Inflation Report

May 2018

BANK OF ENGLAND

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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.

PowerPoint™ versions of the *Inflation Report* charts and Excel spreadsheets of the data underlying most of them are available at
www.bankofengland.co.uk/inflation-report/2018/may-2018

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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 on 9 May 2018, the MPC voted by a majority of 7–2 to maintain Bank Rate at 0.5%. The Committee voted unanimously to maintain the stock of sterling non-financial investment-grade corporate bond purchases, financed by the issuance of central bank reserves, at £10 billion. The Committee also voted unanimously to maintain the stock of UK government bond purchases, financed by the issuance of central bank reserves, at £435 billion.

The MPC's updated projections for inflation and activity are set out in the May *Inflation Report*. The outlook and the main factors shaping it are broadly similar to those set out in the previous *Report*.

The preliminary estimate of GDP growth in the first quarter was 0.1%, 0.3 percentage points lower than expected in February. This is likely in part to have reflected adverse weather in late February and early March. Survey indicators suggest that growth was somewhat stronger in Q1 than implied by the preliminary estimate.

Despite the near-term softness, the MPC's central forecast for economic activity is little changed from that in the previous *Report*. In the MPC's central forecast, conditioned on the gently rising path of Bank Rate implied by current market yields, GDP is expected to grow by around 1¾% per year on average over the forecast period. On the expenditure side, growth continues to rotate towards net trade and business investment and away from consumption. Although business investment is still restrained by Brexit-related uncertainties, it is being supported, like exports, by strong global demand and accommodative financial conditions. Household consumption growth remains subdued, in line with the modest growth in real income over the forecast period.

Wage growth and domestic cost pressures are firming gradually, broadly as expected. The MPC continues to judge that the UK economy has a very limited degree of slack. Hiring intentions have remained strong and, over the past three months, the unemployment rate has fallen slightly further. While modest by historical standards, the projected pace of GDP growth over the forecast is nonetheless slightly faster than the diminished rate of supply growth, which averages around 1½% per year. In the MPC's central projection, therefore, a small margin of excess demand still emerges by early 2020, feeding through into higher rates of pay growth and domestic cost pressures.

CPI inflation fell to 2.5% in March, lower than expected at the time of the February *Report*. The inflation rates of the most import-intensive components of the CPI appear to have peaked. The MPC judges that the impact of the past depreciation of sterling on CPI inflation, while remaining significant, is likely to fade a little faster than previously thought. Taking external and domestic influences together, CPI inflation is projected to fall back slightly more quickly than in February, reaching the target in two years. These projections are conditioned on a gently rising path for Bank Rate over the next three years.

In the exceptional circumstances presented by Brexit, as specified in its remit, the MPC has been balancing any significant trade-off between the speed at which it intends to return inflation sustainably to the target and the support that monetary policy provides to jobs and activity. The prospect of excess demand over the forecast

period has reduced the degree to which it is appropriate for the MPC to accommodate an extended period of inflation above the target. The Committee's best collective judgement therefore remains that, were the economy to develop broadly in line with the May *Inflation Report* projections, an ongoing tightening of monetary policy over the forecast period would be appropriate to return inflation sustainably to its target at a conventional horizon. As previously, however, that judgement relies on the economic data evolving broadly in line with the Committee's projections. For the majority of members, an increase in Bank Rate was not required at this meeting. All members agree that any future increases in Bank Rate are likely to be at a gradual pace and to a limited extent.

1 Global economic and financial market developments

Although momentum in global activity has eased slightly since the start of the year, growth remains robust. The recovery in global growth since 2016 has meant that spare capacity in advanced economies has diminished and, in some countries, inflationary pressures have begun to rebuild. Global financial conditions remain accommodative, despite a rise in short-term interest rates and, more recently, a fall in equity prices.

Table 1.A UK-weighted GDP growth slowed slightly in Q1
GDP in selected countries and regions[a]

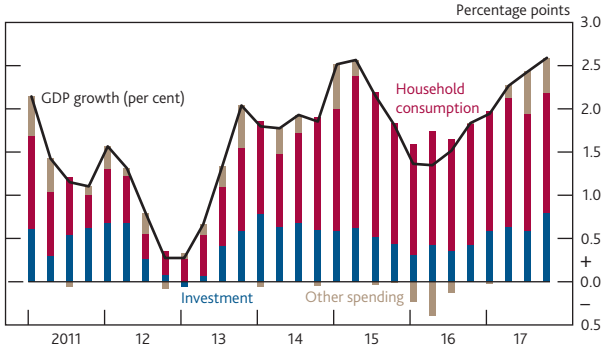
Percentage changes on a quarter earlier

	Averages					2017		2018
	1998–2007	2012–13	2014–15	2016	2017 H1	Q3	Q4	Q1
United Kingdom	0.7	0.5	0.7	0.5	0.3	0.5	0.4	0.1
Euro area (38%)	0.6	0.0	0.4	0.5	0.7	0.7	0.7	0.4
United States (18%)	0.7	0.5	0.6	0.5	0.5	0.8	0.7	0.6
China (3%)[b]	2.5	1.9	1.7	1.7	1.7	1.8	1.6	1.4
Japan (2%)	0.3	0.4	0.1	0.4	0.5	0.6	0.4	n.a.
India (1%)	1.8	1.5	1.8	1.7	1.5	1.8	1.8	n.a.
Russia (1%)[c]	1.9	0.6	-0.3	0.1	0.9	0.0	-0.4	n.a.
Brazil (1%)	0.8	0.6	-0.7	-0.6	0.9	0.2	0.1	n.a.
UK-weighted world GDP[d]	0.7	0.4	0.6	0.6	0.8	0.8	0.7	0.6

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

(a) Real GDP measures. Figures in parentheses are shares in UK goods and services exports in 2016.
(b) The 1998–2007 average for China is based on OECD estimates. Estimates for 2008 onwards are from the National Bureau of Statistics of China.
(c) The earliest observation for Russia is 2003 Q2.
(d) Constructed using data for real GDP growth rates for 180 countries weighted according to their shares in UK exports. Figure for 2018 Q1 is a Bank staff projection.

Chart 1.1 The composition of advanced-economy growth has rotated towards investment
Contributions to four-quarter GDP growth for selected advanced economies[a]



Sources: IMF *WEO*, OECD, Thomson Reuters Datastream and Bank calculations.

(a) Constructed using real GDP data for Canada, euro area, Japan and US. Weighted using the IMF's purchasing power parity (PPP) weights.

Global GDP growth has picked up since 2016. While the pace of activity weighted by countries' shares in UK exports slowed slightly in Q1 (**Table 1.A**), a good part of that slowing appears to have reflected temporary factors such as adverse weather conditions. Geopolitical developments, including the prospect of trade tariffs, appear to have weighed on risky asset prices. To the extent that also contributed to the weakening in survey measures of global output growth since the start of the year, those indicators may overstate the slowing in growth. Global GDP growth is projected to pick back up in Q2, and to be robust over the remainder of 2018 (Section 1.1).

As global growth has strengthened, spare capacity has diminished and inflationary pressures in some countries have begun to rebuild (Section 1.2). That has been particularly apparent in the US, where core inflation and wage growth have both risen in recent months. Wage growth has also firmed in the euro area, albeit from subdued rates.

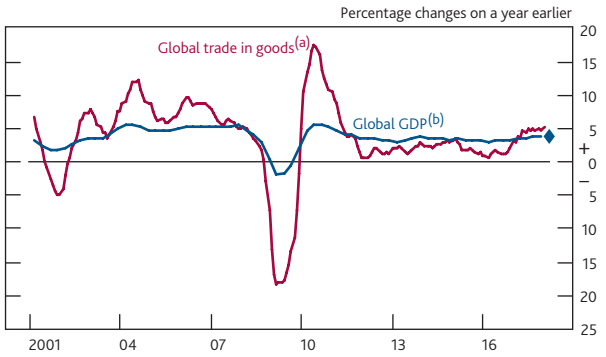
Consistent with these emerging signs of inflationary pressures, investors now appear to be putting less weight on the possibility of very low levels of future inflation. Short-term interest rates in some countries have risen in recent quarters as expectations of the degree to which central banks will need to tighten monetary policy in response have increased. Financial conditions nevertheless remain accommodative (Section 1.3).

1.1 The momentum in global growth

The strengthening in advanced-economy growth since 2016 has been accompanied by a pickup in investment growth (**Chart 1.1**). By adding to the capital stock, that should boost the supply capacity of those countries and support the outlook for global activity further ahead. World trade growth has also strengthened over the past 18 months, having been subdued in the years following the crisis (**Chart 1.2**). That pickup has been broad-based across both advanced and emerging market economies and has been an important driver of the recent strength in UK export growth (Section 2).

Chart 1.2 Global trade growth has picked up in recent quarters

Global GDP and trade in goods

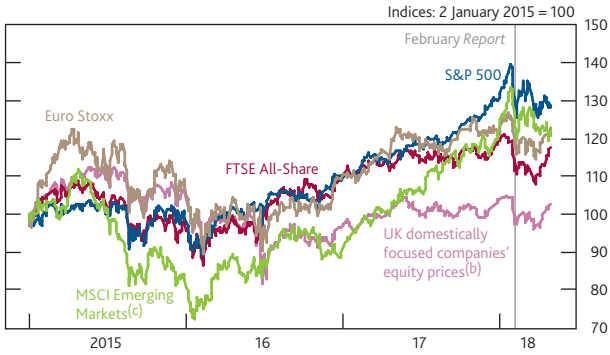


Sources: CPB Netherlands Bureau for Economic Policy Analysis, IMF *WEO*, OECD, Thomson Reuters Datastream and Bank calculations.

(a) Volume measure. Data are three-month moving average.
(b) Chained-volume measure; quarterly data. Constructed using real GDP growth rates of 181 countries weighted according to their shares in world GDP using the IMF's PPP weights. The diamond shows Bank staff's projection for 2018 Q1.

Chart 1.3 International equity prices have fallen somewhat in recent months

International equity prices(a)

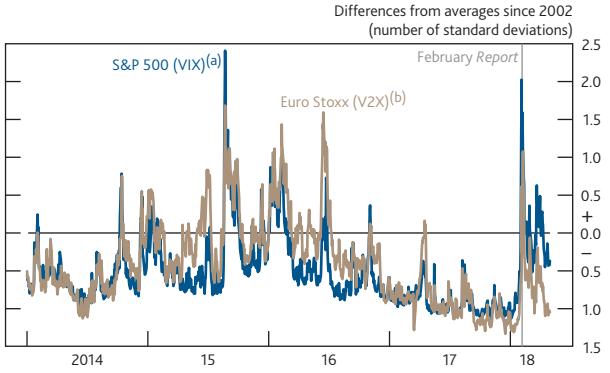


Sources: MSCI, Thomson Reuters Datastream and Bank calculations.

(a) In local currency terms, except for MSCI Emerging Markets which is in US dollar terms.
(b) UK domestically focused companies are those generating at least 70% of their revenues in the UK, based on annual financial accounts data on companies' geographic revenue breakdown.
(c) The MSCI Inc. disclaimer of liability, which applies to the data provided, is available here.

Chart 1.4 Financial market based measures of uncertainty rose sharply in February but have fallen back since

Implied volatilities for euro-area and US equity prices



Sources: Bloomberg Finance L.P. and Bank calculations.

(a) VIX measure of 30-day implied volatility of the S&P 500 equity index.
(b) V2X measure of 30-day implied volatility of the Euro Stoxx equity index.

The strengthening in global growth over the past two years has been accompanied by a marked easing in financial conditions as investor confidence and risk appetite have increased. International equity prices have risen sharply over that period (**Chart 1.3**) and implied equity volatilities, indicators of investor uncertainty, reached historical lows at the end of 2017 (**Chart 1.4**).

Around the time of the February *Report*, equity prices fell back somewhat (**Chart 1.3**) and implied volatility levels rose (**Chart 1.4**) as financial market participants appeared to reassess the outlook for inflationary pressures in the US (Section 1.2). Although equity prices partially recovered following that episode, geopolitical developments and concerns over the outlook for companies' medium-term earnings amid the prospect of higher interest rates are reported to have weighed on these prices in recent weeks.

One important geopolitical development has been the prospect of a rise in trade protectionism. In March, the US government announced that it would impose tariffs on imports of steel and aluminium of 25% and 10% respectively. Further tariffs have since been proposed by both the US and China. By raising the cost of imported goods, tariffs tend to push up prices and reduce demand. The direct impact of the tariffs announced so far is likely to be very small, since the goods affected account for only a small share of bilateral trade between the two countries. But there is a risk that a further rise in trade protectionism could reduce global activity and push up inflation in those countries by more.

The euro area

Quarterly euro-area GDP growth slowed to 0.4% in Q1 (**Table 1.A**), 0.4 percentage points weaker than expected in February. A good part of that weakness appears to have been caused by particularly bad weather in some northern European countries. Business and consumer confidence measures (**Chart 1.5**) and the composite PMI indicator of output growth have fallen since the start of the year, although they remain above their long-term averages.

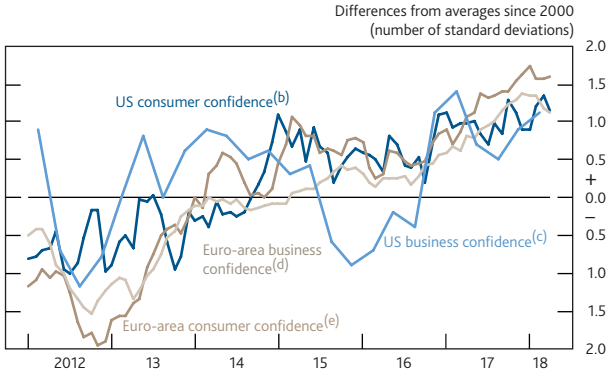
Quarterly GDP growth is expected to recover somewhat in Q2 as the weakness caused by adverse weather unwinds. Growth is projected to be a little above ½% per quarter in the near term (**Table 1.B**), supported by above-average consumer and business confidence as well as accommodative credit conditions.

The United States

Quarterly US GDP growth was 0.6% in 2018 Q1, weaker than expected in February. Some of that downside news is likely to be temporary, reflecting factors such as changes in the timing of tax refunds. Output surveys, and measures of consumer and business confidence (**Chart 1.5**), remain above past averages

Chart 1.5 Measures of euro-area and US confidence remain robust

Euro-area and US consumer and business confidence[a]



Sources: European Commission (EC), The Conference Board, Thomson Reuters Datastream, University of Michigan and Bank calculations.

(a) Monthly data unless otherwise stated.
(b) University of Michigan consumer sentiment index. Data are not seasonally adjusted.
(c) The Conference Board measure of CEO Confidence™, © 2018 The Conference Board. Content reproduced with permission. All rights reserved. Data are quarterly and not seasonally adjusted.
(d) Headline EC sentiment index, reweighted to exclude consumer confidence. Average of overall confidence in the industrial (50%), services (38%), retail trade (6%) and construction (6%) sectors.
(e) EC consumer confidence indicator.

Table 1.B Monitoring the MPC's key judgements

Developments anticipated in February during 2018 Q1–Q3	Developments now anticipated during 2018 Q2–Q4
Advanced economies	**Broadly unchanged**
• Quarterly euro-area GDP growth to average around ¾%.	• Quarterly euro-area GDP growth to average a little above ½%.
• Quarterly US GDP growth to average around ¾%.	• Quarterly US GDP growth to average around ¾%.
Rest of the world	**Broadly unchanged**
• Indicators of activity consistent with four-quarter PPP-weighted EME growth of around 5¼%; GDP growth in China to average around 6¾%.	• Indicators of activity consistent with four-quarter PPP-weighted EME growth of around 5%; GDP growth in China to average around 6½%.
Commodity prices	**Revised up slightly**
• Commodity prices to evolve in line with the conditioning assumptions.	• Oil prices are 6% higher. Commodity prices to evolve in line with the conditioning assumptions.

and growth is projected to be robust in the near term at close to ¾% per quarter (**Table 1.B**).

US GDP growth will be supported by the personal and corporate tax cuts announced in December 2017, as well as the Bipartisan Budget Act of 2018, which lifted discretionary spending caps by around US$300 billion over 2018 and 2019. Together these measures are expected to contribute towards a rise in the US budget deficit. The Congressional Budget Office projects the deficit to rise from 3.5% of GDP in fiscal year 2017 to 4.6% in 2019.

Emerging market economies

GDP growth in China slowed in Q1 (**Table 1.A**) but is expected to pick back up in Q2. Expansionary fiscal policy, robust credit growth and the strength in global demand growth are expected to support activity in coming quarters. The outlook for growth is little changed since February, and the authorities continue to face challenges in maintaining the pace of GDP growth while reducing risks to financial stability.

Activity across other emerging market economies (EMEs) was slightly weaker in 2017 Q4 than expected in February, but survey indicators continue to point to strong growth in the near term. Countries with large US dollar-denominated debts and high external financing requirements are, however, potentially vulnerable to a sharper-than-expected rise in US interest rates or a stronger US dollar exchange rate, and private sector capital flows to EMEs recently turned from a net inflow to a net outflow. While these developments could weigh on activity growth, the rises in commodity prices since mid-2017 (Section 1.2) should support growth for commodity exporters over the coming quarters.

1.2 Global inflation and monetary policy expectations

Inflation

Global inflation has been subdued in recent years. Much of that is likely to have reflected the economic slack that opened up within countries following the financial crisis. Even as demand started to recover, that slack meant that inflationary pressures remained relatively weak.

The strength of global demand has led to much of that slack being absorbed. In the US, both unemployment and broader measures of spare capacity, such as underemployment, have fallen in recent years. And estimates from statistical filters, which estimate potential supply using past observations of GDP, inflation and unemployment, suggest that little, if any, spare capacity remains. As spare capacity has been absorbed, core inflation and wage growth in the US have picked up (**Table 1.C**) and the weight placed by investors on the risk of very low inflation appears to have fallen (**Chart 1.6**).

Table 1.C Wage growth and core inflation have picked up in the US

Inflation and wage growth in selected economies

Per cent

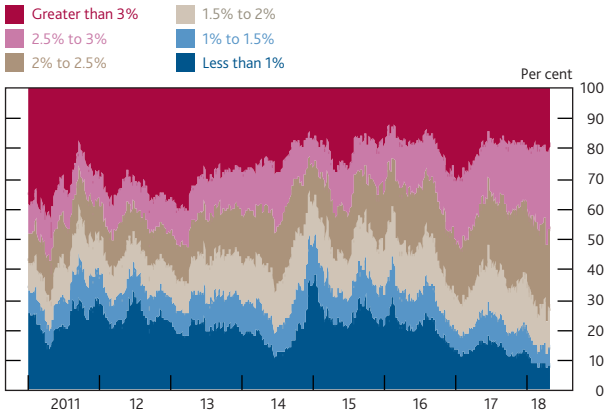
	Monthly averages				2018			
	1998–2007	2016	2017 H1	2017 H2	Jan.	Feb.	Mar.	Apr.
Annual headline consumer price inflation								
United Kingdom	1.6	0.7	2.4	2.9	3.0	2.7	2.5	n.a.
Euro area[a]	2.0	0.2	1.6	1.4	1.3	1.1	1.3	1.2
United States[b]	2.0	1.2	1.8	1.6	1.7	1.7	2.0	n.a.
UK-weighted world inflation[c]	2.0	0.8	1.6	1.5	n.a.	n.a.	1.9	n.a.
Annual core consumer price inflation (excluding food and energy)[d]								
United Kingdom	1.2	1.3	2.1	2.6	2.7	2.4	2.3	n.a.
Euro area[a]	1.6	0.9	1.0	1.0	1.0	1.0	1.0	0.7
United States[b]	1.8	1.8	1.7	1.4	1.5	1.6	1.9	n.a.
Annual UK-weighted world export price inflation excluding oil[c]								
	1.1	-1.8	3.1	1.8	n.a.	n.a.	0.8	n.a.
Annual wage growth								
United Kingdom[e]	4.3	2.4	2.2	2.4	2.8	2.8	n.a.	n.a.
Euro area[f]	2.3	1.2	1.5	1.7	n.a.	n.a.	n.a.	n.a.
United States[g]	3.2	2.3	2.4	2.6	n.a.	n.a.	2.7	n.a.

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

(a) Data points for April 2018 are flash estimates.
(b) Personal consumption expenditure price index inflation. Data points for March 2018 are preliminary estimates.
(c) UK-weighted world consumer price inflation is constructed using data for consumption deflators for 51 countries, weighted according to their shares in UK exports. UK-weighted world export price inflation excluding oil is constructed using data for non-oil export deflators for 51 countries, excluding major oil exporters, weighted according to their shares in UK exports. Data are quarterly. Figures for March are Bank staff projections for 2018 Q1.
(d) For the euro area and the UK, excludes energy, food, alcoholic beverages and tobacco. For the US, excludes food and energy.
(e) Data are three-month moving averages and start in 2001.
(f) Compensation per employee. Data are quarterly.
(g) Employment Cost Index for wages and salaries of civilian workers. Data are quarterly.

Chart 1.6 The weight placed on the risk of very low US CPI inflation has fallen

Option-implied weight on US CPI inflation three years ahead[a]



Sources: Bloomberg Finance L.P. and Bank calculations.

(a) Weights are risk-neutral probabilities from estimated option-implied distributions. Such probabilities contain a compensation for risk, so will differ from market participants' actual subjective probabilities. For more details on option-implied probability distributions, see Smith, T (2012), 'Option-implied probability distributions for future inflation', *Bank of England Quarterly Bulletin*, 2012 Q3.

While slack has also diminished in the euro area, statistical estimates suggest that some spare capacity remains. Euro-area wage growth picked up slightly in 2017 in response to the reduction in slack, although core inflation remains subdued (**Table 1.C**).

Inflation can also be influenced by global factors through their impact on export prices.[1] As the proportion of demand accounted for by imported goods and services has risen steadily over time, the importance of these global channels for inflation is likely to have increased.

Highly tradable goods such as commodities exert a particularly strong influence on inflation rates. Oil and metals prices have picked up sharply since mid-2017 (**Chart 1.7**). Consumption of both oil and metals tends to be closely related to world activity and part of that rise in prices is likely to have reflected the strength in global demand, against a backdrop of modest supply growth. Commodity prices have been volatile in recent months, predominately reflecting supply factors and geopolitical developments, including the introduction of US sanctions on Russia which has led to sharp fluctuations in the price of aluminium. Overall, rises in the prices of commodities over the past year are projected to push up world export price inflation in the near term and by a little more than in February, although world export price inflation is projected to slow in subsequent quarters.

Monetary policy expectations

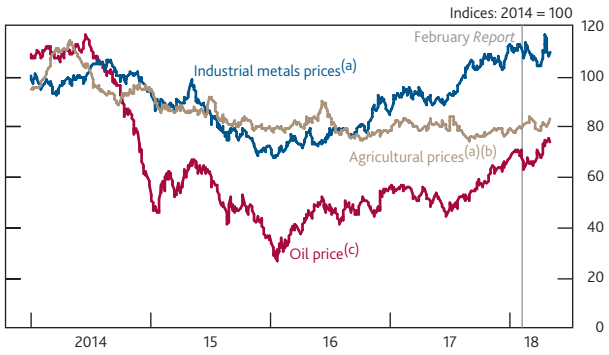
As inflationary pressures in some countries have begun to emerge, expectations of future official interest rates have risen.

In the US, the Federal Open Market Committee raised the target range for the federal funds rate to between 1½% and 1¾% at its March meeting, and left policy unchanged in May (**Chart 1.8**). The market-implied path has risen by around ¼ percentage point since the February *Report*, and suggests a ¾ percentage point rise in the policy rate over the next year. In addition, as announced in September 2017, the Federal Reserve's balance sheet has been shrinking gradually as a proportion of maturing assets are not replaced. As a result, its balance sheet had shrunk by around US$100 billion by early May.

The European Central Bank (ECB) has made no changes to its policy rates since February, and the market path implies a gradual rise in policy rates from 2019 onwards (**Chart 1.8**). As announced in October, while the ECB is continuing its asset purchase programme until at least September 2018, it has

(1) There are a number of other global channels that may affect inflation. For example, the integration of lower-cost producers into the global economy and the increased importance of global labour pools for domestic supply may have reduced inflation for advanced economies. For more details, see Carney, M (2017), '[De]Globalisation and inflation'.

