Office for Budget Responsibility

8 December 2016

Supplementary forecast information release

Breakdown of alternative PSNB decomposition

1.1 The OBR is releasing the information below following a request for further detail underlying the alternative decomposition of borrowing forecast changes in our November 2016 *Economic and fiscal outlook (EFO)*. We will, as far as possible, meet ongoing requests to release supplementary forecast information where this will improve the quality of the public debate on the public finances. Our full release policy is available on our website.

1.2 We have been asked to show the receipts and spending changes underpinning the borrowing diagnostics in Table B.1 (page 249 of the *EFO*). Table 1.1 recreates that alternative decomposition of public sector net borrowing (PSNB) changes. The methodology that underpins this can be found in Annex B of our November *EFO*.

Table 1.1: Alternative decomposition of borrowing forecast changes

| | £ billion | | | | |
| | Forecast | | | | |
	2016-17	2017-18	2018-19	2019-20	2020-21
March forecast	55.5	38.8	21.4	-10.4	-11.0
Classification changes	0.5	0.4	0.5	6.4	4.1
March forecast post-classification change	56.0	39.2	21.9	-4.1	-6.9
Changes unrelated to the referendum result and exiting the EU	7.8	7.3	4.6	3.0	2.9
of which:					
Higher migration and GDP growth	-0.8	-1.9	-3.0	-4.4	-5.9
Weaker in-year receipts	4.5	4.6	4.8	5.0	5.3
Higher in-year spending	2.9	2.9	2.9	2.9	2.9
Other factors	1.2	1.7	-0.1	-0.6	0.6
November counterfactual	63.8	46.5	26.6	-1.1	-4.0
Changes related to the referendum result and exiting the EU	3.5	9.9	15.4	14.7	15.2
of which:					
Lower migration	0.8	1.9	3.0	4.4	5.9
Lower trend productivity growth	0.0	1.2	4.2	5.5	7.2
Cyclical slowdown	2.3	7.6	8.6	5.4	2.3
Higher inflation	0.9	2.7	2.3	2.0	2.2
Lower interest rates	-0.5	-1.1	-1.3	-1.6	-1.8
Other factors	0.0	-2.5	-1.5	-1.1	-0.6
November forecast pre-policy decisions	67.2	56.4	42.0	13.6	11.2
Total effect of Government decisions	0.9	2.5	4.5	8.4	9.6
November forecast	68.2	59.0	46.5	21.9	20.7

Note: This table uses the convention that a negative figure means a reduction in PSNB, i.e. an increase in receipts or a reduction in spending will have a negative effect on PSNB.

1.3   This release provides further detail on the receipts and spending breakdown of each line of the table, with equivalent tables presented for each. Given discussion since the *EFO* was published, we start by providing further background information on how the effect of different migration assumptions was calculated, drawing on the March 2016 *EFO* scenarios where these figures were first presented.

Effect of different migration assumptions on the public finances

1.4   Net international migration to the UK is an important driver of the economy's underlying growth potential. It affects it directly (via population growth) and indirectly (by contributing to changes in the employment rate, average hours worked or underlying productivity growth). Net migration has accounted for over half of UK population growth over the past 15 years and the ONS projects that this will remain so over the five years of our forecast period. Net migration to the UK has typically been concentrated among people of working age, which the ONS assumes will continue over the coming years. That means net migration leads to a higher employment rate and lower dependency ratio than would otherwise be the case.

1.5   In our March *EFO* we presented alternative economic scenarios that estimated the effect on the fiscal forecast of a range of different migration assumptions – including the ONS high migration variant that would have been used in this forecast in the absence of the referendum result. We used the results of that analysis to quantify the revision that would have resulted from moving back from the counterfactual 'high migration' assumption to the 'principal' migration assumption used in this forecast.

1.6   Chart 1.1 shows the three migration variants that were considered in the March scenarios and how they relate to historical migration data. These migration assumptions differ by 80,000 a year from 2016 onwards, while the total population differs by more in each scenario as a higher or lower number of migrants is assumed to lead to higher or lower numbers of children being born. The chart also shows how recent migration – including in the year to June 2016, for which data were released on 1 December – has been stronger than assumed in the 'principal' population projections.

