

Inflation Report

August 2016



BANK OF ENGLAND



On 11 August 2016, the text on page vii describing contributions to defined benefit pension schemes was corrected from 'the past two decades' to 'the past decade', in line with the text on page 12 of the *Report*.

On 9 August 2016, the May *Inflation Report* projection for UK-weighted World GDP growth in 2017, shown in parentheses in Table 5.E, was corrected from 2 to 2½, in line with that published in the May *Report*.

On 5 August 2016, the text describing Chart B on page v was corrected from describing 'mortgagors' to 'mortgages by value' to align with the data shown in the chart.



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In order to maintain price stability, the Government has set the Bank's Monetary Policy Committee (MPC) a target for the annual inflation rate of the Consumer Prices Index of 2%. Subject to that, the MPC is also required to support the Government's economic policy, including its objectives for growth and employment.

The *Inflation Report* is produced quarterly by Bank staff under the guidance of the members of the Monetary Policy Committee. It serves two purposes. First, its preparation provides a comprehensive and forward-looking framework for discussion among MPC members as an aid to our decision-making. Second, its publication allows us to share our thinking and explain the reasons for our decisions to those whom they affect.

Although not every member will agree with every assumption on which our projections are based, the fan charts represent the MPC's best collective judgement about the most likely paths for inflation, output and unemployment, as well as the uncertainties surrounding those central projections.

This *Report* has been prepared and published by the Bank of England in accordance with section 18 of the Bank of England Act 1998.

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The *Inflation Report* is available in PDF alongside PowerPoint™ versions of the charts and Excel spreadsheets of the data underlying most of them at www.bankofengland.co.uk/publications/Pages/inflationreport/2016/aug.aspx.

Contents

Monetary Policy Summary	i
Box A monetary policy package to support the UK economy	iii
1 Financial markets and global economic developments	1
1.1 Developments in sterling asset markets	2
1.2 Developments in the euro area	5
1.3 Developments in the United States	6
1.4 Developments in emerging market economies	7
1.5 The near-term global outlook	8
Box Monetary policy since the May <i>Report</i>	3
Box The implications of falls in the yield curve for financial conditions and stability	9
2 Demand and output	13
2.1 Domestic demand	14
2.2 The current account and net trade	21
2.3 Near-term outlook for GDP	21
Box Agents' survey on the impact on businesses of the vote to leave the European Union	15
Box Revisions to the National Accounts	20
3 Supply and the labour market	23
3.1 Labour demand	23
3.2 Slack in the economy	25
3.3 Labour supply	26
3.4 Productivity	27
Box Factors affecting the prospects for long-term supply following the EU referendum	29
4 Costs and prices	30
4.1 Consumer price developments and the near-term outlook	30
4.2 Imported cost pressures	31
4.3 Domestic cost pressures	33
5 Prospects for inflation	37
5.1 The MPC's central projection, key judgements and risks	38
5.2 The projections for demand, unemployment and inflation	47
Box Other forecasters' expectations	49
Index of charts and tables	50
Glossary and other information	52

Monetary Policy Summary

The Bank of England's Monetary Policy Committee (MPC) sets monetary policy to meet the 2% inflation target, and in a way that helps to sustain growth and employment. At its meeting ending 3 August 2016, the MPC voted for a package of measures designed to provide additional support to growth and to achieve a sustainable return of inflation to the target. This package comprises: a 25 basis point cut in Bank Rate to 0.25%; a new Term Funding Scheme to reinforce the pass-through of the cut in Bank Rate; the purchase of up to £10 billion of UK corporate bonds; and an expansion of the asset purchase scheme for UK government bonds of £60 billion, taking the total stock of these asset purchases to £435 billion. The last three elements will be financed by the issuance of central bank reserves.

Following the United Kingdom's vote to leave the European Union, the exchange rate has fallen and the outlook for growth in the short to medium term has weakened markedly. The fall in sterling is likely to push up on CPI inflation in the near term, hastening its return to the 2% target and probably causing it to rise above the target in the latter part of the MPC's forecast period, before the exchange rate effect dissipates thereafter. In the real economy, although the weaker medium-term outlook for activity largely reflects a downward revision to the economy's supply capacity, near-term weakness in demand is likely to open up a margin of spare capacity, including an eventual rise in unemployment. Consistent with this, recent surveys of business activity, confidence and optimism suggest that the United Kingdom is likely to see little growth in GDP in the second half of the year.

These developments present a trade-off for the MPC between delivering inflation at the target and stabilising activity around potential. The MPC's remit requires it to explain how it has balanced that trade-off. Given the extent of the likely weakness in demand relative to supply, the MPC judges it appropriate to provide additional stimulus to the economy, thereby reducing the amount of spare capacity at the cost of a temporary period of above-target inflation. Not only will such action help to eliminate the degree of spare capacity over time, but because a persistent shortfall in aggregate demand would pull down on inflation in the medium term, it should also ensure that inflation does not fall back below the target beyond the forecast horizon. Thus, in tolerating a temporary period of above-target inflation, the Committee expects the eventual return of inflation to the target to be more sustainable.

The MPC's choice of instruments is based on a consideration of their likely impact on the real economy and inflation. The MPC has examined closely the interaction between monetary policy and the financial sector, both with regard to ensuring the effective transmission of monetary policy to households and businesses, and with consideration for the financial stability consequences of its policy actions.

The cut in Bank Rate will lower borrowing costs for households and businesses. However, as interest rates are close to zero it is likely to be difficult for some banks and building societies to reduce deposit rates much further, which in turn might limit their ability to cut their lending rates. In order to mitigate this, the MPC is launching a Term Funding Scheme (TFS) that will provide funding for banks at interest rates close to Bank Rate. This monetary policy action should help reinforce the transmission of the reduction in Bank Rate to the real economy to ensure that households and firms benefit from the MPC's actions. In addition, the TFS provides participants with a cost effective source of funding to support additional lending to the real economy, providing insurance against the risk that conditions tighten in bank funding markets.

The expansion of the Bank of England's asset purchase programme for UK government bonds will impart monetary stimulus by lowering the yields on securities that are used to determine the cost of borrowing for households and businesses. It is also likely to trigger portfolio rebalancing into riskier assets by current holders of government bonds, further enhancing the supply of credit to the broader economy.

Purchases of corporate bonds could provide somewhat more stimulus than the same amount of gilt purchases. In particular, given that corporate bonds are higher-yielding instruments than government bonds, investors selling corporate debt to the Bank could be more likely to invest the money received in other corporate assets than those selling gilts. In addition, by increasing demand in secondary markets, purchases by the Bank could reduce liquidity premia; and such purchases could stimulate issuance in sterling corporate bond markets.

As set out in the August *Inflation Report*, conditional on this package of measures, the MPC expects that by the three-year forecast horizon unemployment will have begun to fall back and that much of the economy's spare capacity will have been re-absorbed, while inflation will be a little above the 2% target. In those projections the cumulative growth in output is still around 2½% less at the end of the forecast period than in the MPC's May projections. Much of this reflects a downward revision to potential supply that monetary policy cannot offset. However, monetary policy can provide support as the economy adjusts. Had it not taken the action announced today, the MPC judges it likely that output would be lower, unemployment higher and slack greater throughout the forecast period, jeopardising a sustainable return of inflation to the target.

This package contains a number of mutually reinforcing elements, all of which have scope for further action. The MPC can act further along each of the dimensions of the package by lowering Bank Rate, by expanding the TFS to reinforce further the monetary transmission mechanism, and by expanding the scale or variety of asset purchases. If the incoming data prove broadly consistent with the August *Inflation Report* forecast, a majority of members expect to support a further cut in Bank Rate to its effective lower bound at one of the MPC's forthcoming meetings during the course of the year. The MPC currently judges this bound to be close to, but a little above, zero.

All members of the Committee agreed that policy stimulus was warranted at this time, and that Bank Rate should be reduced to 0.25% and be supported by a TFS. Eight members supported the introduction of a corporate bond scheme, and six members supported further purchases of UK government bonds.

These measures have been taken against a backdrop of other supportive actions taken by the Bank of England recently. The Financial Policy Committee has reduced the countercyclical capital buffer to support the provision of credit and has announced that it will exclude central bank reserves from the exposure measure in the current UK leverage ratio framework. This latter measure will enhance the effectiveness of the TFS and asset purchases by minimising the potential countervailing effects of regulatory requirements on monetary policy operations. The Bank has previously announced that it will continue to offer indexed long-term repo operations on a weekly basis until the end of September 2016 as a precautionary step to provide additional flexibility in the Bank's provision of liquidity insurance. The Prudential Regulation Authority will also smooth the transition to Solvency II for insurers.

A monetary policy package to support the UK economy

On 3 August, the MPC voted to introduce a package of measures to support the economy. This box explains why it took that action, how those measures will affect output and inflation and sets out the details of each measure, alongside other actions taken by the Bank.

Why is the MPC easing policy?

Following the United Kingdom's vote to leave the European Union, the exchange rate has fallen and the outlook for growth in the short to medium term has weakened markedly. The fall in sterling is likely to push up on CPI inflation in the near term, hastening its return to the 2% target and probably causing it to rise above the target in the latter part of the MPC's forecast period, before the exchange rate effect dissipates thereafter. In the real economy, although the weaker medium-term outlook for activity largely reflects a downward revision to the economy's supply capacity, near-term weakness in demand is likely to open up a margin of spare capacity, including an eventual rise in unemployment. Consistent with this, recent surveys of business activity, confidence and optimism suggest that the United Kingdom is likely to see little growth in GDP in the second half of the year.

These developments present a trade-off for the MPC between delivering inflation at the target and stabilising activity around potential. The MPC's remit requires it to explain how it has balanced that trade-off. Given the extent of the likely weakness in demand relative to supply, the MPC judges it appropriate to provide additional stimulus to the economy, thereby reducing the amount of spare capacity at the cost of a temporary period of above-target inflation. Not only will such action help to eliminate the degree of spare capacity over time, but because a persistent shortfall in aggregate demand would pull down on inflation in the medium term, it should also ensure that inflation does not fall back below the target beyond the forecast horizon. Thus, in tolerating a temporary period of above-target inflation, the Committee expects the eventual return of inflation to the target to be more sustainable.

The MPC's August policy decision

The MPC discussed a range of monetary policy tools and the support each would provide to the economy, and in particular to UK households and businesses. In an environment of heightened uncertainty and low interest rates, using a broad range of tools should increase the effectiveness of the monetary transmission mechanism, reducing any uncertainty about the supply and price of credit as well as lowering its cost and boosting its supply.

On 3 August, the MPC voted to introduce a package of measures to support the economy:

- A 25 basis point cut in Bank Rate to 0.25%.
- A Term Funding Scheme to reinforce the pass-through of the cut in Bank Rate, financed by the issuance of central bank reserves.
- Purchases of a stock of sterling non-financial investment-grade corporate bonds, issued by firms making a material contribution to the UK economy, financed by the issuance of central bank reserves, up to £10 billion.
- An increase in the stock of purchased UK government bonds, financed by the issuance of central bank reserves, by £60 billion, to £435 billion.

The Term Funding Scheme (TFS) will operate as part of the Asset Purchase Facility (APF). The value of lending in the TFS will be determined by usage of the scheme, and could reach around £100 billion. Coupled with the increase in asset purchases of £70 billion, the total size of the APF could increase by around £170 billion. The Government indemnifies the Bank and the APF from any losses arising out of or in connection with the Facility.

As set out in the August *Inflation Report*, conditional on this package of measures, the MPC expects that by the three-year forecast horizon unemployment will have begun to fall back and that much of the economy's spare capacity will have been absorbed, while inflation will be a little above the 2% target. In those projections the cumulative growth in output is still around 2½% less at the end of the forecast period than in the MPC's May projections. Much of this reflects a downward revision to potential supply that monetary policy cannot offset. However, monetary policy can provide support as the economy adjusts. Had it not taken the action announced today, the MPC judges it likely that output would be lower, unemployment higher and slack greater throughout the forecast period, jeopardising a sustainable return of inflation to the target.

This package contains a number of mutually reinforcing elements, all of which have scope for further action. The MPC can act further along each of the dimensions of the package by lowering Bank Rate, by expanding the TFS to reinforce further the monetary transmission mechanism, and by expanding the scale or variety of asset purchases. If the incoming data prove broadly consistent with the August *Inflation Report* forecast, a majority of members expect to support a further cut in Bank Rate to its effective lower bound at one of the MPC's forthcoming meetings during the course of this year. The MPC currently judges this bound to be close to, but a little above, zero.

In forming its decision on monetary policy, the MPC has also considered the interaction between monetary policy and the financial sector. This included an evaluation of the costs to banks, insurance companies and pension funds from falls in yield curves in a joint meeting with the Financial Policy Committee (FPC) on 6 July (see the box on pages 9–12).

How does the easing in monetary policy support activity and inflation?

Monetary policymakers can stimulate the economy using a variety of instruments. Typically central banks have used short-term interest rates to influence demand and inflation. But as rates have fallen close to zero, a greater variety of tools have been used to influence financial conditions including asset purchases. In addition to purchasing government debt, some central banks have purchased corporate bonds and other private sector assets. As well as providing money to the economy and influencing activity through the same channels as purchases of government debt, such purchases can also influence companies' borrowing costs more directly. Central banks have also used other tools to support the economy and address issues in particular markets. For example, the Bank and the European Central Bank (ECB) have both used programmes that provide finance to banks to support and incentivise lending to the real economy.

The ultimate impact of these tools is broadly similar, with an easing in policy — such as a reduction in Bank Rate or an expansion in asset purchases — reducing interest rates for households and companies and supporting asset prices and confidence.

An easing in monetary policy in part acts through changing the interest rates facing households and companies. By lowering the cost of borrowing and the return on saving it encourages people to bring forward spending — the real interest rate channel. Lower rates also reduce the cost of debt servicing for existing borrowers with floating-rate debt — the cash-flow channel. Lower funding costs for banks also increase the availability of credit — the credit channel. Monetary policy also acts through financial markets more generally. Lower rates and portfolio balance effects, for example as people who sell assets to the Bank reinvest the money received in other assets, support asset prices — the wealth channel. A monetary policy expansion at home, relative to policy abroad, can also lower the value of sterling, supporting net trade and raising the cost of imports — the exchange rate channel. Finally, monetary policy can directly influence people's expectations and behaviour. An easing in policy in the face of a prospective reduction in demand can bolster sentiment and prevent a drift down in inflation expectations — the confidence and expectations channel.

What instruments are the MPC using?

The MPC has a number of instruments that it could use to support the economy. In discussing which instruments to use the MPC considered their likely impact on the economy, including how directly they support UK households and companies.

Bank Rate and its effective transmission

The MPC has announced a 25 basis point cut in Bank Rate to 0.25%.

Purpose: to provide stimulus to the real economy and return inflation sustainably to the 2% target.

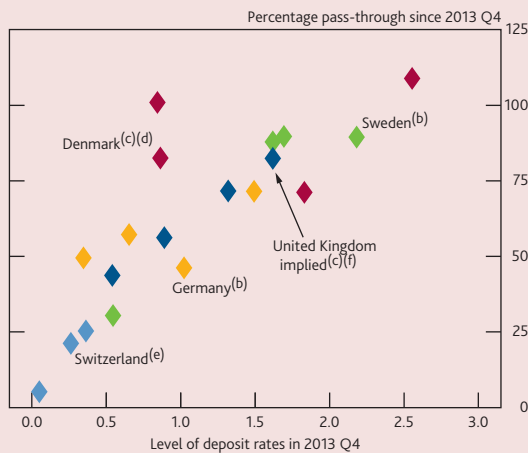
Bank Rate is the rate of interest the Bank pays on the reserves that commercial banks hold at the Bank of England. These reserves, which can be converted into cash on demand, represent the basic settlement asset within the banking system. Bank Rate is therefore the benchmark around which short-term interest rates in wholesale money markets are determined. Wholesale interest rates in turn influence the retail lending and deposit rates faced by UK households and businesses. Banks and building societies make commercial judgements that influence the degree of pass-through from changes in Bank Rate into retail interest rates. As a result, the degree to which a given decline in Bank Rate is matched by equivalent changes in retail interest rates varies, in part reflecting financial conditions at the time.

As set out in a box on pages 9–12, typically banks pay a lower rate on deposits than they charge on loans they make to businesses and households. This 'net interest margin' contributes to covering the cost of providing banking services to their customers. When Bank Rate was far away from zero, banks could move deposit and loan rates in tandem with Bank Rate, preserving that margin. When Bank Rate is close to zero, however, it may be harder for banks to lower deposit rates and they may then face a choice between reducing pass-through of lower official rates to those they charge on loans — in particular rates on new loans — or a period of lower profitability, which, were it to persist, could reduce the supply of lending. In some countries where benchmark interest rates have fallen to very low levels, such as Switzerland where rates were cut below zero, net interest margins for many banks appear to have been compressed. The interest rates on deposits and lending have fallen little in response and some rates have increased. In particular, interest rates on deposits have tended to decline less when those rates were already at low levels (**Chart A**).

Analysis by staff across the Bank suggests that cuts in Bank Rate towards zero from 0.5% could, by themselves, lower banks' net interest margins a little, which could in turn lead to upward pressure on margins on new lending. In such

Chart A Less pass-through of risk-free rates when interest rates are lower

Level of retail deposit rates and pass-through of lower risk-free rates^(a)



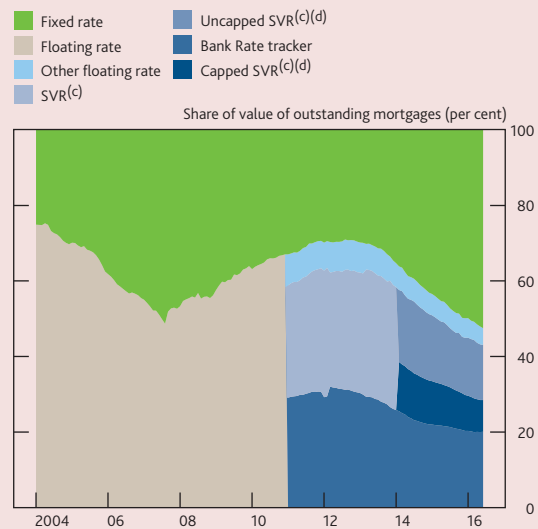
- (a) Effective household deposit rate on new business, unless otherwise stated, and change between 2013 Q4 and the three months to May 2016 as a percentage of the change in the corresponding maturity of swap rate.
 (b) Includes interest rates for overnight deposits, and deposits with a maturity of less than one year, between one and two years and greater than two years.
 (c) Data are for the three months to June 2016.
 (d) Outstanding interest rates for deposits with a maturity of less than three months, between three months and one year, between one and two years and greater than two years.
 (e) Published rates for new sight deposits, and on two and three-year cash bonds.
 (f) Percentage of pass-through is that implied by bivariate regression on the data for other European countries shown in this chart.

circumstances, the transmission of monetary policy would be less effective than usual. To avoid the risk that reductions in Bank Rate do not feed through fully to the rates faced by households and businesses, the MPC is launching a Term Funding Scheme (TFS), discussed further below. That will provide funding for banks at interest rates close to Bank Rate and has been calibrated so that any reduction in Bank Rate has a broadly neutral impact on building societies' and banks' margins in aggregate. This monetary policy measure should help reinforce the transmission of the reduction in Bank Rate to the real economy so that households and firms benefit from the MPC's actions. This allows cuts in Bank Rate from 0.5% to have broadly the same impact as those made when rates were further from zero. Its existence means that Bank Rate can be lowered to its effective lower bound, which the MPC judges currently to be close to, but a little above, zero.

Transmission of lower rates to non-financial companies' borrowing costs should be relatively rapid: those companies had bank loans totalling £440 billion in June, with more than four-fifths at floating rates. Transmission of lower Bank Rate to rates faced by households tends to be slower. Only half of mortgages by value are floating-rate contracts (Chart B). The remainder are fixed-rate mortgages that will get refinanced over time, such that most would see lower interest costs within two years.

Chart B Half of mortgages by value are floating-rate contracts

Distribution of mortgage lending^{(a)(b)}



- (a) Average daily balances on sterling household loans and deposits reported on Form ER (effective rates). Data are non seasonally adjusted. Data from January 2016 are comprised of individuals and individual trusts only. For more information, see the article 'Developments in Effective Rates Statistics' in the December 2015 edition of *Bankstats*.
 (b) More granular breakdowns are included from the earliest point at which the data were collected.
 (c) Standard variable rate.
 (d) The shares of capped and uncapped standard variable rates (SVRs) within total SVR are Bank staff estimates over the period. The estimated data are not calculated monthly and have been linearly interpolated to produce a monthly series.

The Term Funding Scheme

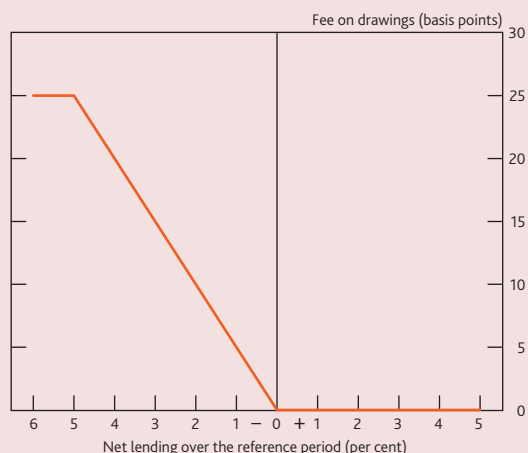
The MPC has launched a Term Funding Scheme.

Purpose: to reinforce the transmission of Bank Rate cuts to those interest rates actually faced by households and companies.

The primary objective of the TFS is to reinforce the pass-through of cuts in Bank Rate to the interest rates faced by households and companies. In order to achieve this, the TFS will provide an initial allowance of funding to eligible institutions (UK banks and building societies that are participants in the Bank's Sterling Monetary Framework and signed up to the Discount Window Facility) that choose to participate. These institutions will be able to borrow central bank reserves at close to Bank Rate, for four years, with the amount they can initially borrow equivalent to 5% of the stock of their outstanding lending to UK businesses and households. The lowest cost of funding — Bank Rate — will be for banks that maintain or expand net lending to the real economy. In addition to their initial allowance, banks will be able to access another pound of funding for every pound their net lending expands between end-June 2016 and end-December 2017. If their lending shrinks, they will face a higher fee and receive no additional allowance. For each 1% that net lending by an institution falls, the cost of TFS funding will rise by 5 basis points to a maximum of 25 basis points over Bank Rate (Chart C). The cost of TFS funding is substantially lower than banks' current all-in funding costs in wholesale markets or deposit rates, which average at least 100 basis points.

Chart C TFS fees rise as bank lending falls

TFS fee schedule



The TFS is a monetary policy instrument. It reinforces the transmission of Bank Rate cuts and reduces the effective lower bound toward zero, it charges a penalty rate if banks reduce net lending, it covers all types of lending, and it is funded by central bank reserves.

Absent the measures taken by the MPC, projections for activity in the real economy, and particularly property markets, would have been consistent with annual growth in the stock of loans to households and companies of only around 2% over the coming 18 months, although there is substantial uncertainty about that projection. The MPC does not expect the TFS to lead to significantly faster aggregate loan growth. Rather it should be seen as a mechanism to prevent any perverse effects on the supply of lending from the cut in Bank Rate and help ensure that this cut is entirely passed through to households and companies.

The TFS will have an initial drawdown period of 18 months. The MPC will confirm by its August 2017 meeting whether the drawdown period will close at end-February 2018 or be extended. The MPC could adjust the terms (borrowing allowance, pricing) and length of the Scheme should macroeconomic conditions warrant it. However, the terms and length of the Scheme would not be made less generous by the MPC during the initial 18 month drawdown window. This provides the certainty that participants need to form their initial funding and lending plans. The TFS will operate as part of the Asset Purchase Facility (APF). The value of lending in the TFS will be determined by usage of the scheme, and could reach around £100 billion. Institutions with outstanding balances in the Bank's Funding for Lending Scheme (FLS) — which are charged a fee of 25 basis points to borrow treasury bills — can refinance those drawings in the TFS, up to their allowance limit. More details of the scheme are available in a market notice.⁽¹⁾

Purchases of government bonds financed by central bank reserves

The MPC has announced that it will increase the stock of gilts financed by the issuance of central bank reserves by £60 billion to £435 billion.

Purpose: to impart monetary stimulus by lowering the cost of borrowing for households and companies; and by triggering portfolio rebalancing into other assets by sellers of gilts.

The Bank launched its asset purchase programme in 2009, purchasing £375 billion of gilts financed by the creation of central bank reserves over the following three years. One way that the asset purchase programme supports demand is through portfolio rebalancing. Investors who sell gilts to the Bank are unlikely to view the money received as a perfect substitute for those gilts. In order for investors to be willing to hold fewer gilts, their price must therefore rise. In addition, rather than holding on to all of the money that they receive from selling the assets, investors are likely to wish to use the money to acquire closer substitutes for the assets sold to the Bank, such as equities or corporate bonds. The increase in demand for these assets should then push up their prices, lowering their yields. And that demand should enable companies to raise more or cheaper funds from capital markets than they otherwise would, supporting their productive activities, including hiring and investment.

Analysis of the impact of previous rounds of MPC and Federal Open Market Committee purchases and the ECB's more recent quantitative easing programme suggests that they lower yields on government debt and support activity and inflation. In the United Kingdom, some of the fall in yields seen recently may have reflected growing expectations of an expansion in the asset purchase programme. That reduces the benchmark rates used to determine borrowing costs for households and companies. Evidence from earlier rounds of gilt purchases in the United Kingdom suggests that the initial purchase announcement appears to have had a particularly pronounced impact on gilt yields relative to later ones, possibly reflecting the associated signal of the MPC's commitment to supporting the economy and therefore the outlook for interest rates.

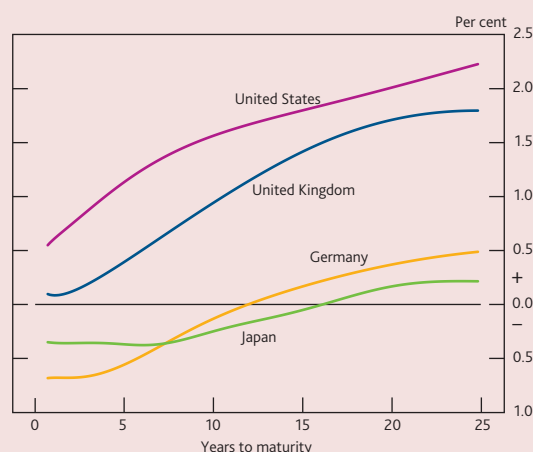
The MPC is mindful of the fact that its asset purchase programme will be expanded within the context of an already low interest rate environment (**Chart D**). As set out in a box on pages 9–12, long-term interest rates have fallen over recent years, reflecting a range of factors including the outlook for long-term supply and the balance between global saving and planned global investment. Lower yields pose potential risks

(1) Further details of the extension of the APF are available at www.bankofengland.co.uk/markets/Documents/marketnotice160804apftfs.pdf.

to some aspects of the functioning of the financial system, for example by increasing the deficits of many pension funds and through their effects on the business models of insurers. At present, however, those effects appear to be relatively limited. Many companies that see increased pension deficits are able to extend the period over which they bring it back to balance, maintaining the current level of contributions. Indeed, the overall size of contributions to defined benefit schemes has been broadly stable over the past decade, despite fluctuations in the size of the deficit. Moreover, financial stability will be supported by a number of regulatory actions such as the Prudential Regulation Authority's (PRA's) decision to smooth the transition to Solvency II for insurers (see below).

Chart D Yield curves are low in many advanced economies

Nominal yield curves derived from government bonds^(a)



Sources: Bloomberg and Bank calculations.

(a) Zero-coupon spot rates derived from government bond prices. Averages for the fifteen working days to 27 July.

As in previous rounds of purchases, the Bank will not purchase bonds where it holds more than 70% of the 'free float', that is the total amount in issue minus government holdings.⁽¹⁾

Table 1 shows the available stock of gilts across different maturities that would meet the Bank's criteria.

Table 1 Stock of gilts available for purchase

Maturity	Stock of outstanding gilts (£ billions) ^(a)
3–7 years	100.0
7–15 years	68.6
15+ years	221.7

(a) Measured in market value as at 27 July 2016. Stock of gilts available for purchase up to 70% of the outstanding free float (amount in issue minus government holdings), excludes index-linked gilts.

Purchases of private sector debt financed by central bank reserves

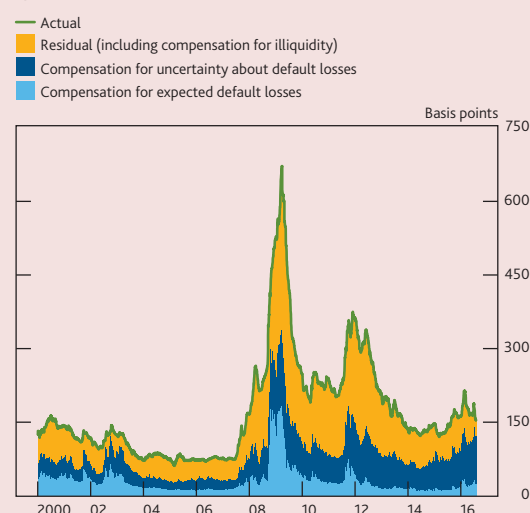
The MPC has announced a corporate bond purchase programme of up to £10 billion, financed by the issuance of central bank reserves.

Purpose: to impart monetary stimulus by lowering the yields on corporate bonds, thereby reducing the cost of borrowing for companies directly; by triggering portfolio rebalancing; and by stimulating new issuance of corporate bonds.

The MPC judges that there are also merits to purchasing private sector assets financed by the issuance of central bank reserves. Given that corporate bonds are higher-yielding instruments than government bonds, investors selling corporate debt to the Bank could be more likely to want to invest the money received in other corporate assets than those selling gilts. In addition, by increasing demand in secondary markets, purchases by the Bank could reduce liquidity premia. The Asset Purchase Facility was used to ease conditions in corporate debt markets during intense financial market stress in 2009; only small quantities of private sector assets were purchased but the Bank's purchases played a role in reducing liquidity premia from elevated levels (Chart E). Moreover, such purchases could stimulate issuance in sterling corporate bond markets. It is therefore likely that purchases of corporate bonds would provide a greater boost to activity, pound for pound, than purchases of government bonds. In addition, such purchases could have fewer implications for the financial system than additional gilt purchases.

Chart E Liquidity premia fell back in 2009

Decomposition of sterling investment-grade corporate bond spreads^(a)



Sources: Bloomberg, Merrill Lynch, Thomson Reuters Datastream and Bank calculations.

(a) See Webber, L and Churm, R (2007), 'Decomposing corporate bond spreads', *Bank of England Quarterly Bulletin*, Vol. 47, No. 4, pages 533–41; www.bankofengland.co.uk/publications/Documents/quarterlybulletin/qb070403.pdf. Option-adjusted spreads over government bond yields.

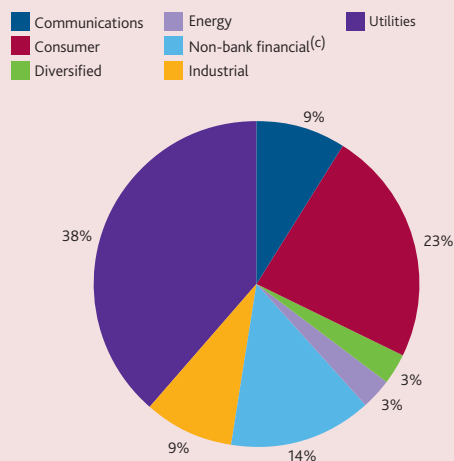
(1) Available at www.bankofengland.co.uk/markets/Documents/marketnotice160804apfgilt.pdf.

The MPC will look to purchase, via the Corporate Bond Purchase Scheme (CBPS), a portfolio of sterling investment grade bonds representative of issuance by firms making a material contribution to the UK economy, in order to impart broad economic stimulus. Corporate bonds issued by banks, building societies and insurance companies will not be eligible. Bonds will also not be eligible if issued by leveraged investment vehicles or from companies within groups that are predominantly banks, building societies or insurance companies.

The likely size of the market that would be eligible for the CBPS is around £150 billion. The precise bonds that will be eligible will be confirmed before purchases commence but as an illustration of the nature of the market, **Chart F** shows the sectoral breakdown of UK incorporated sterling investment-grade corporate bonds. The purchases would probably increase the prices and lower the rates on eligible bonds and the programme could stimulate issuance of bonds that would be eligible for the scheme. Portfolio balance effects could also benefit all UK corporate bond issuers. The market value of the outstanding stock of bonds issued by UK private companies in all currencies (excluding banks and insurers) is around £400 billion. Moreover, although corporate bonds are typically issued by larger companies, any shift towards debt issuance from bank lending by such companies could increase the bank funding available to smaller ones.

