy Committee (MPC) continued to implement unconventional measures aimed at supporting nominal demand in the economy. Specifically, alongside leaving Bank Rate unchanged at 0.5%, on 5 November the MPC voted to increase the scale of its programme of asset purchases financed by the issuance of central bank reserves by £25 billion to £200 billion. Those purchases are due to be completed by the time of the MPC's February 2010 meeting. More details of asset purchases made to date and the Bank's other operations are provided on pages 266–71.

These unconventional policy measures — alongside those to provide liquidity insurance — have led to a significant increase in the size of the Bank's balance sheet over the past year.

Chart 2 puts that expansion in a historical context: relative to annual GDP, the Bank's balance sheet has become about as large as at any point in the past two centuries.⁽²⁾

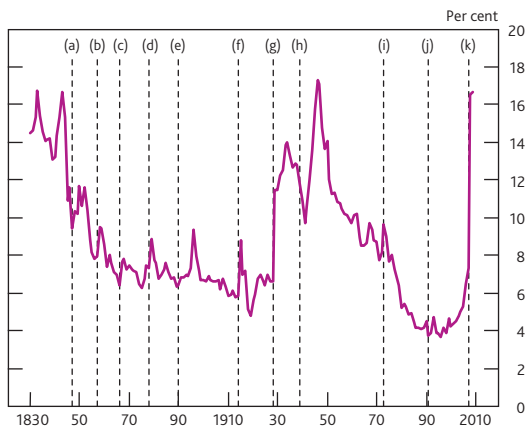
Short-term interest rates

Since the previous *Bulletin*, sterling overnight interest rates traded within 10 basis points of Bank Rate (**Chart 3**). As noted in previous *Bulletins*, banks might usually be expected to charge a premium for the credit risk associated with unsecured interbank lending compared to secured transactions of equivalent maturity. So the fact that for much of the period secured interest rates traded slightly above unsecured interest

(1) The data cut-off for this section is 20 November.

(2) Fisher (2009), available at www.bankofengland.co.uk/publications/speeches/2009/speech413.pdf, provides a detailed discussion of the Bank's operations and how the Bank's balance sheet has expanded during the financial crisis.

Chart 2 Bank of England balance sheet as a percentage of annual nominal GDP



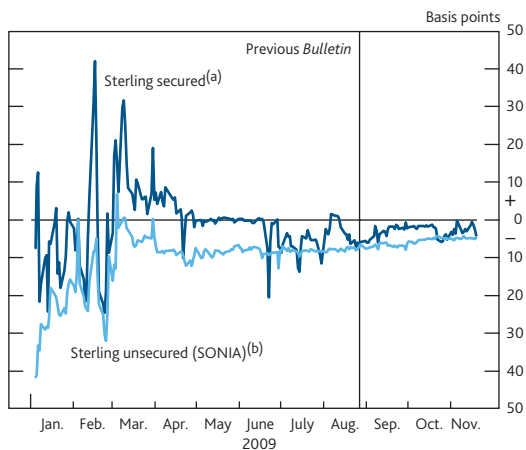
Note: The balance sheet observations are end-February for 1830–1966, end-year for 1967–2008 and end-year for 2009.

Sources: Consensus Economics Inc., ONS, www.measuringworth.org/datasets/ukgdp/result.php# and Bank calculations.

- (a) Famine/end of railroad boom (1847).
- (b) Overextension of credit from 1855–66 (1857).
- (c) Failure of Overend Gurney (1866).
- (d) Failure of City of Glasgow Bank (1878).
- (e) Support for Barings (1890).
- (f) First World War (1914).
- (g) Amalgamation of Treasury and Bank note issues (1928).
- (h) Second World War (1939).
- (i) Secondary Banking Crisis (1973).
- (j) Small Banks Crisis (1991).
- (k) Current crisis (2007).

The y-axis scale has been corrected since initial publication.

Chart 3 Spread to Bank Rate of overnight interest rates



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

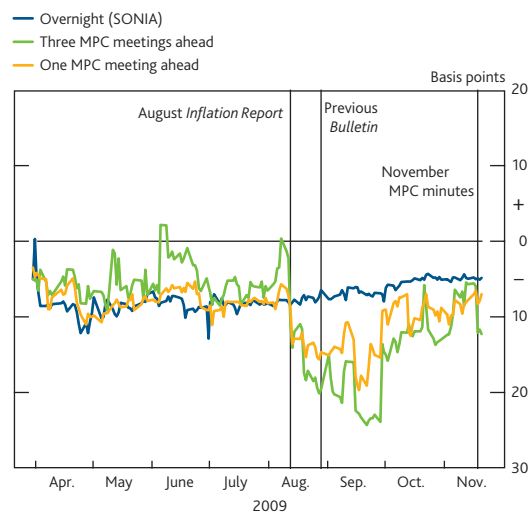
- (a) Spread of weighted average secured overnight rate to Bank Rate.
- (b) Spread of weighted average unsecured overnight rate to Bank Rate.

rates (as measured by sterling overnight index average (SONIA) rates) probably reflected continued fragmentation in money markets. However, consistent with feedback from market contacts that some money market participants shifted from providing unsecured to secured lending, the spread between secured and unsecured overnight interest rates had narrowed by the end of the period.

Interest rates on meeting-to-meeting overnight index swaps (OIS), which are indicative of expectations of future overnight interest rates, were volatile (Chart 4). Market contacts noted

that this was not related to expectations about a change in Bank Rate over the next few months. Instead, the volatility at these short horizons was likely to have reflected speculation following comments at the August *Inflation Report* press conference that the Bank might review whether all reserves balances held by commercial banks at the Bank should continue to be remunerated at Bank Rate.

Chart 4 Spread to Bank Rate of sterling short-term interest rates^(a)



Sources: Bank of England and Bloomberg.

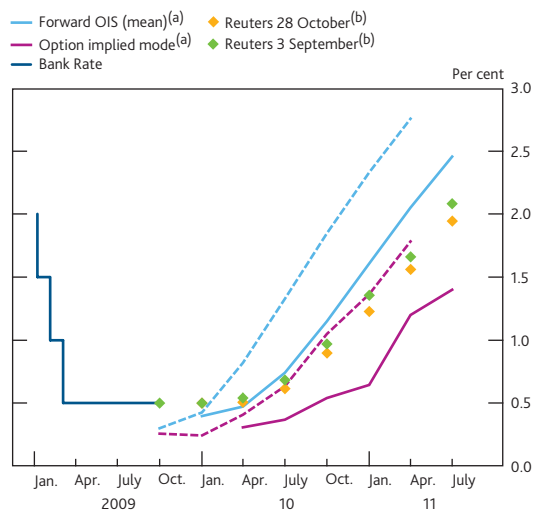
(a) For more details on these and other measures of market expectations of future Bank Rate, see Joyce, M and Meldrum, A (2008), 'Market expectations of future Bank Rate', *Bank of England Quarterly Bulletin*, Vol. 48, No. 3, pages 274–82.

At its November meeting, the MPC discussed the merits of changing the structure of remuneration on commercial bank reserves. The Committee concluded that such an action would be unlikely to have a significant impact on the economic outlook given the already low levels of short-term market rates, and that asset purchases were likely to be a more effective instrument for affecting monetary conditions at that time. While the MPC agreed not to make use of this option in November, the Committee agreed that it might be a useful policy tool in some circumstances and therefore should be available in the future.

At longer horizons, market-based expectations of short-term interest rates as measured by forward OIS rates fell (Chart 5), consistent with a reappraisal by market participants about the timing of the beginning of the withdrawal of the exceptional degree of monetary stimulus. Nevertheless, relative to the Reuters poll of economists' forecasts for Bank Rate, OIS rates remained higher. This divergence has persisted for several months and could reflect the difference between mean and modal expectations rather than differences in the expected pace of monetary policy tightening. Reuters surveys economists' views of the most likely outcome for future policy rates (ie the poll reflects an average of modal expectations) whereas OIS rates reflect mean expectations. Chart 5 plots an

estimated modal path for OIS rates derived from options on futures contracts that settle on the London interbank offered rate (Libor).⁽¹⁾ This estimate of the modal path for OIS rates indicated that market participants anticipated no increase in policy rates until at least the second half of 2010.

Chart 5 Bank Rate, forward market interest rates and survey expectations

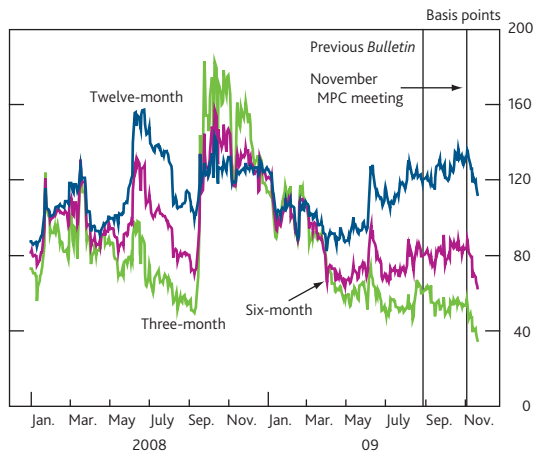


Sources: Reuters and Bank calculations.

(a) Solid lines are as at 20 November. Dashed lines are as at 28 August.
 (b) Simple averages of poll contributors' modal expectations of Bank Rate.

After the November MPC decision, the lower expected path for policy rates was accompanied by reduced uncertainty about future short-term sterling market interest rates (Chart 6). Because these implied volatility measures are derived from options on Libor futures they will, in addition to uncertainty about the future path of policy rates, also reflect uncertainty about the spread between Libor and OIS rates.

Chart 6 Sterling short-term interest rate implied volatility

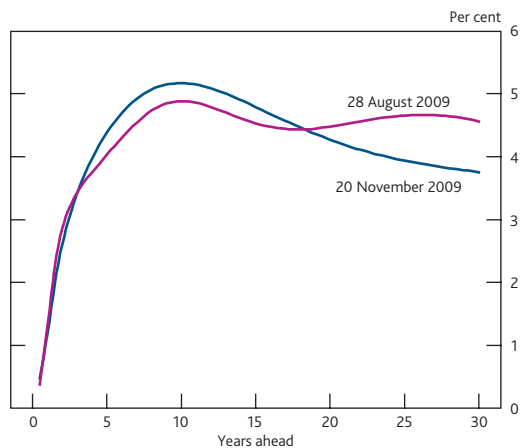


Sources: Euronext.liffe and Bank calculations.

Long-term interest rates

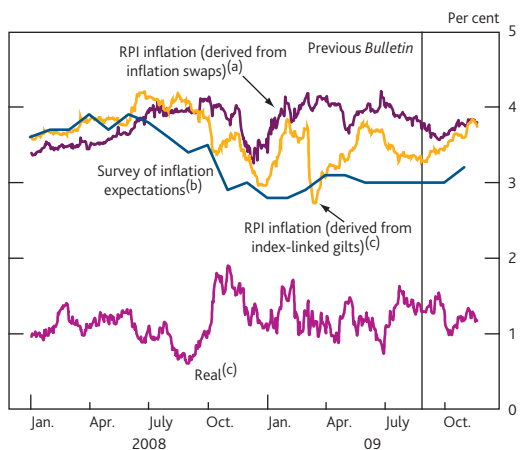
Long-term sterling nominal forward rates rose up to horizons of around 20 years but fell further out (Chart 7). Chart 8 shows that at the five-year, five-year forward horizon this reflected a pickup in long-term inflation forwards (derived from the difference between yields on conventional and index-linked gilts). In contrast, real forward rates ended the period broadly unchanged.

Chart 7 Sterling nominal forward rates^(a)



(a) Instantaneous forward rates derived from the Bank's government liability curve.

Chart 8 Sterling five-year real interest rates and inflation five years forward and long-run inflation expectations



Sources: Bank of England and YouGov/Citigroup.

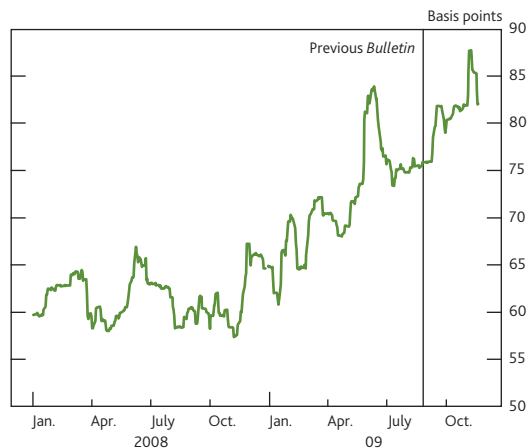
(a) Derived from the Bank's government swap liability curve.
 (b) YouGov/Citigroup survey results of long-term public inflation expectations for five to ten years ahead.
 (c) Derived from the Bank's government liability curve.

A number of factors might explain this increase in implied sterling inflation forward rates. First, it could have reflected a genuine rise in inflation expectations. The YouGov/Citigroup survey indicated that the UK public's inflation expectations over the five to ten-year horizon rose slightly in October, although they remained below levels in 2008.

(1) For a description of the method used to construct modal expectations for OIS rates see the box on pages 158–59 of the 2009 Q3 *Bulletin*, 'An indicative decomposition of the option-implied probability distribution for Libor'.

Second, it could be that it was associated with an increase in inflation risk premia — that is, an increase in the required compensation for uncertainty about future inflation. Contacts put more weight on this second explanation, linking it to uncertainty about the timing and pace at which the significant monetary policy stimulus would be withdrawn. Perhaps consistent with this, information from options on long-term interest rates suggested that implied volatility rose (Chart 9).

Chart 9 Sterling normalised swaption implied volatility (five-year, five years forward)



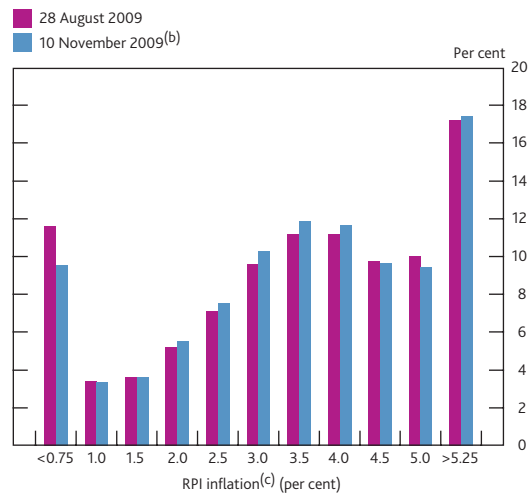
Source: Barclays Capital.

Contacts also noted that investors sought greater protection against upside risks to inflation. A distribution derived from RPI inflation options suggested that investors placed slightly more weight on very high outcomes for future RPI inflation relative to very low outcomes (Chart 10).⁽¹⁾

An alternative explanation for the rise in nominal five-year, five-year forward rates is that it was related to factors specific to the gilt market. Consistent with this, measures of forward inflation rates derived from inflation swaps were little changed since the previous *Bulletin* (Chart 8). Moreover, at similar horizons, forward rates on OIS were little changed over the period (Chart 11).

The divergence between gilt and OIS forward rates may reflect changes in premia specific to UK government bonds. Chart 12 shows that the gilt-OIS spread widened at horizons up to around 20 years but narrowed at longer horizons. This could reflect investors rebalancing their portfolios across different maturity segments of the gilt market, given that asset purchases conducted by the Bank have likely affected the mix of available gilts. To the extent that investors prefer to hold particular securities, bonds of different maturities may be imperfect substitutes. As a result, investors may be prepared to pay more for those bonds relative to others, which would affect their yields relative to OIS rates.

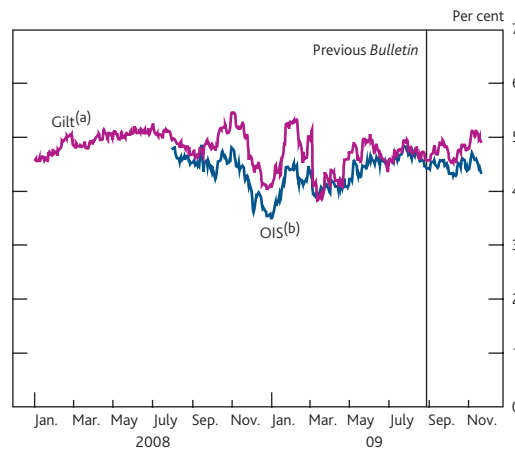
Chart 10 Average probability distribution of annual RPI inflation outturns for five to seven years ahead implied from options^(a)



Sources: Royal Bank of Scotland and Bank calculations.

- (a) Implied from prices of options on UK RPI inflation. For a more detailed discussion of RPI inflation options see the box 'UK RPI inflation options' in 2009 Q3 *Bank of England Quarterly Bulletin*, page 163.
 (b) Latest date within the review period for which quotes for options at multiple strikes were available.
 (c) Probability that RPI inflation will fall within a 0.5% range, centred on x-axis value (except for the distribution tails which extend for noted value onward).

Chart 11 Sterling nominal five-year interest rates, five years forward

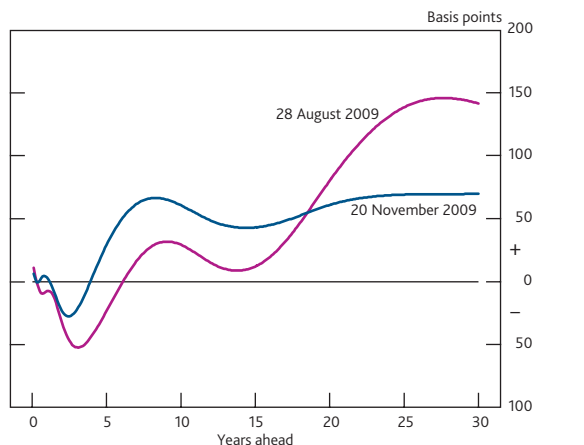


- (a) Derived from the Bank's government liability curve.
 (b) Derived from overnight index swaps (OIS).

In addition, contacts noted that gilt yields were affected by concerns about how the gilt market would absorb the scale of prospective issuance by the UK Debt Management Office and/or potential gilt sales by the Bank. Similarly, because of the projected UK government debt position, investors might also have become more concerned about the United Kingdom's credit standing and demanded additional compensation to hold gilts. The premia on long-horizon UK sovereign credit default swaps (CDS) rose both in absolute terms and relative to other triple-A rated sovereign borrowers, but remained below their peaks earlier in the year (Chart 13).

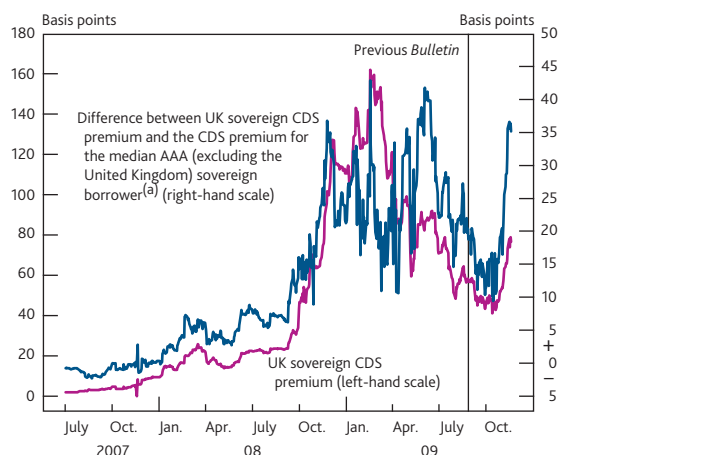
(1) For more discussion of RPI options see the box 'UK RPI inflation options' on page 163 of the 2009 Q3 *Bulletin*.

Chart 12 Sterling gilt-OIS forward spreads^(a)



(a) Instantaneous forward rates derived from the Bank's government liability curve and overnight index swaps.

Chart 13 UK sovereign ten-year CDS premium



Sources: Markit Group Limited and Bank calculations.

(a) Calculated using ten-year sovereign CDS premia for: Australia, Austria, Canada, Denmark, Finland, France, Germany, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden and the United States.

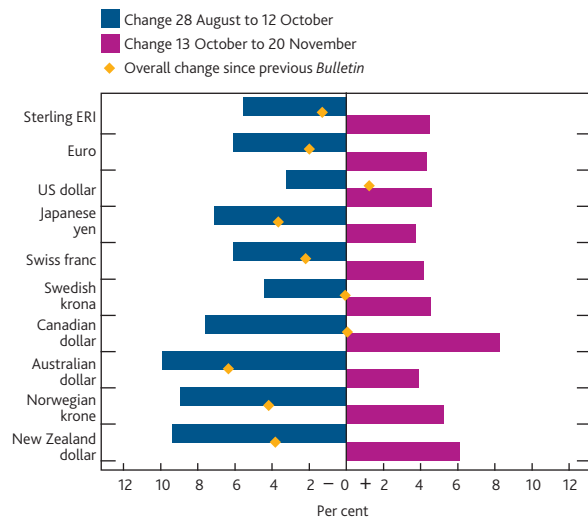
Foreign exchange

The sterling effective exchange rate index (ERI) depreciated by 1.3% compared with its value at the time of the previous *Bulletin*. But this masked a sharper depreciation in sterling against the major currencies during September and early October followed by a subsequent appreciation (Chart 14). Over the period as a whole, sterling appreciated by 1.2% against the US dollar and depreciated by around 2% against the euro.

In light of these moves, the sterling ERI remained around 23% lower than in mid-2007. Adjusting for differences in consumer price levels in the United Kingdom and overseas, the real sterling ERI has returned close to its level in the mid-1990s.

Perceptions about the relative cyclical prospects for the UK economy, which in principle might be expected to affect real returns on sterling-denominated assets compared with assets denominated in other currencies, cannot explain the scale of

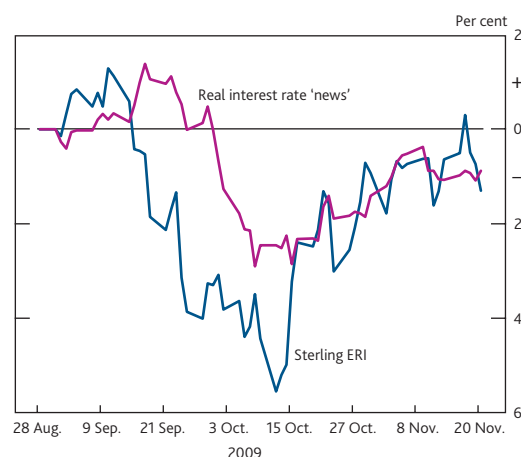
Chart 14 Percentage changes in selected bilateral sterling exchange rates and the sterling ERI since previous *Bulletin*



Sources: Bloomberg and Bank calculations.

sterling's real depreciation since the summer of 2007.⁽¹⁾ But over the latest quarter at least, unexpected shifts in real interest rate differentials across countries do seem to broadly account for changes in the (real) sterling ERI (Chart 15). Consistent with this, market contacts suggested that perceptions about the near-term outlook for the UK economy relative to other countries worsened slightly early in the period before subsequently recovering.

Chart 15 Implied contribution of real interest rate 'news' to cumulative changes in the sterling ERI since previous *Bulletin*^(a)



Source: Bank calculations.

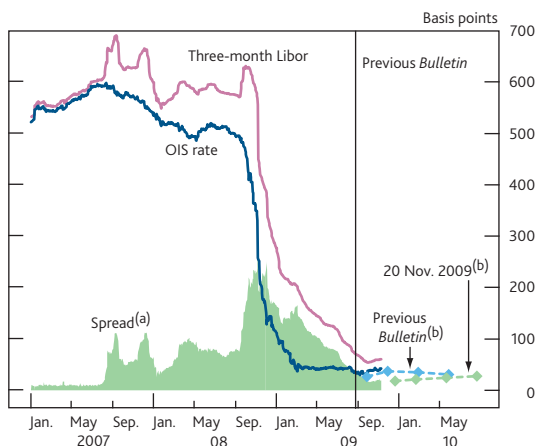
(a) For more information on the analytics required to isolate the impact of interest rate 'news' on exchange rates, see Brigden, A, Martin, B and Salmon, C (1997), 'Decomposing exchange rate movements according to the uncovered interest rate parity condition', *Bank of England Quarterly Bulletin*, November,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

(1) Possible explanations for the depreciation in sterling over recent years are discussed in Astley, M, Pain, D and Smith, J (2009), 'Interpreting recent movements in sterling', *Bank of England Quarterly Bulletin*, Vol. 49, No. 3, pages 202-14.

Bank funding markets

Conditions in short-term sterling interbank money markets continued to improve. Contacts noted greater funding opportunities out to three months, particularly for higher-rated money market participants. Perhaps consistent with this, the spread between the three-month Libor fixing and equivalent-maturity OIS rates narrowed further and approached its level prior to the start of the turmoil in financial markets (**Chart 16**). Funding at maturities greater than three months remained patchy.