Chart 1.1: Past and projected net migration to the UK
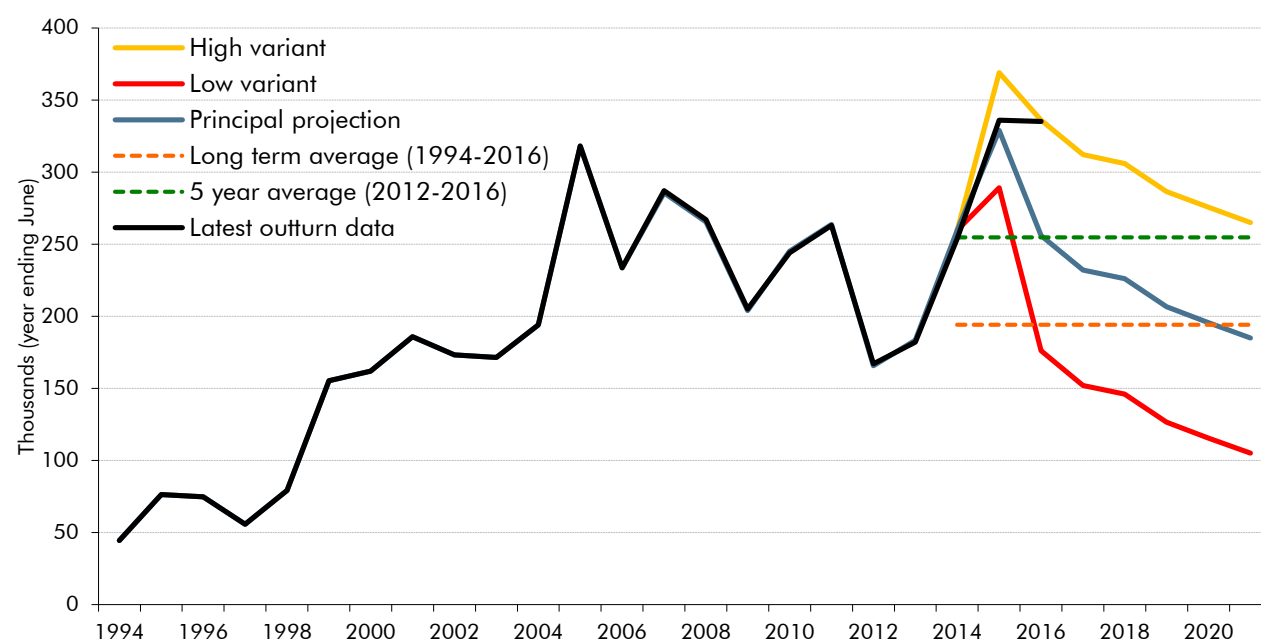
Source: ONS, OBR

1.7   In assessing those fiscal implications, we made the following key assumptions:

- net migrants to the UK on average have the same **age- and gender-specific characteristics** as the native population, with the same employment rates and productivity and the same net contributions to the public finances. These assumptions look reasonable at a whole economy level (as discussed in Annex A to our 2013 *FSR*), but what is true on average will of course not be true of every individual migrant;

- the impact of different migration assumptions on **receipts** is estimated using the age-specific profiles that underpin our *FSR* projections. These show receipts are concentrated among people of working age, particularly older individuals on that age bracket. For each scenario, we hold per capita receipts by age and gender fixed and use the demographic projection to estimate total receipts in each year;

- the impact of different migration assumptions on **welfare spending** is also modelled using age-specific profiles for tax credits, child benefit and social security spending administered by DWP. These profiles show spending is concentrated at younger and, especially, older ages. Per capita spending on children is around one and a half that of working-age adults, while per capita spending on pensioners is around five times higher thanks largely to the state pension;

- **debt interest spending** is modelled using our debt interest ready reckoner (see Box 4.4 in Chapter 4 of our March 2016 *EFO*), applied to the difference in borrowing relative to the central forecast. Since the interest paid on debt that has already been issued is fixed in cash terms, in per capita terms it varies negatively with changes in net

migration – i.e. higher net migration spreads the cost of a given amount of debt interest across more people and vice versa; and

- **departmental expenditure limits (DEL)** are fixed in cash terms at the levels set out by the Government, so changes in the size of the population do not affect the level of spending on public services or investment. This means that DEL spending on a per capita basis and as a share of GDP changes inversely with the assumed level of net migration. This is different to the assumption underpinning our long-term fiscal projections, where age- and gender-specific spending are held constant as a share of GDP so that demographic trends lead to changes in spending on age-related public services. But since the Government has set out departmental spending plans in cash terms for the next four years, and cash totals for 2020-21 and 2021-22, using our *FSR* assumption would not be consistent with 'unchanged government policy' for the purposes of these medium-term scenarios.

