

Conditioning assumptions, MPC key judgements, and indicative projections February 2018

This document contains five tables of projections:

- Table 1 shows the conditioning assumptions used for the MPC's projections;
- Table 2 shows the MPC's mean projections for GDP, CPI inflation and LFS unemployment;
- Table 3 shows a summary of the headline forecast variables;
- Table 4 shows profiles that illustrate the MPC's key judgements as described in Section 5; and
- Table 5 shows indicative projections produced for the MPC by Bank staff to be consistent with the MPC's modal projections for GDP, inflation and unemployment.

The February 2018 projections in Tables 2, 3, 4 and 5 have been conditioned on the paths shown in Table 1, and 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 November 2017 projections were conditioned on the same asset purchase and TFS assumptions and market interest rates.

The '*Inflation Report* fan charts February 2018' document and the quarterly market interest rate paths are available in the 'Data from the February 2018 Inflation Report' section at www.bankofengland.co.uk/inflation-report/2018/february-2018.

Table 1 Forecast conditioning assumptions^{(a)(b)}

| | Average 1998– 2007 | Projections | | | |
|---|--------------------------|-------------|------|------|------|
| | | 2017 | 2018 | 2019 | 2020 |
| Bank Rate ^(c) | 5.0 | 0.4 | 0.7 | 1.0 | 1.1 |
| Sterling effective exchange rate ^(d) | 100 | 78 | 79 | 79 | 79 |
| Oil prices ^(e) | 39 | 61 | 67 | 63 | 60 |
| Gas prices ^(f) | 29 | 52 | 50 | 47 | 45 |
| Nominal government expenditure ^(g) | 7¼ | 1¼ | 2¼ | 2 | 2½ |

Sources: Bank of England, Bloomberg, Office for Budget Responsibility, ONS, Thomson Reuters Datastream and Bank calculations.

(a) The table shows the projections for financial market prices, wholesale energy prices and government spending projections that are used as conditioning assumptions for the MPC's projections for CPI inflation, GDP growth and the unemployment rate.

(b) Financial market data are based on averages in the 15 working days to 31 January 2018. Figures show the average level in Q4 of each year, unless otherwise stated.

(c) Per cent. The path for Bank Rate implied by forward market interest rates. The curves are based on overnight index swap rates. Figure for 2017 is the outturn.

(d) Index: January 2005 = 100. The convention is that the sterling exchange rate follows a path that is half way between the starting level of the sterling ERI and a path implied by interest rate differentials. Figure for 2017 is the outturn.

(e) Dollars per barrel. Projection based on monthly Brent futures prices. Figure for 2017 is the outturn.

(f) Pence per therm. Projection based on monthly natural gas futures. Figure for 2017 is the outturn.

(g) Annual average growth rate. Nominal general government consumption and investment. Projections are taken from the Office for Budget Responsibility's *Economic and Fiscal Outlook* associated with the 2017 Autumn Budget. Historical data based on NMRP+D7QK.

Table 2 The MPC's mean projections for GDP, CPI inflation and LFS unemployment

| | Average 1998– 2007 | Projections | | | |
|--------------------------------------|--------------------------|-------------|------|------|------|
| | | 2017 | 2018 | 2019 | 2020 |
| GDP ^(a) | 2.9 | 1.9 | 1.8 | 1.8 | 1.8 |
| CPI inflation ^(b) | 1.6 | 3.0 | 2.4 | 2.2 | 2.1 |
| LFS unemployment rate ^(c) | 5.3 | 4.3 | 4.2 | 4.1 | 4.1 |

(a) Annual average growth in real GDP consistent with the mean projection for four-quarter growth in real GDP. The MPC's projections are based on its backcast for GDP. Figure for 2017 is the MPC's backcast.

(b) Four-quarter inflation rate in Q4. Figure for 2017 is the outturn.

(c) LFS unemployment rate in Q4. 2017 Q4 is a staff projection, based in part on data for October and November.

Table 3 Forecast summary^(a)

| | Projections | | | |
|------------------------------|-------------|-----------|-----------|---------|
| | 2018 Q1 | 2019 Q1 | 2020 Q1 | 2021 Q1 |
| GDP ^(b) | 1.7 (1.5) | 1.8 (1.7) | 1.7 (1.7) | 1.7 |
| <i>Excluding backcast</i> | 1.7 (1.5) | 1.8 (1.7) | 1.7 (1.7) | 1.7 |
| CPI inflation ^(c) | 2.9 (2.6) | 2.3 (2.3) | 2.2 (2.2) | 2.1 |
| LFS unemployment rate | 4.3 (4.2) | 4.2 (4.2) | 4.1 (4.2) | 4.1 |
| Bank Rate ^(d) | 0.5 (0.5) | 0.8 (0.8) | 1.0 (0.9) | 1.2 |

(a) Modal projections for GDP, CPI inflation and LFS unemployment. Figures in parentheses show the corresponding projections in the November 2017 *Inflation Report*.