Chart 16 Three-month interbank rates and spreads relative to OIS rates



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

(a) Three-month London interbank offered rate (Libor) spreads over equivalent-maturity OIS rates.

(b) Three-month Libor forward spreads over equivalent-maturity forward OIS rates.

An improvement in the perceived financial strength of the banks in the sterling Libor panel was generally reflected in continued falls in their CDS premia and likely contributed to the falls in Libor-OIS spreads. However, whereas Libor-OIS spreads returned close to their pre-crisis average levels, bank CDS premia remained elevated.

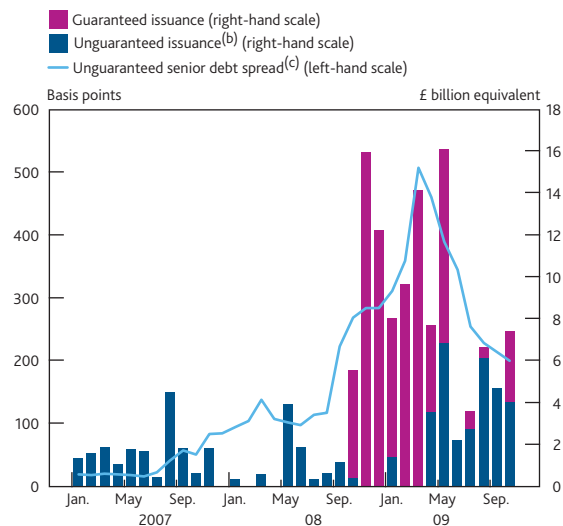
A number of factors may have contributed to this. For example, some contacts suggested that Libor fixings (based on contributing banks' quotes rather than actual transacted rates) may potentially underestimate the true cost of funding in size beyond three months where lending volumes remained low. Conversely, short-maturity credit default swaps reportedly remained relatively illiquid and may therefore overstate the underlying compensation for default risk.

Alternatively, the narrowing in Libor-OIS spreads could be related to banks' reduced need to borrow at term in the sterling money market. The increased size of the Bank's balance sheet since the onset of the financial crisis has increased available liquid funds. Moreover, with institutions still engaged in balance sheet repair, banks have been wary of borrowing from wholesale markets, preferring, where possible, to raise longer-term funds in capital markets. As a result, some non-bank investors that traditionally lend to

high-quality banks may have had little option but to accept lower rates given the reduced appetite to borrow. Taken together, these factors could have contributed to lower Libors.

Difficulties associated with obtaining short-term funding via cross-currency swap markets also continued to abate. And at longer horizons, funding conditions for UK banks reportedly improved, albeit gradually. UK banks issued senior debt under the Government's guarantee scheme as well as on an unguaranteed basis (**Chart 17**). Lloyds Banking Group (LBG) announced new capital raising plans, offering an exchange of existing capital instruments into Enhanced Capital Notes (ECNs) designed to convert into equity should the bank's core Tier 1 capital fall below 5%. There was strong demand for these new notes, although uncertainties remained over how the market for ECNs would evolve in the future.

Chart 17 UK bank senior debt issuance^(a) and spreads



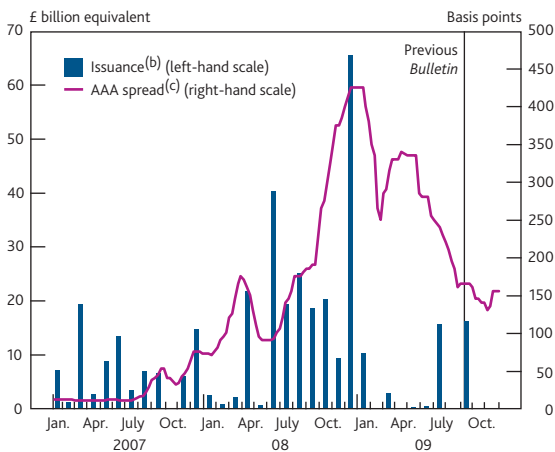
Sources: Dealogic, JPMorgan Chase and Co. and Bank calculations.

(a) Issuance with a value greater than or equal to US\$500 million equivalent and original maturity greater than one year. Data were converted into sterling using monthly averages of the sterling-dollar exchange rate.

(b) Senior debt issued under HM Treasury's Credit Guarantee Scheme.

(c) Secondary market spread to swaps for sterling and euro unguaranteed senior debt. Simple average of spreads for Barclays, HSBC, LBG and RBS sterling and euro senior debt.

Some primary markets for UK asset-backed securities reopened, with UK banks issuing covered bonds and the first public issuance of UK residential mortgage-backed securities (RMBS) since May 2008 (**Chart 18**). The new securities from Lloyds' Permanent and Nationwide's Silverstone Master Trust programmes both included an option for investors to sell the notes back to the issuer at their expected maturity dates. Contacts said that this helped underpin investor demand by addressing concerns about extension risk (the risk that mortgagors repay their loans slower than anticipated, which would mean that the bonds would not mature on their expected maturity dates). However, demand was reportedly concentrated across relatively few investors.

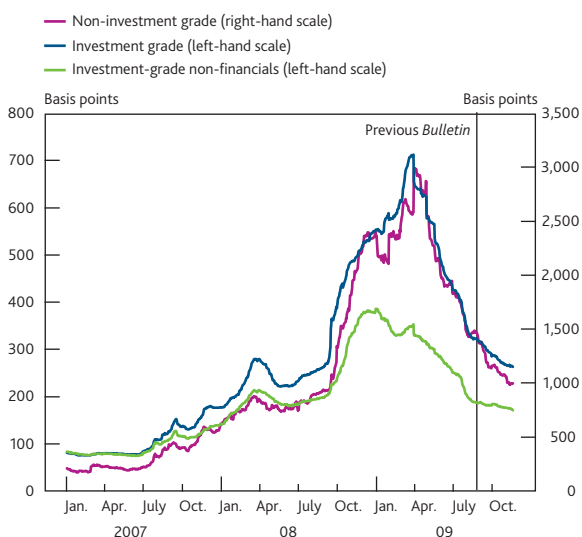
Chart 18 UK RMBS issuance^(a) and spreads

Sources: JPMorgan Chase and Co. and Bank calculations.

- (a) Retained and public issuance.
 (b) All-currency RMBS issued by UK residents, converted to sterling at prevailing exchange rates as at date of issue. Excludes UK-based but foreign-owned SPV issuance backed by foreign collateral.
 (c) Spread of benchmark AAA five-year UK RMBS yields to three-month Libor.

Corporate credit markets

Conditions in credit markets also continued to ease for non-financial companies. Spreads on sterling-denominated corporate bonds narrowed, especially for non-investment grade bonds. Indeed, the sharp widening in spreads in Autumn 2008, when the turmoil in financial markets intensified, has been largely unwound, although spreads remained above their average levels over the past decade (Chart 19).

Chart 19 Sterling corporate bond spreads

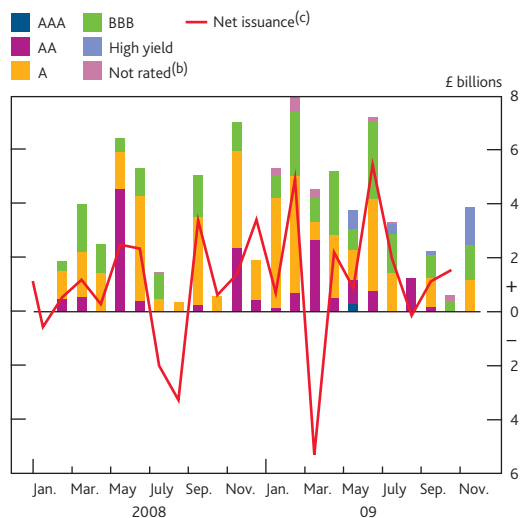
Sources: Merrill Lynch and Bank calculations.

Although perceptions of corporate default risk may have fallen a little over recent months, much of the reduction in spreads, and in turn the cost of issuing corporate bonds in the primary market, has been associated with a decline in illiquidity premia. Consistent with this, secondary market bid-offer spreads narrowed and banks reportedly dedicated more

balance sheet and resources to market-making in corporate bonds. The Bank's Corporate Bond Secondary Market Scheme is reported to have been supportive of these improvements, although trading conditions in secondary markets continue to be somewhat restricted (see the box on page 269).

Despite brief episodes of weaker market sentiment, investor demand for corporate bonds generally remained strong, especially in the primary market — 2009 will be a record year for issuance. Contacts also noted that investors with less restrictive investment mandates became more willing to invest in riskier assets.

Investment-grade firms, with better access to the capital markets, appear to have benefited most from the improvements in corporate bond market conditions. Issuance by lower-rated borrowers nonetheless also increased since the previous *Bulletin* (Chart 20). This included issuance from firms that had previously never accessed capital markets before, as well as from non-rated companies and private placements.

Chart 20 Gross^(a) and net bond issuance by UK non-financial corporates (all currencies)

Sources: Bank of England, Dealogic and Bank calculations.

- (a) Gross issuance data refer to bond issuance by UK private non-financial corporations in all currencies by rating. Data for November 2009 include issuance until 17 November.
 (b) Also includes bonds that were not allocated a rating reference by Dealogic.
 (c) Net issuance data cover bond issuance by UK-resident companies and sterling-denominated bonds issued in the United Kingdom by non-resident companies.

Overall, given the continued limited supply of bank lending, the ability of corporates to issue bonds reportedly helped to alleviate somewhat their near-term refinancing concerns. Smaller firms, on the other hand, that were typically unable to access capital markets, remained credit constrained and sought ways to extend the maturity of their existing loans.

Equity markets

Against the background of the general upward trend in risky asset prices, UK equity prices rose further, by around 7% (Chart 21). Since the March 2009 lows, the FTSE All-Share

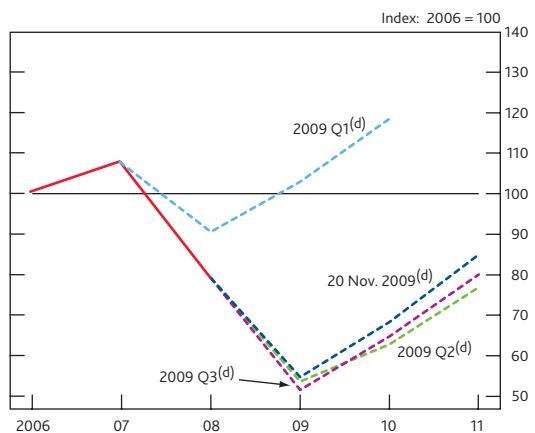
Chart 21 UK equity indices

Sources: Bloomberg and Bank calculations.

index increased by around 50%, but it remained around 20% lower than its level in early 2008.

A number of UK firms reported stronger-than-expected earnings for the third quarter. This, and forward-looking indicators pointing to an improved outlook for the global economy, may have encouraged investors to reassess the prospects for UK corporate earnings.

Analysts' forecasts for company earnings over the next few years were revised marginally higher over the quarter, although the projections remained much lower than those made in early 2009 (**Chart 22**). This pattern was mirrored in market-based measures of future dividends implied from dividend swaps which also picked up, albeit from low levels.

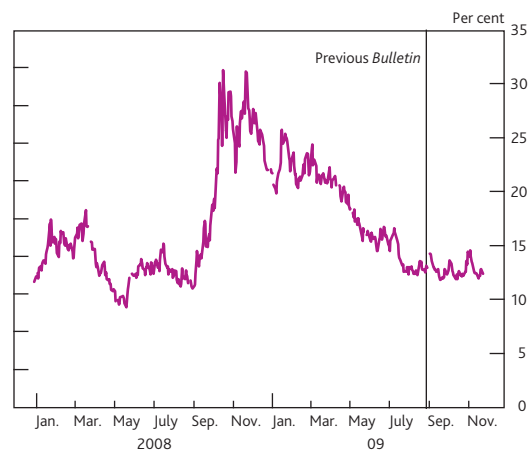
Chart 22 Actual and IBES forecasts for earnings per share for the FTSE All-Share index^{(a)(b)(c)}

- (a) Institutional Brokers' Estimate System (IBES) uses Consensus forecasts of earnings per share by sell-side analysts.
 (b) Data refer to earnings per share on the FTSE All-Share index. Forecasts are denoted by dashed lines, and outturns are denoted by the solid line.
 (c) The actual and forecast figures for a specific year relate to companies' annual results that have a year end between start-June of that year and end-May of the following year.
 (d) Refers to forecast data available at the data cut-off for each *Bulletin*.

Alongside a slightly improved outlook for earnings, the returns required by investors to compensate for the risk of holding

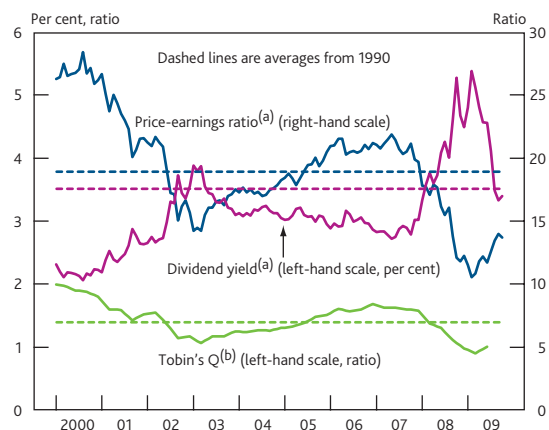
equities may have fallen further. For example, contacts noted fewer concerns about extreme downside risks, not least in part due to accommodative monetary and fiscal policies.

Information from options prices suggested that the weight attached by market participants to the possibility of a large fall in equity prices fell slightly (**Chart 23**). The asset purchase schemes implemented by different countries, including the United Kingdom, may also have contributed to higher equity prices by encouraging investors to rebalance their portfolios away from gilts towards riskier assets.

Chart 23 FTSE 100 option-implied probability of a 20% fall^(a)

Sources: Euronext.Liffe and Bank calculations.

(a) Calculated from the risk-neutral distribution of returns from six-month option prices.

Chart 24 UK equity valuation measures

Sources: National Statistics, Thomson Datastream and Bank calculations.

- (a) Price-earnings ratio and dividend yield are for the FTSE All-Share index.
 (b) Tobin's Q refers to UK private non-financial corporations.

Despite their rapid rise since March, the level of UK equity prices did not look particularly elevated compared with long-run averages of simple valuation metrics. For example, the price-earnings ratio remained below its average since 1990, and the dividend yield was close to its average (**Chart 24**). Similarly, a measure based on a comparison of firms' market value with the replacement cost of the assets

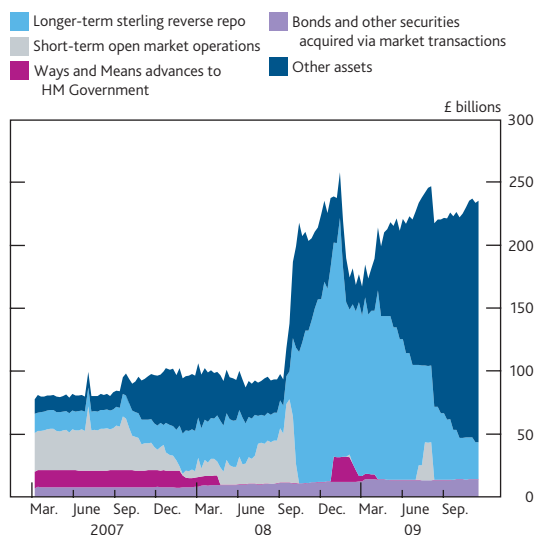
they own — so-called Tobin’s Q — was also below its recent historical average.⁽¹⁾ Nonetheless, some market participants expressed worries that equity prices might have increased too far relative to the improvement in underlying macroeconomic fundamentals.

Bank of England operations

The Bank’s balance sheet enables the Bank to fulfil its core purposes to promote and maintain monetary and financial stability. At the end of the review period to 20 November, the size of the balance sheet was £235 billion. This was larger than at the end of the previous review period to 28 August but below its earlier highs (Chart 25 and Chart 26).

The composition of the balance sheet, in particular on the asset side, also continued to change. This reflected a shift away from liquidity insurance provision towards policies to support nominal demand through asset purchases. Over the review period, the former is shown as a reduction in the amount outstanding in the Bank’s extended-collateral long-term repo open market operations (OMOs) (Chart 25). The latter is shown as an increase in ‘other assets’ which in turn reflects an increase in the loan the Bank has made to the Bank of England Asset Purchase Facility Fund Limited (BEAPFF) (Chart 25).⁽²⁾ Those asset purchases have resulted in a significant increase in reserves balances (Chart 26). The remainder of this section describes the Bank’s operations over the review period in more detail.

Chart 25 Bank of England consolidated balance sheet: assets^(a)

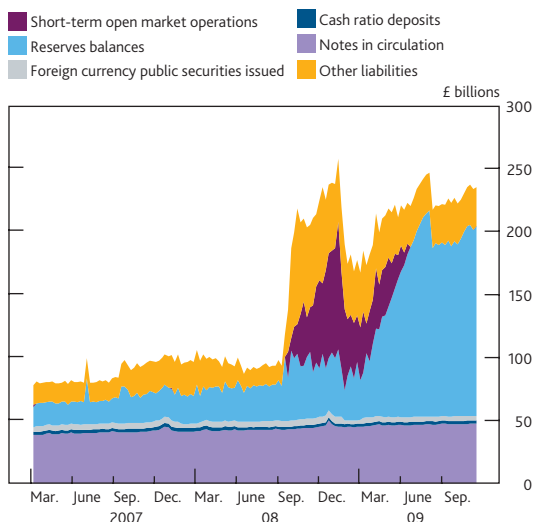


(a) Excludes loans and associated deposits in course of settlement.

Asset purchases⁽³⁾

In the week prior to the November MPC meeting, the Bank completed the £175 billion of private and public sector asset purchases financed by the issuance of central bank reserves that had been announced on 5 March and extended on 7 May

Chart 26 Bank of England consolidated balance sheet: liabilities^(a)



(a) Excludes loans and associated deposits in course of settlement.

and 6 August. On 5 November, the MPC voted to continue with this programme of asset purchases and to increase its size by £25 billion to £200 billion. Table A summarises asset purchases by type of asset.⁽⁴⁾

Gilts

As of 19 November, £178 billion of gilts had been purchased under the asset purchase programme, of which £80 billion were in the 3–10 year residual maturity range, £80 billion in the 10–25 year maturity range and £18 billion had a maturity greater than 25 years (Chart 27).

These gilt purchases took place over 79 auctions, which varied in size up to a maximum of £3.5 billion. The size of the auctions between the 6 August and 5 November MPC decisions were £1.4 billion. Following the MPC’s decision on 5 November to increase the scale of the programme of asset purchases financed by central bank reserves to £200 billion, the size of the auctions was increased to £1.7 billion.

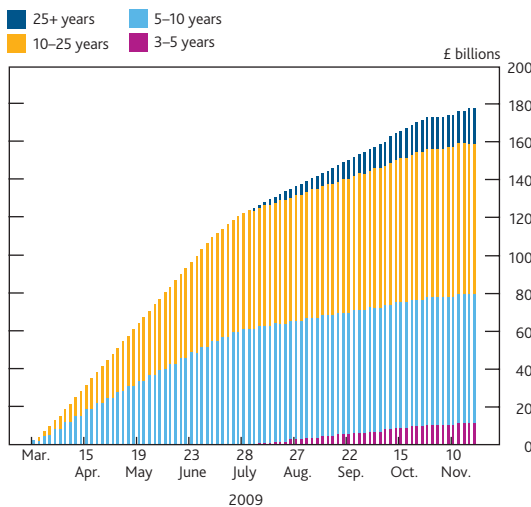
The Bank also announced on 5 November that while it would continue, normally, to conduct auctions to purchase gilts with a residual maturity of 10–25 years on Mondays; of over 25 years on Tuesdays; and of 3–10 years on Wednesdays, these auctions would be spread over a two-week cycle. In the week beginning 9 November, auctions were held on Monday and Wednesday and an auction was held on the Tuesday of the subsequent week. This cycle was repeated in subsequent weeks.

(1) For a discussion of this measure see Thompson, J and Mac Gorain, S (2002), ‘Profit expectations and investment’, *Bank of England Quarterly Bulletin*, Winter, pages 404–09.
 (2) As described in previous *Bulletins*, asset purchases are undertaken by the BEAPFF which is a wholly-owned subsidiary of the Bank of England. The BEAPFF borrows from the Bank for the purchases it makes.
 (3) The data cut-off for this subsection is 19 November.
 (4) The objectives and operation of the Asset Purchase Facility are described in more detail in the 2009 Q2 *Quarterly Bulletin*.

Table A Asset purchases by type (£ millions)

Week ending ^(a)	Commercial paper	Gilts	Corporate bonds	Total ^(b)
27 August 2009 ^{(c)(d)}	1,573	134,971	938	137,482
3 September 2009	0	2,800	32	2,832
10 September 2009	5	5,604	27	5,636
17 September 2009	225	4,200	32	4,457
24 September 2009	395	4,201	51	4,647
1 October 2009	225	4,200	72	4,497
8 October 2009	80	4,200	139	4,419
15 October 2009	25	4,200	33	4,258
22 October 2009	145	4,201	13	4,359
29 October 2009	0	4,200	62	4,262
5 November 2009	0	0	63	63
12 November 2009	0	3,400	60	3,460
19 November 2009	70	1,700	13	1,783
Total financed by Treasury bills	–	–	–	–
Total financed by central bank reserves ^(d)	588	177,875	1,522	179,985
Total asset purchases ^(d)	588	177,875	1,522	179,985

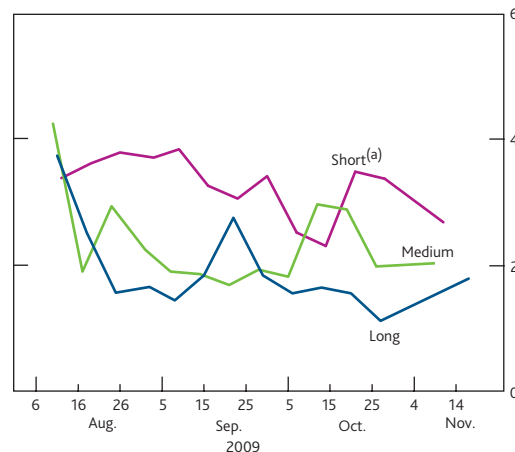
(a) Week-ended amounts are in terms of the proceeds paid to counterparties, on a trade-day basis, rounded to the nearest million. Data are aggregated for purchases from the Friday to the following Thursday.
(b) Weekly values may not sum to totals due to rounding.
(c) Measured as amount outstanding as at 27 August 2009.
(d) In terms of proceeds paid to counterparties less redemptions at initial purchase price on a settled basis. Amounts outstanding may be less than total purchases due to assets maturing during the period.

Chart 27 Cumulative gilt purchases^(a) by maturity

(a) Data based on settled transactions.

Cover in the auctions varied, but averaged 3.2 in the 3–10 year auctions, 2.3 in the 10–25 year auctions and 1.9 in the auctions for gilts with a maturity greater than 25 years (**Chart 28**).⁽¹⁾

As purchases progressed, the Bank had earlier acquired a sizable proportion (around 70%) of the free float (the total issue size of a gilt minus government holdings) in four gilts, which had subsequently been suspended from auctions until further notice.⁽²⁾ As the Bank's holdings as a proportion of the free float fell in three of these gilts following further issuance by the UK Debt Management Office (DMO), these bonds were made eligible.⁽³⁾

Chart 28 Cover ratios in APF gilt auction

(a) On 6 August, 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.

The Bank continued to lend some of the gilts via the DMO in return for other UK government collateral, as announced on 6 August. The Bank announced on 14 October that between 7 August and 30 September an average daily value of £4.8 billion had been lent in this way.

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. The functioning of the non-bank investment-grade European commercial paper market improved further over the review period. Although the total amount of sterling-denominated CP outstanding for UK corporate and non-bank financial firms declined over the period from £6.3 billion to £4.1 billion (**Chart 29**), this was partially offset by foreign currency denominated issuance. Corporates were also able to raise a greater proportion of their funding through longer-term issuance in the corporate bond market.

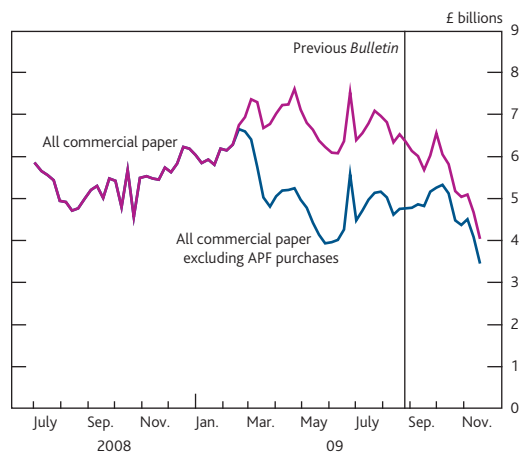
Quoted primary market CP spreads narrowed further and remained below the spreads at which the Asset Purchase Facility (APF) offers to purchase CP. This meant that some issuers found it more economic to issue to investors rather than use the APF. The facility reportedly acted as a backstop, for example following temporary reductions in market liquidity. As a result, gross purchases over the period were £1.3 billion compared with redemptions of £2.3 billion. As of 19 November, APF holdings of CP amounted to £0.6 billion, down from £1.6 billion as of 27 August.

