Office for
Budget Responsibility

Devolved tax and spending forecasts

October 2018

1 Introduction and summary

Introduction

1.1 The Office for Budget Responsibility (OBR) was established in 2010 to provide independent and authoritative analysis of the UK's public finances. Alongside the UK Government's Budgets and other fiscal statements, we produce forecasts for the economy and the public finances. We publish these in our *Economic and fiscal outlook* (*EFO*).

1.2 Since 2012, we have forecast some tax streams that are devolved to the Scottish Parliament. Since 2014, we have also produced forecasts of taxes that are being devolved to the National Assembly for Wales. In November 2017 we produced an illustrative forecast for carer's allowance in Scotland, which was devolved in September 2018. In this document we produce an illustrative projection for Scottish VAT assignment. We have not yet produced forecasts for any devolved taxes in Northern Ireland.

1.3 Our devolved tax and spending forecasts are published alongside each *EFO* and are consistent with our main UK forecasts. Further information on fiscal devolution in the UK and our role is available in the *Scotland, Wales and Northern Ireland* section of our website.

1.4 The Treasury draws on our tax forecasts when making spending settlements for the Scottish and Welsh Governments in accordance with their respective fiscal frameworks. The OBR has no direct involvement in these spending decisions or block grant negotiations, so we do not discuss such changes in this document. But we do use our tax forecasts to inform our forecast for Scottish Government expenditure, which we discuss in more detail in the *EFO*.

Our approach

Forecast methodology

1.5 It is not possible to replicate in full the methodology we use to produce our UK-wide forecasts when producing devolved tax and spending forecasts. In particular, the macroeconomic data that we would need to produce a full Scottish or Welsh economic forecast and the associated determinants of tax and spending are either not available at this level or are only available with a long lag. We are therefore not able to produce a Scottish or Welsh macroeconomic forecast to drive the relevant tax and spending forecasts. These challenges would apply equally to any future forecast of Northern Ireland taxes.

1.6 Given these challenges, the methodologies we use are generally based on estimating and projecting Scottish and Welsh shares of relevant UK tax or Great Britain social security spending streams. We typically assume that the shares will remain close to recent levels,

unless available evidence suggests we should adjust them to ensure our forecasts are central. For example, if a newly announced policy was expected to have a disproportionate impact on a particular tax in Scotland or Wales, or there was evidence pointing to different trends in an underlying tax base. We typically adjust for differences in population growth. The exception to this approach is where taxes have been fully devolved and we are able to take account of outturns and build tax specific models.

1.7 As with our UK forecasts, the methodology and the forecasts represent the collective view of the three independent members of the OBR's Budget Responsibility Committee (BRC). The BRC takes full responsibility for the judgements that underpin them.

Policy costings

1.8 The *Charter for Budget Responsibility* requires the OBR's forecasts to reflect the impact of "*all Government decisions and all other circumstances that may have a material impact on the fiscal outlook. In particular where the fiscal impact of these decisions and circumstances can be quantified with reasonable accuracy.*" The Treasury is responsible for the costing of UK Government policies, which it does by coordinating a process that delegates the analysis to the departments responsible for implementing the policy. Our role is to state publicly whether we believe each costing to be reasonable and central. This involves a detailed process of scrutiny and discussion with the Treasury and relevant departments. We then incorporate these costings (or our preferred alternative) in our forecasts.[1]

1.9 The *Charter* also states that "*where the fiscal impact of these decisions and circumstances cannot be quantified with reasonable accuracy, these impacts should be noted as specific fiscal risks*". Where the UK Government has voiced a policy aspiration or ambition but not supported it with precise details, such as the timetable for implementation, we would not include it in our central forecast, but would instead note it as a fiscal risk in our *EFO*. We ask the Treasury to confirm whether or not such aspirations reflect firm Government policy.

1.10 We follow the same approach for our devolved tax and spending forecasts. For UK Government policies that affect a devolved tax, we ask that the relevant effect is estimated with supporting evidence. For policy changes to the devolved taxes themselves, we scrutinise the costing and only include it in our forecast if we consider it reasonable and central. We would not include the effects of a devolved tax policy if it was not deemed a firm commitment – for example before it had been presented in sufficient detail to the relevant legislature as part of a formal budget process. We would also not include the effects of a policy until we had sufficient detail on its operation in each year of the forecast. Where we cannot include the effects in our central forecast, we note them as a fiscal risk.

[1] See *Briefing paper No.6: Policy costings and our forecast* for a detailed description of this process.