Chart F Corporate bonds are issued by companies across a range of sectors

Distribution of sterling-denominated investment-grade corporate bonds^{(a)(b)}



Sources: Bloomberg, Dealogic and Bank calculations.

(a) May not sum to 100% due to rounding.

(b) The stock of UK-incorporated sterling investment-grade bonds, excluding those issued by banks and insurers. Market value as at 2 August 2016. Stock based on Dealogic data. Market values and sector classifications based on Bloomberg and Bank staff calculations.

(c) Includes issuers in the property and real estate sectors and excludes insurers.

The CBPS is expected to commence in mid-September and further details will be provided in a market notice ahead of its launch. The CBPS will operate for an initial period of 18 months and is authorised by the MPC to make purchases up to £10 billion over that period.⁽¹⁾

What other actions is the Bank taking?

The actions taken by the MPC reinforce the support already provided by the Bank. The Bank will continue to offer indexed long-term repo operations on a weekly basis until end-September 2016 as a precautionary step to provide additional flexibility in the Bank's provision of liquidity insurance. This complements banks' ability to draw on their own liquidity buffers. The PRA will allow insurance companies to use the flexibility in Solvency II regulations to reduce any immediate pressure on them to sell other risky assets.

In July, the FPC reduced the countercyclical capital buffer rate from 0.5% to 0%, which reduced regulatory capital buffers by £5.7 billion, raising banks' capacity for lending to UK households and businesses by up to £150 billion.

On 4 August, the FPC announced that it had decided to exclude central bank reserves from the exposure measure in the current UK leverage ratio framework, with immediate effect. In doing so, the FPC's aim is to ensure that the leverage ratio does not act as a barrier to the effective implementation of policy measures that might lead to an increase in central bank reserves. These measures include actions taken to maintain monetary and financial stability since the referendum on the United Kingdom's membership of the European Union: the package of actions being announced by the Monetary Policy Committee; and the precautionary step announced by the Bank on 30 June to provide additional flexibility in the Bank's provision of liquidity insurance by continuing to offer indexed long-term repo operations on a weekly basis until end-September 2016.⁽²⁾ The PRA also made a statement on how it is putting this change into effect.

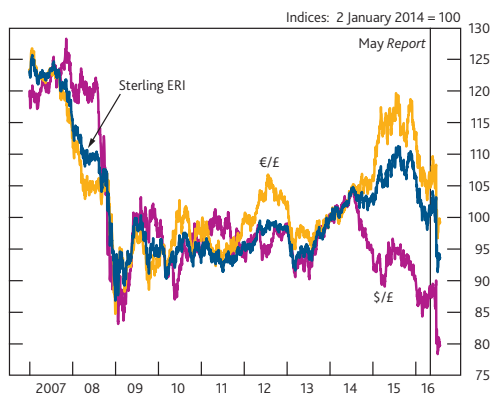
(1) More information on the CBPS is available at www.bankofengland.co.uk/markets/Documents/marketnotice160804apfcbps.pdf.

(2) As set out in the Statement from the FPC's 25 July meeting, the FPC is making this improvement to the design of the leverage ratio in the United Kingdom now, given the policy measures being put in place. It recognises that, absent offsetting the impact of this change, excluding current central bank reserves from the exposure measure — the denominator of the leverage ratio — mechanically reduces the nominal amount of capital required to meet the leverage ratio standard, other things equal. This is not the FPC's intention. It therefore intends to recalibrate the UK leverage ratio standard to offset this impact. It will consult and decide on the appropriate form of this recalibration as part of its planned review of the leverage ratio framework in 2017, in the light of the finalised international standard. In the intervening period, the PRA will monitor firms' behaviour.

1 Financial markets and global economic developments

Following the referendum on UK membership of the European Union, sterling depreciated sharply and the prices of domestically focused risky assets have fallen. The referendum also appears to have contributed to falls in the prices of risky assets in some other economies, particularly the euro area. Elevated uncertainty and a weaker growth outlook in the United Kingdom are projected to weigh a little on the outlook for global growth in the near term.

Chart 1.1 Sterling fell sharply after the referendum
Sterling exchange rates



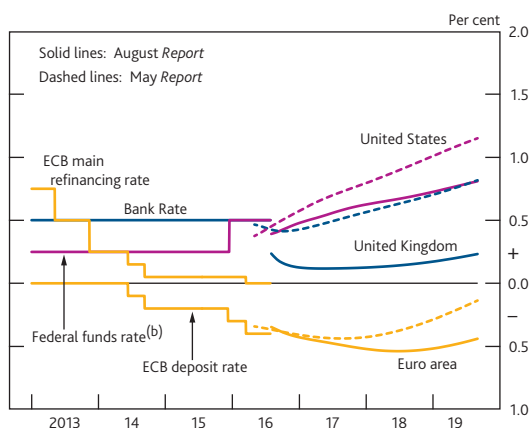
Following the UK referendum on European Union (EU) membership on 23 June, sterling depreciated significantly (**Chart 1.1**). The prices of sterling-denominated risky assets that are most exposed to the UK economy have also fallen (Section 1.1). This may reflect an increase in uncertainty about the implications of the referendum and a deterioration in UK near-term growth prospects (Section 2). The UK yield curve has fallen markedly (**Chart 1.2**).

Following the referendum, there were material falls in the prices of some euro-area risky assets (Section 1.2), most notably bank equities where price falls were exacerbated by concerns about the profitability of some euro-area banks. Slower growth in the United Kingdom may also weigh on euro-area export growth to some extent. Market participants' expectations of further monetary policy stimulus by the European Central Bank (ECB) appear to have grown.

In contrast, asset prices in the United States (Section 1.3) and emerging market economies (Section 1.4) have been broadly stable, notwithstanding some volatility around the referendum. Trade links between the United Kingdom and the United States are more limited than those with the euro area, reducing the extent of any spillovers from a weaker UK outlook. US market interest rates are also materially lower than three months ago (**Chart 1.2**).

In the near term, global growth is expected to be broadly stable and inflation is projected to rise gradually, although the projection for growth is slightly lower than in May (Section 1.5). Global economic developments beyond the United Kingdom have been broadly as expected over the past three months. An increase in uncertainty in the United Kingdom is, however, expected to weigh on UK domestic demand growth. In turn, through trade links, this may reduce activity growth elsewhere. These developments are likely to be only partially offset by the support to spending growth from falls in UK, US and euro-area yield curves (**Chart 1.2**).

Chart 1.2 Market-implied paths for US, UK and euro-area policy rates have flattened
International forward interest rates^(a)



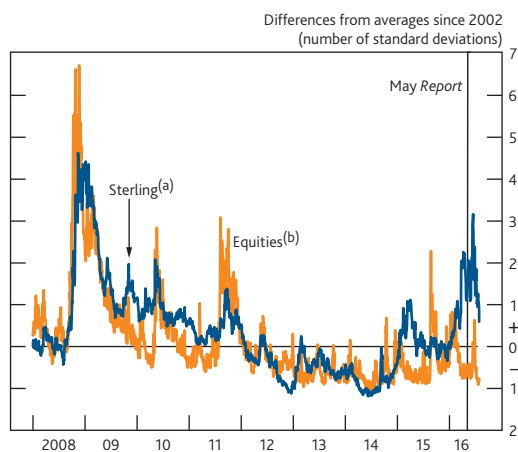
Sources: Bank of England, Bloomberg, European Central Bank (ECB) and Federal Reserve.

(a) The August 2016 and May 2016 curves are estimated using instantaneous forward overnight index swap rates in the fifteen working days to 27 July and 4 May respectively.

(b) Upper bound of the target range.

Chart 1.3 Uncertainty around the future value of sterling remains elevated

Option-implied volatility



Sources: Bloomberg and Bank calculations.

(a) Unweighted average of three-month sterling-US dollar and sterling-euro exchange rate implied volatility.

(b) VIX measure of 30-day implied volatility of the S&P 500 equity index.

1.1 Developments in sterling asset markets

Exchange rates

The sterling ERI has fallen by 9% since the referendum on 23 June and by 15% since its peak in November 2015, having weakened against both the euro and the US dollar (**Chart 1.1**). In part, this may reflect concerns that, subject to the outcome of any future negotiations, leaving the European Union is likely to reduce the United Kingdom's competitiveness (Section 3). There remains, however, substantial uncertainty about the nature of the United Kingdom's future trading arrangements and the implications for competitiveness. This may have increased the risk premium required by investors to hold sterling-denominated assets. Consistent with this, uncertainty around the outlook for sterling, as measured by implied volatility, remains elevated (**Chart 1.3**). The lower level of sterling may also reflect the weaker outlook for UK demand growth in the near term (Section 2), together with lower relative interest rates; short-term interest rates have fallen by more in the United Kingdom than in the United States and the euro area (**Chart 1.2**).

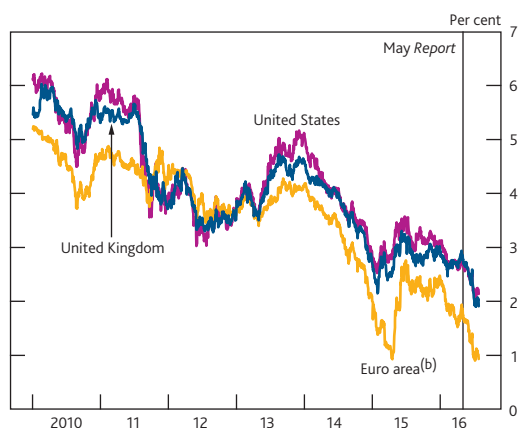
Interest rates

Benchmark interest rates have fallen markedly in the United Kingdom, with much of that decline occurring after the referendum. In the run-up to the *August Report*, the market-implied path of Bank Rate over the next three years was around 40 basis points lower on average than in May, and suggested expectations of a cut of around 25 basis points at the MPC's August meeting (**Chart 1.2**). As set out in the box on page 3, the MPC voted to keep Bank Rate and the stock of asset purchases unchanged at its meetings in June and July. The details of the decision at its August meeting are set out in the Monetary Policy Summary on pages i–ii of this *Report*, and in more detail in the Minutes of the meeting.

Yields on longer-term government bonds have also fallen: the ten-year UK nominal yield reached 0.9% in July. While these lower longer-term rates, in part, reflect the falls in short-term interest rates, longer-term forward rates have also fallen (**Chart 1.4**). Market contacts suggest that these falls in forward rates are likely to reflect a combination of investors seeking assets perceived as relatively safe, given heightened uncertainty, and increased perceptions of downside risks to the longer-term growth outlook. Market intelligence suggests that it also reflects expectations that the MPC would increase the stock of purchased assets. Consistent with this, the Bank's survey of external forecasters, discussed in the box on page 49, suggests that around £70 billion of additional purchases were expected.

Chart 1.4 Longer-term interest rates have fallen further

Ten-year forward nominal interest rates^(a)



Sources: Bloomberg and Bank calculations.

(a) Zero-coupon instantaneous forward rates derived from government bond prices.

(b) An estimate based on French and German government bond prices.

Corporate capital markets

Interest rates on sterling-denominated investment-grade corporate bonds have fallen since the *May Report*, reflecting both the falls in benchmark interest rates and a slight

Monetary policy since the May Report

The MPC's central projection in the *May Report*, under the assumptions that Bank Rate followed a path implied by market interest rates, that the stock of purchased assets remained at £375 billion and of continued UK membership of the European Union (EU), was that GDP growth was likely to dip further in the near term, reflecting a period of uncertainty around the referendum, before picking up to 2¼% as that drag waned. CPI inflation was projected to pick up over the next year or so, returning to the 2% target by mid-2018 and rising slightly above it thereafter.

At its meeting ending on 15 June, the MPC noted that an increasing range of financial asset prices had become more sensitive to market perceptions of the likely outcome of the EU referendum. There was also growing evidence that uncertainty about the referendum was leading to delays to major economic decisions that were costly to reverse, including commercial and residential real estate transactions and business investment.

Twelve-month CPI inflation was 0.3% in May, well below the 2% inflation target. This shortfall was due mainly to unusually large drags from energy and food prices, which were expected to attenuate over the next year. Core inflation also remained subdued as a consequence of weak global price pressures, past movements in sterling and restrained domestic cost growth. Looking ahead, the anticipated pickup in inflation depended on both a lessening drag from external factors and an increase in domestic cost growth.

All Committee members considered the current stance of monetary policy to be appropriate. The MPC noted, however, that a vote to leave the EU could materially alter the outlook for output and inflation, and therefore the appropriate setting of monetary policy.

At its meeting ending on 14 July, the MPC considered the early evidence on the impact of the vote to leave the EU and the implications this had for monetary policy, in light of the actions already taken by the Financial Policy Committee, the Prudential Regulation Authority and the Bank. There had been a sharp reaction in financial markets. Sterling had fallen markedly against the dollar and, although the FTSE All-Share index had risen over the same period, the equity prices of UK-focused banks and other companies exposed to the domestic property sector had fallen. Short-term and longer-term interest rates had declined internationally and there had been falls in the prices of euro-area risky assets.

Official data on economic activity covering the period since the referendum were not yet available. Indicators of

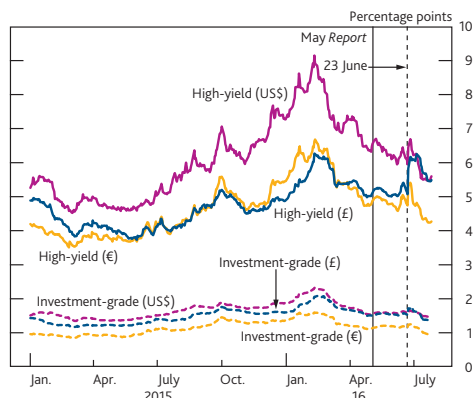
uncertainty among households and companies had risen further and early indications from surveys suggested that some businesses were beginning to delay investment projects and postpone recruitment. Regarding the housing market, the latest RICS survey had pointed to a significant weakening in expected activity. This evidence suggested the uncertainty stemming from the referendum result was likely to depress economic activity in the near term.

The sharp fall in the exchange rate would, in the short run, put upward pressure on inflation. In the longer run, the path for inflation would also depend crucially on how inflation expectations responded. Financial market measures of near-term inflation expectations had risen moderately following the referendum, although only to around historical averages and longer-term inflation expectations had fallen.

To that end, most members of the Committee expected monetary policy to be loosened in August. The Committee discussed various easing options and combinations thereof. The exact extent of any additional stimulus measures would be based on the Committee's updated forecast, and their composition would take account of any interactions with the financial system and their effectiveness in supporting the UK economy. Eight members judged it appropriate to leave the stance of monetary policy unchanged at the July meeting. For one member, the subdued economic outlook before the referendum had already come close to warranting further stimulus and the early evidence supported the view that demand was likely to weaken further. The resulting outlook for medium-term inflation therefore justified an immediate loosening of monetary policy, to be supplemented by a package of additional measures in August.

Chart 1.5 Sterling high-yield corporate bond spreads have widened

International non-financial corporate bond spreads^(a)

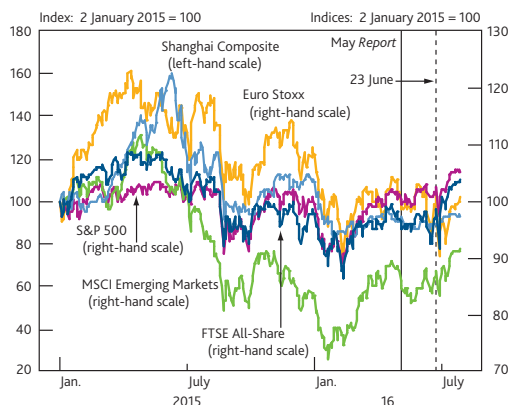


Source: Bank of America Merrill Lynch Global Research.

(a) Spreads on government bond yields. Investment-grade bond yields are calculated using an index of bonds with a rating of BBB3 or above. High-yield corporate bond yields are calculated using aggregate indices of bonds rated lower than BBB3. Due to monthly index rebalancing, movements in yields at the end of each month might reflect changes in the population of securities within the indices.

Chart 1.6 International equity prices are broadly unchanged, despite volatility around the referendum

International equity prices^(a)

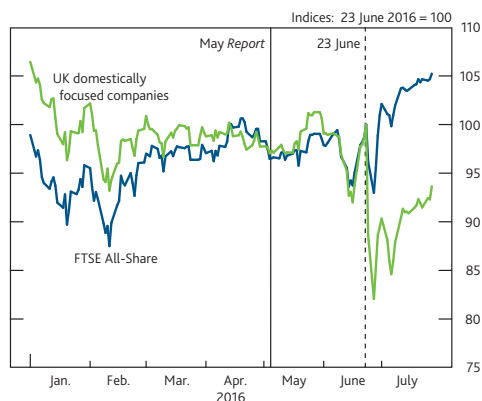


Sources: Thomson Reuters Datastream and Bank calculations.

(a) In local currency terms, except for MSCI Emerging Markets, which is in US dollar terms.

Chart 1.7 Equity prices of UK-focused companies have fallen significantly

FTSE All-Share and UK domestically focused companies' equity prices^(a)



Sources: Bloomberg, Thomson Reuters Datastream and Bank calculations.

(a) Companies are categorised using annual financial accounts data on their geographic revenue breakdown. UK domestically focused companies are defined as those generating at least 70% of their revenues in the United Kingdom.

narrowing in the spreads on these bonds (**Chart 1.5**). In contrast, spreads on high-yield bonds widened significantly following the referendum, and by more than those on US dollar and euro-denominated bonds. This may, in part, reflect investors' perceptions that the referendum had increased UK corporate credit risk, particularly for riskier and more domestically focused companies. As that widening in spreads was broadly offset by the falls in benchmark rates, the overall cost of debt for these high-yield companies was, however, little changed.

Although the cost of debt finance has not increased significantly, the cost of issuing new equity for UK domestically focused companies has probably increased. In the run-up to the *August Report*, the FTSE All-Share index was 4% above its pre-referendum level, having recovered from a fall of 7% in the two trading days following the referendum (**Chart 1.6**). The equity prices of UK domestically focused companies — those for which at least 70% of revenue is earned in the United Kingdom — were, however, 9% below their pre-referendum level (**Chart 1.7**). This is likely to reflect the effect of weaker prospects for domestic demand growth on their expected future profitability. Consistent with this, two sectors that have seen large falls in equity prices were the construction and consumer services sectors (**Chart 1.8**), which derive a significant proportion of their revenue from UK activity. In contrast, the sterling value of foreign profits earned by internationally focused companies will have been boosted by the depreciation.

Bank funding costs

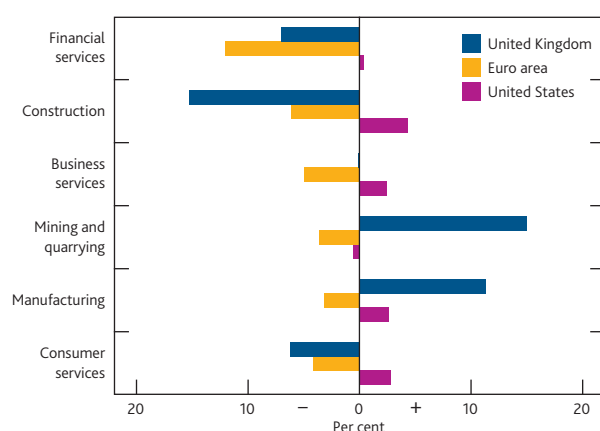
Along with the construction and consumer services sectors, the UK financial sector has seen some of the largest falls in equity prices (**Chart 1.8**), concentrated in domestically focused UK banks for which prices were 24% lower. In part this is likely to reflect reduced expectations for bank profitability in response to the weaker outlook for UK growth (Section 2), and for property markets in particular as a significant proportion of banks' UK assets are loans linked to property. And it may, in part, reflect greater uncertainty about UK banks' future access to markets in the European Union.

One other factor that could also affect bank profitability is the path for market interest rates. As discussed in the box on pages 9–12, the fall in international interest rates and the flattening in the term structure of those rates in recent years — which have continued since the *May Report* — may weigh on banks' net interest income.

In contrast to equity finance, the cost of debt funding for banks has been broadly unchanged since May. While funding spreads for UK banks widened somewhat around the turn of the year, most have not widened much further following the referendum (**Chart 1.9**). The impact of that on the overall cost of debt funding since the turn of the year has been more

Chart 1.8 UK equity prices have fallen since the referendum in the construction, consumer services and financial services sectors

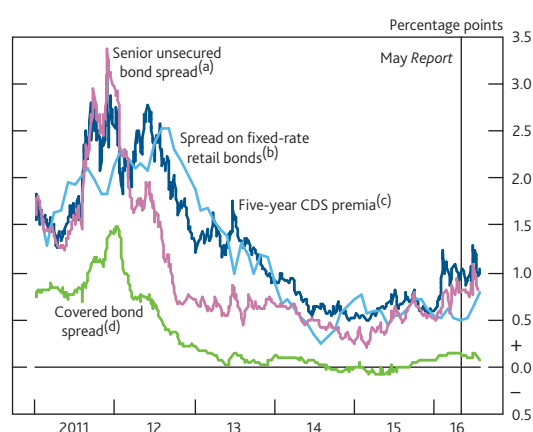
Change in equity indices for selected sectors since 23 June^(a)



Sources: Thomson Reuters Datastream and Bank calculations.

(a) Local currency terms. Change between 23 June and the average of the fifteen working days to 27 July. Sectoral indices are calculated as an average of sub-indices of the Datastream total market indices for the United Kingdom, United States and euro area, weighted by daily shares in market capitalisation. Sectors capture around 96% of the FTSE All-Share.

Chart 1.9 Bank funding spreads have been broadly stable
UK banks' indicative longer-term funding spreads



Sources: Bank of England, Bloomberg, Markit Group Limited and Bank calculations.

- (a) Constant-maturity unweighted average of secondary market spreads to mid-swaps for the major UK lenders' five-year euro-denominated senior unsecured bonds or a suitable proxy when unavailable.
- (b) Unweighted average of spreads for two-year and three-year sterling fixed-rate retail bonds over equivalent-maturity swaps. Bond rates are end-month rates and swap rates are monthly averages of daily rates. Bond rates for July are flash estimates.
- (c) Unweighted average of five-year euro-denominated senior CDS premia for the major UK lenders.
- (d) Constant-maturity unweighted average of secondary market spreads to swaps for the major UK lenders' five-year euro-denominated covered bonds or a suitable proxy when unavailable.

than offset by lower benchmark interest rates. As discussed in the July 2016 *Financial Stability Report*, the UK financial system is substantially more resilient than prior to the crisis. This could explain why funding spreads have been broadly stable despite the weaker outlook for profitability. Since the crisis, UK banks have significantly reduced their reliance on short-term wholesale funding. The capital requirements of the largest UK banks are now ten times higher than before the crisis. The results of the European Banking Authority stress test, released on 29 July, also provided evidence that the major UK banks have the resilience necessary to maintain lending to the real economy in a macroeconomic stress scenario.

Further, the Financial Policy Committee (FPC) decision in July to lower the countercyclical capital buffer rate from 0.5% to 0% of banks' UK exposures will enable banks to finance more of any increase in lending using cheaper debt financing.⁽¹⁾ All else equal, this should lower banks' overall cost of funds and support lending to households and companies (Section 2).⁽²⁾

1.2 Developments in the euro area

European markets for risky assets also appear to have been affected by the UK referendum result, although other factors are likely to have exacerbated the impact. Corporate bond spreads widened slightly (Chart 1.5) and equity prices fell sharply following the referendum (Chart 1.6), although subsequently unwound. These movements in asset prices may, in part, have reflected investors' reassessment of euro-area growth prospects in light of the potential spillovers from the UK referendum. The projected near-term slowing in UK growth (Section 2) and the depreciation in sterling will reduce demand for euro-area exports, 14% of which are to the United Kingdom.

Pre-existing concerns about banks in some euro-area countries, in part relating to elevated levels of non-performing loans on their balance sheets, may have exacerbated the falls in euro-area financial sector equity prices since the UK referendum (Chart 1.8).⁽³⁾ Euro-area bank funding spreads have also widened slightly since May.

Euro-area short-term (Chart 1.2) and longer-term (Chart 1.4) interest rates have fallen since May, although the ECB left policy unchanged in June and July. These lower interest rates have been sufficient to offset the widening in bank funding

(1) For more detail on the FPC's decision, see the July 2016 *Financial Stability Report*; www.bankofengland.co.uk/publications/Documents/fsr/2016/fsrjul16.pdf.

(2) For more detail on the link between macroprudential capital policy and UK credit conditions, see Harimohan, R and Nelson, B (2014), 'How might macroprudential capital policy affect credit conditions?', *Bank of England Quarterly Bulletin*, Vol. 54, No. 3, pages 287–303; www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q303.pdf.

(3) For more detail on the risks relating to euro-area banks, see page 15 of the July 2016 *Financial Stability Report*; www.bankofengland.co.uk/publications/Documents/fsr/2016/fsrjul16.pdf.

Table 1.A Global activity growth picked up around the turn of the yearGDP in selected countries and regions^(a)

Percentage changes on a quarter earlier, annualised

	Averages					2016	
	1998–2007	2012–13	2014	2015 H1	2015 H2	Q1	Q2
United Kingdom	2.9	1.9	3.5	1.4	2.3	1.8	2.4
Euro area (39%)	2.3	-0.2	1.0	1.9	1.5	2.2	1.2
United States (16%)	3.0	1.9	2.5	2.3	1.4	0.8	1.2
China (4%) ^(b)	10.0	7.7	7.3	7.0	6.9	6.7	6.7
Japan (2%)	1.1	1.1	-0.8	1.8	0.0	1.9	n.a.
India (2%) ^(b)	n.a.	6.2	7.0	7.1	7.4	7.9	n.a.
Russia (1%) ^(c)	7.8	1.6	-0.7	-4.9	-2.3	n.a.	n.a.
Brazil (1%)	3.1	2.6	-0.6	-6.1	-5.7	-1.1	n.a.
UK-weighted world GDP ^(d)	3.0	1.5	2.1	2.1	2.0	2.3	n.a.

Sources: IMF *World Economic Outlook (WEO)*, OECD, ONS, Thomson Reuters Datastream and Bank calculations.

(a) Real GDP measures. Figures in parentheses are shares in UK goods and services exports in 2014.

(b) Data are four-quarter growth. The earliest observation for India is 2012 Q2.

(c) The earliest observation for Russia is 2003 Q2. Figure for 2015 H2 is based on data to 2015 Q3. Official seasonally adjusted GDP data beyond 2015 Q3 are not yet available.

(d) Constructed using data for real GDP growth rates for 180 countries weighted according to their shares in UK exports. For the vast majority of countries, the latest observation is 2016 Q1. For those countries where data are not yet available, Bank staff projections are used.

Table 1.B Monitoring the MPC's key judgements

Developments anticipated in May	Developments now anticipated
Advanced economies	Growth revised down slightly
- Quarterly euro-area growth to average a little below ½%. Inflation to remain close to zero, before increasing gradually. - Quarterly US GDP growth to average a little above ½%. Annual PCE inflation to fall slightly, before increasing to around 1½%.	- Quarterly euro-area GDP growth to average around ¼%. Annual inflation to increase. - Quarterly US GDP growth to average a little above ½%. Annual PCE inflation to pick up in coming months, averaging a little below 1½%.
Rest of the world	Broadly unchanged
Average four-quarter PPP-weighted EME growth of around 4%. Chinese GDP growth to average around 6¾%.	EME GDP growth of around 4¼%. Chinese GDP growth to average around 6½%.
The exchange rate	Lower than expected
Sterling ERI to evolve in line with the conditioning assumptions.	The sterling ERI depreciated by 7%.

spreads, such that euro-area credit conditions are expected to be little changed. The falls in interest rates will reflect a range of factors, perhaps including market participants' expectations of an extension of the ECB's existing asset purchase schemes. The corporate sector purchase programme (CSPP) and the second series of targeted longer-term refinancing operations (TLTRO II), both of which had been announced in March, began in early June.

Average quarterly euro-area GDP growth remained robust in H1 at 0.4%, although there was some volatility across Q1 and Q2 (**Table 1.A**). Domestic demand has been the driver of recent activity growth, supported by ECB policy and a slightly expansionary fiscal stance. Euro-area credit conditions have improved significantly over the past few years, with the interest rates faced by households and companies having fallen in both core and periphery euro-area countries. The *Bank Lending Survey* published by the ECB in July suggested that the ECB's TLTROs had enabled banks to ease terms and conditions on lending, and euro-denominated corporate bond spreads narrowed on the announcement of additional policy measures by the ECB in March.

In the near term, growth is projected to remain subdued at around 0.3% per quarter (**Table 1.B**), as weaker external demand growth weighs on activity. This is slightly below the projection three months ago. Headline inflation, which was 0.2% in July (**Table 1.C**), is expected to increase gradually, at a similar pace to that projected three months ago.

1.3 Developments in the United States

US risky asset prices have been broadly stable since May. In the run-up to the *August Report*, the level of the S&P 500 was higher relative to three months ago — having recovered from its falls immediately after the UK referendum (**Chart 1.6**) — and the US dollar effective exchange rate was slightly higher. Although there was a spike in implied volatility in US equity markets in the immediate aftermath of the UK referendum, this unwound quickly (**Chart 1.3**). US dollar-denominated investment-grade corporate bond spreads were broadly unchanged on the quarter and spreads on high-yield bonds narrowed (**Chart 1.5**).

Financial asset prices may have, in part, been supported by lower benchmark interest rates: the implied path for US interest rates has flattened materially since the *May Report* (**Chart 1.2**). In the run-up to the *August Report*, the market-implied path for the federal funds rate reached 0.8% in three years' time, compared with 1.1% three months ago. The Federal Open Market Committee (FOMC) voted to keep rates unchanged in June and July, and the median projections of FOMC members for interest rates in 2017 and 2018 were revised down. As noted in its July statement, indicators pointed to some increase in labour utilisation, activity had

Table 1.C Inflation remains weak across countries

Inflation in selected countries and regions

Per cent	Monthly averages					2016			
	1998–2007	2014	2015 H1	2015 H2	2016 Q1	Apr.	May	June	July
Annual headline consumer price inflation									
United Kingdom	1.6	1.5	0.1	0.0	0.4	0.3	0.3	0.5	n.a.
Euro area ^(a)	2.0	0.4	-0.1	0.1	0.0	-0.2	-0.1	0.1	0.2
United States ^(b)	2.0	1.4	0.2	0.4	1.0	1.1	0.9	n.a.	n.a.
UK-weighted world inflation ^(c)	2.0	1.0	0.4	0.6	0.7	n.a.	n.a.	n.a.	n.a.
Annual consumer price inflation excluding food and energy^(d)									
United Kingdom	1.2	1.6	1.0	1.2	1.3	1.2	1.2	1.4	n.a.
Euro area ^(a)	1.6	0.8	0.7	0.9	1.0	0.7	0.8	0.9	0.9
United States ^(b)	1.8	1.5	1.3	1.3	1.6	1.6	1.6	n.a.	n.a.

Sources: Eurostat, IMF WEO, ONS, Thomson Reuters Datastream, US Bureau of Economic Analysis and Bank calculations.

(a) Data point for July 2016 is a flash estimate.

(b) Personal consumption expenditure price index inflation. Data for June were released after the preparation of this Report.

(c) Constructed using data for consumption deflators for 51 countries weighted according to their shares in UK exports. For the vast majority of countries, the last observation is 2016 Q1. For those countries where data are not yet available, Bank staff projections are used.

(d) For the euro area and the United Kingdom, excludes energy, food, alcoholic beverages and tobacco. For the United States, excludes food and energy.

continued to expand at a more moderate pace and near-term risks to the economic outlook had diminished. Long-term forward interest rates have also fallen, in a similar fashion to those in the United Kingdom and euro area (**Chart 1.4**).

Quarterly US GDP growth picked up slightly to 0.3% in Q2, weaker than expected, having been just 0.2% in Q1. As a result, growth in Q2 remained below its 2015 average (**Table 1.A**), although consumption growth was strong. GDP growth is expected to increase to around ½% per quarter in the second half of the year (**Table 1.B**), supported in part by a projected strengthening in real wage growth as the labour market continues to normalise. Headline inflation is projected to pick up gradually, supported by the waning effect of past commodity price falls and robust labour cost growth.