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

(2) The 5% 2014, 4.75% 2020, 8% 2021 and 4% 2022 gilts.

(3) 4% 2022 on 12 October, 4.75% 2020 on 26 October, 5% 2014 on 11 November.

Chart 29 Sterling commercial paper outstanding for UK corporates and non-bank financial firms



Sources: CP Ware and Bank calculations.

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 offers to make regular small purchases of a wide range of high-quality corporate bonds by reverse auctions. These operations are currently carried out three times a week, split by maturity, with the Bank offering to purchase each eligible bond once a week.

Following a reduction in activity during July and early August, participation in the Bank's auctions increased modestly, with an average of £161.5 million offered to the Bank each week over the review period, and £49.3 million purchased (Chart 30).

The volume and number of offers in the Bank's auctions was higher following periods of volatility in corporate bond markets. For example, on 2 October the Bank received £332 million in offers and purchased £102 million, as corporate bond and CDS spreads widened and market contacts reported a temporary deterioration in market sentiment.

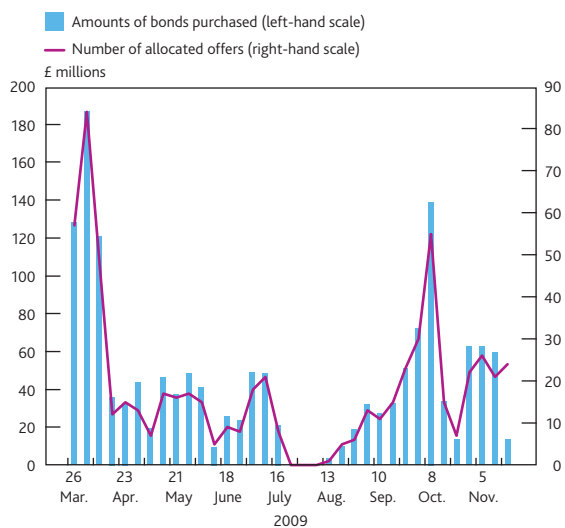
As of 19 November, the corporate bond portfolio totalled £1,522 million, compared to £938 million on 27 August. The portfolio had been acquired through 630 purchases of 144 bonds of 53 issuers, spread over 86 auctions from 25 March to 19 November.

On 3 December, the Bank launched a consultation process on proposals for a possible extension to the Scheme through the BEAPFF operating as a seller, as well as a buyer, of corporate bonds. The proposals are aimed at improving secondary market liquidity further. See the box on page 269.

Secured commercial paper

The Bank continued to offer to purchase secured commercial paper (SCP) backed by underlying assets that are short term

Chart 30 Weekly purchases of sterling corporate bonds^(a)



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

and provide credit to companies or consumers that support economic activity in the United Kingdom. There has been no usage of the facility to date.⁽¹⁾

Credit Guarantee Scheme

The Bank did not make any purchases of bank debt issued under the Credit Guarantee Scheme from the secondary market, but stands ready to do so should conditions in that market deteriorate.

Operations within the sterling monetary framework⁽²⁾

Since the announcement of the programme of asset purchases financed by central bank reserves on 5 March, the usual system, in which banks chose monthly reserves targets to achieve on average over a maintenance period, has been suspended and all reserves balances have been remunerated at Bank Rate.⁽³⁾ Since 6 August, the Bank has continued to offer reserves in long-term repo open market operations (OMOs), but has not conducted short-term OMOs. During the period under review, the level of reserves was thus 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.

Long-term repo OMOs

The Bank continued to provide liquidity insurance by conducting extended-collateral long-term repo OMOs with a three-month maturity against a wider range of collateral than routinely accepted in the Bank's short-term OMOs and

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

(2) This and the subsection describing other market operations cover operations from 6 August to 20 November.

(3) This article however continues to use the term 'maintenance period' for convenience to refer to the period between one MPC decision date and the next.

Asset Purchase Facility Corporate Bond Secondary Market Scheme

The introduction, in March, of the Bank of England's programme of auctions to purchase small amounts of high-quality sterling corporate bonds can be viewed as a response to the problems facing the market and akin to the Bank acting as a 'market maker of last resort'.⁽¹⁾ As dealers withdrew, due to a combination of capital constraints and risk aversion, market liquidity had become impaired. As such, the Scheme's primary objective was to improve market liquidity in order to support the flow of credit to the corporate sector. A key step in the mechanism to achieve this objective was to improve price discovery and transparency through offering to undertake frequent transactions and help establish pricing points. Furthermore, its aim was to be catalytic, helping to reinvigorate the market, rather than replace it.

To date the Bank's purchases have had some success in establishing pricing points and improving price discovery. Counterparties report that the disclosure of auction results reduced the uncertainty for investors in valuing their portfolios and established, for dealers, a price at which others were willing to sell. The Scheme also helped dealers to manage their inventory of securities, thus freeing up balance sheet capacity.

Since the launch of the Scheme, conditions in the sterling corporate bond market have, overall, improved. This has occurred alongside a general improvement in sentiment in global credit markets. During 2009, gross bond issuance has been strong and net issuance has also increased. For new issues, the 'new issuance premium' (ie the difference between the yields based on the offer price and the secondary market price) fell, dropping from between 75 basis points to 100 basis points in January to perhaps less than 10 basis points. Conditions in the secondary market also improved, with both credit (**Chart 19**) and bid-offer spreads narrowing considerably from their highs in March 2009. Some indicators of market liquidity, such as the difference between corporate bond spreads and credit default swap premia, improved for bonds that were eligible for purchases by the APF and for those that were not.

Despite strong primary market issuance, the secondary market is still not functioning well with trading volumes remaining at low levels. And, although reduced, bid-offer spreads remained elevated. Dealers' capacity to support market functioning has, at times, continued to be limited by balance sheet constraints. When demand for corporate bonds has been notably strong, dealers have not always been able to meet that demand. As a result, contacts consistently highlight that the sterling corporate bond market remains prone to bouts of illiquidity.

Earlier this year this manifested itself in an absence of buyers; recently periods of illiquidity have more commonly been due to potential buyers finding it difficult to source bonds that meet their requirements. Market intelligence also suggests that many dealers (and indeed some investors) have been cautious of offering bonds to the APF during times of strong demand as they have no certainty of being able to buy the bonds back should clients demand them in the future. As a consequence, market participants may not have fully utilised the current Scheme.

On 3 December, the Bank launched a consultation process on proposals for a possible extension to the APF.⁽²⁾ The proposals are aimed at improving secondary market liquidity further by the BEAPFF operating as a seller, as well as a buyer, of bonds. Starting to offer for sale the APF holdings of corporate bonds, while continuing to offer to buy (both in small quantities), would be intended to support price transparency and improve two-way liquidity through the establishment of pricing points. Any sales would be in addition to the Scheme's existing purchase programme. As such, the overall size of the Bank's portfolio of corporate bonds would vary in line with the intensity of offers by market participants to both buy and sell bonds to the Scheme; the Bank would not target any particular portfolio size. Any net reduction in the stock of purchases would be offset by gilt purchases while the MPC's programme of asset purchases continued. As before, such a policy would be designed in such a way that all transactions would move back towards private sector participants as soon as markets fully recover.

(1) See www.bankofengland.co.uk/publications/speeches/2009/speech410.pdf.

(2) See www.bankofengland.co.uk/markets/marketnotice091203.pdf.

Operational Standing Facilities (OSFs). The results of these operations are shown in **Table B**.

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

18 August 2009	
On offer (£ millions)	10,000
Cover	0.53
Weighted average rate ^(a)	0.935
Lowest accepted rate ^(a)	0.510
Tail ^(b)	0.43
1 September 2009	
On offer (£ millions)	10,000
Cover	0.38
Weighted average rate ^(a)	0.511
Lowest accepted rate ^(a)	0.500
Tail ^(b)	0.01
15 September 2009	
On offer (£ millions)	5,000
Cover	0.43
Weighted average rate ^(a)	0.625
Lowest accepted rate ^(a)	0.500
Tail ^(b)	0.12
29 September 2009	
On offer (£ millions)	5,000
Cover	0.34
Weighted average rate ^(a)	0.505
Lowest accepted rate ^(a)	0.500
Tail ^(b)	0.00
13 October 2009	
On offer (£ millions)	5,000
Cover	0.41
Weighted average rate ^(a)	0.558
Lowest accepted rate ^(a)	0.500
Tail ^(b)	0.06
3 November 2009	
On offer (£ millions)	5,000
Cover	0.85
Weighted average rate ^(a)	0.705
Lowest accepted rate ^(a)	0.500
Tail ^(b)	0.20
17 November 2009	
On offer (£ millions)	5,000
Cover	0.69
Weighted average rate ^(a)	0.926
Lowest accepted rate ^(a)	0.530
Tail ^(b)	0.40

(a) Per cent.

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

All three-month extended-collateral long-term repo OMOs over the review period were uncovered. This resulted in a decline in the stock of long-term repo OMOs outstanding (**Chart 25**). In light of revealed demand for funds in these operations, from the operation on 15 September, the Bank reduced the amount on offer from £10 billion to £5 billion.

For the period under review, the Bank continued to set two minimum bid rates applicable to 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.

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

Table C Long-term repo operations

	Six-month	Nine-month	Twelve-month
18 August 2009			
On offer (£ millions)	750	400	200
Cover	2.33	2.13	4.25
Weighted average rate ^(a)	0.406	0.466	0.693
Lowest accepted rate ^(a)	0.396	0.440	0.688
Tail ^(b)	0.01	0.03	0.01
15 September 2009			
On offer (£ millions)	750	400	200
Cover	3.27	3.75	4.75
Weighted average rate ^(a)	0.373	0.483	0.738
Lowest accepted rate ^(a)	0.360	0.450	0.730
Tail ^(b)	0.01	0.03	0.01
13 October 2009			
On offer (£ millions)	750	400	200
Cover	3.33	3.13	4.00
Weighted average rate ^(a)	0.400	0.480	0.620
Lowest accepted rate ^(a)	0.385	0.480	0.620
Tail ^(b)	0.02	0.00	0.00
17 November 2009			
On offer (£ millions)	750	400	200
Cover	2.83	4.35	4.75
Weighted average rate ^(a)	0.452	0.526	0.670
Lowest accepted rate ^(a)	0.443	0.511	0.650
Tail ^(b)	0.01	0.01	0.02

(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, 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, daily 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 6 October, the Bank announced that the average daily amount outstanding in the 30-day Discount Window Facility between 1 April and 30 June 2009 was £0 million.

Changes to haircuts applied to eligible securities

On 25 September, the Bank announced some changes to the haircuts it applies to securities accepted as collateral in its operations. In addition to changes to haircut levels, a greater number of haircut categories were introduced for bonds with different maturities.⁽¹⁾

Changes to the eligibility criteria for access to SMF facilities

On 5 October, the Bank announced that it had widened the population of institutions eligible to apply for reserves accounts in order to assist smaller institutions in managing their liquidity. Previously, only firms required to place cash ratio deposits (CRDs) with the Bank — that is, institutions with an average level of eligible liabilities of £500 million or more — were eligible to apply for reserves accounts. With effect from 5 October 2009, all institutions that are subject to the statutory CRD regime — that is all institutions reporting their eligible liabilities to the Bank — are eligible to apply for a reserves account. Newly eligible institutions would also be able to apply to access the other SMF facilities: the Operational Standing Facilities, the Discount Window Facility and open market operations.⁽²⁾

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, since 18 September 2008 the Bank has offered US dollar financing to financial institutions funded by a swap with the Federal Reserve. These measures are designed to improve the liquidity conditions in global financial markets.

Over the previous review period the Bank offered US dollar financing at one-week and three-month maturities. In light of the reduced use of these operations, the Bank announced on 24 September that, following a 91-day auction on 6 October, all further three-month operations would be suspended. All further scheduled operations would be seven days, with the exception of eleven and ten-day operations in December. The Bank announced operations up until 27 January 2010. Since the previous *Bulletin*, the total stock outstanding (\$13 million) was unchanged. However, following the suspension of the longer-dated operations, by 6 November all this stock was of one-week maturity.

As previously announced, since 6 April, the Bank, along with other central banks, has had swap arrangements in place that would enable the provision of foreign currency liquidity by the Federal Reserve to US financial institutions. Should it be required, the Bank would provide sterling via a swap arrangement with the Federal Reserve, similar to that which underpins the Bank's US dollar repo operations.

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. The assets held in the Bank's reserves are included in the balance sheet under 'bonds and other securities acquired via market transactions' (**Chart 25**). They are financed with medium-term foreign currency securities issued by the Bank (**Chart 26**). At 20 November, the Bank's foreign exchange reserves comprised £4 billion of assets.

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 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 £1 billion of other debt securities. Over the period from 6 August to 20 November, gilt purchases of £258 million in six purchase transactions were made in accordance with the quarterly announcements on 1 July 2009 and 1 October 2009.

(1) Further details are available in a Market Notice available at www.bankofengland.co.uk/markets/marketnotice090925.pdf.

(2) Further details are available in the consolidated Market Notice dated 13 November, available at www.bankofengland.co.uk/markets/marketnotice091113con.pdf.

Research and analysis



The financial position of British households: evidence from the 2009 NMG survey

By Tomas Hellebrandt and Silvia Pezzini of the Bank's Monetary Assessment and Strategy Division and Jumana Saleheen and Richard Williams of the Bank's Structural Economic Analysis Division.⁽¹⁾

The severe recession of the past year might be expected to have put the financial position of British households under considerable strain. Unemployment has risen significantly, credit conditions have tightened and many homeowners have seen their housing equity eroded. But many borrowers have also benefited significantly from the effects of lower mortgage interest rates. Evidence from the latest survey of households, carried out for the Bank by NMG Financial Services Consulting in late September and early October, shows how these and other changes impacted on households' budgets and their decisions on whether to spend or save. Despite the weak economic backdrop, a slightly smaller proportion of households reported problems repaying their debts than in the 2008 survey. Partly this was because around half of mortgagors had benefited from lower interest rates. Around a quarter of households had increased or planned to increase saving.

Introduction

The financial position of many British households has been affected by the financial crisis that intensified following the failure of Lehman Brothers in September 2008. Acute concern over the stability of the banking system led to a seizure of interbank lending markets, making it more difficult for banks to borrow funds that they could lend on to households. Tightening credit conditions and collapsing consumer and business confidence plunged the United Kingdom into its deepest recession since the Second World War. Against this backdrop, authorities in the United Kingdom and internationally took wide-ranging measures in the latter part of 2008 and early 2009.⁽²⁾ As part of this effort, the Bank of England cut Bank Rate to historically low levels, affecting the interest rates faced by many borrowers and savers. The Bank also embarked on a programme of asset purchases, thereby injecting money into the economy to provide an additional stimulus to nominal spending in order to meet the inflation target.⁽³⁾ Output is estimated to have fallen further in the third quarter of 2009. But a range of other indicators suggest that economic activity has begun to stabilise.⁽⁴⁾

The implication of these developments for aggregate household spending and incidence of debt payment problems is likely to depend, in part, on how their impact is distributed across different households. Disaggregated data can

illuminate the differences in impact and can indicate how different groups have responded to recent developments.

In late September and early October 2009 NMG Financial Services Consulting (NMG) carried out a survey of around 2,000 British households on behalf of the Bank.⁽⁵⁾ Households were asked a range of questions about their finances. These included questions about how much they owed, whether their borrowing was secured or unsecured, whether they found it to be a burden and whether they had difficulty accessing credit.⁽⁶⁾ The survey is the seventh that the Bank has commissioned NMG to conduct on household finances.⁽⁷⁾ Some results from this year's survey were previously reported in the November 2009 *Inflation Report* (pages 22–23) to assess the extent of household difficulties in servicing their debts.

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- (1) The authors would like to thank Jonathan Bridges for his help in producing this article.
 (2) For more detail on the financial crisis and the policy response see the June 2009 *Financial Stability Report*.
 (3) For more information on the Bank's programme of asset purchases see Benford *et al* (2009).
 (4) For more detail on recent developments and the outlook for the UK economy, see the November 2009 *Inflation Report*.
 (5) The 2008 survey was carried out shortly after the failure of Lehman Brothers on 15 September, but before the UK bank support package was announced on 8 October.
 (6) Some more detailed information about the survey is included in the box on pages 284–85. The NMG survey is carefully designed and weighted to be representative of British households. But, as in any small sample of a population, care must be taken in interpreting small changes in results from year to year because they may not be a reliable guide to changes in the population.
 (7) The results of each year's survey have been reported in the *Quarterly Bulletin*. See Hellebrandt, Waldron and Young (2008) for details of the 2008 survey.

This article describes the results from the survey in more detail.⁽¹⁾ The first section discusses how weakness in the labour and housing markets impacted on households' income and housing wealth and how these shocks interacted with tightening credit conditions. The impact of the monetary policy response to the crisis is also addressed. The second section discusses how the offsetting effects of the negative shocks to household finances and the policy response affected households' ability to keep up with debt commitments and household bills, and how those suffering from payment problems were resolving them. The third section considers how households may have responded to these shocks by altering their decisions to spend and save. Household spending is important for monetary policy because it accounts for around two thirds of aggregate demand. The last section concludes.

Impact of the financial crisis on household finances

Weakness in the labour market

The recession that began in 2008 was accompanied by an increase in the unemployment rate and a reduction in the rate of growth of earnings. Both of these factors push down on aggregate household income, but their distributional effects can be quite different — the income shock from job losses affects a narrower group, while slower earnings growth tends to have a more broad-based impact. The unemployment rate of respondents in this year's NMG survey was about 7%,⁽²⁾ similar to the rate recorded in the ONS Labour Force Survey of close to 8% in 2009 Q3.

The NMG survey asked respondents about the level of their 'available' income — income left over after paying tax, national insurance, housing costs (rent, mortgage payments, council tax), loan payments and utility bills — and how it has changed over the past year. **Table A** reports the results according to employment status of the respondent. It suggests that those who said they were unemployed in September 2009 had seen the largest fall in monthly available income over the previous year, with almost half reporting a fall in excess of £100. For the employed respondents, those in manual jobs had seen a larger fall in income on average than those in non-manual jobs. This may be because manual workers had been more affected by reduced overtime and shorter working hours.⁽³⁾ Almost half of those respondents who classified themselves as inactive — that is, not participating in the labour market — had also seen a fall in their available income. Three quarters of these inactive respondents were retired and so their savings were likely to be an important source of income. The falls in income reported by this group may partly reflect the fall in interest rates on deposit accounts over the past year (see the section on the monetary policy response below) and lower returns on

Table A Changes in available income by employment status^(a)

	Employed (non-manual)	Employed (manual)	Unemployed	Inactive
Percentages of households	36	24	5	35
Characteristics				
Mean pre-tax monthly income (£s)	3,981	2,291	805	1,424
Mean available monthly income (£s)	953	518	204	533
Distribution of changes in monthly available income (percentages of households)^(b)				
Down by more than £100	27	30	49	21
Down by £51 to £100	9	22	6	15
Down by £1 to £50	4	7	5	10
Not changed	38	30	28	44
Up by £1 to £50	5	3	5	5
Up by £51 to £100	7	3	1	2
Up by more than £100	9	6	5	2
Mean change in available income (£s)	-28	-51	-71	-40

Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Questions: 'How much of your monthly income would you say your household has left after paying tax, national insurance, housing costs (eg rent, mortgage repayments, council tax), loan repayments (eg personal loans, credit cards) and bills (eg electricity)?'. 'And how much would you say your monthly leftover income has changed over the past year?'

(b) Columns may not sum to 100 because of rounding.

financial assets. In comparison with the NMG survey, ONS data for household post-tax incomes showed a rise of about 1% in the year to 2009 Q2, although this was much lower than the 5% average growth rate seen over the preceding fifteen years.⁽⁴⁾

Weakness in the housing market

The price of an average house fell by around 20% between the peak in the housing market in Autumn 2007 and Summer 2009. Since then house prices have recovered somewhat such that in September 2009 they were around 16% below their peak in Autumn 2007 and around 5% below their level in September 2008.⁽⁵⁾ The average house value reported by mortgagors in the 2009 survey was broadly unchanged from the previous year, at £210,000.

The increases in house prices between the mid-1990s and 2007 meant that first-time buyers and those trading up the housing ladder had to take on increasingly more debt to fund their house purchases. In addition, high turnover in the housing market also supported growth in secured debt, as buyers were adding more to the debt stock than was being subtracted by sellers and by the repayments of existing debt. Over the past two years, there has been much less turnover in the housing market, with the number of housing market transactions in 2009 Q3 around 60% of the levels seen earlier

(1) The raw survey data are available at www.bankofengland.co.uk/publications/quarterlybulletin/nmgsurvey2009.xls.

(2) The unemployment rate is calculated as the proportion of those active in the labour market rather than as a proportion of the whole population.

(3) For a more detailed recent discussion of the labour market, see the November 2009 *Inflation Report*.

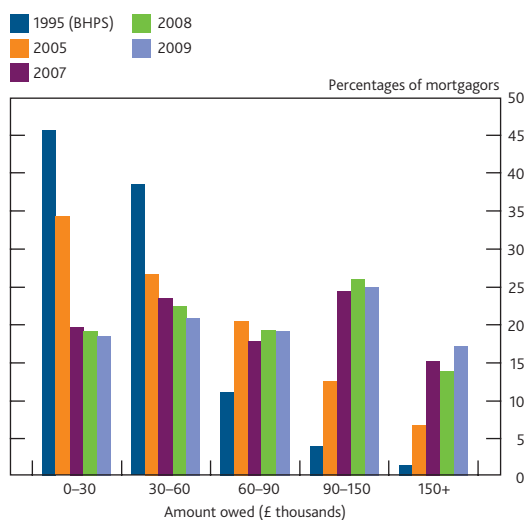
(4) The ONS data measure income after tax but before bills, for example, have been paid — so they are not directly comparable with the NMG figures for 'available' income.

(5) These statistics are based on the average of the quarterly Nationwide and Halifax house price indices.

in the decade.⁽¹⁾ At the same time prices have fallen and lenders have reduced maximum loan to value (LTV) ratios on new lending. As a result, the growth of secured debt has fallen. This is evident in the NMG survey where the shift in the distribution of secured debt among mortgagors towards higher levels of debt was much less marked between 2007 and 2009 than it was between 2005 and 2007 (**Chart 1**).

Lower house prices since 2007 have eroded the housing equity of mortgagors. This has reduced the 'buffer' of potential funds that households can draw on to smooth consumption (see Hellebrandt, Kavar and Waldron (2009)). Compared with the

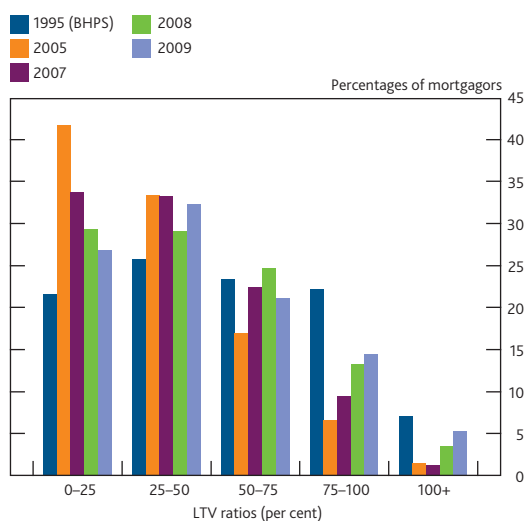
Chart 1 Distribution of secured debt among mortgagors^(a)



Sources: British Household Panel Survey, NMG Financial Services Consulting survey and Bank calculations.

(a) Mortgage debt from the BHPS captures mortgage debt owed by households on all properties they own. Mortgage debt from the NMG survey captures only mortgage debt owed on households' primary residences.

Chart 2 Distribution of loan to value ratios on mortgagors' outstanding secured debt^(a)



Sources: British Household Panel Survey, NMG Financial Services Consulting survey and Bank calculations.

(a) Mortgage debt from the BHPS captures mortgage debt owed by households on all properties they own. Mortgage debt from the NMG survey captures only mortgage debt owed on households' primary residences.

2007 survey, the proportion of mortgagors with LTV ratios in excess of 75% (high LTV mortgagors) increased as did the proportion of those in negative equity (LTV greater than 100%), which rose from 1% in 2007 to 5% in 2009 (**Chart 2**).⁽²⁾ Nevertheless, most homeowners still have a substantial buffer of housing equity. Over 80% of mortgagors had an LTV ratio below 75% in the 2009 survey.