Forecast process

1.11 The process for producing these devolved tax forecasts has been as follows:

- **Analysts in HMRC, the Welsh Government and the OBR produced draft Scottish and Welsh tax forecasts** using our preliminary UK economy and fiscal forecasts. This took into account the latest information on the fully-devolved taxes. The BRC scrutinised these forecasts with officials from HMRC, the Scottish Fiscal Commission (SFC) and the Scottish and Welsh Governments at meetings held on 25 September and 9 October.

- **Ten days before the Budget, a final set of pre-measures Scottish and Welsh tax forecasts** were produced using our final pre-measures UK-wide forecasts.

1.12 The SFC produced its second five-year fiscal forecasts in May 2018. The Welsh Government produced its most recent receipts forecasts in October 2018, with external scrutiny provided by academics at the University of Bangor. The forecasts we present in this document are our own. Differences between our forecasts and those of the SFC and the Welsh Government are discussed in the relevant chapters.

UK-level economic determinants

1.13 Our fiscal forecasts are based on the economy forecasts presented in Chapter 3 of our *EFO*. Most economic forecasts focus on the outlook for real GDP, but it is nominal GDP – affected both by the volume of economic activity and prices – that matters most when forecasting the public finances. Tax forecasts are particularly dependent on the profile and composition of economic activity. Tables 1.1 and 1.2 set out the key economic determinants of the devolved taxes forecast and how they have changed since our March forecast.

Table 1.1: Key determinants of the devolved taxes forecast

	Percentage change on previous year, unless otherwise specified						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
GDP							
Real GDP	1.6	1.4	1.6	1.4	1.5	1.5	1.6
Nominal GDP	3.6	3.2	3.4	3.4	3.4	3.5	3.5
Inflation							
RPI	3.7	3.4	3.0	3.1	3.1	3.1	3.1
CPI	2.8	2.5	1.9	2.1	2.1	2.1	2.0
Income tax							
Average earnings	2.7	2.3	2.6	2.9	3.0	3.2	3.2
Employment (millions)	32.2	32.5	32.8	32.9	33.0	33.1	33.2
Property							
Residental property prices	4.5	3.1	3.2	3.1	3.3	3.6	3.9
Residental property transactions (000s)	1208	1187	1210	1244	1278	1314	1349
Commercial property prices	-7.0	3.0	-1.4	-0.7	1.8	1.8	1.9
Commercial property transactions	-0.8	-4.1	1.0	1.5	1.6	1.6	1.6

Table 1.2: Change in key determinants of the devolved taxes forecast

	Percentage change on previous year, unless otherwise specified				
	Forecast				
	2018-19	2019-20	2020-21	2021-22	2022-23
GDP					
Real GDP	0.0	0.3	0.1	0.1	0.0
Nominal GDP	0.2	0.5	0.4	0.3	0.1
Inflation					
RPI	0.0	0.1	0.2	0.2	0.1
CPI	0.3	0.1	0.1	0.1	0.1
Income tax					
Average earnings	-0.3	0.2	0.3	0.2	0.2
Employment (millions)	0.2	0.3	0.4	0.4	0.4
Property					
Residential property prices	-0.3	0.7	0.9	0.9	0.6
Residential property transactions (000s)	-49	-49	-41	-34	-29
Commercial property prices	3.6	-3.0	-2.3	0.0	0.0
Commercial property transactions	-5.5	-0.2	0.1	0.2	0.2

Summary of tax and spending forecasts

1.14 Tables 1.3 and 1.4 detail our forecasts for the Scottish and Welsh taxes and spending.

Table 1.3: Summary of October 2018 Scottish tax forecasts

	£ million						
	Outturn estimate	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Full income tax	11122	11817	11898	12495	12926	13430	13988
LBTT	558	591	617	652	696	747	808
Scottish landfill tax	147	147	116	119	112	112	114
Aggregates levy	54	55	56	59	61	64	67
Air passenger duty	299	326	343	355	372	389	407
Total	**12180**	**12937**	**13031**	**13680**	**14167**	**14742**	**15384**

Shaded cells represent national estimates for years when tax devolution has not occurred or been confirmed.

Table 1.4: Summary of October 2018 Welsh Government tax forecasts

	£ million						
	Outturn estimate	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Income tax	1983	2062	2059	2163	2232	2315	2406
SDLT/ LTT	258	238	255	269	290	316	348
Landfill tax / LDT	29	44	40	36	34	32	31
Aggregates levy	36	37	37	39	40	42	44
Total	**2306**	**2381**	**2391**	**2507**	**2597**	**2706**	**2829**

Shaded cells represent national estimates for years when tax devolution has not occurred or been confirmed.