1.4 Developments in emerging market economies

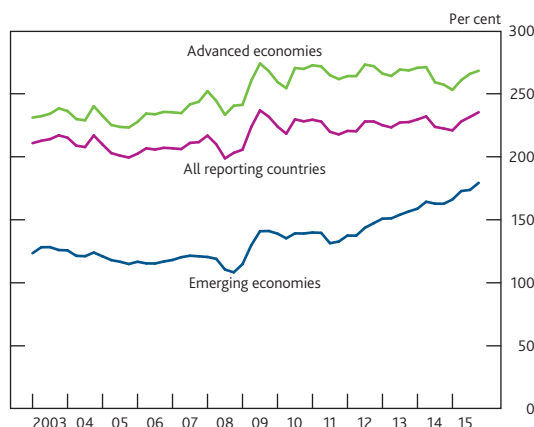
As in the United States, financial markets in emerging market economies (EMEs) have been relatively stable, notwithstanding some volatility in the immediate aftermath of the UK referendum, and are likely to have been supported to some degree by the flattening in the US yield curve. EME growth was slightly stronger than expected in H1: activity in Brazil, for example, contracted less rapidly than expected in Q1, while growth in India picked up to nearly 8% (**Table 1.A**). This unexpected strength is judged, however, largely to reflect temporary factors and measurement issues rather than a fundamental improvement in near-term prospects. In China, policy stimulus measures are likely to have supported the pace of GDP growth, which was 6.7% in Q2, broadly as expected. In the near term, the central projection is for a gradual recovery in aggregate EME growth, albeit to a rate below past averages (**Table 1.B**), reflecting long-term demographic and structural factors, although the balance of risks around the outlook remains to the downside.

There is a risk that the recovery in growth in many EMEs could be impeded by their exposure to a reversal in international capital inflows. Estimates from the Institute of International Finance suggest that portfolio flows into EMEs excluding China recovered in June and July, having dipped in May. Data on China's foreign exchange reserves also suggest that outflows from China have stabilised. An adverse change in market sentiment towards EMEs or an unexpected tightening in US monetary policy, however, could trigger renewed capital outflows from emerging markets and a tightening in credit conditions in those economies.

The effects on EME growth of any reversal in capital flows and associated tightening in credit conditions would be exacerbated by high levels of outstanding debt. Over the past year, debt to GDP ratios have continued to increase

Chart 1.10 Debt to GDP in emerging markets has continued to increase

Non-financial sector debt to nominal GDP ratios



Source: Bank for International Settlements total credit statistics.

Chart 1.11 Survey indicators of global growth have softened over recent quarters

Global composite PMI^(a)



Sources: JPMorgan and Markit Economics.

(a) Composite (manufacturing and services) purchasing managers' index (PMI). Based on the results of surveys in over 30 countries. Together these countries account for an estimated 87% of global GDP. A figure over 50 indicates rising output compared with the previous month, and a figure below 50 indicates falling output. Last data point is June 2016.

significantly in a number of EMEs. For example, in China, four-quarter growth in total social financing was 13% in 2016 Q2, and the amount outstanding is now a little over 200% of annual GDP. Overall, non-financial sector indebtedness in EMEs was around 180% of GDP in 2015 Q4 (**Chart 1.10**). Further, while the overall proportion of EME debt denominated in local currency has been rising, a significant proportion is still denominated in foreign currency, particularly US dollars. Capital outflows would tend to be associated with falls in the value of local currencies relative to the US dollar, and therefore could increase the value of dollar-denominated debt in local currency terms.⁽¹⁾

1.5 The near-term global outlook

Overall, average quarterly growth in UK-weighted global activity was relatively stable at around $\frac{1}{2}\%$ in 2015 — and picked up a little in 2016 Q1 — although it remained subdued relative to its pre-crisis average of $\frac{3}{4}\%$. In the near term, growth is projected to remain stable at around its current rate, a little weaker than projected three months ago (**Table 1.B**), largely reflecting the spillovers from the UK referendum to the euro area (Section 1.2). As in recent *Reports*, the risks around this projection are judged to lie to the downside. Some indicators of global activity point to a more material slowing in growth in H2; for example, the global composite PMI is around its lowest level for four years (**Chart 1.11**). Further, existing vulnerabilities in EMEs could be exacerbated by a deterioration in market sentiment or US monetary policy tightening faster than expected.

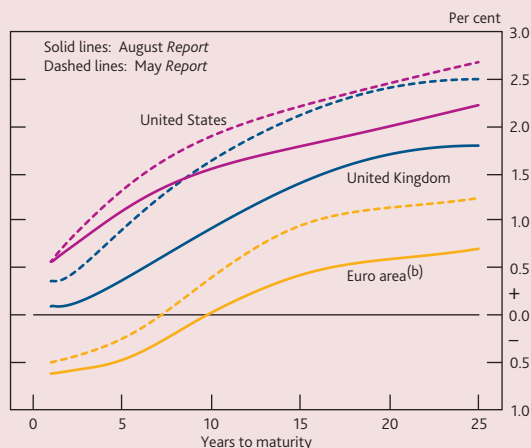
The near-term projection for global inflation is for it to increase gradually, broadly similar to the May projection. Core inflation — which excludes food and energy prices — remains below average in many economies (**Table 1.C**). Those below-average rates reflect, in part, the effects of past commodity price falls continuing to feed through the supply chain. They are also likely to reflect a degree of spare capacity remaining. Accordingly, four-quarter UK import-weighted world export price inflation, excluding energy, remained subdued at around $-2\frac{1}{2}\%$ in 2016 Q1, compared with its past average rate of around 1%. The significant depreciation of the sterling exchange rate (Section 1.1), however, means that annual sterling UK import price inflation is projected to reach around 6% in 2017 Q1 (Section 4).

(1) For more detail on the financial risks faced by EMEs, see pages 15–16 of the July 2016 *Financial Stability Report*; www.bankofengland.co.uk/publications/Documents/fsr/2016/fsrjul16.pdf.

The implications of falls in the yield curve for financial conditions and stability

Since the *May Report*, benchmark interest rates — such as government bond yields — have fallen in many advanced economies (**Chart A**), extending their falls in recent years (Section 1). Indeed, many rates are at their lowest ever levels.⁽¹⁾ While some of those falls may reflect expectations of monetary policy stimulus (Section 1), much is likely to reflect factors such as the outlook for long-term supply in the economy and the balance between global saving and planned global investment.⁽²⁾ For example, increased private sector precautionary saving in response to heightened global uncertainty, and increased public sector saving through reserves accumulation in some countries, are likely to have been responsible for a large part of the decline in interest rates in recent years.

Chart A Yield curves are lower than in May
Nominal government bond yields^(a)



Sources: Bloomberg and Bank calculations.

(a) Zero-coupon spot rates derived from government bond prices.
(b) Based on French and German government bond prices.

Although falls in the yield curve may be driven by a deterioration in growth prospects, these falls may themselves help to support spending and the economic outlook by reducing borrowing costs and boosting asset prices. Due to the nature of their businesses, however, such falls can have adverse implications for the profitability and functioning of financial intermediaries. Indeed, some of the recent falls in banks' and insurers' equity prices (Section 1) may have reflected expectations that the shift down in yield curves could reduce future profitability. That may have consequences for financial stability and, to the extent it affects the price and availability of financial services, the economic outlook. On 6 July, the Financial Policy Committee (FPC) and the Monetary Policy Committee (MPC) met to discuss, and were presented with analysis on, the sensitivity of banks, insurers and pension providers to falls in the yield curve

and the implications for their ability to provide financial services. This box provides a summary of that material.

Banks

One of the main ways a fall in the yield curve can affect banks is through the so-called 'net interest margin' that they earn. A core part of the business model of many banks is receiving interest payments on their assets, such as longer-term loans to businesses to finance investment, and paying interest on their liabilities, such as shorter-term retail deposits from households. The profitability of this model and the ability of banks to cover the costs of providing those services depends on the difference between the interest rates at which banks borrow and the interest rates at which they lend, known as the net interest margin. Bank retail deposits tend to attract interest rates below benchmark interest rates reflecting the cost of transaction services provided to depositors.⁽³⁾ To cover the risk of losses associated with loans and other costs of providing and servicing the loans, banks tend to charge borrowers interest rates above benchmark rates.

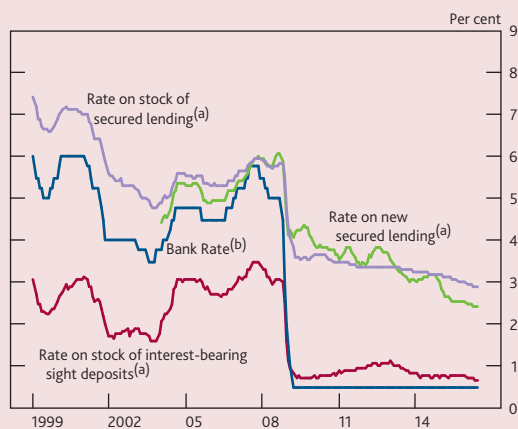
The level and slope of benchmark interest rates can, therefore, have implications for the net interest margin that banks earn.⁽⁴⁾ The ability of banks to lower retail deposit rates below 0% is restricted by the ability of customers to withdraw their deposits as cash, which can be held without incurring interest charges. As benchmark rates get closer to 0%, this reduces the spread that banks are able to earn between deposit and benchmark rates. Indeed, following the falls in Bank Rate during the crisis, the spread to deposit interest rates narrowed significantly (**Chart B**).

Some of the fall in deposit spreads, and the reduction in profits banks earn, may be offset by increased spreads on their existing stock of lending. To the extent that this lending is at longer-term fixed interest rates, then falls in wholesale interest rates will, for a time, increase the spreads banks earn on this lending. Many banks, however, use so-called 'interest rate swaps' to exchange the fixed-rate interest they receive on lending for floating-rate payments that are more closely linked to their funding costs. Moreover, the interest rates on many loans are floating rate; some, such as 'tracker' mortgages, are explicitly linked to Bank Rate or other market interest rates.

- (1) For more on long-run time series of interest rates, see Haldane, A (2015), 'Stuck', www.bankofengland.co.uk/publications/Documents/speeches/2015/speech828.pdf.
- (2) For more on the longer-term influences on interest rates see the box on pages 42–43 of the *August 2014 Report*, www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14aug.pdf; and Rachel, L and Smith, T D (2015), 'Secular drivers of the global real interest rate', *Bank of England Staff Working Paper No. 571*, www.bankofengland.co.uk/research/Documents/workingpapers/2015/swp571.pdf.
- (3) For more detail on how this works in practice, see the box on pages 174–75 of Button, R, Pezzini, S and Rossiter, N (2010), 'Understanding the price of new lending to households', *Bank of England Quarterly Bulletin*, Vol. 50, No. 3, pages 172–82; www.bankofengland.co.uk/publications/Documents/quarterlybulletin/qb100301.pdf.
- (4) For more detail on the link between net interest margins and the yield curve, see Alessandri, P and Nelson, B (2015), 'Simple banking: profitability and the yield curve', *Journal of Money, Credit and Banking*, Vol. 47, No. 1, pages 143–75.

Chart B As benchmark interest rates fell towards zero, deposit spreads were compressed and mortgage spreads widened

Bank Rate and selected household effective interest rates



(a) Effective rates on sterling household loans and deposits. The Bank's effective rate series are currently compiled using data from up to 19 UK monetary financial institutions (MFIs). The effective rate is an average monthly rate. Non seasonally adjusted.
(b) End-month rate.

Indeed, around half of the stock of UK mortgages and more than four fifths of UK corporate loans are floating rate (Table 1). So banks will be less able to increase spreads on that lending in response to falling benchmark rates, compressing overall net interest margins.

Table 1 Around half of all mortgages and four fifths of corporate lending is floating rate

Proportion of the stock of UK-resident MFIs' lending and deposits at fixed and floating rate in 2016 Q1^(a)

Per cent	Floating rate	Fixed rate
Secured lending to households	50	50
Unsecured lending to households	25	75
Lending to private non-financial corporations	82	18
Deposits from households ^{(b)(c)}	73	27
Deposits from private non-financial corporations ^{(b)(c)}	60	40

(a) Average daily balances on sterling household loans and deposits reported on form ER (effective rates), and balance sheet data reported on forms BE and BT. Non seasonally adjusted.
(b) Floating rate includes sight deposits and redeemable-at-notice time deposits.
(c) Fixed rate includes non interest bearing deposits and fixed-maturity time deposits.

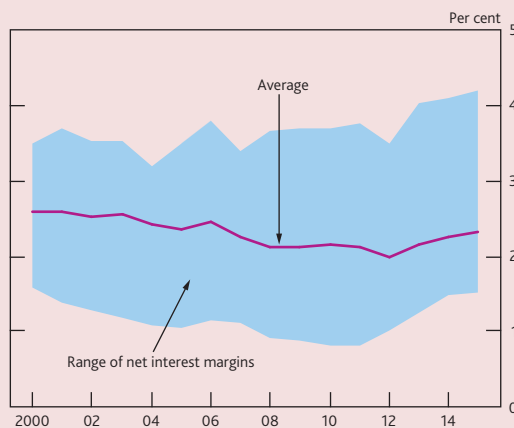
On new lending, banks may choose to limit the extent to which any fall in benchmark interest rates is passed through to the interest rates they charge in order to maintain their net interest margins. Moreover, if the effects described above mean the net interest margin that banks earn on their existing stock of lending is reduced, then they may even increase interest rates on new lending to compensate, which would tighten credit conditions.

There is some evidence of these effects following the falls in UK benchmark interest rates during the financial crisis: the spread between the rates charged by banks on new mortgage lending and Bank Rate remains much wider than prior to

the crisis (Chart B). Overall, though, despite the falls in benchmark rates, UK banks' net interest margins have remained broadly stable on average in recent years at around 2¼% (Chart C), and are only slightly lower than pre-crisis levels. However, in some countries where benchmark interest rates have fallen to very low levels, such as Switzerland where rates were cut below zero, net interest margins for many banks appear to have been compressed. The interest rates on deposits and lending have fallen little in response and some rates have increased. In particular, interest rates on deposits have tended to decline less when these rates were already at low levels. As explained in the box on pages iii–viii, the consideration of these effects underpinned the design of the MPC's Term Funding Scheme (TFS) to reinforce the pass-through of cuts in Bank Rate.

Chart C Banks' net interest margins have been relatively stable

Estimates of large UK banks' net interest margins^(a)



Sources: Published accounts and Bank calculations.

(a) Estimates derived from published accounts for the six largest UK banks: Barclays, HSBC, Lloyds Banking Group, Nationwide, Royal Bank of Scotland and Santander UK. The definition of net interest margin used differs by bank and over time, as the calculation is not prescribed under International Financial Reporting Standards.

The desire among banks to maintain profitability may limit the extent to which the falls in the yield curve are passed on to household and corporate interest rates. Banking sector profitability has been weak in recent years due to factors such as the cost of past misconduct and the changing nature of investment banking.⁽¹⁾ Those factors have offset a relatively healthy return on lending to the real economy. While the recent further fall in the UK yield curve since May is likely to have reduced banks' net interest margins on their existing UK lending somewhat, the underlying return that large UK banks earned on UK retail and commercial lending in 2015 is estimated to be 15% of the equity held for that lending, on average, compared to an overall return on equity of 3%.⁽²⁾

(1) For more details on the other factors affecting bank profitability, see pages 20–21 of the July 2016 *Financial Stability Report*; www.bankofengland.co.uk/publications/Documents/fsr/2016/fsrjul16.pdf.

(2) Bank staff estimate for 2015 for the six largest UK banks, calculated using banks' reported divisional accounts and with equity apportioned according to divisional risk-weighted assets.

Those healthy returns, alongside recent regulatory changes such as the reduction in the countercyclical capital buffer by the FPC (Section 1), should help to support the supply of credit to the real economy. Moreover, any falls in interest rates for borrowers will reduce the extent to which they are likely to default on their payments and so, in turn, reduce the potential impairments and credit losses on lending banks face, further supporting credit conditions.

Insurers

Falls in the yield curve can also affect insurers' profitability, particularly for life insurers. Insurers collect and invest upfront payments for the potential provision of payouts in the future, such as to limit the financial costs associated with risks to physical property or in the occurrence of ill health or loss of life. As a result, the solvency of insurers and their ability to provide insurance services is sensitive to changes in the value of their investments and expected payouts.⁽¹⁾

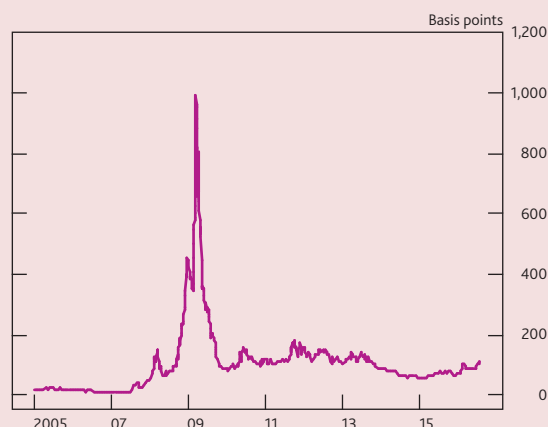
Insurers are required to hold sufficient assets to cover their expected payouts and those that may occur in stressed conditions. Further, under Solvency II, the new regulatory regime for insurers effective from the start of 2016, insurers are also required to hold enough assets to cover the so-called 'risk margin' that represents the additional cost of capital another insurer would incur were they required to take over those liabilities.⁽²⁾

All of these elements are calculated by discounting future payouts in line with the benchmark yield curve. As a result, when the yield curve falls, the present value of future payouts increases. This effect is most acute for life insurers whose expected payouts tend to lie quite far into the future and, hence, their present value is quite sensitive to the discount rate used. The calculation of the risk margin is also particularly sensitive to changes in interest rates. While a fall in the yield curve will increase the value of some of the assets insurers hold, such as bonds, for many life insurers that is unlikely to offset all of the increase in obligations, including the risk margin.

Falls in the yield curve could, therefore, lead to some insurers increasing the cost of providing new insurance in order to increase their asset holdings. At present, however, the impact of the transition to Solvency II is being phased in over the next 16 years, which will dampen any immediate impact on insurers' balance sheets. Moreover, while the cost of protection against insurers' default increased slightly following the recent falls in the yield curve, it remains relatively stable reflecting the perceived resilience of the insurance sector among market participants (Chart D). That resilience should help to support the provision of insurance.⁽³⁾

Chart D Market-based measures of insurers' resilience remain broadly stable

Average cost of default protection on selected UK insurers^(a)



Sources: Markit CDS Pricing and Bank calculations.

(a) Average of five-year senior credit default swap premia of Aviva, Legal and General, Prudential and Standard Life. Data for Standard Life start in October 2006; data for Aviva start in June 2009.

Pension providers

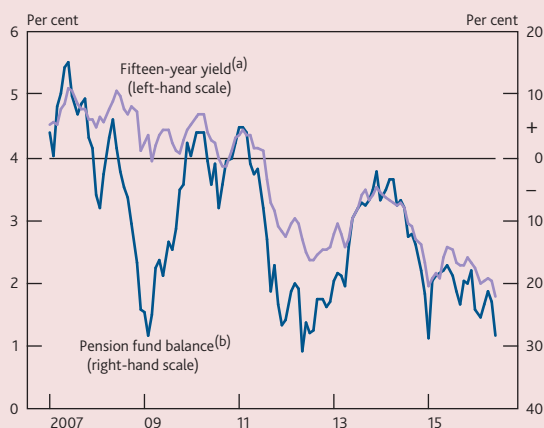
A third group of financial services that can be affected by shifts in the yield curve are pension providers. Pension providers invest upfront contributions in a pension fund to provide payouts and income to the beneficiaries on retirement. For defined-benefit pensions, such as some of those provided occupationally, the value of those future obligations is largely specified in advance. As with insurers, therefore, the present value of potential future payouts increases when the yield curve falls. While a fall in the yield curve will boost the value of pension funds' bond holdings, for many pension funds that will typically be more than matched by the increase in the value of their liabilities. Falls in benchmark yields, therefore, tend to be associated with increases in the deficit that pension funds face.

One timely measure of the size of pension fund deficits is provided by the Pension Protection Fund. On that measure, UK defined-benefit pension funds had a deficit of 28% of their liabilities in June (Chart E), close to the largest on record. The size of pension fund deficits will be affected by changes in asset prices, such as equity and property prices, but much of the recent increase in the deficit is likely to have been due to the fall in the yield curve.

- (1) For more details on the interaction between insurers and financial stability see French, A, Minot, D and Vital, M (2015), 'Insurance and financial stability', *Bank of England Quarterly Bulletin*, Vol. 55, No. 3, pages 242–58; www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2015/q303.pdf.
- (2) For more details on Solvency II see Swain, R and Swallow, D (2015), 'The prudential regulation of insurers under Solvency II', *Bank of England Quarterly Bulletin*, Vol. 55, No. 2, pages 139–52; www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2015/q203.pdf.
- (3) For more details on the resilience of the insurance sector and the phasing in of Solvency II see pages 24–25 of the July 2016 *Financial Stability Report*; www.bankofengland.co.uk/publications/Documents/fsr/2016/fsrjul16.pdf.

Chart E Defined-benefit pension fund deficits have increased as long-term yields have fallen

Fifteen-year government bond yield and the balance on UK defined-benefit pension funds as a proportion of total liabilities



Sources: Pension Protection Fund and Bank calculations.

(a) Zero-coupon spot rate derived from government bond prices.

(b) Calculated as the aggregate value of pension fund assets less the value of their liabilities, divided by the total value of liabilities. Calculated on a \$179 basis, which is the theoretical cost that would have to be paid to a private insurance company to take on the level of protection provided by the Pension Protection Fund. As the Fund does not provide protection for the full liability, this number may be somewhat smaller than a similar measure calculated based on companies' financial statements.

Companies are required by the Pensions Regulator to have plans in place to eliminate any pension deficit. To meet the cost of an increased deficit companies may reduce their dividends or attempt to reduce other spending, which could weigh on activity. For example, to the extent they are constrained by available funds, companies may reduce investment or they may try to reduce other labour costs such as salaries or benefits for employees.

Companies are, however, only required to update their pension deficit reduction plans every three years. Many companies that see an increase in their deficit may also be

able to extend the period over which they bring it back to balance, while maintaining the current level of contributions. Indeed, the overall size of contributions to defined-benefit schemes has been broadly stable over the past decade, despite significant fluctuations in the size of deficits. The Bank's Agents currently report little evidence of companies having adjusted their investment plans in response to their pension deficits. Companies' cash and financial positions have also improved since the financial crisis and access to external finance continues to be supportive of investment growth (Section 2). And, to the extent a lower yield curve helps to support consumer spending through lower borrowing rates and higher asset prices, that will in turn support companies' profitability.

Conclusion

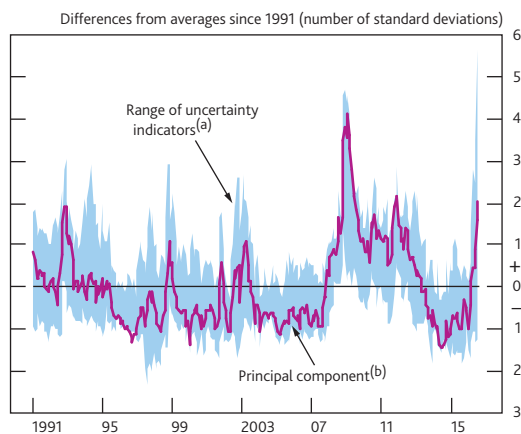
The recent falls in international yield curves could pose risks to the functioning of the financial system through their effects on the business models of intermediaries such as banks, insurers and pension funds. At present, however, those effects appear to be relatively limited and overall financial conditions will be supported by a number of regulatory actions, such as the reduction in the countercyclical capital buffer for banks and the smooth transition to Solvency II for insurers. To the extent to which those falls reflect monetary policy stimulus, that would support the economic environment, raising asset prices and reducing losses, which should support the provision of financial services. The need among banks to maintain profitability in the face of falls in the yield curve would all else equal, however, be likely to dampen the extent to which it is passed through to lower interest rates for households and companies. In light of this, and as explained in the box on pages iii–viii, the MPC has taken action to reinforce the pass-through of cuts in Bank Rate through the Term Funding Scheme (TFS).

2 Demand and output

The vote to leave the European Union is likely to affect GDP growth through a number of channels, but there are currently few post-referendum data available to assess the scale of those effects. Growth was firmer than expected ahead of the referendum, but the available indicators suggest that domestic demand growth is likely to slow over the near term as greater uncertainty and lower confidence drag on activity. That is already apparent in the housing and commercial property sectors, where indicators point to significant falls in activity. The large depreciation in sterling should, however, support net trade in the near term.

The vote to leave the European Union is likely to affect spending through a number of channels, including greater uncertainty. There is, however, little information available yet on the severity of these channels and how they may interact with each other over the near term.

Chart 2.1 Uncertainty has continued to rise
Range of uncertainty measures



Sources: Bloomberg, Consensus Economics, Dow Jones Factiva, GfK (research on behalf of the European Commission), Thomson Reuters Datastream and Bank calculations.

(a) Range includes: the average standard deviation of monthly Consensus Economics forecasts for GDP growth in the current and next year ahead, seasonally adjusted by Bank staff; the number of media reports citing uncertainty in four national broadsheet newspapers; survey responses of households to questions relating to their personal financial situation and unemployment expectations; and the three-month implied volatilities for the FTSE 100 and sterling ERI — realised volatilities have been used prior to April 1992 and September 2001 respectively. Media and implied volatilities data for July are based on daily data up to 27 July. A higher number indicates greater uncertainty.

(b) The first principal component extracted from the set of indicators.

Measures of uncertainty had been rising ahead of the referendum and have risen further since (Chart 2.1). That is likely to reflect ambiguity about the nature of the United Kingdom's future trading arrangements with its economic partners, and the implications of those arrangements for economic activity and incomes. As discussed in the box on pages 14–15 of the *May Report*, heightened uncertainty tends to depress spending by firms and households as they delay decisions and hold back on major purchases.

There have also been significant moves in some financial asset prices (Section 1). Most notably, sterling has depreciated by 9% since the referendum and is around 10% lower than the conditioning path assumed in the *May Report*. That will weigh on domestic spending by raising the cost of imported investment and consumption goods and services. Though it will tend to support net trade volumes.

In addition to these developments, households and companies may be revising down expectations of future incomes. A prospective change in the United Kingdom's future trading arrangements would probably be associated with some period of adjustment as firms anticipate, and adapt to, that change. Over that time, some resources are likely to be reallocated, and output may be lower than it otherwise would have been. The anticipation of lower income as a result of those effects could reduce spending.

In contrast with the financial crisis, there have not been any significant changes in the funding costs of banks (Section 1),

Table 2.A Monitoring the MPC's key judgements

Developments anticipated in May	Developments now anticipated
Cost of credit	Revised up slightly
• Credit spreads to be broadly flat in 2016.	• Credit spreads to increase slightly.
Consumer spending	Revised down
• Quarterly consumption growth of between ½% and ¾%.	• Quarterly consumption growth to slow gradually to around ¼% in 2017 Q1.
Housing market	Revised down
• Mortgage approvals to average around 75,000 a month in 2016 H2, following a period of volatility.	• Mortgage approvals to average 56,000 a month.
• Rates of increase in the main indices of national house prices to average around ½% per month.	• The average of Halifax and Nationwide price indices to decline a little over the next year.
• Quarterly housing investment growth to be volatile, averaging ¾% over 2016.	• Quarterly growth in housing investment to average -1%.
Business investment	Revised down
• Business investment to fall in Q2, grow only modestly in Q3 and rebound from Q4.	• Business investment to fall by around 1¼% a quarter, on average.

Table 2.B Business investment fell, while household consumption growth picked up in Q1Expenditure components of demand^(a)

Percentage changes on a quarter earlier

	Averages						
	1998–2007	2008–09	2010–12	2013–14	2015 H1	2015 H2	2016 Q1
Household consumption ^(b)	0.9	-0.6	0.2	0.5	0.8	0.6	0.8
Private sector investment	0.7	-4.4	1.6	1.1	1.6	0.0	0.7
of which, business investment ^(c)	0.6	-3.0	1.9	0.8	1.3	-0.3	-0.6
of which, private sector housing investment	0.8	-7.4	0.8	2.8	2.4	0.6	3.3
Private sector final domestic demand	0.8	-1.3	0.6	0.7	0.9	0.5	0.7
Government consumption and investment ^(c)	0.8	0.9	-0.1	0.4	0.7	0.1	0.0
Final domestic demand	0.8	-0.8	0.4	0.6	0.9	0.4	0.6
Change in inventories ^{(d)(e)}	0.0	0.2	0.0	0.0	-0.1	-0.2	0.3
Alignment adjustment ^(e)	0.0	-0.1	0.0	0.1	-0.4	0.3	-0.7
Domestic demand ^(f)	0.8	-0.8	0.4	0.8	0.3	0.7	0.3
'Economic' exports ^(g)	1.1	-1.1	0.7	0.8	0.9	1.5	-0.4
'Economic' imports ^(g)	1.4	-1.2	0.8	1.1	0.9	1.9	0.1
Net trade ^{(e)(g)}	-0.1	0.0	0.0	-0.1	0.0	-0.2	-0.2
Real GDP at market prices	0.7	-0.7	0.4	0.7	0.3	0.6	0.4
Memo: nominal GDP at market prices	1.2	-0.2	0.9	1.0	0.7	0.2	1.0

(a) Chained-volume measures unless otherwise stated.

(b) Includes non-profit institutions serving households.

(c) Investment data take account of the transfer of nuclear reactors from the public corporation sector to central government in 2005 Q2.

(d) Excludes the alignment adjustment.

(e) Percentage point contributions to quarterly growth of real GDP.

(f) Includes acquisitions less disposals of valuables.

(g) Excluding the impact of missing trader intra-community (MTIC) fraud.

nor signs of constraints on the supply of credit. As discussed in the July 2016 *Financial Stability Report*, the resilience of the UK banking system has improved markedly over recent years, which should ensure that the availability of credit to households and businesses does not tighten as it did in 2008–09. As discussed in the 2016 Q2 *Credit Conditions Review*, the major UK lenders expect the availability of credit to remain steady in the near term.

The developments following the referendum will take time to be revealed in official data. GDP growth of 0.6% in 2016 Q2 was firmer than expected. Many indicators, however, point to much weaker growth in July, with some pointing to a contraction.

Domestic demand growth is, therefore, projected to slow materially over the near term (Section 2.1), though there is considerable uncertainty about the extent of that slowing. The most pronounced signs of a slowing are within the commercial and residential property markets. Investment intentions also softened ahead of the referendum and appear to have weakened further since. In addition, consumer confidence has fallen to below past average levels. Net trade, however, is likely to be boosted by the depreciation in sterling in the near term (Section 2.2). The rest of this section considers the evidence across these areas of spending before setting out the overall near-term outlook for activity (Section 2.3).

2.1 Domestic demand

Corporate spending

Business investment fell in 2016 Q1 (Table 2.B) and is projected to continue to fall in the near term. Survey measures of investment intentions generally softened during the first half of the year (Chart 2.2), and those surveys conducted since the referendum (the diamonds in Chart 2.2) point to further weakness. That was most apparent in the *Deloitte CFO Survey* of large companies, which reported a sharp fall following the referendum; large companies account for a disproportionately greater share of business investment. The Agents' contacts also report that the decision to leave the European Union is likely to weigh on capital spending (see the box on page 15). The Agents' investment intentions scores fell towards zero in July, indicating broadly flat investment spending over the next twelve months. Contacts also report that they are yet to fully process the implications of the referendum vote over the near and long term: investment plans will continue to be revised as new business plans develop.

The current heightened level of uncertainty (Chart 2.1) may persist for some time, and is likely to weigh on business investment growth. Companies are likely to be facing uncertainty about the terms of future trading arrangements,

Agents' survey on the impact on businesses of the vote to leave the European Union

The Bank's Agents surveyed a range of contacts with the aim of understanding how the vote to leave the European Union is expected to affect their businesses over the coming year. The questions asked about expected effects on capital spending, corporate transactions (such as mergers and acquisitions activity), hiring activity, turnover and prices over the coming twelve months. The survey covered around 270 businesses in the month or so following the referendum result, with a total UK employment of 1.2 million people.⁽¹⁾

The survey results relate to the marginal effect of the vote on each business aspect: whether the vote would have a positive or negative expected effect on turnover, for example, rather than whether it would lead to an absolute rise or fall in turnover over the coming year.

Overall, respondents expected a negative effect from the vote on turnover, capital spending and hiring activity over the next twelve months (Table 1). Output prices were expected to be boosted, on balance, as the rise in imported costs following the decline in sterling is passed through. That upward price effect suggests the effect on activity in real terms is more negative than that shown for turnover.