Credit conditions

The financial crisis that began in the summer of 2007 has significantly affected households' access to credit. When assessing the impact of tightening credit conditions on household finances, it is useful to distinguish between housing tenure groups, that is, between households who own their homes outright, mortgagors and renters. Past surveys have shown that outright owners have very little debt. Most debt (including unsecured debt) is owed by mortgagors, where for most borrowers that debt is backed by substantial amounts of housing collateral. However, as discussed above, falling house prices have eroded the value of that collateral. Unlike outright owners and mortgagors, renters can only borrow unsecured and for this reason they tend to face higher borrowing costs. Given the rise in unemployment, the analysis below also assesses the impact of tightening credit conditions on this group.

In 2006 and 2007 a small net percentage balance of households, especially mortgagors, found that credit had become easier to access over the year preceding the survey. But in 2008 and 2009 a much larger net percentage balance of respondents thought credit conditions had deteriorated (**Chart 3**). The tightening in credit conditions applied particularly to renters and high LTV mortgagors, who had little or no collateral to pledge, and the unemployed, who were probably less able to service debt payments and had less chance than in the past to find work quickly.

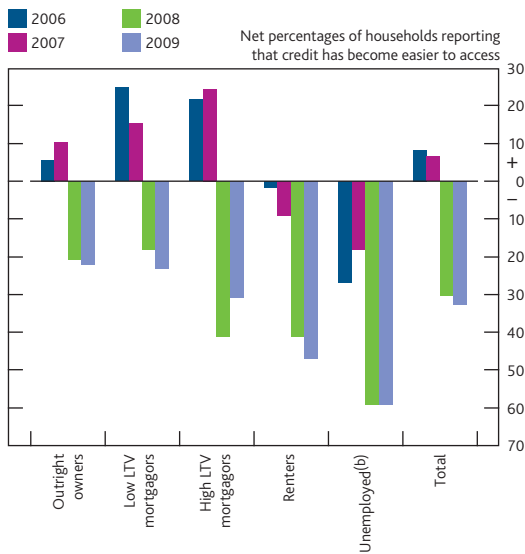
Around 17% of respondents reported being put off spending because of concerns about credit availability (**Chart 4**). Again, high LTV mortgagors, renters and the unemployed were more likely to report being credit constrained. And 8% of households also reported that they would like to borrow more, but found it too expensive.

The proportion of mortgagors who took out an additional mortgage in the year preceding the 2009 survey remained small, unchanged at 6% from 2008, and down from the higher rates of 10% and 14% in 2007 and 2006 respectively. This may reflect lower demand for additional secured loans given the shrinking buffer of housing equity, but it is also likely to reflect reduced willingness of lenders to provide such loans.

(1) Source: Her Majesty's Revenue and Customs data.

(2) The accuracy of these estimates depends on the reliability of the overall survey responses. Hellebrandt, Kavar and Waldron (2009) discuss the advantages and disadvantages of survey-based measures of negative equity and compare them to other estimates of negative equity monitored by the Bank.

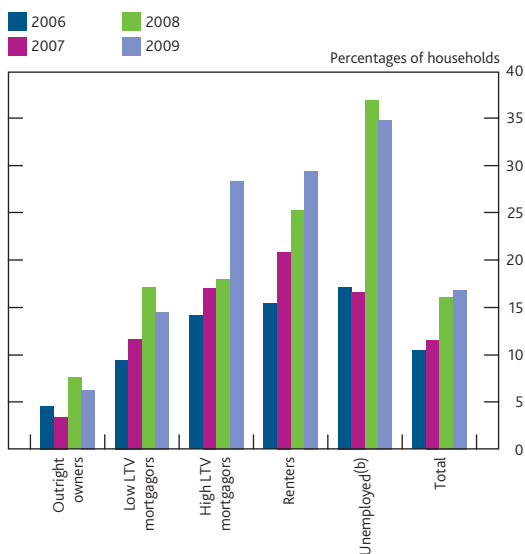
Chart 3 Change in credit conditions^(a)



Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Have you found it easier or harder to borrow to finance spending than a year ago?'.
 (b) Unemployed respondents are included in the housing tenure categories as well.

Chart 4 Proportion put off spending by concerns about credit availability^(a)



Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Have you been put off spending because you are concerned that you will not be able to get further credit when you need it, say because you are close to your credit limit or think your loan application would be turned down?'.
 (b) Unemployed respondents are included in the housing tenure categories as well.

Of those who took out an additional mortgage, the proportion that used it to finance consumption (car, holiday or consumer goods) fell from 31% in 2008 to 7% in 2009. And the proportion taking out an additional mortgage to repay other debts also fell from 39% to 17% over the same period.

Monetary policy response

Between October 2008 and March 2009, in response to the financial crisis and the weakening economic outlook, the Bank's Monetary Policy Committee cut Bank Rate from 5% to 0.5% and embarked on a programme of asset purchases

financed by the issuance of central bank reserves. These policies influenced the interest rates faced by borrowers and savers although lenders have not always passed on the full cut in Bank Rate to lending rates. The average interest rate on the UK stock of mortgages fell from 5.8% in September 2008 to 3.6% in September 2009. The average interest rate on the unsecured debt stock fell over the same period from 11.0% to 10.2%. Meanwhile, the average interest rate on the stock of deposits fell from 3.8% to 1.5%.⁽¹⁾

Falling interest rates benefit borrowers but have an adverse effect on the interest income of savers. However, not all borrowers benefit to the same extent. The survey can shed light on how different groups of borrowers may have been affected. Around 41% of mortgagors reported that they had remained on a fixed-rate mortgage during the preceding twelve months and therefore had not benefited from lower interest rates. Another 45% of mortgagors reported themselves to be on a continuing variable-rate deal.⁽²⁾ Almost half of them reported a fall in their monthly mortgage payments in excess of £100 and almost a quarter reported a fall of more than £200 (Table B).

Table B Characteristics of mortgagors and changes in repayments by types of mortgage

	Mortgagors on continuing variable-rate deals	Mortgagors who had a deal that expired during the preceding twelve months
Percentages of mortgagors	45	14
Mean outstanding mortgage balance (£s)	78,966	112,510
Mean last monthly instalment on mortgage (£s)	473	666
Distribution of changes in monthly mortgage repayments (percentages of mortgagors)		
Down by more than £200	23	10
Down by £101 to £200	26	15
Down by £51 to £100	18	14
Down by £1 to £50	14	12
More or less the same	16	28
Up by £1 to £50	0	4
Up by £51 to £100	2	4
Up by £101 to £200	0	6
Up by more than £200	0	7
Mean change in monthly repayments (£s)	-130	-39

Sources: NMG Financial Services Consulting survey and Bank calculations.

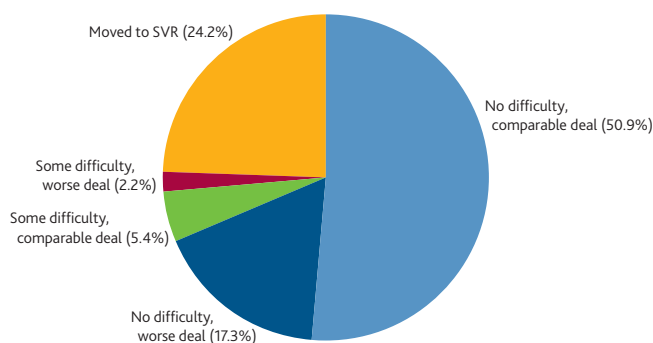
The remaining 14% of mortgagors had a deal that had expired during the twelve months preceding the survey. The majority of mortgagors in this category were able to refinance onto a new deal with lower monthly payments. But the average fall

(1) Source: Bank of England *Monetary and Financial Statistics (Bankstats)*.
 (2) Some variable-rate mortgage contracts were such that the interest rate followed Bank Rate down to a certain threshold. Once that threshold was reached further cuts in Bank Rate were not passed on.

was considerably smaller for this group than for mortgagors on continuing variable-rate deals (**Table B**). A fifth of them reported a rise in monthly mortgage payments. This could be because falling house prices had increased their LTV ratios, forcing them to refinance onto a more expensive mortgage.

Among those mortgagors whose deal had expired during the twelve months preceding the survey, about a fifth reported that they got a worse deal on their new mortgage (**Chart 5**). And only 8% reported some difficulty when refinancing. This may be because, unlike in previous years, moving to their lender's standard variable rate (SVR) was an attractive alternative to refinancing onto a new deal for many households. Almost a quarter moved to the SVR in 2009 compared to only 7% in 2008. In the 2009 survey all mortgagors who moved to the SVR saw their payment fall or remain broadly unchanged, with an average fall of £109. By contrast, monthly payments increased by £89 on average for mortgagors who reported moving to the SVR in the year preceding the 2008 survey.⁽¹⁾

Chart 5 Credit conditions when refinancing a mortgage^(a)



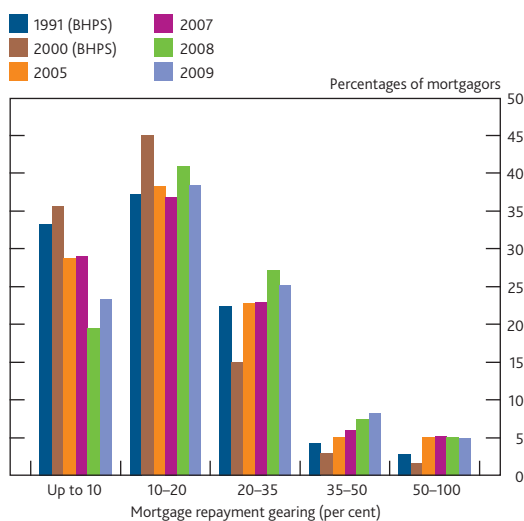
Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Did you have a mortgage deal that ended/came up for refinancing during the past twelve months? If yes, when you refinanced your mortgage which statement best describes your experience?'

Across all mortgagors (including those on fixed-rate deals who had not benefited from the fall in interest rates) just over a half reported that their repayments had fallen over the past year. And around 15% saw falls in repayments in excess of £200 per month.

Changes in interest rates faced by mortgagors affect the share of income devoted to servicing their secured debt (mortgage repayment gearing). The proportion of mortgagors devoting less than 10% of their pre-tax income to mortgage payments had increased compared to the 2008 survey, reflecting the fact that monetary policy might have eased the burden of secured debt for some households (**Chart 6**). However, it also appears that mortgagors with lower levels of gearing benefited more from the fall in payments, with the proportion who spend over 35% of their income on mortgage payments little changed from 2008. This partly reflects a higher prevalence of

Chart 6 Mortgage repayment gearing^{(a)(b)(c)}



Sources: British Household Panel Survey, NMG Financial Services Consulting survey and Bank calculations.

(a) Mortgage repayment gearing is calculated as total mortgage payments (including principal repayments)/gross income.

(b) Calculation excludes those whose gearing exceeds 100%.

(c) Reported repayments may not account for endowment mortgage premia.

fixed-rate mortgage deals among more highly geared households.

Repayment problems and how households respond to them

Weak wage growth, higher unemployment, a fall in housing wealth and further tightening in credit conditions might be expected to have put the financial position of British households under considerable strain and led to increased problems with mortgage and rental payments, bills and other credit commitments. On the other hand, monetary policy easing and fiscal measures are likely to have alleviated some of that strain. It is encouraging that the proportion of households that reported that they could keep up with bills and credit commitments without much difficulty increased to 64% in this year's survey (**Table C**) compared with 58% in 2008.

There was also a rise in the proportion of respondents who reported no problems in keeping up with bills and credit commitments among high LTV mortgagors and the unemployed. Among these groups the proportion who reported that keeping up with payments was a struggle was correspondingly lower. The proportion that reported more serious difficulties, involving falling behind on payments, had remained unchanged for the unemployed but increased from 4% in 2008 to 9% in 2009 for high LTV mortgagors.

The proportion of households who said that they were having difficulty keeping up with their housing payments (ie rental

(1) A further reason, besides low SVR, for preferring to move to the SVR is that this avoids having to pay the lender fees for refinancing onto a new deal.

Table C Keeping up with bills and credit commitments^(a)

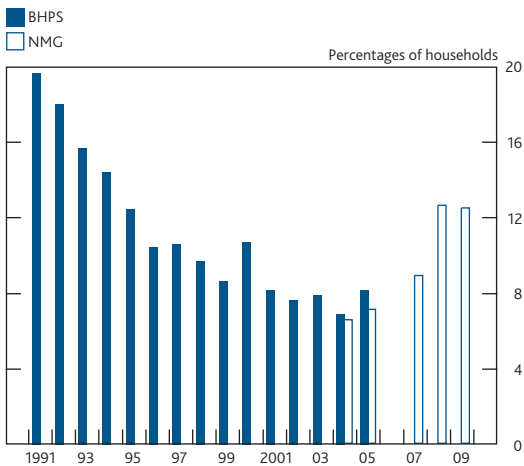
	Outright owners	Low LTV mortgagors	High LTV mortgagors	Renters	Unemployed	Total
Percentage that mentioned:						
Keep up without much difficulty	79	65	53	46	38	64
Keep up, but struggle from time to time	16	28	33	31	36	25
Keep up, but have a constant struggle	4	6	5	15	13	8
Have fallen behind on some or many payments	1	2	9	7	13	3

Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Which one of the following statements best describes how well your household is keeping up with your bills and/or credit commitments at the moment?'

payments for renters and mortgage payments for mortgagors) remained broadly unchanged over the year (Chart 7). There were, however, some important differences across households: the proportion of mortgagors, especially high LTV mortgagors, experiencing housing payment problems increased, whereas the proportion of renters with housing payment problems fell, but remained elevated (Chart 8).

Chart 7 Housing payment problems^{(a)(b)}

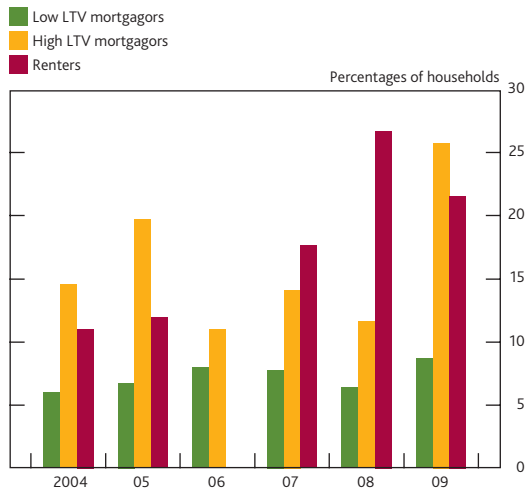


Sources: British Household Panel Survey, NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Many people these days are finding it difficult to keep up with their housing payments. In the past twelve months would you say you have had any difficulties paying for your accommodation?'.
 (b) In the 2006 NMG survey, renters and outright owners were not asked this question, so data for 2006 have been excluded from the chart because they are not comparable.

The pickup in housing payment problems for high LTV mortgagors relative to low LTV mortgagors could be for two reasons. Because credit availability appeared to have deteriorated by more for high LTV mortgagors, they will have been less able to access credit to help them cope with fluctuations in income or other shocks. Indeed, those high LTV mortgagors who reported housing payment problems had seen, on average, a much larger fall in available income than those who did not report problems. Also, a higher proportion of high LTV mortgagors had fixed-rate mortgages and so this group benefited less from falls in mortgage interest payments.

Chart 8 Housing payment problems by tenure^{(a)(b)}



Sources: British Household Panel Survey, NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Many people these days are finding it difficult to keep up with their housing payments. In the past twelve months would you say you have had any difficulties paying for your accommodation?'.
 (b) Renters were not asked this question in 2006.

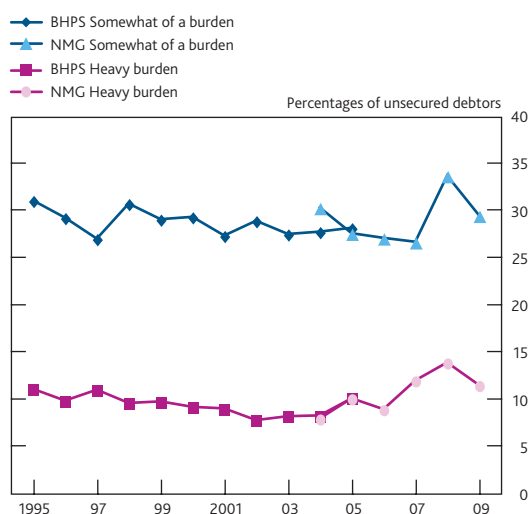
The fall in housing payment problems for renters may partly reflect lower rents, as indicated by survey data from the Royal Institution of Chartered Surveyors which suggested that rents had fallen since Summer 2008.

Respondents experiencing housing payment problems were also asked for the first time in the 2009 survey if they had missed any mortgage or rental payments. Of those experiencing problems, 39% of renters had missed a payment, compared with 32% of high LTV mortgagors and 8% of low LTV mortgagors.⁽¹⁾ Only 2% of all mortgagors reported being in arrears while 1% reported being in arrears of more than three months. This is lower than the 2.4% arrears rate (for arrears of more than three months) in 2009 Q3 reported by the Council of Mortgage Lenders.⁽²⁾

The survey also asked about the burden of unsecured debt. The proportion of households with unsecured debt who said that it was a burden fell in 2009 (Chart 9) and this was true across housing tenure groups and also for the unemployed.

Households who reported difficulty in keeping up with bills and credit commitments were asked for the reasons for their problems. The most common reason cited was 'lack of cash flow that has been or will be resolved in the future' (Table D). Higher-than-expected bills were cited by 20% of households, down from 35% in 2008. And, the proportion of respondents who said loss of income through reduction or cessation of

(1) The UK Government announced in its 2008 Pre-Budget Report a number of measures aimed at improving access for the unemployed to the 'Support for Mortgage Payments' programme, in particular by increasing the capital limit and reducing waiting periods before being able to claim payment support. For more information, see Box 5.6 in Budget Report 2009 (www.hm-treasury.gov.uk/bud_bud09_repindex.htm).
 (2) This could be because of reluctance of some survey respondents to admit to having financial difficulties.

Chart 9 Burden of unsecured debt^(a)

Sources: British Household Panel Survey, NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'To what extent is the repayment of these loans and the interest a financial burden on your household?'

Table D Reasons for difficulty in keeping up with bills and credit commitments^(a)

	2008	2009
Percentage that mentioned:		
Lack of cash flow that has been or will be resolved in future	28	31
Higher-than-expected household bills	35	20
Overspending	13	16
Loss of income through reduction or cessation of overtime	7	14
Unemployment	9	8
Illness	4	5
Higher-than-expected interest rates	8	5
Children's school or university fees	2	3
Credit card and other loan offers were too tempting	2	2
Redundancy	2	2
Divorce or separation	3	2
You or your partner leaving work to have a child	1	1
Debt legacy from being a student	1	1
Other	7	11
Don't know	5	3

Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Households were permitted to make multiple responses so figures do not add up to 100.

overtime was a cause of their financial problems, increased from 7% in 2008 to 14% in 2009.

When asked what action they would consider taking to resolve the difficulty in keeping up with bills and credit commitments, the most frequently cited response was to cut back on spending (Table E). But there were also a high number of 'other' responses this year (15%). When asked to specify their reason, many respondents indicated that they would try to increase their labour income. For the unemployed and inactive, this would be through trying to find a job; and for those already employed, this would be through trying to find an additional job or a better paid job or through trying to work

Table E Action to resolve difficulties in keeping up with bills and credit commitments^{(a)(b)}

	Total
Percentage that mentioned:	
Cut back on spending	45
Use cash in savings/other assets	5
Take out another loan	4
Sell your house	3
Declare yourself insolvent (ie bankruptcy or an Individual Voluntary Arrangement)	1
Enter into another debt solution	3
Take out another mortgage on your house	1
Other (please specify)	15
None of these	27
Don't know	5

Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Households were permitted to make multiple responses so figures do not add up to 100.

(b) In 2009 the list of options was extended so the results are not directly comparable to the 2008 survey.

more overtime. Over a quarter of those reporting difficulties said they would not take any of the actions presented to them.

Prospects for spending and saving

The perception of falling incomes, housing wealth and tightening credit conditions is likely to have altered households' decisions on whether to save or spend. A recent *Quarterly Bulletin* article outlined a number of reasons why the financial crisis and recession might encourage household saving.⁽¹⁾ The article noted that while a rise in household saving during a recession may seem counterintuitive — because households might instead be expected to run down their saving to smooth consumption — at times certain factors (such as increased uncertainty and tighter credit conditions) may outweigh the desire to maintain earlier consumption levels. And, as noted by Benito *et al* (2007), falling asset prices may push down on spending, particularly for households with a lot of debt relative to their assets (ie those with high leverage).

This year's NMG survey included for the first time additional questions aimed at finding out whether or not households had increased or planned to increase their saving and if so why. Around a quarter of respondents reported an increase or planned increase in saving (Chart 10).⁽²⁾ And about 35% of households said that they had 'definitely not' increased or planned to increase saving.⁽³⁾

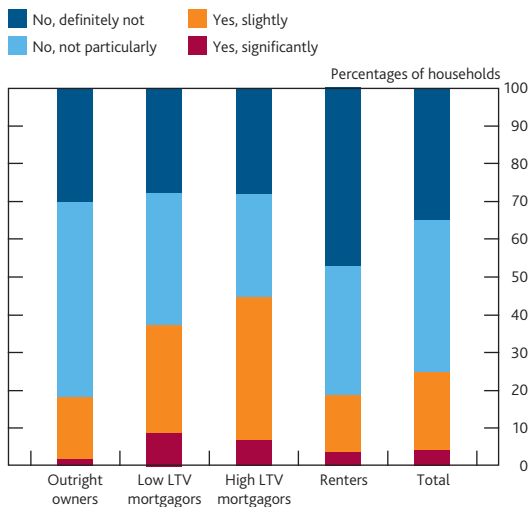
High LTV mortgagors were more likely to increase their saving than low LTV mortgagors. And outright owners were much

(1) Berry, Waldron and Williams (2009).

(2) It is not easy to infer whether these qualitative responses imply a small or large change to total household spending, because there is no information on the actual monetary increase in saving.

(3) This is consistent with the findings of the 2005 NMG survey — the most recent survey to include questions about financial assets — which showed that 30% of all households have no financial assets whatsoever. For more information, see Barwell, May and Pezzini (2006).

Chart 10 Actual or planned increase in saving^(a)



Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Are you planning to/or have you already started to increase the amount of money you save?'

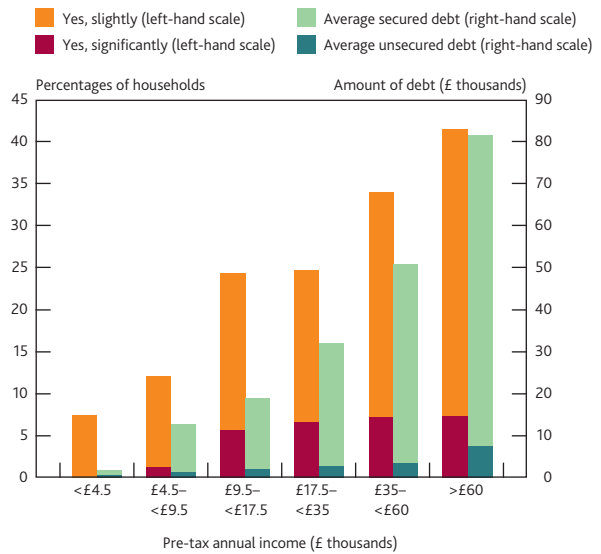
less likely to increase saving than mortgagors (Chart 10). This suggests that the desire to deleverage in the wake of falling house prices may be one of the reasons for increased saving (Benito *et al* (2007)). For a given fall in house prices, mortgagors will have seen a larger percentage reduction in their housing equity than outright owners. High LTV mortgagors will have been most affected. Since housing equity is likely to be a significant component of an individual homeowner's net worth, they may respond to a reduction in housing equity as they would to a fall in lifetime income, by reducing spending and increasing saving. Another potential explanation for the difference between mortgagors and outright owners is the fact that mortgagors are likely to have benefited the most from falling interest rates. As a result they have additional funds available that they can use to increase their saving.

Renters were the least likely group to increase saving. This may partly be because they tend to have lower incomes and so less scope to increase saving. Indeed, the survey suggests that the incidence of increased saving or planned increase in saving rises with income (Chart 11). High-income households also tend to hold the most debt (both secured and unsecured).

An increase or planned increase in saving was markedly more likely among individuals of working age than among those of retirement age (Chart 12). This may partly reflect differences in incomes between these groups. But it may also be that rising unemployment increased the uncertainty about future employment and income, increasing the need for precautionary saving for those below retirement age.