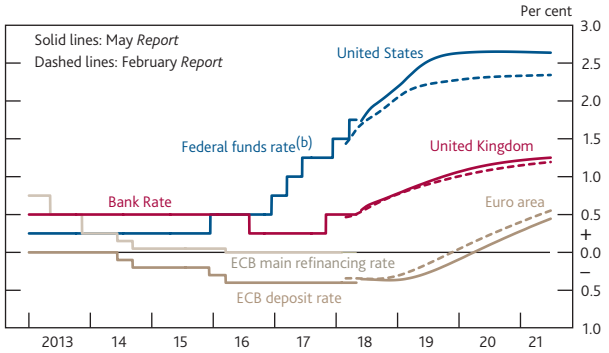
Chart 1.7 Oil and metals prices have risen over the past year
US dollar oil and commodity prices



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

(a) Calculated using S&P GSCI US dollar commodity price indices.
(b) Total agricultural and livestock S&P commodity index.
(c) US dollar Brent forward prices for delivery in 10–25 days' time.

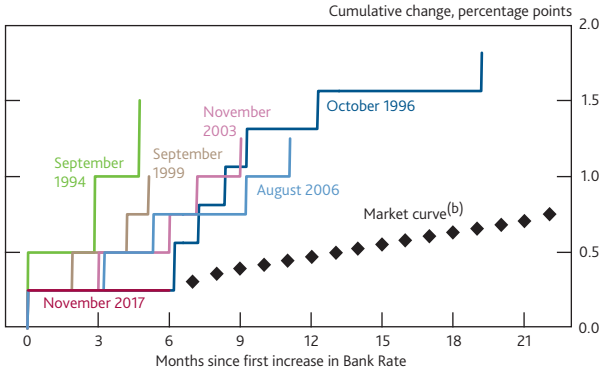
Chart 1.8 The market-implied path for US short-term interest rates has risen
International forward interest rates(a)



Sources: Bank of England, Bloomberg Finance L.P., ECB and Federal Reserve.

(a) The May 2018 and February 2018 curves are estimated using instantaneous forward overnight index swap rates in the 15 working days to 2 May and 31 January respectively.
(b) Upper bound of the target range.

Chart 1.9 Market prices imply a gradual tightening cycle relative to the past
UK Bank Rate tightening cycles(a)



Sources: Bank of England, Bloomberg Finance L.P. and Bank calculations.

(a) Tightening cycles since the start of inflation targeting in 1992. Tightening cycles are shown up to when interest rates reached their highest level before they were next reduced.
(b) The curve is estimated using instantaneous forward overnight index swap rates in the 15 working days to 2 May 2018.

reduced the pace of purchases from €60 billion to €30 billion per month since the beginning of 2018.

At its March meeting, the MPC voted 7–2 to leave Bank Rate unchanged and unanimously to maintain the stock of purchased assets (see Box 1). The MPC judged that, given the prospect of excess demand over the forecast period, an ongoing tightening of monetary policy would be expected to be appropriate over the next three years in order to return inflation sustainably to the 2% target. In the run-up to the May *Report*, the market-implied path for Bank Rate reached 1¼% in three years' time, slightly higher than in the run-up to the February *Report* (**Chart 1.8**). That path continues to imply that future rises in Bank Rate will be gradual relative to past tightening cycles (**Chart 1.9**). The MPC's May decision is described in the Monetary Policy Summary and in more detail in the Minutes of the meeting.

Longer-term interest rates are close to their levels in the run-up to the February *Report* in the UK, Germany and France (**Chart 1.10**). They have risen slightly in the US, however, which market contacts report may be partly due to a projected increase in government bond issuance (Section 1.1) net of central bank asset purchases. Between late 2013 and 2017, government bond issuance in major advanced economies broadly matched purchases of government debt by central banks. But lower volumes of asset purchases, combined with projected rises in US government debt issuance, will raise the stock of government bonds that needs to be held by private investors. All else equal, that is likely to be pushing up the required yields on those bonds and hence longer-term interest rates. Overall, however, longer-term rates remain at historically low levels, largely reflecting slow-moving structural factors such as demographics. These factors are likely to continue to weigh on longer-term rates for some time.(2)

1.3 Credit conditions facing UK households and companies

Bank Rate was raised to 0.5% in November and the path of short-term interest rates has steepened since then. Much of that rise has been passed through to the borrowing rates facing households and companies, many of which have risen in recent months. Most borrowing rates for households remain lower than in mid-2016, however, as spreads have narrowed. That narrowing has reflected a rise in global risk appetite and the stronger outlook for global growth, which reduced the cost of bank funding relative to policy rates in the UK and many other countries during 2016–17, as well as strong competition

(2) For further discussion, see the box on pages 8–9 of the November 2016 *Inflation Report*; and Vlieghe, G (2016), 'Monetary policy expectations and long-term interest rates'.

Box 1
Monetary policy since the February *Report*

In the MPC's central projection in the February *Report*, GDP was expected to grow by around 1¾% per year on average over the forecast period. While modest by historical standards, that growth rate was expected to exceed the diminished rate of supply growth of the economy, which was projected to be around 1½% per year. As a result, a small margin of excess demand was projected to emerge by early 2020 and build thereafter. That would support domestic cost growth, although CPI inflation was projected to fall back gradually as the effects of sterling's past depreciation faded. Conditional on the path for Bank Rate implied by market interest rates prevailing at the time, inflation remained above the 2% target in the second and third years of the MPC's central projection.

At its meeting ending on 21 March 2018, the MPC noted that recent data releases had been broadly consistent with the view of the medium-term outlook set out in the February *Report*. The prospects for global GDP growth remained strong, and financial conditions continued to be accommodative, with little persistent effect from the recent financial market volatility.

CPI inflation fell from 3.0% in January to 2.7% in February. Inflation was expected to ease further, although to remain above the 2% target in the short term. A range of measures of domestically generated inflation had picked up, although they generally remained below target-consistent levels. Wage growth had also increased steadily, as expected. The unemployment rate had remained low and other indicators suggested that the margin of spare capacity within the labour market was limited. Taken together with the increase in job-to-job flow rates, which could strengthen workers' bargaining power, this provided increasing confidence that growth in wages and unit labour costs would pick up to rates consistent with the inflation target.

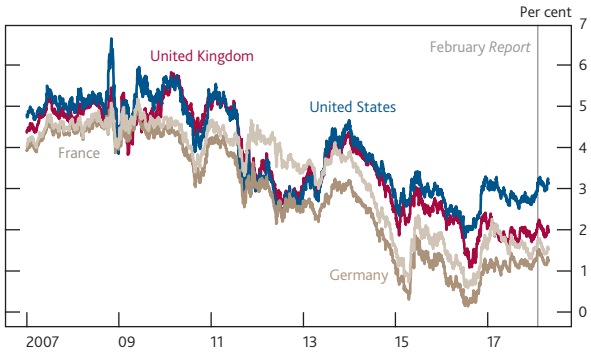
As in February, the best collective judgement of the MPC remained that, given the prospect of excess demand, an ongoing tightening of monetary policy over the forecast period would be appropriate to return inflation sustainably to its target at a more conventional horizon. All members agreed that any future increases in Bank Rate were likely to be at a gradual pace and to a limited extent.

For seven members, however, that did not require an increase in Bank Rate at this meeting. There had been few surprises in recent economic data and the February *Inflation Report* projections, conditioned on a gently rising path of Bank Rate, had appeared broadly on track. The May forecast round would enable the Committee to undertake a fuller assessment of the underlying momentum in the economy, the degree of slack remaining and the extent of domestic inflationary pressures.

Two members favoured a rise in Bank Rate by 25 basis points. They noted the widespread evidence that slack was largely used up and that pay growth was picking up, presenting upside risks to inflation in the medium term. A modest tightening of monetary policy at this meeting could mitigate the risks from a more sustained period of above-target inflation that might ultimately necessitate a more abrupt change in policy.

Chart 1.10 Longer-term interest rates have risen slightly in the US since the run-up to the February *Report*

Five-year, five-year forward nominal interest rates[a]



Sources: Bloomberg Finance L.P. and Bank calculations.

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

between lenders in the face of subdued demand for credit in the UK.

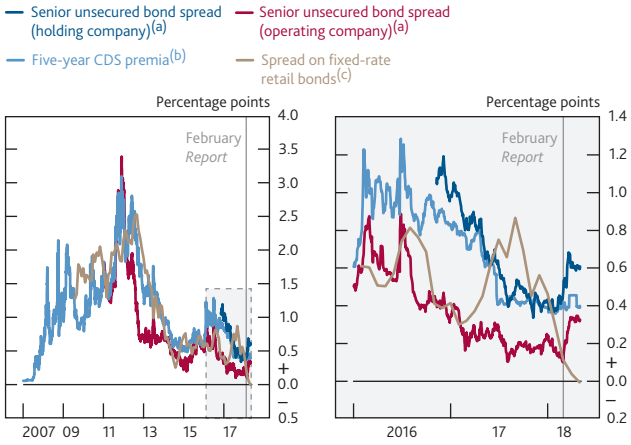
Borrowing costs for households and companies are projected to rise gradually further in coming years. The market-implied path for Bank Rate remains upward sloping and bank funding costs, over and above those market rates, have risen in recent months, unwinding some of the compression since 2016. This will feed through gradually to higher retail interest rates. Nevertheless, credit conditions are likely to remain accommodative, and this will support the outlook for consumption and business investment (Section 5).

Bank funding costs and retail deposit rates

As explained in Box 2, an important component of the interest rates facing households and companies is the cost of bank funding. During the financial crisis, the spread between reference rates and bank funding costs rose sharply as investors demanded higher compensation for the risks associated with providing funding to banks (**Chart 1.11**). These

Chart 1.11 UK bank wholesale unsecured funding spreads have risen in recent months

UK banks' indicative longer-term funding spreads

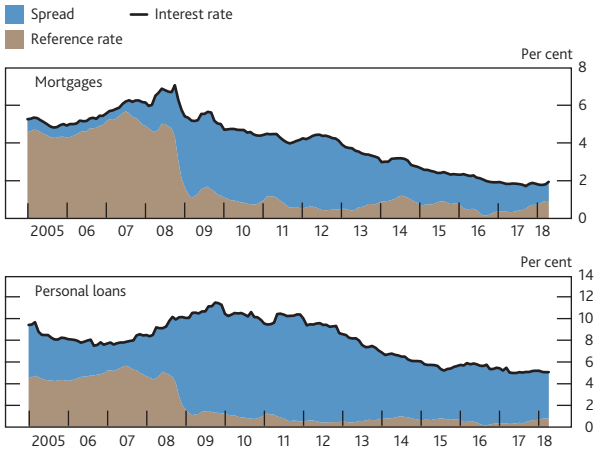


Sources: Bank of England, Bloomberg Finance L.P., IHS Markit and Bank calculations.

(a) Constant-maturity unweighted average of secondary market spreads to mid-swaps for the major UK lenders' five-year euro-denominated bonds or a suitable proxy when unavailable. For more detail on unsecured bonds issued by operating and holding companies, see the 2017 Q3 *Credit Conditions Review*.
(b) Unweighted average of five-year euro-denominated senior credit default swap (CDS) premia for the major UK lenders.
(c) Unweighted average of spreads for two-year and three-year sterling quoted fixed-rate retail bonds over equivalent-maturity swaps. Bond rates are end-month rates and swap rates are monthly averages of daily rates.

Chart 1.12 Spreads on household lending rates have narrowed since mid-2016

Averages of quoted mortgage and personal loan rates(a)



Sources: Bank of England, Bloomberg Finance L.P. and Bank calculations.

(a) Interest rates are calculated using the Bank's quoted interest rate series, which are weighted averages of rates from a sample of banks and building societies with products meeting the specific criteria. Data are not seasonally adjusted. Spreads are calculated over Bank Rate or, for longer fixed-rate products, OIS rates of the appropriate maturity. Mortgage rates are a weighted average of: two-year fixed rate (75% LTV); five-year fixed rate (75% LTV); lifetime tracker; two-year fixed rate (90% LTV). Personal loan rates are a weighted average of: £5,000 personal loan; £10,000 personal loan. See Butt, N and Pugh, A (2014), 'Credit spreads: capturing credit conditions facing households and firms', *Bank of England Quarterly Bulletin*, 2014 Q2.

higher funding spreads meant that the interest rates banks charged for household borrowing fell by significantly less than Bank Rate over this period.

In the years following the crisis, funding spreads narrowed as banks repaired their balance sheets and became more resilient. Central bank policies also helped to improve conditions over this period. The Bank's Funding for Lending Scheme, which began in 2012, provided funding at rates closer to Bank Rate and incentivised banks to increase lending.(3) In addition, the ECB's longer-term refinancing operations — which provided finance directly to euro-area banks beginning in late 2011 — led to an improvement in sentiment in UK bank funding markets, and some UK banks raised funds directly from these operations through their foreign subsidiaries.

Since mid-2016, a rise in global risk appetite and the stronger outlook for activity (Section 1.1) have seen investors more willing to provide funding for banks, which has helped drive wholesale unsecured funding spreads narrower still (**Chart 1.11**). The Term Funding Scheme, which enabled banks to draw down funding between August 2016 and February 2018 at rates close to Bank Rate for a period of four years, may also have contributed to the narrowing in funding spreads over this period, although the effect is estimated to be relatively small.

Spreads on wholesale unsecured funding have widened slightly since February, although they remain tight (**Chart 1.11**). That widening appears to reflect a shift in the balance of supply and demand for bank debt. Market contacts have cited a number of drivers of the recent moves in both short and longer-term funding spreads, including: a rise in US Treasury bill issuance; higher bank debt issuance in response to regulatory changes; the prospective end of the ECB's corporate bond purchase programme; and recent US corporate tax reform, which has reduced the demand for bank debt and encouraged greater share buybacks among US companies. These developments have been most acute in the US dollar funding market — where Libor-OIS spreads, in particular, have widened sharply — but they appear to have affected funding spreads more broadly as banks compete globally for funding. Wholesale funding spreads for UK banks are projected to widen slightly further in coming years.

Banks also fund their lending through deposits. In contrast to the widening in wholesale funding spreads, spreads on both time (**Chart 1.11**) and sight deposits have fallen in recent months. As discussed in Box 2 of the February *Report*, sight deposit rates were some way below Bank Rate prior to the crisis. Since there are limits to the extent that deposit rates can be lowered below 0%, deposit rates fell by less than Bank Rate during the crisis. Since the rise in Bank Rate in

(3) For more details, see the box on pages 14–15 of the August 2012 *Inflation Report*.

Box 2
Factors influencing the cost of borrowing for households and companies

The cost of credit is an important influence on the spending decisions of households and companies. A key component of that cost is the 'credit spread' — the extent to which the interest rates facing households and companies exceed their reference rates, namely Bank Rate or longer-term equivalent market rates.

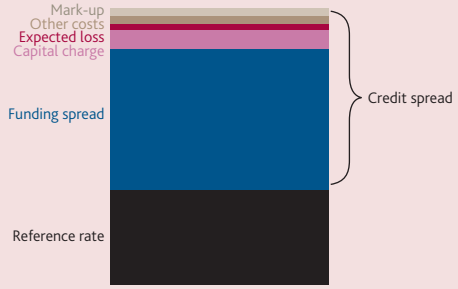
This box sets out the factors that can influence the size of the credit spread and hence the overall cost of borrowing. As shown in the stylised example in **Figure A**, these include the funding spread (the spread between banks' funding costs and reference rates), credit risk charges associated with the loan (which encompass both expected losses and a capital charge), other costs and a mark-up.

(i) **Funding spread.** Banks' funding for the loans they extend comes from a variety of sources, including wholesale funding from other lenders and institutional investors, and customer deposits. Borrowing rates on unsecured wholesale debt are a useful indicator of the marginal cost of funding for the banking system as a whole, since this is a market in which it is possible to raise a large amount of funding relatively quickly. In addition to other market influences, the funding spread will reflect the amount of compensation investors demand for the risk that a bank might fail. As explained in Section 1.3, that spread has fallen sharply since the crisis as banks have repaired their balance sheets and global risk appetite has increased.

(ii) **Credit risk charges.** These account for the risk that a borrower may not repay their loan in full, and are formed of two components: the expected loss associated with the loan and the capital charge. The expected loss component is determined by the likelihood that a borrower will default, together with the loss for the bank should that default occur. The capital charge component of credit risk represents the cost of capital funding — which tends to be more expensive than wholesale debt funding — in order to absorb losses in the event of a stress scenario. The amount of capital funding, and hence the cost to the bank of the capital charge, is affected by national and international regulation.

(iii) **Other costs and mark-up.** The remainder of the credit spread comprises additional factors, including banks' operating costs, such as staff costs and overheads, and any mark-up over and above the costs associated with making a loan. As explained in Section 1.3, strong competition between lenders means that mark-ups are likely to have fallen in recent quarters, especially in the market for mortgage lending.

Figure A Stylised example of loan pricing(a)



(a) The framework is described in more detail in Button, R, Pezzini, S and Rossiter, N (2010), 'Understanding the price of new lending to households', *Bank of England Quarterly Bulletin*, 2010 Q3. See also Cadamagnani, F, Harimohan, R and Tangri, K (2015), 'A bank within a bank: how a commercial bank's treasury function affects the interest rates set for loans and deposits', *Bank of England Quarterly Bulletin*, 2015 Q2.

November, the corresponding rise in deposit rates has therefore been somewhat less as the spread between deposit rates and Bank Rate has begun to return to more normal levels.

Household borrowing

The compression in bank funding spreads during 2016–17 contributed to a narrowing in spreads on household borrowing rates (**Chart 1.12**). A weighted average of spreads on new household mortgage rates has fallen by a little under 1 percentage point since mid-2016. Spreads on personal loan rates have also narrowed over that period.

Besides the compression in bank funding spreads, another factor that may have contributed to the narrowing in spreads on retail interest rates is the strength in competition between

Table 1.D Most retail interest rates have risen since August 2017 but remain lower than in mid-2016

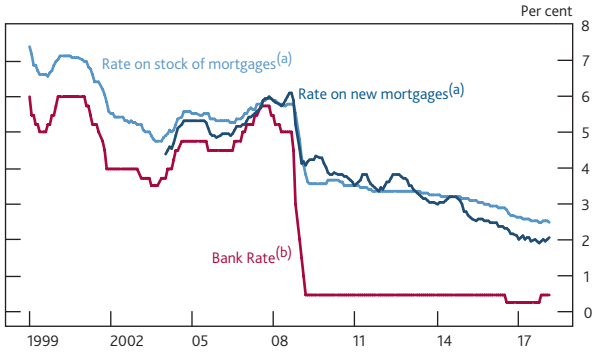
Retail interest rates on deposits and lending[a]

	Level (per cent)	Change since (basis points)		
		Feb. 2018	Aug. 2017	May 2016
Households[b]				
Mortgages				
Two-year variable rate, 75% LTV	1.57	-3	18	-4
Two-year fixed rate, 60% LTV	1.74	29	50	4
Two-year fixed rate, 75% LTV	1.72	23	29	-19
Five-year fixed rate, 75% LTV	2.03	4	7	-61
Two-year fixed rate, 90% LTV	2.37	16	4	-38
Consumer credit				
£10,000 unsecured loan	3.79	-3	0	-54
Deposits				
Instant access savings	0.21	1	7	-19
One-year fixed-rate bond	0.79	-2	-7	-12
Private non-financial corporations[c]				
Outstanding floating loans	2.93	4	35	18
New floating loans	2.58	-14	29	7

(a) The Bank's quoted and effective rate series are weighted averages of rates from a sample of banks and building societies with products meeting the specific criteria. Data are not seasonally adjusted.
(b) Sterling-only end-month quoted rates. The latest data points are for April 2018. Some of the differences in the rates between products will reflect sampling differences.
(c) Sterling-only average monthly effective rates. The latest data points are for March 2018.

Chart 1.13 Effective mortgage rates have fallen further

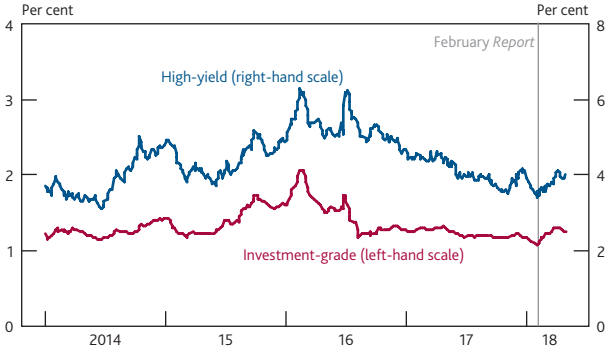
Bank Rate and effective mortgage interest rates



(a) Effective rates on sterling household loans. The Bank's effective rate series are currently compiled using data from 19 UK monetary financial institutions and are average monthly rates. Not seasonally adjusted.
(b) End-month rate.

Chart 1.14 Corporate borrowing spreads have widened slightly since February

Sterling non-financial corporate bond spreads[a]



Sources: ICE/BoAML Global Research, Thomson Reuters Datastream and Bank calculations.

(a) Option-adjusted spreads on government bond yields. Investment-grade corporate 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.

lenders in the face of relatively sluggish demand for credit. Lenders noted in recent discussions that profit margins for low loan to value (LTV) products were squeezed, and that competition has intensified over the past six months in the market for high LTV mortgages where margins were wider.(4)

That narrowing in credit spreads has meant that many household borrowing rates remain significantly lower than in mid-2016, even after rises in short-term interest rates in recent months have been passed through (**Table 1.D**). That has allowed many mortgagors to remortgage to lower interest rates than they had previously, so effective rates on the existing stock of household borrowing have fallen since mid-2016 (**Chart 1.13**). Rates on personal loans have also decreased markedly since mid-2016 and have changed little in recent months, although there is evidence of a tightening in consumer credit conditions as a whole over the past year (Section 2).

The upward-sloping market-implied path for short-term interest rates and recent rises in bank funding spreads are expected to feed through gradually into a further rise in household borrowing rates over time. Lending conditions are nevertheless projected to remain relatively accommodative and supportive of consumption growth (Section 2).

Corporate financing conditions

Bank lending rates for companies have risen since August 2017 (**Table 1.D**), mainly reflecting rises in short-term market interest rates. Since most lending to companies is agreed at a floating rate, those rises were passed through fairly quickly to the stock of corporate borrowing.

As well as borrowing from banks, companies can raise finance by issuing equity. While the FTSE All-Share index has risen in recent years, much of that has reflected the effect of sterling's depreciation on the value of profits earned by UK-listed companies on their overseas operations. The equity prices of UK-focused companies have risen by less than the FTSE All-Share and aggregate US and euro-area indices (**Chart 1.3**). Reflecting that, equity risk premia — the additional return that investors require for holding equities instead of less risky government debt — are estimated to have increased for UK-focused companies in recent years.

Larger companies can also raise finance by issuing corporate bonds. Spreads on sterling corporate bonds have widened a little in recent months (**Chart 1.14**), reflecting some of the same factors that have driven the fall in equity prices and widening in bank funding spreads. That, combined with increases in market interest rates, means that corporate bond yields have risen over the past year, increasing financing costs for companies.

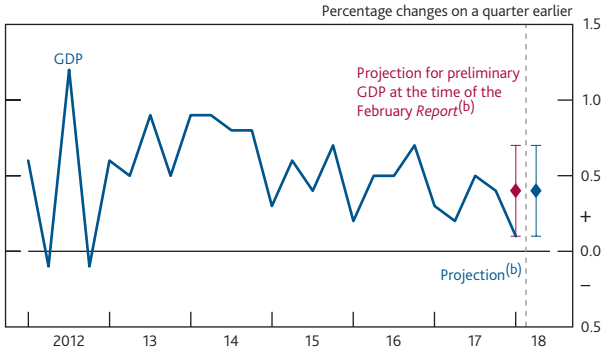
(4) For more details, see the 2018 Q1 *Credit Conditions Review*.

2 Demand and output

GDP growth dipped in Q1, but much of that decline is likely to be temporary. Over 2017, GDP growth was modest, but close to the estimated pace of potential supply growth. Sterling's depreciation has weighed on real incomes and, in turn, consumption. At the same time, demand growth has rotated towards net trade and business investment in response to that depreciation and strong global growth. The rotation in the composition of growth is expected to persist in the near term as the effects of the depreciation continue to pass through.

Chart 2.1 GDP growth slowed in Q1

Output growth and Bank staff's near-term projection[a]

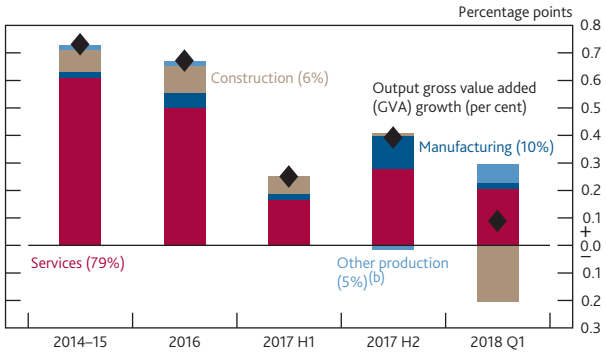


Sources: ONS and Bank calculations.