Country-by-country tax forecasts

1.15 Tables 1.5 to 1.10 summarise each of our tax forecasts.

Table 1.5: Income tax on non-savings, non-dividend income

	£ million							
	Outturn	Forecast						
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Whole UK NSND income tax	160.4	165.8	173.2	173.7	182.9	189.3	197.0	205.6
of which:								
Scottish income tax (full NSND basis)	10.7	11.1	11.8	11.9	12.5	12.9	13.4	14.0
Welsh Government income tax (WRIT basis)	1.9	2.0	2.1	2.1	2.2	2.2	2.3	2.4
UK Government income tax from Wales	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.2
UK excluding Scottish Govt income tax	149.7	154.7	161.3	161.8	170.4	176.3	183.5	191.6
England and Northern Ireland	145.2	150.1	156.6	157.0	165.4	171.2	178.2	186.1

Shaded cells represent national estimates for years when tax devolution has not occurred or been confirmed.

Table 1.6: England and Northern Ireland non-savings, non-dividend income tax by tax band WRIT equivalent

	£ billion								
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
October 2018 forecast	52.3	54.1	56.1	58.5	59.0	62.1	64.3	66.9	69.8
of which:									
Basic rate	36.1	37.0	38.6	40.3	41.2	43.3	44.8	46.7	48.6
Higher rate	10.7	11.2	11.3	11.6	10.9	11.5	11.8	12.2	12.7
Additional rate	5.4	5.8	6.2	6.6	6.9	7.3	7.6	8.0	8.4

Shaded cells represent notional estimates for years when tax devolution has not occurred.

Table 1.7: Property transactions taxes

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Whole UK property transaction taxes	**13463**	**12683**	**13207**	**13929**	**14820**	**15702**	**17024**
of which:							
Scottish LBTT	558	591	617	652	696	747	808
Welsh SDLT / LTT	258	238	255	269	290	316	348
UK excluding Scottish LBTT	12905	12092	12590	13277	14125	14955	16216
UK excluding Scottish LBTT and Welsh SDLT / LTT	12647	11854	12335	13008	13834	14639	15869

Shaded cells represent national estimates for years when tax devolution has not occurred or been confirmed.

Table 1.8: Landfill taxes

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Whole UK landfill taxes	**892**	**863**	**747**	**693**	**673**	**626**	**549**
of which:							
Scottish landfill tax (already devolved)	147	147	116	119	112	112	114
Welsh landfill tax / LDT	29	44	40	36	34	32	31
UK excluding Scottish landfill tax	746	716	631	574	561	514	435
UK excluding Scottish and Welsh landfill taxes	717	672	591	538	527	482	404

Shaded cells represent national estimates for years when tax devolution has not occurred or been confirmed.

Table 1.9: Aggregates levy

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Whole UK aggregates levy	**372**	**382**	**388**	**405**	**424**	**444**	**464**
of which:							
Scottish aggregates levy	54	55	56	59	61	64	67
Welsh aggregates levy	36	37	37	39	40	42	44
UK excluding Scottish aggregates levy	318	327	332	347	362	379	397
UK excluding Scottish and Welsh aggregates levy	283	290	294	308	322	337	352

Shaded cells represent national estimates for years when tax devolution has not occurred or been confirmed.

Table 1.10: Air passenger duty

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Whole UK air passenger duty	**3360**	**3659**	**3846**	**3987**	**4175**	**4361**	**4565**
of which:							
Scottish duty	299	326	343	355	372	389	407
UK excluding Scottish duty	3060	3333	3503	3632	3803	3972	4158

Shaded represent national estimates for years when tax devolution has not occurred or been confirmed.

Spending forecast

1.16 Table 1.11 contains our Great Britain and Scotland carer's allowance forecasts.

Table 1.11: Carer's allowance

	£ million					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
GB carers allowance	**3038**	**3304**	**3511**	**3757**	**3999**	**4134**
of which:						
Scottish expenditure	267	290	308	329	349	359
GB excluding Scottish expenditure	2771	3014	3204	3428	3651	3775

Structure of the document

1.17 The rest of this document is structured as follows:

- **Chapter 2**: income tax on non-savings non-dividend income in Scotland and Wales.
- **Chapter 3**: property taxes in Scotland (LBTT) and Wales (LTT).
- **Chapter 4**: landfill taxes in Scotland and Wales, Scottish and Welsh shares of UK aggregates levy and the Scottish share of UK air passenger duty.
- **Chapter 5**: carer's allowance spending in Scotland.
- **Annex A:** assigned VAT.