Households who had increased or were planning to increase saving were also asked to select the single main reason for the increase. Fear of redundancy, the desire to reduce debts,

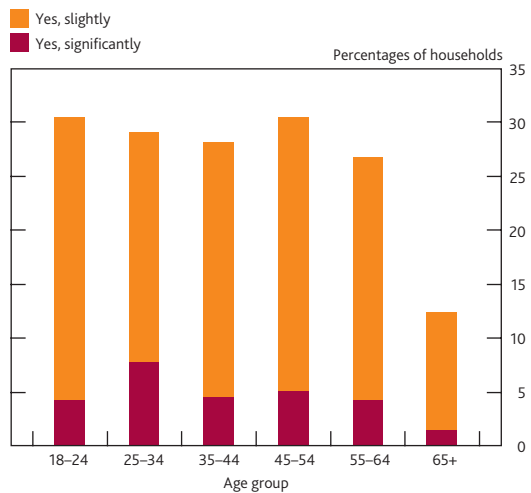
Chart 11 Actual or planned increase in saving and debt levels by income^(a)



Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Are you planning to/or have you already started to increase the amount of money you save?'

Chart 12 Actual or planned increase in saving by age group^(a)



Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'Are you planning to/or have you already started to increase the amount of money you save?'

additional personal commitments and extra cash from falling mortgage payments or bills, were the reasons most often cited (Table F). More than a quarter selected 'other' reasons. Those respondents who selected 'other' were then asked to specify their reason and the answers tended to fall into three categories: saving for retirement, saving for the future and saving because they had extra money from a new job or an inheritance.

There was some variation in the reasons for increased saving across age groups. For young people (aged 18-24), the most commonly cited reason was to save up for a deposit for a house or flat. A large proportion of those between 35 and 44

Table F Reasons for actual or planned increase in saving^(a)

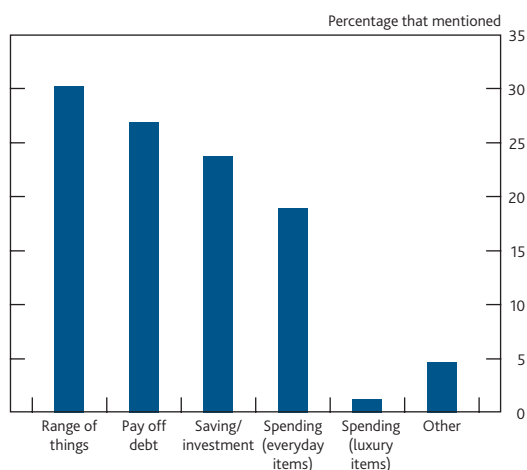
	Per cent
Percentages of those who planned to/or had already increased saving^(b)	
Fear of redundancy/job insecurity	10
Trying to reduce debts	9
Additional personal commitments	9
Extra cash from decrease in mortgage pay	9
Extra cash from fall in other bills	8
Saving for deposit on house/flat	6
Less guaranteed monthly income	6
Value of existing investments fallen	5
Worried about future tax increases	2
Other reasons	28
Don't know	7
Refused	2

Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'What would you say is the main factor driving this increase (in actual or planned saving)?'.
 (b) Percentages do not sum to 100 because of rounding.

had increased saving in order to pay off debts. For those aged over 65, the most commonly cited reason was a fall in the value of their existing investments. Fear of redundancy was commonly cited among all those of working age.

This year the survey also included a new question on how those households that had benefited from a fall in mortgage payments over the past year had used that extra money. Over a quarter of households benefiting from lower payments used the money to pay off debt (**Chart 13**), while another quarter used the extra money to increase saving. Around a fifth reported using the money for spending although very few reported using the money to purchase luxury items. Around 30% said they had not been using the money on anything in particular and that it went on a range of things.

Chart 13 Use of money saved on mortgage payments^{(a)(b)}

Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) Question: 'How are you using this extra money that you are saving on your mortgage payments?'.
 (b) Respondents were allowed to give more than one use of their additional saving. As such, the categories may not sum to 100%.

Reassessment of debt levels

As already mentioned, the desire to deleverage was an important reason for increased saving (**Table F** and **Chart 13**). Around 6% of all respondents reported either that trying to reduce debt was the most important reason for their increase in saving or that they had used the additional money from lower mortgage payments to pay off debt. Such deleveraging could have a material effect on the level of aggregate debt in the economy, if those who were keen to reduce their debts held the largest amounts of it and if they were successful at paying off a significant share. The survey suggested that the average secured and unsecured debt of all those respondents who had some form of debt was £50,000 and £5,000 respectively. But those who explicitly reported paying off debts had on average £85,000 in secured debt and £7,000 in unsecured debt. And the debt to income ratio of those seeking to pay off debts was nearly five compared to an average debt to income ratio of two, across all households who had some form of debt.⁽¹⁾

A higher proportion of households with unsecured debt had increased or planned to increase saving compared to those that had no unsecured debt (**Table G**, Panel A).⁽²⁾ But increased saving was less likely if households reported the burden of debt to be 'heavy', presumably because debt-servicing costs were higher for these households leaving less funds available for saving (**Table G**, Panel B).

Table G Saving for those with and without unsecured debt

Per cent	Actual or planned increase in saving ^(a)	
	Yes	No
Panel A		
All households	26	74
Those that do not have unsecured debt	22	78
Those that have unsecured debt	30	70
Panel B		
Those that have unsecured debt and:		
debt is heavy burden	11	89
debt is somewhat of a burden	30	70
debt is not a burden	33	67

Sources: NMG Financial Services Consulting survey and Bank calculations.

(a) The 'Yes' column reports the share of each group of households (described in the first column) that increased saving (significantly or slightly).

Summary and conclusions

The latest NMG survey shed some light on the impact of the events of the past year on British households' finances. It suggested that households had experienced rising

(1) These calculations use the mid-point value for debt (and income) that is derived from the lower and upper monetary values that households select, eg £5,000–£10,000.
 (2) Households with unsecured debt make up 52% of all households in the sample.

unemployment and weak wage growth, erosion of their housing equity and a further tightening in credit conditions. However, despite the worst recession since the Second World War, the proportion of households who reported difficulties keeping up with bills and credit commitments had fallen slightly compared to the previous year's survey. This partly reflected the effects of the reduction in interest rates on borrowers' loan repayments. Over half of all mortgagors in the survey reported a fall in their monthly mortgage repayments.

The survey also highlighted that the impact of the weak economy and tight credit conditions differed substantially across households, with some groups particularly vulnerable. Those that reported themselves to be unemployed at the time of the survey reported the largest fall in their available income over the past year. And lenders' efforts to reduce the riskiness of new lending had borne down most heavily on high LTV mortgagors, renters and the unemployed, who reported the greatest constraints on borrowing. At the same time fewer

high LTV mortgagors benefited from lower interest rates because a higher proportion were on continuing fixed-rate deals. In contrast to the general trend, a higher proportion of high LTV mortgagors reported arrears on bills and credit commitments and housing payment problems than in the previous year's survey.

The perception of falling available incomes and tightening credit conditions is likely to have borne down on consumer spending. Monetary policy is likely to have had some stimulatory impact, with one in five of mortgagors who benefited from lower interest payments reporting that they had used the money to finance spending. Going forward, the prospects for consumer spending depend to a large extent on household attitudes to saving. Around a quarter of respondents reported that they have increased or plan to increase the amount of money they save. The survey suggests that the increase in saving is more common among people of working age, in employment, and particularly among mortgagors.

Survey method

The survey was undertaken between 25 September and 1 October 2009 by adding 35 questions related to household finances and housing wealth to a regular monthly survey, MarketMinder, carried out by NMG Financial Services Consulting. Interviews were conducted on 1,933 households in the respondents' homes using Computer Assisted Personal Interviewing (CAPI). The results were weighted to help correct for any bias in the sample using nationally defined profiles for age, social grade, region, working status and housing tenure.

A limitation of all surveys about sensitive issues such as household finances is that some people are reluctant to discuss them in face-to-face interviews. Because of embarrassment, those who face the most financial stress might be more likely than others to refuse to answer certain questions or to understate their difficulties. As in previous years, the survey was designed to reduce these possibilities. In order to encourage respondents to divulge sensitive information, they were told that the survey was being carried out on behalf of the Bank of England and would be useful in assessing how spending might be affected by its monetary policy decisions and in judging the risks to financial stability. They were assured that their replies would be treated in the strictest confidence, would not be passed to any third party at any stage in the future and would not under any circumstances be used for sales or marketing purposes. Also, to avoid embarrassment in revealing sensitive information to the interviewer, replies to questions were coded on show cards and recorded on a computer in such a way that the interviewer would not know the content of respondents' answers.

Response rates for the 2009 survey were generally higher than those obtained in previous years. Only those respondents who were the chief income earner or main shopper were asked for their income. On a weighted basis, this meant that 9% of respondents were not asked about their income. A further 26% of households refused to provide (12%) or did not know (15%) their household income. And 13% of respondents refused to say or did not know how much secured debt they owed. A similar percentage of households did not provide information about their unsecured debts, with 8% not knowing how much they owed and 3% refusing to say how much. There was quite a large overlap between those households who did not provide information about their income and those that refused to provide information about their debts.

Several possible approaches can be used to adjust for missing values arising from non-response to particular survey questions. Effectively, these all involve imputing a value for

missing observations. All calculations reported in this article have been carried out using all available responses, implicitly assuming that non-response is distributed in the same way as recorded responses: that is, regardless of the characteristics of non-respondents. But in practice non-response for individual survey questions is not distributed uniformly across groups in the survey population. For example, older people were more likely to refuse to say what their household income was. Nevertheless, internal analysis shows that the overall conclusions from the survey are not very sensitive to the imputation method used.

But the extent to which the sample of households surveyed can be considered representative of the population as a whole also depends on other factors. For example, collectively, survey respondents may systematically misreport information about their finances. Redwood and Tudela (2004) perform an aggregation exercise using the British Household Panel Survey and conclude that mortgage debt is underrecorded, the value of households' housing assets is overrecorded and that unsecured debt is substantially underrecorded. Internal analysis shows that those broad conclusions also apply to the NMG survey. But there is less evidence that these biases vary over time. So, changes in the distribution of balance sheets between different survey years may be taken as representative of changes in the population as a whole.

Finally, in an attempt to encourage as many households as possible to provide information about their finances, the respondents were offered a list of categories from which they could select their responses. For example, mortgagors were asked roughly how much they had left to pay on their mortgage and other secured debts. Those who were prepared or able to provide a response were offered a list of 25 buckets from which to choose: 'Less than £10,000', '£10,000–£19,999', '£20,000–£29,999', ... , '£1,000,000 or more'. And similar response lists were associated with other questions (eg household income, house values etc). In each case, the buckets were chosen so that there were smaller increments in parts of the distribution that tend to draw more of the responses. But regardless of how the buckets were chosen, it is not possible to determine the distribution of responses within each bucket in the absence of additional information. For example, a mortgagor who reported having an outstanding mortgage balance of '£10,000–£19,999' could owe £10,000, £19,999, or anything between the two. Some of the statistics reported in this article require an assumption to be made about the distribution of responses within each bucket. This applies in particular to calculation of the mean (eg mean house value) and ratios of two variables (eg loan to value ratios). The approach taken in the *Quarterly Bulletin* articles that discussed NMG surveys up to 2007, was to use the mid-points of the buckets for all such calculations (eg Waldron and Young (2007)). When calculating means, this implies that

all values between the minimum and maximum in each bucket are assumed to be equally likely (that is, observations are uniformly distributed within the bucket). This method was retained for calculating means in subsequent articles.

However, using mid-points generates lumpy aggregate distributions of ratios (eg distribution of loan to values) with too few respondents falling in the extremes of the distribution (eg the percentage of households in negative equity). For this reason the ratios calculated in this article (including all NMG data covering previous surveys as well) assume that each respondent's weight is uniformly distributed between the minimum and maximum value of the ratio consistent with the buckets selected. For example, a mortgagor who reported having an outstanding mortgage balance of '£20,000–£29,999' and a house worth '£100,000–£124,999' is

assumed to have a loan to value ratio of anywhere between 16% (for a mortgage of £20,000 and a house value of £124,999) and 30% (for a mortgage of £29,999 and a house value of £100,000), with all values in between equally likely. This means that in producing **Chart 2**, 64% of this mortgagor's weight would be assigned to the 0–25 bucket and 36% would be assigned to the 25–50 bucket. The percentages are obtained by calculating the proportion of the mortgagor's range of possible loan to value ratios that lies in each of the two buckets. While this approach has shortcomings of its own (the ratio of two uniform distributions is not uniform) internal analysis has shown that it is a more accurate representation of the raw information provided by the respondents than the method using mid-points. It has also shown that the results are not very sensitive to the method used.

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Accounting for the stability of the UK terms of trade

By Conall MacCoille of the Bank's Monetary Policy Unit and Karen Mayhew and Kenny Turnbull of the Bank's Inflation Report and Bulletin Division.⁽¹⁾

Since the middle of 2007, the sterling effective exchange rate has depreciated significantly. Over the same period the UK terms of trade — the price of the United Kingdom's exports relative to imports — have remained broadly unchanged. Movements in the exchange rate can affect the price of exports relative to imports. But the timing, size and even direction of the impact on the terms of trade will depend on how companies respond to the movement in the exchange rate. This article considers the factors that determine how the terms of trade move in response to an exchange rate depreciation, and investigates what lies behind the stability of the UK terms of trade since 2007.

Introduction

The terms of trade measure the price of exports relative to the price of imports. They represent the purchasing power of the domestic economy — the amount of imported goods and services a country can buy in exchange for a unit of exported goods and services — and its competitiveness abroad. Therefore, any change in the terms of trade can have important implications for both domestic spending and the country's trade balance.

A depreciation of the domestic currency might be expected to cause import prices to increase which, other things being equal, would reduce the terms of trade. Between 2007 Q2 and 2009 Q3, the sterling effective exchange rate depreciated by around 20%, and import prices increased by around 15%.⁽²⁾ Despite that, however, the UK terms of trade have remained broadly stable, reflecting the fact that export prices also increased significantly.

A number of factors will determine how import and export prices respond to a change in the exchange rate. The prices of traded goods and services are likely to take time to adjust to a change in the exchange rate. That means that the initial impact on the terms of trade will depend on the currencies in which domestic and foreign companies price their exports. Over time, companies may choose to alter their prices if they judge that doing so will increase profits. How much they do so will depend on how responsive demand for their products is to changes in price. Over a longer period, a key determinant of the impact on the terms of trade will be the extent to which supply in the export sector responds to changes in profit margins following exchange rate movements.

This article explores the link between the exchange rate and the terms of trade. The first section examines what happened to the UK terms of trade following previous large movements in sterling. The article then considers how companies' pricing strategies can affect the link between the exchange rate and the terms of trade. Following that, the UK terms of trade is then decomposed by product group and region, to see if this can help explain the stability of the UK terms of trade since 2007.

The exchange rate and the terms of trade: previous episodes

Previous episodes involving significant movements in sterling may give some indication as to how the terms of trade might be affected by large exchange rate movements.

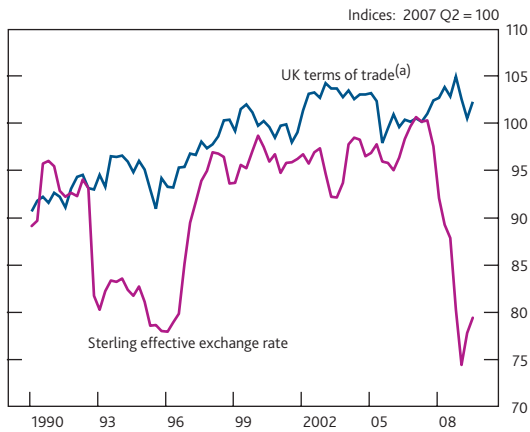
Chart 1 shows the UK terms of trade and the sterling effective exchange rate since 1990. Between 1990 and 2007, there were two episodes where sterling moved significantly. In September 1992, sterling exited from the Exchange Rate Mechanism and within three months had depreciated by around 10%. In 1996, the sterling effective exchange rate started to appreciate and by the end of 1997 had increased by around 20%.

The data in **Chart 1** suggest that the relationship between the terms of trade and the exchange rate is far from close. In the first episode, the UK terms of trade did not fall as the exchange rate depreciated. In the second episode, the terms of trade did increase as sterling appreciated, and for some time afterwards.

(1) The authors would like to thank Varun Paul for his help in producing this article.

(2) Data used in this article are to 2009 Q3 unless stated otherwise.

Chart 1 The UK terms of trade and the sterling effective exchange rate



(a) Excluding fuel and the estimated impact of missing trader intra-community (MTIC) fraud.

But Dury *et al* (2003) argue that the appreciation of sterling in the second half of the 1990s was not the reason behind the rise in the UK terms of trade. They note that the appreciation of sterling was predominantly against EU countries, whereas the rise in the UK terms of trade was predominantly against non-EU countries. In addition, the UK terms of trade actually began increasing prior to the start of the appreciation. Dury *et al* suggest that the rise in the UK terms of trade in the middle of the 1990s was most likely due to an increase in foreign buyers' demand for UK services (pushing up on UK export prices) and productivity improvements in ICT export sectors abroad (pushing down on UK import prices).

Data measurement is also likely to affect the observed relationship between the terms of trade and the exchange rate. The majority of trade prices are now measured directly from surveys. But **Table A** shows that this was not always the case. Between 1990 and 1997, the majority of trade prices were measured by taking the equivalent domestic price measures (using the producer price indices (PPIs)) and adjusting those using the exchange rate. As such, it is possible that the relationship between the exchange rate and the terms of trade in previous episodes was somewhat distorted by measurement problems.

Table A Measurement of UK import prices^(a)

	Exchange rate		Unit values ^(b)
	Surveyed prices	Adjusted PPIs	
1990–94		80%	20%
1995–97	45%	55%	1%
1998–2009	75%	25%	

Source: Statistics on Trade in Goods, *ONS Methodological Series*, No. 36, 2007.

(a) Rows may not sum to 100 because of rounding.
 (b) Unit values measure the ratio of the value of shipped products to the quantity (measured as number of units).

Importing and exporting companies' pricing decisions

The response of the terms of trade will initially depend on the currency in which domestic and foreign companies set their prices. This is because prices may adjust slowly, perhaps because some companies have agreed fixed-price contracts for a period of time. But over time, companies will be able to change their prices, and so the response of the terms of trade will depend on how they do so: that in turn will depend on the relative responsiveness of export and import demand to changes in price, and the responsiveness of supply in the export sector.

The next subsection discusses how the currency companies set their prices in — their invoice currency — can influence the initial response of the terms of trade to an exchange rate depreciation. The following subsection examines how companies will respond once they are able to reset prices, for example, once fixed-price contracts come up for renegotiation. The responsiveness of supply in the export sector is then considered.

The initial impact on the terms of trade

It is likely that prices take time to adjust following a change in the exchange rate. In part, that will reflect the fact that some contracts are negotiated for a fixed period. But companies may also choose to wait and see whether or not the movement in the exchange rate persists. If prices adjust gradually then the currencies that foreign and domestic companies price their exports in will play an important role in determining the initial impact on the terms of trade.

Companies can set prices for the goods and services they export in their home currency (home currency pricing), or in the currency of the foreign destination (foreign currency pricing).⁽¹⁾ If all UK and foreign exporting companies home currency price, then the UK terms of trade would be expected to *fall* initially after a sterling depreciation — sterling export prices would be unchanged, but sterling import prices would rise. UK exports would become cheaper relative to UK imports in sterling terms.

But if all exporting companies foreign currency price, then the UK terms of trade would *rise* initially after a sterling depreciation — sterling export prices would increase, but sterling import prices would remain unchanged. In this case, UK exports would become more expensive relative to UK imports in sterling terms.

So the direction in which the terms of trade move initially will depend on the currencies in which UK and foreign companies

(1) In the literature, home currency pricing is often termed producer currency pricing, and foreign currency pricing is often termed local currency pricing. See Devereux and Engel (2003).

set prices. Indeed it is possible that the terms of trade could remain completely unchanged. That would be the case if the proportion of UK exports priced in foreign currency is equal to the proportion of foreign exports to the United Kingdom that are priced in the home currency of the exporter.

Whether companies choose to price in home or foreign currency is likely to depend on how much they expect the exchange rate to fluctuate, and how much of any fluctuation they are willing to absorb in profit margins. Foreign currency pricing means companies' profit margins will automatically fluctuate with the exchange rate (assuming that most costs are fixed in domestic currency), but sales will not fluctuate with the exchange rate — because prices are fixed in foreign currency. Home currency pricing means that exchange rate movements will affect sales but not profit margins. If exporting companies value stability in their profit margins and the cost of hedging against exchange rate movements is large, they may be less willing to set their prices in foreign currency. In addition, companies with relatively small profit margins may have little scope to absorb fluctuations without making losses. Hence, such companies may be less likely to engage in foreign currency pricing.

The volatility of the exchange rate can influence the choice of invoice currencies in trade. And Campa and Goldberg (2005) find evidence that countries with lower exchange rate variability do have lower rates of pass-through of nominal exchange rate movements into their import prices. This could suggest that exporters to markets where the bilateral exchange rate volatility is low are more likely to engage in foreign currency pricing.

Recent detailed evidence on the prevalence of home currency pricing and foreign currency pricing is somewhat limited. Goldberg and Tille (2009) suggest that around 70% of UK and euro-area exporters price in foreign currency terms, compared with less than 10% of US exporters.⁽¹⁾ But to draw firm conclusions from such estimates about the impact of an exchange rate move on the terms of trade more detailed information would be needed — for example, the proportions of UK imports from the euro area that are priced in euros and sterling.

The impact on the terms of trade over time

Over time, as contracts expire, an increasing proportion of companies will be able to reset prices. Effectively this means that companies will not be constrained by the choice of invoice currency they had been using prior to the exchange rate movement.

Price elasticity of demand

Companies will take into account the responsiveness of demand for their products to a change in price — the price elasticity of demand — when setting their prices. The price

elasticity of demand for an exported product is said to be low if changes in its price lead to a relatively small proportional change in demand. The price elasticity of demand faced by a company tends to be low for goods in niche or specialised markets where competition for market share is limited and so price changes lead only to small changes in demand.

Following an exchange rate depreciation, domestic exporters that price in foreign currency will initially see an increase in their home currency price. Since their foreign currency price will be unaffected by the depreciation, demand for their product should also be unchanged, and so higher home currency prices will lead to higher profits. But these companies may judge that profits can be raised further by cutting their foreign currency price, and boosting demand. This will depend on the price elasticity of demand — the lower the price elasticity of demand faced by the company, the smaller will be the incentive to cut prices.

For exporting companies pricing in home currency terms a depreciation will initially lead to an increase in the demand for their products, since their foreign currency price will fall. But these companies may choose to raise their home currency price so that their foreign currency price returns towards its pre-depreciation level. Again this will depend on the price elasticity of demand. In both cases, a low price elasticity of demand will tend to put upwards pressure on home currency export prices following a depreciation.

Exporters to the domestic market will face similar considerations. The lower the price elasticity of demand, the larger will be the rise in home country import prices as the foreign currency appreciates. With a low price elasticity of demand foreign exporters will face little penalty of reduced demand. This will have the effect of reducing the home country's terms of trade for given export prices.

How exporting companies respond will also depend on the nature of the competition that they face. For example, if foreign exporters are competing with domestic companies, then raising their price may lead to significant loss in market share. Conversely, if foreign exporters mainly compete with other exporting companies that have also seen their currencies appreciate, then all foreign exporters may have an incentive to raise prices, and so any loss in market share might be limited.

Globally determined prices

The price of some products such as oil and other commodities are set in global markets, typically in US dollars. Companies producing those commodities will be price-takers in their respective markets and will always take the dollar price for

(1) The results for the United Kingdom are broadly in line with a Her Majesty's Customs and Excise study carried out in 2002.

their goods. This means that the sterling price of crude oil exports and imports, for example, will move by the same amount following nominal exchange rate movements against the dollar. Indeed, the UK terms of trade for crude oil has been broadly flat over the past decade.

But there could be an impact on the aggregate terms of trade, following an exchange rate movement, if a country runs a net surplus or deficit in trade of a globally priced commodity. This is because the weight given to those import and export prices in the aggregate terms of trade will differ. The United Kingdom has in the recent past been broadly balanced in trade in oil. This means movements in sterling oil prices following exchange rate movements have little impact on the aggregate terms of trade. The United Kingdom, however, does run a net trade deficit in some other globally traded commodities, implying that exchange rate depreciations will tend to push down on the aggregate terms of trade through this channel.

The supply response in the export sector

As discussed, following an exchange rate depreciation, profit margins in the export sector may rise. Any increase in profit margins should, over time, encourage other companies to enter the export market. As supply increases in the export market, profit margins would likely fall back as a result of increased competition. As export prices decline so too would the terms of trade, for given import prices.