(a) Chained-volume measures. GDP is at market prices.
(b) The blue diamond shows Bank staff's projection for preliminary GDP growth in 2018 Q2. 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.

Chart 2.2 Weather-related factors probably weighed on construction and services activity in Q1

Contributions to average quarterly GVA growth by output sector[a]



(a) Chained-volume measures at basic prices. Figures in parentheses are weights in nominal GDP in 2015.
(b) Other production includes utilities, extraction and agriculture.

Quarterly GDP growth slowed in 2018 Q1 to 0.1%, from 0.4% in 2017 Q4 (**Chart 2.1**). That was 0.3 percentage points weaker than expected at the time of the February *Report*. As discussed in Box 3, part of that slowing is likely to have reflected temporary factors, with the boost from the reopening of the Forties oil pipeline more than offset by recent disruption from adverse weather.

Part of the recent weakness is also likely to be revised away over time, with output growth expected to be revised up to 0.3% in the mature estimate. Preliminary estimates of quarterly GDP growth are typically revised up, with a greater upward revision in the first quarter of the year than in other quarters. In addition, estimates of output growth in quarters with substantial snowfall have tended to be revised up significantly. That expected upward revision is also supported by survey indicators of activity, which overall point to only a modest slowing in output growth in Q1.

At a sectoral level, a contraction in construction activity weighed particularly sharply on output growth in Q1 (**Chart 2.2**). That is consistent with both the role of weather-related disruption — the Bank's Agents report that construction activity was affected by the snow and by inclement weather more generally — and the potential for a substantial upward revision to growth. Early estimates of construction output have been particularly prone to upward revisions in recent years. In addition, the purchasing managers' index for construction suggested that output recovered in April, probably as the effects of snow abated. Adverse weather may also account for part of the weakness in consumer services growth. By contrast, business services activity was strong and growth in manufacturing output remained positive.

Headline GDP growth is projected to pick back up to 0.4% in Q2, consistent with survey indicators of growth. There is considerable uncertainty about momentum in the first half of the year, however. On the one hand, if adverse weather accounted for a larger part of the weakness in Q1, then growth

could pick up by more in Q2 (see Box 3). On the other hand, if more of the weakness reflected underlying growth, then it could recover by less.

GDP growth is projected to remain around 0.4% over the rest of the year, as the underlying drivers of growth remain supportive. Within that, the rotation in demand growth toward net trade and business investment (Section 2.1), and away from household spending (Section 2.2), since mid-2016 is projected to persist (**Chart 2.3**).

2.1 Net trade and business investment

The strength of global growth over the past 18 months, together with the past depreciation in sterling, appears to have boosted net trade. That, in turn, should help to support business investment. Greater external demand for UK goods and services, combined with a rise in profit margins on those exports in sterling terms, should encourage exporters and other firms in the supply chain to expand production and invest in capacity. In addition, higher import prices will have encouraged UK households and companies to substitute towards domestically produced goods and services.

Net trade subtracted 0.4 percentage points from aggregate demand growth in 2017 Q4. This partly reflected a drop in net exports of non-monetary gold. But this component is very volatile and is offset by changes in the contribution to GDP growth from valuables.(1) The closure of the Forties oil and gas pipeline in December (see Box 3) also weighed on net trade in 2017 Q4. The resulting fall in domestic production of oil and gas temporarily reduced fuel exports, and fuel imports increased to make up the shortfall. That effect should have unwound in 2018 Q1, as the pipeline was reopened by January, boosting net trade.

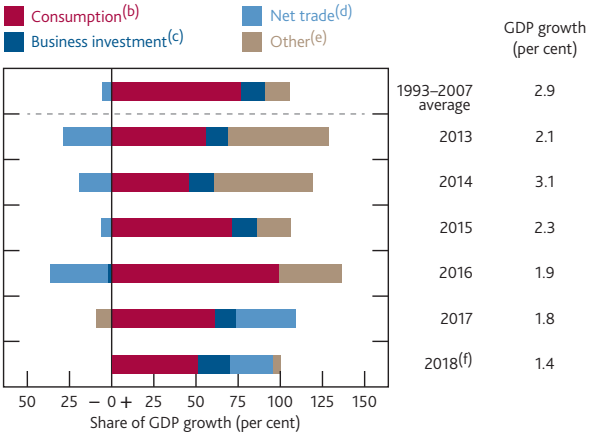
Consistent with the fall in net trade, the nominal trade balance widened in 2017 Q4. This, however, was more than offset by a narrowing in the income deficit, reflecting a rise in the net rate of return on UK foreign direct investment. As a result, the current account deficit — which reflects the balance of nominal trade flows and other payments between the United Kingdom and the rest of the world — narrowed slightly to 3.6% of GDP.

Over 2017 as a whole, net trade contributed positively to GDP growth, having subtracted from growth on average over the past (**Chart 2.3**). That positive contribution reversed some of the large fall in 2016 and was greater than expected a year ago, supported by stronger-than-expected global growth (see Box 5).

(1) Non-monetary gold is a volatile component of UK trade, reflecting activity in the London gold bullion market, and has no impact on aggregate demand; movements in non-monetary gold are offset by movements in private sector investment in valuables.

Chart 2.3 The composition of demand has rotated away from consumption

Share of GDP growth by expenditure component(a)



(a) Chained-volume measures. Annual average.
(b) Includes non-profit institutions serving households (NPISH).
(c) Investment data take account of the transfer of nuclear reactors from the public corporation sector to central government in 2005 Q2.
(d) Excluding the impact of missing trader intra-community (MTIC) fraud.
(e) Calculated as a residual. Includes housing investment, government consumption and investment, changes in inventories, the statistical discrepancy and acquisitions less disposals of valuables.
(f) Bank staff's projection for 2018.

Table 2.A Monitoring the MPC's key judgements

Developments anticipated in February during 2018 Q1–Q3	Developments now anticipated during 2018 Q2–Q4
Consumer spending	**Broadly unchanged**
• Quarterly real post-tax household income growth to average ¼%.	• Quarterly real post-tax household income growth to average ¼%.
• Quarterly consumption growth to average ¼%.	• Quarterly consumption growth to average ¼%.
Housing market	**Broadly unchanged**
• Mortgage approvals for house purchase to average around 65,000 per month.	• Mortgage approvals for house purchase to average around 65,000 per month.
• The average of the Halifax/Markit and Nationwide house price indices to increase by just under ½% per quarter, on average.	• The average of the Halifax/Markit and Nationwide house price indices to increase by around ¾% per quarter, on average.
• After picking up in Q4, housing investment to be broadly flat.	• After recovering somewhat in Q2, housing investment to be broadly flat.
Business investment	**Broadly unchanged**
• Quarterly growth in business investment to average ¾%.	• Quarterly growth in business investment to average ¾%.
Trade	**Broadly unchanged**
• Net trade to provide a significant boost to quarterly UK GDP growth.	• Net trade to provide a significant boost to quarterly UK GDP growth.

Box 3
The role of temporary factors in recent output growth

Over the past two quarters, output growth has been affected by two significant, but temporary, factors. First, the Forties pipeline, a major oil and gas pipeline in the North Sea, was closed in December for three weeks, reducing energy production in 2017 Q4. Second, adverse weather in 2018 Q1 weighed on domestic activity across a number of sectors.

The impact of those temporary factors on GDP growth will partly depend on the extent to which output is recovered in subsequent periods. For example, a temporary hit to output in a given quarter will push quarterly growth below its trend. A recovery in activity to its previous level will then push growth above trend in the next quarter before reverting to trend thereafter, all else equal.

Given those dynamics, estimating the impact of recent temporary factors is important for assessing the underlying pace of growth. This box sets out how recent events are expected to have affected domestic output and the implications for the path of underlying activity.

The impact of the closure of the Forties pipeline

Over a three week period in December, the Forties pipeline, which transports around 40% of the UK's North Sea oil and gas production, was closed. Comparing the amount of oil and gas produced that month with usual production levels suggests that the closure subtracted 0.05 percentage points from overall output in 2017 Q4, by weighing on output growth in the mining and quarrying sector, which includes oil and gas production.

Since the pipeline has reopened, production has returned to its original level, providing an equivalent boost to growth in Q1. As discussed in Section 2.2, that closure and subsequent reopening has also affected the composition of demand, weighing on net trade in Q4, before boosting it in Q1. The nature of oil and gas production means none of that lost output is expected to be made up.

The impact of adverse weather

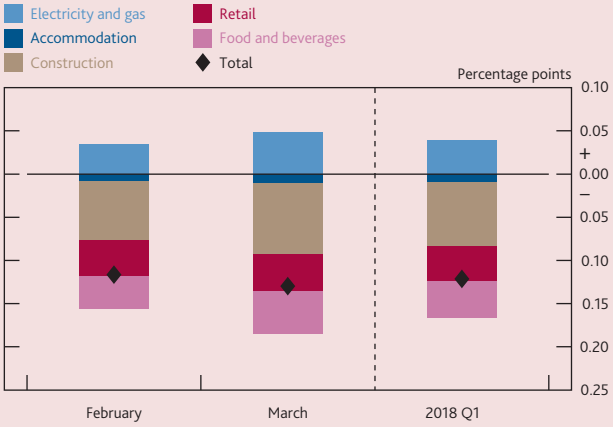
Snowfall in February and March, and inclement weather in Q1 more generally, is likely to have affected economic activity. The impact of snow is difficult to estimate, however, and early estimates of output growth in past quarters with heavy snowfall have been prone to material upward revisions.

Snow will probably have been a significant driver of reduced activity in 2018 Q1 in the distribution sector — reflected in the weakness of retail sales (Section 2.2) — and, in particular, the construction sector, as transportation was disrupted and building projects delayed. Output in other consumer services, such as in food and accommodation services, was also weak in Q1 and is likely to have been reduced by snow. Offsetting that to some extent, output in the utilities sector picked up, probably as cold weather increased energy usage.

Given uncertainty around early estimates, other indicators can be useful in providing additional evidence on the impact of snowfall. For example, internet search engine data can provide a timely indicator of the number of people actually affected by snow, rather than just the volume of snow overall.(1) Estimates from the past relationship between Google searches for 'snow disruption' and activity in sectors that tend to be significantly affected suggests the impact weighed on GDP growth by a little more than 0.1 percentage points in 2018 Q1. That drag reflects lower services — particularly the retail and hospitality sectors — and construction activity, offset somewhat by a boost to utilities output (**Chart A**). That is corroborated by contacts of the Bank's Agents, who have reported particular weakness in the construction and consumer services sectors.

Chart A Snow is likely to have weighed on output in a number of sectors in Q1

Estimated impact of snow on output in selected sectors(a)



Sources: Google Trends, ONS and Bank calculations.

(a) Calculated by regressing monthly output growth in each sector on two autoregressive terms and the Google trends indicator of snow disruption. The sample period is 2009 to 2017. Only those relationships that are statistically significant are included. Output data are chained-volume measures at basic prices.

Although the negative impact of adverse weather on output should be temporary, a key question for the near-term outlook is the extent to which companies catch up any of the output that they were unable to produce in Q1. Overall, Bank staff estimate that the amount of output caught up in Q2 is likely to be negligible. The relationship between internet searches for snow disruption and activity suggests that such catch-up has tended to be small over the past. In addition, much of the

(1) For more detail on the strengths and weakness of internet search data as an indicator, see McLaren, N and Shanbhogue, R (2011), 'Using internet search data as economic indicators', *Bank of England Quarterly Bulletin*, 2011 Q2.

recent snow disruption was in the middle of Q1 which means that, even if some output is caught up, much of that may have occurred within the quarter. Nevertheless, it remains difficult to assess the size of any catch-up effect and the risk remains that some output is made up, providing a boost to growth in Q2. That would also have implications for output growth in Q3 as output growth returns to its underlying trend.

The path of underlying activity

Temporary factors mean that underlying output growth is expected to have been stronger in both 2017 Q4 and 2018 Q1 than suggested by the headline figures. A substantial share of the weakness in output in 2018 Q1 in particular is judged to reflect weather-related disruption that quarter. The recovery in activity from those effects is projected to boost headline growth in Q2. However, given the difficulty of estimating the impact of snow in Q1, there is significant uncertainty around the underlying path for output.

Table 2.B Expenditure components of demand[a]

Percentage changes on a quarter earlier

	Averages							
	1998–2007	2008–09	2010–12	2013–15	2016	2017 H1	2017 Q3	2017 Q4
Household consumption[b]	0.9	-0.5	0.1	0.6	0.7	0.3	0.3	0.3
Private sector investment	0.5	-4.6	2.0	0.9	0.9	0.7	1.2	0.4
of which, business investment[c]	*0.5*	*-3.4*	*2.2*	*0.4*	*0.5*	*0.8*	*0.8*	*0.3*
of which, private sector housing investment	*0.6*	*-7.0*	*1.5*	*2.3*	*2.0*	*0.8*	*2.2*	*0.6*
Private sector final domestic demand	**0.8**	**-1.1**	**0.5**	**0.9**	**0.6**	**0.4**	**0.5**	**0.3**
Government consumption and investment[c]	0.9	0.9	-0.2	0.3	0.4	0.5	-0.4	1.0
Final domestic demand	**0.8**	**-0.7**	**0.3**	**0.8**	**0.5**	**0.4**	**0.3**	**0.4**
Change in inventories[d][e]	0.0	0.0	0.1	0.0	-0.1	0.0	-0.5	0.0
Alignment adjustment[e]	0.0	-0.1	0.0	0.0	-0.1	-0.2	0.6	0.3
Domestic demand[f]	**0.8**	**-0.8**	**0.4**	**0.8**	**0.3**	**0.4**	**0.4**	**0.8**
'Economic' exports[g]	1.1	-1.0	0.8	0.9	1.2	0.9	1.8	-0.9
'Economic' imports[g]	1.4	-1.2	0.8	1.3	0.9	0.8	1.2	0.3
Net trade[e][g]	**-0.1**	**0.1**	**0.0**	**-0.1**	**0.1**	**0.0**	**0.2**	**-0.4**
Real GDP at market prices	**0.7**	**-0.7**	**0.4**	**0.7**	**0.5**	**0.3**	**0.5**	**0.4**
Memo: nominal GDP at market prices	1.2	-0.2	0.9	0.9	1.3	0.7	0.9	0.7

(a) Chained-volume measures unless otherwise stated.
(b) Includes NPISH.
(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 MTIC fraud.

Continued strong global growth (Section 1) is projected to support net trade further over 2018 (**Table 2.A**). The outlook for net trade will depend, however, on how the supply chains and capacity of companies, both in the UK and abroad, evolve in response to Brexit and the associated depreciation in sterling.

That fall in sterling should incentivise domestic producers of substitutes for imports to expand production and capacity in response to higher import prices, if these encourage domestic companies to source more goods and services from the UK. Contacts of the Bank's Agents have reported an increased incidence of companies switching to domestic suppliers. Perhaps partly reflecting that, import growth slowed in Q4, despite the temporary increase in fuel imports that quarter (**Table 2.B**). As a result, import penetration — the proportion of demand satisfied using imported goods and services — has remained broadly flat.

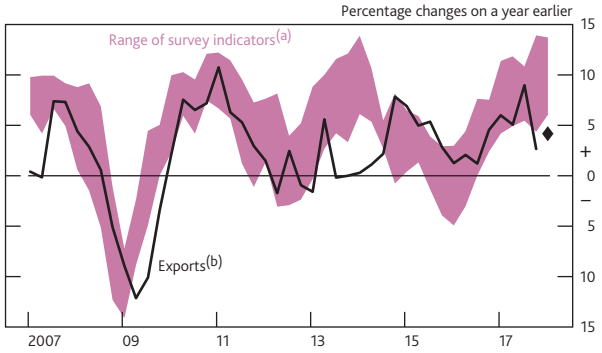
By boosting exporters' margins in sterling terms, the fall in sterling should also support an expansion in export volumes. Alongside continued robust export growth, sterling export prices rose by 14% between 2015 Q4 and 2017 Q4, and survey indicators continue to point to strong export growth in coming quarters (**Chart 2.4**).

With limited spare capacity for many firms, that expansion in domestic production, both to support import substitution and for export, will require investment in additional capacity. The recovery in business investment has been relatively modest, however (**Table 2.B**). As a result, growth in the capital stock has been particularly weak since the crisis in comparison with periods following previous recessions (**Chart 2.5**).

Evidence of increased investment among exporters, in particular, remains mixed. Although some business survey indicators suggest that investment intentions among manufacturers have picked up over the past year, the Bank's Agents' company visit scores suggest that exporters' and non-exporters' investment intentions have been broadly similar in recent months. And the Bank's Decision Maker Panel (DMP) Survey suggests that, despite the rise in their operating

Chart 2.4 Indicators of UK export growth remain robust

UK exports and survey indicators of export growth

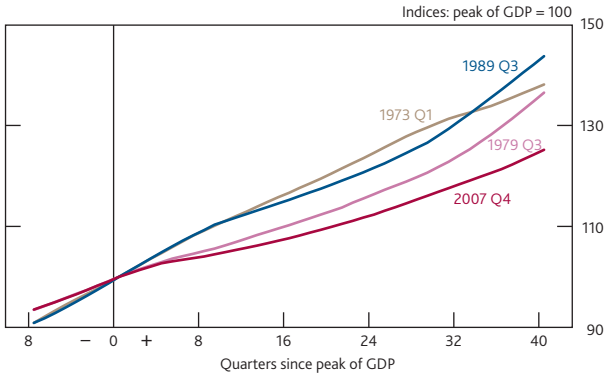


Sources: Bank of England, BCC, CBI, EEF, IHS Markit, ONS and Bank calculations.

(a) Swathe includes: BCC net percentage balance of companies reporting that export orders and deliveries increased on the quarter (data are not seasonally adjusted); CBI average of the net percentage balances of manufacturing companies reporting that export orders and deliveries increased on the quarter, and that their present export order books are above normal volumes (the latter series is a quarterly average of monthly data); Markit/CIPS net percentage balance of manufacturing companies reporting that export orders increased this month compared with the previous month (quarterly average of monthly data); Agents measure of manufacturing companies' reported annual growth in production for sales to overseas customers over the past three months (last available observation for each quarter); EEF average of the net percentage balances of manufacturing companies reporting that export orders increased over the past three months and were expected to increase over the next three months. Indicators are scaled to match the mean and variance of four-quarter export growth since 2000.
(b) Chained-volume measure, excluding the impact of MTIC fraud. The diamond shows Bank staff's projection for 2018 Q1.

Chart 2.5 The capital stock has risen by less than in previous cycles

Market sector capital stock over past growth cycles(a)



Sources: ONS and Bank calculations.

(a) Fixed capital stock, including structures, machinery, vehicles, computers, purchased software, own-account software, mineral exploration, artistic originals and R&D. Calculations are based on Oulton, N and Wallis, G (2016), 'Capital stocks and capital services: integrated and consistent estimates for the United Kingdom, 1950–2013', *Economic Modelling*, Vol. 54, pages 117–25.

margins, exporters' investment spending grew no faster than that of non-exporters in 2017.

The muted response of business investment is, at least in part, likely to have reflected the expected impact of Brexit and associated uncertainty. In the Bank's DMP Survey, however, the drag on investment growth from Brexit uncertainty appeared to diminish in 2017 H2.(2) And respondents to the 2018 Q1 *Deloitte CFO Survey* no longer viewed the effects of Brexit as the biggest risk facing their business at the moment. But the Bank's Agents reported that that had not yet been enough to prompt a material change in contacts' investment plans and there were few signs that companies were making up the past weakness in investment, with most survey indicators of investment intentions little changed (**Chart 2.6**).

While the recent rise in Bank Rate has raised interest rates on borrowing for businesses (Section 1), financial conditions remain accommodative and are likely to have been supporting investment. Reflecting the factors weighing on investment growth, however, there are few signs that demand for credit among businesses has picked up over the past year. Net new external finance raised by UK corporates has fallen since mid-2017, driven by lower net equity issuance and bank lending growth. And respondents to the latest *Credit Conditions Survey* suggested demand for credit across corporates of all sizes was unchanged in 2018 Q1, having fallen significantly in the second half of 2017.

Overall, business investment is projected to grow at around its current rate in the near term (**Table 2.A**). Although global activity and financial conditions are expected to remain supportive, investment is likely to remain sensitive to developments in negotiations around the UK's future trading arrangements with the EU.

2.2 Household spending

Consumption

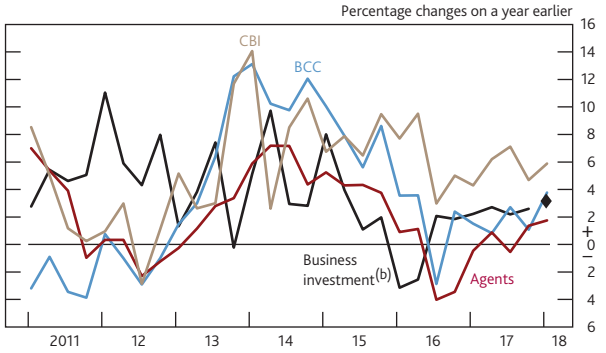
The main driver of consumption growth is real income growth. Real income has barely risen since 2016 (**Chart 2.7**), reflecting subdued nominal wage growth (Section 4) and the reduction in households' purchasing power as a result of the fall in sterling around the EU referendum. In addition, net taxes and benefits, as well as a fall in dividends receipts, have weighed on real income growth over that period.(3)

As expected, households have adjusted only gradually to the slowing in real income growth and the saving ratio has fallen (**Chart 2.8**). Consumption growth has averaged 0.3% a

(2) As of April 2018, the survey panel consisted of around 3,700 companies, with around half responding to the survey each quarter.
(3) As discussed in recent *Reports*, the fall in dividends receipts and some of the pickup in tax payments is likely to have reflected changes to the effective rate of tax on dividends in 2016 that caused many of those payments to be brought forward to the 2015/16 financial year at the expense of payments in future years.

Chart 2.6 Investment intentions remain stable

Business investment and survey indicators of investment intentions[a]

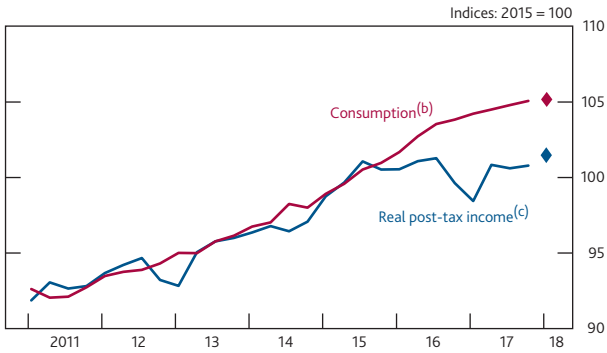


Sources: Bank of England, BCC, CBI, CBI/PwC, ONS and Bank calculations.

(a) Survey measures are scaled to match the mean and variance of four-quarter business investment growth since 2000. CBI measure is the net percentage balance of respondents reporting that they have increased planned investment in plant and machinery for the next 12 months. BCC measure is the net percentage balance of respondents reporting that they have increased planned investment in plant and machinery; data are not seasonally adjusted. Agents measure shows companies' intended changes in investment over the next 12 months; last available observation for each quarter. Sectors are weighted together using shares in real business investment.
(b) Chained-volume measure. Data are adjusted for the transfer of nuclear reactors from the public corporation sector to central government in 2005 Q2. The diamond shows Bank staff's projection for 2018 Q1.

Chart 2.7 Consumption has slowed less sharply than real income

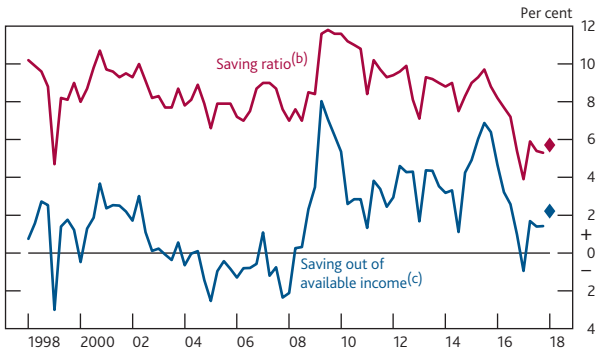
Consumption and real post-tax income[a]



(a) The diamonds show Bank staff's projections for 2018 Q1.
(b) Chained-volume measure. Includes NPISH.
(c) Nominal post-tax income divided by the consumption deflator (including NPISH).