2 Income tax

Scottish income tax

2.1 The Scottish Parliament's income tax is levied on non-savings, non-dividend (NSND) income liabilities. This includes earnings from employment, self-employment, pension income, foreign income, taxable benefits and income from property. Tax liabilities for a particular year include both PAYE (pay-as-you-earn income tax, which is largely paid in the same year as the activity that created the tax liability) and self-assessment (where returns are submitted in the year after the activity that took place to create the tax liability).

2.2 The Scottish income tax rates must be set each year by the Scottish Parliament. An individual's taxpayer status is determined by the location of their main place of residence for the majority of the tax year. If this is in Scotland, they are defined as a Scottish taxpayer. It is the taxpayer's responsibility to tell HMRC their correct address – including for those with residences in both Scotland and elsewhere in the UK, for whom it is their responsibility to tell HMRC the address at which they reside for the majority of the year.

2.3 The Scotland Act 2016 provides the Scottish Parliament with wide-ranging powers over income tax, including the power to vary rates and thresholds separately, as well as creating new bands paying different rates. The Scottish Government does not have the power over what is classed as NSND income or to change the income tax personal allowance, but it could create an equivalent effect to increasing the allowance by introducing a zero-rate band. From 2017-18 onwards the Scottish Government receives full NSND income tax liabilities from taxpayers in Scotland. Income tax revenues from savings and dividends are reserved to the UK Government and account for around 10 per cent of total income tax revenue at the UK level, and somewhat smaller percentages in Scotland and Wales.

2.4 The Scottish Government has implemented several policies that lead to differences in the amount of tax paid by Scottish residents compared with those in the rest of the UK. Changes announced by the UK Government at this Budget, notably the raising of the higher-rate threshold, have further increased the differences.

Welsh rate of income tax

2.5 The Wales Act 2014 gave the Welsh Assembly the power to set Welsh rates of income tax (WRIT), as levied on NSND income liabilities, subject to a referendum. The Wales Act 2017 removed the need for a referendum. Following publication of the Welsh Government's fiscal framework in December 2016, Welsh rates of income tax will be devolved from April 2019. The existing basic, higher and additional rates of income tax levied by the UK Government will be reduced by 10p in the pound for those individuals defined as Welsh taxpayers. The

Welsh Government has announced that it will levy Welsh rates for each band of income tax at 10p to keep income tax at the same level as the rest of the UK in 2019-20. An individual will be defined as a Welsh taxpayer if their main residence is in Wales for the majority of the tax year. The forecasts presented in this document assume that the Welsh Assembly continues to levy a 10p rate across all the income tax bands in each of the next five years.

2.6 The Welsh Government's fiscal framework agreement places an obligation on the OBR to forecast income tax liabilities associated with each band of income tax. In a recent working paper we set out the methodology that we employ to meet this obligation.[1]

Methodology

2.7 We generate a UK forecast for NSND income tax liabilities from the full UK income tax forecast published in our *Economic and fiscal outlook (EFO)*. The forecast models are run on our behalf by officials in HMRC. The key components are:

- Total **pay-as-you-earn (PAYE)** liabilities.
- **Self-assessment (SA)** liabilities on NSND income. For this forecast we exclude savings and dividends elements of SA income tax and adjust it to be on a liabilities basis (i.e. when the activity occurred). The full UK forecast is on a receipts basis (i.e. when the cash is received), consistent with the treatment of SA receipts in the National Accounts.
- **PAYE repayments and repayments to pension providers**, from our income tax repayments forecast.

2.8 We apply the latest estimated Scottish and Welsh shares to the UK total of these forecast components. These historically-derived shares are adjusted for factors that can be forecast, such as when a previous policy measure has an asymmetric effect across countries and projected differences in population growth. We also include deductions in respect of the Scottish and Welsh shares of gift aid repayments.

2.9 Finally, we add estimates of the Scottish and Welsh income tax elements of new policies announced since our previous forecast.