1.8 Moving from the 'principal' to the 'high migration' variant in the 'no referendum' counterfactual and then back to the 'principal' migration assumption in our actual November forecast were assumed to have equal and opposite effects, respectively reducing and increasing borrowing over the forecast period, by amounts that reached £5.9 billion in 2020-21. Table 1.2 shows that higher borrowing is driven by:

- **lower tax receipts**, reflecting both a smaller population but also a lower employment rate. Around half of this tax reduction reflects weaker income tax and NICs receipts, with a further quarter explained by weaker consumption taxes such as VAT, fuel duty and alcohol and tobacco duties. Average receipts per additional person in the population is similar to the average across the whole population;

- **lower welfare spending**, reflecting a smaller population with the difference concentrated among people below pension age. Average welfare spending per person in this extra migrant population is considerably lower than across the whole population because the spending is concentrated in benefits paid to children and those of working-age, particularly tax credits and child benefit. There is little effect on pensioner benefits such as the state pension, pension credit, attendance allowance or the winter fuel payment. Pensioner benefits would be affected over longer time horizons if working-age migrants remained in the UK long enough to be eligible. We take such effects into account in our long-term fiscal projections, but they are not material over a five-year horizon; and

- **higher debt interest spending**. Weaker tax receipts outweigh the effect of lower welfare spending. The net increase in borrowing boosts the amount of government debt that must be issued, increasing debt interest spending. The rising profile of additional debt interest spending broadly offsets the population-driven rise in welfare spending, so that the overall effect on spending is relatively flat from 2017-18 onwards.

Table 1.2: Effect of moving from the 'high' to 'principal' migration scenario on PSNB

	£ billion				
	Forecast				
	2016-17	2017-18	2018-19	2019-20	2020-21
Effect on PSNB	**0.8**	**1.9**	**3.0**	**4.4**	**5.9**
of which:					
Lower tax receipts	1.0	2.1	3.3	4.7	6.2
Lower welfare spending	-0.2	-0.3	-0.4	-0.5	-0.7
Higher debt interest spending	0.0	0.0	0.1	0.2	0.3

1.9 As we noted in Box 3.4 of our 2014 *FSR*, it is important to emphasise that just because we find that higher net inward migration is likely to improve the fiscal position, that does not mean that we are recommending that the Government should aim for more inward migration rather than less. This judgement lies outside our remit and for those that have to make it there are clearly other factors to consider beyond the impact of migration on the public finances via the age structure of the population. It would also be wrong to conclude from our analysis that the Government has to accept higher inward migration in order to put or to keep the public finances on a sustainable path. If a government succeeded in reducing net inward migration from what would otherwise occur then that would be likely to create additional fiscal pressures, but it could always choose to offset those pressures through additional spending cuts or tax increases.

Alternative decomposition of receipts forecast changes

1.10 Table 1.3 sets out an alternative decomposition of our receipts forecast changes that is consistent with the PSNB decomposition shown in Table 1.1. A detailed description of these effects can be found in Annex B of our November *EFO*. It shows that our 'no referendum' counterfactual receipts forecast would have been stronger by the end of the forecast compared to March. Specifically:

- higher **net inward migration** would have boosted receipts by £6.2 billion by the end of the forecast. Around half of this reflects higher income tax and NICs receipts, with a further quarter explained by higher consumption taxes such as VAT, fuel duty and alcohol and tobacco duties. The methodology underpinning this is set out above;

- **receipts in 2016-17 were lower** than we forecast in March, even before the referendum. This is more than explained by our downward revision to income tax and NICs receipts for 2016-17. That reflects lower-than-expected receipts in 2015-16, a lower forecast for earnings growth in 2016-17 and a lower-than-expected effective tax rate in 2016-17. Paragraph 4.38 of our November *EFO* sets these changes out in more detail;

- **other fiscal forecast changes** would have boosted receipts with uneven effects from year-to-year. This largely reflects a number of modelling changes across the major tax forecasts (income tax and NICs, onshore corporation tax, VAT and excise duties) as well as other factors such as the boost to North Sea revenues from the higher dollar oil

price and upward revision to production prospects. These are explained in the relevant sections of our November *EFO*.