Table 1 Negative effects are expected on business activity over the next year

Survey responses on the impact of the vote to leave the EU on business

Proportion of companies, weighted by employment (per cent)^(a)

	Substantially increase	Slightly increase	No effect	Slightly reduce	Substantially reduce	Net balance ^(b)
Capital spending	0	0	40	51	9	-34
Corporate transactions	0	1	84	11	3	-8
Hiring activity	0	3	43	49	6	-29
Turnover	1	12	35	42	11	-25
of which, exports	1	28	47	20	5	0
Prices	4	32	50	14	1	12

(a) Results are weighted by employment within the companies, and then re-weighted by sectoral employment shares in aggregate ONS data.

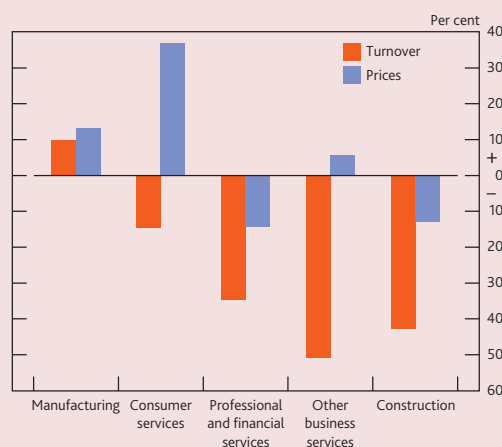
(b) When calculating the net balance of responses, half weight is given to those responding slightly increase or slightly reduce, and full weight is given to those that have responded substantially increase or substantially reduce.

Across sectors, the expected effects on turnover were most negative for business services and construction (Chart A). In contrast, for manufacturing there was a slight positive effect on balance, reflecting an expected boost to export demand from the fall in sterling. But exports overall were expected to be broadly unaffected, as that positive effect was offset by an adverse impact on services exports associated with lower commercial real estate and mergers activity by overseas investors.

On corporate pricing, downward pressure on prices was expected for professional and financial services and

Chart A Only manufacturers expected a positive effect on turnover; upward effects are expected on consumer prices

Balance of survey responses for turnover and prices by sector

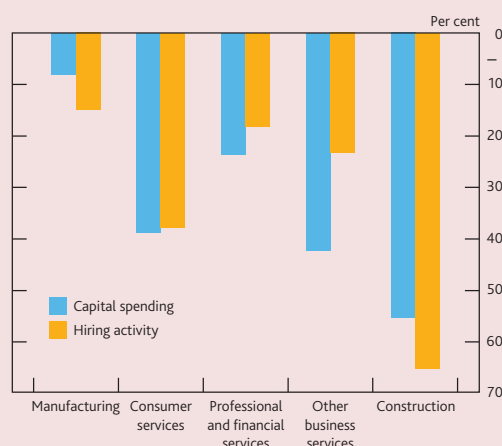


construction, reflecting a weaker outlook for demand. In contrast, for consumer services firms, any downward pressure from demand was expected to be more than offset by the pass-through of higher import prices.

Expected effects on capital spending and hiring activity were negative across all sectors, on balance, but particularly so for construction businesses (Chart B).

Chart B Negative effects on hiring and investment are expected across all sectors

Balance of survey responses for capital spending and hiring activity by sector

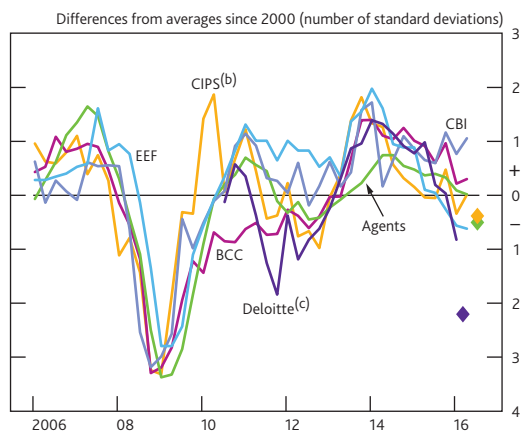


Consistent with the survey results, Agents' scores for companies' investment and employment intentions have weakened in absolute terms since the referendum result. Those scores point to broadly unchanged levels of staff numbers and capital spending over the next six and twelve months respectively.

(1) The results shown are weighted by employment within the companies, and then re-weighted by sectoral employment shares in aggregate ONS data to be more representative of the economy as a whole.

Chart 2.2 Investment intentions have generally weakened since 2015

Survey measures of investment intentions^(a)



Sources: Bank of England, BCC, CBI, CBI/PwC, Deloitte, EEF, Markit/CIPS and Bank calculations.

- (a) Net percentage balance of respondents reporting that they expect to increase investment over the next twelve months, unless otherwise stated. Agents, BCC and CBI measures weight together sectoral surveys using shares in real business investment. CIPS and EEF measures correspond to the manufacturing sector only. BCC and Deloitte data are non seasonally adjusted. The diamonds show the available post-referendum data.
- (b) Net percentage balance of monthly increases in new orders to investment goods manufacturers.
- (c) Data available from 2010 Q3. The 2016 Q2 Deloitte CFO Survey was conducted during 28 June to 11 July.

Table 2.C The amount of net external finance raised by companies continued to rise in 2016 Q2

Net external finance raised by private non-financial corporations^(a)

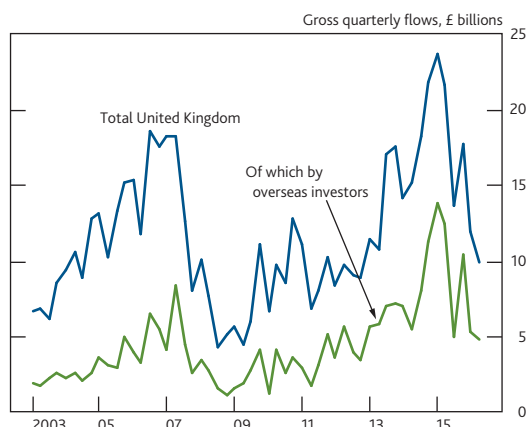
£ billions

	Quarterly averages				2016 Q1	2016 Q2
	2003–08	2009–12	2013–14	2015		
Loans	11.6	-6.2	-1.5	1.3	6.0	6.2
Bonds ^{(b)(c)}	2.9	3.3	3.0	3.1	9.2	1.2
Equities ^(b)	-2.1	1.3	0.2	1.1	0.4	1.2
Commercial paper ^(b)	0.0	-0.4	-0.3	1.5	1.2	-2.3
Total^(d)	12.9	-2.0	1.5	6.3	14.3	6.6

- (a) Includes sterling and foreign currency funds from UK monetary financial institutions and capital markets.
- (b) Non seasonally adjusted.
- (c) Includes stand-alone and programme bonds.
- (d) As component series are not all seasonally adjusted, the total may not equal the sum of its components.

Chart 2.3 CRE transactions fell in 2016 H1

UK CRE transactions^(a)



Sources: The Property Archive and Bank calculations.

- (a) Data are non seasonally adjusted.

as well as the outlook for domestic and foreign demand. As explained in the box on pages 14–15 of the *May Report*, a period of heightened uncertainty tends to be associated with firms delaying some decisions with sunk costs and long-term pay-offs, such as capital investment.

Slower demand growth is also projected to dampen investment spending over the near term. A weaker domestic demand outlook would reduce expected future profits, limiting the incentive to invest. The potential boost to profits on exports from the depreciation of sterling, however, (Section 2.3) may encourage some firms to invest in additional exporting capacity.

The incentive to invest also depends on its cost. Excluding buildings (around a quarter of investment spending), investment is relatively import-intensive. The recent depreciation in sterling will raise the cost of imported investment goods, which could deter some spending. As well as the cost of capital goods, investment also depends on the cost of finance. There are few signs of any marked tightening in corporate credit conditions. The overall cost of debt financing in capital markets has been broadly unchanged since the referendum (Section 1), and industry contacts report that bank lending remains available on similar terms to prior to the referendum. Loans to businesses continued to grow in 2016 Q2 (Table 2.C), but lending growth is projected to slow in the near term, reflecting weaker demand for credit rather than changes in domestic credit supply. As discussed in the *Credit Conditions Review*, the major UK lenders anticipated a slowing in the demand for corporate credit, in part reflecting some investment decisions being delayed and a slowing in mergers and acquisitions activity. Foreign direct investment (FDI) flows into the United Kingdom are expected to soften, given the uncertainty over the United Kingdom's future trading arrangements.

The commercial real estate market

Commercial real estate (CRE) prices and activity can affect companies' spending in a number of ways. Some companies — particularly small and medium-sized businesses — use CRE as collateral for borrowing. Fluctuations in CRE prices can, therefore, affect their access to finance. In addition, around a quarter of investment reflects spending on new and existing buildings, which could be dampened by weaker sentiment.

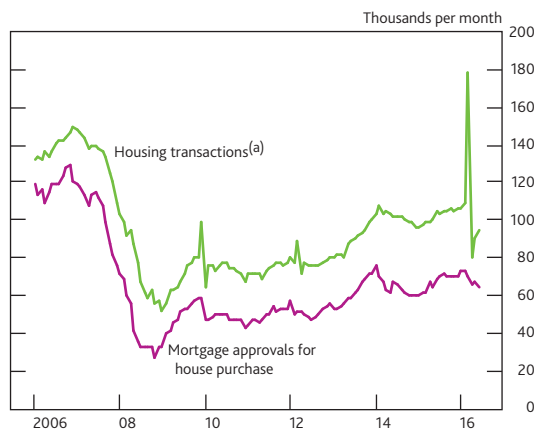
CRE activity fell significantly ahead of the referendum (Chart 2.3), and prospects for the CRE market have since weakened further. That fall in activity appeared, in part, to reflect a rise in uncertainty, while industry contacts also reported some perceptions of prices being near their peak in certain areas. Since the referendum, share prices of UK real estate investment trusts have fallen sharply, and a number of open-ended funds investing in the CRE market suspended redemptions due to liquidity pressures as investors sought to

divest from the sector. The latest Royal Institution of Chartered Surveyors (RICS) commercial property market survey reported a significant weakening in occupier demand following the referendum, and a sharp fall in investor enquiries — particularly from foreign investors. These moves are consistent with a further weakening in activity in the sector.

Reflecting weak demand and activity, CRE prices are also likely to fall over the near term. The RICS survey balance of price expectations turned negative in July, and around a third of respondents reported that the market was in the early stages of a downturn, with that share rising to over half for the London region.

Chart 2.4 Housing transactions remain subdued following a spike in March

Mortgage approvals for house purchase and housing transactions

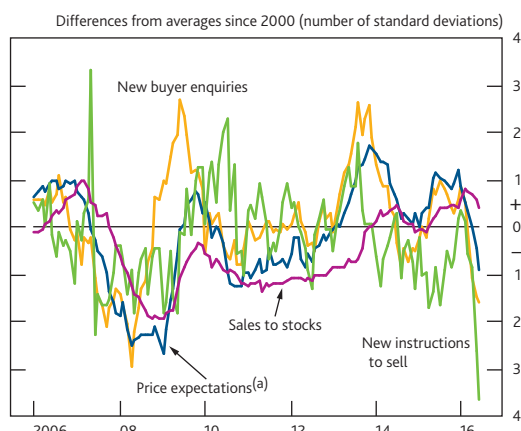


Sources: Bank of England and HM Revenue and Customs.

(a) Number of residential property transactions for values of £40,000 or above.

Chart 2.5 Forward-looking housing market indicators have deteriorated in recent months

RICS housing market indicators



Source: Royal Institution of Chartered Surveyors.

(a) Net percentage balance of respondents reporting that they expect prices to rise over the next three months.

The housing market

Developments in the housing market can also be important for investment and wider activity. As described in the *May Report*, the pre-announced rise in stamp duty in April 2016 led to some housing transactions that would otherwise have taken place later in the year to be brought forward. The sharp fall in transactions in 2016 Q2 was therefore broadly consistent with expectations, given the surge before April (**Chart 2.4**). House price growth has also slowed over the past few months. The average of the Halifax and Nationwide indices grew by 1% in Q2, having grown by 2% in 2016 Q1.

Forward-looking indicators suggest that both housing transactions and house price inflation may decline further (**Chart 2.5**). The latest RICS housing survey reported sharp falls in the balances of price and sales expectations over the next three months; the price expectations balance fell to its lowest level since 2011, and the balance of sales expectations fell to its lowest ever level. The net balances of reported new enquiries and selling instructions have also fallen significantly in recent months.

Heightened uncertainty ahead of the referendum and following its outcome have probably weighed on activity. Given the relatively large costs associated with buying and selling houses, such as estate agent and legal fees as well as stamp duty, some households are likely to delay buying or moving house until they are more certain about the outlook.

Moreover, if on balance households' expectations of future income fall, that will weigh on their demand for housing, putting downward pressure on prices. Lower expectations of future capital gains on housing could also dampen demand and, as expectations may be guided by actual house price moves, this could amplify the near-term weakness in the housing market.

Credit supply, however, is likely to continue to support housing demand. As discussed in the latest *Credit Conditions Review*, the major UK lenders expected the cost and

availability of secured credit to be little changed over the near term. Lending growth is, however, projected to slow, reflecting subdued demand.

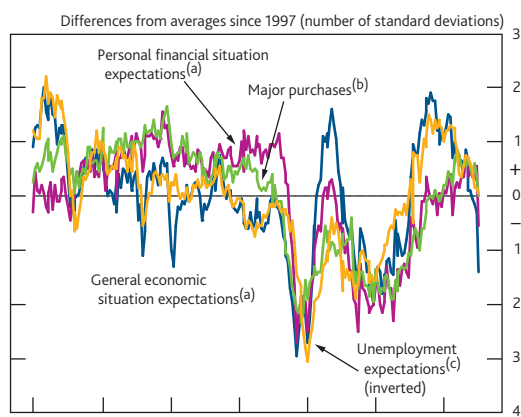
Overall, house prices are projected to decline a little over the near term, while the level of transactions remains broadly flat. The path for transactions, in part, reflects the recent drag associated with the rise in stamp duty unwinding over time — which will boost the number of transactions — offset by greater uncertainty associated with the referendum outcome. A reassessment by Bank staff of prospects for housing market activity prior to the referendum also lowered the projected path for transactions. The proportion of existing owner-occupiers moving house has remained low since the financial crisis, despite the past improvement in credit conditions, which appears in part to have been associated with the increasing average age of the population. This recent trend is now judged to be more persistent.

Chart 2.6 Falls in property transactions have been accompanied by lower house building in the past
Contributions to four-quarter private sector housing investment growth^(a)



(a) Chained-volume measure.

Chart 2.7 Consumer confidence has fallen
Measures of consumer confidence and unemployment expectations



Source: GfK (research carried out on behalf of the European Commission).

- (a) Net balance of respondents reporting that they expect their personal financial situation or the general economic situation to improve over the next twelve months.
(b) Net balance of respondents reporting that, in view of the general economic situation, now is the right time for people to make major purchases such as furniture or electrical goods.
(c) Net balance of respondents expecting that the number of people unemployed will rise over the next twelve months.

Subdued housing activity and weaker sentiment are expected to weigh on housing-related investment in the near term. This, in part, reflects subdued spending on services associated with property transactions. As in the past, weaker housing market sentiment is also projected to dampen investment in new buildings; for example, large falls in housing transactions during the early stages of the financial crisis were soon followed by reductions in house building (Chart 2.6).

Household spending

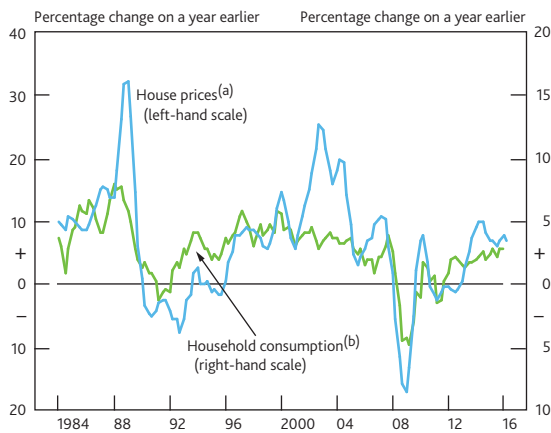
Household consumption growth has remained solid in recent quarters (Table 2.B), but growth is projected to slow over the second half of this year.

The rate of consumption growth depends in part on households' current and expected future income growth. It is also sensitive to the degree of confidence that households have in their expectations, as well as their ability to access credit to accommodate possible fluctuations in income.

Robust real income growth has supported consumption growth over the past year, but a combination of muted wage growth and higher import prices following the depreciation of sterling (Section 4) are projected to contribute to a slowing in real income growth over 2016 H2.

Correspondingly, households' income expectations already appear to have fallen. The GfK measure of households' expectations of their personal financial situation had been above average levels during 2016 Q2, but fell sharply in July to slightly below its average (Chart 2.7). Other indicators of consumer sentiment have also declined (Chart 2.7). These falls may, at least in part, reflect higher uncertainty following the outcome of the referendum. A rise in uncertainty could lead to an increase in saving as a precaution against the risk of a negative outcome, such as becoming unemployed;

Chart 2.8 Consumption growth has been closely correlated with house price growth over the past
Household consumption and house prices

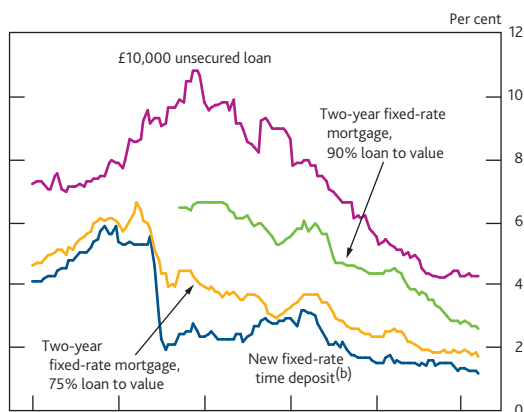


Sources: Halifax/Markit, Nationwide, ONS and Bank calculations.

- (a) House prices are an average of the Halifax and Nationwide measures. Nationwide house price data have been seasonally adjusted by Bank staff.
 (b) Chained-volume measure. Includes non-profit institutions serving households. Data available up to 2016 Q1.

Chart 2.9 Household interest rates remain at historically low levels

Household deposit and lending interest rates^(a)



- (a) Sterling-only end-month quoted rates, unless otherwise stated. The Bank's interest rate series are weighted average rates from a sample of banks and building societies with products meeting the specific criteria (see www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household_int.aspx). Data are non seasonally adjusted.
 (b) Average monthly effective rate.

households' expectations for UK unemployment rose slightly in July, but remain close to average levels.

Consumption growth has been closely correlated with house price growth in the past (**Chart 2.8**). Although that relationship in part reflects common factors driving both, such as income, a lower path for house prices could dampen spending through a number of channels. Lower house prices reduce the value of housing equity that homeowners can borrow against and some homeowners may reduce spending if the value of their property falls. Any fall in house prices could also affect consumption through broader confidence channels.

Credit conditions are projected to remain broadly unchanged, thereby continuing to support spending growth. A sharp tightening in credit conditions during the financial crisis amplified the effects of weaker income on consumption. The subsequent reduction in household deposit and lending rates (**Chart 2.9**) and improved access to credit will have supported consumption growth since then. Household interest rates have been stable at historically low levels in recent quarters and, as discussed in the 2016 Q2 *Credit Conditions Review*, lenders expect personal loan and mortgage rates to remain broadly stable.

Overall, consumer spending growth is projected to slow gradually in 2016 H2 as real income growth slows; supported by the stance of credit conditions, the rate of saving is projected to remain broadly stable. There is, however, a great deal of uncertainty around the path of savings. On the one hand, households may be inclined to save more, in response to heightened uncertainty and reduced confidence. On the other hand, the saving ratio is now estimated to have remained broadly stable over the past few years (see **Chart B** in the box on page 20), and so households may feel able to reduce their rate of saving for a period to support spending in the face of slowing real income growth. Perhaps consistent with that, some timely indicators of consumer spending, such as retail footfall, do not yet point to a material slowing in growth.

Government spending

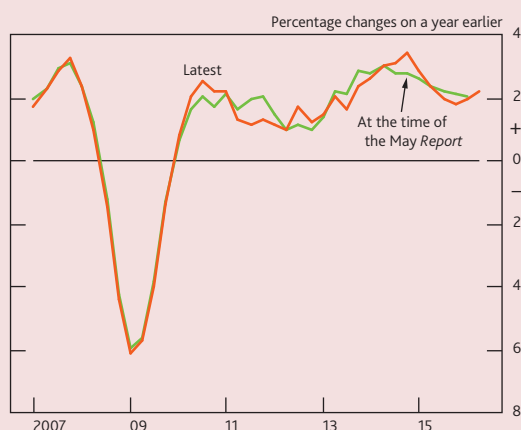
The MPC's forecast is conditioned on the tax and spending policies set out in the Government's March *Budget*, which imply a continued fiscal consolidation. This consolidation will continue to dampen growth in households' and companies' incomes. The projected slowing in private sector income growth is likely to be cushioned to some degree by features of the tax and welfare system. For example, to the extent that unemployment increases (Section 3), some households' incomes will be supported by out of work benefit payments. The longer-term implications for the public finances will depend on a range of factors and, in particular, the prospects for the United Kingdom's future supply growth (Section 3).

Revisions to the National Accounts

The latest National Accounts data have been revised to make them consistent with the *Blue Book*, an annual ONS publication that incorporates methodological improvements and a wider range of information than in earlier estimates. This box sets out the main revisions following this year's process.

Revisions to real GDP (**Chart A**) have been relatively small, with larger revisions to nominal GDP. That mainly reflects an improvement to the ONS's approach to measuring the value of imputed rents — an estimate of the value of housing services consumed by homeowners — which has broadly similar effects on estimates of both income and consumption. Those revisions to income and consumption are larger before 2010, as the ONS had already partially implemented the new approach in the more recent period (**Chart B**).

Chart A GDP growth has slowed since 2014
GDP^(a)



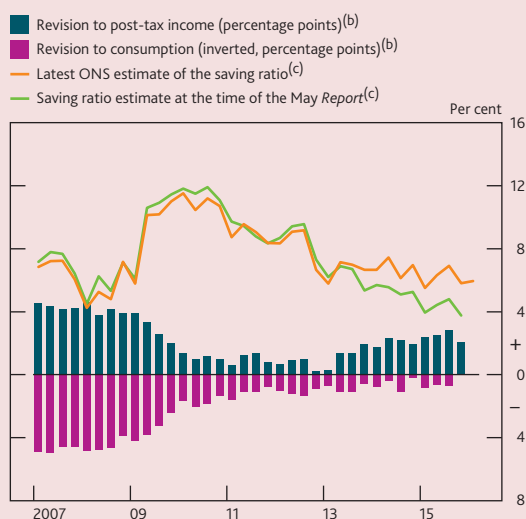
(a) Chained-volume measures at market prices.

The slowdown in GDP growth since 2014 currently appears to have been somewhat more pronounced than previously estimated (**Chart A**). Within that, household consumption growth was revised down marginally. Income, and in particular, wages and salaries growth has been revised up, consistent with administrative tax data. Consumption now appears to have grown more closely in line with incomes since 2013, with the rate of saving broadly flat rather than falling as in previous estimates (**Chart B**).

The counterpart to higher household savings has been a lower rate of domestic corporate savings (**Chart C**). The corporate financial balance now appears to be close to balance, rather than in surplus. Revisions to the current account have been relatively small.

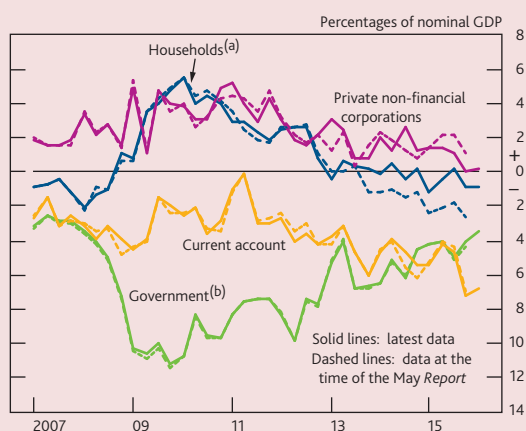
Chart B The estimated saving ratio now appears to have been broadly flat since 2013

Revisions to household income, consumption and the saving ratio^(a)



(a) Includes non-profit institutions serving households.
(b) Contributions to the total revision in the saving ratio.
(c) Percentages of household post-tax income.

Chart C Revisions have reduced the size of the household financial deficit over the recent past
Financial balances by sector



(a) Includes non-profit institutions serving households.
(b) Excludes public corporations.

Chart 2.10 The wider current account deficit since mid-2011 has mainly been due to a lower primary income balance

UK current account

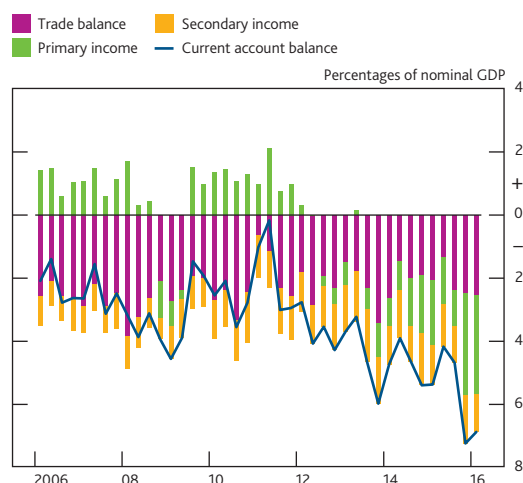
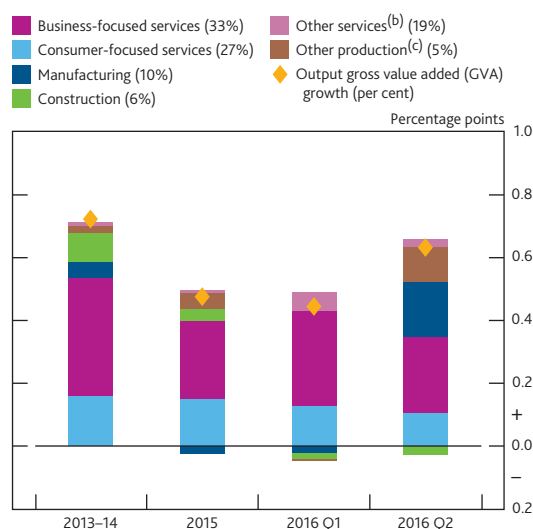


Chart 2.11 Output growth was 0.6% in Q2

Contributions to average quarterly GVA growth by sector^(a)



(a) Chained-volume measures at basic prices. Contributions may not sum to the total due to rounding. Service industries are defined as 'consumer-focused' if the share of their output that is directly consumed exceeds the share of output that is sold to other businesses to be used as intermediate inputs, while the reverse is true for 'business-focused' service sectors. Calculated using the *United Kingdom Input-Output Analytical Tables 2010*. Figures in parentheses are weights in nominal GDP in 2013.

(b) Other services includes: public administration and defence; health services and education.

(c) Other production includes: utilities; extraction and agriculture.

2.2 The current account and net trade

All else equal, the depreciation in sterling since the referendum (Section 1) will support net trade volumes over the near term. One channel is through higher import prices (Section 4), which will encourage UK consumers and businesses to substitute towards domestically produced goods and services. That, combined with lower projected domestic demand growth (Section 2.3), will dampen import growth over the near term.

The recent depreciation should also support exports. It will raise exporters' profit margins, and could encourage new and existing exporters to expand production. Goods export volumes picked up in the three months to May after falls in early 2016 and the second half of 2015, and the Agents' contacts report somewhat greater optimism for export growth over the next year.

The extent of the improvement in export growth will, however, depend on how UK companies and their trading partners react to the vote to leave the European Union. UK exporters or international customers could be dissuaded from entering into new trading contracts if either attaches some weight to the possibility of reduced trading access in the future. That would also dampen imports, since exports are relatively import-intensive.

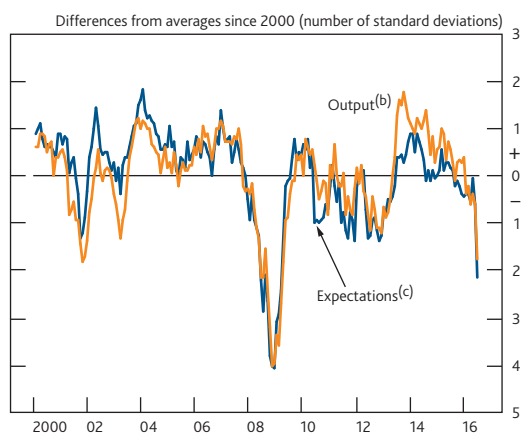
The current account reflects the balance of all payment flows, including trade, between the United Kingdom and other countries. While the current account deficit remained very wide at 6.9% of GDP in 2016 Q1 (Chart 2.10), it is projected to narrow over the near term. That narrowing reflects both improvements to the trade balance — the nominal value of exports minus imports — and the value of net investment income flows. As UK residents hold more foreign currency assets than they have foreign currency liabilities, the depreciation will have increased the sterling value of the net international investment position.⁽¹⁾ It will also therefore reduce the primary income deficit, which is the sterling value of income received by UK residents on foreign direct and portfolio investment relative to that paid abroad on domestic liabilities. An increasing primary income deficit has been the main reason behind the increase in the current account deficit over the recent past.

2.3 Near-term outlook for GDP

According to the preliminary estimate, GDP grew by 0.6% in 2016 Q2 (Chart 2.11), above the 0.3% projected in May.

(1) Estimates suggest that around 60% of the stock of external liabilities is denominated in foreign currency, compared with more than 90% of the stock of external assets: see Bénétrix, A, Lane, P and Shambaugh, J (2015), 'International currency exposures, valuation effects and the global financial crisis', *Journal of International Economics*, Vol. 96(S1), pages S98–S109 and accompanying data; www.philipplane.org/BLSJIE2015data.xls.

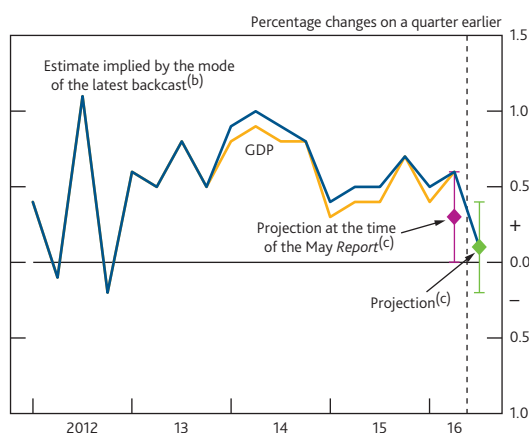
Chart 2.12 The Markit/CIPS survey output and expectations indices fell significantly in July
Survey indicators of output growth and expected output growth^(a)



Sources: Markit/CIPS and Bank calculations.

- (a) Produced by weighting together balances for services, manufacturing and construction using their shares in nominal GDP in 2013.
(b) Net percentage of companies saying that output (manufacturing and construction) or business activity (services) increased over the month.
(c) Net percentage of companies reporting that they expect business activity to rise over the next twelve months (services and construction) or that new orders have increased over the month (manufacturing).

Chart 2.13 GDP growth is projected to slow in 2016 Q3
Output growth and Bank staff's near-term projection^(a)



Sources: ONS and Bank calculations.

- (a) Chained-volume measures. GDP is at market prices.
(b) The latest backcast, shown to the left of the vertical line, is a judgement about the path for GDP in the mature estimate of the data. The observation for 2016 Q3, to the right of the vertical line, is consistent with the MPC's central projection.
(c) The magenta diamond shows Bank staff's central projection for the preliminary estimate of GDP growth in 2016 Q2 at the time of the May Report. The green diamond shows the current staff projection for GDP growth in 2016 Q3. The bands on either side of the diamonds show uncertainty around those projections based on one root mean squared error of past Bank staff forecasts for quarterly GDP growth made since 2004.

Underlying that growth, there was a pickup in activity within the manufacturing and utilities sectors, while service sector growth slowed. While manufacturing growth is likely to be supported by demand for UK exports (Section 2.2), services growth is likely to slow further in response to softer domestic demand (Section 2.1). Strong quarterly growth within the utilities sector appears to have been erratic and will probably reverse in Q3; following a sharp rise in April, activity within that sector fell back somewhat in May.

The precise scale of the drag on near-term activity from heightened uncertainty is difficult to judge at present. Official activity data are yet to span the post-referendum period. Business surveys relating to activity in July have, however, begun to emerge. The Markit/CIPS measures of business activity — which have on average been a better gauge of official output data than most other survey measures — reported a sharp fall in output, alongside a steeper fall in expectations (Chart 2.12).⁽¹⁾ Their current levels, if sustained, would be consistent with a contraction in output in Q3. Contacts of the Agents also report a slowing in activity growth, albeit consistent with slightly positive growth. While the Lloyds measure of business confidence, which recovered much of its post-referendum fall in the July release, points to a more gradual slowing.