Scottish and Welsh shares of income tax

Estimating the recent outturn

2.10 In March we used the Scottish and Welsh shares of income tax from HMRC's Survey of Personal Incomes (SPI) for 2015-16. This is an annual survey based on a sample of around 745,000 individuals in contact with HMRC during a year through the PAYE, SA or repayment claim systems. The SPI has to date been our primary data source for all devolved income tax analysis. The SPI data are published with a long lag, and the 2015-16 SPI

[1] Mathews (2018) Working paper No.14 *Devolved income tax: forecasting by tax bands.*

remains the latest year available for this forecast. So we need to project the devolved shares between the SPI base year and the current year.

2.11 Over the summer, HMRC published NSND liabilities outturn for Scotland and the rest of the UK for 2016-17 that was significantly lower than our SPI-based 'forecast' for 2016-17 from March. We forecast liabilities of £11.4 billion, whereas HMRC estimates outturn was £10.7 billion, a difference of £700 million or 6.3 per cent. Information released subsequently by HMRC suggests that the total number of Scottish taxpayers was 2.4 per cent lower than our forecast implied. More of the difference can therefore be attributed to lower-than-expected average tax paid per taxpayer. In turn, this reflects a smaller proportion of Scottish taxpayers paying the higher or additional tax rates than indicated in the SPI data. NSND liabilities for the whole of the UK in 2016-17 were a relatively small 0.7 per cent lower than we estimated in March. This means that the Scottish share of the UK total was 6.7 per cent rather than the 7.1 per cent we assumed in March.

2.12 The Scottish Fiscal Commission (SFC) also over-forecast Scottish income tax in 2016-17, but by a slightly smaller margin of £550 million (5.1 per cent). The SFC also uses the SPI as the main source of tax data for its forecast. The SFC discussed some of the possible sources of the shortfall in its recent forecast evaluation report,[2] finding that over-estimating the number of taxpayers in the upper part of the income distribution was the key factor.

2.13 There are several potential reasons why both we and the SFC over-forecast the upper end of the Scottish income distribution:

- The **representativeness of the Survey of Personal Incomes (SPI).** Sampling errors within the SPI could cause bias. While the Scottish- and Welsh-specific errors are unknown, at the UK level we can compare the total receipts estimated by the SPI (grossed up using the sampling fraction) to actual receipts received by HMRC. Over the past three years errors have been below 2 per cent and in both directions, both under-and over-estimating receipts. But such errors are likely to be greater for smaller groups of the taxpayer population.

- **Incorrect identification of Scottish taxpayers:** The SPI location marker is currently based on the postcode as reported as part of the taxpayer's address, rather than the legally-defined main residence used for the outturn.

- **Attribution of tax reliefs:** The SPI has some information on tax reliefs but does not cover all reliefs. We include an explicit estimate of gift aid repayments in our forecasts, but assume all other tax reliefs net off proportionately to the tax liability in each tax band.

- **Projecting from the 2015-16 SPI base year to 2016-17**: In March we assumed that the Scottish share of income tax fall by just 0.03 percentage points in 2016-17, rather than the 0.4 percentage point drop that would be necessary to explain the outturn.

[2] Scottish Fiscal Commission (2018) *Forecast Evaluation Report*

- **Administrative problems in flagging Scottish taxpayers:** This was the first time that HMRC has separately flagged Scottish taxpayers and with any operational change it is possible there were problems in the process.[3]

- **Real-world behavioural responses:** It is possible that some taxpayers could have moved their main residence for tax purposes from Scotland in anticipation of tax increases once devolution had occurred. This might particularly be true for higher or additional rate taxpayers with more than one residence in the UK, given the debate around the extent to which the top rate of income tax might rise after April 2017.

2.14 Until the 2016-17 SPI is released in early 2019 it is not possible to isolate which of the above are the main causes, and even then there will remain some uncertainty. For this forecast we have therefore simply based it on a lower Scottish share, calibrating it to the 6.7 per cent implied by the 2016-17 outturn. This reduces Scottish income tax revenues in all years of the forecast.[4] Our March UK-wide NSND forecast also over-forecast outturn, so we calibrate this too, but the adjustment is much smaller.

2.15 HMRC continues to develop its real-time information (RTI) reporting for the entire population of PAYE income taxpayers. As we noted in March, RTI has been showing that the latest Scottish tax shares may be lower than those derived by projecting forward the SPI data. However, it is not directly comparable to either the SPI share or the 2016-17 outturn, as it only reflects tax paid through PAYE. Analysis of RTI data remains at an early stage and subject to significant uncertainty. For now we note this as a possible risk to our forecast.