The responsiveness of supply to changes in price will depend upon the extent to which new companies enter the market, or existing companies expand capacity and output. If set-up costs for new firms are high or labour and capital are relatively immobile between sectors, then export prices may remain high for longer than if the responsiveness of supply was high.

The extent to which companies are willing to enter the export market or expand existing capacity will also depend upon whether they perceive the sterling depreciation to be temporary or permanent, and hence if high profit margins are expected to be maintained.

Summarising pricing decisions

Because prices may adjust only gradually, the initial impact of the exchange rate on the terms of trade will depend on the currencies in which exporting companies set their prices. As companies are able to adjust prices, it is the relative price elasticity of demand for exports and imports that will be an important determinant of the impact of the exchange rate on the terms of trade.

If the price elasticity of demand for the home country's exports and imports is low, then following an exchange rate depreciation, both the domestic and foreign exporting companies may choose to raise their prices in the home currency. The home country's terms of trade will change if the

price elasticities of demand for their exports and imports are different. Over time, as prices adjust, there may be an incentive for supply to respond and this too will have a bearing on how the terms of trade respond.

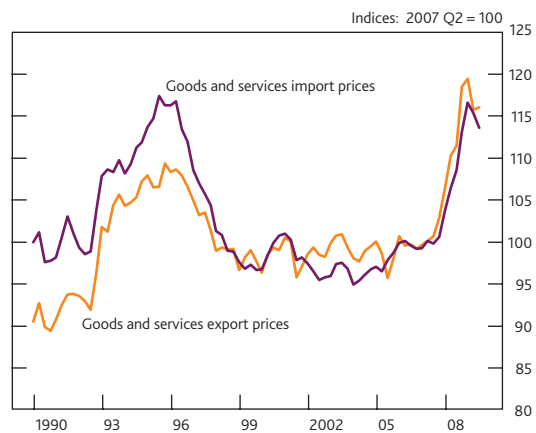
Decomposing the UK terms of trade

This section decomposes the UK terms of trade into its various components to see what lies behind its stability since 2007. It first looks more closely at movements in sterling export and import prices and then decomposes the UK terms of trade by product and area.

Sterling export and import prices

The broad stability of the terms of trade since the depreciation began in mid-2007 implies that export and import prices have moved in a similar way. In fact both import and export prices have increased by around 15% (Chart 2). So what are the potential explanations?

Chart 2 Export and import prices^(a)



(a) Excluding fuel and the estimated impact of MTIC fraud.

The stability of the UK terms of trade might reflect the pricing strategies adopted by UK exporters and foreign exporters to the United Kingdom. It would be consistent, for example, with equal proportions of UK exporting companies pricing in foreign currency and foreign exporting companies pricing in their own domestic currency. In fact, sterling export and import prices have both increased by only a little less than the exchange rate depreciation. That might suggest that a significant proportion of UK exporters have been foreign currency pricing, and a significant proportion of exporters to the United Kingdom have been home currency pricing.

But as noted, once companies are able to reset prices, the initial choice of invoice currency will no longer be a constraint. It may be that UK exporters have decided to increase their sterling prices (or allowed them to increase), so that their foreign currency denominated price remains constant, and their profit margins rise. As discussed previously, this would be

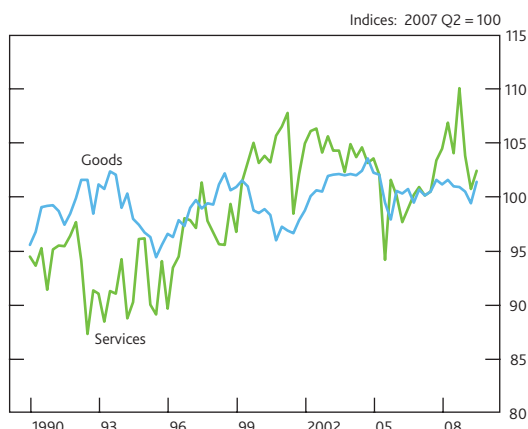
consistent with the price elasticity of demand for UK exports being relatively low, perhaps because many exporters are specialised with few close substitutes. But this increase in profit margins would be expected to encourage entry into the export sector and so over time export prices may fall back. The speed and strength of the response in supply will depend on how easy it is for companies to switch into export production.

If the price elasticity of demand for UK imports is low, foreign exporters to the United Kingdom will be more likely to push up their sterling prices in response to the sterling depreciation. But UK import prices have risen by less than the exchange rate depreciation, suggesting some foreign exporters to the United Kingdom have reduced their profit margins. It is possible that over time foreign exporters may choose to restore their profit margins, or leave the UK market, putting upward pressure on UK import prices and downward pressure on the UK terms of trade.

The terms of trade for goods and services

As well as being decomposed into export and import prices, the terms of trade can also be decomposed into the terms of trade for goods and services (**Chart 3**) separately. Also the goods terms of trade can be decomposed further into product categories. The goods terms of trade have been broadly flat, while the services terms of trade have been very volatile, but are currently at a similar level to that in 2007 Q2, prior to the depreciation of sterling.

Chart 3 The terms of trade for goods and services

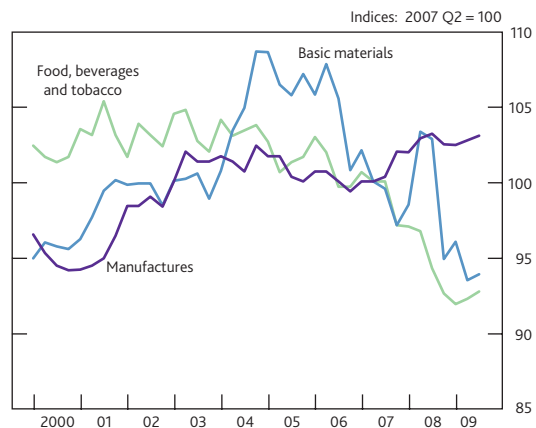


Services make up only around a third of UK trade. In addition, the ONS has few directly surveyed prices for UK trade in services, and relies on various assumptions and proxy measures to construct the services trade price deflator. And the ONS does not publish any further breakdown of the services trade price deflators into different sectors. Hence this section concentrates on decomposing the goods terms of trade.

The broad stability of the goods terms of trade (in aggregate) masks a considerable degree of variation at the product level.

Manufactured goods account for around 80% of all trade in goods and since mid-2007, the manufactures terms of trade have risen slightly. This has broadly offset sharp falls in the terms of trade for food, beverages and tobacco and basic materials (**Chart 4**).

Chart 4 The goods terms of trade by product



What might explain the contrasting movements at product level? It is possible that companies producing manufactured goods are more likely to price in foreign currency terms. This may be because the high value added in this sector means that profit margins are high and hence companies are able to absorb price fluctuations in their margins. The rise in the manufactures terms of trade would also be consistent with the price elasticity of demand for UK exports being lower than the price elasticity of demand for UK imports — this might be the case if UK exports are more specialised than foreign exports to the United Kingdom.

The fall in the terms of trade for food is likely to be explained, in part, by the relative price elasticities of demand for food in the United Kingdom and foreign markets. If the elasticity of demand for UK imports of food is lower than the price elasticity of demand for UK exports of food, then the UK food terms of trade would fall following an exchange rate depreciation. But the exchange rate depreciation is not the only factor that has affected food prices in recent years. Between August 2007 and August 2009, global food prices increased by around 15%. And it is possible that this increase also contributed to the decline in the food terms of trade, for example if cost pressures affected the price of food imports more than the price of food exports.

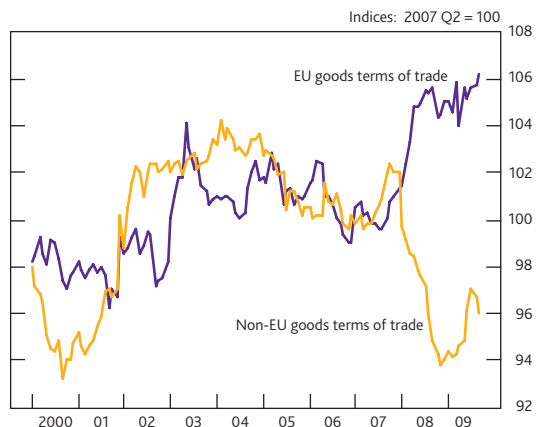
In summary, the aggregate UK terms of trade have been relatively flat since the middle of 2007. This can largely be explained by the relative stability of the goods terms of trade, which make up around two thirds of trade. The stability of the goods terms of trade can be decomposed into, first, a small rise in the terms of trade for manufactured goods — perhaps because companies have been engaging in foreign currency pricing, or perhaps because UK exports are more

specialised. And second, that had been offset by falls in the terms of trade for food and basic materials — perhaps because of the relative price elasticities of demand in the United Kingdom and abroad, or as a result of a cost shock to UK food import prices.

The terms of trade by region

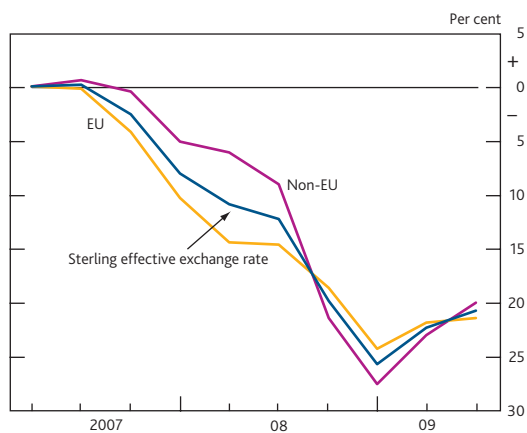
The UK goods terms of trade can also be decomposed into the terms of trade with EU and non-EU countries. The goods terms of trade (excluding oil) with EU countries have increased significantly since 2007 Q2, whereas they have fallen significantly with non-EU countries (Chart 5). But sterling has fallen by similar amounts against both EU and non-EU countries (Chart 6). So differing movements in the exchange rate cannot explain the different movements of the UK terms of trade with these countries.

Chart 5 Terms of trade with EU and non-EU countries^(a)



(a) Excluding oil.

Chart 6 Cumulative change in effective exchange rates since 2007 Q2



One possible explanation for the different movement in the terms of trade between EU and non-EU countries could be that the composition of UK trade differs between the two regions. For example, if the United Kingdom’s trade in manufactured goods was primarily with the EU, then this could explain the divergence. But the composition of the

Table B UK trade in goods shares (2008)

	Food, beverages and tobacco	Basic materials	Fuels	Semi-manufactures	Finished manufactures	Misc.
UK exports to:						
EU	6.7	2.3	17.3	31.6	41.7	0.4
Non-EU	3.9	3.0	9.8	28.6	53.5	1.1
UK imports from:						
EU	11.7	2.7	6.3	27.4	51.7	0.2
Non-EU	6.1	3.7	22.4	18.6	47.9	1.3

Table C UK terms of trade with EU and non-EU countries

Percentage changes between August 2007 and August 2009

	Food, beverages and tobacco	Basic materials	Semi-manufactures	Finished manufactures	Total goods
Terms of trade					
Total	-8.1	-5.8	4.2	2.5	0.9
EU	-2.7	-3.0	6.9	8.2	5.6
Non-EU	-20.2	-10.4	0.7	-4.5	-4.2

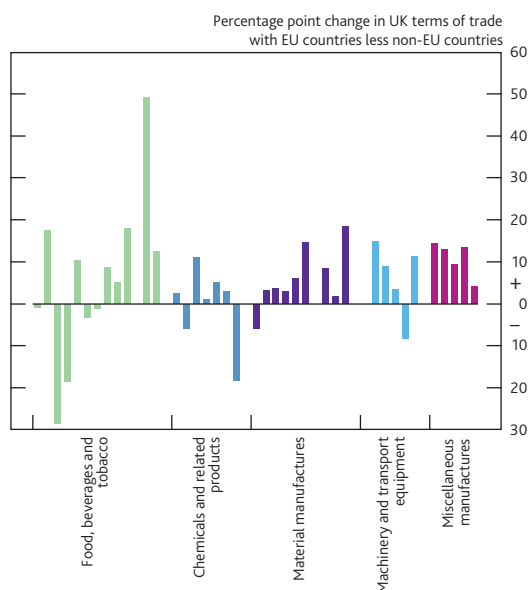
United Kingdom’s trade with EU and non-EU countries is broadly similar (Table B) and therefore does not appear to be the explanation.

Table C shows the UK terms of trade with EU and non-EU countries by product. It shows that for both EU and non-EU countries, the terms of trade for food and basic materials have fallen while the terms of trade for manufactured goods have generally increased. But it also shows that for each category, the terms of trade have increased by more (or fallen by less) against EU countries compared with non-EU countries.

The contrast between the terms of trade with EU and non-EU countries can also be seen at a more disaggregated level. Separating UK goods trade into 41 sectors reveals that in 29 of these sectors (71%) the terms of trade have increased by more (or fallen by less) against EU countries compared with non-EU countries (Chart 7). And this picture is reasonably broad-based across sectors.

Another possible explanation for the different movements in the terms of trade between the two regions is that the pricing decisions of UK exporters are dependent, in part, on whether the destination country is part of the EU and in particular the euro area. More specifically, it is possible that UK exporters are more willing to price their exports in euros than in other currencies, because the more liquid foreign exchange market in euros reduces the cost of hedging the associated currency risk. UK exporters may therefore be more willing to price in foreign currency to euro-area countries than they are to non-EU countries.

Chart 7 Disaggregated sectoral differences in UK terms of trade: movements against the EU and non-EU countries (August 2007–August 2009)^(a)



(a) Two and three-digit Standard International Trade Classification sectors. The 41 sectors accounted for 87% of UK goods trade in 2008.

Conclusion

Between 2007 Q2 and 2009 Q3, the sterling effective exchange rate depreciated by around 20%, yet the UK terms of trade remained broadly unchanged. There are a number of factors that can influence the response of the terms of trade to movements in the exchange rate. And the exchange rate itself is only one possible explanation behind any movement in a country's terms of trade.

Because prices may adjust only gradually, the currency in which traded products are priced can affect the initial response

of the terms of trade to a change in the exchange rate. How companies respond once they are able to reset prices will depend on their price elasticities of demand. And it is the relative price elasticities of demand for exports and imports that will determine the response of the terms of trade to an exchange rate movement. Over time, the responsiveness of supply in the export sector will be a key determinant of how the terms of trade respond.

The recent stability of the UK terms of trade reflects the fact that sterling import and export prices have risen by similar amounts and by only a little less than the overall exchange rate depreciation. The stability of the aggregate UK terms of trade can largely be explained by the relative stability of the goods terms of trade. This can be explained by a small rise in the terms of trade for manufactured goods being broadly offset by a fall in the terms of trade for food and basic materials.

The broad stability in the UK terms of trade masks considerable differences in the terms of trade between EU and non-EU countries. The UK terms of trade with the EU has increased significantly whereas it has fallen significantly against the non-EU countries. Movements in the components of the terms of trade are likely to reflect the relative price elasticities of demand for UK exports and imports. Differing movements across regions could reflect the fact that the euro foreign exchange market is more liquid.

But if the rise in export prices is persistent, then this will create an incentive for rebalancing within the UK economy. It might encourage resources to be reallocated towards the export sector. And over time as these margins are competed away, sterling export prices would be expected to fall back and as they do so the UK terms of trade would decline.

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Recent developments in pay settlements

By Christopher Hackworth of the Bank's Structural Economic Analysis Division.⁽¹⁾

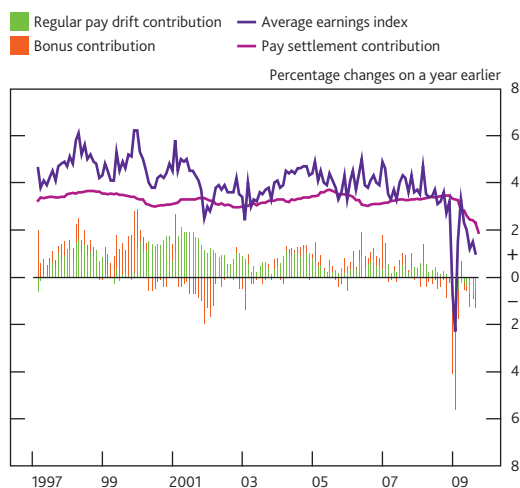
Pay settlements negotiated between employers and their employees have fallen sharply during 2009. Pay settlements have averaged below 2%, with many companies freezing pay. The recession, and the associated drop in employers' demand for labour, has been a key influence on settlements. Inflation measures frequently cited in pay negotiations have also moderated, further reducing upward pressures on pay. This short article examines the recent movements in settlements.

Introduction

Aggregate earnings growth per employee has weakened substantially over the past year as the recession in the UK economy intensified. In the three months to September 2008, whole-economy annual earnings growth was 3.4% according to the average earnings index (AEI).⁽²⁾ In the three months to September 2009, growth was 1.2%.

Aggregate earnings growth can be decomposed into the contribution from pay settlements, regular pay drift, and bonuses. Pay settlements are changes in basic pay which are applied to groups of employees within a business. Firms tend to associate these with general changes in demand, or cost of living changes. Pay settlements do not capture performance-related bonuses or changes related to an individual's performance which will be reflected in regular pay drift along with other factors such as hours worked (Chart 1).⁽³⁾

Chart 1 Earnings growth



Sources: Bank of England, Incomes Data Services, Industrial Relations Services, the Labour Research Department and ONS.

Typically, settlements have made the largest contribution to aggregate earnings growth. Over the past ten years, the annual growth of the AEI averaged 3.8%, with settlements accounting for over four fifths of this.

The figures on pay settlements in this article bring together information from a number of external sources, as well as from the Bank's regional Agents since 1993.⁽⁴⁾ However, the information comes from a sample of businesses, and businesses may use differing definitions of settlements. In 2008, figures are based on over 3,000 settlements, covering slightly fewer than 16 million employees. This is just under 60% of employees, as measured by the ONS' Employee Jobs measure.

The Bank of England often publishes analysis of pay settlements in the *Inflation Report*: this article considers movements in settlements and important influencing factors in more depth. This article first reviews the recent movements in aggregate earnings and settlements. It then considers how settlements may have been affected by the weakness in demand, as well as the role of current inflation and households' expectations of future inflation.

- (1) The author would like to thank Rachana Shanbhogue for her help in producing this article.
- (2) The UK Statistics Authority has recently approved the average weekly earnings series as a National Statistic. It also shows a substantial weakening in earnings growth over this period. This series will in due course replace the AEI as the ONS monthly measure of wages and salaries. See www.statisticsauthority.gov.uk/assessment/assessment-reports/assessment-report-19---average-weekly-earnings.pdf.
- (3) The weakness in the bonus contribution and aggregate earnings in early 2009 reflected sharp falls in financial sector bonuses. These are paid disproportionately in the first quarter of the year.
- (4) The Bank of England's calculations are based on information from the Bank's regional Agents, Incomes Data Services, Industrial Relations Services and the Labour Research Department. We are grateful to these providers for their data and analysis, which are an invaluable input to the Bank's work.

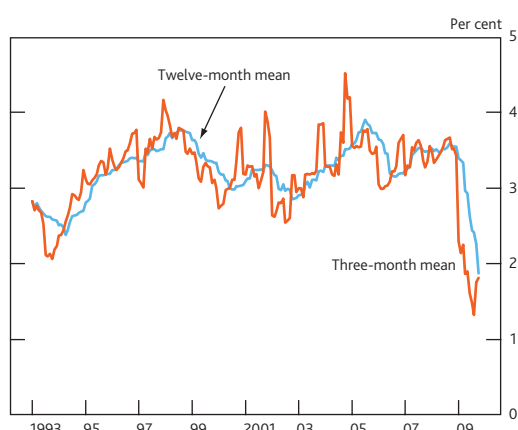
Recent movements in private sector earnings

As discussed, earnings growth per employee has weakened substantially. This is also the case in the private sector, which accounts for around 80% of employment. In the three months to September 2009, earnings grew by 0.8% according to the AEI, compared with growth of 3.2% in the three months to September 2008.

The fall in private sector earnings growth reflects a fall in the contribution from all the components of pay. Businesses have implemented short-time working initiatives, reducing the wage per employee through lower regular pay drift. Bonuses have also fallen, with especially large impacts from the financial sector. Around half of the decline in private sector average earnings growth since late 2008 can be accounted for by these factors. The other half can be accounted for by weaker settlements.

The weighted private sector twelve-month mean settlement has fallen from 3.5% at the end of 2008 to 1.9% in October (Chart 2). This is the measure of settlements which is comparable with the twelve-month change in private sector AEI. The twelve-month mean is calculated because settlement negotiations tend to occur annually, and hence any one pay settlement will influence the annual growth rate for twelve months. So that the estimate is representative of employment in the private sector each settlement is weighted by the number of employees it represents, and also by the employment weight of that sector.

Chart 2 Private sector weighted pay settlements



Sources: Bank of England, Incomes Data Services, Industrial Relations Services and the Labour Research Department.

The twelve-month mean measure of pay settlements is a backward-looking estimate and relatively slow moving. Movements in the three-month mean measure of settlements can give us a more up-to-date picture of pay pressures. This more volatile measure has fallen to under 2% in recent months (Chart 2).

The two factors most often cited in business surveys as being very important in negotiations between businesses and employees are the ability to pay, associated with demand for businesses' outputs, and changes in the cost of living. The remainder of the article discusses these two factors in more detail, and considers the extent to which weakness in settlements reflects them.

How have settlements changed with weakening demand?

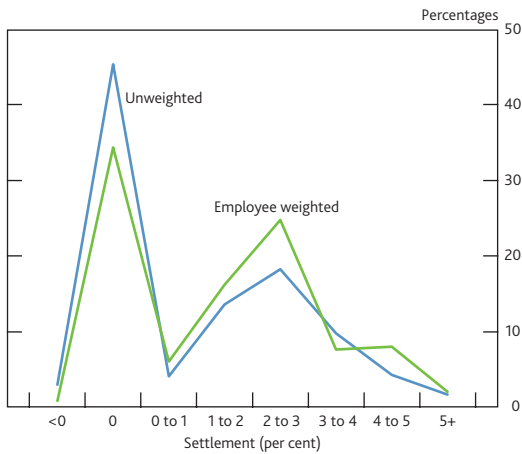
During the recession, demand for the goods and services businesses produce has fallen, and to the extent businesses' profits cannot be squeezed further, this will have necessitated a reduction in the pay bill. The fall in demand for goods and services will also have put downward pressure on the prices businesses can charge for them. This pushes up on real wages — nominal wages relative to the output prices of those goods and services. To achieve the required adjustment in real wages, nominal wage growth — and hence pay settlements — is therefore likely to need to moderate substantially.

There has been a sharp increase in the number of people having their pay frozen, but there have been few instances of pay cuts. Just under 35% of employees received a basic pay freeze (green line in Chart 3), and only 1% received a negative settlement. There is also evidence that the number of businesses deferring pay agreements has increased: in the short term, these act as pay freezes, as businesses postpone negotiations with employees for a specified period. Estimates from the EEF suggest slightly under 30% of businesses in the manufacturing sector deferred pay deals in the three months to October, the highest number during this recession.

It is possible to disaggregate the data by size of business: businesses have been more likely to freeze pay if they have relatively few employees. Weighting each private sector settlement by the number of people it covers shows fewer pay freezes (comparing the blue (unweighted) and green (employee weighted) lines in Chart 3).

The relatively high prevalence of pay freezes among smaller businesses could reflect the nature of the operations of a small firm. Owners of smaller businesses may be more able to discuss the businesses' prospects with employees than owners of larger businesses. Therefore employees may be more willing to accept a pay freeze in smaller businesses than larger businesses. These results chime with a British Chambers of Commerce survey conducted during early 2009, which suggested a larger proportion of smaller businesses were intending to freeze pay during 2009 than were larger businesses.

Chart 3 Distribution of 2009 pay settlements^{(a)(b)}



Sources: Bank of England, Incomes Data Services, Industrial Relations Services and the Labour Research Department.

- (a) Based on settlements effective between 1 January and 25 November 2009.
- (b) A settlement that is a round number is classified within the bucket where that round number is the upper bound. So a 2% settlement is included in the 1% to 2% bucket.