Overall, the available evidence suggests little growth in GDP in the second half of the year, and growth is projected to slow to 0.1% in 2016 Q3 (Chart 2.13). Household spending growth is projected to slow gradually, as consumers respond to a slowing in income growth, while investment spending continues to decline. Some firms could also run down their stocks due to expectations of weaker near-term demand, which would slow output growth by more than the softening in demand growth.

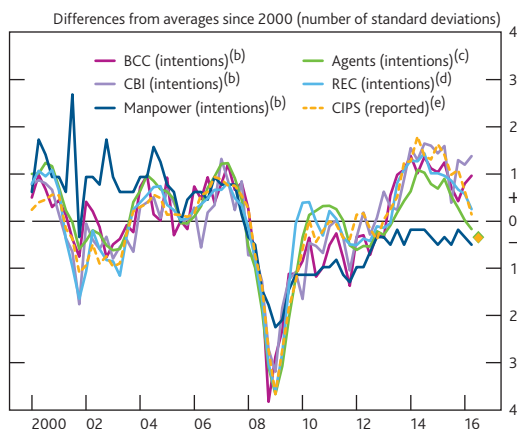
(1) The quarterly Markit/CIPS output indicator, consistent with Chart 2.12, has a correlation coefficient of 0.65 with GDP growth over 1997 Q2 to 2016 Q2.

3 Supply and the labour market

Reflecting the weaker near-term outlook for output, capacity pressures are likely to soften in the second half of 2016. Surveys of recruitment intentions suggest that prospects for labour demand growth have eased. In part reflecting that, average hours worked are projected to fall and unemployment to pick up, leading to a widening in the degree of slack in the economy. The extent to which output recovers further ahead will depend partly on developments in supply, which will be sensitive to the eventual trading arrangements between the United Kingdom and its economic partners. In the near term, the outlook for supply growth is weaker than in May.

Chart 3.1 Many survey indicators of employment softened ahead of the referendum, and those available since have fallen further

Survey indicators of employment intentions and reported changes in employment^(a)



Sources: Bank of England, BCC, CBI, CBI/PwC, Manpower, Markit/CIPS, ONS, REC and Bank calculations.

- (a) Measures for the Bank's Agents (manufacturing and services), the BCC (non-services and services), CBI (manufacturing, financial services, business/consumer/professional services and distributive trades) and CIPS (construction, manufacturing and services) are weighted together using employee shares from Workforce Jobs. The Manpower and REC data cover the whole economy. The BCC data are non seasonally adjusted.
- (b) Net percentage balance of companies expecting their workforce to increase over the next three months.
- (c) End-quarter observation. The scores refer to companies' employment intentions over the next six months. The diamond for Q3 shows data for July.
- (d) Quarterly average. Recruitment agencies' reports on the demand for permanent staff placements.
- (e) Quarterly average. Companies' reported change in employment compared with the previous month. The diamond for Q3 shows data for July.

Output growth is projected to slow sharply in Q3, reflecting heightened uncertainty following the referendum (Section 2). In the near term, firms are likely to take time to adjust capacity in response to a more subdued demand outlook; capacity pressures within businesses are expected to soften, while surveys of recruitment intentions suggest that prospects for labour demand growth have weakened (**Chart 3.1**). As a result, average hours worked per worker are projected to fall, employment growth to slow and unemployment to rise (Section 3.1). The margin of slack in the labour market and in the overall economy is therefore projected to widen over the next year (Section 3.2).

The extent to which output recovers further ahead will in part depend on labour supply growth (Section 3.3) and potential productivity growth (Section 3.4). Productivity growth is projected to weaken in Q3 and thereafter be more subdued than anticipated three months ago. In part that reflects the effects of elevated uncertainty on investment both in physical capital and in skills and innovation. There is significant uncertainty around the path for potential supply; it will be sensitive to the eventual trading arrangements between the United Kingdom and its economic partners, and to the transition to those new arrangements (Section 5). The box on page 29 sets out some of the channels through which any changes in the United Kingdom's trading arrangements might affect long-term potential supply.

3.1 Labour demand

Although growth in employment over the first half of 2016 remained robust, that was accounted for by a large rise in self-employment (**Table 3.A**). Growth in the number of employees eased to slightly below its pre-crisis average rate in 2016 H1, and most employment surveys have fallen back since late 2015 (**Chart 3.1**). That softening is likely primarily to have reflected a normalisation in the labour market, as spare

Table 3.A Growth in the number of employees has eased since 2015

Change in employment, and vacancies

	Quarterly averages					2016 Q1	2016 Q2
	2000–07 ^(a)	2008–09	2010–12	2013–14	2015		
Change in employment ^(b)	70	-59	67	130	149	44	176
of which, employees ^(b)	55	-67	32	106	112	28	49
of which, self-employed and other ^{(b)(c)}	16	7	35	24	37	16	127
Vacancies to labour force ratio (per cent) ^(d)	2.09	1.70	1.48	1.85	2.24	2.28	2.24

(a) Unless otherwise stated.

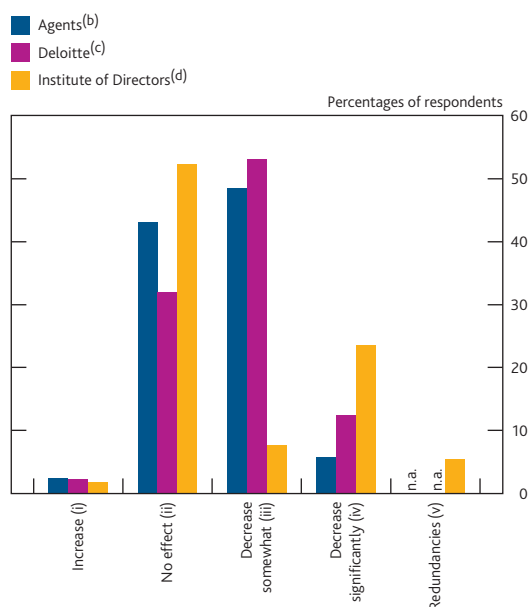
(b) Changes relative to the previous quarter in thousands. Figures for 2016 Q2 are data for the three months to May 2016.

(c) Other comprises unpaid family workers and those on government-supported training and employment programmes classified as being in employment.

(d) Excludes vacancies in agriculture, forestry and fishing. Average is 2001 Q2 to 2007. Figure for 2016 Q2 shows vacancies in June as a percentage of the number of people in the labour force in the three months to May.

Chart 3.2 Following the referendum result, firms expect to revise down recruitment plans

Post-referendum surveys of the expected effect on recruitment of the vote to leave the European Union^(a)



Sources: Deloitte, Institute of Directors and Bank calculations.

(a) The survey questions are shown in footnotes (b) to (d), together with the mapping from the answers to the bars shown on the chart. Only the Institute of Directors survey asked about redundancies.

(b) Following the vote to leave the EU, what effects do you expect on hiring over the following twelve months? Substantially increase (i); Slightly increase (i); No effect (ii); Slightly reduce (iii); Substantially reduce (iv).

(c) Overall how do you think a UK exit from the EU will affect your business's decisions on hiring over the next three years? Increase significantly (i); Increase somewhat (i); No change (ii); Decrease somewhat (iii); Decrease significantly (iv).

(d) How will the result of the referendum affect your primary organisation's hiring intentions? The pace of hiring will increase (i); We will continue hiring at the same pace (ii); We will continue hiring, but at a decreased pace (iii); We will freeze hiring new staff (iv); We will make redundancies (v); Not applicable (ii); Don't know (not shown on chart; 9% of firms responded with this option).

capacity was absorbed following very rapid employment growth over 2012–15. The level of vacancies relative to the size of the labour force remained above its pre-crisis average in Q2, suggesting that labour demand remained robust.

Nonetheless, the slowing in output growth since 2014 and rising uncertainty ahead of the referendum (Section 2) may also have moderated employment growth.

There is at present very little evidence to assess how the labour market is evolving following the referendum. Official data for the post-referendum period will not be available for some time, and there are currently limited survey data. Further, many businesses are likely to take time to reassess their employment plans. Those indicators that are available suggest that labour demand growth is likely to slow in the near term. Surveys of changes in companies' employment and their employment intentions conducted since the referendum (the diamonds in **Chart 3.1**) have fallen and are now below their past averages. Additionally, those surveys that have asked specifically about the impact of the vote indicate, on average, that over half of firms expect the outcome to reduce recruitment, in some cases significantly (**Chart 3.2**). There is, however, less evidence that firms are expecting to make redundancies in response to the result. Contacts of the Bank's Agents report that labour demand in the construction and consumer services sectors is likely to be the most affected by the referendum (see the box on page 15). Initial evidence from weekly online vacancies, a higher frequency indicator, corroborates a softening in labour demand growth since the referendum.

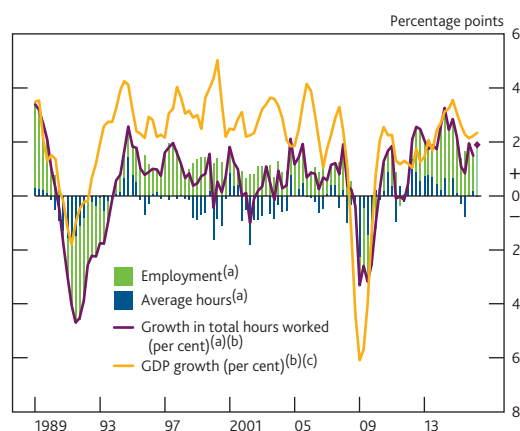
There is, therefore, considerable uncertainty over the precise extent, composition and timing of any slowing in labour demand growth. It will depend, in part, on how severe and long-lasting businesses expect any slowdown to be and how they expect to be affected by changes in the United Kingdom's relationships with its major trading partners (Section 5). The degree to which firms moderate their overall labour demand growth may also depend on the extent to which they can reduce wage growth to offset the impact from weaker output growth and higher imported costs on their revenues and profitability (Section 4).

Reductions in labour demand tend to be associated with reductions in average hours worked (**Chart 3.3**). Average hours, which edged down over 2016 H1, are therefore projected to fall further in the near term. That reduction is likely to occur in part through less overtime, the most flexible element of hours worked.

Reductions in labour demand also tend to be associated with increases in unemployment, either by firms cutting back on recruiting new workers or increasing redundancies. In recent years, as the labour market has normalised and vacancies have increased, there has been a steady pickup in the rate at which

Chart 3.3 Both average hours and employment tend to fall in economic slowdowns

GDP growth and decomposition of growth in total hours worked



Sources: Labour Force Survey and Bank calculations.

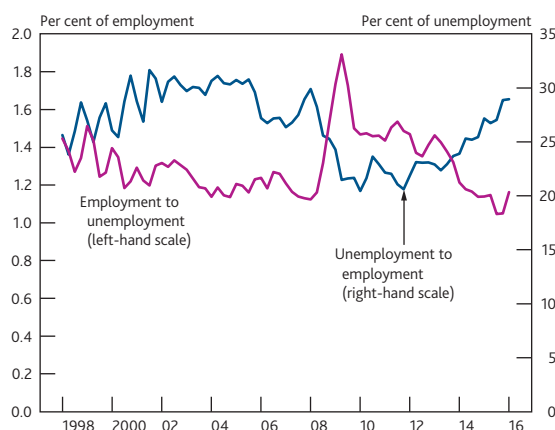
(a) Diamond and light bars are Bank staff projections for Q2, based on data to May.

(b) Percentage changes on a year earlier.

(c) Chained-volume measure at market prices, based on the backcast for the final estimate of GDP.

Chart 3.4 The rates at which people move between employment and unemployment had broadly normalised in 2016 Q1

Flows between employment and unemployment^(a)



Sources: Labour Force Survey (LFS) and Bank calculations.

(a) Two-quarter averages. Based on total LFS employment and unemployment of people aged 16–64.

unemployed people have found jobs and a fall in the rate at which employed workers have become unemployed, both to around their pre-crisis rates (**Chart 3.4**). In response to a softening in labour demand, these trends are expected to be partly reversed in coming quarters. Reflecting that, the unemployment rate is expected to have risen modestly in July (**Chart 3.5**) and to continue rising over the next year (Section 5). That pickup would, though, only slightly reverse the large decline seen in recent years. The unemployment rate fell to 4.9% in the three months to May, having stood at around 8% three years ago. There is, however, a great deal of uncertainty over the precise path of unemployment.

A reduction in labour demand could also weigh on the aggregate participation rate, by discouraging some people from actively participating in the labour market. The participation rate has been fairly stable in recent years, reflecting two large but broadly offsetting factors: a decline in the share of the population in the age groups most likely to participate in the labour market, set against increased participation among older people.⁽¹⁾ Overall, the participation rate is projected to remain broadly stable.

3.2 Slack in the economy

In the near term, as growth in demand for their output weakens, firms are likely only gradually to adjust their labour and other resources in response. As a result, the margin of spare capacity within firms is likely to widen. Survey measures of capacity utilisation have, on average, fallen slightly in recent quarters (**Chart 3.6**), consistent with increased spare capacity, and are likely to fall further in the second half of 2016.

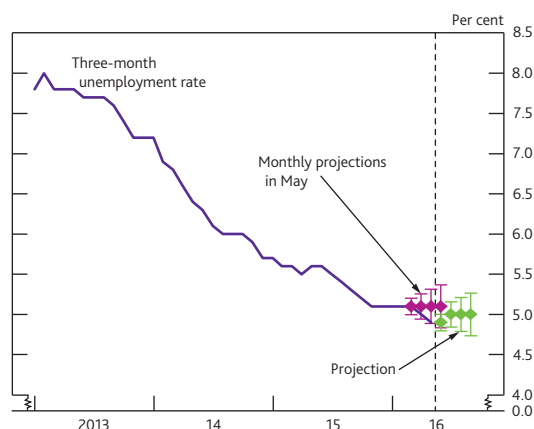
Slack in the labour market — the scope for total hours worked to rise before it puts upward pressure on pay — is also projected to widen in the near term as average hours fall and unemployment rises (Section 3.1). As labour market slack increases, measures of labour market tightness such as recruitment difficulties would be expected to ease. Recruitment difficulties reported by contacts of the Bank's Agents had already started to abate over 2016 H1 (**Chart 3.7**), probably reflecting an easing in firms' recruitment intentions as well as a reduction in skills shortages as a result of staff training and process redesign within firms.

Overall, the MPC judges that the margin of spare capacity in the economy is likely to widen in the near term. That increased slack in the economy will weigh on wage growth and domestic inflationary pressure (Section 4).

(1) For more details, see page 20 of the February Report; www.bankofengland.co.uk/publications/Documents/inflationreport/2016/feb.pdf.

Chart 3.5 Unemployment is expected to be around 5% in the near term

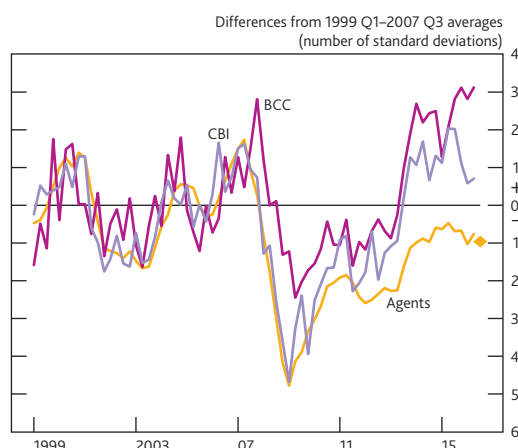
Unemployment rate and Bank staff's near-term projection^(a)



(a) The magenta diamonds show Bank staff's central projections for the headline unemployment rate for March, April, May and June 2016, at the time of the May Report. The green diamonds show the current staff projections for the headline unemployment rate for June, July, August and September 2016. The bands on either side of the diamonds show uncertainty around those projections based on one root mean squared error of past Bank staff forecasts for the three-month LFS unemployment rate.

Chart 3.6 Companies' capacity pressures have eased on average

Survey indicators of capacity utilisation^(a)



Sources: Bank of England, BCC, CBI, CBI/PwC, ONS and Bank calculations.

(a) Measures are produced by weighting together measures from the Bank's Agents (manufacturing and services), the BCC (non-services and services) and the CBI (manufacturing, financial services, business/consumer/professional services and distributive trades) using shares in nominal value added. The BCC data are non seasonally adjusted. The diamond for Q3 shows data for July.

3.3 Labour supply

The extent to which output can recover further ahead will, in part, be determined by developments in labour supply. Overall, the outlook for labour supply growth is judged to be broadly similar to that at the time of the May Report.

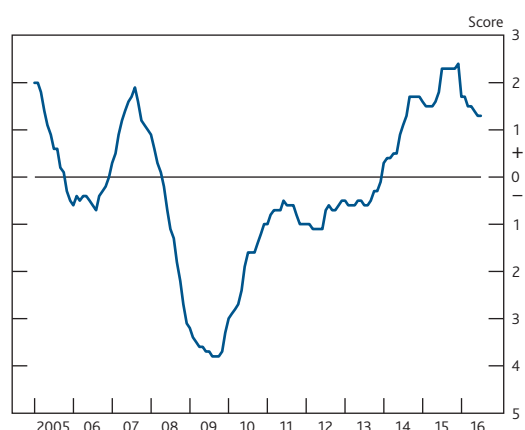
Growth in labour supply derives mainly from population growth. Since the May Report, the Labour Force Survey data have been revised to incorporate updated official population estimates. These revisions had been anticipated and already incorporated into the MPC's projections and so contain little news. Population growth is estimated to have been 0.7% in the four quarters to 2016 Q1, broadly in line with its pre-crisis average rate.

In the MPC's projections, population growth evolves in line with the ONS's projection made in October 2015. Under those projections, population growth slows over the next three years, primarily due to a fall back in net migration. The prospects for net migration at present are particularly uncertain, and will depend on a number of factors, including the United Kingdom's relative economic performance and also UK government policy in light of the referendum. As discussed in the box on pages 30–31 of the May 2015 Report, while net migration will contribute to labour supply, it will also contribute to domestic demand, and so any implications for inflationary pressure of a different path are likely to be relatively small.

Another factor affecting potential labour supply growth is the composition of unemployment: protracted periods of unemployment typically make it more difficult for the unemployed to find work, possibly because their skills become less relevant to employers. The proportion of the workforce in long-term unemployment has fallen in recent years, towards its pre-crisis average (Chart 3.8). There is a risk that the projected rise in aggregate unemployment (Section 3.1) is associated with an increase in the long-term unemployment rate over time, perhaps if there is a significant shift in the composition of jobs. That would be likely to weigh on labour supply and reduce somewhat the downward pressure on wage growth from unemployment.

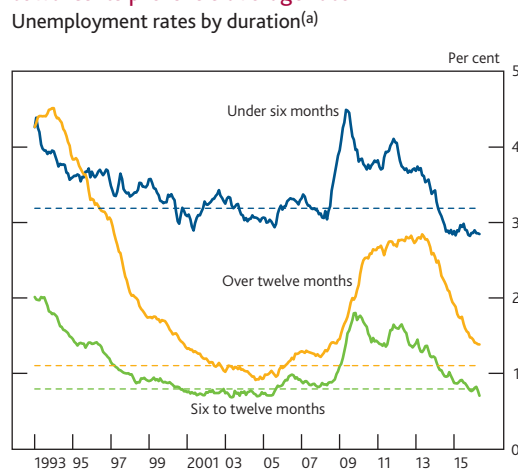
While average hours worked are likely to fall in the near term (Section 3.1), there is a risk that the projected slowing in real income growth (Section 2) could lead to an increase in the desired hours of those in work and in the extent of participation across the population. Desired hours of work and participation tend to increase in response to weak real wage growth as households attempt to offset the impact on their income. For example, a greater proportion of those working part-time may seek full-time work. This was the case during the financial crisis and, although the number of part-time workers who could not find full-time work has fallen in recent

Chart 3.7 Companies' recruitment difficulties have eased
Agents' scores on recruitment difficulties^(a)



(a) Observations on a scale of -5 to +5, with positive scores indicating greater recruitment difficulties in the most recent three months compared with a year earlier.

Chart 3.8 Long-term unemployment has been falling towards its pre-crisis average rate
Unemployment rates by duration^(a)



Sources: Labour Force Survey and Bank calculations.

(a) The number of people unemployed in each duration category, divided by the economically active population. Dashed lines are averages from 2002 to 2007.

Chart 3.9 The number of part-time workers seeking full-time work remains elevated
Part-time workers who could not find full-time work^(a)



Source: Labour Force Survey.

(a) Number of people reporting to the LFS that they are working part-time because they could not find a full-time job, as a percentage of LFS total employment. Rolling three-month measure. First data point is May 1992.

years, it remains higher than prior to the crisis (**Chart 3.9**). Were desired average hours and participation to increase, they would provide support to labour supply (Section 5).

3.4 Productivity

Productivity fell sharply during the financial crisis, and it has grown at a persistently weak rate since then. Four-quarter growth in hourly productivity is expected to have been 0.4% in 2016 Q2 (**Chart 3.10**), compared to its pre-crisis average rate of 2.1%. There is significant uncertainty around the path for productivity; it will be sensitive to the eventual trading arrangements between the United Kingdom and its economic partners, to the transition to those new arrangements and to companies' uncertainty about those arrangements (Section 5). The box on page 29 sets out some of the channels through which changes in the United Kingdom's trading arrangements could affect long-term potential supply, and productivity in particular.

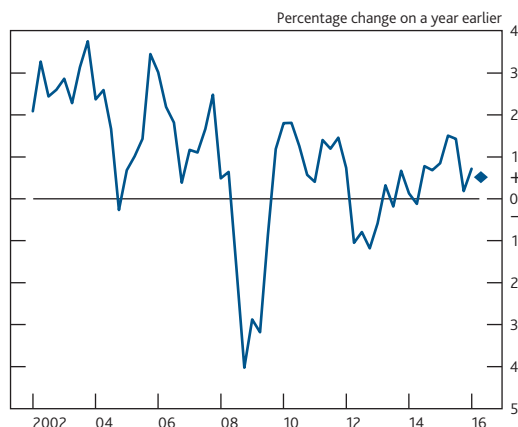
In the near term, measured productivity growth is projected to slow, as companies take time to adjust their resources in response to the weaker outlook for demand (Section 3.1). The extent to which productivity can recover will depend in part on underlying potential productivity growth. It is difficult to judge what the implications of the referendum may be for the outlook for potential productivity growth, but a number of factors are likely to weigh on it.

Growth in productivity can be decomposed into changes in capital per hour worked — the equipment and resources that are available to produce output — and growth in total factor productivity (TFP), the efficiency with which companies combine their capital and labour inputs to produce output. Elevated uncertainty about the United Kingdom's future trading arrangements and reduced confidence about the outlook for demand are likely to drag on companies' investment (Section 2), impeding expansion in the capital stock. Heightened uncertainty may also weigh on companies' intangible investment in skills and innovation and so on TFP growth. It is also possible that, in some companies, effort could be diverted away from producing output towards planning for different possible trading arrangements. Further, there may need to be some reallocation of resources in response both to the fall in the exchange rate and, as discussed in the box on page 29, to the changing composition of demand for UK goods and services as the United Kingdom changes its trading arrangements. That too could weigh on TFP growth, with firms taking time to adjust production to meet the new pattern of demand or being less able to specialise in certain sectors.

Overall, measured productivity growth is projected to slow in the near term as output growth slows. Looking through that volatility, underlying potential productivity growth is

Chart 3.10 Productivity growth has been subdued in recent years

Hourly labour productivity^(a)



(a) GDP is based on the backcast for the final estimate of GDP. The diamond shows Bank staff's forecast for 2016 Q2.

projected to be somewhat softer than anticipated at the time of the *May Report* due to the effects of uncertainty on growth in the capital stock and other resources used to produce output, and in response to any gradual reallocation of resources. The outlook for productivity growth is, however, highly uncertain and there are substantial risks in both directions (Section 5).

Table 3.B Monitoring the MPC's key judgements

Developments anticipated in May	Developments now anticipated
Unemployment Headline LFS unemployment rate to reach 5% by end-2016.	Revised up slightly Unemployment rate fell to 4.9% in May, and is expected to rise, reaching just over 5% by 2017 Q1.
Participation Labour market participation rate to remain stable at around 63½%.	Broadly unchanged Labour market participation rate to remain stable at around 63½%.
Average hours Average hours to fall by ¾% during 2016 Q2–Q4.	Broadly unchanged Average hours to fall by ¾% in the year to 2017 Q1.
Productivity Quarterly hourly labour productivity to grow at an average pace of around ½%.	Revised down Quarterly hourly labour productivity growth of around ¼%.

Factors affecting the prospects for long-term supply following the EU referendum

The long-term impact of the vote to leave the European Union on the competitiveness of the UK economy and its supply potential is highly uncertain, and will be sensitive to the United Kingdom's eventual trading arrangements with its economic partners. This box sets out some of the factors that might affect the long-term level of UK potential supply. The MPC will continue to assess the prospects for potential supply as the likely trading arrangements become clearer.

As part of the European Union, the United Kingdom has been part of a single market in which there is free movement of goods, capital and labour, and reduced barriers to trade in services. Following the vote to leave the European Union, there is considerable uncertainty over the eventual trading and investment arrangements between the United Kingdom and its economic partners, both in the European Union and elsewhere, as well as over how quickly these are put in place.

Those arrangements, such as the extent of tariffs and non-tariff barriers to trade, will influence the United Kingdom's trade and capital flows. A number of studies suggest that the degree of openness of an economy to trade and capital flows is an important determinant of income and potential supply.⁽¹⁾ In particular, openness can influence the extent of capital accumulation and labour supply, and how efficiently capital and labour are combined to produce output, known as total factor productivity (TFP). In part, TFP reflects the degree of intangible investment in skills and innovation.

Evidence suggests that one way in which openness matters for productivity is through foreign direct investment (FDI). FDI has been shown to lead to the adoption of new technologies and processes, boosting domestic firms' productivity.⁽²⁾ Reduced openness could, therefore, restrict these opportunities. Domestic firms may be less able to learn from ideas and practices among foreign competitors or in foreign firms in their supply chain. There could be less movement of workers between foreign and domestic firms, and therefore less acquired knowledge passed on between firms. Any such effects on productivity could, however, be limited if firms are able to maintain trading relationships built up over time.

A reduction in the size of the potential market available to firms could also hamper the ability of firms to specialise, making it more difficult for them to exploit the United Kingdom's areas of comparative advantage and to achieve economies of scale. And reduced openness may lower the degree of competition and, therefore, aggregate TFP: many studies find that competition leads more productive firms to expand and less productive firms to exit markets, raising aggregate productivity.⁽³⁾

In addition, there is evidence that reductions in openness to capital flows may make it harder for some potentially productive investment projects to get funding and can lead to an increase in the cost of capital, as investors' portfolios are less able to be diversified across a wide range of assets.⁽⁴⁾ This could reduce investment in the physical capital stock and lead to a less efficient allocation of capital.

Openness may also affect the contribution of the labour force to the supply potential of the economy. In part, the size of the labour force will be affected by the degree of migration, the long-term outlook for which is uncertain. That, in turn, will depend on a number of factors such as UK government policy in light of the referendum. In addition to the size of the labour force, the degree of labour flexibility can affect how efficiently firms can match vacancies with those workers that have the desired skills.

Finally, the composition of demand for UK output may be affected by changes in the trading arrangements between the United Kingdom and its economic partners, necessitating a reallocation of resources. If such a shift were to take place from sectors with a high level of productivity to sectors with a low level of productivity, or require retraining of workers or investment in new capital, that would exert a drag on aggregate productivity growth for as long as that shift occurs.

Overall, there are a number of channels through which a less open trading arrangement with the European Union may lead to some reduction in the long-run level of potential output in the United Kingdom. The extent of any such drag, however, will depend on the precise arrangements that are eventually put in place. Those arrangements, and any effects on potential supply that result, are likely to take some time to become clear. There is also substantial uncertainty over how companies will react in anticipation of any changes in trading arrangements (Section 5).

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- (1) See, for example, Feyrer, J (2009), 'Distance, trade, and income — the 1967 to 1975 closing of the Suez Canal as a natural experiment', *Trade and income: exploiting time series in geography*, and Kehoe, T J and Ruhl, K (2007), 'Recent great depressions: aggregate growth in New Zealand and Switzerland', in Kehoe, T J and Prescott, E C (eds), *Great Depressions of the Twentieth Century*, Federal Reserve Bank of Minneapolis, pages 335–72. For a detailed discussion of the empirical literature on productivity and dynamism in the UK economy, see Section 2 of 'EU membership and the Bank of England', www.bankofengland.co.uk/publications/Documents/speeches/2015/euboe211015.pdf.
- (2) See Haskel, J E, Pereira, S C and Slaughter, M J (2007), 'Does inward foreign direct investment boost the productivity of domestic firms?', *The Review of Economics and Statistics*, Vol. 89(3), pages 482–96, and the discussion on page 37 of 'EU membership and the Bank of England', *ibid*, which showed that a high proportion of firms in the United Kingdom reported that FDI brought new technology into the country.
- (3) See, for instance, Bloom, N, Draca, M and Van Reenen, J (2011), 'Trade induced technical change? The impact of Chinese imports on innovation, IT and productivity', *NBER Working Paper No. 16717*.
- (4) See Forbes, K J (2007), 'The microeconomic evidence on capital controls: no free lunch', in Edwards, S (ed), *Capital controls and capital flows in emerging economies: policies, practices and consequences*, University of Chicago Press.

4 Costs and prices

The rise in uncertainty and financial market moves associated with the vote in June to leave the European Union are likely to have contrasting implications for external and domestic cost pressures. The fall in the sterling ERI is projected to push up imported costs significantly. In contrast, the outlook for domestic cost growth is a little weaker, as a projected widening in the margin of spare capacity weighs on wage growth and companies' pricing decisions. Overall, the near-term inflation outlook is higher than in the *May Report*.

Table 4.A Monitoring the MPC's key judgements

Developments anticipated in May	Developments now anticipated
Household energy prices	Revised up
- Domestic gas prices to fall by just over 10% in 2016 H2. - Domestic electricity prices to remain flat.	Domestic gas and electricity prices are unchanged in 2016.
Commodity prices	Higher than expected
Commodity prices to evolve in line with the conditioning assumptions.	US dollar oil prices are around 1½% higher.
Import prices	Revised up significantly
Non-fuel import prices to rise by almost 1% in the year to 2016 Q4.	Non-fuel import prices expected to rise by 6% in the year to 2017 Q1, on account of recent falls in sterling.
Earnings growth	Revised down slightly
Four-quarter AWE growth to pick up to 3% by the end of the year.	Four-quarter AWE growth around 2¾% at the turn of the year.
Unit labour costs	Revised down slightly
Four-quarter growth in whole-economy unit labour costs to average 2½% in 2016 H2.	Weak productivity growth means that four-quarter growth in whole-economy unit labour costs reaches 2¼% by the turn of the year.
Inflation expectations	Broadly unchanged
Indicators of inflation expectations continue to be broadly consistent with the 2% target.	Household and financial market measures of near-term inflation expectations have increased a little, while longer-term measures have fallen modestly. On balance, measures are broadly consistent with the 2% target.

4.1 Consumer price developments and the near-term outlook

CPI inflation was 0.5% in June (**Chart 4.1**). As inflation remains more than 1 percentage point below the 2% target, the Governor has written a seventh consecutive open letter to the Chancellor, as required by the MPC's remit.⁽¹⁾ As that letter sets out, three quarters of the deviation of inflation from the target reflects drags from energy and food prices (**Chart 4.2**), driven in part by past falls in commodity prices. Core inflation — which excludes volatile components such as energy and food — has also been subdued, albeit less so than the headline measure. In part that has reflected falls in other goods prices, due to the appreciation in sterling between 2013 and 2015 (**Chart 4.3**). Services inflation has also been below its average rate, which is likely to have reflected a drag from muted labour cost growth, along with weak imported services price inflation.

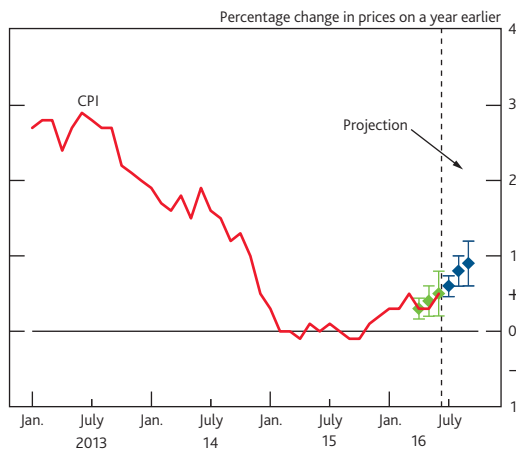
Headline inflation in June was in line with expectations in the *May Report* (**Chart 4.1**), although there was mixed news across components within that. Food price inflation was a little weaker than expected. In contrast, petrol prices were higher than expected, reflecting rises in sterling oil prices since the start of the year. Services inflation also picked up by more than anticipated.