Chart 2.8 The saving ratio has fallen over the past two years

Household saving[a]



(a) The diamonds show Bank staff's projections for 2018 Q1.
(b) Saving as a percentage of household post-tax income. Includes NPISH.
(c) Saving as a percentage of household post-tax income, excluding income not directly received by households such as flows into employment-related pension schemes and imputed rents. Excludes NPISH.

quarter in 2017, compared with 0.6% on average during 2013–16 (**Table 2.B**).

In recent months, wage growth has started to rise and the effect of sterling's depreciation on inflation has diminished (Section 4). That has eased the squeeze in real income growth, and should support household spending growth. The extent to which households continue to spend a greater proportion of their current income, relative to the recent past, or choose to rebuild their savings, will depend partly on their confidence around future incomes and economic prospects. The GfK measure of consumer confidence has fallen since the start of 2016, and fell slightly further in April, although it remains only a little below its historical average.

Interest rates and the availability of credit will also affect households' spending decisions. Growth in consumer credit — the type of borrowing most directly associated with household spending — slowed sharply in March. That may have been affected by the impact of adverse weather on consumer spending and, to that extent, should recover in April. There is also some evidence of a tightening in consumer credit conditions over the past year, with respondents to the *Credit Conditions Survey*, for example, reporting a reduction in consumer credit availability in 2018 Q1. That said, consumer credit conditions remain supportive overall, with competition between lenders reported to be intense.

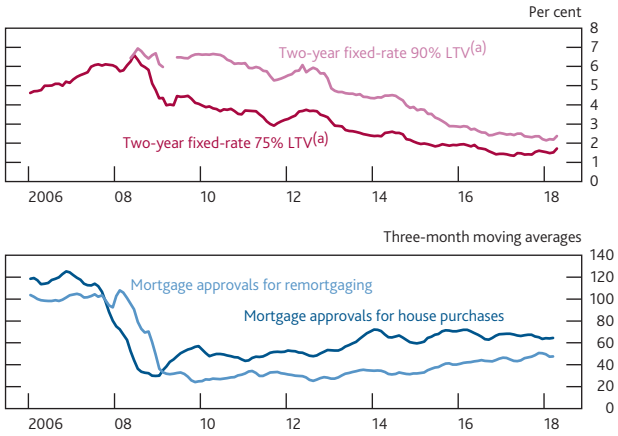
Interest rates affect consumption via the interest paid and received on mortgages and deposits, the largest components of borrowing and saving respectively. As discussed in Section 1, although mortgage interest rates have risen in response to the rise in Bank Rate, they remain lower than in mid-2016. Lower mortgage interest rates over that period have encouraged households to remortgage (**Chart 2.9**) to lower their interest payments, which will have supported consumption growth. Deposit rates have been broadly stable over that period.

Despite that support from credit conditions, and an easing in the squeeze on real incomes, consumption is expected to have grown by only 0.1% in 2018 Q1. As discussed in Box 3, a large part of that weakness, relative to recent quarters, is likely to reflect the temporary impact of adverse weather on certain types of household spending. For example, retail sales — which account for around one third of household consumption and will have been affected by snow — fell sharply in Q1. In addition, there have been more persistent sector-specific pockets of weakness. Car purchases, for instance, have been particularly weak over the past year. As explained in Box 4, however, this has not been matched by more widespread weakness in durables spending and is likely to mainly reflect factors specific to the car market.

Abstracting from the temporary effect of weather-related disruption, and accounting for future revisions, underlying

Chart 2.9 Mortgage approvals for house purchase remain subdued despite low interest rates

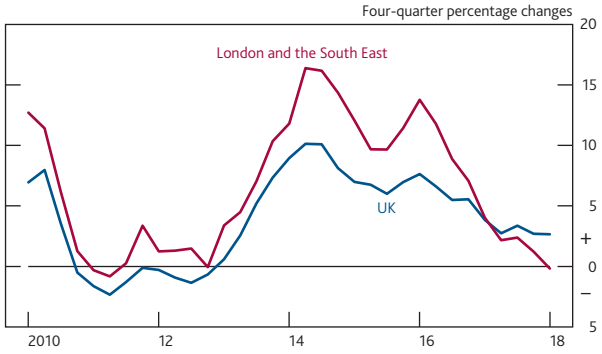
Mortgage approvals and selected mortgage interest rates



(a) Sterling-only end-month quoted rates. The Bank's quoted rates series are weighted averages of rates from a sample of banks and building societies with products meeting the specific criteria. The two-year 90% loan to value (LTV) series is only available on a consistent basis from May 2008 and is not published for March to May 2009 as fewer than three products were offered. Data are not seasonally adjusted.

Chart 2.10 House price inflation has fallen, largely driven by London and the South East

House prices(a)



Sources: IHS Markit, Nationwide and Bank calculations.

(a) Average of the quarterly Halifax/Markit and Nationwide house price indices.

consumption growth was estimated to have remained around 0.3% and is projected to be stable in coming quarters (**Table 2.B**). That path for household spending growth remains modest by historical standards, consistent with subdued real income growth.

Housing

Developments in the housing market can provide a signal about developments in household spending more generally. That is largely because decisions about whether to buy a house and whether to spend share common drivers, such as income expectations and confidence. In addition, house prices can affect household spending directly. One such channel is by raising the value of homeowners' equity, which they can use as collateral against which to borrow, though this effect is estimated to be small.

Activity in the housing market has remained broadly stable, but subdued. Mortgage approvals for house purchase have been broadly unchanged since 2016 despite support from low mortgage interest rates (**Chart 2.9**). Within that, homemover and buy-to-let activity has fallen somewhat, offset by a pickup in activity from first-time buyers.

Relatively subdued housing market activity, given the low cost of credit, is likely to have partly reflected the squeeze in real incomes over that period and slightly lower confidence in the general economic situation, with households perhaps choosing to delay moving as a result. Past regulatory action, such as the Recommendations by the Financial Policy Committee to lenders to limit the proportion of new mortgages at loan to income multiples of 4.5 or above, and around lenders' affordability tests, are estimated to have had only a small impact on aggregate mortgage approvals. In coming quarters, activity in the housing market is likely to pick up modestly as real income growth recovers somewhat and credit conditions remain supportive.

National house price inflation slowed to 2.1% in 2018 Q1, from around 8% in 2016 Q1, according to the average of lenders' indices (**Chart 2.10**). But within that, house price inflation in London and the South East slowed more sharply, with prices broadly flat in the four quarters to 2018 Q1. Although the RICS survey points to an expected pickup in aggregate house price inflation in the near term, expectations for house price inflation in those regions remained subdued.

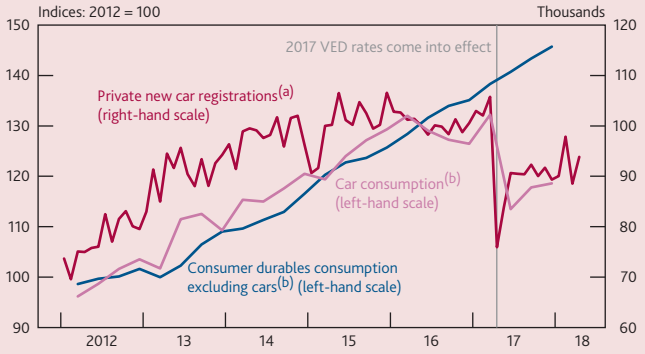
Developments in the housing market will also contribute to GDP directly through housing investment. Housing investment growth was relatively robust in 2017, contributing to above-average growth in overall private sector investment (**Table 2.B**). Around four fifths of housing investment consists of new house building and improvements to existing buildings. The pickup in housing starts in 2016 (**Chart 2.11**) pushed up housing investment substantially over 2017. However, housing

Box 4
Implications of recent developments in the car market for consumer spending

Having been broadly stable during 2014–16, new car purchases fell sharply in 2017 (**Chart A**). Slow real income growth is likely to have been one factor weighing on car purchases but, as this box explains, factors specific to the car market are also likely to have been a significant driver of that weakness. Consistent with that, spending on other types of durables has remained relatively resilient. As cars only account for around 5% of consumer spending, the implications of the weakness in car spending for the broader outlook is therefore likely to be limited.

Chart A Spending on cars fell in 2017, while other durables spending grew steadily

Private new car registrations and consumption of cars and other consumer durables



Sources: ONS, Society of Motor Manufacturers and Traders and Bank calculations.

(a) Seasonally adjusted by Bank staff. Data to April 2018.
(b) Chained-volume measures. Durables includes semi-durables.

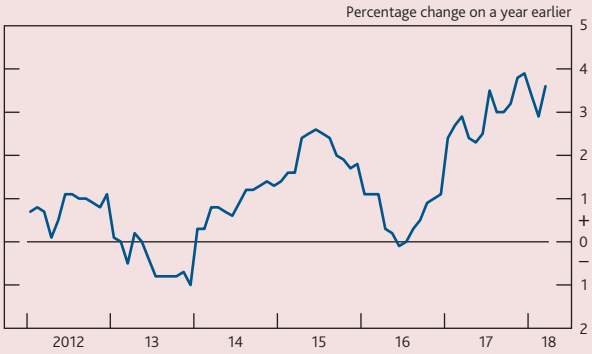
Some of the recent volatility in the car market is likely to have reflected tax changes. Rises in Vehicle Excise Duty (VED) for new cars, based on CO_2 emissions, came into effect on 1 April 2017. That is likely to have led to some purchases being brought forward ahead of that date, supporting registrations in 2017 Q1 and contributing to the subsequent fall. Additional rises in VED on new diesel vehicles from 1 April 2018 may have had a similar effect in 2018 Q1, although the disruption from adverse weather has probably offset some of that effect. Registrations rose in February, fell in March and then rose again in April. Contacts of the Bank's Agents also report that uncertainty around the future tax treatment of higher-emission vehicles may have weighed on spending in 2017.

Developments in the way cars are financed may also have affected sales. In recent years, structural changes in new car finance have made it easier to replace existing cars with new ones, which will have driven some of the pickup in new registrations over that period.(1) That structural shift appears to have come to an end, with 90% of new cars now purchased with some form of car finance. As such it is unlikely to support growth in car purchases to the same degree going forward.

The effect of that maturing of the car finance market on demand has been compounded by a pickup in car retail prices since mid-2016 (**Chart B**). Car retailers had held prices broadly flat during 2015–16 H1, squeezing their margins, with contacts of the Bank's Agents reporting that retailers were trying to boost demand in the UK, amid relatively weak demand in the rest of Europe. Since mid-2016, however, prices have risen, in part as relatively strong demand through 2016 provided car dealers with scope to rebuild their margins, but also as the impact of sterling's depreciation during 2016 was passed on to consumers.

Chart B Car price inflation has risen over the past year

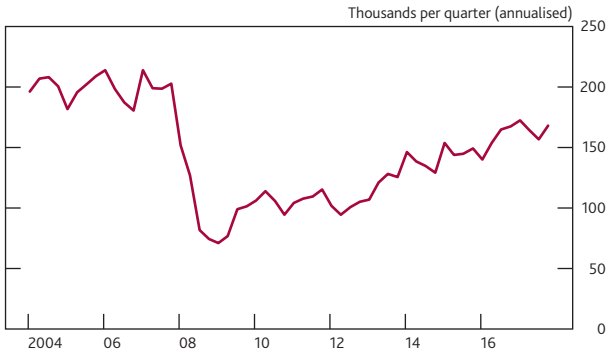
Car retail prices



Overall, new car purchases are expected to remain around their current level as the factors dragging on spending persist. This, however, is not expected to be indicative of prospects for broader consumption growth, which is expected to remain around 0.3%, abstracting from recent snow-related disruption (Section 2.2).

(1) For more information on this structural shift, see the box on pages 16–17 of the November 2017 *Inflation Report*.

Chart 2.11 Housing starts were flat in 2017 having risen in 2016
UK private housing starts[a]



Sources: Department for Communities and Local Government and Bank calculations.

(a) Number of permanent dwellings started by private enterprises up to 2017 Q4 for England and Northern Ireland. Data from 2011 Q2 for Wales and 2017 Q3 for Scotland have been grown in line with permanent dwelling starts by private enterprises in England. Data are seasonally adjusted by Bank staff.

investment growth is likely to be weaker in 2018 (**Table 2.A**). New housing starts were broadly flat during 2017 and are expected to have slowed in 2018 Q1 as snow and other weather-related disruption hampered construction activity. Reflecting that, a timelier measure of private housing starts from the NHBC — which accounts for around 80% of new builds and feeds into official data — fell substantially in Q1. In addition, growth in services associated with property transactions, which account for the remaining one fifth of housing investment activity, is likely to remain relatively subdued, consistent with the modest projected pickup in housing market activity.

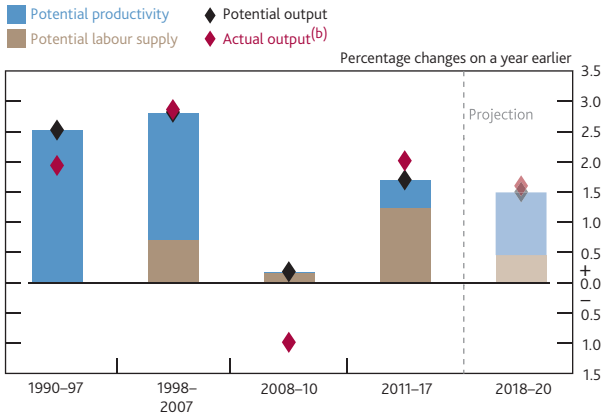
2.3 Government

The MPC's projections are conditioned on the Government's tax and spending plans detailed in the March 2018 Spring Statement. In line with the commitment to move to a single fiscal event per year, there were no substantive new tax or spending measures announced, relative to the November 2017 *Budget*. Under those plans, the fiscal consolidation continues, with public sector net borrowing projected to fall to 1.3% of nominal GDP by 2020/21.

3 Supply and the labour market

Labour demand growth remains robust and a very limited degree of slack is left in the economy. Productivity growth is projected to rise from its recent weak pace, but to remain well below pre-crisis rates. As a result, the pace at which output can grow without generating inflationary pressures is likely to be modest.

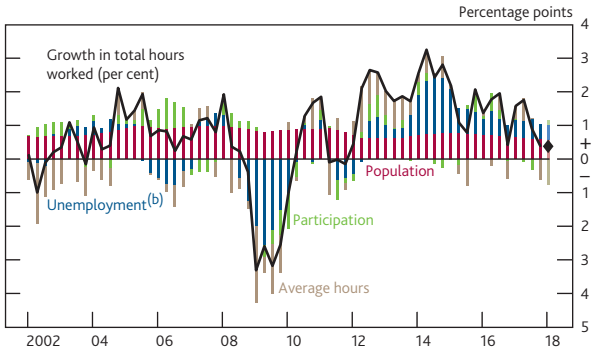
Chart 3.1 Despite a projected rise in potential productivity growth, the MPC expects supply growth to remain subdued
Decomposition of estimated potential output growth[a]



Sources: ONS and Bank calculations.

(a) Annual averages. Faded diamonds and bars are projections.
(b) Chained-volume measure.

Chart 3.2 Growth in total hours worked has slowed
Contributions to four-quarter growth in total hours worked[a]



Sources: ONS and Bank calculations.

(a) Diamond and faded bars are Bank staff's projections for 2018 Q1, based on data to February.
(b) Positive bars indicate that a fall in the unemployment rate contributed to an increase in total hours worked.

The outlook for GDP depends on the evolution of demand (Section 2) and potential supply growth. Supply, in turn, depends on the supply of labour and how productively that labour can be employed. The MPC conducted its annual reassessment of supply-side conditions ahead of the February *Report*. This section considers the latest data in the context of that assessment.

The balance between demand and supply — that is, the degree of slack or excess demand in both the labour market and the wider economy — is an important determinant of wage growth and broader inflationary pressures. During the financial crisis, output fell, unemployment rose substantially and a significant degree of slack opened up (**Chart 3.1**). In the years following the crisis, demand could therefore grow more quickly than supply as spare capacity was absorbed. The unemployment rate, for example, fell from 8.5% in 2011 to 4.2% in the three months to February 2018. Although output growth was weaker than expected in Q1, that is likely in large part to have reflected temporary disruption due to adverse weather (Section 2), which is unlikely to have had any significant effect on spare capacity. Overall, a very limited degree of slack is judged likely to remain (Section 3.1).

Productivity growth has been persistently weak since the crisis (Section 3.2). Overall potential supply growth is therefore judged to have been lower than in the past, despite a boost from greater labour supply (**Chart 3.1**). Part of that boost reflected relatively strong population growth. Population growth has slowed and is projected to remain lower than in recent years. While potential productivity growth is projected to rise slightly, the speed limit of the economy is expected to remain modest relative to pre-crisis norms (Section 5).

3.1 Labour market developments and slack

As slack has been absorbed, growth in total hours worked has slowed. But its precise path has been affected by volatility in participation and average hours worked (**Chart 3.2**). Both fell sharply during 2017 H2 and, while the drop in participation has unwound, average hours worked remain lower than a year ago.

Table 3.A Employment intentions remain robust

Changes in employment, vacancies, redundancies and survey indicators of employment intentions and recruitment difficulties

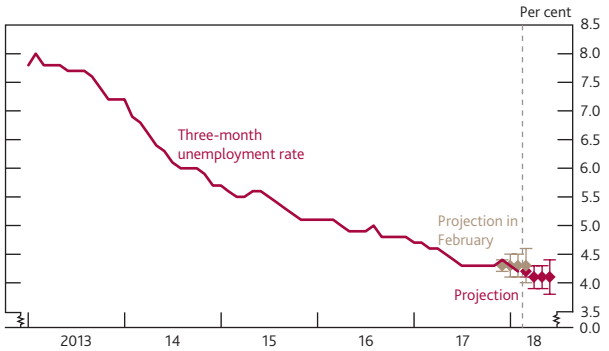
	Quarterly averages								
	2000–07	2008–09	2010–12	2013–14	2015	2016	2017 H1	2017 H2	2018 Q1
Change in employment (thousands)[a]	70	-59	67	130	147	75	124	37	169
of which, employees	*55*	*-67*	*32*	*106*	*110*	*40*	*135*	*38*	*n.a.*
of which, self-employed and other[b]	*16*	*7*	*35*	*24*	*36*	*35*	*-12*	*-1*	*n.a.*
Surveys of employment intentions[c]									
Agents[d]	0.8	-1.7	0.3	0.9	1.0	0.1	0.3	0.3	0.4
BCC[e]	19	-3	8	26	25	21	23	21	23
CBI[e]	3	-20	-3	17	18	17	14	16	18
REC[f]	58	44	56	63	64	59	63	63	61
Vacancies to labour force ratio[g]	2.09	1.70	1.48	1.85	2.23	2.25	2.32	2.40	2.42
Redundancies to employees ratio[h]	0.63	0.79	0.60	0.46	0.41	0.43	0.38	0.39	0.35
Surveys of recruitment difficulties[c]									
Agents[i]	1.5	-2.5	-1.1	0.4	2.0	1.3	1.6	2.3	2.6
BCC[j]	61	55	51	57	66	62	63	70	62
CBI, skilled[k]	27	15	16	23	34	32	31	32	30
CBI, other[k]	8	2	2	3	8	8	7	12	10

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

(a) Changes relative to the previous quarter. Figure for 2018 Q1 is Bank staff's projection, based on data to February.
(b) Other comprises unpaid family workers and those on government-supported training and employment programmes classified as being in employment.
(c) Measures for the Bank's Agents (split by manufacturing and services for employment intentions), the BCC (non-services and services) and CBI (manufacturing, financial services and business/consumer/professional services; employment intentions also include distributive trades) are weighted together using employee job shares from Workforce Jobs. BCC data are not seasonally adjusted. Agents data are last available observation for each quarter.
(d) The scores are on a scale of -5 to +5, with positive scores indicating stronger employment intentions over the next six months relative to the previous three months.
(e) Net percentage balance of companies expecting their workforce to increase over the next three months.
(f) Quarterly average. Recruitment agencies' reports on the demand for staff placements compared with the previous month. A reading above 50 indicates growth on the previous month and below 50 indicates a decrease.
(g) Vacancies as a percentage of the workforce, calculated using rolling three-month measures. Excludes vacancies in agriculture, forestry and fishing. Figure for 2018 Q1 shows vacancies in the three months to March relative to the size of the labour force in the three months to February. Vacancies data start in 2001 Q2.
(h) Redundancies as a percentage of total LFS employees, calculated using rolling three-month measures. Figure for 2018 Q1 is for the three months to February.
(i) The scores are on a scale of -5 to +5, with positive scores indicating greater recruitment difficulties in the most recent three months relative to normal.
(j) Percentage of respondents reporting recruitment difficulties over the past three months.
(k) Net percentage of respondents expecting skilled or other labour to limit output/business over the next three months (in the manufacturing sector) or over the next twelve months (in the financial services and business/consumer/professional services sectors).

Chart 3.3 The unemployment rate is projected to fall further to 4.1% in Q2

Unemployment rate and Bank staff's near-term projection[a]



Sources: ONS and Bank calculations.

(a) The beige diamonds show Bank staff's central projections for the headline unemployment rate for the three months to December 2017, January, February and March 2018 at the time of the February *Report*. The red diamonds show the current staff projections for the headline unemployment rate for the three months to March, April, May and June 2018. The bands on either side of the diamonds show uncertainty around those projections based on one root mean squared error of past Bank staff projections for the three-month headline unemployment rate.

Looking through recent volatility, employment has grown faster than expected at the time of the February 2017 *Report*, even as output has grown broadly in line with expectations (see Box 5). Indicators of employment intentions have been stable, with most at levels above past averages. And the number of vacancies relative to the size of the labour force has continued to rise (**Table 3.A**).

That stronger-than-expected employment growth has been partly reflected in a larger-than-expected fall in the unemployment rate over the past year. Wage growth was nevertheless weaker than expected over that period and, partly as a result, the MPC revised down its estimate of the equilibrium unemployment rate to 4¼% in February. There are a number of factors that may have reduced the equilibrium rate in recent years. Those include rises in the average age and educational attainment of the workforce, which have tended to be associated with lower unemployment rates. Increased flexibility within the labour market is also likely to have reduced flows from employment to unemployment and hence the equilibrium rate of unemployment.(1)

The unemployment rate is projected to fall further to 4.1% in 2018 Q2 (**Chart 3.3**), a little below the February projection and its assumed equilibrium level. That is consistent with other signs that the labour market is tight. Along with the rise in vacancies, survey indicators suggest that recruitment difficulties are somewhat elevated (**Table 3.A**). And, having fallen during the crisis, job-to-job flows have gradually returned to pre-crisis rates (Section 4).

The MPC also continues to judge that there is no material spare capacity among those not actively looking for a job. The 'marginal attachment' ratio — the proportion of the population who report that they would like a job but are not currently seeking one — has fallen sharply in recent years (**Chart 3.4**). That suggests little scope for the participation rate to rise and it is projected to be broadly flat, reflecting two offsetting factors. The rising average age of the population is likely to weigh on aggregate labour force participation because the participation rate of older people tends to be lower. But participation rates among older people have increased steadily in recent years and this trend is expected to continue.

There are some signs of underemployment, and therefore scope for a cyclical boost to output through increases in average hours worked. Average hours worked in 2017 Q4 were below the hours that households said they would like to work, although by much less than a few years ago. The proportion of those working part-time who would prefer a full-time job is also still some way above its pre-crisis level, despite falling as the proportion of workers in full-time jobs has increased (**Chart 3.5**). But any scope for average hours to rise as that

(1) For further discussion see Box 4 of the February 2018 *Inflation Report*.

Chart 3.4 The proportion of people not currently looking for work, but who would like a job, is low

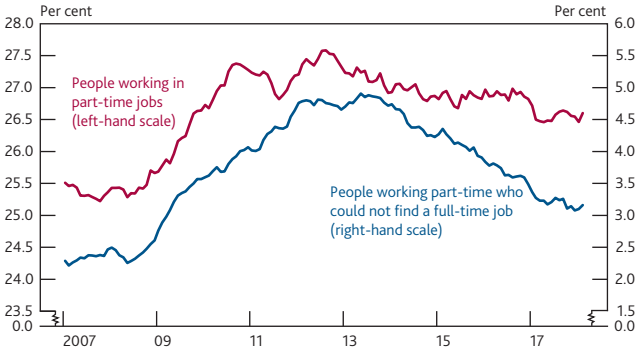
Marginal attachment ratio[a]

Sources: ONS and Bank calculations.

(a) Number of those aged 16–64 who say they are not actively looking for work but would like a job, as a percentage of the 16–64 population. Rolling three-month measure.