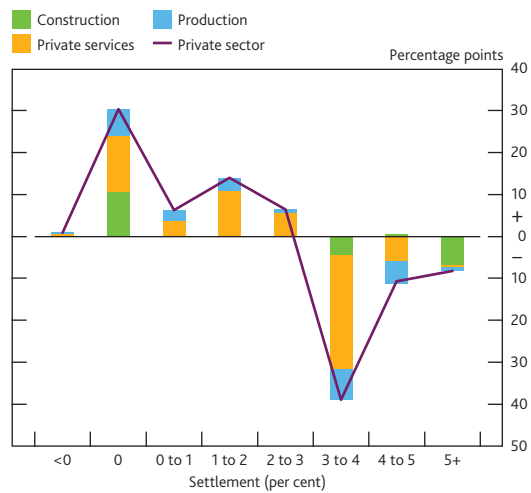
Pay settlements can also be disaggregated by the sector in which people work. **Chart 4** shows the change in distribution of private sector settlements between 2008 and 2009. The private sector line shows the percentage point difference between the number of settlements in each range between January and November 2009, compared with the same period in 2008. The bars show the sectoral make-up of these changes. The bars illustrate the broad-based decline in settlements across sectors over the past year. The largest contribution to the change in the distribution is from private services. The sharp fall in the proportion of people receiving settlements between 3% and 4% can be mostly accounted for by settlements among private services, such as transport and hotels. The fall in the proportion of people receiving over 5% can be almost entirely accounted for by the construction sector. The pay settlement in 2008 was the final year of a three-year pay deal for the vast majority of these employees, so the fall between 2008 and 2009 may have been larger than if the settlement had been renegotiated in 2008. The small numbers of negative settlements have been concentrated in the production and service sectors.

As pay settlements started falling in 2008, pay freezes were initially concentrated among a small number of firms. As discussed in the November 2008 *Inflation Report*, pay freezes became apparent first in housing-related industries, which include private service businesses such as estate agents and property lawyers. As the recession intensified, pay freezes became more common across the economy.

This is the first recession in the data set. Before the recession, the most substantial slowdown in economic growth in the data set was that seen at the start of this decade. The response of businesses as the economy slowed, while not on the same scale, was similar in nature (**Chart 5**). As the

slowdown in growth started influencing businesses' wage negotiations, the number of pay freezes picked up during 2002, and the number of higher settlements dropped back (green line). Pay freezes were, however, relatively short-lived. In 2003, there were very few pay freezes, with an increase in the number of settlements between 3% and 4% (orange line).

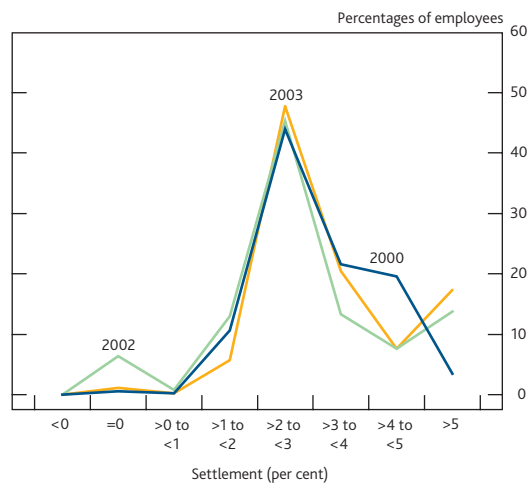
Chart 4 Change in private sector pay settlements between 2008 and 2009^{(a)(b)}



Sources: Bank of England, Incomes Data Services, Industrial Relations Services and the Labour Research Department.

- (a) Applies 2008 sectoral weights to 2009 data for comparability. The sum of all changes, in each sector and at an aggregate level, is zero.
- (b) A settlement that is a round number is classified within the bucket where that round number is the upper bound. So a 2% settlement is included in the 1% to 2% bucket.

Chart 5 Distribution of pay settlements in the private sector^{(a)(b)}



Sources: Bank of England, Incomes Data Services, Industrial Relations Services and the Labour Research Department.

- (a) Settlements weighted by employees.
- (b) A settlement that is a round number is classified within the bucket where that round number is the upper bound. So a 2% settlement is included in the 1% to 2% bucket.

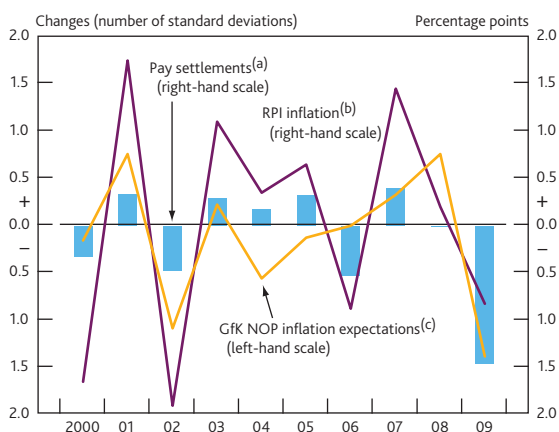
How has the inflation outlook influenced settlements?

The second most frequently cited factor influencing pay negotiations is increases in the cost of living. According to the 2009 *Industrial Relations Services Pay Prospects Survey*, just over two thirds of businesses use a measure of inflation during negotiations. The majority of these businesses use inflation only as a guide to inform pay awards. Only around 15% of the businesses questioned who use inflation had an explicit link between inflation and settlements.

Both current and expected inflation are important to pay settlements. Of those businesses who consider inflation, over half of businesses consider the current inflation rate, and around a quarter use a forecast of inflation, according to recent *Industrial Relations Services Pay Prospects Surveys*. The official measure of inflation which is most often referenced for those pay settlements with an explicit link to inflation is the retail prices index (RPI). The consumer prices index (CPI) has been increasingly referenced, although when used, this has tended to be in conjunction with other measures.

The majority of private sector businesses, and a significant proportion of private sector employees, settle their pay renegotiations in the first four months of the year. Inflation, and expected future inflation, towards the end of the previous year is likely to be very important for the next year's outturn for pay settlements. **Chart 6** presents some evidence for a correlation between the changes in the mean settlement in the early months of the year, and changes in both inflation and inflation expectations at the end of the previous year.

Chart 6 Factors influencing changes in pay settlements



Sources: Bank of England, GfK NOP, research carried out by GfK NOP on behalf of the European Commission, Incomes Data Services, Industrial Relations Services, the Labour Research Department and ONS.

- (a) Change on previous year, based on one-month private sector settlements in the first four months of the year.
 (b) Change on previous year, based on average annual inflation rate in the final four months of the preceding year.
 (c) Inflation expectations over the next twelve months. Change on previous year, based on number of standard deviations difference from its 1997–2009 average in the final four months of the preceding year.

Official measures of inflation have fallen during 2009. RPI inflation fell from 5% in 2008 Q3 to -1.4% in 2009 Q3. CPI fell from 4.8% to 1.5% over the same period. The larger fall in RPI, in part, reflects the impact of cuts in Bank Rate: this reduces RPI inflation through lower mortgage interest payments.

Households' expectations of inflation also moderated sharply during 2009 (Barnett, Oomen and Bell (2009)),⁽¹⁾ in part because measures of actual inflation had fallen, but also because households viewed that there was less upward pressure on inflation going forward.

The upwards impetus on pay settlements from inflation outturns and households' expectations of future inflation, moderated between 2008 and 2009. This moderation in inflation and expected future inflation reflects both the effects of the recession on businesses' ability to increase prices, or pressure to cut prices, and temporary factors such as VAT, some of which may unwind.

Conclusion

Pay settlements in the private sector have fallen sharply in 2009, and many companies have imposed freezes in basic pay. The decline has been broad-based across sectors, and the businesses which have frozen basic pay have tended to be smaller than average.

The decline in settlements during 2009 likely reflects the influence of two important factors in negotiations between businesses and their employees. First, sharp falls in demand for businesses' goods and services will have reduced those businesses' ability to increase basic pay. Second, sharp falls in official inflation measures and households' expectations of future inflation are likely to have acted to reduce settlements.

(1) See Barnett, A, Oomen, O and Bell, V (2009), 'Public attitudes to inflation and monetary policy', *Bank of England Quarterly Bulletin*, Vol. 49, No. 2, pages 101–09.

Endogenous choice of bank liquidity: the role of fire sales

Summary of Working Paper no. 376 Viral V Acharya, Hyun Song Shin and Tanju Yorulmazer

A central difficulty during banking crises is one of finding ready buyers of distressed assets. If a bank needs to restructure its balance sheet during a crisis, the potential buyers of its assets are other banks that may have also been severely affected and thus may not have enough equity capital or debt capacity to purchase assets. Hence, during crisis periods, asset prices fall below their fundamental value, giving rise to 'cash-in-the-market' (or fire-sale) pricing. Surviving banks that do have enough liquidity during such states stand to make windfall profits from purchasing assets at fire-sale prices. Even if crises arrive infrequently, the potential gains from acquisitions at fire sales could be large. This gives banks incentives to hold liquid assets, not merely to increase the chances of surviving the crisis, but also so that in the event that they survive the crisis, they will have resources to take advantage of fire sales.

We present a model of banks' choice of *ex-ante* liquidity that is driven by such strategic considerations. We examine the portfolio choice of banks maximising their profits in the presence of fire sales that are endogenously derived in an equilibrium setup of the banking industry. While risky assets are attractive to banks given their limited liability, cash flows of risky assets are illiquid and have limited pledgeability (that is, financing capacity) compared to cash flows of safe assets. This limited pledgeability of risky cash flows, coupled with the potential for future acquisitions at fire-sale prices, induces banks to hold liquid assets in their portfolios.

In this setting, we show that banks' equilibrium holding of liquid assets is decreasing in the pledgeability of risky cash flows. In turn, bank liquidity is also decreasing in the health of the economy. During economic upturns, expected profits from risky assets are high and so is their pledgeability. An important implication of this result is that adverse asset-side shocks that follow good times result in deeper fire-sale discounts since bank balance sheets feature low liquidity in such times, whereby conditional on adverse shocks, there is lower aggregate liquidity to clear the market for assets.

We also compare the privately optimal levels of bank liquidity with benchmark levels that maximise the overall banking sector output. The pledgeability of risky cash flows turns out to be the critical determinant of whether banks hold too little or too high liquidity relative to the socially optimal level. When pledgeability is high, banks hold less liquidity than is socially optimal due to the preference for risk induced by limited liability; otherwise, banks may hold even more liquidity than is socially optimal in order to capitalise on fire sales. This latter result may seem surprising but

is explained simply. Fire sales result in transfers of value among banks but do not lead to any aggregate welfare gains or costs, and thus, liquidity hoarded to capitalise on fire sales may in some cases be excessive from the standpoint of maximising banking sector output. In particular, inefficiently high levels of bank liquidity and by implication inefficiently low levels of intermediation arise when pledgeability of risky cash flows is sufficiently low, for example, during crises or in banking sectors of emerging markets.

We present descriptive cross-country evidence on the asset liquidity of banks across countries. This evidence suggests that banks' choice of liquidity seems to vary along dimensions that would be correlated with difficulty in raising external finance and the severity of financial distress. We show that banks hold more liquid assets in those countries that have (i) less developed accounting standards; (ii) lower total market capitalisation relative to GDP; and, (iii) lower liquidity in stock markets. We discuss how our model's implications on management of liquidity by banks over the business cycle square up with existing evidence and the recently documented facts concerning leverage targeting by banks.

We also analyse the effect of entry by outsiders (to the banking sector) for acquisition of assets during crises. Since outsiders may lack expertise relative to surviving banks, they may enter only when fire sales are sufficiently deep. Once they enter, they increase the aggregate pool of liquidity and stabilise prices. This reduces *ex-ante* returns to liquidity for banks and they hold lower levels of liquid assets in their portfolios. This implies that even when outsiders are second-best users of assets, their entry can potentially unlock liquid hoardings of banks in emerging markets and lead to greater intermediation by their banking sectors.

Finally, we consider the effect of various resolution policies on banks' choices. Bailouts in our model result in lower equilibrium bank liquidity holdings only if they are excessive. In contrast, liquidity grants to surviving banks that are not contingent on banks' liquidity holdings always lower equilibrium liquidity holdings. However, if the amount of liquidity provided is increasing in liquid holdings of surviving banks, then incentives for banks to hold liquid assets are strengthened. These results illustrate that the resolution policies can have subtle effects on bank liquidity depending on whether these policies are optimal or excessively forbearing, and whether they are unconditional or contingent on quality of bank balance sheets at the time of resolution.

International spillover effects and monetary policy activism

Summary of Working Paper no. 377 Anna Lipińska, Morten Spange and Misa Tanaka

When several countries are hit by the same global shock, how do other central banks' reactions to that shock affect the trade-off between inflation and output stabilisation faced by a central bank of a small open economy? This is very pertinent in the United Kingdom's case, a relatively small country with some large trading partners.

Such a country is potentially affected by foreign monetary policy through a demand channel as well as a supply channel. The demand channel works as follows: by stimulating global demand, an expansionary monetary policy abroad can potentially lead to higher demand for UK goods (an aggregate demand effect). But a foreign monetary expansion also tends to lead to an appreciation of sterling, which may dampen demand for UK goods (an expenditure-switching effect). The overall effect on the demand for UK goods of a foreign monetary expansion therefore depends on the strength of the aggregate demand effect relative to the expenditure-switching effect. Foreign monetary policy also affects UK supply. This is because foreign monetary policy affects the terms of trade, and shifts in the terms of trade can affect workers' incentives to work for a given real wage. On the one hand, a deterioration in the terms of trade makes workers feel poorer, thus inducing them to work harder (the 'income effect'). On the other hand, it also reduces the amount of consumption which they can obtain by working an additional hour, and this diminishes the incentives to work (the 'substitution effect'). Depending on the preferences of households either the income or substitution effect may dominate.

Thus in this paper we examine how the preferences of a large economy's central bank (such as the European Central Bank or the Federal Reserve Board) affect the trade-off between

output and inflation volatility faced by a central bank of a small open economy (such as the Bank of England). We use a New Keynesian model of a small open economy (where there is a degree of price stickiness). We refer to the small open economy as 'Home', and the large open economy as 'Foreign'. To conduct this analysis, we examine the impact of a global 'cost-push shock', eg, a rise in the price of oil, raising the cost of production. This shock will generate an output-inflation trade-off both for the Home and the Foreign central bank.

The specific question which we seek to address is: does it make it harder for the Home central bank to bring down inflation without causing a large contraction of output when the Foreign central bank is 'dovish', and is hesitant to bring down inflation quickly? We demonstrate that the answer to this question is not straightforward. We find that the impact of a more dovish Foreign central bank on the trade-off faced by the Home central bank depends on two key assumptions of the model: it depends on the currency in which exports are denominated, and it depends on the substitutability between goods produced in the Home and Foreign countries. The choice of invoicing currency is important, as it determines how Foreign monetary policy affects Home's terms of trade. The substitutability between goods determines the extent to which demand switches between Home and Foreign goods following a change in relative prices, and it determines how Home labour supply responds to fluctuations in the terms of trade. When exports are denominated in the producer's currency ('producer currency pricing'), the trade-off faced by the Home economy is likely to worsen as the Foreign central bank becomes more focused on output stabilisation. But the opposite tend to be true in the case of local currency pricing.

Do supermarket prices change from week to week?

Summary of Working Paper no. 378 Colin Ellis

The object of UK monetary policy is to target inflation, as measured by the consumer prices index, the CPI, at 2% a year. In order for policymakers to keep inflation on target, they need to understand how the actual prices in the economy that underlie official inflation measures behave. One central issue is the degree of nominal rigidity in the economy, the extent to which prices and wages are 'sticky'. That follows if companies are either unable or unwilling to adjust either quickly, perhaps because of costs of adjustment. This stickiness has profound implications for inflation dynamics and therefore for the conduct of monetary policy.

As a result, a key question for policymakers is how often prices change, and by how much. Early work to investigate this phenomenon often focused on examining the behaviour of aggregate inflation rates at the macroeconomic level. But that can potentially be misleading. So recently economists have spent time examining so-called 'micro-pricing' data — the prices of individual products, which may be weighted and aggregated to construct the official price indices.

This paper adds to that exploratory effort, and examines how prices behave for around 280 products in 240 different supermarkets across Great Britain. The data cover a recent three-year period, and were kindly made available to the Bank of England by Nielsen, a market research company. In all, the data set accounts for a little under 5% of annual household

expenditure. One big advantage of these data is that they are available at a relatively high frequency — Nielsen collect information on a weekly basis, as opposed to the monthly collection of price quotes often used by national statistical offices. By examining prices and volumes over shorter periods, in particular a week rather than a month, we can shed some light on whether evidence from monthly data may overstate the true degree of price stickiness in the economy — as, by construction, a monthly price series can only change a maximum of twelve times a year.

Several interesting features emerge from analysing the data. Prices change quite frequently in supermarkets — as much as 40% a week, even after trying to strip out temporary promotions and sales — and there is also evidence that monthly price observations can overstate the implied stickiness of prices. The range of different prices changes is very wide, with some very large moves but also many small ones, and there appears to be little link between how much a price changes by and how long it has been since the last time it changed. Prices and volumes — the number of goods sold — tend to move together in the data, and there is tentative evidence that consumers may be quite price sensitive, with volumes changing more than one-for-one when prices change. But, importantly, it must be borne in mind that all of these results relate to supermarket prices, rather than other prices, which may exhibit less flexibility.

Speeches



Bank of England speeches

A short summary of speeches made by Bank personnel since publication of the previous *Bulletin* are listed below.

[2009: a review of the economic year](#)

Spencer Dale, Executive Director and Chief Economist, December 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech416.pdf

In this speech, Spencer Dale noted that much of the world started 2009 in economic freefall. This was driven by tight credit conditions, amplified by a collapse in confidence. It fell to policy to break the ensuing vicious cycle. In the United Kingdom, the MPC cut Bank Rate to 0.5% and commenced a programme of asset purchases. This easing occurred alongside a range of Government policies. There were encouraging signs that these policies were working; corporate insolvencies and unemployment had both increased by less than might have been feared. Turning to the prospects for 2010: a period of renewed expansion was likely, but this should not obscure the fact that structural adjustments needed to occur in the economy. Explaining his vote to maintain the level of asset purchases at £175 billion in November, he fully recognised the benefits of a more expansionary policy given the downside risks to the economy. However he was also wary of the potential risks to such a policy.

[Finding the right tool for dealing with asset price booms](#)

Adam Posen, Monetary Policy Committee member, December 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech415.pdf

In this speech, Dr Adam Posen discussed how costly asset price booms may be tackled in the future. He rejected the notion that monetary policy can be used to successfully 'lean against the wind' and tackle asset prices directly as he presented evidence that suggested there was no dependable relationship between interest rates, or narrow money, and asset prices. There is also little evidence that tightening of conditions could limit or counteract the boom once under way. In fact, tightening conditions in the face of an asset price boom could make matters worse for open economies through the attraction of capital inflows. Dr Posen highlighted that there are other tools that are better suited to dealing with asset price booms. Macroprudential instruments, such as those proposed in a recent Bank of England (2009) discussion paper would be a welcome addition to the toolkit, given that

historically the worst financial crises have come when asset price busts have led to banking system failures. However, there remains room for tools that could directly address costly asset price booms. In presenting evidence that residential real estate bubbles tend to have higher real economic costs than equity booms, Dr Posen suggested that the use of countercyclical real estate taxes could provide the simple blunt instrument required to successfully lean against the wind in real estate prices. The bottom line for monetary policy coming out of the crisis is, if you have a financial problem, use financial policy tools to fix it.

[The UK bank resolution regime](#)

Andrew Bailey, Executive Director for Banking Services and Chief Cashier, November 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech414.pdf

In this speech, Andrew Bailey described the new special resolution regime (SRR), created under the 2009 Banking Act. Having set out the case for an SRR, he described the objectives of the UK regime, the tools available, the roles of the different authorities and the safeguards that exist to protect property rights.

Bailey went on to highlight several areas where further work was required to hone the regime. The Financial Services Compensation Scheme should gradually be pre-funded by industry contributions. On safeguards, the right balance should be struck between discretion and ensuring banks and markets knew as much as they could about how the Bank would, and would not, act in a resolution. Noting that resolution is an invasive form of surgery requiring large amounts of information, he welcomed work on recovery and resolution plans. Finally he noted the importance of ensuring the regime could deal with cross-border resolutions.

[The Bank of England's balance sheet: monetary policy and liquidity provision during the financial crisis](#)

Paul Fisher, Executive Director for Markets, November 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech413.pdf

The extent of the Bank of England's support for the economy during the past two years has been historically exceptional. In this speech, Paul Fisher used the Bank's balance sheet as a framework to describe the expanded set of operations which have been undertaken during the financial crisis. There has been an unprecedented pace of innovation. New tools and

facilities, such as the Asset Purchase Facility have been created to implement monetary policy. Other operations, such as the Special Liquidity Scheme, have been focused toward providing liquidity support to the banking system. The Discount Window Facility has been one of the most significant, permanent developments in this framework. He noted that at some point the Bank's balance sheet may return to something like its former composition, and perhaps even its former size, but the innovations introduced during the crisis should leave the Bank better prepared to deal with stresses in the future.

Recovery and resolution plans

Andrew Bailey, Executive Director for Banking Services and Chief Cashier, November 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech412.pdf

In remarks at the Santander International Banking Conference, Andrew Bailey discussed the role of recovery and resolution plans (RRPs) as part of the response to the banking crisis.

He noted that RRPs should be critical tools for financial institutions themselves (where they should be owned at Board level), banking supervisors and resolution authorities. Bailey stressed that the Bank, in its role as resolution authority, would place great emphasis on the existence of credible and usable resolution plans. He noted that while these must be owned and produced by the authorities, firms would need to play a vital role in producing and maintaining the information needed to enable a resolution plan to be enacted. Bailey went on to use the examples of Northern Rock and Lehman Brothers to illustrate the role that RRPs might play as a device to enable tough questioning on structures and business models.

Prospects for the British economy after the financial storm

Andrew Sentance, Monetary Policy Committee member, November 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech411.pdf

In this speech, Andrew Sentance discussed the prospects for Britain's economic recovery in the wake of the financial storm. He talked about the positive prospects for UK growth in the short term, including signs of growth across the global economy; positive news from business surveys; improvements in consumer spending and confidence; and an apparent levelling off in unemployment. But he cautioned that there are a number of uncertainties that stand to affect how the recovery develops. The pace of the global recovery and the need for domestic rebalancing between the public and private sector are two particular areas for concern. The legacy of the financial crisis would also create headwinds. But he drew comfort from the resilience of emerging economies and

the 1990s' experience in the United Kingdom when a successful rebalancing was achieved. He then went on to discuss the policy choices that will need to be made as the recovery develops to ensure the economy is steered through an upswing underpinned by low inflation.

The crisis management menu

Paul Tucker, Deputy Governor, November 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech410.pdf

In this speech, Paul Tucker reviewed the various components of a crisis management package for financial institutions. These are central bank liquidity insurance for viable firms and markets; recovery and resolution plans, or 'living wills' for firms; and official sector support operations, including capital of last resort. During the crisis governments have gone beyond insuring retail deposits via established schemes, to guarantee uninsured wholesale creditors too. Principles need to be developed to ensure that the cost falls to firms, their wholesale creditors and equity holders, rather than the general taxpayer.

Banking on the state

Andrew Haldane, Executive Director for Financial Stability, November 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech409.pdf

This paper discusses the evolution in the risks to banks' balance sheets and the impact on the evolution of the three elements of the banking safety net — liquidity insurance, deposit insurance and capital insurance. Evidence shows a progressive rise in banking risk that has been accompanied by a widening and deepening of the safety net. The paper then goes on to explain the sources of this time-consistency problem and approaches to tackling it, including introducing leverage limits, reconsidering the industrial organisation of banking and redesigning the safety net.

Getting credit flowing: a non-monetarist approach to quantitative easing

Adam Posen, Monetary Policy Committee member, October 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech408.pdf

In this speech, Dr Adam Posen argued that unconventional monetary policy should be thought about in terms of its impact on specific credit markets as well as in its general impact on portfolios. The goal of central bank measures was ultimately to turn around the economy, but the proximate

target was to restore normalcy to credit markets through aggressive intervention. They were not just measures to expand the money supply *per se*, nor should they be thought of as optimal policy-setting exercises given uncertainty over the size and timing of the impact of quantitative easing. Dr Posen presented international evidence that leads to the conclusion that quantitative easing by the Bank of England will not lead to unacceptably high inflation at any time horizon. However, Dr Posen highlighted an area of concern for policymakers; that the current concentrated structure of the UK financial system may limit the availability of funding for smaller companies and so may constrain the private sector led recovery. In this specific regard, unlike the macropolicy response, the United Kingdom has an uncomfortable parallel with Japan's situation in the 1990s. It is a challenge to policymakers for the United Kingdom to come out of the crisis with a better financial structure that can keep credit flowing than it had going in.