1.11   Relative to that illustrative 'no referendum' counterfactual, we have revised receipts down significantly. That reflects a number of factors that we consider mostly referendum-related:

- **lower migration.** We have used the same migration assumption as in March, so this reverses the improvement that would have been in the counterfactual;

- **lower trend productivity growth.** This feeds through to weaker growth in earnings, profits and consumer spending, all of which reduce receipts. But it also feeds through to weaker growth in business investment, which boosts receipts by reducing the use of capital allowances. This effect builds steadily over the forecast period;

- **the cyclical slowdown in GDP growth.** This affects tax receipts along the same channels as weaker trend productivity growth, but the effect is concentrated at the start of the forecast when we expect a negative output gap to open up. The cyclical element of the PSNB revision was calculated top-down using cyclical adjustment coefficients. We have apportioned most of that change to receipts, which tend to move more than one-for-one with changes in GDP;

- **higher inflation.** After stripping out the effect of higher dollar oil prices, we assume that most of the remaining upward revision to inflation in this forecast is predominantly referendum-related via the weaker pound. This pushes up the cost of indexing allowances and thresholds, reducing income tax and NICs receipts. That is only partly offset by the boost to excise duties where rates rise with inflation;

- **lower interest rates** reduce the amount of interest income received on government assets; and

- **other factors.** The reduction in capital taxes from reduced activity in the property market is more than offset by a number of factors (including the strength of the stock market) boosting receipts in most years.

Table 1.3: Alternative decomposition of receipts forecast changes

| | £ billion | | | | |
| | Forecast | | | | |
	2016-17	2017-18	2018-19	2019-20	2020-21
March forecast	716.5	745.8	779.5	820.9	852.2
Classification changes	0.9	0.9	0.9	-5.1	-2.6
March forecast post-classification change	717.3	746.7	780.4	815.8	849.6
Changes unrelated to the referendum result and exiting the EU	-3.5	0.1	3.0	1.4	1.7
of which:					
Higher migration and GDP growth	1.0	2.1	3.3	4.7	6.2
Weaker in-year receipts	-4.5	-4.6	-4.8	-5.0	-5.3
Other factors	0.0	2.7	4.5	1.8	0.8
November counterfactual	713.8	746.8	783.3	817.2	851.3
Changes related to the referendum result and exiting the EU	-3.2	-9.4	-16.1	-16.6	-17.0
of which:					
Lower migration	-1.0	-2.1	-3.3	-4.7	-6.2
Lower trend productivity growth	0.0	-1.1	-4.8	-6.7	-8.6
Cyclical slowdown	-2.0	-6.5	-7.4	-4.6	-1.9
Higher inflation	0.0	0.4	-0.3	-0.6	-0.6
Lower interest rates	0.0	-0.4	-0.4	-0.3	-0.3
Other factors	-0.3	0.3	0.2	0.4	0.6
November forecast pre-policy decisions	710.6	737.4	767.3	800.6	834.2
Total effect of Government decisions	0.0	0.7	0.7	1.1	0.6
November forecast	710.6	738.0	768.0	801.8	834.8

Alternative decomposition of spending forecast changes

1.12 Table 1.4 sets out an alternative decomposition of our spending forecast changes that is consistent with the PSNB decomposition shown in Table 1.1. A detailed description of these effects can be found in Annex B of our November *EFO*. It shows that our 'no referendum' counterfactual spending forecast would have been higher by the end of the forecast compared to March. The effects on spending are generally smaller than those on receipts, since much of spending is relatively insensitive to changes in GDP growth. Specifically:

- higher **net inward migration** would have boosted spending by £0.3 billion by the end of the forecast. The effect of higher welfare spending (given a larger population, but lower old-age dependency ratio) rises over the forecast to increase spending by £0.7 billion in 2020-21. But the increase in tax receipts outweighs this higher welfare spending. The net reduction in borrowing reduces the amount of government debt that must be issued, reducing debt interest spending. The methodology underpinning this is discussed above;

- **spending in 2016-17 was higher** than we forecast in March, even before the referendum. This reflects a number of factors (mainly higher-than-expected local authority spending in 2015-16) that are discussed more detail in Chapter 4 of our November *EFO*;

- **other fiscal forecast changes** would have boosted spending across the forecast and are uneven from year-to-year. Higher spending in 2016-17 reflects the boost to debt interest spending driven by the element of higher inflation that we have not attributed to being referendum-related (mostly the effect of higher dollar oil prices). Higher spending in future years reflects a number of factors, including changes to the modelling of environmental levies (which also affect receipts as they are classified as imputed tax-and-spend policies) and the latest upward revision to spending on incapacity and disability benefits.

1.13 Relative to that illustrative 'no referendum' counterfactual, we have revised spending down by the end of the forecast. That reflects a number of factors that we consider mostly referendum-related:

- **lower migration**. We have used the same migration assumption as in March, so this reverses the higher spending that would have been in the counterfactual;

- **lower trend productivity growth**. With departmental spending fixed in cash terms, the main effect of lower trend productivity growth comes via weaker earnings growth. That raises spending on means-tested benefits (e.g. tax credits and housing benefit) but reduces it on benefits where cash awards are uprated by earnings (e.g. pension credit and in some years the state pension). Towards the end of the forecast, the effect on state pensions spending dominates. The 'triple lock' on uprating means that the basic state pension rises by the highest of 2.5 per cent, CPI inflation or average earnings growth. In our central forecast, earnings growth is the highest of these three from 2019-20 onwards;

- **the cyclical slowdown in GDP growth**. This affects spending via higher unemployment and cyclical weakness in earnings growth. The effect is concentrated at the start of the forecast when we expect a negative output gap to open up;

- **higher inflation**. As with receipts, we assume that most of the upward revision to inflation in this forecast is predominantly referendum-related via the weaker pound. This pushes up spending via debt interest, public sector pensions and those elements of welfare spending that are not subject to the uprating freeze;

- **lower interest rates** reduce debt interest spending via lower payments on newly issued government bonds and bigger savings via the bonds held by the Bank of England; and

- **other factors** mostly reflect debt interest spending. The downward effect of the Bank's August monetary stimulus package is partly offset by the effect of higher net borrowing, increasing the amount of government debt that must be issued.

Table 1.4: Alternative decomposition of spending forecast changes

	£ billion				
	Forecast				
	2016-17	2017-18	2018-19	2019-20	2020-21
March forecast	771.9	784.6	801.0	810.4	841.1
Classification changes	1.4	1.3	1.3	1.3	1.5
March forecast post-classification change	773.3	785.9	802.3	811.7	842.6
Changes unrelated to the referendum result and exiting the EU	4.3	7.5	7.6	4.5	4.7
of which:					
Higher migration and GDP growth	0.2	0.2	0.3	0.3	0.3
Higher in-year spending	2.9	2.9	2.9	2.9	2.9
Other factors	1.2	4.3	4.4	1.2	1.4
November counterfactual	777.6	793.4	809.9	816.2	847.3
Changes related to the referendum result and exiting the EU	0.3	0.4	-0.6	-2.0	-1.9
of which:					
Lower migration	-0.2	-0.2	-0.3	-0.3	-0.3
Lower trend productivity growth	0.0	0.1	-0.6	-1.2	-1.3
Cyclical slowdown	0.3	1.1	1.2	0.8	0.3
Higher inflation	0.9	3.1	2.1	1.4	1.6
Lower interest rates	-0.5	-1.5	-1.7	-1.9	-2.2
Other factors	-0.3	-2.2	-1.3	-0.7	0.0
November forecast pre-policy decisions	777.8	793.8	809.3	814.2	845.4
Total effect of Government decisions	0.9	3.2	5.2	9.5	10.2
November forecast	778.8	797.0	814.5	823.7	855.6

OBR supplementary release