Chart 3.5 Involuntary part-time work remains slightly elevated

People working part-time, as a proportion of total employment[a]

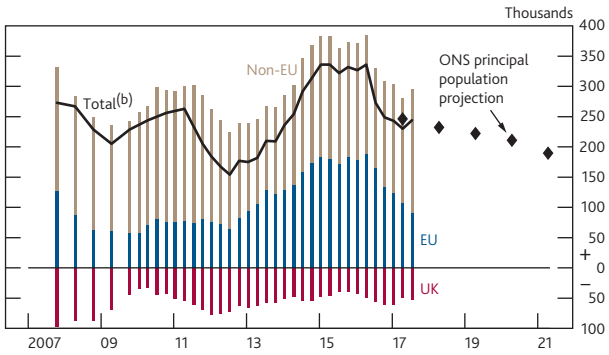


Sources: ONS and Bank calculations.

(a) Percentage of LFS total employment. Rolling three-month measures.

Chart 3.6 Net migration is projected to fall slightly further in the ONS's projection

Decomposition of net inward migration by nationality[a]



Sources: ONS and Bank calculations.

(a) Rolling four-quarter flows. Data are half-yearly to December 2009 and quarterly thereafter, unless otherwise stated. Figures by nationality do not sum to the total prior to 2012.
(b) Data are half-yearly to December 2011 and quarterly thereafter.

spare capacity is absorbed is expected to be broadly offset by a structural downward trend in average hours worked. That trend is partly due to an ageing workforce, as older workers typically want to work fewer hours.[2]

With little slack in the labour market, growth in the size of the workforce will come mainly from population growth. The MPC's forecasts assume that the population evolves in line with the ONS's latest principal population projection, published in October 2017. Under that projection, population growth remains slower than in recent years, reducing the contribution from annual population growth to labour supply by 0.2 percentage points to 0.5%.

A key influence on population growth is net migration to the UK. Net migration rose slightly to 244,000 in the year to 2017 Q3, bringing it back in line with the ONS's projection (**Chart 3.6**). The level remains around 90,000 below net migration in the year to 2016 Q2, however. Within that, net migration from non-EU countries has risen a little, but EU net migration — which tends to be disproportionately for work-related reasons — has fallen.

The ONS projects net migration to fall somewhat further in coming years (**Chart 3.6**), reducing population growth slightly. That path is uncertain, however, and there is a risk that net migration could fall more sharply. The extent to which it does will depend on a number of factors including the UK's relative economic performance. Bank staff analysis suggests that the subdued outlook for UK GDP per capita, combined with stronger growth prospects in other countries (Section 1), would, on its own, reduce net migration by a little more than implied by the ONS projection over the next three years.[3]

3.2 Productivity

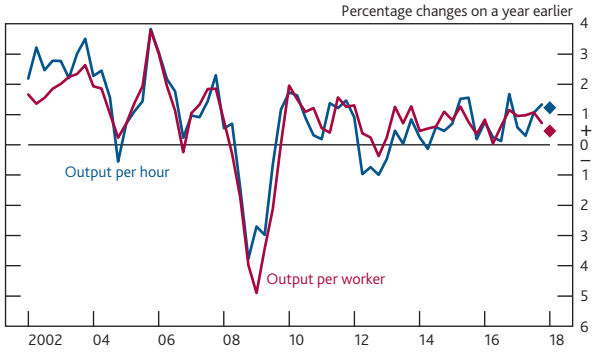
The sharp fall in hours worked during 2017 H2 provided a temporary boost to hourly productivity growth over that period (**Chart 3.7**). Average hours worked can be volatile from one quarter to another, however. Abstracting from that, growth in output per worker — which tends to be more stable — has continued to be weak, and is expected to have been 0.5% in the year to 2018 Q1. On both measures, productivity growth remains some way short of its pre-crisis average.

A standard growth-accounting framework suggests that around half of the weakness in productivity growth since 2010 has been associated with slow growth in the amount of capital per worker — the resources and equipment available to produce output. In turn, that reflects subdued business investment over much of that period (Section 2). Given this,

(2) For further discussion see the box on pages 22–23 of the February 2016 *Inflation Report*.
(3) For further discussion see Box 5 of the February 2018 *Inflation Report*.

Chart 3.7 Productivity growth remains subdued

Measures of labour productivity(a)



Sources: ONS and Bank calculations.

(a) Output is based on the backcast for the final estimate of GDP. Diamonds show Bank staff's projections for 2018 Q1, based on labour market data to February.

Table 3.B Monitoring the MPC's key judgements

Developments anticipated in February during 2018 Q1–Q3	Developments now anticipated during 2018 Q2–Q4
Unemployment	**Revised down slightly**
• Unemployment rate to remain around 4¼%.	• Unemployment rate to fall to 4% by the end of the year.
Participation	**Broadly unchanged**
• Participation rate to remain just above 63½%.	• Participation rate to remain just under 63¾%.
Average hours	**Broadly unchanged**
• Average weekly hours worked to remain around 32.	• Average weekly hours worked to fall slightly to a little under 32.
Productivity	**Broadly unchanged**
• Quarterly hourly labour productivity growth to average just over ¼%.	• Quarterly hourly labour productivity growth to average just over ¼%.

a recovery in productivity growth is in part likely to be reliant on a pickup in business investment growth.

The remainder of the weakness in productivity growth is accounted for by weak growth in the efficiency with which labour and capital are put to use, known as total factor productivity. The shortfall appears to have been focused within a few sectors, including financial and insurance services and manufacturing.(4) That might suggest sector-specific factors have been important, for example the role of higher financial sector leverage prior to the crisis and the deleveraging since then. Equally, broader trends may have disproportionately affected some sectors. For example, growth in world trade tends to be associated with productivity gains through greater economies of scale and increased competition, and so productivity within the manufacturing sector — which tends to be highly integrated within global supply chains — is likely to have been affected by the weakness in trade growth following the crisis.

As well as these pre-existing trends, the outlook for productivity growth is likely to be affected by changes in trading arrangements as a result of Brexit.(5) The anticipation of, and uncertainty around, those arrangements has been weighing on business investment (Section 2), and consequently growth in the capital stock.

Overall, the MPC judges that growth in output per worker is likely to pick up slightly in coming quarters, in part reflecting the past pickup in business investment (Section 2). Four-quarter growth in hourly productivity is expected to be volatile during 2018, however, as the boost from the past fall in hours worked unwinds and the recent weather-related disruption distorts headline GDP growth to some extent (see Box 3). More generally, potential productivity growth is expected to remain subdued relative to pre-crisis norms, as the effect of Brexit and other factors weighing on it since the crisis persist (Section 5).

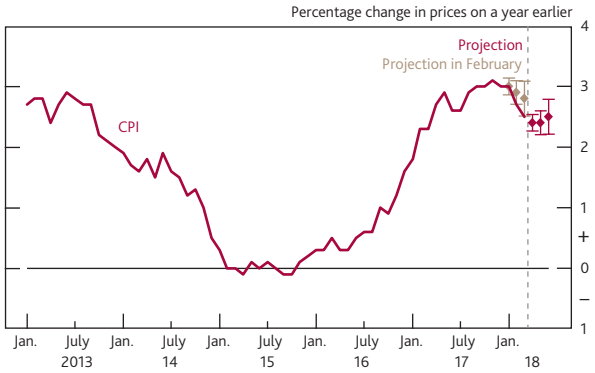
(4) For more details see Tenreyro, S (2018), 'The fall in productivity growth: causes and implications'.
(5) For more details see Carney, M (2017), '[De]Globalisation and inflation'.

4 Costs and prices

CPI inflation has fallen by more than had been expected in the February *Report*, to 2.5% in March from 3.0% in December. The impact of sterling's depreciation appears to have diminished slightly more quickly than expected and inflation is projected to fall further towards the 2% target as it continues to diminish. By contrast, domestic cost pressures appear to be rebuilding, supported by rising wage growth.

Chart 4.1 CPI inflation fell to 2.5% in March

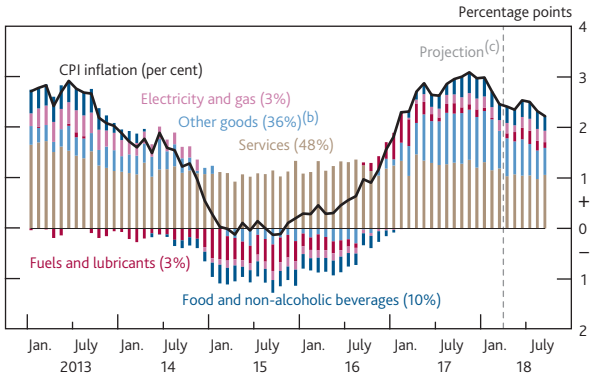
CPI inflation and Bank staff's near-term projection[a]



(a) The beige diamonds show Bank staff's central projection for CPI inflation in January, February and March 2018 at the time of the February *Inflation Report*. The red diamonds show the current staff projection for April, May and June 2018. 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 Inflation is expected to rise slightly in coming months before falling back further

Contributions to CPI inflation[a]



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

(a) Contributions to annual CPI inflation. Figures in parentheses are CPI basket weights in 2018.
(b) Difference between CPI inflation and the other contributions identified in the chart.
(c) Bank staff's projection. Fuels and lubricants estimates use Department for Business, Energy and Industrial Strategy petrol price data for April 2018 and are then based on the May 2018 *Inflation Report* sterling oil futures curve, shown in **Chart 4.3**.

4.1 Consumer price developments and the near-term outlook

CPI inflation fell to 2.5% in March from 3.0% in December 2017 (**Chart 4.1**). Although still above the MPC's 2.0% target, that was 0.4 percentage points lower than projected in the February *Report*. Around 0.1 percentage points of that downside news reflected the effect of the annual update of the CPI component weights by the ONS. The majority of the news, however, reflected the impact of both domestic and external pressures, with lower-than-expected contributions from a range of components within both services and goods.

Goods price inflation, which tends to be relatively import-intensive, slowed by more than expected in 2018 Q1 (**Chart 4.2**). That suggests that the effect of the pass-through of higher import prices following sterling's depreciation to CPI inflation has diminished by slightly more than expected, having probably peaked in 2017 Q4. The contribution of that pass-through has accounted almost entirely for the period of above-target inflation since 2016 and is expected to diminish further during the rest of the year (Section 4.2).

Despite the fall in the contribution from import prices, CPI inflation is likely to rise slightly in coming months due to changes in taxation and utility bills. First, the 'Soft Drinks Industry Levy', a tax on companies producing soft drinks with high levels of sugar, is expected to push up inflation by around 0.1 percentage points from April before dropping out of the 12-month comparison a year later. Second, rises in household energy tariffs were announced by some utility companies in April. Those rises are a little larger and sooner than expected in the February *Report* (Section 4.2).

The path for inflation further ahead will depend on the balance between the diminishing contribution from higher import prices and rising domestic inflationary pressures. Import price growth has continued to slow and the MPC now judges that

import prices will push up inflation by somewhat less in coming years than it previously judged (Section 4.2). Domestic inflationary pressures, which had been subdued, are showing signs of picking up and are expected to firm further (Section 4.3). In particular, regular pay growth has continued to rise and is expected to support unit labour cost growth, given subdued productivity growth (Section 3). Inflation expectations, which can influence wage and price-setting, have been broadly stable and remain consistent with inflation returning to the target in the medium term (Section 4.4).

4.2 External cost pressures

Energy prices

Energy prices affect CPI inflation directly through their impact on petrol prices and domestic gas and electricity bills. Coupled with this, there are indirect effects, for example on production and transport costs, which affect companies' costs. The combined weight of those direct and indirect effects is estimated to make up around 9% of the CPI basket.

Changes in oil prices tend to be passed on to retail fuel prices, and therefore CPI inflation, relatively quickly. The spot price of oil has risen further since February (Section 1) and that will put some slight upward pressure on petrol prices over the next few months. The oil futures curve — on which the MPC's forecasts are conditioned — remains downward sloping, however (**Chart 4.3**). As such, the contribution from fuel prices to inflation is expected to fall to below average from December 2018.

There was a temporary rise in the spot price of gas in March (**Chart 4.3**) due to high demand during the period of unusually cold weather (see Box 3). Domestic energy companies tend to agree the purchase of future gas supplies well in advance and so the futures curve, which rose by less, matters more for the price of energy for households.

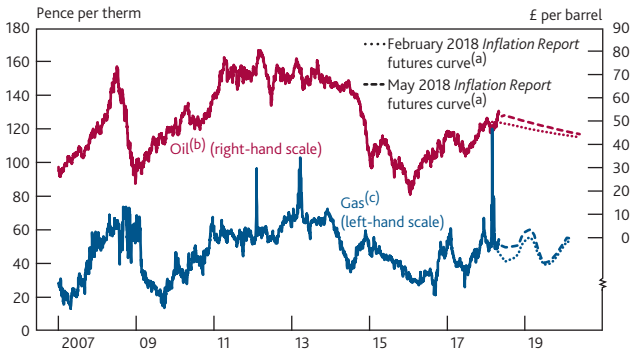
In April, three large utility companies announced a rise in their prices, which may in part reflect higher wholesale prices from mid-2017 being passed on with a lag. Other providers are expected to announce similar price rises and, as those are implemented in the coming months, the total effect is expected to add around 0.1 percentage points to CPI inflation over the next year, relative to the February *Report*.

Household utility bills are also likely to be affected by upcoming regulatory changes to caps on standard variable tariff (SVT) accounts. In April, Ofgem increased the existing cap on SVTs for prepayment customers and the Government has proposed a cap on SVT accounts not already capped, expected to be implemented at the end of 2018.

SVTs are the only tariffs captured in the CPI basket, so only changes in those tariffs will be directly reflected in CPI

Chart 4.3 The sterling spot oil price has risen slightly further but the futures curve continues to slope downwards

Sterling oil and wholesale gas prices



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

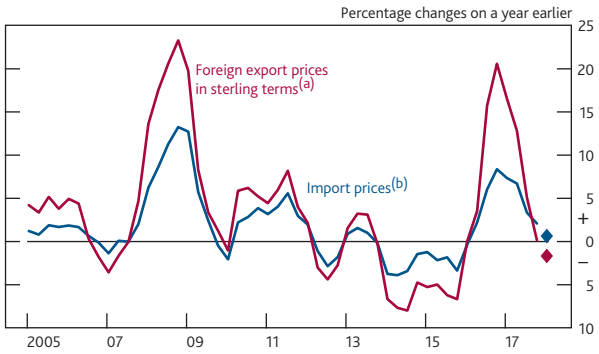
(a) Fifteen working day averages to 31 January and 2 May 2018 respectively.
(b) US dollar Brent forward prices for delivery in 10–25 days' time converted into sterling.
(c) One-day forward price of UK natural gas.

Chart 4.4 Sterling remains 15% below its late-2015 peak

Sterling ERI

Chart 4.5 Import prices have risen by around half of the rise in sterling foreign export prices

Import prices and foreign export prices

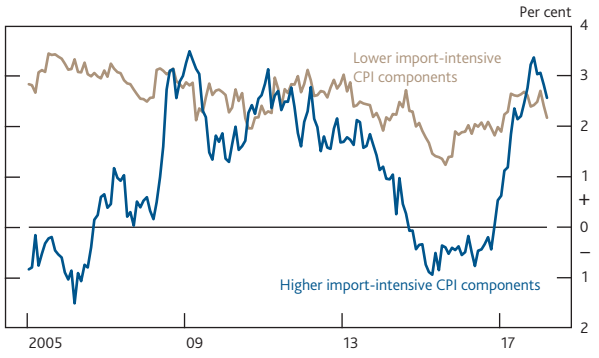


Sources: Bank of England, CEIC, Eurostat, ONS, Thomson Reuters Datastream and Bank calculations.

(a) Domestic currency non-oil export prices for goods and services of 51 countries weighted according to their shares in UK imports divided by the sterling exchange rate index. The sample excludes major oil exporters. Diamond shows Bank staff's projection for 2018 Q1.
(b) UK goods and services import price deflator excluding fuels and the impact of MTIC fraud. Diamond shows Bank staff's projection for 2018 Q1.

Chart 4.6 Firms have passed on rising import costs to consumer prices

CPI inflation by import intensity(a)

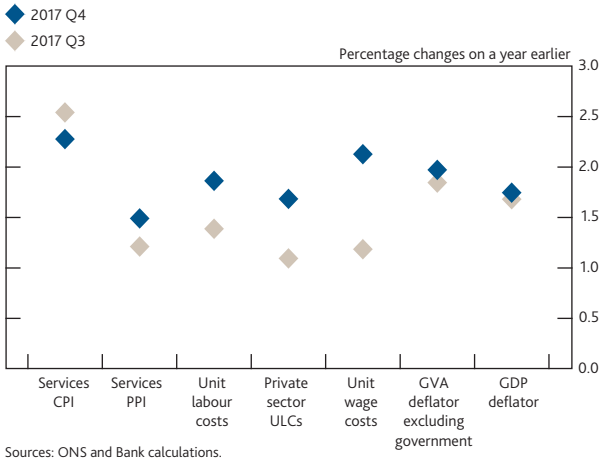


Sources: ONS and Bank calculations.

(a) Higher import-intensive and lower import-intensive CPI components comprise the top half and bottom half respectively of CPI components by weight ordered by import intensity. Excluding fuel and administered and regulated prices. Data are adjusted by Bank staff for changes in the rate of VAT, although there is uncertainty around the precise impact of those changes. Import intensities are ONS estimates of the percentage total contribution of imports to final household consumption in the CPI, by COICOP class, based on the *United Kingdom Input-Output Analytical Tables 2014*.

Chart 4.7 Most measures of DGI have picked up

Measures of domestically generated inflation(a)



Sources: ONS and Bank calculations.

(a) Unit labour costs (ULCs) are whole-economy labour costs (including self-employment income) divided by real GDP, based on the backcast of the final estimate of GDP. Private sector ULCs exclude general government wages and salaries and employers' social contributions and are calculated by using Bank staff's backcast for output generated in the private sector. Unit wage costs are wages and salaries and self-employment income divided by real GDP, based on the backcast of the final estimate of GDP. Services CPI excludes airfares, package holidays, education and VAT; where Bank staff have adjusted for the rate of VAT there is uncertainty around the precise impact of those changes. All data are quarterly except services CPI which are quarterly averages of monthly data.

inflation. But, depending on how utility companies react to those changes, there may be effects on other tariffs which could affect energy costs for households and companies. For example, utility companies could seek to maintain their overall margins by increasing the prices of fixed-rate tariffs.

Pass-through of the depreciation of sterling to non-energy consumer prices

Episodes of large exchange rate changes tend to result in sustained movements in inflation away from the 2.0% target. The current overshoot of inflation almost entirely reflects the pass-through of the boost to import prices from the depreciation of sterling which, although volatile since the February *Report*, remains around 15% below its peak in late 2015 (**Chart 4.4**).

As set out in previous *Reports*, Bank staff have estimated that, on average over the past, 60% of changes in the sterling value of non-energy foreign export prices are subsequently reflected in UK import prices, with most of that first-stage pass-through taking around a year. Between 2015 Q4 and 2017 Q4, non-energy import prices rose by around 10%. That is around half of the rise in foreign export prices in sterling terms (**Chart 4.5**) and so less than had been expected.

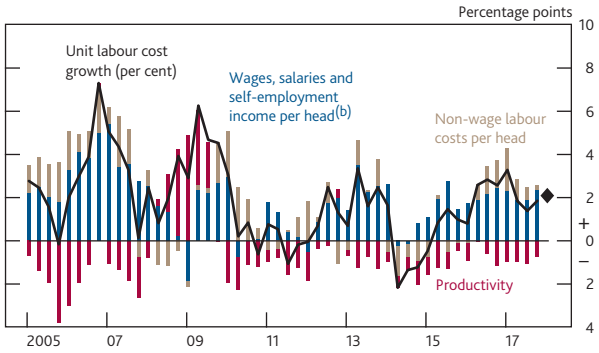
Import price growth slowed in the latest data (**Chart 4.5**) and a recent survey on corporate pricing by the Bank's Agents has suggested a further easing in import price inflation over 2018. As a result, the MPC now judges that import prices will rise by 55% of the rise in sterling foreign export prices since 2015 Q4, somewhat less than projected in February (Section 5).

The rise in import prices so far appears to have been passed on to consumer prices broadly as expected. Bank staff have estimated that for any rise in import prices, the CPI tends to rise by around 30% of that. That pass-through is gradual, with the peak impact on inflation coming after a year and inflation continuing to be pushed up for a further three years after that. In the November 2016 *Report*, the MPC judged that, due to the nature of the depreciation since 2015 Q4, the speed of pass-through from import prices to consumer prices was likely to be faster than on average in the past.

The effect of the rise in import prices on CPI inflation can be seen most clearly in more import-intensive components (**Chart 4.6**). Inflation in those components has slowed in recent months and by more than was expected in February (Section 4.1). That brought the estimated degree of pass-through from the rise in import prices seen so far broadly into line with the MPC's judgement in November 2016, having been slightly above it at the time of the February *Report*. The effect of import prices on inflation is expected to diminish further over the next couple of years and somewhat more quickly than projected in February, reflecting the lower projected path for import price inflation (Section 5).

Chart 4.8 Unit labour cost growth is expected to have picked up in 2018 Q1

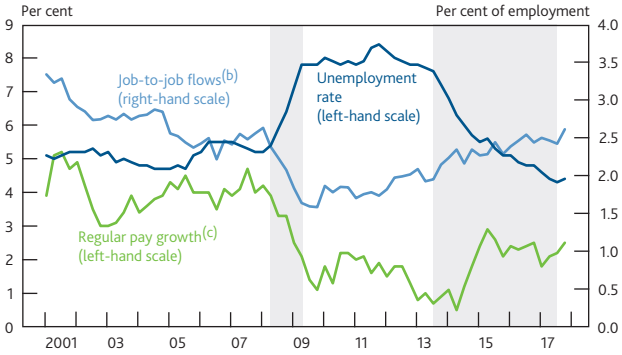
Decomposition of four-quarter whole-economy unit labour cost growth[a]



(a) Whole-economy labour costs as defined in **Chart 4.7**. The diamond shows Bank staff's projection for 2018 Q1.
(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.

Chart 4.9 Pay growth and churn have picked up as unemployment has fallen

Unemployment rate, job-to-job flows and whole-economy regular pay growth[a]

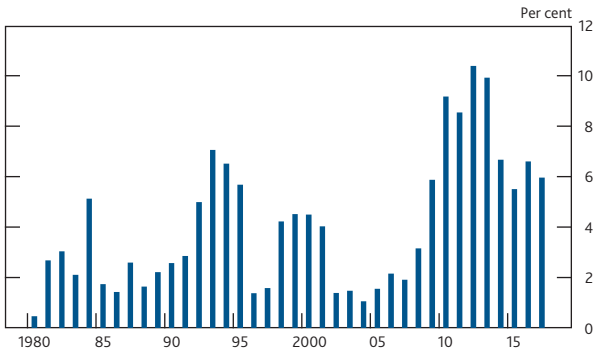


Sources: ONS and Bank calculations.

(a) Shaded areas show two periods of large changes in unemployment: 2008 Q2 to 2009 Q2 and 2013 Q3 to 2017 Q3.
(b) Number of people who reported being in a job three months ago and report currently being in a job for fewer than three months. Seasonally adjusted by Bank staff.
(c) Four-quarter change in whole-economy total pay excluding bonuses and arrears of pay.

Chart 4.10 The proportion of workers receiving zero pay rises rose sharply during the crisis

Percentage of contracts with zero pay change[a]



Sources: Annual Survey of Hours and Earnings and Bank calculations.

(a) Percentage of workers across the whole economy receiving zero change in pay in their main job between April of each year. Based on hourly gross earnings excluding overtime obtained by dividing gross pay in the reference week by total hours worked.

4.3 Domestic cost pressures

Domestically generated inflation

Inflation depends both on external cost pressures and on domestically generated inflation (DGI), which will be influenced by the degree of spare capacity in the economy. While DGI is not directly observable, there are a number of indicators that are closely linked to that concept, the majority of which rose in the latest data (**Chart 4.7**). As set out in previous *Reports*, some of those measures can be affected by changes in sterling's exchange rate. While that had been pushing up some measures, the effect is likely to have diminished in recent quarters.

Given the expected slowing in world export price inflation and the diminishing pass-through from the depreciation of sterling, most indicators of domestic inflation will need to rise further to be consistent with CPI inflation at the MPC's 2% target. With very little slack judged to remain (Section 3), domestic inflationary pressures are projected to continue to build to more normal levels over the next year (Section 5).

