

# Conditioning assumptions, MPC key judgements, and indicative projections November 2018

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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 November 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 August 2018 projections were conditioned on the same asset purchase and TFS assumptions and market interest rates.

The '*Inflation Report* fan charts November 2018' document and the quarterly market interest rate paths are available from the 'Download the chart slides and data' link at [www.bankofengland.co.uk/inflation-report/2018/november-2018](http://www.bankofengland.co.uk/inflation-report/2018/november-2018).

**Table 1** Forecast conditioning assumptions<sup>(a)(b)</sup>

	Average 1998– 2007	Projections			
		2018	2019	2020	2021
Bank Rate <sup>(c)</sup>	5.0	0.7	1.0	1.2	1.4
Sterling effective exchange rate <sup>(d)</sup>	100	79	79	79	79
Oil prices <sup>(e)</sup>	39	81	78	74	71
Gas prices <sup>(f)</sup>	29	71	68	61	60
Nominal government expenditure <sup>(g)</sup>	7¼	1¾	3¼	2¾	2

Sources: Bank of England, Bloomberg Finance L.P., Datastream from Refinitiv, Office for Budget Responsibility (OBR), ONS 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 24 October 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.

(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.

(e) Dollars per barrel. Projection based on monthly Brent futures prices.

(f) Pence per therm. Projection based on monthly natural gas futures.

(g) Annual average growth rate. Nominal general government consumption and investment. Projections are taken from the OBR's *Economic and Fiscal Outlook* associated with the Spring Statement 2018. Historical data based on NMRP+D7QK.

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

	Average 1998– 2007	Projections			
		2018	2019	2020	2021
GDP <sup>(a)</sup>	2.9	1.3	1.7	1.7	1.7
CPI inflation <sup>(b)</sup>	1.6	2.5	2.1	2.1	2.0
LFS unemployment rate <sup>(c)</sup>	5.3	3.9	3.9	3.9	3.9

(a) Annual average growth in real GDP consistent with the mean projection for four-quarter growth in real GDP. The growth rates reported in this table exclude the backcast for GDP.

(b) Four-quarter inflation rate in Q4.

(c) LFS unemployment rate in Q4.

**Table 3** Forecast summary<sup>(a)</sup>

	Projections			
	2018 Q4	2019 Q4	2020 Q4	2021 Q4
GDP <sup>(b)</sup>	1.5 (1.5)	1.7 (1.8)	1.7 (1.7)	1.7
<i>Including the backcast</i> <sup>(c)</sup>	1.7 (1.6)	1.7 (1.8)	1.7 (1.7)	1.7
CPI inflation <sup>(d)</sup>	2.5 (2.3)	2.1 (2.2)	2.1 (2.0)	2.0
LFS unemployment rate	3.9 (3.9)	3.9 (3.9)	3.9 (3.9)	3.9
Excess supply/Excess demand <sup>(e)</sup>	0 (0)	+¼ (0)	+¼ (+¼)	+½
Bank Rate <sup>(f)</sup>	0.7 (0.7)	1.0 (0.9)	1.2 (1.1)	1.4

(a) Modal projections for GDP, CPI inflation, LFS unemployment and excess supply/excess demand. Figures in parentheses show the corresponding projections in the August 2018 *Inflation Report*. Projections were only available to 2021 Q3 in August.

(b) Four-quarter growth in real GDP. Excludes the backcast for GDP.

(c) Four-quarter growth in real GDP.

(d) Four-quarter inflation rate.

(e) Per cent of potential GDP. A negative figure implies output is below potential and a positive figure 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.

**Table 4 MPC key judgements<sup>(a)(b)</sup>****Key Judgement 1: global GDP growth slows to around its potential rate, as financial conditions tighten**

	Average 1998– 2007	Projections			
		2018	2019	2020	2021
World GDP (UK-weighted) <sup>(c)</sup>	3	2¾ (2¾)	2¼ (2½)	2 (2¼)	2
World GDP (PPP-weighted) <sup>(d)</sup>	4	3¾ (3¾)	3½ (3½)	3¼ (3½)	3½
Euro-area GDP <sup>(e)</sup>	2¼	2 (2¼)	1½ (1¾)	1½ (1¾)	1½
US GDP <sup>(f)</sup>	3	3 (3)	2¾ (2½)	1¾ (1¾)	1¾

**Key Judgement 2: net trade and a rebound in business investment support UK activity, while consumption growth is modest**

	Average 1998– 2007	Projections			
		2018	2019	2020	2021
Business investment contribution to GDP growth <sup>(g)</sup>	¼	0 (¼)	¼ (¼)	½ (½)	½
Net trade contribution to GDP growth <sup>(h)</sup>	-¼	¼ (0)	¼ (¼)	¼ (¼)	0
Business investment to GDP ratio <sup>(i)</sup>	9¾	9½ (9½)	9½ (9¾)	9¾ (10)	10
Household consumption contribution to GDP growth <sup>(j)</sup>	2¼	1 (¾)	¾ (¾)	¾ (¾)	1
Credit spreads <sup>(k)</sup>	¾ <sup>(l)</sup>	1½ (1½)	1½ (1½)	1½ (1½)	1½
Household saving ratio <sup>(m)</sup>	8½	4 (4½)	4 (4½)	3¾ (4½)	3¾