Inflation is projected to rise over the second half of 2016, as the drag from past falls in petrol, food and other goods prices diminishes (**Chart 4.2**). In addition, greater external cost pressures have pushed up the outlook relative to May, with inflation projected to be close to 1% in September (**Chart 4.1**). The sterling ERI is around 10% lower than the conditioning path assumed in the *May Report*, and around 15% below its peak in November 2015 (Section 1). Those large falls in

(1) The letter can be found at www.bankofengland.co.uk/monetarypolicy/Documents/pdf/cpiletter040816.pdf.

Chart 4.1 CPI inflation is projected to rise further in the near term

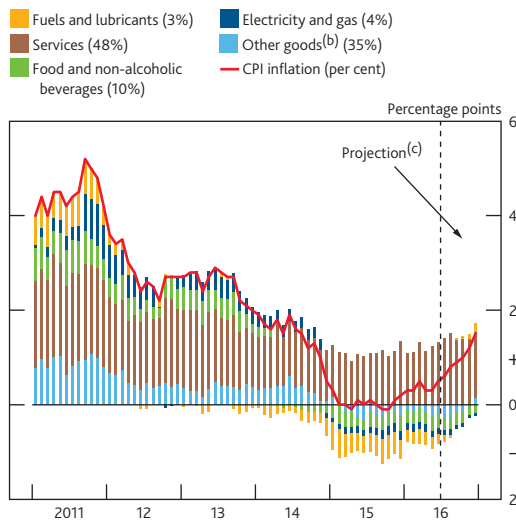
CPI inflation and Bank staff's near-term projection^(a)



(a) The green diamonds show Bank staff's central projection for CPI inflation in April, May and June 2016 at the time of the May *Inflation Report*. The blue diamonds show the current staff projection for July, August and September 2016. The bands on each side of the diamonds show the root mean squared error of the projections for CPI inflation one, two and three months ahead made since 2004.

Chart 4.2 The drag from food and petrol prices is likely to continue to fade over 2016 H2

Contributions to CPI inflation^(a)



Sources: Bloomberg, Department for Business, Energy and Industrial Strategy, ONS and Bank calculations.

- (a) Contributions to annual CPI inflation. Figures in parentheses are weights in the CPI basket in 2016.
 (b) Calculated as the difference between CPI inflation and the other contributions identified in the chart.
 (c) Bank staff projection. Electricity and gas prices projections assume prices stay broadly unchanged in 2016 H2. Fuels and lubricants estimates use Department for Business, Energy and Industrial Strategy petrol price data for July 2016 and are then based on the August 2016 sterling oil futures curve shown in **Chart 4.4**.

sterling will push up UK import prices, which will be passed through to consumer prices in coming years (Section 4.2).

Further ahead, the outlook for inflation will be sensitive to the extent to which those two countervailing forces — higher external cost pressures and muted domestic cost pressures — offset each other. In contrast to external pressures, the outlook for domestic cost pressures is a little weaker than in May. A greater degree of spare capacity within companies and in the labour market is projected to bear down on domestic costs and prices (Section 4.3). The outlook will also depend, however, on developments in companies' and households' inflation expectations, which are currently subdued, through their influence on wage and price-setting behaviour.

4.2 Imported cost pressures

The large fall in sterling will push up the prices of those goods and services consumed in the United Kingdom that are imported or produced using imported inputs. Previous episodes of large exchange rate moves have contributed to prolonged divergences of the inflation rate from the 2% target. For example, the depreciation of sterling by more than 25% in 2007–08 contributed to a period of significantly above-target inflation during 2008–13. And, as discussed in the open letter, the appreciation in sterling in 2013–15 has weighed on imported costs in recent years, contributing to the current low inflation rate (**Chart 4.3**).

The extent to which the fall in the exchange rate passes through to consumer prices is very uncertain and tends to vary across components: while the prices of highly tradable goods, such as food and petrol, tend to respond relatively quickly, the prices of other imports tend to react over a longer period of time.

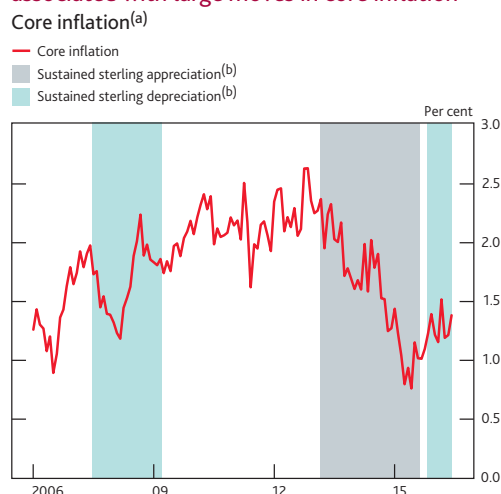
Energy and food prices

Sterling oil prices have risen by 12% since the May *Report* (**Chart 4.4**), reflecting the depreciation of sterling against the US dollar following the referendum (Section 1). Dollar oil prices are broadly unchanged, although they are around 70% higher than earlier in the year, following sharp falls in 2014–15 (**Chart 4.5**).

Despite the increase in the sterling oil price since January, retail petrol prices were around 5% lower in June than a year earlier (**Chart 4.6**), and so are continuing to exert a drag on the annual inflation rate, albeit a declining one. From September onwards, however, petrol prices are projected to make a positive contribution to annual headline inflation (**Chart 4.2**).

Sterling wholesale gas prices have risen by 14% in the past three months, having fallen by over 50% between early 2014 and May 2016 (**Chart 4.4**). Changes in wholesale prices tend to feed through to retail prices with a lag, as energy suppliers

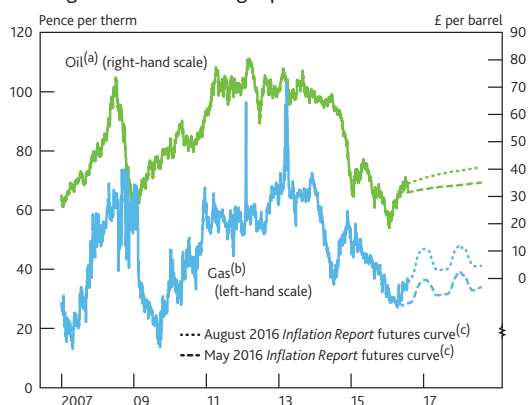
Chart 4.3 Large sterling moves have typically been associated with large moves in core inflation



(a) CPI inflation excluding energy, food, tobacco, alcohol and non-alcoholic beverages. Adjusted by Bank staff for changes in the rate of VAT, although there is uncertainty around the precise impact of those changes.

(b) The periods shown are July 2007 to March 2009; March 2013 to August 2015; and November 2015 to June 2016. Based on a move of at least 15% in the sterling ERI between the local minima and maxima.

Chart 4.4 Sterling oil and gas prices have risen since May
Sterling oil and wholesale gas prices



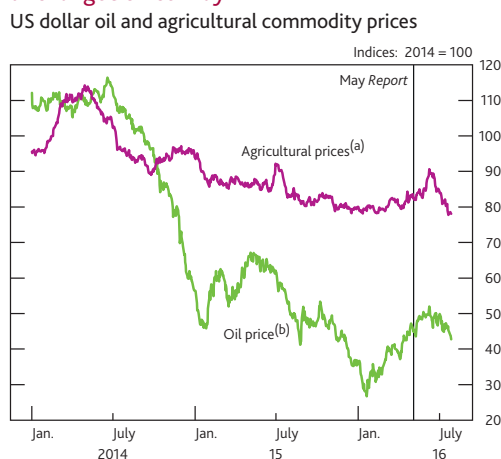
Sources: Bank of England, Bloomberg, Thomson Reuters Datastream and Bank calculations.

(a) US dollar Brent forward prices for delivery in 10–25 days' time converted into sterling.

(b) One-day forward price of UK natural gas.

(c) Averages during the fifteen working days to 27 July 2016 and 4 May 2016 respectively.

Chart 4.5 US dollar commodity prices are broadly unchanged since May
US dollar oil and agricultural commodity prices



Sources: Bloomberg, S&P indices, Thomson Reuters Datastream and Bank calculations.

(a) Total agricultural and livestock S&P GSCI US dollar commodity index.

(b) US dollar Brent forward prices for delivery in 10–25 days' time.

agree contracts for future wholesale gas supplies some time in advance. While in the *May Report* these past falls were projected to continue to feed through to lower retail prices in the near term, Bank staff now anticipate no further cuts over the next year (**Table 4.A**); broadly consistent with reports from the Bank's Agents.

Consumer food prices fell further in 2016 Q2, and are 7% lower than their peak in 2014. In part that has reflected past sterling appreciation and lower US dollar agricultural commodity prices, which have fallen by a further 3% since the *May Report* (**Chart 4.5**). An intensification in competition among food retailers is also likely to have borne down on prices.

Set against that, the recent significant depreciation in sterling, including by 9% against the euro since the referendum (Section 1), is likely to push up food costs. The prices of food-related imports are closely linked to the euro exchange rate, due to close trade links and competition. The degree to which these higher costs are passed through will depend on the extent to which continued intense competition leads retailers to absorb some of the increase in costs into their margins.

Overall, while the fall in food prices in Q2 will weigh on annual inflation over the next year, the drag from food prices is projected to diminish, reflecting higher imported costs.

Non-energy import prices

In response to the recent depreciation in sterling, overall UK non-energy import prices are projected to rise sharply over the next year. Higher input prices will then gradually feed through to consumer prices.

Following several years of import price falls, driven by the past appreciation in sterling and falls in foreign currency export prices, annual import price inflation is projected to reach 6% in 2017 Q1, up from 1.3% in 2016 Q1 (**Chart 4.7**). That profile for import prices is higher than projected in the *May Report*, reflecting a path for the sterling ERI that is around 10% lower than embodied in the May projections, which were conditioned on a vote to remain in the European Union.⁽¹⁾

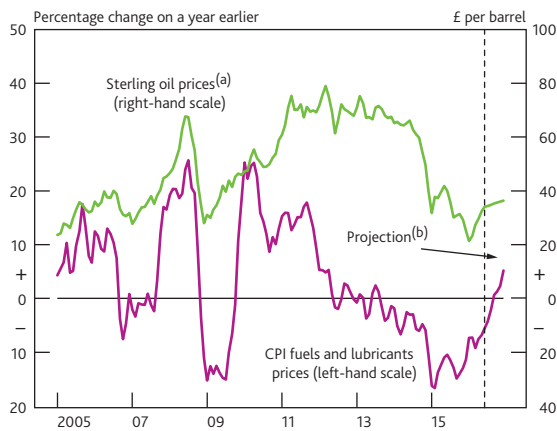
As discussed in previous *Reports*, Bank staff estimate that, on average, 60% of any change in sterling foreign export prices tends to be reflected in UK import prices, with pass-through mostly completed in a year.⁽²⁾ There is significant uncertainty around the path for import prices, however. The extent to which foreign exporters adjust their prices will depend on the

(1) For a discussion of the treatment of asset prices in the May projections, see the box on page 40 of the *May 2016 Report*;
www.bankofengland.co.uk/publications/Documents/inflationreport/2016/may.pdf.

(2) For further discussion see the box on pages 28–29 of the *November 2015 Report*;
www.bankofengland.co.uk/publications/Documents/inflationreport/2015/nov.pdf.

Chart 4.6 Petrol prices are likely to push up annual CPI inflation later this year

Sterling oil prices and CPI fuels prices

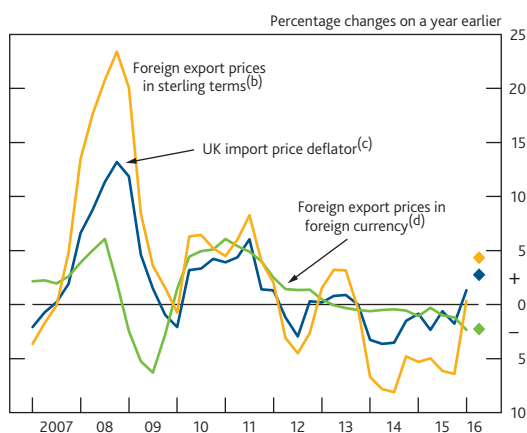


Sources: Bank of England, Bloomberg, Department for Business, Energy and Industrial Strategy, ONS, Thomson Reuters Datastream and Bank calculations.

- (a) Monthly averages of the oil price and the futures curve. The oil price is the Brent forward price for delivery in 10–25 days' time, converted into sterling. The futures curve is the average during the fifteen working days to 27 July 2016.
(b) Bank staff projections of the fuels and lubricants component of CPI inflation use Department for Business, Energy and Industrial Strategy petrol price data for July 2016 and are then based on the August 2016 sterling oil futures curve.

Chart 4.7 Import prices rose in Q1

UK import and foreign export prices excluding fuel^(a)



Sources: Bank of England, CEIC, Eurostat, ONS, Thomson Reuters Datastream and Bank calculations.

- (a) The diamonds show Bank staff's projections for 2016 Q2.
(b) Domestic currency non-oil export prices as defined in footnote (d), divided by the sterling effective exchange rate.
(c) UK goods and services import deflator excluding fuels and the impact of MTIC fraud. The ONS has identified an error in the data for April and May 2016. Bank staff's projection looks through these data.
(d) Domestic currency non-oil export prices of goods and services of 51 countries weighted according to their shares in UK imports. The sample does not include any major oil exporters.

factors driving the change in the exchange rate and the demand backdrop: for example, a weaker domestic demand environment could lead to reduced pass-through to higher import prices as companies exporting to the United Kingdom seek to maintain their market share.⁽¹⁾ It is also possible that the relatively large scale of the recent move in the exchange rate prompts exporters to pass through more of the depreciation than they would on average.

Developments in non-energy import prices are passed through the supply chain to consumer prices, generally with a lag, as domestic companies adjust their margins and prices. The degree of pass-through to consumer prices is uncertain and will depend on factors such as the import content of consumption and how domestic economic conditions affect businesses' pricing decisions. In addition, the speed of pass-through may be influenced by the extent to which companies have entered into forward contracts to hedge against exchange rate movements.

As discussed in the November 2015 *Report*, Bank staff estimate that, on average, all of the change in import prices tends to be reflected in the CPI, with most of that pass-through occurring over three years. There is so far little evidence to suggest that the recent depreciation will be passed through differently: according to the Bank's Agents, for example, there was little reported change in hedging activity in the run-up to the referendum, suggesting that the speed of pass-through to consumer prices will be similar to that seen in previous episodes. Having dragged on CPI inflation in recent years, import prices are now projected to push up inflation from the autumn.

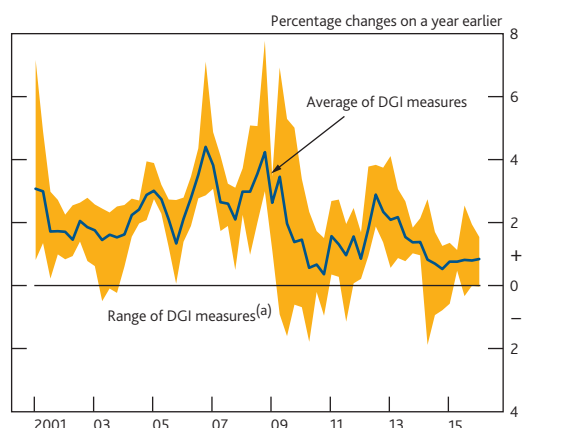
4.3 Domestic cost pressures

In addition to imported cost pressures, the outlook for inflation will also be determined by the evolution of domestic costs. Domestically generated inflation (DGI) is not directly observable, but a range of indicators suggest that DGI is currently some way below its historical average rate (Chart 4.8).

The impact of falls in sterling on inflation, and the projected weakness in demand, will have countervailing effects on domestic cost pressures. On the one hand, the associated widening in the margin of spare capacity (Section 3) is likely to weigh on costs and prices. On the other hand, a period of rising import prices could lead companies to seek to restore their profit margins and households to seek higher wages, which would place upward pressure on consumer prices.

(1) For further discussion of the factors affecting exchange rate pass-through see Forbes, K, Hjortsoe, I and Nenova, T (2015), 'The shocks matter: improving our estimates of exchange rate pass-through', *External MPC Unit Discussion Paper No. 43*; www.bankofengland.co.uk/monetarypolicy/Documents/externalmpc/extmpcpaper0043.pdf.

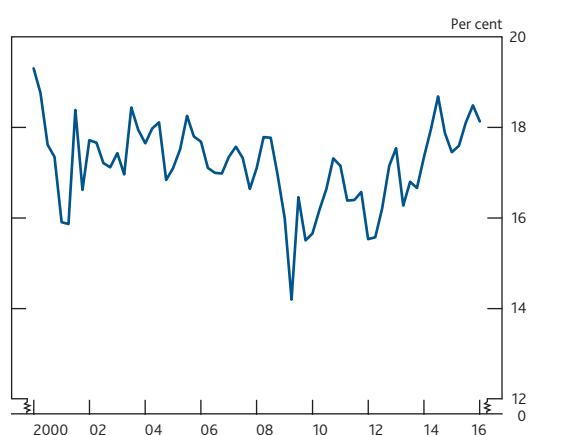
Chart 4.8 Measures of DGI remain subdued
Measures of domestically generated inflation (DGI)



(a) Includes: whole-economy unit labour costs (as defined in footnote (a) of Chart 4.11); private sector AWE total pay divided by private sector productivity, based on the backcast of the final estimate of GDP; the GDP deflator; the GVA deflator excluding government; and the services producer prices index.

Chart 4.9 Companies' profit margins have recovered in recent years

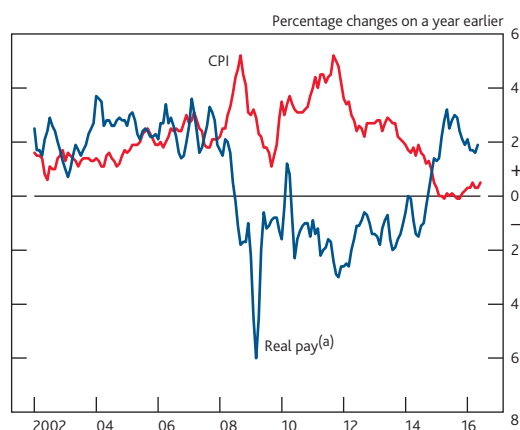
Private non-financial corporate profit share (excluding the oil sector)(a)



(a) Gross trading profits of PNFCs (excluding continental shelf companies) less the alignment adjustment divided by nominal gross value added at factor cost.

Chart 4.10 Real wage growth has been supported by subdued inflation

Real pay and consumer prices



(a) Whole-economy average weekly earnings excluding arrears of pay, deflated by CPI. The last observation is May 2016.

Developments in inflation expectations could also influence these price and wage-setting decisions.

Companies' margins

Having fallen during the financial crisis, companies' margins have recovered in recent years (Chart 4.9). In the near term, margins are likely to be squeezed as the rise in imported price pressures pushes up companies' input costs. Over time, companies are likely to seek to restore their margins by pushing down domestic costs, such as wages, or by passing higher import costs on to consumers in the form of higher prices.

The way in which companies respond to higher import costs is likely to be influenced by the demand outlook. The projected slowing in demand growth is likely to be associated with greater spare capacity (Section 3), which is likely to weigh on domestic costs, such as wage growth. That will reduce somewhat the extent to which companies seek to restore their margins by increasing their output prices.

Wages and labour costs

Companies' wage bills tend to account for the majority of their domestic cost of producing output. In particular, the average labour cost of producing a unit of output — the unit labour cost — is likely to be a significant driver of pricing pressure.

Wage growth has been weak since the financial crisis. That has predominantly reflected subdued productivity growth. Elevated unemployment is also likely to have played a role, although that effect will have diminished as unemployment has fallen back (Section 3). In addition, some contacts of the Bank's Agents report that the low level of inflation has recently weighed on nominal wage growth: the boost to real wages (Chart 4.10) and associated increase in households' purchasing power has reduced some of the pressure on companies to increase nominal pay growth.

Whole-economy average weekly earnings (AWE) increased by 2.3% in the three months to May, compared with the same period a year ago (Table 4.B). Although growth remains below its pre-crisis average, it was somewhat stronger than had been projected in the May Report. Shorter-term measures have pointed to some further momentum in pay growth: annualised whole-economy regular pay growth, which excludes bonuses, is estimated to have risen by 3% in the three months to May, compared with the previous three months.

While that momentum will continue to influence the annual rate of wage growth in the near term, the weaker outlook for demand (Section 2) is likely to be associated with an easing in capacity pressures within companies and greater slack in the labour market (Section 3), which are likely to reduce pay

Table 4.B Wage growth has picked up in recent years but still remains below average

Indicators of annual wage growth

Per cent	Averages				2016	
	2002–07	2010–12	2014	2015	Q1	Q2
(1) Total AWE ^(a)	4.2	2.0	1.2	2.4	2.0	2.3
(2) AWE regular pay ^{(a)(b)}	3.9	1.8	1.3	2.4	2.2	2.2
(1)–(2) Bonus contribution ^{(a)(c)}	0.3	0.2	0.0	0.0	-0.2	0.1
Pay settlements ^(d)	3.2	1.7	2.0	2.1	2.1	2.2
Survey indicators of wage growth						
CBI ^(e)	n.a.	1.6	2.0	2.3	2.3	2.1
REC ^(f)	56.7	52.4	63.1	61.9	58.9	58.0
Agents ^(g)	2.4	1.3	1.9	2.0	1.9	2.0
CIPD ^(h)	n.a.	1.2	2.0	1.8	1.7	n.a.

Sources: Bank of England, BCC, CBI, Chartered Institute of Personnel and Development (CIPD), Incomes Data Services, KPMG/REC/Markit, the Labour Research Department, ONS, XperTHR and Bank calculations.

- (a) Figures for 2016 Q2 are data for the three months to May.
 (b) Whole-economy total pay excluding bonuses and arrears of pay.
 (c) Percentage points. The bonus contribution does not always equal the difference between total AWE growth and AWE regular pay growth due to rounding.
 (d) Average over the past twelve months, based on monthly data.
 (e) Measures of expected wages for the year ahead. Produced by weighting together balances for manufacturing, distributive trades, business/consumer/professional services and financial services using employee job shares.
 (f) Produced by weighting together survey indices for the pay of permanent and temporary placements using employee job shares; quarterly averages. A reading above 50 indicates growth on the previous month and those below 50 indicate a decrease.
 (g) End-quarter observation for manufacturing and services weighted together using employee job shares. The scores refer to companies' labour costs over the past three months compared with the same period a year earlier. Scores of -5 to 5 represent rapidly falling and rapidly rising respectively, with zero representing no change.
 (h) Pay increase intentions excluding bonuses over the coming year. Data only available since 2012.

pressures over time. There could be some upward pressure on wages from higher costs of imported goods and services, if employees seek greater pay rises to maintain growth in their purchasing power, and if households' inflation expectations rise beyond past averages. Currently, however, measures of households' inflation expectations remain subdued relative to average.

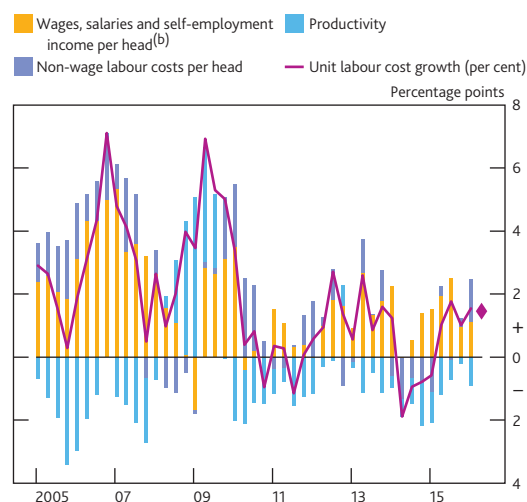
The National Living Wage, which came into effect in April, is likely to have a limited effect on overall wage growth. The impact may be greater for sectors with a large share of employees receiving the minimum wage, such as hospitality and retail. Reports from the Bank's Agents, however, suggest that companies are seeking to limit the impact on overall costs, for example by reducing other aspects of pay, such as overtime payments, or by investing to increase productivity.

The impact of wage pressures on companies' costs will depend on how wages evolve relative to productivity — unit labour cost growth. Whole-economy unit labour costs, based on National Accounts data, rose by 1.5% in the year to Q1 (Chart 4.11). That was much stronger than the 0.7% expected in the *May Report*, on account of a pickup in non-wage costs, which tend to be volatile from quarter to quarter.

Overall, the outlook for four-quarter wage growth over the rest of the year is a little weaker than in May (Table 4.A), and it is projected to remain subdued in 2017 (Section 5). While productivity growth is likely to slow in the second half of the year (Section 3), that is likely to feed through to wage growth more gradually. Reflecting the more sluggish adjustment in wage growth, companies' unit labour cost growth is projected to rise over the next year, before falling back in 2017 (Section 5).

Chart 4.11 Unit labour cost growth rose in Q1 and is likely to have been broadly stable in Q2

Decomposition of four-quarter whole-economy unit labour cost growth^(a)



- (a) Whole-economy labour costs divided by GDP, based on the backcast of the final estimate of GDP. The diamond shows Bank staff's projection for 2016 Q2.
 (b) Self-employment income is calculated from mixed income, assuming that the share of employment income in that is the same as the share of employee compensation in nominal GDP less mixed income.

Inflation expectations

Inflation expectations can influence both price and wage-setting behaviour, which in turn determine the inflation outlook. Measures of inflation expectations are, on average, subdued relative to their pre-crisis averages (Table 4.C), in part reflecting the current low inflation environment. The MPC judges that inflation expectations are, on balance, well anchored and are likely to rise back towards their averages as inflation picks up. But there is a risk that inflation expectations either remain persistently weak, or that a period of above-target inflation, following the sharp depreciation in sterling since the referendum, is associated with medium-term inflation expectations rising beyond levels consistent with the 2% target.

It is too soon to judge the extent to which the referendum outcome, and the associated depreciation in sterling, has influenced households' inflation expectations as most survey measures available at the time of publication predate the referendum. Those measures that cover the period after the

Table 4.C Indicators of inflation expectations^(a)

Per cent	2000 (or start of series) to 2007 averages ^(b)	Averages since 2008	2013	2014	2015	2016		
						Q1	Q2	Q3 ^(c)
One year ahead inflation expectations								
Households^(d)								
Bank/GfK/TNS ^(e)	2.4	3.1	3.5	2.7	2.0	1.8	2.0	n.a.
Barclays Basix ^(f)	2.8	2.8	2.8	2.3	1.5	n.a.	1.7	n.a.
YouGov/Citigroup (Nov. 2005)	2.5	2.4	2.7	2.0	1.3	1.4	1.5	1.8
Companies (2008 Q2)^(g)	n.a.	0.5	0.4	0.6	0.4	0.3	0.5	n.a.
Financial markets (Oct. 2004)^(h)	2.6	2.7	3.0	2.8	2.5	2.4	2.6	3.0
Two to three year ahead expectations								
Households^(d)								
Bank/GfK/TNS (2009 Q1) ^(e)	n.a.	2.8	3.3	2.7	2.3	2.1	2.2	n.a.
Barclays Basix ^(f)	3.2	3.1	3.2	2.6	1.9	n.a.	2.2	n.a.
Professional forecasters (2006 Q2)⁽ⁱ⁾	2.0	2.1	2.2	2.1	2.1	2.0	2.1	2.1
Financial markets (Oct. 2004)^(j)	2.8	3.0	3.1	3.1	3.0	2.8	2.9	3.0
Five to ten year ahead expectations								
Households^(d)								
Bank/GfK/TNS (2009 Q1) ^(e)	n.a.	3.2	3.6	3.1	2.8	2.9	3.4	n.a.
Barclays Basix (2008 Q3) ^(f)	n.a.	3.7	3.8	3.6	3.1	n.a.	3.6	n.a.
YouGov/Citigroup (Nov. 2005)	3.5	3.2	3.5	2.9	2.7	2.8	2.7	2.4
Financial markets (Oct. 2004)^(k)	3.0	3.4	3.5	3.4	3.3	3.2	3.1	3.0
Memo: CPI inflation	1.6	2.4	2.6	1.5	0.0	0.4	0.4	n.a.

Sources: Bank of England, Barclays Capital, Bloomberg, CBI (all rights reserved), Citigroup, GfK, ONS, TNS, YouGov and Bank calculations.

(a) Data are non seasonally adjusted.

(b) Dates in parentheses indicate start date of the data series.

(c) Financial markets data are averages from 1 July to 27 July 2016. YouGov/Citigroup data are for July.

(d) The household surveys ask about expected changes in prices but do not reference a specific price index, and the measures are based on the median estimated price change.

(e) In 2016 Q1, the survey provider changed from GfK to TNS.

(f) No data available for 2016 Q1.

(g) CBI data for the manufacturing, business/consumer services and distribution sectors, weighted together using nominal shares in value added. Companies are asked about the expected percentage price change over the coming twelve months in the markets in which they compete.

(h) Instantaneous RPI inflation one year ahead implied from swaps.

(i) Bank's survey of external forecasters, inflation rate three years ahead.

(j) Instantaneous RPI inflation three years ahead implied from swaps.

(k) Five-year, five-year forward RPI inflation implied from swaps.

referendum suggest that shorter-term indicators have picked up, probably reflecting the expected impact of the fall in sterling. For example, according to the GfK/EC survey of households, the proportion of respondents expecting inflation to rise at a more rapid pace over the next year, compared with the past year, increased to 34% in July, from 12% in June. One year ahead expectations, according to the YouGov/Citigroup survey, picked up a little in July (**Table 4.C**). In contrast, expectations of inflation in five to ten years' time fell.

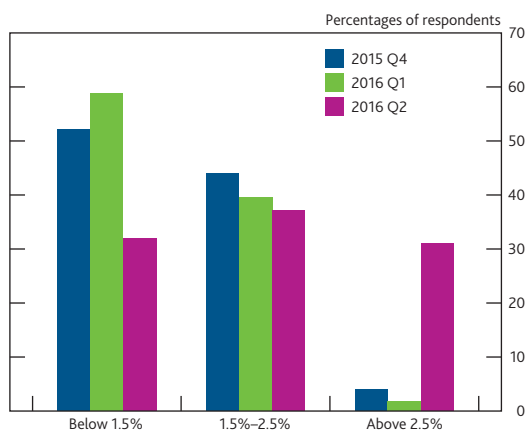
Companies' expectations of inflation two years ahead have also risen. According to the Deloitte survey of chief financial officers of large companies, the proportion of respondents expecting inflation to exceed 2.5% in two years time rose to a third in the survey taken after the referendum, from close to zero in the previous survey (**Chart 4.12**). In addition, the proportion of companies expecting inflation to be below 1.5% fell sharply, although only to around the same share of companies expecting inflation to be above 2.5%. Professional forecasters' expectations of inflation in three years' time were little changed on the quarter (**Table 4.C**).

Measures of inflation compensation in financial markets are an indicator of financial market participants' inflation expectations. Shorter-term inflation compensation measures have picked up a little since the referendum, consistent with an expectation that the depreciation in sterling will push up inflation in the near term. In contrast, inflation compensation five to ten years ahead fell a little in July (**Table 4.C**), as have longer-term compensation measures, such as those ten to twenty years ahead.

The MPC judges that inflation expectations remain well anchored, and it will continue to monitor further developments in inflation expectations closely as inflation continues to rise.

Chart 4.12 The proportion of companies expecting inflation to exceed the target in two years' time rose in Q2

Deloitte CFO Survey: distribution of two year ahead CPI inflation expectations^(a)



Source: Deloitte.

(a) The question asks respondents what they think CPI inflation will be in two years' time. Responses on the boundary of the range are included in the lower range, for example an inflation expectation of 1.5% is in the 'Below 1.5%' range. Data are non seasonally adjusted.