Wage growth and unit labour costs

The cost of labour, and in particular wages, is the largest domestic cost facing most companies and so is a significant indicator of domestic inflationary pressures. The impact of labour costs on companies' production costs will depend on unit labour cost (ULC) growth — how fast labour costs are rising relative to productivity. Wage growth has been weaker than expected in recent years, but that has partly been driven by weaker-than-expected productivity growth (Section 3). As such, ULC growth has been less subdued (**Chart 4.8**) and closer to expectations. Greater-than-expected slack in the labour market, however, appears to have weighed on both wage and ULC growth. As a result, the MPC revised down its estimate of the equilibrium unemployment rate. More recently, as slack has been absorbed the drag on wage growth is easing.

During the financial crisis, unemployment rose sharply, job-to-job flows and resignations fell (**Chart 4.9**), and on-the-job searches rose. These trends were consistent with a fall in the demand for labour and employees becoming less confident about their job prospects. A greater weight on job security during that period is probably one factor that dampened wage expectations and employee bargaining power. Despite that, wage growth did not fall by as much as productivity growth, so ULC growth was less subdued (**Chart 4.8**) and companies' margins were squeezed. One possible explanation is that employers tend to avoid cutting pay where possible, preferring to freeze pay even if productivity and revenues are falling. Reflecting that, the share of workers receiving 0% pay rises rose sharply during the crisis (**Chart 4.10**).

Table 4.A Regular pay growth has firmed in recent quarters
Indicators of pay growth

	Quarterly averages							
	2002–07	2010–12	2013–14	2015	2016	2017 H1	2017 H2	2018 Q1
Average weekly earnings (per cent)[a]								
Whole-economy total pay	4.2	1.9	1.1	2.6	2.4	2.2	2.5	2.5
Private sector total pay	4.2	1.9	1.4	3.0	2.6	2.5	2.6	2.6
Whole-economy regular pay[b]	3.9	1.8	1.0	2.5	2.4	1.9	2.4	2.7
Private sector regular pay[b]	3.8	1.7	1.3	2.9	2.6	2.1	2.5	2.9
Survey indicators of pay growth								
CBI[c]	n.a.	1.6	1.8	2.3	2.2	2.5	2.4	2.6
Agents[d]	2.4	1.3	1.5	2.0	1.9	1.9	1.9	2.1
CIPD[e]	n.a.	1.2	1.8	1.8	1.4	1.0	2.0	n.a.
BCC[f]	29.1	19.9	22.4	25.6	23.4	18.9	16.9	19.7
Survey indicators of pay growth for new recruits								
REC[g]	56.7	52.4	59.0	61.9	57.1	58.9	60.7	61.0

Sources: Bank of England, BCC, CBI, Chartered Institute of Personnel and Development (CIPD), KPMG/REC/IHS Markit, ONS and Bank calculations.

(a) Three-month average growth on the same period a year earlier. Figures for 2018 Q1 are estimated based on data for January and February and Bank staff's projections for March.
(b) Total pay excluding bonuses and arrears of pay.
(c) Measures of expected pay for the year ahead. Produced by weighting together responses for manufacturing, distributive trades, business/consumer/professional services and financial services using employee job shares. Data only available since 2008.
(d) Quarterly averages 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 costs respectively, with zero representing no change.
(e) Pay increase intentions excluding bonuses over the coming year. Data only available since 2012.
(f) Net percentage balance of companies currently facing pressures to raise prices due to pay settlements. Produced by weighting together survey indices for pay settlements for services and non-services using employee job shares.
(g) Produced by weighting together survey indices for the pay of permanent and temporary new placements using employee job shares; quarterly averages. A reading above 50 indicates growth on the previous month and those below 50 indicate a decrease.

Table 4.B Monitoring the MPC's key judgements

Developments anticipated in February during 2018 Q1–Q3	Developments now anticipated during 2018 Q2–Q4
Household energy prices	**Revised up**
• Electricity and gas prices to be flat.	• Electricity prices to rise 5¼% and gas prices 4½% by the end of 2018.
Import prices	**Revised down**
• Non-fuel import prices to rise by ½% in the year to 2018 Q3.	• Non-fuel import prices to be broadly flat in the year to 2018 Q4.
• Commodity prices and sterling ERI to evolve in line with the conditioning assumptions.	• Commodity prices and sterling ERI to evolve in line with the conditioning assumptions.
Earnings growth	**Broadly unchanged**
• Four-quarter growth in whole-economy AWE regular pay to rise to around 2¾%.	• Four-quarter growth in whole-economy AWE regular pay to average around 2¾%.
Unit labour costs	**Revised up slightly**
• Four-quarter growth in whole-economy unit labour costs to average around 2¼%.	• Four-quarter growth in whole-economy unit labour costs to average around 2¾%.
Inflation expectations	**Broadly unchanged**
• Indicators of medium-term inflation expectations continue to be broadly consistent with the 2% target.	• Indicators of medium-term inflation expectations continue to be broadly consistent with the 2% target.

In more recent years, unemployment has fallen back significantly and churn in the labour market has recovered, with the proportion of people moving from one job to another now around its pre-crisis rate (**Chart 4.9**). That suggests some recovery in confidence among employees in their labour market prospects. As a result, businesses have needed to raise wages for new recruits in order to attract staff. The REC survey, for example, suggests that pay growth has risen for new joiners in recent years (**Table 4.A**), and the Bank's Agents have reported a greater willingness among companies to increase pay growth for new recruits and key staff. In contrast, as set out in the February *Report*, data from the Annual Survey of Hours and Earnings suggested that pay growth for those staying in their jobs remained subdued in the year to April 2017.

There are now signs that regular pay growth is starting to rise more broadly as the labour market tightens further. Annual regular pay growth rose to 2.8% in the three months to February and is projected to remain around 2¾% over the rest of the year, broadly as projected in February (**Table 4.B**). Although there was downside news in the contribution from bonuses, and hence total pay growth, bonuses tend to be volatile. As such, total pay growth is expected to rise a little further during 2018.

In addition to wage growth, ULC growth will also depend on growth in non-wage labour costs. Further increases in minimum contributions for auto-enrolled pensions are projected to push up non-wage labour costs in 2018 Q2 and 2019 Q2 but, as these rises affect only a subset of employees, the impact on aggregate ULC growth is expected to be modest.

Weaker-than-expected growth in output per head in 2017 Q4 meant that ULC growth rose by more than expected in February, consistent with some strengthening in domestic cost pressures over the past few months. And ULC growth is expected to firm over 2018 as pay growth continues to outstrip productivity growth (Section 5).

4.4 Inflation expectations

Inflation expectations can influence domestic inflation through wage and price-setting behaviour. For example, if companies and households become less confident that inflation will return to the MPC's 2% target, that may lead to changes in wage and price-setting that make inflation persist above the target for longer. The MPC monitors a range of indicators derived from financial market prices and surveys of households and companies to assess whether inflation expectations remain consistent with the target.

Table 4.C Indicators of inflation expectations[a]

Per cent

	2000 (or start of series) to 2007 averages[b]	Averages since 2008	2015	2016	2017		2018	
					H1	H2	Q1	Q2[c]
One year ahead inflation expectations								
Households[d]								
Bank/GfK/TNS[e]	2.4	3.0	2.0	2.2	2.9	2.9	2.9	n.a.
Barclays Basix	2.8	2.8	1.5	1.9	2.3	2.5	2.5	n.a.
YouGov/Citigroup (Nov. 2005)	2.5	2.4	1.3	1.8	2.6	2.6	2.4	2.4
Companies (2008 Q2)[f]	n.a.	0.6	0.4	0.6	1.5	1.2	1.3	n.a.
Financial markets (Oct. 2004)[g]	2.6	2.8	2.5	2.8	3.5	3.3	3.0	3.0
Two to three year ahead expectations								
Households[d]								
Bank/GfK/TNS (2009 Q1)[e]	n.a.	2.7	2.3	2.3	2.8	2.8	2.9	n.a.
Barclays Basix	3.2	3.0	1.9	2.3	2.9	2.9	3.0	n.a.
Professional forecasters (2006 Q2)[h]	2.0	2.1	2.1	2.1	2.1	2.0	2.0	1.9
Financial markets (Oct. 2004)[g]	2.8	3.0	3.0	3.0	3.4	3.3	3.3	3.3
Five to ten year ahead expectations								
Households[d]								
Bank/GfK/TNS (2009 Q1)[e]	n.a.	3.2	2.8	3.1	3.3	3.5	3.4	n.a.
Barclays Basix (2008 Q3)	n.a.	3.7	3.1	3.4	3.9	4.1	4.1	n.a.
YouGov/Citigroup (Nov. 2005)	3.5	3.2	2.7	2.7	3.0	3.2	3.1	3.1
Financial markets (Oct. 2004)[g]	3.0	3.4	3.3	3.2	3.4	3.4	3.4	3.4
Memo: CPI inflation	1.6	2.4	0.0	0.7	2.4	2.9	2.7	n.a.

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

(a) Data are not seasonally adjusted.
(b) Dates in parentheses indicate start date of the data series.
(c) Financial markets data are averages to 2 May 2018. YouGov/Citigroup data are for April.
(d) The household surveys ask about expected changes in prices but do not reference a specific price index. The measures are based on the median estimated price change.
(e) In 2016 Q1, the survey provider changed from GfK to TNS.
(f) CBI data for the manufacturing, business/consumer services and distributive trade sectors, weighted together using nominal shares in value added. Companies are asked about the expected percentage price change over the coming 12 months in the markets in which they compete.
(g) Instantaneous RPI inflation one, three and five years ahead implied from swaps.
(h) Bank's survey of external forecasters, inflation rate three years ahead.

Most measures of inflation expectations have been broadly stable and remain close to past averages (**Table 4.C**). Overall, the MPC judges that inflation expectations remain well anchored, and that indicators of medium-term inflation expectations continue to be consistent with a return of inflation to the 2% target.

5 Prospects for inflation

Inflation has fallen by more than expected since the start of the year, reaching 2.5% in March. It seems likely that pass-through of sterling's depreciation to import prices is somewhat smaller than previously expected. GDP growth was weaker than expected in Q1, in part due to a temporary drag from adverse weather. The MPC continues to judge, however, that a very limited degree of slack remains in the economy. As in February, based on a conditioning path for Bank Rate that embodies three 25 basis point rises over the next three years, a small margin of excess demand is likely to emerge by early 2020, raising domestic inflationary pressures such that inflation settles at the 2% inflation target.

GDP growth slowed to 0.1% in Q1, according to the preliminary estimate, from 0.4% in Q4 and below the projection three months ago. That partly reflected the temporary disruptive impact of adverse weather across the country (see Box 3). As in the February *Report*, the MPC continues to judge that very little spare capacity remains in the economy. Growth is likely to be revised up a little over time (Section 2) and to the extent that weakness in activity reflected disruptive weather, it is unlikely to have had any significant effect on the degree of spare capacity. Moreover, the labour market has remained robust, with unemployment falling further in the three months to February. In Q2, as the drag from weather effects unwinds, growth is expected to bounce back to 0.4%, broadly consistent with the latest survey indicators, although there will be considerable uncertainty about underlying momentum in the first half of the year until more data become available.

Growth also dipped in the euro area, United States and China at the start of the year. This appears to reflect erratic factors, including weather. Overall momentum in the global economy is still judged to be robust.

UK CPI inflation has fallen back more rapidly than expected three months ago. It now seems likely that pass-through of the past depreciation of sterling to import prices is somewhat smaller than previously thought. Regular pay growth has picked up, broadly as expected three months ago, and there are continuing signs that domestic inflationary pressures are building gradually.

Financial conditions are similar to those underlying the February *Report*. The MPC's projections are conditioned on a path for Bank Rate that reaches 1.2% by early 2021

Table 5.A Conditioning path for Bank Rate implied by forward market interest rates[a]

Per cent

	2018			2019				2020				2021	
	Q2[b]	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
May	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2
February	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.2	

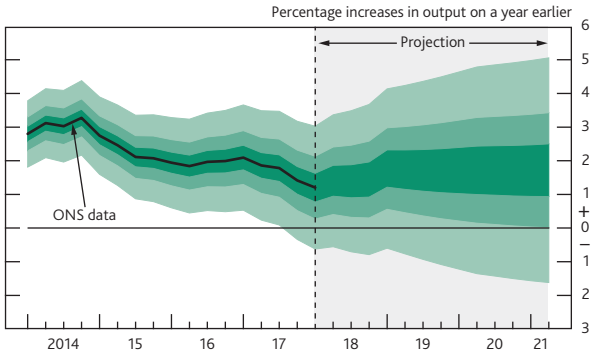
(a) The data are 15 working day averages of one-day forward rates to 2 May 2018 and 31 January 2018 respectively. The curve is based on overnight index swap rates.
(b) May figure for 2018 Q2 is an average of realised overnight rates to 2 May 2018, and forward rates thereafter.

Table 5.B Forecast summary[a][b]

	Projections			
	2018 Q2	2019 Q2	2020 Q2	2021 Q2
GDP[c]	1.4 (1.8)	1.7 (1.7)	1.7 (1.7)	1.7
CPI inflation[d]	2.4 (2.7)	2.1 (2.2)	2.0 (2.1)	2.0
LFS unemployment rate	4.1 (4.2)	4.0 (4.2)	4.0 (4.1)	4.0
Excess supply/Excess demand[e]	-¼ (-¼)	0 (0)	0 (0)	+¼
Bank Rate[f]	0.6 (0.5)	0.9 (0.9)	1.1 (1.1)	1.2

(a) Modal projections for GDP, CPI inflation, LFS unemployment and excess supply/excess demand. Figures in parentheses show the corresponding projections in the February 2018 *Inflation Report*. Projections were only available to 2021 Q1 in February.
(b) The May projections have been conditioned on the assumptions that the stock of purchased gilts remains at £435 billion and the stock of purchased corporate bonds remains at £10 billion throughout the forecast period, and on the Term Funding Scheme (TFS); all three of which are financed by the issuance of central bank reserves. The February projections were conditioned on the same asset purchase and TFS assumptions.
(c) Four-quarter growth in real GDP. The growth rates reported in the table exclude the backcast for GDP. Including the backcast 2018 Q2 growth is 1.7%, 2019 Q2 growth is 1.7%, 2020 Q2 growth is 1.7% and 2021 Q2 growth is 1.7%. This compares to 1.8% in 2018 Q2, 1.7% in 2019 Q2 and 1.7% in 2020 Q2 in the February 2018 *Inflation Report*.
(d) Four-quarter inflation rate.
(e) Per cent of potential GDP. A negative figure implies output is below potential and a positive that it is above.
(f) Per cent. The path for Bank Rate implied by forward market interest rates. The curves are based on overnight index swap rates.

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



The fan chart depicts the probability of various outcomes for GDP growth. It has been conditioned on the assumptions in **Table 5.B** footnote (b). To the left of the vertical dashed line, the distribution reflects uncertainty around revisions to the data over the past. To aid comparability with the official data, it does not include the backcast for expected revisions, which is available at Data from the May 2018 Inflation Report. To the right of the vertical line, the distribution 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 outturns 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.

(**Table 5.A**).[1] In the 15 working days to 2 May, the sterling ERI was 1% higher than in the run-up to the February *Report*, but it remains 15% below its late-2015 peak. As in previous *Reports*, the MPC's projections are conditioned on the average of a range of possible outcomes for the United Kingdom's eventual trading relationship with the European Union. They also assume that households and companies base their decisions on the expectation of a smooth adjustment to those new trading arrangements. Since the February *Report*, a draft Withdrawal Agreement between the UK Government and the European Union, including an implementation period ending on 31 December 2020, has been published. This pushes back the date at which the UK would move to new trading arrangements.

The assumptions underlying the MPC's May projections and the medium-term outlook for growth and inflation, summarised in **Table 5.B**, are broadly similar to the projections set out in the February *Report*. Following a period of weakness at the start of this year, GDP is then projected to grow at around 1¾% a year (**Chart 5.1**). That modest growth is supported by robust global growth (Key Judgement 1), as the euro-area recovery continues and US growth picks up further. Robust world activity continues to support UK exports, with the past depreciation of the sterling exchange rate also providing a continued boost to net trade, which contributes positively to growth over the next three years (Key Judgement 2). That in turn supports UK business investment, helping to offset the drag from uncertainty around the United Kingdom's future trading arrangements. Household spending growth remains subdued over the forecast period, in line with the muted recovery in real income growth.

Although demand growth is projected to be modest by historical standards, it is faster than supply growth, which is restrained by continued weakness in productivity growth (Key Judgement 3). With very little slack at the start of the forecast period, the economy moves into excess demand by early 2020 and domestic inflationary pressures build further (Key Judgement 4). Inflation falls more rapidly than in February (**Chart 5.3**), reflecting a smaller assumed boost from the past depreciation of sterling, and settles at the 2% target by mid-2020 (**Chart 5.2**).

At its meeting ending on 9 May 2018, the MPC voted to maintain Bank Rate at 0.5%, to maintain the stock of sterling

(1) Unless otherwise stated, the projections shown in this section are conditioned on: Bank Rate following a path implied by market yields; the stock of purchased gilts remaining at £435 billion and the stock of purchased corporate bonds remaining at £10 billion throughout the forecast period and the Term Funding Scheme (TFS), all three of which are financed by the issuance of central bank reserves; 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 Spring Statement 2018; commodity prices following market paths; and the sterling exchange rate remaining broadly flat. For more details see the 'Data from the May 2018 Inflation Report' section at www.bankofengland.co.uk/inflation-report/2018/may-2018.

Chart 5.2 CPI inflation projection based on market interest rate expectations, other policy measures as announced

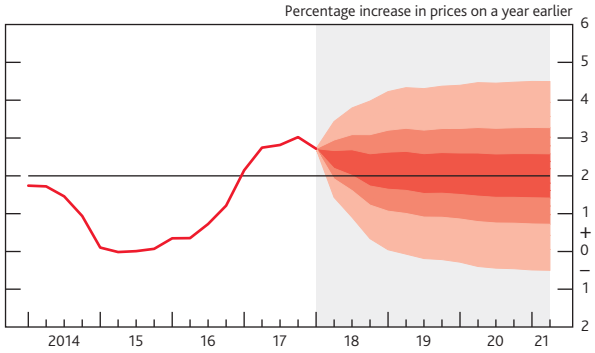
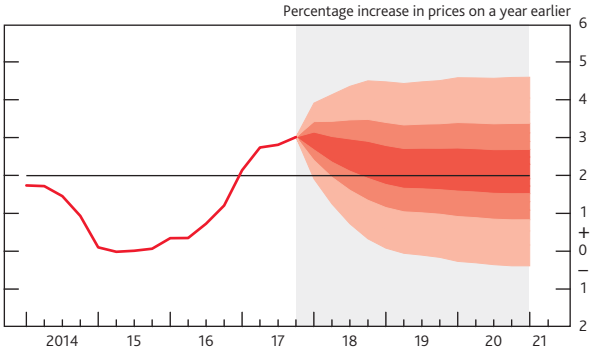


Chart 5.3 CPI inflation projection in February based on market interest rate expectations, other policy measures as announced



Charts 5.2 and **5.3** depict the probability of various outcomes for CPI inflation in the future. They have been conditioned on the assumptions in **Table 5.B** footnote (b). 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.

non-financial investment-grade corporate bond purchases, financed by the issuance of central bank reserves, at £10 billion and to maintain the stock of UK government bond purchases, financed by the issuance of central bank reserves, at £435 billion. 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.(2) The remainder of this section sets out the MPC's projections, and the risks around them, in more detail.

5.1 The MPC'S key judgements and risks

Key Judgement 1: global growth remains robust

Global growth has strengthened over the past two years, with many countries growing at above-trend rates. That has contributed to a rise in commodity prices, with dollar oil prices up a further 6% since February. It has also reduced spare capacity in many countries, which is projected to support global inflation over the forecast period.

In the euro area, where the recovery has been particularly marked, growth dipped to 0.4% in Q1 in contrast to the pickup suggested by surveys at the start of the year. Some of that news may well reflect a drag from weather effects that will probably unwind in Q2. Although surveys have also softened a little, they remain consistent with quarterly growth a little over ½%, above its estimated potential rate. Growth is projected to remain around that rate in the second half of the year. It slows towards potential thereafter as the support to growth from accommodative monetary policy and the past improvement in confidence and credit conditions wanes. Indicators of domestic inflationary pressures have remained subdued in the euro area, consistent with a degree of slack remaining in the economy. Inflation is projected to rise to around 1¾% over the forecast period, as that slack is absorbed.

(2) The Minutes are available at www.bankofengland.co.uk/monetary-policy-summary-and-minutes/2018/may-2018.

Table 5.C MPC key judgements[a][b]

Key Judgement 1: global growth remains robust

	Average 1998–2007	Projections 2018	2019	2020
World GDP (UK-weighted)[c]	3	3 (3)	2½ (2½)	2¼ (2¼)
World GDP (PPP-weighted)[d]	4	4 (4)	3¾ (3¾)	3½ (3½)
Euro-area GDP[e]	2¼	2½ (2¾)	2 (2)	1¾ (1¾)
US GDP[f]	3	3 (3)	2½ (2¼)	1¾ (1¾)

Key Judgement 2: investment and net trade support UK demand, while consumption growth remains subdued

	Average 1998–2007	Projections 2018	2019	2020
Household consumption contribution to GDP growth[g]	2¼	¾ (¾)	¾ (¾)	¾ (1)
Business investment contribution to GDP growth[h]	¼	¼ (¼)	¼ (¼)	½ (½)
Net trade contribution to GDP growth[i]	-¼	¼ (½)	¼ (¼)	¼ (¼)
Business investment to GDP ratio[j]	9¾	9½ (9½)	9¾ (9¾)	10 (9¾)
Credit spreads[k]	¾[l]	1½ (1¾)	1½ (1¾)	1½ (1¾)
Household saving ratio[m]	8½	5½ (5¾)	5½ (5¼)	5¼ (5)

Key Judgement 3: very little slack remains and the pace of potential supply growth is modest

	Average 1998–2007	Projections 2018	2019	2020
Productivity[n]	2¼	1¼ (1¼)	1¼ (1¼)	1 (1)
Participation rate[o]	63	63½ (63½)	63½ (63½)	63½ (63½)
Average hours[p]	32¼	32 (32)	32 (32)	32 (32)

Key Judgement 4: with demand outstripping potential supply, domestic inflationary pressures continue to build while the contribution from energy and import prices dissipates further

	Average 1998–2007	Projections 2018	2019	2020
UK import prices[q]	¼	1¼ (1½)	-½ (¼)	-½ (-¼)
Dollar oil prices[r]	39	71 (67)	65 (63)	61 (60)
Unit labour costs[s]	3	2¾ (2)	2¼ (2¼)	2¼ (2¼)
Unit wage costs[t]	2½	2¼ (1¾)	2¼ (2¼)	2¼ (2¼)

Sources: Bank of England, BDRC Continental *SME Finance Monitor*, Bloomberg Finance L.P., British Household Panel Survey, Department for Business, Energy and Industrial Strategy, Eurostat, ICE/BoAML Global Research (used with permission), 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 annual average growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the February 2018 *Inflation Report*.
(c) Chained-volume measure. Constructed using real GDP growth rates of 180 countries weighted according to their shares in UK exports.
(d) 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.
(e) Chained-volume measure.
(f) Chained-volume measure.
(g) Chained-volume measure. Includes non-profit institutions serving households.
(h) Chained-volume measure.
(i) Chained-volume measure. Exports less imports.
(j) Annual average. Chained-volume business investment as a percentage of GDP.
(k) 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.
(l) 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.
(m) Annual average. Percentage of total available household resources.
(n) GDP per hour worked.
(o) Level in Q4. Percentage of the 16+ population.
(p) Level in Q4. Average weekly hours worked, in main job and second job.
(q) Four-quarter inflation rate in Q4.
(r) Average level in Q4. Dollars per barrel. Projection based on monthly Brent futures prices.
(s) 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.
(t) Four-quarter growth in unit wage costs in Q4. Whole-economy total wage costs divided by GDP at market prices, based on the mode of the MPC's GDP backcast. Total wage costs are wages and salaries and the labour share multiplied by mixed income.

The US has been growing at above-trend rates since 2016 and core inflation has picked up more recently. Growth is projected to fall back more slowly over the forecast period than had been assumed three months ago (**Table 5.C**) as a consequence of additional support from fiscal policy measures signed into law in February. With the economy already operating close to, if not a little above, full capacity, inflation is projected to be above 2% from around the middle of this year.

GDP growth in China slowed in Q1 but is expected to pick up in Q2. Expansionary fiscal policy, robust credit growth and the strength in global demand growth, is expected to support activity in coming quarters. In other emerging economies, commodity producers are benefiting from higher prices for their exports. Emerging economies, particularly those with large US dollar-denominated debts and high external financing requirements, remain vulnerable, however, to a sharper-than-expected rise in US interest rates or a stronger US dollar exchange rate.