(b) Four-quarter growth in real GDP. The MPC's projections are based on its backcast for GDP.

(c) Four-quarter inflation rate.

(d) Per cent. The path for Bank Rate implied by forward market interest rates. The curves are based on overnight index swap rates.

Table 4 MPC key judgements^{(a)(b)}**Key Judgement 1: the broad-based strength in global growth continues**

| | Average 1998– 2007 | Projections | | | |
|---|--------------------------|-------------|---------|---------|---------|
| | | 2017 | 2018 | 2019 | 2020 |
| World GDP (UK-weighted) ^(c) | 3 | 2¾ (2¾) | 3 (2¾) | 2½ (2½) | 2¼ (2¼) |
| World GDP (PPP-weighted) ^(d) | 4 | 3¾ (3½) | 4 (3¾) | 3¾ (3½) | 3½ (3½) |
| Euro-area GDP ^(e) | 2¼ | 2½ (2¼) | 2¾ (2¼) | 2 (2) | 1¾ (1¾) |
| US GDP ^(f) | 3 | 2¼ (2¼) | 3 (2¼) | 2¼ (2) | 1¾ (1¾) |

Key Judgement 2: the rotation in UK GDP growth away from domestic consumption and towards external demand and investment continues

| | Average 1998– 2007 | Projections | | | |
|---|--------------------------|-------------|---------|---------|---------|
| | | 2017 | 2018 | 2019 | 2020 |
| Household consumption contribution to GDP growth ^(g) | 2¼ | 1 (1) | ¾ (¾) | ¾ (¾) | 1 (1) |
| Business investment contribution to GDP growth ^(h) | ¼ | ¼ (¼) | ¼ (¼) | ¼ (¼) | ½ (¼) |
| Net trade contribution to GDP growth ⁽ⁱ⁾ | -¼ | ¾ (½) | ½ (½) | ¼ (½) | ¼ (¼) |
| Business investment to GDP ratio ⁽ⁱ⁾ | 9¾ | 9¼ (9½) | 9½ (9½) | 9¾ (9½) | 9¾ (9¾) |
| Credit spreads ^(k) | ¾ ^(l) | 1¾ (1¾) | 1¾ (1¾) | 1¾ (1¾) | 1¾ (2) |
| Household saving ratio ^(m) | 8½ | 5¼ (5¼) | 5¾ (5¼) | 5¼ (4¾) | 5 (4¾) |

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

| | Average 1998– 2007 | Projections | | | |
|-----------------------------------|--------------------------|-------------|-----------|-----------|-----------|
| | | 2017 | 2018 | 2019 | 2020 |
| Productivity ⁽ⁿ⁾ | 2¼ | ½ (¼) | 1¼ (1¼) | 1¼ (1½) | 1 (1¼) |
| Participation rate ^(o) | 63 | 63¾ (63½) | 63½ (63½) | 63½ (63½) | 63½ (63¾) |
| Average hours ^(p) | 32¼ | 32 (32¼) | 32 (32) | 32 (31¾) | 32 (31¾) |

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

| | Average 1998– 2007 | Projections | | | |
|----------------------------------|--------------------------|-------------|---------|---------|---------|
| | | 2017 | 2018 | 2019 | 2020 |
| UK import prices ^(q) | ¼ | 2¾ (2½) | 1½ (1¾) | ¼ (½) | -¼ (½) |
| Dollar oil prices ^(r) | 39 | 61 (57) | 67 (56) | 63 (55) | 60 (55) |
| Unit labour costs ^(s) | 3 | 2¼ (1¾) | 2 (2) | 2¼ (2¼) | 2¼ (2¼) |

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

(a) The MPC's projections for GDP growth, CPI inflation and unemployment (as presented in the fan charts) are underpinned by four key judgements. The mapping from the key judgements to individual variables is not precise, but the profiles in the table should be viewed as broadly consistent with the MPC's key judgements.

(b) Figures show annual average growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the November 2017 *Inflation Report*. Calculations for back data based on ONS data are shown using ONS series identifiers.

(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. Figure for 2017 is the outturn.

(f) Chained-volume measure. Figure for 2017 is the outturn.