**Key Judgement 3: a margin of excess demand builds as demand growth exceeds subdued potential supply growth**

	Average 1998– 2007	Projections			
		2018	2019	2020	2021
Productivity <sup>(n)</sup>	2¼	1 (1)	1 (1¼)	1¼ (1¼)	1
Participation rate <sup>(o)</sup>	63	63½ (63¾)	63½ (63¾)	63½ (63¾)	63½
Average hours <sup>(p)</sup>	32¼	32 (32)	32 (32)	32 (32)	32

**Key Judgement 4: domestic inflationary pressures continue to build, while the contributions from energy and import prices dissipate**

	Average 1998– 2007	Projections			
		2018	2019	2020	2021
UK import prices <sup>(q)</sup>	¼	3¼ (1¾)	1 (¼)	0 (0)	0
Dollar oil prices <sup>(r)</sup>	39	81 (75)	78 (72)	74 (68)	71
Unit labour costs <sup>(s)</sup>	2¾	1¾ (2¾)	2¼ (2¼)	2¼ (2¼)	2½
Unit wage costs <sup>(t)</sup>	2½	1½ (2½)	2¼ (2)	2¼ (2¼)	2½
Private sector regular pay based unit wage costs <sup>(u)</sup>	1¾	2½ (2¾)	2½ (2¼)	2¾ (2¾)	2¾

Sources: Bank of England, BDCR 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 at the time of the August 2018 *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. Forecast was finalised before the release of the preliminary flash estimate of euro-area GDP for Q3, so that has not been incorporated.
- (f) Chained-volume measure. Forecast was finalised before the release of the advance estimate of US GDP for Q3, so that has not been incorporated.
- (g) Chained-volume measure. Business investment data based on GAN8. GDP data based on ABMI. Investment data take account of the transfer of nuclear reactors from the public corporation sector to central government in 2005 Q2.
- (h) Chained-volume measure. Exports less imports. Exports based on (IKBK-OFNN/(BOKH/BQKO)) and imports based on (IKBL-OFNN/(BOKH/BQKO)). GDP data based on ABMI.
- (i) Annual average. Chained-volume business investment as a percentage of GDP.
- (j) Chained-volume measure. Includes non-profit institutions serving households. Household consumption data based on ABJR+HAYO. 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.
- (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 data based on ABMI. 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 excluding fuel and the impact of MTIC fraud.
- (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 whole-economy unit wage costs in Q4. Whole-economy 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 excluding non-wage costs and the labour share multiplied by mixed income.
- (u) Four-quarter growth in private sector regular pay based unit wage costs in Q4. Private sector wage costs divided by private sector output at market prices, based on the mode of the MPC's backcast. Private sector wage costs are average weekly earnings (excluding bonuses) multiplied by private sector employment.

**Table 5** Indicative projections consistent with MPC's modal projections<sup>(a)</sup>

	Average 1998– 2007	Projections				Memo: mean forecast error <sup>(b)</sup>	Memo: level in 2017 <sup>(c)</sup>
		2018	2019	2020	2021		
<b>Annual average growth rate</b>							
Household consumption <sup>(d)</sup>	3½	1½ (1¼)	1¼ (1)	1¼ (1¼)	1½	1¼	1,316
Business investment <sup>(e)</sup>	2½	0 (1¾)	2 (3¾)	5 (4)	4½	6¼	190
Housing investment <sup>(f)</sup>	3¼	1¼ (2½)	1¼ (1½)	¼ (½)	½	9	99
Exports <sup>(g)</sup>	4½	1¾ (¾)	2½ (2¼)	1¼ (1¾)	1¼	4½	588
Imports <sup>(h)</sup>	6	¾ (½)	1¼ (1)	¾ (1)	1¼	4¾	605
Real post-tax household income <sup>(i)</sup>	3¼	1 (1½)	1 (1)	¾ (1)	1¾	1¼	1,378
<b>Four-quarter growth rate in Q4</b>							
Employment <sup>(j)</sup>	1	1 (1¼)	½ (½)	½ (½)	½	1	32 <sup>(k)</sup>
Average weekly earnings <sup>(l)</sup>	4¼	2¾ (2½)	3¼ (3¼)	3½ (3½)	3¾	1½	512 <sup>(m)</sup>

(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 August 2018 *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 2017.

(c) £ billion chained-volume measure (reference year 2015) in 2017 unless otherwise stated.

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

(e) Chained-volume measure. Based on CAN8.

(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 IKBL-OFNN/(BOKH/BQKO). Prior to 1998 based on IKBL.

(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 2017 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 2017 Q4.