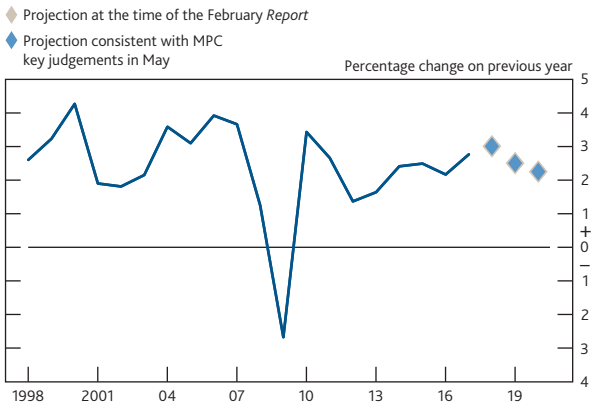
Taking advanced and emerging economies together, based on PPP weights, global growth is projected to be 4% in 2018 before slowing to 3½% (**Table 5.C**). Weighted by UK export shares, growth is around 3%, slowing in the second half of the forecast period as slack is absorbed. The projection is broadly similar to that of three months ago (**Chart 5.4**) but the slight softening in momentum, which was widespread across regions, means the risks around it are now judged to be balanced rather than weighted to the upside. There is still a risk of a larger upswing in productivity growth than projected, which would allow economies to grow more quickly before upside risks to inflation emerge. On the downside, trade tensions have increased (Section 1). While the tariffs announced by the United States and China to date are likely to have limited effects on activity and inflation, there is a risk of escalation.

Key Judgement 2: investment and net trade support UK demand, while consumption growth remains subdued

While the world economy has strengthened, UK growth has slowed to modest rates. On the expenditure side, UK growth has rotated towards net trade and business investment and away from consumption (Section 2). That pattern continues over the forecast period as households continue to face weak growth in real incomes.

Net trade contributed positively to growth in 2017 and is projected to continue to do so throughout the forecast period. That in part reflects the support to UK exports from strong overseas demand. Net trade has also been supported by the lower sterling exchange rate, which boosts exports and discourages imports. For some time, both exports and imports have been projected to grow relatively weakly as companies here and abroad begin to adjust trading relationships in light

Chart 5.4 World GDP (UK-weighted)[a]



Sources: IMF *WEO* and Bank calculations.

(a) Calendar-year growth rates. Chained-volume measure. Constructed using real GDP growth rates of 180 countries weighted according to their shares in UK exports.

Table 5.D Indicative projections consistent with the MPC's modal projections[a]

	Average 1998–2007	Projections		
		2018	2019	2020
Annual average growth rate				
Household consumption[b]	3½	1 (1¼)	1¼ (1¼)	1¼ (1¼)
Business investment[c]	1¾	2¾ (3)	4 (3¾)	4½ (4¼)
Housing investment[d]	3¼	-¼ (¼)	½ (½)	½ (¾)
Exports[e]	4½	3¼ (3¼)	2¼ (1¼)	1½ (½)
Imports[e]	6	2 (1¼)	1¼ (¼)	1 (0)
Real post-tax household income[f]	3¼	1½ (1¾)	1 (½)	1¼ (1¼)
Four-quarter growth rate in Q4				
Employment	1	1 (½)	½ (½)	½ (½)
Average weekly earnings[g]	4¼	2¾ (3)	3¼ (3¼)	3½ (3½)

(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 annual average growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the February 2018 *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) Whole-economy total pay.

of the United Kingdom's vote to withdraw from the European Union. As set out in Box 5, gross trade flows have been stronger than projected over the past year, suggesting that little adjustment has happened so far. Moreover, the draft transition agreement to preserve UK access to the single market until end-2020 suggests that most of the adjustment still to come is likely to happen beyond the three-year forecast horizon. Gross trade flows are therefore projected to grow a little faster over coming years than previously assumed (**Table 5.D**), but these changes have no implications for net trade or, therefore, aggregate demand.

Business investment has been supported by external demand, limited spare capacity, the relatively high rate of return on capital and the low cost of finance, even as the rise in Bank Rate in November has fed through to borrowing costs (Section 1). Its pace of growth has, however, been more modest than would be expected at this stage of the economic cycle and relative to investment growth in other countries, probably a result of the anticipation of and uncertainty over Brexit, as suggested by a range of survey evidence and contacts of the Bank's Agents. Overall, business investment is projected to grow a little faster than current rates (**Table 5.D**), as global growth and capacity pressures encourage spending, and the drag on growth from uncertainty wanes.

Consumption growth has slowed to subdued rates. Households have faced a period of falling real income as the lower sterling exchange rate fed through to higher prices (Key Judgement 4). Aggregate household real incomes are no longer falling, but real income growth is still subdued and rises only a little over the forecast period. Spending has not slowed as much as total post-tax income, and the saving ratio has fallen to a relatively low level (Section 2).

There have been signs of weakness in consumer spending in Q1 including in data on retail sales and consumer credit (Section 2). In the central projection, that weakness is largely assumed to reflect erratic factors, including the impact of adverse weather, that unwind in the second quarter. Annual consumption growth recovers gradually to reach 1¼% by 2019, broadly in line with income (**Table 5.D**). That is well below its historical average rate of around 3%. The saving ratio is projected to remain around its current rate. There is greater-than-usual uncertainty about the near-term momentum in consumer spending and the extent to which households adjust their spending and saving to the past fall in their real incomes.

Weak real income growth has probably also weighed on the housing market. House price inflation has slowed and activity remains subdued (**Table 5.E**). That is despite average mortgage interest rates falling over recent years as credit spreads have narrowed (Section 1). Over the forecast period, a gradual

Table 5.E 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 assess 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 2018 Q2 to 2018 Q4 if judgements evolve as expected
1: global growth remains robust	• Quarterly euro-area GDP growth to average a little above ½%. • Quarterly US GDP growth to average around ¾%. • Indicators of activity consistent with four-quarter PPP-weighted emerging market economy growth of around 5%; within that, GDP growth in China to average around 6½%.
2: investment and net trade support UK demand, while consumption growth remains subdued	• Quarterly growth in business investment to average ¾%. • Net trade to provide a significant boost to quarterly GDP growth. • Quarterly real post-tax household income growth to average ¼%. • Quarterly consumption growth to average ¼%. • Mortgage spreads to widen a little. • Mortgage approvals for house purchase to average around 65,000 per month. • The average of the Halifax/Markit and Nationwide house price indices to increase by around ¾% per quarter, on average. • After recovering somewhat in 2018 Q2, housing investment to be broadly flat.
3: very little slack remains and the pace of potential supply growth is modest	• Unemployment rate to fall to 4% by the end of the year. • Participation rate to remain just under 63¾%. • Average weekly hours worked to fall slightly, to a little under 32. • Quarterly hourly labour productivity growth to average just over ¼%.
4: with demand outstripping potential supply, domestic inflationary pressures continue to build while the contribution from energy and import prices dissipates further	• Four-quarter growth in whole-economy AWE regular pay to average around 2¾%. • Four-quarter growth in whole-economy unit labour costs to average around 2¾%. • Four-quarter growth in whole-economy unit wage costs to average around 2½%. • Non-fuel import prices to be broadly flat in the year to 2018 Q4. • Electricity prices to rise by 5¼% and gas prices by 4½% by the end of 2018. • Commodity prices and sterling ERI to evolve in line with the conditioning assumptions set out in www.bankofengland.co.uk/inflation-report/2018/may-2018. • Indicators of medium-term inflation expectations to continue to be broadly consistent with the 2% target.

widening in credit spreads, albeit a slightly smaller one than assumed three months ago, alongside the gently upward sloping yield curve, raises mortgage rates, but the recovery in income growth supports the housing market. House price inflation is projected to pick up a little and approvals to rise (**Table 5.E**), though they remain significantly below levels seen prior to the crisis.

Key Judgement 3: very little slack remains and the pace of potential supply growth is modest

There is a limit to how rapidly the economy can grow without putting upward pressure on inflation. In the aftermath of the financial crisis, the UK economy had scope to grow above its potential rate as spare capacity was used up. Now, with unemployment around its equilibrium rate and few signs of slack elsewhere, the speed at which demand can grow sustainably depends on how fast supply capacity is expanding. As set out in the MPC's February reassessment of the supply

side of the economy, supply is expected to grow at a slower pace than was typical prior to the financial crisis.

The MPC continues to judge that very little spare capacity remains in the economy. Although growth is estimated to have slowed sharply in Q1, this estimate is likely to be revised up a little over time (Section 2). Moreover, to the extent that weakness in activity reflected the disruptive impact of adverse weather, it is unlikely to have had any significant effect on the degree of spare capacity. Other indicators of slack, such as unemployment, do not point to any reduction in capacity pressures.

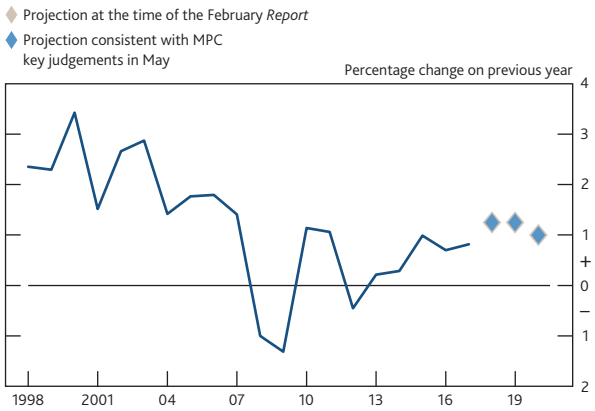
Over the forecast period, supply growth remains modest by historical standards at around 1½% a year. Within that, labour supply growth, which boosted supply growth during the economic recovery, is projected to slow a little further. That slowing in part reflects lower net inward migration flows, in line with ONS projections. Offsetting that, structural productivity growth is projected to pick up a little.

Since the financial crisis, productivity growth has been subdued in the United Kingdom, as in many other economies. Weakness in investment has led to slow growth in the capital stock — a key driver of productivity growth. Moreover, the efficiency with which companies use their capital and labour to produce output also seems to have been rising only slowly. One influence on UK productivity is the anticipation of, and response to, post-Brexit trading relationships. That is likely to have weighed on investment. Over the forecast period, growth in productivity is projected to be a little faster than its average in recent years (**Chart 5.5**) as increases in investment begin to feed through, but is expected to remain around half the rate seen before the financial crisis.

The extent of the recovery in productivity growth remains very uncertain. On the downside, as set out in the MPC's latest evaluation of its forecast performance (see Box 5), productivity growth has continued to disappoint over the past year and may well do so again. On the upside, annual productivity growth has averaged 2% over many decades and it could pick up by more than expected. For example, the rise in job-to-job flows could lead to better diffusion of ideas and skills between companies, raising productivity growth.

Conditional on market interest rate expectations of three 25 basis point rises in Bank Rate over the forecast period, demand is projected to grow a little faster than potential supply over the forecast period. As in February, a small margin of excess demand emerges by early 2020 and builds thereafter, putting upward pressure on domestic inflation (Key Judgement 4).

Chart 5.5 Productivity[a]



Sources: ONS and Bank calculations.

(a) Calendar-year growth rates. GDP per hour worked. GDP is at market prices and projections are based on the mode of the MPC's backcast.

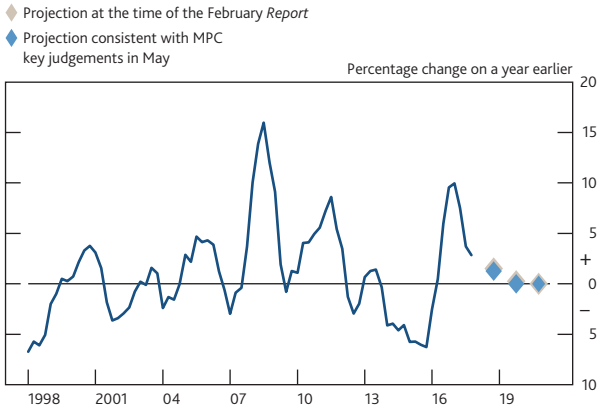
Key Judgement 4: with demand outstripping potential supply, domestic inflationary pressures continue to build while the contribution from energy and import prices dissipates further

CPI inflation has fallen back from its recent peak, and by more than expected at the time of the February *Report*. That largely reflects lower-than-expected inflation rates across a range of import-intensive CPI components. In addition, import prices have risen by slightly less than had been expected following the depreciation of sterling. In previous *Reports*, all of that shortfall in import prices was projected to be made up over the forecast period. But, with more signs that may not be happening (Section 4), the MPC now judges that import prices will rise by less (**Chart 5.6**). As a result, the contribution of import prices to CPI inflation diminishes more quickly than in the February projection.

Partially offsetting the decline in the contribution from import prices in the near term, there is a modest rise in the contribution of energy to CPI inflation over the next six months. Higher oil prices are passed through to retail petrol prices and recently announced tariff rises by some domestic energy suppliers take effect with other providers assumed to follow suit. The downward-sloping oil futures curve, on which the forecast is conditioned, means, however, that the contribution from energy prices is below average in the second half of the forecast period. In the later years of the forecast period, those below-average contributions broadly offset the positive contribution from import prices.

Where inflation eventually settles depends mainly on domestic inflationary pressures. These have been weak in recent years, reflecting the degree of spare capacity in the economy. The drag from slack has been most apparent in the subdued pace of wage growth since the financial crisis. Over the past year, wage growth has started to pick up gradually as the labour market has tightened further: unemployment has fallen to around its equilibrium rate; recruitment difficulties have risen; and people are moving between jobs at a similar rate to that before the crisis (Section 3). Although total pay growth was a little weaker than assumed in the February *Report*, that reflected lower bonus payments. Regular pay growth rose to just under 3%, as expected in February (Section 4). Pay deals seem to be picking up, broadly consistent with the results of the Bank's Agents' annual pay survey reported in February. Wage growth is likely to rise gradually over the forecast period as excess demand builds. As in February, that pushes up growth in unit labour costs — the cost to companies of employing someone relative to productivity. With productivity growth remaining below rates typically seen before the crisis, pay growth needs to be commensurately lower than its pre-crisis average for unit

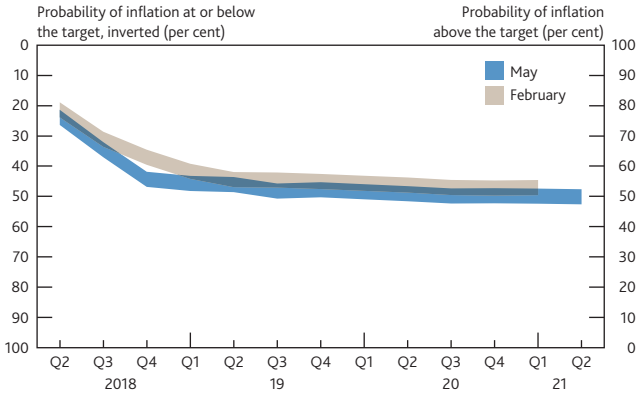
Chart 5.6 Import price inflation(a)



Sources: ONS and Bank calculations.

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

Chart 5.7 Inflation probabilities relative to the target



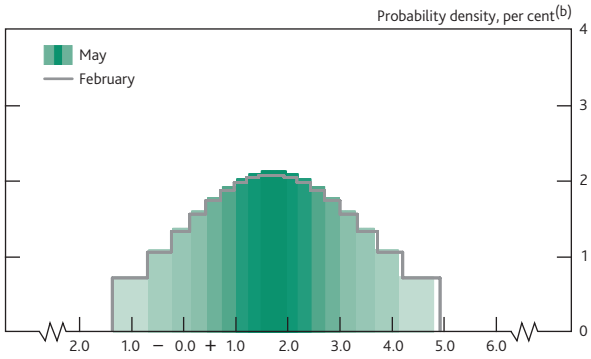
The May and February swathes in this chart are derived from the same distributions as **Charts 5.2** and **5.3** respectively. They indicate the assessed probability of inflation relative to the target in each quarter of the forecast period. The 5 percentage points width of the swathes reflects the fact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

Table 5.F Annual average GDP growth rates of modal, median and mean paths[a]

	Mode	Median	Mean
2018	1.4 (1.8)	1.4 (1.8)	1.4 (1.8)
2019	1.7 (1.7)	1.7 (1.8)	1.7 (1.8)
2020	1.7 (1.7)	1.7 (1.8)	1.7 (1.8)

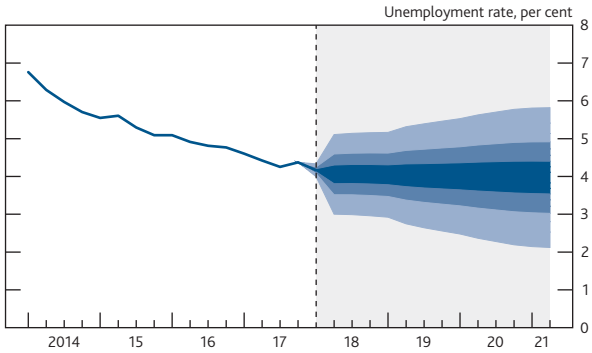
(a) The table shows the projections for annual average GDP growth rates of modal, median and mean projections for four-quarter growth of real GDP implied by the fan chart. The figures in parentheses show the corresponding projections in the February 2018 *Inflation Report* excluding the backcast. The projections have been conditioned on the assumptions in **Table 5.B** footnote (b).

Chart 5.8 Projected probabilities of GDP growth in 2020 Q2 (central 90% of the distribution)[a]



(a) **Chart 5.8** represents the cross-section of the GDP growth fan chart in 2020 Q2 for the market interest rate projection. The grey outline represents the corresponding cross-section of the February 2018 *Inflation Report* fan chart for the market interest rate projection excluding the backcast. The projections have been conditioned on the assumptions in **Table 5.B** footnote (b). 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.
(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.

Chart 5.9 Unemployment projection based on market interest rate expectations, other policy measures as announced



The fan chart depicts the probability of various outcomes for LFS unemployment. It has been conditioned on the assumptions in **Table 5.B** footnote (b). The coloured bands have the same interpretation as in **Chart 5.1**, 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 2018 Q1, a quarter earlier than the fan for CPI inflation. That is because Q1 is a staff projection for the unemployment rate, based in part on data for January and February. The unemployment rate was 4.2% in the three months to February, and is projected to be 4.2% in Q1 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.

Table 5.G Q4 CPI inflation

	Mode	Median	Mean
2018 Q4	2.2 (2.4)	2.2 (2.4)	2.2 (2.4)
2019 Q4	2.1 (2.2)	2.1 (2.2)	2.1 (2.2)
2020 Q4	2.0 (2.1)	2.0 (2.1)	2.0 (2.1)

The table shows projections for Q4 four-quarter CPI inflation. The figures in parentheses show the corresponding projections in the February 2018 *Inflation Report*. The projections have been conditioned on the assumptions in **Table 5.B** footnote (b).

labour cost growth to be consistent with meeting the inflation target.

Conditional on market interest rates, domestic inflationary pressures are projected to build over the forecast period while the contribution from energy and import prices dissipates. In the central projection, CPI inflation is judged likely to settle around the 2% target from mid-2020 (**Chart 5.7**).

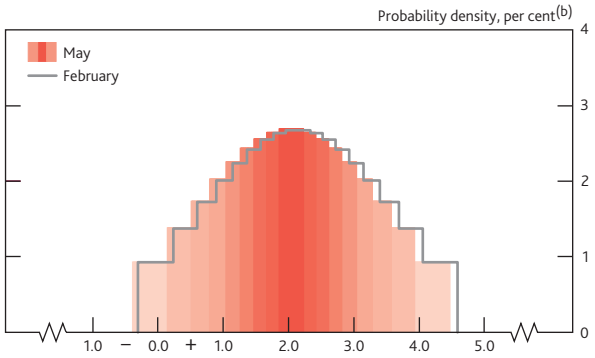
5.2 The projections for demand, unemployment and inflation

Based on these judgements, under the market path for Bank Rate and the assumption of an unchanged stock of purchased assets, the MPC projects four-quarter GDP growth to pick up to 1¾% over the next year and remain there throughout the forecast period (**Table 5.F**). That projection is weaker than in February in the near term, reflecting the weak Q1 outturn, but similar further out (**Chart 5.8**) once that weakness has dropped out of the four-quarter rate. Within demand, consumption growth is projected to remain well below past average rates. But strong global growth, together with the lower level of sterling, supports net trade and investment. There is particular uncertainty around the near-term outlook given the weakness in activity indicators in Q1 both in the United Kingdom and abroad. The risks around the projection are judged to be balanced, rather than skewed to the upside as in February, reflecting more balanced risks around the global outlook.

As set out in the February *Report*, the Committee judges that the economy's supply capacity is likely to grow at a relatively modest pace of 1½% over the forecast period. Unemployment is projected to fall a little further (**Chart 5.9**) and the economy moves into excess demand by early 2020.

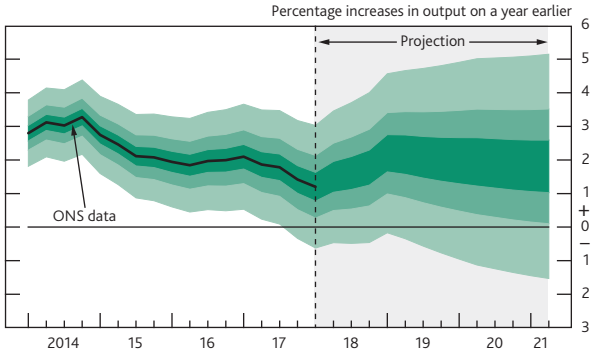
Above-target inflation since early 2017 entirely reflects the impact of higher import prices following sterling's depreciation and rises in energy prices. Inflation has fallen back from 3% to 2½% since late 2017. Inflation is projected to fall further over this year, before settling at the 2% target around mid-2020. The contribution from import prices to inflation is lower throughout the projection, fully accounting for the modest downward revision to the inflation projection in the medium term (**Table 5.G**). As in February, domestic inflationary pressures build to rates consistent with the 2% target over the forecast period. The risks around the inflation projection remain balanced (**Chart 5.10**).

Chart 5.10 Projected probabilities of CPI inflation in 2020 Q2 (central 90% of the distribution)[a]



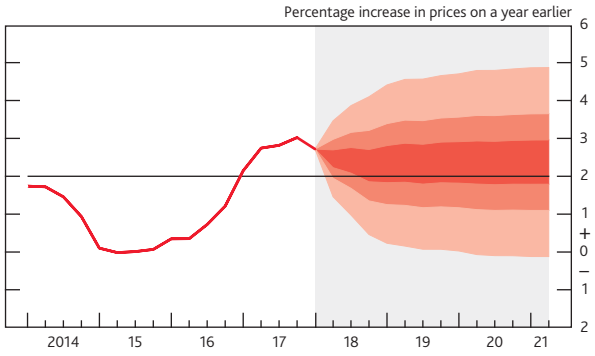
(a) **Chart 5.10** represents the cross-section of the CPI inflation fan chart in 2020 Q2 for the market interest rate projection. The grey outline represents the corresponding cross-section of the February 2018 *Inflation Report* fan chart for the market interest rate projection. The projections have been conditioned on the assumptions in **Table 5.B** footnote (b). The coloured bands in **Chart 5.10** have a similar interpretation to those on the fan charts. Like the fan charts, they portray the central 90% of the probability distribution.
(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.

Chart 5.11 GDP projection based on constant nominal interest rates at 0.5%, other policy measures as announced



See footnote to **Chart 5.1**.

Chart 5.12 CPI inflation projection based on constant nominal interest rates at 0.5%, other policy measures as announced



See footnote to **Chart 5.2**.

Charts 5.11 and **5.12** show the MPC's projections under the alternative constant rate assumption and an unchanged stock of purchased assets. That assumption holds Bank Rate at 0.5% throughout the three years of the forecast period, before it rises towards the market path over the subsequent three years. Under that path, GDP growth is stronger and inflation ends the forecast period above the target.

Box 5
How has the economy evolved relative to the February 2017 *Report*?

The MPC regularly assesses how the economy has evolved relative to its forecasts. This box looks at how recent developments in GDP growth, the labour market and inflation compare to the projections in the February 2017 *Report* (**Chart A**) and what the MPC has learnt from the evolution of the economy over that period.

The MPC's forecasts use conditioning assumptions for a number of variables, such as Bank Rate, the sterling ERI and US dollar oil prices. As such, when evaluating forecast performance it is important to abstract from the news introduced by those conditioning assumptions.(1) Relative to the February 2017 projections, dollar oil prices are 17% higher than assumed, and the yield curve and sterling ERI are also slightly higher than assumed (**Table 1**).