(g) Chained-volume measure. Includes non-profit institutions serving households. Household consumption data based on ABJR+HAYO. GDP data based on ABMI.

(h) Chained-volume measure. Business investment data based on GAN8. GDP data based on ABMI.

(i) Chained-volume measure. Exports less imports. Since 1998, exports based on (IKBK-OFNN/(BOKH/BQKO)). Since 1998, imports based on (IKBL-OFNN/(BOKH/BQKO)).

Prior to 1998 the data exclude the impact of missing trader intra-community (MTIC) fraud, with net trade based on IKBK-IKBL. GDP data based on ABMI.

(j) Annual average. Chained-volume business investment as a percentage of GDP. Business investment data based on GAN8. GDP data based on ABMI.

(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. Figure for 2017 is the Q4 outturn.

(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. Based on NRJS.

(n) GDP per hour worked. GDP at market prices is based on the mode of the MPC's backcast. Hours worked based on YBUS.

(o) Level in Q4. Percentage of the 16+ population. Based on MGWG.

(p) Level in Q4. Average weekly hours worked, in main job and second job. Based on YBUS/MGRZ.

(q) Four-quarter inflation rate in Q4.

(r) Average level in Q4. Dollars per barrel. Projection based on monthly Brent futures prices. Figure for 2017 is the Q4 outturn.

(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.

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

| | Average 1998– 2007 | Projections | | | | Memo: mean forecast error ^(b) | Memo: level in 2016 ^(c) |
|---|--------------------------|-------------|--------|---------|---------|---|--|
| | | 2017 | 2018 | 2019 | 2020 | | |
| Annual average growth rate | | | | | | | |
| Household consumption ^(d) | 3½ | 1½ (1½) | 1¼ (1) | 1¼ (1¼) | 1¼ (1½) | 1½ | 1,275 |
| Business investment ^(e) | 1¾ | 2¼ (2½) | 3 (2¾) | 3¾ (3) | 4¼ (3) | 6¼ | 179 |
| Housing investment ^(f) | 3¼ | 5½ (4) | ¼ (1¼) | ½ (¼) | ¾ (½) | 9¼ | 89 |
| Exports ^(g) | 4½ | 6¼ (4¾) | 3¼ (2) | 1¼ (1¼) | ½ (½) | 4¾ | 528 |
| Imports ^(h) | 6 | 3 (3) | 1¼ (¼) | ¼ (-¼) | 0 (-¼) | 4¾ | 575 |
| Real post-tax household income ⁽ⁱ⁾ | 3¼ | -½ (-½) | 1¾ (1) | ½ (¾) | 1¼ (1½) | 1¼ | 1,372 |
| Four-quarter growth rate in Q4 | | | | | | | |
| Employment ^(j) | 1 | 1¼ (1) | ½ (¾) | ½ (½) | ½ (¾) | 1 | 32 ^(k) |
| Average weekly earnings ^(l) | 4¼ | 2½ (2¼) | 3 (3) | 3¼ (3¼) | 3½ (3¼) | 1¼ | 499 ^(m) |

(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 in parentheses show the corresponding projections in the November 2017 *Inflation Report*. Calculations for back data are shown using ONS series identifiers.

(b) Root mean squared errors of one year ahead forecasts made between February 2003 and February 2016.

(c) £ billion chained-volume measure (reference year 2015) in 2016 unless otherwise stated.

(d) Chained-volume measure. Includes non-profit institutions serving households. Based on ABJR+HAYO.

(e) Chained-volume measure. Based on GAN8.

(f) Chained-volume measure. Whole-economy measure. Includes new dwellings, improvements and spending on services associated with the sale and purchase of property. Based on DFEG+L635+L637.

(g) Chained-volume measure. The historical data exclude the impact of missing trader intra-community (MTIC) fraud. Since 1998 based on IKBK-OFNN/(BOKH/BQKO). Prior to 1998 based on IKBK.

(h) Chained-volume measure. The historical data exclude the impact of MTIC fraud. Since 1998 based on IKBK-OFNN/(BOKH/BQKO). Prior to 1998 based on IKBK.

(i) Total available household resources deflated by the consumer expenditure deflator. Based on RPQK/((ABJQ+HAYE)/(ABJR+HAYO)).

(j) Based on MGRZ.

(k) People aged 16+ employed in 2016 Q4, millions.

(l) Whole-economy total pay. Growth rates since 2001 based on KAB9. Prior to 2001, growth rates are based on historical estimates of AWE, with ONS series identifier MD9M.

(m) Average pounds sterling earned per week in 2016 Q4.