5 Prospects for inflation

The vote to leave the European Union is likely to have significant implications for the UK economic outlook. It will take some time for those implications to become clear and the projections in this *Report* assume that uncertainty around the United Kingdom's future trading arrangements weighs on the outlook for both demand and supply. There are already signs of a weaker outlook: some uncertainty indicators have risen further; property markets appear to be weakening; and survey indicators of activity have fallen. The sterling exchange rate has also fallen sharply. That will, by itself, provide support to exporters, but it will also raise import prices, weighing on households' real incomes and pushing up inflation. Overall, growth is projected to slow markedly in coming quarters, opening up a margin of spare capacity. The transition to new trading arrangements with the European Union, and companies' uncertainty about the impact of those, could weigh on productivity growth in coming years. Supply growth is judged likely to remain below past averages throughout the forecast period. That means a pickup in GDP growth to modest rates in the second half of the forecast period begins to close the margin of slack. There are counterbalancing forces on inflation throughout the forecast period, with a boost from higher import prices and a drag from the larger margin of spare capacity. The exchange rate effect will, however, fade over time. In light of the outlook for activity and inflation, the MPC has announced a package of policy stimulus measures to support the UK economy.

The MPC has assessed the likely implications of the vote to leave the European Union for demand, supply and inflation in light of the evidence available to date. The outlook for the UK economy has changed markedly since May. It now seems likely that demand growth will weaken significantly over coming quarters and that the path for supply growth will be below that assumed three months ago. Despite those downward revisions to supply, demand is projected to be sufficiently weak to raise unemployment and economic slack, constraining wage growth and putting downward pressure on domestic inflation. As a consequence, the MPC now faces a policy trade-off as the upward impetus from the fall in sterling is likely to push inflation somewhat above the 2% target in the second half of the forecast period. Under its remit, the MPC aims to support demand to reduce the variability of output, and by extension employment, and so ensure that the return of inflation to the target is sustainable. If a margin of slack were to remain once the temporary boost from higher import prices fades, inflation would subsequently be likely to fall back below the target. At its meeting ending 3 August, the MPC voted for a package of measures designed to provide additional support to growth and to achieve a sustainable return of inflation to the target. This package comprises: a 25 basis point cut in Bank Rate to 0.25%; a new Term Funding Scheme to reinforce the pass-through of the cut in Bank Rate;

Table 5.A Forecast summary^(a)

	Projections			
	2016	2017	2018	
GDP ^(b)	2.0 (2.0)	0.8 (2.3)	1.8 (2.3)	
<i>Excluding backcast</i>	1.8 (1.9)	0.8 (2.3)	1.8 (2.3)	
	2016 Q3	2017 Q3	2018 Q3	2019 Q3
CPI inflation ^(c)	0.8 (0.8)	1.9 (1.5)	2.4 (2.1)	2.4
LFS unemployment rate	5.0 (5.1)	5.4 (4.9)	5.6 (4.9)	5.3
Bank Rate ^(d)	0.3 (0.4)	0.1 (0.5)	0.1 (0.6)	0.2

- (a) Modal projections for GDP, CPI inflation and LFS unemployment. Figures in parentheses show the corresponding projections in the May 2016 *Inflation Report*. Projections were only available to 2019 Q2 in May.
- (b) Calendar-year growth in real GDP consistent with the modal projection for four-quarter growth in real GDP. The MPC's projections are based on its backcast for GDP.
- (c) Four-quarter inflation rate.
- (d) Per cent. The path for Bank Rate implied by forward market interest rates. The curves are based on overnight index swap rates.

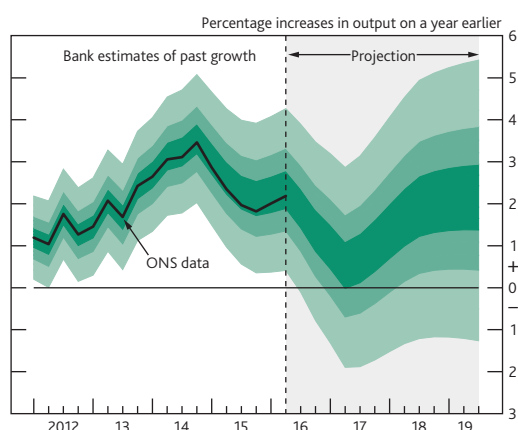
the purchase of up to £10 billion of UK corporate bonds; and an expansion of the asset purchase scheme for UK government bonds of £60 billion, taking the total stock of these asset purchases to £435 billion. The last three elements will be financed by the issuance of central bank reserves. That package is set out in more detail in a box on pages iii–viii. The factors behind that decision are set out in the Monetary Policy Summary on pages i–ii of this *Report*, and in more detail in the Minutes of the meeting.⁽¹⁾ The remainder of this section sets out the MPC's projections, as summarised in Table 5.A, and the risks around them, in more detail.

5.1 The MPC's central projection, key judgements and risks

The vote to leave the European Union has significant implications for the UK economic outlook. The eventual trading arrangements with its economic partners will depend on the outcome of negotiations with many countries. It will be some time before those arrangements, and their impact on the UK economy, become clear. There are significant uncertainties around the nature of those trading arrangements and the MPC has not assumed they take any particular form over the long run. Instead, the projections in this *Report* are conditioned on the average of a range of possible outcomes. As such, firms are assumed gradually to anticipate, and to adapt to, a somewhat less open trading environment for a number of years.

That uncertainty has been reflected in sharp rises in indicators of uncertainty in recent months. Greater uncertainty could weigh on spending and particularly on major spending commitments that are large, costly to reverse or have returns that accrue over time. This is likely, for example, to be one element behind the growing signs of weakness in property markets.

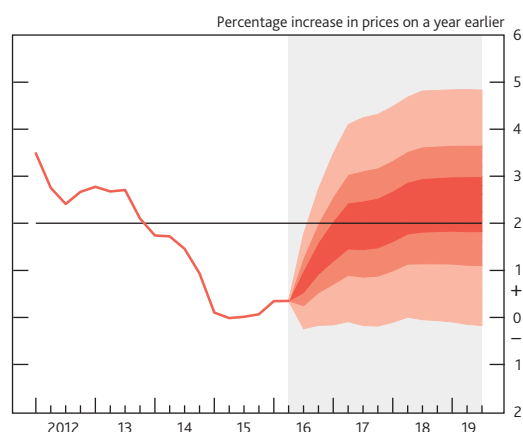
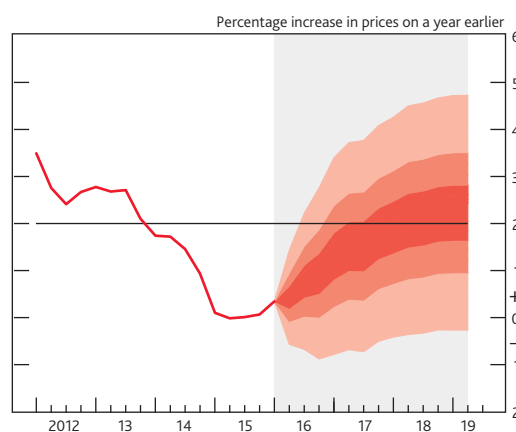
Asset markets have also been volatile in the wake of the referendum result. Most notably, sterling has fallen further, leaving it 15% below its November peak, and around 10% below the path assumed in the May projection.⁽²⁾ Equity prices fell in the days after 23 June, but have tended to recover subsequently. That recovery has been most marked for those companies operating in international markets who benefit from the lower exchange rate. Equity prices for domestically focused companies are 9% below their pre-referendum levels. Banks' equity prices have fallen by around 9% since 23 June, with domestically focused banks' prices down 24%. Bank debt funding costs have, however, been relatively stable, suggesting that any concerns about future profitability have not been compounded by concerns about resilience. Banks in the United Kingdom have strengthened their balance sheets over

Chart 5.1 GDP projection based on market interest rate expectations, other policy actions as announced

The fan chart depicts the probability of various outcomes for GDP growth. It has been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves reaches £435 billion and remains there throughout the forecast period; that the stock of purchased corporate bonds financed by the issuance of central bank reserves reaches £10 billion and remains there throughout the forecast period; and on the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves. To the left of the vertical dashed line, the distribution reflects the likelihood of revisions to the data over the past; to the right, it reflects uncertainty over the evolution of GDP growth in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that the mature estimate of GDP growth would lie within the darkest central band on only 30 of those occasions. The fan chart is constructed so that outcomes are also expected to lie within each pair of the lighter green areas on 30 occasions. In any particular quarter of the forecast period, GDP growth is therefore expected to lie somewhere within the fan on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions GDP growth can fall anywhere outside the green area of the fan chart. Over the forecast period, this has been depicted by the light grey background. See the box on page 39 of the November 2007 *Inflation Report* for a fuller description of the fan chart and what it represents.

(1) The Minutes are available at www.bankofengland.co.uk/publications/minutes/Documents/mpc/pdf/2016/aug.pdf.

(2) The May projection assumed the sterling ERI exchange rate was around 89.

Chart 5.2 CPI inflation projection based on market interest rate expectations, other policy actions as announced**Chart 5.3** CPI inflation projection in May based on market interest rate expectations and £375 billion purchased gilts

Charts 5.2 and 5.3 depict the probability of various outcomes for CPI inflation in the future. Chart 5.2 has been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves reaches £435 billion and remains there throughout the forecast period; that the stock of purchased corporate bonds financed by the issuance of central bank reserves reaches £10 billion and remains there throughout the forecast period; and on the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves. Chart 5.3 has been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation in any particular quarter would lie within the darkest central band on only 30 of those occasions. The fan charts are constructed so that outturns of inflation are also expected to lie within each pair of the lighter red areas on 30 occasions. In any particular quarter of the forecast period, inflation is therefore expected to lie somewhere within the fans on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions inflation can fall anywhere outside the red area of the fan chart. Over the forecast period, this has been depicted by the light grey background. See the box on pages 48–49 of the May 2002 *Inflation Report* for a fuller description of the fan chart and what it represents.

recent years such that the financial system has become significantly more resilient. Consistent with that, there have been few signs of a tightening in bank credit supply.

Table 5.B Conditioning path for Bank Rate implied by forward market interest rates^(a)

	2016		2017				2018				2019		
	Q3 ^(b)	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
August	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
May	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	

(a) The data are fifteen working day averages of one-day forward rates to 27 July 2016 and 4 May 2016 respectively. The curve is based on overnight index swap rates.

(b) August figure for 2016 Q3 is an average of realised overnight rates to 27 July 2016, and forward rates thereafter.

Yield curves have fallen in the United Kingdom and other advanced economies (Section 1). That probably in part reflects revisions to expectations for monetary policy in a range of countries but also increased demand for assets that are perceived as relatively safe. In the United Kingdom, in the run-up to the *August Report* market interest rates implied a cut in Bank Rate of 25 basis points in August, and further reductions by early 2017 (Table 5.B). The projections described in this section are conditioned on that path for Bank Rate and the policy package announced on 4 August.⁽¹⁾

There are limited data as yet for the post-referendum period. Survey data that are available, together with evidence from the Bank's Agents, suggest a slowing in activity growth and that some companies are beginning to adjust their investment and employment plans. For example, the Markit/CIPS survey of the private non-distribution sector, which typically provides one of the better signals about activity, would by itself suggest a contraction in output in Q3 (Section 2). Survey indicators have, however, sometimes overreacted to unexpected events. The Lloyds measure of business confidence, which recovered much of its post-referendum fall in its subsequent release,

(1) Unless otherwise stated, the projections shown in this section are conditioned on: Bank Rate following a path implied by market yields; the introduction of the Term Funding Scheme (TFS) financed by the issuance of central bank reserves; the stock of purchased gilts financed by the issuance of central bank reserves reaching £435 billion and remaining there throughout the forecast period; the stock of purchased corporate bonds financed by the issuance of central bank reserves reaching £10 billion and remaining there throughout the forecast period; the Recommendations of the Financial Policy Committee and the current regulatory plans of the Prudential Regulation Authority; the Government's tax and spending plans as set out in the March 2016 *Budget*; commodity prices following market paths; and the sterling exchange rate remains broadly flat. The main assumptions are set out in a table at www.bankofengland.co.uk/publications/Documents/inflationreport/2016/augca.pdf.

Table 5.C Indicative projections consistent with the MPC's modal projections^(a)

	Average 1998– 2007	Projections		
		2016	2017	2018
Household consumption ^(b)	3½	2½ (2½)	1 (2½)	¾ (2¼)
Business investment ^(c)	2½	-3¾ (2½)	-2 (7¼)	4¾ (7¾)
Housing investment ^(d)	3¾	1¼ (4)	-4¾ (5¼)	2½ (4¾)
Exports ^(e)	4½	2¾ (1½)	-½ (1¼)	¼ (1¾)
Imports ^(e)	6	1¼ (3)	-2½ (2¼)	-1¼ (2½)
Real post-tax household income ^(f)	3	2 (1½)	½ (1¾)	1¼ (2)
Employment ^(g)	1	½ (¾)	0 (¾)	¾ (¾)
Average weekly earnings ^(h)	4¼	2¾ (3)	3 (3¾)	3½ (4)

(a) These projections are produced by Bank staff for the MPC to be consistent with the MPC's modal projections for GDP growth, CPI inflation and unemployment. Figures show calendar-year growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the May 2016 Inflation Report.

(b) Chained-volume measure. Includes non-profit institutions serving households.

(c) Chained-volume measure.

(d) Chained-volume measure. Whole-economy measure. Includes new dwellings, improvements and spending on services associated with the sale and purchase of property.

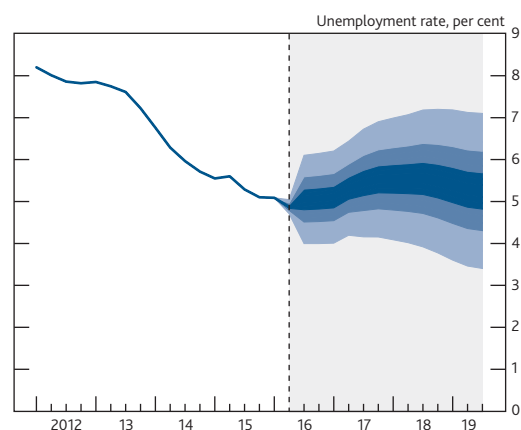
(e) Chained-volume measure. The historical data exclude the impact of missing trader intra-community (MTIC) fraud.

(f) Total available household resources deflated by the consumer expenditure deflator.

(g) Four-quarter growth rate in Q4.

(h) Four-quarter growth in Q4 in whole-economy total pay.

Chart 5.4 Unemployment projection based on market interest rate expectations, other policy actions as announced



The fan chart depicts the probability of various outcomes for LFS unemployment. It has been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves reaches £435 billion and remains there throughout the forecast period; that the stock of purchased corporate bonds financed by the issuance of central bank reserves reaches £10 billion and remains there throughout the forecast period; and on the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves. The coloured bands have the same interpretation as in Chart 5.2, and portray 90% of the probability distribution. The calibration of this fan chart takes account of the likely path dependency of the economy, where, for example, it is judged that shocks to unemployment in one quarter will continue to have some effect on unemployment in successive quarters. The fan begins in 2016 Q2, a quarter earlier than the fan for CPI inflation. That is because Q2 is a staff projection for the unemployment rate, based in part on data for April and May. The unemployment rate was 4.9% in the three months to May, and is projected to be 4.9% in Q2 as a whole. A significant proportion of this distribution lies below Bank staff's current estimate of the long-term equilibrium unemployment rate. There is therefore uncertainty about the precise calibration of this fan chart.

points to a more gradual slowing. On balance, these indicators suggest little growth in the second half of 2016 (Chart 5.1). There is a range of views among Committee members on the near-term outlook, with risks on both sides of that path. On balance, however, the risks to the near-term central projection are judged to lie to the downside.

Relative to the time of the May Report a number of factors are likely to weigh on activity. The outlook for activity will depend on: how companies react to a period of heightened uncertainty; the extent to which they begin to adjust their output, investment and workforces in anticipation of any changes in trading arrangements; how asset markets, including property markets, react; and the net impact of looser monetary policy and greater uncertainty on households' saving. Even absent any increase in precautionary saving, household spending will be affected by the squeeze in real incomes following the fall in sterling and any weakening in employment growth.

Uncertainty around the MPC's growth projection (Chart 5.1) is greater than usual. Overall, the MPC judges it likely that annual private domestic demand growth will slow over the coming year before recovering gradually further out, a weaker path than assumed in May. Business investment is projected to fall by around 5% in the second half of 2016 and to rise at a slower rate than expected in the May Report thereafter (Table 5.C). Businesses are projected to reduce employment growth such that unemployment rises to around 5½% (Chart 5.4). Housing investment is projected to fall, and house prices to decline a little over the next year (Table 5.D) before picking up in line with earnings further out. Households' real income is likely to be broadly flat over the next year as higher import prices offset modest rises in wages and salaries, and it is likely to grow only modestly further out given the weak prospects for supply growth. Reflecting that, consumption growth is projected to slow gradually over the next twelve months, before picking up again from 2018 (Table 5.C). The household saving ratio is projected to remain around its current level. The risks around the private domestic demand projection are set out in Key Judgement 1.

Net trade is projected to support growth over the forecast period, a stronger profile than in May. Growth in the rest of the world is projected to remain modest, with only limited spillovers from the UK referendum to other economies. Given relative demand weakness in the United Kingdom and the lower level of sterling, exports are judged likely to rise relative to imports over the forecast period, although both are weaker than in May (Table 5.C). The risks around those assumptions, and other influences on the UK current account, are set out in Key Judgement 3.

While the outlooks for demand and supply are closely linked, it is the extent to which demand weakens relative to supply that will determine inflationary pressure in the medium term

Table 5.D Monitoring risks to the Committee's key judgements

The Committee's projections are underpinned by four key judgements. Risks surround all of these, and the MPC will monitor a broad range of variables to understand the degree to which the risks are crystallising. The table below shows

Bank staff's indicative near-term projections that are consistent with the judgements in the MPC's central view evolving as expected.

Key judgement	Likely developments in 2016 Q3 to 2017 Q1 if judgements evolve as expected
1: a period of heightened uncertainty and weakness in property markets weighs on private domestic demand	• Business investment is projected to fall by around 1¼% a quarter, on average, reflecting the impact of post-referendum uncertainty. • A slowing in real income growth leads quarterly consumption growth to slow gradually to around ¼% in 2017 Q1. • Credit spreads to increase slightly. • Mortgage approvals for house purchase to be 56,000 a month, on average. • Quarterly growth in housing investment to average -1%. • The average of the Halifax and Nationwide price indices is expected to decline a little over the next year.
2: potential supply growth remains well below past average rates	• Quarterly growth in hourly productivity of around ¼%. • Participation rate to remain around 63½%. • Average hours to fall by ¾% in the year to 2017 Q1. • Unemployment starts to rise from its current trough, reaching just over 5% by 2017 Q1.
3: the fall in sterling leads to a narrowing in the current account deficit against a backdrop of modest global demand growth	• Quarterly euro-area growth to average around ¼%. • Annual euro-area HICP inflation to increase in the coming months as past falls in oil prices drop out of the annual calculation. • Quarterly US GDP growth to average a little above ½%. • Annual US PCE inflation to pick up in coming months, averaging a little below 1½%. • Indicators of activity consistent with four-quarter PPP-weighted emerging market economy growth of around 4¼%; within that, Chinese GDP growth to average around 6½%. • Net trade contributes positively to real GDP growth. • The current account deficit narrows to around 5% by early 2017.
4: domestic cost pressures remain soft but higher import prices take inflation back to the 2% target then somewhat above it	• Weak productivity growth means that four-quarter growth in whole-economy unit labour costs reaches 2¼% by the turn of the year. • Commodity prices and sterling ERI to evolve in line with the conditioning assumptions set out in www.bankofengland.co.uk/publications/Documents/inflationreport/2016/augca.pdf. • Domestic gas and electricity prices are unchanged in 2016. • Four-quarter AWE growth remains around 2¾% at the turn of the year. • Non-fuel import prices to rise by 6% in the year to 2017 Q1. • Indicators of inflation expectations continue to be broadly consistent with the 2% target.

and is therefore more relevant for monetary policy. The weakness in demand will, in itself, weigh on supply growth to some degree: in particular, the period of low investment will reduce growth in the capital stock and thus labour productivity. There could also be more direct implications for supply from the transition to new trading arrangements with the European Union as large-scale capital reallocations are usually associated initially with weaker productivity (see the box on page 29). Companies' uncertainty about the impact of those arrangements could also weigh on productivity growth. The MPC's central judgement is therefore that supply growth is likely to remain well below average rates throughout the forecast period. Overall, however, demand falls relative to supply so that unemployment and slack are projected to increase over the next year or so before falling back somewhat. Key Judgement 2 sets out the risks around supply.

Although domestic inflationary pressures are likely to remain weak over the forecast period, those are more than offset by upward pressure from external factors. The impact of past falls in food and energy prices will fall out of the annual inflation rate over coming months. More notably, the 15% fall in sterling since November 2015 by itself suggests close to a 10% rise in import prices over the next year or so. For some items, such as food and petrol, changes in import costs tend to feed through quickly to retail prices. For other items, pass-through tends to be more drawn out. In the central projection, the contribution of non-energy import prices adds around 0.6 percentage points to annual inflation in the second and third years of the forecast period, with that contribution likely to fall back in the subsequent year. The MPC's best collective judgement is that, conditional on the market path for interest rates and its package of additional stimulus measures, inflation is likely to return to the 2% target in late 2017 and then rise somewhat above it temporarily (**Chart 5.2**). The risks around that profile are set out in Key Judgement 4.

Key Judgement 1: a period of heightened uncertainty and weakness in property markets weighs on private domestic demand

The MPC judges it likely that private domestic demand growth will slow over the coming year, driven by declining housing and business investment and a slowdown in consumption growth. Private domestic demand growth recovers gradually further out as the drag from uncertainty fades and the substantial easing in monetary policy gains traction.

Uncertainty has risen sharply. For example, a measure based on indicators such as media references, surveys and the dispersion of forecasts (Section 2) has picked up since December 2015 and is now two standard deviations above its 25-year average, with economists' forecasts unusually dispersed. That elevated uncertainty reduces companies' appetite for investment and deters households from making some major purchases. In the central projection uncertainty remains elevated for the next few quarters before falling back slowly. There are risks around that path. A purely mechanical mapping, holding all else equal, suggests that a one standard deviation lower (or higher) path for uncertainty would be associated with four-quarter GDP growth over the following year or so being just over $\frac{1}{2}$ percentage point higher (or lower). In practice, the overall changes in the MPC's projections would also depend on the precise cause of the change in uncertainty.

One way in which a rise in uncertainty is likely to influence activity is through other variables such as asset prices. It seems likely that the signs of slowing in the housing and commercial real estate markets set out below in part reflect the recent rise in uncertainty. Given those interlinkages, an update of the MPC's forecasts that took account of both the observed increases in uncertainty and developments in property markets would risk double counting to some degree

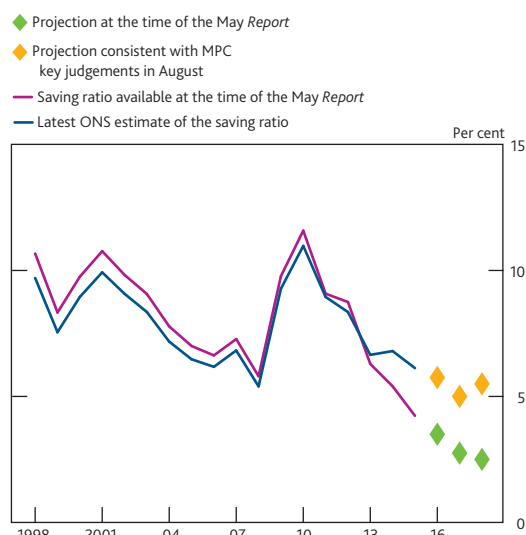
their overall impact. The MPC has therefore slightly reduced the combined effect of these two channels a little to take account of those common drivers. If they had not made that change, the central projection for GDP growth would be around $\frac{1}{2}$ percentage point lower over the first year of the forecast period. There are risks on both sides of that adjustment to the profile.

Commercial real estate activity fell significantly ahead of the referendum and prospects appear to have weakened further since. That weighs a little on activity directly. It will also weigh indirectly as weakness in transactions feeds through to investment in new buildings, and projected falls in prices reduce the collateral available for businesses to borrow against. The impact of each of these channels is relatively small in the central projection, but there is considerable uncertainty about the extent of the slowdown in this market.

The outlook for the housing market has been revised down markedly since the *May Report*. Some of that reflects a reassessment of prospects for housing transactions in the medium term, unconnected to developments since the referendum (Section 2). Most, however, reflects more recent signs of weakness including the RICS survey of chartered surveyors, which pointed to sharp falls in expectations of activity and prices immediately after the referendum. Heightened uncertainty around, or downward revisions to, expectations for income are likely to lead some prospective homebuyers to put off purchases. That affects activity directly, as will related falls in construction activity as house builders put projects on hold. Those factors also affect the outlook for house prices, which has been revised down. That is likely to weigh on consumption growth; it lowers the value of collateral available to borrowers and some homeowners may reduce spending if the value of their property falls.

Another key influence on household spending will be income growth. Real income growth had been picking up in recent years as nominal incomes continued to grow and the price of oil and other imported goods fell. Both those trends appear likely to reverse over the next year reflecting a sharp rise in import prices and slower supply growth. Household consumption growth is projected to slow gradually, broadly in line with income (**Table 5.C**). In other words, the central projection incorporates a broadly flat path for saving (**Chart 5.5**), with factors that tend to raise saving such as increased uncertainty balanced by monetary stimulus. It is possible that households will want to increase saving for precautionary reasons if, for example, they become more concerned about job loss or lower income growth in the future. Alternatively, households may be slower to adjust to a lower path for income, and so could reduce saving for a period in order to maintain spending growth. There is a range of views on the Committee about the outlook for saving and hence consumption.

Chart 5.5 Household saving ratio^(a)



Sources: ONS and Bank calculations.

(a) Calendar-year average. Percentage of total available household resources.

In the central projection, uncertainty weighs on business investment in the near term. Further out, some companies may reinstate delayed projects, supported by the falls in their borrowing costs and improved demand prospects associated with the MPC's stimulus package and, for some exporters, the lower exchange rate. Others are likely to scale back investment plans in the light of the weaker supply outlook, but could do that more slowly or more quickly than assumed.

Key Judgement 2: potential supply growth remains well below past average rates

A feature of the years following the financial crisis has been the weakness in potential productivity and supply growth more generally. In previous projections, potential productivity growth was projected to be rising gradually towards average rates, reflecting, for example, improved functioning of the financial system. In the August projection, however, potential productivity growth remains subdued. Weakness in supply limits the extent to which lower demand translates into higher unemployment and greater spare capacity: in the central projection the unemployment rate reaches 5½% and slack widens to just over 1% of GDP, despite the 2½% downward revision to cumulative GDP growth over the forecast period since the *May Report*. There are risks around those assumptions stemming from the responses of companies and households to demand prospects and their assessment of, and uncertainty about, the United Kingdom's future capacity needs.

Weakness in demand will, in itself, weigh on supply growth: in particular, the period of low investment will reduce growth in the capital stock and productivity. There could also be more direct implications for supply from the vote to leave the European Union (Section 3). First, whatever new arrangements are agreed upon may be anticipated to result in reduced openness overall, at least for a period. This is likely to have some negative effect on potential supply growth. Second, if companies are uncertain about the implications of those new arrangements for their future operating models, including staffing, that could weigh on investment, productivity and supply growth. For example, if UK companies delay entering new markets or foreign firms put off planned investment into the United Kingdom. Businesses may also postpone some research projects which would otherwise have improved their productivity over the forecast period. Third, a desire to reorient business models may require a reallocation of resources towards new sectors or markets, including possibly some reduction in specialisation in sectors in which the United Kingdom has previously had a particular comparative advantage: that may also weigh on productivity growth for a period. Overall, while the implications for productivity of the transition to new trading arrangements with the European Union are highly uncertain, the MPC's central judgement is that productivity growth is likely to be below past average rates throughout the forecast period. As

Table 5.E MPC key judgements^{(a)(b)}**Key Judgement 1: a period of heightened uncertainty and weakness in property markets weighs on private domestic demand**

	Average 1998– 2007	Projections		
		2016	2017	2018
Credit spreads ^(c)	¾ ^(d)	2¼ (2¼)	2¼ (2¼)	2¼ (2)
Household saving ratio ^(e)	8	5¾ (3½)	5 (2¾)	5½ (2½)
Business investment to GDP ratio ^(f)	9½	9 (9¾)	8¾ (10¼)	9¼ (10¾)

Key Judgement 2: potential supply growth remains well below past average rates

	Average 1998– 2007	Projections		
		2016	2017	2018
Productivity ^(g)	2¼	¾ (1¼)	1¼ (1¾)	1½ (1¾)
Participation rate ^(h)	63	63½ (63½)	63½ (63½)	63½ (63½)
Average hours ⁽ⁱ⁾	32¼	32 (32)	32 (31¾)	31¾ (31¾)

Key Judgement 3: the fall in sterling leads to a narrowing in the current account deficit against a backdrop of modest global demand growth

	Average 1998– 2007	Projections		
		2016	2017	2018
World GDP (UK-weighted) ^(j)	3	2¼ (2¼)	2¼ (2½)	2¼ (2½)
World GDP (PPP-weighted) ^(k)	4	3¼ (3)	3¼ (3½)	3½ (3½)
Euro-area GDP ^(l)	2¼	1½ (1¾)	1¼ (1¾)	1¾ (1¾)
US GDP ^(m)	3	2 (1¾)	2¼ (2¼)	2 (2)
Dollar oil prices ⁽ⁿ⁾	39	47 (46)	52 (49)	55 (51)

Key Judgement 4: domestic cost pressures remain soft but higher import prices take inflation back to the 2% target then somewhat above it

	Average 1998– 2007	Projections		
		2016	2017	2018
UK import prices ^(o)	¼	7 (1)	2¼ (¾)	1¾ (¾)
Unit labour costs ^(p)	3	2¼ (2¾)	2 (2¼)	2¼ (2½)

Sources: Bank of England, BDRG Continental *SME Finance Monitor*, Bloomberg, BofA Merrill Lynch Global Research (used with permission), British Household Panel Survey, Department for Business, Energy and Industrial Strategy, Eurostat, IMF *World Economic Outlook* (WEO), ONS, US Bureau of Economic Analysis and Bank calculations.

- (a) The MPC's projections for GDP growth, CPI inflation and unemployment (as presented in the fan charts) are underpinned by four key judgements. The mapping from the key judgements to individual variables is not precise, but the profiles in the table should be viewed as broadly consistent with the MPC's key judgements.
- (b) Figures show calendar-year growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the May 2016 *Inflation Report*. Calculations for back data based on ONS data are shown using ONS series identifiers.
- (c) Level in Q4. Percentage point spread over reference rates. Based on a weighted average of household and corporate loan and deposit spreads over appropriate risk-free rates. Indexed to equal zero in 2007 Q3.
- (d) Based on the weighted average of spreads for households and large companies over 2003 and 2004 relative to the level in 2007 Q3. Data used to construct the SME spread are not available for that period. The period is chosen as broadly representative of one where spreads were neither unusually tight nor unusually loose.
- (e) Calendar-year average. Percentage of total available household resources. As shown in **Chart 5.5**, the starting point for the saving ratio is higher than at the time of the *May Report*.
- (f) Calendar-year average. Chained-volume business investment as a percentage of GDP.
- (g) GDP per hour worked. GDP at market prices is based on the mode of the MPC's backcast.
- (h) Level in Q4. Percentage of the 16+ population.
- (i) Level in Q4. Average weekly hours worked, in main job and second job.
- (j) Chained-volume measure. Constructed using real GDP growth rates of 180 countries weighted according to their shares in UK exports.
- (k) Chained-volume measure. Constructed using real GDP growth rates of 181 countries weighted according to their shares in world GDP using the IMF's purchasing power parity (PPP) weights.
- (l) Chained-volume measure.
- (m) Chained-volume measure.
- (n) Average level in Q4. Dollars per barrel. Projection based on monthly Brent futures prices.
- (o) Four-quarter inflation rate in Q4.
- (p) Four-quarter growth in unit labour costs in Q4. Whole-economy total labour costs divided by GDP at market prices, based on the mode of the MPC's GDP backcast. Total labour costs comprise compensation of employees and the labour share multiplied by mixed income.

always, the MPC has made no judgement about supply prospects beyond its forecast horizon.