[The debate on financial system resilience: macroprudential instruments](#)

Paul Tucker, Deputy Governor, October 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech407.pdf

In this speech, Paul Tucker summarised the Bank of England's developing thinking on possible macroprudential instruments, designed to help make the financial system more resilient to swings in the credit cycle. There are at least four dimensions to be considered. First, the objective. The Bank doubts that it is feasible to target asset prices or credit growth as such. Instead, the focus could be on the dynamic resilience of the banking system, which could indirectly have a material effect on domestic credit-supply conditions. Second, instruments. They could involve using microregulatory requirements on capital and liquidity for macro, system-wide ends. Sometimes overly exuberant credit expansion affects particular sectors rather than the economy as a whole. So Tucker airs the possibility of sometimes adjusting capital (or liquidity) requirements for lending to specific sectors. Variations of collateral haircuts might also be deployed for secured lending. Third, rules or discretion? Given that simple rules have not been developed for monetary policy, Tucker doubts that a rules-based approach would suffice for macroprudential policy. But to the extent that judgement and discretion were involved, they would need to be constrained by a clear mandate and transparency involving explanations of policy decisions. Fourth, whether international co-ordination is needed, given that domestic residents and firms can always borrow from abroad. Tucker suggests that increasing the capital (and liquidity) requirements of domestic banks would at least enhance their resilience, and so their ability to lend to the real economy when a bubble bursts. Transparency and exchanges of information among authorities might also encourage

overseas authorities to apply similar tools. International co-operation would be highly desirable. Concluding, Tucker said that the Bank would issue a Discussion Paper over the subsequent weeks.

[Speech by Mervyn King](#)

Mervyn King, Governor, October 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech406.pdf

In this speech, the Governor set out two key underlying causes of the financial crisis that had engulfed the world economy over the past year: global imbalances; and deficiencies in the structure and regulation of the financial sector. In this speech, the Governor majored on the latter factor.

He highlighted that at the heart of the problem of managing and regulating the financial system is the 'too important to fail' problem — that some banks' incentives are distorted by the knowledge that in a crisis, the government would stand behind them. He set out two possible approaches to dealing with this issue, and called for a debate about how they might be used. One is to try to ensure that the probability of those institutions failing, and hence of the need for taxpayer support, is extremely low. The other is to find a way that institutions can fail without imposing unacceptable costs on the rest of society.

The authorities could set out to achieve the first approach through better regulation — for example through higher capital requirements. This might be complemented by a requirement to have additional contingent capital available when capital gets eroded. But any given capital requirement can never be enough to ensure the stability of an institution with certainty — and a higher capital requirement would always be safer. And through a highly connected financial system, the failure of an important institution would always have the potential to infect the essential — or utility — services banks provide to the real economy.

The alternative is to change the structure of the industry so that the utility services are insulated from the other activities of financial companies, and to restrict public support to these utility providers. But this does not resolve all misaligned incentives. The fundamental issue is that when private companies, outside of the utility sector, engage in a high degree of maturity transformation on a scale that could have consequences for the rest of the economy, the government would not want to stand aside when such an entity fails.

The Governor concluded that there are no easy answers, but the two approaches he outlined could be used in a complementary way.

Quantitative easing: an interim report

Charles Bean, Deputy Governor, October 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech405.pdf

In this speech, Charles Bean described the operations of the Bank of England's Asset Purchase Facility (APF) and the associated policy of quantitative easing (QE). He discussed the mechanics of QE and explained why purchasing assets through the issuance of central bank reserves necessarily increased the aggregate claims of the banking system on the Bank of England. Consequently it was invalid to conclude that banks were 'sitting on the reserves' rather than lending them out simply because the level of bank reserves had risen. He went on to discuss recent movements in a number of indicators that were consistent with the expected impact from QE, although he noted that it would always be uncertain how successful the policy had been because one can never know what would have happened in its absence. He concluded by noting that the accounting gains or losses on the APF provided an incomplete picture of the impact of QE on the public finances, which should include the higher tax revenues and lower benefit payments which result from stronger nominal output growth, as well as the lower public debt servicing costs incurred during the period of operation of the policy.

Money, banks and quantitative easing

David Miles, Monetary Policy Committee member, September 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech404.pdf

In this speech, David Miles discussed monetary policy in the context of a weakened financial sector. On the eve of the crisis banks had too little capital and too few highly liquid assets; they had been reliant on short-term funding and acquired assets with inadequate compensation for risk. Cuts in Bank Rate and quantitative easing (QE) smoothed the adjustment of the economy towards more sustainable pricing and availability of credit. These policies aimed to stimulate nominal demand so CPI inflation remained close to target. Further, QE helped engineer the transition to a more stable long run and mitigated the risks of a prolonged recession.

There was no money supply target by which to judge the efficacy of QE. Movements in broad money were neither necessary nor sufficient for QE to influence nominal demand. Asset purchases had led to portfolio rebalancing effects, evident in falling gilt-OIS and corporate bond spreads and stimulating rising equity and corporate bond issuance. Such issuance had helped companies to switch away from bank finance. In the absence of QE companies might have reduced spending by even more in order to repay bank debt. As banks

had built up reserves they had become less reliant on short-term and wholesale funding, and the cost of such funding had fallen sharply.

David Miles concluded that it was difficult to be precise about the impact of QE on the economy but that there were clear signs QE was offsetting the impact of the reduced availability of bank credit.

Separating fact from fiction: household balance sheets and the economic outlook

Spencer Dale, Executive Director and Chief Economist, September 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech403.pdf

In this speech, Spencer Dale noted that in order to meet the inflation target a sustained period of robust growth would be required. A key influence on growth would be the extent to which households would need to rebuild their balance sheets. Despite the common presumption, there was little evidence of a debt-fuelled consumption boom. The big increase in household debt was not a myth, but these debts were mostly accumulated to pay for housing. There had been a huge redistribution of wealth between different households. Standard measures of household balance sheets suffered from a 'missing' asset — human capital — and a 'missing' liability — future housing costs. If these were not taken into account, the pressure on households to repair their balance sheets might be exaggerated. Explaining his decision to vote for £175 billion of asset purchases in August, he had thought this would best balance two considerable risks, doing too much versus doing too little.

Monetary policy and debt sustainability

Kate Barker, Monetary Policy Committee member, September 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech402.pdf

In this speech, Kate Barker considered the questions of debt sustainability and the monetary policy implications of possible balance sheet adjustments. She argued that although debt levels had increased prior to the crisis, debt for many households and most firms was not unsustainable in the sense that there was little chance of repayments being possible. But the expectations of income growth and credit conditions on which debt had been taken on were now unlikely to be realised, leading some to retrench.

With the fiscal plans implying retrenchment by the public sector also, Ms Barker argued that too rapid an adjustment of private sector balance sheets would imply a large

improvement in the current account deficit, probably only achievable with below-trend import growth (implying low domestic demand growth). In these circumstances, the rate of inflation would likely remain below target. To avoid this outcome, two conditions were needed. First, banks needed to be put in a position where they were able to lend enough to support economic growth. Second, monetary policy should continue to be set to support lending and borrowing.

[Energy and environmental challenges in the new global economy](#)

Andrew Sentance, Monetary Policy Committee member, September 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech401.pdf

In this speech, Andrew Sentance discussed how increased interdependencies and global spillovers associated with a more integrated global economy present new challenges to policymakers. Increased vulnerability to global shocks and a change in growth and inflation dynamics were likely to have a significant impact on the future path of national economies. He argued that although these changes would likely persist in the future it was important to avoid a retreat into protectionism, promoting instead the need for effective international policy co-ordination across a range of areas

including energy and environmental issues. He also argued that we should not expect a return to the apparent 'great stability' and should recognise the global economy as an important source of volatility for economic growth and inflation at the national level going forward.

[Credit is trust](#)

Andrew Haldane, Executive Director for Financial Stability, September 2009.

www.bankofengland.co.uk/publications/speeches/2009/speech400.pdf

In this speech, Andrew Haldane discussed how the financial crisis was caused by a break down of trust within the banking sector, which through a collapse in confidence led to a withdrawal of credit to the real economy. He assessed the implications of this for three aspects of the financial system: structure, where there may be a case for local relationship-based, as well as global, banking; strategy, where diversity, not diversification, can provide benefits to system stability; and governance, where the alignment of stakeholder incentives with the public good can help ensure the risk of banking activities is better-matched with the possible return. These principles, which were missing in the run-up to the present crisis, can help in building a more stable financial system for the future.

Appendices



Contents of recent Quarterly Bulletins

The articles and speeches that have been published recently in the *Quarterly Bulletin* are listed below. Articles from November 1998 onwards are available on the Bank's website at:

www.bankofengland/publications/quarterlybulletin/index.htm.

Articles and speeches

Speeches are indicated by (S)

2006 Q3

- The UK international investment position
- Costs of sovereign default
- UK export performance by industry
- The Governor's speech in Edinburgh, Scotland (S)
- The Governor's speech at the Mansion House (S)
- Stability and change (S)
- Financial system risks in the United Kingdom (S)

2006 Q4

- The economic characteristics of immigrants and their impact on supply
- Recent developments in sterling inflation-linked markets
- The state of British household finances: results from the 2006 NMG Research survey
- Measuring market sector activity in the United Kingdom
- The Governor's speech at the Great Hall, Winchester (S)
- Trusting in money: from Kirkcaldy to the MPC (S)
- The Governor's speech to the Black Country business awards dinner (S)
- International monetary stability — can the IMF make a difference? (S)
- The puzzle of UK business investment (S)
- Hedge funds and financial stability (S)
- Practical issues in preparing for cross-border financial crises (S)
- Reflections on my first four votes on the MPC (S)
- Prudential regulation, risk management and systemic stability (S)
- Globalisation and inflation (S)

2007 Q1

- The Monetary Policy Committee of the Bank of England: ten years on
- The macroeconomic impact of globalisation: theory and evidence
- The macroeconomic impact of international migration
- Potential employment in the UK economy
- The role of household debt and balance sheets in the monetary transmission mechanism

- Gauging capacity pressures within businesses
- Through the looking glass: reform of the international institutions (S)
- The Governor's speech to the Birmingham Chamber of Commerce Annual Banquet (S)
- Perspectives on current monetary policy (S)
- The MPC comes of age (S)
- Pricing for perfection (S)
- Risks to the commercial property market and financial stability (S)
- Macro, asset price, and financial system uncertainties (S)
- The impact of the recent migration from Eastern Europe on the UK economy (S)
- Inflation and the supply side of the UK economy (S)
- Inflation and the service sector (S)
- Recent developments in the UK labour market (S)

2007 Q2

- Public attitudes to inflation and interest rates
- National saving
- Understanding investment better: insights from recent research
- Financial globalisation, external balance sheets and economic adjustment
- A review of the work of the London Foreign Exchange Joint Standing Committee in 2006
- The MPC ten years on (S)
- The City's growth: the crest of a wave or swimming with the stream? (S)
- The changing pattern of savings: implications for growth and inflation (S)
- Interest rate changes — too many or too few? (S)
- A perspective on recent monetary and financial system developments (S)
- Recent developments in the UK economy: the economics of walking about (S)

2007 Q3

- Extracting a better signal from uncertain data
- Interpreting movements in broad money
- The Bank of England Credit Conditions Survey
- Proposals to modify the measurement of broad money in the United Kingdom: a user consultation
- The Governor's speech to CBI Wales/CBI Cymru, Cardiff (S)
- The Governor's speech at the Mansion House (S)
- London, money and the UK economy (S)
- Uncertainty, policy and financial markets (S)
- Central banking and political economy: the example of the United Kingdom's Monetary Policy Committee (S)
- Promoting financial system resilience in modern global capital markets: some issues (S)

- UK monetary policy: good for business? (S)
- Consumption and interest rates (S)

2007 Q4

- Household debt and spending: results from the 2007 NMG Research survey
- The macroeconomic impact of higher energy prices on the UK economy
- Decomposing corporate bond spreads
- The foreign exchange and over-the-counter derivatives markets in the United Kingdom
- The Governor's speech in Northern Ireland (S)
- Current monetary policy issues (S)
- The global economy and UK inflation (S)
- Trends in European labour markets and preferences over unemployment and inflation (S)
- Fear, unemployment and migration (S)
- Risk, uncertainty and monetary policy (S)
- New markets and new demands: challenges for central banks in the wholesale market infrastructure (S)
- A tale of two shocks: global challenges for UK monetary policy (S)

2008 Q1

- Capital inflows into EMEs since the millennium: risks and the potential impact of a reversal
- Recent developments in portfolio insurance
- The Agents' scores: a review
- The impact of low-cost economies on UK import prices
- The Society of Business Economists' survey on MPC communications
- The Governor's speech in Bristol (S)
- The impact of the financial market disruption on the UK economy (S)
- The return of the credit cycle: old lessons in new markets (S)
- Money and credit: banking and the macroeconomy (S)
- Financial markets and household consumption (S)

2008 Q2

- Public attitudes to inflation and interest rates
- Recent advances in extracting policy-relevant information from market interest rates
- How do mark-ups vary with demand?
- On the sources of macroeconomic stability
- A review of the work of the London Foreign Exchange Joint Standing Committee in 2007
- Sovereign wealth funds and global imbalances (S)
- Monetary policy and the financial system (S)
- Inflation and the global economy (S)
- Does sterling still matter for monetary policy? (S)
- Strengthening regimes for controlling liquidity risk: some lessons from the recent turmoil (S)
- Inflation, expectations and monetary policy (S)

2008 Q3

- Market expectations of future Bank Rate
- Globalisation, import prices and inflation: how reliable are the 'tailwinds'?
- How has globalisation affected inflation dynamics in the United Kingdom?
- The economics of global output gap measures
- Banking and the Bank of England (S)
- The Governor's speech at the Mansion House (S)
- A tale of two cycles (S)
- The financial cycle and the UK economy (S)
- The credit crisis: lessons from a protracted 'peacetime' (S)
- Financial innovation: what have we learnt? (S)
- Global inflation: how big a threat? (S)
- Remarks on 'Making monetary policy by committee' (S)

2008 Q4

- The financial position of British households: evidence from the 2008 NMG Research survey
- Understanding dwellings investment
- Price-setting behaviour in the United Kingdom
- Monetary Policy Roundtable

2009 Q1

- Price-setting behaviour in the United Kingdom: a microdata approach
- Deflation

2009 Q2

- Quantitative easing
- Public attitudes to inflation and monetary policy
- The economics and estimation of negative equity
- A review of the work of the London Foreign Exchange Joint Standing Committee in 2008

2009 Q3

- Global imbalances and the financial crisis
- Household saving
- Interpreting recent movements in sterling
- What can be said about the rise and fall in oil prices?
- Bank of England *Systemic Risk Survey*
- Monetary Policy Roundtable

2009 Q4

- The financial position of British households: evidence from the 2009 NMG survey
- Accounting for the stability of the UK terms of trade
- Recent developments in pay settlements

Bank of England publications

The Bank of England publishes information on all aspects of its work in many formats. Listed below are some of the main Bank of England publications. For a full list, please refer to our website:

www.bankofengland.co.uk/publications/index.htm.

Working papers

An up-to-date list of working papers is maintained on the Bank of England's website at:

www.bankofengland.co.uk/publications/workingpapers/index.htm

where abstracts of all papers may be found. Papers published since January 1997 are available in full, in portable document format (PDF).

No. 365 Foreign exchange rate risk in a small open economy (March 2009)

Bianca De Paoli and Jens Søndergaard

No. 366 Common determinants of currency crises: role of external balance sheet variables (April 2009)

Mirko Licchetta

No. 367 Labour market flows: facts from the United Kingdom (April 2009)

Pedro Gomes

No. 368 The real exchange rate in sticky-price models: does investment matter? (April 2009)

Enrique Martínez-García and Jens Søndergaard

No. 369 Multivariate methods for monitoring structural change (June 2009)

Jan J J Groen, George Kapetanios and Simon Price

No. 370 Banks' intraday liquidity management during operational outages: theory and evidence from the UK payment system (June 2009)

Ouarda Merrouche and Jochen Schanz

No. 371 Payment systems, inside money and financial intermediation (June 2009)

Ouarda Merrouche and Erlend Nier

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External MPC Unit discussion papers

The MPC Unit discussion paper series reports on research carried out by, or under supervision of, the external members of the Monetary Policy Committee. Papers are available from the Bank's website at:

www.bankofengland.co.uk/publications/externalmpcpapers/index.htm.

The following papers have been published recently:

No. 27 The global credit boom: challenges for macroeconomics and policy (June 2009)

Michael Hume and Andrew Sentance

No. 28 International comovements, business cycle and inflation: a historical perspective (July 2009)

Haroon Mumtaz, Saverio Simonelli and Paolo Surico

Monetary and Financial Statistics

Monetary and Financial Statistics (Bankstats) contains detailed information on money and lending, monetary and financial institutions' balance sheets, banks' income and expenditure,

analyses of bank deposits and lending, external business of banks, public sector debt, money markets, issues of securities, financial derivatives, interest and exchange rates, explanatory notes to tables and occasional related articles.

Bankstats is published on a monthly basis, free of charge, on the Bank's website at:

www.bankofengland.co.uk/statistics/ms/current/index.htm.

Further details are available from: Leslie Lambert, Monetary and Financial Statistics Division, Bank of England: telephone 020 7601 4544; fax 020 7601 3208; email leslie.lambert@bankofengland.co.uk.

Articles that have been published in recent issues of *Monetary and Financial Statistics* can also be found on the Bank's website at:

www.bankofengland.co.uk/statistics/ms/articles.htm.

Financial Stability Report

The *Financial Stability Report* is published twice a year. Its purpose is to encourage informed debate on financial stability; survey potential risks to financial stability; and analyse ways to promote and maintain a stable financial system. The Bank of England intends this publication to be read by those who are responsible for, or have interest in, maintaining and promoting financial stability at a national or international level. It is of especial interest to policymakers in the United Kingdom and abroad; international financial institutions; academics; journalists; market infrastructure providers; and financial market participants. It is available at a charge, from Publications Group, Bank of England, Threadneedle Street, London, EC2R 8AH and on the Bank's website at:

www.bankofengland.co.uk/publications/fsr/index.htm.

Payment Systems Oversight Report

The *Payment Systems Oversight Report* provides an account of how the Bank is discharging its responsibility for oversight of UK payment systems. Published annually, the *Oversight Report* sets out the Bank's assessment of key systems against the benchmark standards for payment system risk management provided by the internationally adopted Core Principles for Systemically Important Payment Systems, as well as current issues and priorities in reducing systemic risk in payment systems. Copies are available on the Bank's website at:

www.bankofengland.co.uk/publications/psor/index.htm.

Handbooks in central banking

The series of *Handbooks in central banking* provide concise, balanced and accessible overviews of key central banking topics. The *Handbooks* have been developed from study materials, research and training carried out by the Bank's Centre for Central Banking Studies (CCBS). The *Handbooks* are therefore targeted primarily at central bankers, but are likely to be of interest to all those interested in the various technical and analytical aspects of central banking. The *Handbook* series also includes '*Technical Handbooks*' which are aimed more at specialist readers and often contain more methodological material than the *Handbooks*, incorporating the experiences and expertise of the author(s) on topics that address the problems encountered by central bankers in their day-to-day work. All the *Handbooks* are available via the Bank's website at:

www.bankofengland.co.uk/education/ccbs/handbooks/index.htm.

The framework for the Bank of England's operations in the sterling money markets (the 'Red Book')

The 'Red Book' describes the Bank of England's framework for its operations in the sterling money markets, which is designed to implement the interest rate decisions of the Monetary Policy Committee while meeting the liquidity needs, and so contributing to the stability of, the banking system as a whole. It also sets out the Bank's specific objectives for the framework, and how it delivers those objectives. The framework was introduced in May 2006. The 'Red Book' is available at:

www.bankofengland.co.uk/markets/money/publications/redbookjan08.pdf.

The Bank of England Quarterly Model

The *Bank of England Quarterly Model*, published in January 2005, contains details of the new macroeconomic model developed for use in preparing the Monetary Policy Committee's quarterly economic projections, together with a commentary on the motivation for the new model and the economic modelling approaches underlying it.

www.bankofengland.co.uk/publications/other/beqm/index.htm.

Cost-benefit analysis of monetary and financial statistics

The handbook describes a cost-benefit analysis (CBA) framework that has been developed within the Bank to ensure a fair balance between the benefits derived from good-quality statistics and the costs that are borne by reporting banks. Although CBA is a well-established approach in other contexts, it has not often been applied to statistical provision, so techniques have had to be adapted for application to the Bank's monetary and financial statistics. The handbook also discusses how the application of CBA has enabled cuts in both the amount and the complexity of information that is required from reporting banks.

www.bankofengland.co.uk/statistics/about/cba.htm.

Credit Conditions Survey

As part of its mission to maintain monetary stability and financial stability, the Bank needs to understand trends and developments in credit conditions. This survey for bank and non-bank lenders is an input to this work. Lenders are asked about the past three months and the coming three months. The survey covers secured and unsecured lending to households and small businesses; and lending to non-financial corporations, and to non-bank financial firms.

www.bankofengland.co.uk/publications/other/monetary/creditconditions.htm.

Trends in Lending

This monthly publication presents the Bank of England's assessment of the latest trends in lending to the UK economy. The report draws mainly on long-established official data sources, such as the existing monetary and financial statistics collected by the Bank of England. But these data are supplemented by the results of a new collection, established by the Bank of England in late 2008, to provide more timely data covering aspects of lending to the UK corporate and household sectors. The Bank collects these data on behalf of the Lending Panel, which was established by the Chancellor in November 2008 to monitor lending to the UK economy, and to promote best practice across the industry in dealing with borrowers facing financial difficulties.

The Lending Panel comprises Government, lenders, consumer, debt advice and trade bodies, regulators and the Bank of England. See www.hm-treasury.gov.uk/press_126_08.htm.

Copies are available on the Bank's website at:

www.bankofengland.co.uk/publications/other/monetary/trendsinsending.htm.

Quarterly Bulletin

The *Quarterly Bulletin* provides regular commentary on market developments and UK monetary policy operations. It also contains research and analysis and reports on a wide range of topical economic and financial issues, both domestic and international.

www.bankofengland.co.uk/publications/quarterlybulletin/index.htm.

Inflation Report

The Bank's quarterly *Inflation Report* sets out the detailed economic analysis and inflation projections on which the Bank's Monetary Policy Committee bases its interest rate decisions, and presents an assessment of the prospects for UK inflation over the following two years. The *Inflation Report* is available at:

www.bankofengland.co.uk/publications/inflationreport/index.htm.

The *Report* starts with an overview of economic developments; this is followed by five sections:

- analysis of money and asset prices;
- analysis of demand;
- analysis of output and supply;
- analysis of costs and prices; and
- assessment of the medium-term inflation prospects and risks.

Publication dates

Copies of the *Quarterly Bulletin*, *Inflation Report* and *Financial Stability Report* can be bought separately, or as combined packages for a discounted rate. Current prices are shown overleaf. Publication dates for 2010 are as follows:

<i>Quarterly Bulletin</i>		<i>Inflation Report</i>	
Q1	15 March	February	10 February
Q2	14 June	May	12 May
Q3	20 September	August	11 August
Q4	13 December	November	10 November

Financial Stability Report
To be confirmed

Quarterly Bulletin, Inflation Report and Financial Stability Report subscription details

Copies of the *Quarterly Bulletin (QB)*, *Inflation Report (IR)* and *Financial Stability Report (FSR)* can be bought separately, or as combined packages for a discounted rate. Subscriptions for a full year are also available at a discount. The prices are set out below:

Destination	2010					
	<i>QB, IR and FSR</i> package	<i>QB and IR</i> package	<i>IR and FSR</i> package	<i>QB</i> only	<i>IR</i> only	<i>FSR</i> only
United Kingdom						
First class/collection ⁽¹⁾	£31.50	£27.00	£13.50	£21.00	£10.50	£5.25
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Rest of Europe						
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Air mail	£50.00	£43.00	£21.50	£34.00	£17.00	£8.50

(1) Subscribers who wish to collect their copy (copies) of the *Bulletin*, *Inflation Report* and/or *Financial Stability Report* may make arrangements to do so by writing to the address given below. Copies will be available to personal callers at the Bank from 10.30 am on the day of issue and from 8.30 am on the following day.

Readers who wish to become **regular subscribers**, or who wish to purchase single copies, should send to the Bank, at the address given below, the appropriate remittance, payable to the Bank of England, together with full address details, including the name or position of recipients in companies or institutions. If you wish to pay by **Visa, MasterCard, Maestro or Delta**, please telephone +44 (0)20 7601 4030. Existing subscribers will be invited to renew their subscriptions automatically. Copies can also be obtained over the counter at the Bank's front entrance.

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These publications are available from Publications Group, Bank of England, Threadneedle Street, London, EC2R 8AH; telephone +44 (0)20 7601 4030; fax +44 (0)20 7601 3298; email mapublications@bankofengland.co.uk or fsr_enquiries@bankofengland.co.uk.

General enquiries about the Bank of England should be made to +44 (0)20 7601 4878.
The Bank of England's website is at www.bankofengland.co.uk.

Issued by the Bank of England Publications Group.

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ISSN 0005-5166

Printed by Park Communications Limited



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