The February 2017 *Report* forecast

In the February 2017 *Report*, four-quarter GDP growth was projected to slow gradually over 2017 (Panel 1 of **Chart A**). That reflected slowing consumption growth as households adjusted their spending to lower real income growth, driven largely by the past fall in sterling and the resulting rise in consumer prices. Business investment was expected to be broadly flat as uncertainty around the impact of Brexit continued to weigh on companies' spending. Offsetting that to some degree, the fall in sterling, along with a recovery in global activity growth, was projected to support exports and, in turn, boost the contribution from net trade. Taken together, the composition of demand was expected to rotate away from consumption growth and towards net trade.

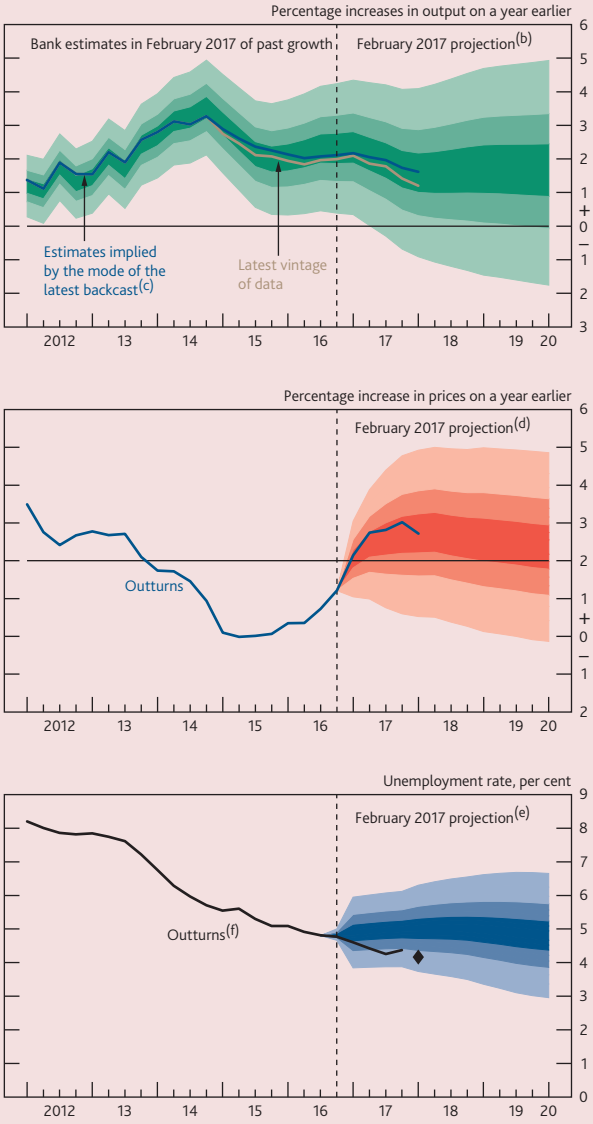
CPI inflation was projected to rise above the 2% target, reaching 2.7% at the end of 2017 (Panel 2 of **Chart A**), almost entirely due to the fall in sterling feeding through to consumer prices. Although past falls in unemployment were expected to feed through to higher wage growth, domestic inflationary pressures were expected to remain relatively subdued in 2017 as some degree of spare capacity in the economy remained. For instance, the unemployment rate was projected to be stable at around 5% (Panel 3 of **Chart A**), above its equilibrium rate, which had been revised down to 4½% at the time of the February 2017 *Report*.

GDP growth has slowed broadly as expected in 2017

GDP growth has slowed since 2016 Q4, and was estimated to have been 2.0% in the five quarters to 2018 Q1 once the expected upward revision to the ONS data captured in the backcast is taken into account. That slowing was broadly in line with the February 2017 projection, and within the central bands of the MPC's fan chart (**Chart A**).

Chart A GDP growth and CPI inflation have evolved broadly as expected, while unemployment fell further than anticipated

GDP, CPI and unemployment outturns and projections in the February 2017 *Report*(a)



(a) The projections were conditioned on: market interest rate expectations; the assumption that the stock of purchased gilts financed by the issuance of central bank reserves remained at £435 billion throughout the forecast period; the stock of purchased corporate bonds reached £10 billion and remained there throughout the forecast period; and the announced Term Funding Scheme (TFS) financed by the issuance of central bank reserves.
(b) See footnote to Chart 5.1 in the February 2017 *Report* for information on how to interpret the fan chart.
(c) The latest backcast is a judgement about the path for GDP in the mature estimate of the data.
(d) See footnote to Charts 5.2 and 5.3 in the February 2017 *Report* for information on how to interpret the fan chart.
(e) See footnote to Chart 5.6 in the February 2017 *Report* for information on how to interpret the fan chart.
(f) The diamond shows Bank staff's projection for 2018 Q1, based on data to February.

Growth has, however, been stronger than expected immediately following the referendum. In August 2016, the MPC had projected that GDP growth would slow sharply (**Table 2**), based on a range of indicators available at the time. Although growth did slow, it did not do so by as much as projected, in part as uncertainty probably weighed on

(1) For more on the role of conditioning assumptions, see 'Evaluating forecast performance', Independent Evaluation Office, November 2015.

Table 1 Assessing the anticipated developments underpinning the key judgements in the February 2017 *Report*

Conditioning assumptions and key judgements	Percentage change between latest quarterly data available at the time of the February 2017 and May 2018 *Reports*, unless otherwise stated[a]	
	February 2017 projection	Current estimate
Conditioning assumptions[b]		
Bank Rate (per cent)	0.3	0.5
Sterling ERI (index: January 2005 = 100)	77	79
Oil prices (US$ per barrel)	57	67
Key Judgement 1: UK trade will be supported by the past depreciation of the sterling exchange rate and the expected pickup in global growth		
World GDP (UK-weighted)[c][d]	3	3¾
World GDP (PPP-weighted)[c]	4½	5
Euro-area GDP[c]	2¼	3¼
US GDP[c]	2¾	3¼
Net trade (contribution to GDP growth)[e]	1	1½
Exports[f]	4¾	8
Imports[f]	1	2
Key Judgement 2: weak real income growth weighs on UK domestic demand		
Contributions to GDP growth[e]		
Household consumption	1½	1
Business investment	0	¼
Change in:		
Credit spreads[g]	0	-¼
Household saving ratio[h]	-1¾	-1¾
Key Judgement 3: slack in the labour market and weak productivity growth weigh on wage growth		
Productivity[i][j]	1½	1
Participation rate[j][k]	63½	63¾
Average hours[j][l]	32	32
Average weekly earnings[j][m]	3¾	3
Unit labour costs[n]	2	1¾
Key Judgement 4: higher import prices take inflation above the 2% target for a period		
Non-fuel import prices[f]	6	3½

Sources: Bank of England, BDRC Continental *SME Finance Monitor*, Bloomberg Finance L.P., British Household Panel Survey, Department for Business, Energy and Industrial Strategy, Eurostat, ICE/BoAML (used with permission), IMF *World Economic Outlook* (*WEO*), ONS, Thomson Reuters Datastream, US Bureau of Economic Analysis and Bank calculations.

(a) Where partial data are available for the quarter, Bank staff's projection for that quarter, based on that data, is used.
(b) Level in 2018 Q1.
(c) Chained-volume measures. Change in percentage points between 2016 Q4 and 2018 Q1.
(d) Constructed using real GDP growth rates of 180 countries weighted according to their shares in UK exports.
(e) Percentage point contributions between 2016 Q3 and 2017 Q4. GDP at market prices is based on the mode of the MPC's backcast.
(f) Excludes the impact of missing trader intra-community fraud. Per cent change between 2016 Q3 and 2017 Q4.
(g) Based on a weighted average of household and corporate loan and deposit spreads over appropriate risk-free rates. Change in percentage points between 2016 Q4 and 2018 Q1.
(h) Percentage of total available household resources. Includes non-profit institutions serving households. Change in percentage points between 2016 Q3 and 2017 Q4.
(i) GDP per hour worked. GDP at market prices is based on the mode of the MPC's backcast. Change in percentage points between 2016 Q4 and 2018 Q1.
(j) Figure for 2018 Q1 is Bank staff's projection, based on labour market data to February.
(k) Percentage of the 16+ population. Level in 2018 Q1.
(l) Average weekly hours worked in main job and second job. Level in 2018 Q1.
(m) Whole-economy total pay. Per cent change in level between 2016 Q4 and 2018 Q1.
(n) Whole-economy total labour costs divided by GDP at market prices, based on the mode of the MPC's GDP backcast. Per cent change in level between 2016 Q3 and 2017 Q4.

consumer spending by less than expected. In following quarters, the MPC adjusted its forecasts in response to these developments and at a faster pace than other forecasters on average (**Chart B**).(2) Relative to those more recent projections, the latest outturn for 2017 has been broadly in line.

Table 2 News relative to selected forecasts

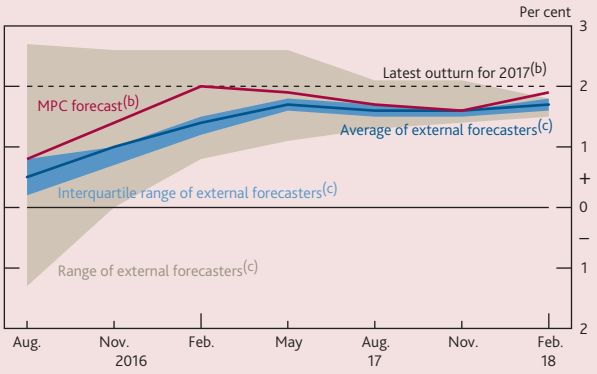
	GDP growth: 2016 Q4–2018 Q1[a]	Unemployment rate: 2018 Q1[b]	Annual CPI inflation: 2018 Q1
Latest outturn	**2.0**	**4.2**	**2.7**
February 2017 forecast	2.1	5.0	2.7
News[c]	*-0.1*	*-0.9*	*0.0*
August 2016 forecast	1.5	5.5	2.1
News[c]	*0.5*	*-1.4*	*0.6*
May 2016 forecast	3.0	4.9	1.9
News[c]	*-0.9*	*-0.7*	*0.8*

Sources: ONS and Bank calculations.

(a) Chained-volume measure, based on the mode of the MPC's backcast.
(b) Data for 2018 Q1 is Bank staff's projection, based on data to February.
(c) Percentage points. May not equal the difference between forecast and outturn due to rounding.

Chart B The MPC's projection for GDP growth was revised up in late 2016

Projections for 2017 GDP growth[a]



Sources: HM Treasury and Bank calculations.

(a) Projections for annual average GDP growth in 2017. Chained-volume measure.
(b) Based on the mode of the MPC's backcast.
(c) External forecasters' projections are from Forecasts for the UK economy: a comparison of independent forecasts. The projections chosen are those collected ahead of each *Inflation Report* publication and only projections produced within one month of the *Report* are included in the sample.

Nevertheless, growth remains weaker than had been projected before the referendum in the May 2016 *Report*, which was conditioned on remaining in the EU.

Demand has rotated to a greater degree than anticipated

Although demand growth has slowed broadly in line with the February 2017 *Report* forecast, its composition has rotated to a greater degree than had been anticipated. Net trade — already expected to contribute positively to growth over much of the forecast — boosted GDP growth by more (**Table 1**). And business investment growth also picked up by more than expected, although it remained weak relative to past expansions (Section 2). By contrast, consumption growth slowed by more than expected.

A significant driver of the additional rotation in demand growth has been stronger-than-expected global activity. Global growth, weighted by countries' shares in UK exports,

(2) See box on pages 39–41 of the May 2017 *Report*.

has been ¾ percentage point stronger than projected in February 2017, pushing up external demand for UK goods and services (**Table 1**). That has been reflected in stronger-than-expected gross trade flows, particularly exports. Business investment growth is also likely to have been supported by the stronger global environment, in part as a result of more supportive global financial conditions.

Weaker-than-expected household spending growth has largely reflected lower-than-expected real income growth, such that the change in the saving ratio has been broadly as expected (**Table 1**). That slowing in consumption growth is despite more supportive financial conditions — falls in bank funding spreads and greater competition between banks, for example, led to narrower-than-expected mortgage spreads over 2017 (Section 1), even as reference rates rose ahead of the increase in Bank Rate in November.

Supply growth has been weaker and the degree of spare capacity narrower than expected

While aggregate demand has evolved broadly as expected, potential supply growth is estimated to have slowed by more than expected. That has reflected weaker-than-expected potential productivity, with slower-than-expected growth in output per hour judged to have reflected slower underlying productivity growth.

Partly offsetting that, potential labour supply appears to have been greater than anticipated. As part of its annual assessment of aggregate supply-side conditions, set out in the February 2018 *Report*, the MPC revised down its estimate of the equilibrium unemployment rate to 4¼% from 4½%. That judgement, to a large degree, reflected downside news in wage growth, which remained subdued (**Table 1**), alongside a further fall in the unemployment rate (**Chart A**).

With potential supply growth weaker than expected but demand growth more in line, slack has been eroded more quickly than expected. As a result, in 2018 Q1 there is judged to have been a little less spare capacity than anticipated at the time of the February 2017 *Report*, while unemployment was around its equilibrium rate, rather than a little above it.

Higher oil prices have pushed up inflation, but non-fuel import price growth has been slightly less than expected

CPI inflation was 2.7% in 2018 Q1, in line with expectations at the time of the February 2017 *Report*, but peaked at a higher rate during 2017 (**Chart A**). Much of that upside news can be attributed to higher-than-expected energy prices, reflecting rises in dollar oil prices (**Table 1**), in part as global demand strengthened.

The main driver of above-target inflation has been the effect of the rise in import prices following the substantial depreciation in sterling over 2016. Import price growth has, however, been somewhat less than anticipated (**Table 1**).

Domestic cost pressures have been broadly in line with the February 2017 projection. Although wage growth has been weaker than anticipated, that weakness has in part been accounted for by weaker productivity growth. As a result, unit labour cost growth has been closer to expectations than wage growth (**Table 1**).

Implications for the MPC's projections

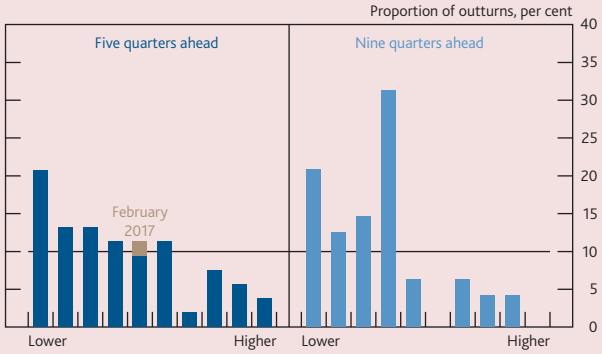
Overall, growth and inflation have developed broadly as expected in the February 2017 *Report*, and the key judgements underpinning those forecasts have been borne out in the main developments in the UK economy over this period (**Table 2**). GDP growth has slowed and the composition of demand has rotated, albeit to a greater degree than anticipated, largely reflecting stronger global growth. Although slower supply growth has meant a more rapid narrowing in spare capacity, the slightly faster pickup in CPI inflation has largely reflected external factors, particularly a rise in global energy prices.

These developments are reflected in the key judgements underpinning the MPC's May 2018 forecasts (Section 5). Consumption growth is still projected to remain subdued relative to historical norms, with a positive contribution from net trade and a pickup in investment growth offsetting that to a degree. Gross trade flows have been stronger than projected over 2017 and are expected to grow a little faster over coming years than previously assumed. The economy's potential supply capacity — or 'speed limit' — is expected to remain modest relative to historical averages, in part as productivity growth picks up only modestly. Inflation is expected to continue to fall back as the upward pressure from external cost pressures diminishes, although a little more quickly than previously anticipated, reflecting the smaller-than-expected rise in import prices.

Outturns relative to the MPC's fan charts

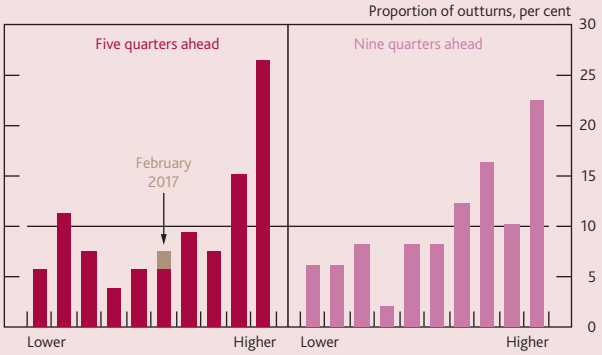
One way of assessing the significance of economic news is by comparing outturns against the MPC's fan charts over time. The 2018 Q1 outturns for GDP growth and CPI inflation were well within the central band of the February 2017 fan charts (**Charts A, C** and **D**). If the fan charts accurately describe the uncertainty faced by the MPC then, absent any news in the conditioning paths, outturns would be expected to lie evenly across the fan chart distribution over time, with 10% of outcomes in each decile.

Chart C Dispersion of GDP growth outturns across deciles of the fan chart probability distribution[a]



(a) Four-quarter GDP growth. Calculated for the market rate fan charts published since February 2004.

Chart D Dispersion of CPI inflation outturns across deciles of the fan chart probability distribution[a]



(a) Calculated for the market rate fan charts published since February 2004.

Box 6
Other forecasters' expectations

This box reports the results of the Bank's most recent survey of external forecasters, carried out in April.(1) On average, respondents expected four-quarter GDP growth to pick up to 1.7% in three years' time (**Table 1**). While this was broadly unchanged relative to expectations in February, it is somewhat lower than in May 2016. After the EU referendum, the average probability that forecasters attached to growth below 1% three years ahead rose sharply and has remained elevated, while the probability of growth above 3% has declined steadily (**Chart A**). Despite the recent fall in the unemployment rate to 4.2%, external forecasters, on average, had continued to expect it to rise over the next three years.

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

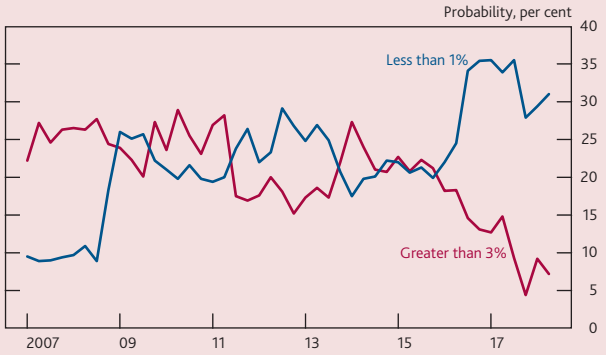
	2019 Q2	2020 Q2	2021 Q2
CPI inflation(b)	2.2	2.0	1.9
GDP growth(c)	1.5	1.6	1.7
LFS unemployment rate	4.5	4.6	4.9
Bank Rate (per cent)	1.0	1.3	1.6
Stock of purchased gilts (£ billions)(d)	435	432	430
Stock of purchased corporate bonds (£ billions)(d)	10	10	10
Sterling ERI	79.4	79.2	78.7

Source: Projections of outside forecasters as of 27 April 2018.

(a) For 2019 Q2, there were 24 forecasts for CPI inflation, 24 for GDP growth, 20 for the unemployment rate, 22 for Bank Rate, 16 for the stock of gilt purchases, 13 for the stock of corporate bond purchases and 12 for the sterling ERI. For 2020 Q2, there were 15 forecasts for CPI inflation, 15 for GDP growth, 13 for the unemployment rate, 18 for Bank Rate, 14 for the stock of gilt purchases, 9 for the stock of corporate bond purchases and 11 for the sterling ERI. For 2021 Q2, there were 14 forecasts for CPI inflation, 14 for GDP growth, 12 for the unemployment rate, 17 for Bank Rate, 12 for the stock of gilt purchases, 8 for the stock of corporate bond purchases and 10 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 The average probability attached to growth above 3% in three years' time has declined

Average probability for growth outturns in three years' time

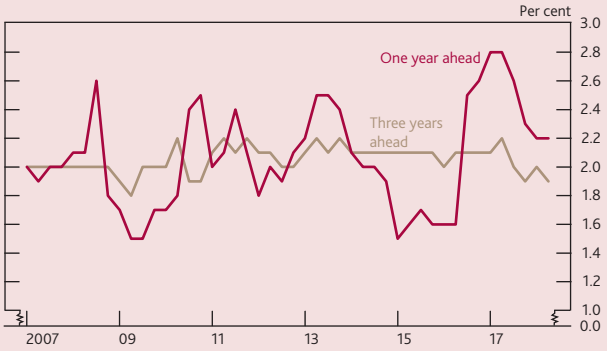


Sources: Projections of outside forecasters provided for *Inflation Reports* between February 2007 and May 2018.

External forecasters' central expectations for CPI inflation at all horizons were broadly unchanged relative to three months ago. The average central expectation at the one-year horizon has fallen sharply over the past year (**Chart B**), slightly faster than the equivalent *Inflation Report* forecasts. The average central expectation for inflation in three years' time was, at 1.9%, slightly below the MPC's 2% inflation target.

Chart B Expectations of inflation are broadly unchanged since February

Average of forecasters' central projections for CPI inflation

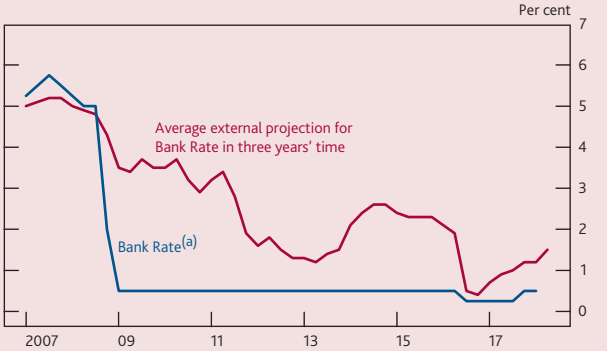


Sources: Projections of outside forecasters provided for *Inflation Reports* between February 2007 and May 2018.

External forecasters, on average, expected somewhat less monetary stimulus than they did at the time of the February *Report*: the average expectation for Bank Rate was around 0.3 percentage points higher over the next three years. The average central expectation for Bank Rate in three years' time remained, however, below its level in early 2016 (**Chart C**). As in February, almost all forecasters expected the current stock of gilt and corporate bond purchases to remain unchanged over the next three years.

Chart C Expectations of Bank Rate have risen in recent quarters

Bank Rate and average of forecasters' central projections of Bank Rate



Sources: Bank of England and projections of outside forecasters provided for *Inflation Reports* between February 2007 and May 2018.

(a) Quarter-end value.

(1) For detailed distributions, see 'Other forecasters' expectations'.

Glossary and other information

Glossary of selected data and instruments

AWE – average weekly earnings.
CPI – consumer prices index.
CPI inflation – inflation measured by the consumer prices index.
DGI – domestically generated inflation.
DMP – Decision Maker Panel.
ERI – exchange rate index.
GDP – gross domestic product.
LFS – Labour Force Survey.
Libor – London interbank offered rate.
OIS – overnight index swap.
PMI – purchasing managers' index.
PPI – producer price index.
RPI – retail prices index.
RPI inflation – inflation measured by the retail prices index.
ULC – unit labour cost.

Abbreviations

BCC – British Chambers of Commerce.
CBI – Confederation of British Industry.
CEIC – CEIC Data Company Ltd.
CFO – chief financial officer.
CIPD – Chartered Institute of Personnel and Development.
CIPS – Chartered Institute of Purchasing and Supply.
COICOP – Classification of Individual Consumption by Purpose.
ECB – European Central Bank.
EME – emerging market economy.
EU – European Union.
FTSE – Financial Times Stock Exchange.
GfK – Gesellschaft für Konsumforschung, Great Britain Ltd.
GVA – gross value added.
ICE/BoAML – Intercontinental Exchange/Bank of America Merrill Lynch.
IMF – International Monetary Fund.
LTV – loan to value.
MPC – Monetary Policy Committee.
MSCI – Morgan Stanley Capital International Inc.
MTIC – missing trader intra-community.
NPISH – non-profit institutions serving households.
OECD – Organisation for Economic Co-operation and Development.
Ofgem – Office of Gas and Electricity Markets.
ONS – Office for National Statistics.
PPP – purchasing power parity.
PwC – PricewaterhouseCoopers.
R&D – research and development.
REC – Recruitment and Employment Confederation.
RICS – Royal Institution of Chartered Surveyors.
S&P – Standard & Poor's.
SMEs – small and medium-sized enterprises.
SVT – standard variable tariff.
TFS – Term Funding Scheme.
VAT – Value Added Tax.
VED – Vehicle Excise Duty.
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.