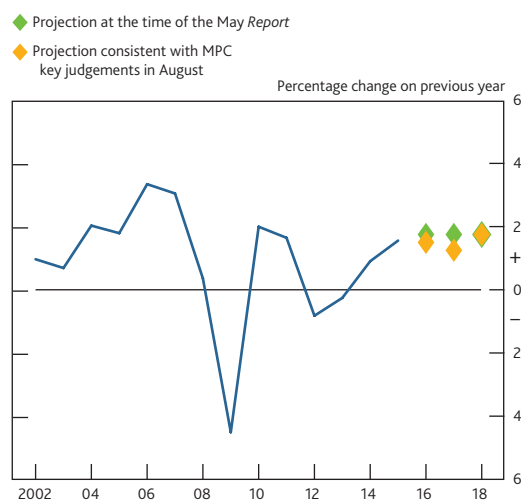
There is also uncertainty about prospects for labour supply. In the central projection, as in May, population grows in line with ONS projections, which embody a fall back in net migration. The paths for participation and average hours are both broadly unrevised since May (**Table 5.E**). It is possible that labour supply reacts more to the squeeze in real income: following the financial crisis, the number of people reporting they wanted to work more hours rose as real take-home pay fell. The subdued path for supply growth means that the demand slowdown is associated with a relatively modest rise in unemployment back to rates last seen in 2015. Unemployment falls back as demand growth recovers. There is considerable uncertainty around that path.

Key Judgement 3: the fall in sterling leads to a narrowing in the current account deficit against a backdrop of modest global demand growth

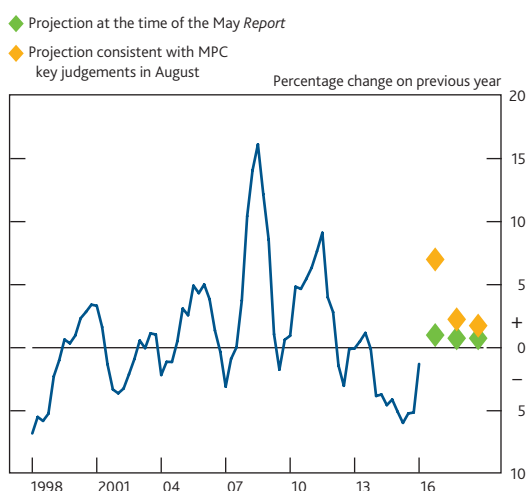
The UK current account deficit was at a historic high at nearly 7% of GDP at the start of 2016. That reflected deficits on both trade and income flows, in part due to the relatively strong performance of the United Kingdom compared with its major trading partners in recent years. The current account deficit is now projected to halve over the forecast period. That in part reflects the less favourable demand conditions in the United Kingdom relative to those abroad, which are likely to be associated with a rebalancing of trade and income flows. It also reflects support from the sharp fall in sterling, which bolsters exports and discourages imports and also boosts the sterling value of inflows of profits from abroad. The lower level of sterling also improves the UK net international investment position. Estimates suggest that around 60% of the stock of external liabilities is denominated in foreign currency, compared with more than 90% of the stock of external assets (Section 2). The outlook for trade and the current account will depend crucially on how UK companies and their trading partners and domestic and foreign investors react to the vote to leave the European Union and the lower level of sterling, with a risk that exports are weaker or imports stronger than assumed.

UK prospects also depend on developments in the rest of the world. There has been little material news regarding the major advanced or emerging economies since the *May Report*. And the MPC's projections assume limited spillovers from the UK vote to leave the European Union on other countries. Overall, therefore, global GDP grows at below average rates, just a little weaker than projected in May (**Table 5.E**). The risks to that projection remain to the downside.

Of these spillovers, the most significant are to the euro area. The lower level of sterling and slower growth in UK demand weigh on euro-area exports. The resultant drag is only partly

Chart 5.6 Euro-area GDP^(a)

(a) Calendar-year growth rates. Chained-volume measure.

Chart 5.7 Import price inflation^(a)

(a) Projections are four-quarter inflation rate in Q4. Excludes the impact of MTIC fraud.

Table 5.F Calendar-year GDP growth rates of the modal, median and mean paths^(a)

	Mode	Median	Mean
2016 ^(b)	2.0 (2.0)	2.0 (2.0)	1.9 (2.0)
2017	0.8 (2.3)	0.8 (2.2)	0.7 (2.2)
2018	1.8 (2.3)	1.7 (2.2)	1.7 (2.2)

(a) The table shows the projections for calendar-year growth of real GDP consistent with the modal, median and mean projections for four-quarter growth of real GDP implied by the fan chart. Where growth rates depend in part on the MPC's backcast, revisions to quarterly growth are assumed to be independent of the revisions to previous quarters. The figures in parentheses show the corresponding projections in the May 2016 Inflation Report. The August projections have been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves reaches £435 billion and remains there throughout the forecast period; that the stock of purchased corporate bonds financed by the issuance of central bank reserves reaches £10 billion and remains there throughout the forecast period; and on the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves. The May projections have been conditioned on market interest rates, and the assumption that the stock of purchased gilts financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period.

(b) The anticipated revisions to recent estimates of quarterly GDP growth have implications for calendar-year growth in 2016. Without the anticipated revisions to past GDP growth, the modal path of the Committee's August projections would imply calendar-year growth of 1.8% in 2016 rather than 2.0%.

offset by the greater stimulus implied by a lower yield curve, falls in which may in part reflect an expectation by market participants of further easing by the European Central Bank. Overall, euro-area growth is therefore judged likely to be a little weaker than projected in May (Chart 5.6).

Long-standing financial vulnerabilities within the euro area remain: for example, falls in bank equity prices have reflected increased concerns about banks in some periphery countries.

Further afield, spillovers are likely to be less marked. In the United States, although activity has been a little weaker than expected over the past three months, consumption growth has picked up and continued labour market normalisation is expected to support strengthening domestic demand growth. Although lower prospects for UK growth are assumed to weigh a little on US exports, that effect is largely offset by the greater stimulus implied by a lower yield curve, leaving the outlook for US GDP broadly unchanged (Table 5.E).

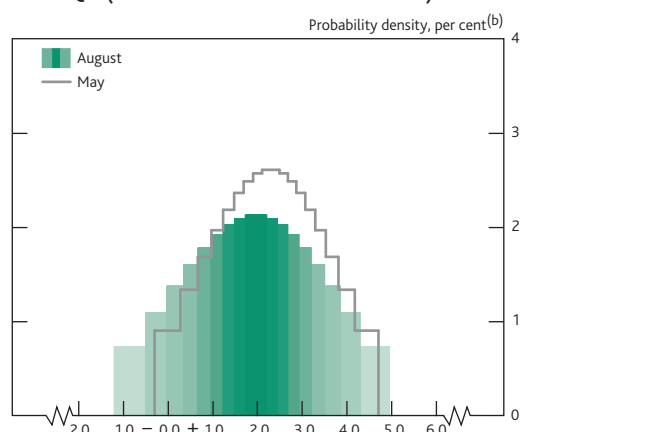
That fall in the US yield curve provides some support to emerging market economies (EMEs) as well. There remains a risk, however, that a more pronounced tightening in US policy rates than embodied in market prices could trigger renewed capital outflows from EMEs, particularly given sharp rises in debt levels in a number of countries, including China, in recent years. In the central projection, GDP growth in China is broadly similar to the path assumed in May, slowing to around 6% a year, but that is likely to be associated with further growth in credit and risks remain to the downside. Growth in other EMEs is assumed to recover a little following weakness in 2015 but, as in May, it remains well below past average rates.

Key Judgement 4: domestic cost pressures remain soft but higher import prices take inflation back to the 2% target then somewhat above it

CPI inflation has been close to zero for the past 18 months, largely reflecting a drag from food, energy and other imported goods prices but also weak domestic pressures (Section 4). The fall in the value of sterling, together with a pickup in oil prices means that the contribution from external prices is likely to turn positive by early 2017. In contrast, domestic price pressures seem likely to remain soft, given a growing margin of slack over the first half of the forecast period. On balance, the MPC judges it likely that CPI inflation will pick up sharply over the next six months. It is likely to remain close to the 2% target until early 2018 and, conditioned on market interest rates and the MPC's policy stimulus, rise temporarily above it thereafter. Risks to that outlook stem from the degree and pace of exchange rate pass-through, and on the extent of the drag from domestic pressures.

The 15% fall in the sterling exchange rate since November 2015 will, over time, be reflected in higher consumer prices. Evidence from similar moves in the past

Chart 5.8 Projected probabilities of GDP growth in 2018 Q3 (central 90% of the distribution)^(a)



(a) Chart 5.8 represents the cross-section of the GDP growth fan chart in 2018 Q3 for the market interest rate projection. It has been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves reaches £435 billion and remains there throughout the forecast period; that the stock of purchased corporate bonds financed by the issuance of central bank reserves reaches £10 billion and remains there throughout the forecast period; and on the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves. The coloured bands in Chart 5.8 have a similar interpretation to those on the fan charts. Like the fan charts, they portray the central 90% of the probability distribution. The grey outline represents the corresponding cross-section of the May 2016 *Inflation Report* fan chart, which was conditioned on market interest rates and the assumption that the stock of purchased gilts financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period.

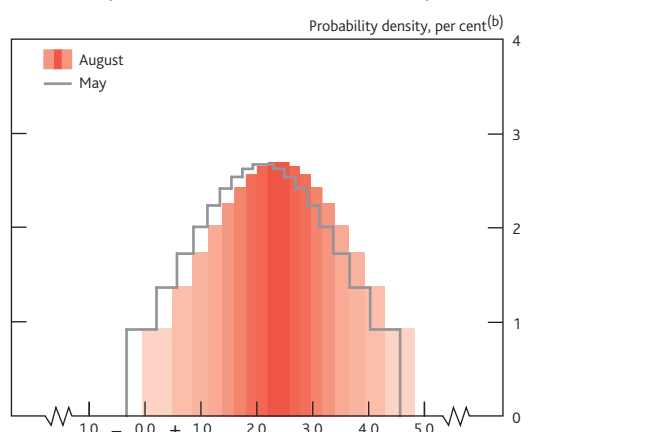
(b) Average probability within each band; the figures on the y-axis indicate the probability of growth being within ± 0.05 percentage points of any given growth rate, specified to one decimal place.

Table 5.G Q4 CPI inflation

	Mode	Median	Mean
2016 Q4	1.2 (0.9)	1.3 (0.9)	1.3 (0.9)
2017 Q4	2.0 (1.8)	2.0 (1.8)	2.1 (1.8)
2018 Q4	2.4 (2.2)	2.4 (2.2)	2.4 (2.2)

The table shows projections for Q4 four-quarter CPI inflation. The figures in parentheses show the corresponding projections in the May 2016 *Inflation Report*. The August projections have been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves reaches £435 billion and remains there throughout the forecast period; that the stock of purchased corporate bonds financed by the issuance of central bank reserves reaches £10 billion and remains there throughout the forecast period; and on the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves. The May projections have been conditioned on market interest rates, and the assumption that the stock of purchased gilts financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period.

Chart 5.9 Projected probabilities of CPI inflation in 2018 Q3 (central 90% of the distribution)^(a)



(a) Chart 5.9 represents the cross-section of the CPI inflation fan chart in 2018 Q3 for the market interest rate projection. It has been conditioned on the assumption that the stock of purchased gilts financed by the issuance of central bank reserves reaches £435 billion and remains there throughout the forecast period; that the stock of purchased corporate bonds financed by the issuance of central bank reserves reaches £10 billion and remains there throughout the forecast period; and on the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves. The coloured bands in Chart 5.9 have a similar interpretation to those on the fan charts. Like the fan charts, they portray the central 90% of the probability distribution. The grey outline represents the corresponding cross-section of the May 2016 *Inflation Report* fan chart, which was conditioned on market interest rates and the assumption that the stock of purchased gilts financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period.

(b) Average probability within each band; the figures on the y-axis indicate the probability of inflation being within ± 0.05 percentage points of any given inflation rate, specified to one decimal place.

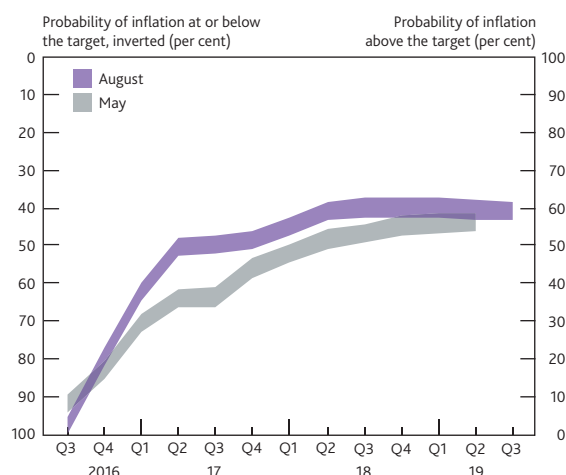
suggests that the fall is unlikely to be fully reflected in UK import prices — some exporters to the United Kingdom may absorb the change in sterling by lowering other costs or accepting lower profits. The fall in sterling is assumed to raise import prices by around 10% by mid-2017 (Chart 5.7). For some items, such as food and petrol, changes in import costs feed through quickly to retail prices. For other items, pass-through is more drawn out. In the central projection, non-energy import prices are projected to still be contributing 0.6 percentage points to CPI inflation in three years' time. Given the scale of the fall in sterling, it is possible that pass-through will be faster, implying an upside risk to the central projection in the near term and a downside risk further out.

Domestic pricing pressures are likely to remain weak. Companies that are facing a weaker demand outlook and an associated increase in their spare capacity are likely to try to bear down on their costs, including labour costs, or accept a period of lower profit margins in an attempt to attract customers. Wages adjust slowly to the weaker path for productivity growth, but unit labour costs grow at below-average rates throughout the forecast period (Table 5.E). Overall, pay growth is projected to remain subdued in coming years, with average earnings growth lower than the path in the May Report (Table 5.C).

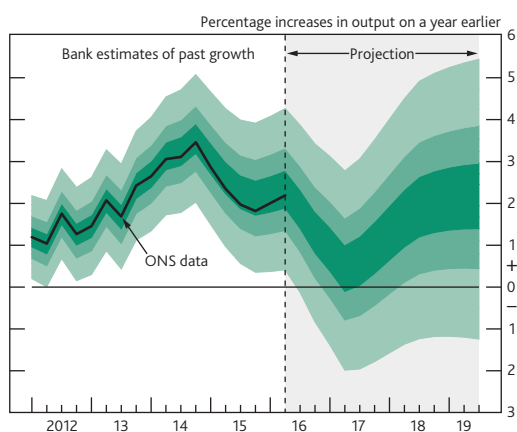
There are downside risks to that outlook stemming from the possibility of a weaker path for demand and therefore a higher path for unemployment. Upside risks stem from households' and companies' reaction to the rise in import prices. Higher costs for imported goods and services will, by themselves, reduce real wages. There is a risk that employees will try to resist that reduction by bidding for higher nominal wages. That risk is greater should inflation expectations begin to rise beyond levels consistent with the 2% target, increasing companies' willingness to raise wages more quickly and raise their prices in response. In that circumstance it could prove more costly for the MPC to bring inflation back to the 2% target. The past decade has, however, seen sustained periods of both above and below-target inflation, and, although indicators of inflation expectations have responded modestly to those developments, there have been only limited signs of any material impact on wage and price-setting decisions. Moreover, despite rises in indicators of near-term inflation expectations following the fall in sterling, financial market and available household indicators further ahead have fallen slightly (Section 4). The MPC will continue to monitor inflation expectations closely.

5.2 The projections for demand, unemployment and inflation

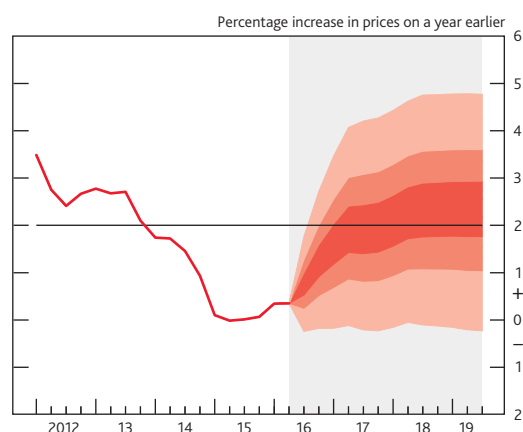
Based on these judgements and the risks around them, and under the path for Bank Rate based on market yields and the MPC's package of additional stimulus measures, four-quarter GDP growth is projected to slow markedly in the near term

Chart 5.10 Inflation probabilities relative to the target

The August and May swathes in this chart are derived from the same distributions as Charts 5.2 and 5.3 respectively. They indicate the assessed probability of inflation relative to the target in each quarter of the forecast period. The 5 percentage points width of the swathes reflects the fact that there is uncertainty about the precise probability in any given quarter, but they should not be interpreted as confidence intervals.

Chart 5.11 GDP projection based on constant nominal interest rates at 0.25%, other policy actions as announced

See footnote to Chart 5.1.

Chart 5.12 CPI inflation projection based on constant nominal interest rates at 0.25%, other policy actions as announced

See footnote to Chart 5.2.

before rising to around 2¼% further out. That is a lower growth projection than in the *May Report*, which was conditioned on a continuation of EU membership, for much of the forecast period (Table 5.F) but similar by the end. Greater uncertainty and lower supply prospects following the vote to leave the European Union weigh on private domestic demand growth, although the depreciation in sterling supports net trade. Consistent with heightened uncertainty, the MPC has widened its growth fan chart (Chart 5.8). And, despite the lower central path for growth than three months ago, it judges that risks remain to the downside, largely stemming from the possibility that net trade will provide less support than assumed. There is a range of views on the Committee about the outlook for demand and the risks around it.

Demand growth weakens relative to supply, such that unemployment is projected to rise and a margin of spare capacity opens up. Conditioned on market interest rates and the MPC's package of additional stimulus measures, by the end of the forecast period the unemployment rate is projected to fall back to 5¼% (Chart 5.4). Unemployment is higher than the path in the *May Report* throughout the forecast period. There remain considerable risks around that projection, but to the extent that risks to demand and supply are closely related, the risks around the unemployment profile have not increased markedly since May.

The margin of spare capacity bears down on CPI inflation throughout the forecast period. Acting against that, however, is the substantial upward pressure from the depreciation of sterling since late 2015. In the central projection, past falls in energy and food prices drop out of the annual comparison and external price pressures build such that inflation rises sharply over the next six months (Table 5.G). Those external pressures push inflation above the target in the second half of the forecast period (Chart 5.9). It is possible that pass-through of higher import prices will be more rapid, such that the risks to inflation are to the upside in the near term and to the downside further out. On balance, the MPC judges it more likely that inflation will be above the target than below it for the second half of the forecast period (Chart 5.10), a higher profile than in May despite greater slack.

Charts 5.11 and 5.12 show the MPC's projections under the alternative constant rate assumption, and the policy package announced by the MPC. That assumption is that Bank Rate remains at 0.25% throughout the three years of the forecast period, before rising towards the market path over the subsequent three years. Under that path, the outlooks for GDP growth and inflation are only marginally lower than under the market path.

Other forecasters' expectations

This box reports the results of the Bank's most recent survey of external forecasters, carried out in July.⁽¹⁾ On average, respondents expected four-quarter GDP growth to slow substantially over the coming year, before picking up to a little below 2% in three years' time (Table 1). The range of estimates for growth over the next year was at its widest for over seven years (Chart A).

Table 1 Averages of other forecasters' central projections^(a)

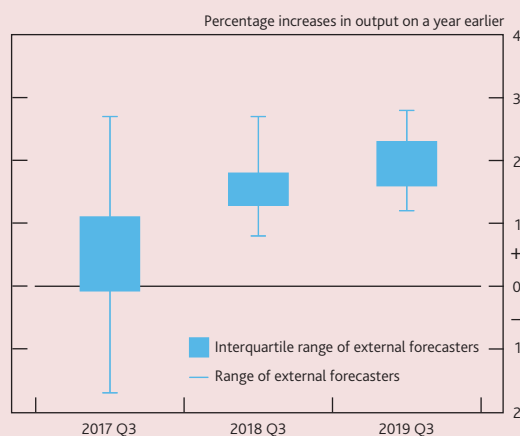
	2017 Q3	2018 Q3	2019 Q3
CPI inflation ^(b)	2.5	2.4	2.1
GDP growth ^(c)	0.5	1.6	1.9
LFS unemployment rate	5.7	6.0	6.0
Bank Rate (per cent)	0.2	0.3	0.5
Stock of purchased assets (£ billions) ^(d)	443	449	447
Sterling ERI	77.8	79.3	80.3

Source: Projections of outside forecasters as of 29 July 2016.

- (a) For 2017 Q3, there were 22 forecasts for CPI inflation, GDP growth and Bank Rate, 20 for the unemployment rate and the stock of asset purchases and 13 for the sterling ERI. For 2018 Q3, there were 18 forecasts for CPI inflation and GDP growth, 19 for Bank Rate, 17 for the unemployment rate and the stock of asset purchases and 13 for the sterling ERI. For 2019 Q3, there were 17 forecasts for CPI inflation and GDP growth, 18 for Bank Rate, 16 for the unemployment rate and the stock of asset purchases and 12 for the sterling ERI.
- (b) Twelve-month rate.
- (c) Four-quarter percentage change.
- (d) Original purchase value. Purchased via the creation of central bank reserves.

Chart A Most forecasters expect GDP growth to slow over the coming year

Forecasters' central projections of GDP growth



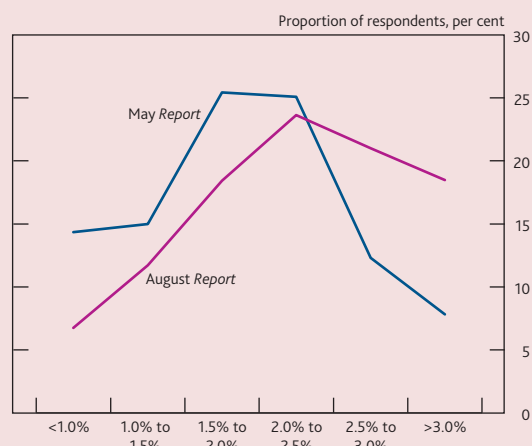
Source: Projections of outside forecasters as of 29 July 2016.

The average of respondents' central expectation for CPI inflation in a year's time was 2.5%, above the MPC's 2% target, while the average expectation in three years' time was 2.1%. On average, external forecasters placed a weight of around two thirds on CPI inflation being at or above target in two years' time, with that weight falling to around half in three years' time (Chart B).

External forecasters, on average, expected a looser monetary stance in the next three years compared with at the time of

Chart B The weight placed on above-target inflation two years ahead has picked up

Average probability of CPI inflation outturns in two years' time^(a)



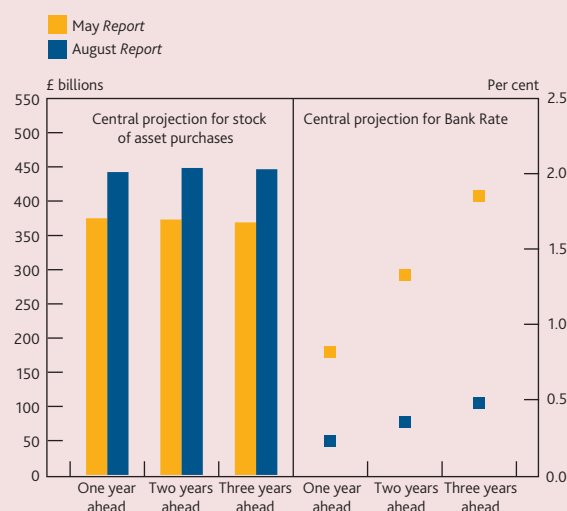
Sources: Projections of outside forecasters provided for Inflation Reports in May and August 2016.

- (a) Projections on the boundary of these ranges are included in the upper range, for example a projection of inflation being 2.0% is in the 2.0% to 2.5% range.

the May Report (Chart C). The average of external forecasters' central expectations was that Bank Rate will fall to around 0.2% by 2017 Q3 and then rise very gradually over the subsequent two years. While the stock of asset purchases was expected, on average, to increase to around £445 billion over that period.

Chart C Forecasters expect a looser monetary stance compared with three months ago

Forecasters' central projections of Bank Rate and asset purchases



Sources: Projections of outside forecasters provided for Inflation Reports in May and August 2016.

(1) For detailed distributions of other forecasters' expectations, see 'Other forecasters' expectations' on the Bank's website at www.bankofengland.co.uk/publications/Documents/inflationreport/2016/augofe.pdf.

Index of charts and tables

Charts

A monetary policy package to support the UK economy	iii
A Level of retail deposit rates and pass-through of lower risk-free rates	v
B Distribution of mortgage lending	v
C TFS fee schedule	vi
D Nominal yield curves derived from government bonds	vii
E Decomposition of sterling investment-grade corporate bond spreads	vii
F Distribution of sterling-denominated investment-grade corporate bonds	viii
1 Financial markets and global economic developments	1
1.1 Sterling exchange rates	1
1.2 International forward interest rates	1
1.3 Option-implied volatility	2
1.4 Ten-year forward nominal interest rates	2
1.5 International non-financial corporate bond spreads	4
1.6 International equity prices	4
1.7 FTSE All-Share and UK domestically focused companies' equity prices	4
1.8 Change in equity indices for selected sectors since 23 June	5
1.9 UK banks' indicative longer-term funding spreads	5
1.10 Non-financial sector debt to nominal GDP ratios	8
1.11 Global composite PMI	8
The implications of falls in the yield curve for financial conditions and stability	9
A Nominal government bond yields	9
B Bank Rate and selected household effective interest rates	10
C Estimates of large UK banks' net interest margins	10
D Average cost of default protection on selected UK insurers	11
E Fifteen-year government bond yield and the balance on UK defined-benefit pension funds as a proportion of total liabilities	12
2 Demand and output	13
2.1 Range of uncertainty measures	13
2.2 Survey measures of investment intentions	16
2.3 UK CRE transactions	16
2.4 Mortgage approvals for house purchase and housing transactions	17
2.5 RICS housing market indicators	17
2.6 Contributions to four-quarter private sector housing investment growth	18
2.7 Measures of consumer confidence and unemployment expectations	18
2.8 Household consumption and house prices	19
2.9 Household deposit and lending interest rates	19
2.10 UK current account	21
2.11 Contributions to average quarterly GVA growth by sector	21
2.12 Survey indicators of output growth and expected output growth	22
2.13 Output growth and Bank staff's near-term projection	22

Agents' survey on the impact on businesses of the vote to leave the European Union	15
A Balance of survey responses for turnover and prices by sector	15
B Balance of survey responses for capital spending and hiring activity by sector	15
Revisions to the National Accounts	20
A GDP	20
B Revisions to household income, consumption and the saving ratio	20
C Financial balances by sector	20
3 Supply and the labour market	23
3.1 Survey indicators of employment intentions and reported changes in employment	23
3.2 Post-referendum surveys of the expected effect on recruitment of the vote to leave the European Union	24
3.3 GDP growth and decomposition of growth in total hours worked	25
3.4 Flows between employment and unemployment	25
3.5 Unemployment rate and Bank staff's near-term projection	26
3.6 Survey indicators of capacity utilisation	26
3.7 Agents' scores on recruitment difficulties	27
3.8 Unemployment rates by duration	27
3.9 Part-time workers who could not find full-time work	27
3.10 Hourly labour productivity	28
4 Costs and prices	30
4.1 CPI inflation and Bank staff's near-term projection	31
4.2 Contributions to CPI inflation	31
4.3 Core inflation	32
4.4 Sterling oil and wholesale gas prices	32
4.5 US dollar oil and agricultural commodity prices	32
4.6 Sterling oil prices and CPI fuels prices	33
4.7 UK import and foreign export prices excluding fuel	33
4.8 Measures of domestically generated inflation (DGI)	34
4.9 Private non-financial corporate profit share (excluding the oil sector)	34
4.10 Real pay and consumer prices	34
4.11 Decomposition of four-quarter whole-economy unit labour cost growth	35
4.12 <i>Deloitte CFO Survey</i> : distribution of two year ahead CPI inflation expectations	36
5 Prospects for inflation	37
5.1 GDP projection based on market interest rate expectations, other policy actions as announced	38
5.2 CPI inflation projection based on market interest rate expectations, other policy actions as announced	39
5.3 CPI inflation projection in May based on market interest rate expectations and £375 billion purchased gilts	39
5.4 Unemployment projection based on market interest rate expectations, other policy actions as announced	40
5.5 Household saving ratio	43
5.6 Euro-area GDP	46
5.7 Import price inflation	46

5.8	Projected probabilities of GDP growth in 2018 Q3 (central 90% of the distribution)	47
5.9	Projected probabilities of CPI inflation in 2018 Q3 (central 90% of the distribution)	47
5.10	Inflation probabilities relative to the target	48
5.11	GDP projection based on constant nominal interest rates at 0.25%, other policy actions as announced	48
5.12	CPI inflation projection based on constant nominal interest rates at 0.25%, other policy actions as announced	48
	Other forecasters' expectations	49
A	Forecasters' central projections of GDP growth	49
B	Average probability of CPI inflation outturns in two years' time	49
C	Forecasters' central projections of Bank Rate and asset purchases	49

Tables

A monetary policy package to support the UK economy		iii
1	Stock of gilts available for purchase	vii
1 Financial markets and global economic developments		
1.A	GDP in selected countries and regions	6
1.B	Monitoring the MPC's key judgements	6
1.C	Inflation in selected countries and regions	7
The implications of falls in the yield curve for financial conditions and stability		9
1	Proportion of the stock of UK-resident MFIs' lending and deposits at fixed and floating rate in 2016 Q1	10
2 Demand and output		13
2.A	Monitoring the MPC's key judgements	14
2.B	Expenditure components of demand	14
2.C	Net external finance raised by private non-financial corporations	16
Agents' survey on the impact on businesses of the vote to leave the European Union		15
1	Survey responses on the impact of the vote to leave the EU on business	15
3 Supply and the labour market		23
3.A	Change in employment, and vacancies	24
3.B	Monitoring the MPC's key judgements	28
4 Costs and prices		30
4.A	Monitoring the MPC's key judgements	30
4.B	Indicators of annual wage growth	35
4.C	Indicators of inflation expectations	36
5 Prospects for inflation		37
5.A	Forecast summary	38
5.B	Conditioning path for Bank Rate implied by forward market interest rates	39
5.C	Indicative projections consistent with the MPC's modal projections	40
5.D	Monitoring risks to the Committee's key judgements	41
5.E	MPC key judgements	45
5.F	Calendar-year GDP growth rates of the modal, median and mean paths	46
5.G	Q4 CPI inflation	47
Other forecasters' expectations		49
1	Averages of other forecasters' central projections	49

Glossary and other information

Glossary of selected data and instruments

AWE – average weekly earnings.

CDS – credit default swap.

CPI – consumer prices index.

CPI inflation – inflation measured by the consumer prices index.

DGI – domestically generated inflation.

ERI – exchange rate index.

GDP – gross domestic product.

HICP – harmonised index of consumer prices.

LFS – Labour Force Survey.

PCE – personal consumption expenditure.

PMI – purchasing managers' index.

RPI – retail prices index.

RPI inflation – inflation measured by the retail prices index.

SVR – standard variable rate.

Abbreviations

APF – Asset Purchase Facility.

BCC – British Chambers of Commerce.

CBI – Confederation of British Industry.

CBPS – Corporate Bond Purchase Scheme.

CEIC – CEIC Data Company Ltd.

CFO – chief financial officer.

CIPD – Chartered Institute of Personnel and Development.

CIPS – Chartered Institute of Purchasing and Supply.

CRE – commercial real estate.

CSPP – corporate sector purchase programme.

EC – European Commission.

ECB – European Central Bank.

EME – emerging market economy.

EU – European Union.

FDI – foreign direct investment.

FLS – Funding for Lending Scheme.

FOMC – Federal Open Market Committee.

FPC – Financial Policy Committee.

FTSE – Financial Times Stock Exchange.

GfK – Gesellschaft für Konsumforschung, Great Britain Ltd.

GVA – gross value added.

IMF – International Monetary Fund.

MFIs – monetary financial institutions.

MPC – Monetary Policy Committee.

MSCI – Morgan Stanley Capital International Inc.

MTIC – missing trader intra-community.

OECD – Organisation for Economic Co-operation and Development.

ONS – Office for National Statistics.

PNFCs – private non-financial corporations.

PPP – purchasing power parity.

PRA – Prudential Regulation Authority.

PwC – PricewaterhouseCoopers.

REC – Recruitment and Employment Confederation.

RICS – Royal Institution of Chartered Surveyors.

S&P – Standard & Poor's.

SMEs – small and medium-sized enterprises.

TFP – total factor productivity.

TFS – Term Funding Scheme.

TLTRO – targeted longer-term refinancing operation.

VAT – Value Added Tax.

WEO – IMF *World Economic Outlook*.

Symbols and conventions

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) and all data, apart from financial markets data, are seasonally adjusted.

n.a. = not available.

Because of rounding, the sum of the separate items may sometimes differ from the total shown.

On the horizontal axes of graphs, larger ticks denote the first observation within the relevant period, eg data for the first quarter of the year.

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