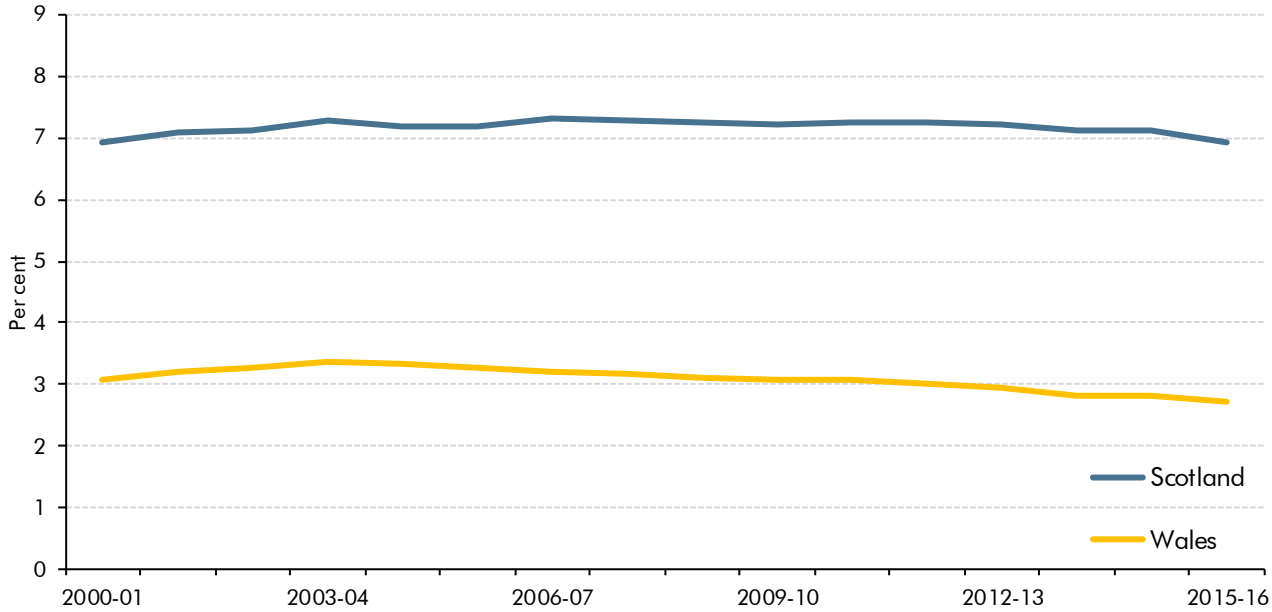
2.16 The factors that led us to over-forecast Scottish revenues could also affect our Welsh income tax forecast. Given the uncertainties over the causes of the shortfall in Scottish liabilities we have decided against adjusting the Welsh share at this event. We note it as a risk and will reflect on the methodology in light of any insights from the new SPI.

2.17 While the *level* of the 2016-17 Scottish share may be too high we are not aware of any reasons why the *trend* as reported in the SPI would be misleading. Chart 2.1 shows the latest SPI-based estimates of the Scottish and Welsh shares of total income tax, including from savings and dividends. Both the Scottish and Welsh shares have declined in recent years and we expect these broad trends to continue in the absence of policy changes. The downward trends reflect four main factors: population growth; labour market trends; the distribution of income; and policy decisions. We only make explicit assumptions in our forecasts about population and policy decisions.

[3] For more information on the possible risks see National Audit Office (2017) *The administration of the Scottish rate of Income Tax 2016-17*.

[4] We have also included two smaller additional adjustments in light of the 2016-17 outturn. First, we reduce the expected yield from the Scottish Government's increases to the higher and additional rates in line with the lower-than-expected number of taxpayers at those levels. Second, as there is a lower proportion of taxpayers who are subject to high marginal tax rates we assume slightly less fiscal drag. This latter adjustment is based on analysis conducted by the SFC. Both reduce the percentage share by very small amounts. The effect on the final forecast of both combined is around £40 million a year.

Chart 2.1: Scottish and Welsh historic share of all income tax liabilities



Note: Data unavailable for 2008-09 so the proportional shares are based on interpolation from the adjacent years.
Source: HMRC National Statistics table 3.11

Population growth

2.18 Trends in population growth differ across the countries of the UK, with the Scottish and Welsh populations assumed to grow more slowly than the UK population as a whole. This is explained by lower life expectancy, fertility and net international migration. We base our forecasts on the 2016-based ONS principal population projections that were published in October 2017. These are used to adjust the projected Scottish and Welsh shares of income tax. The respective adult population projections were set out in Table 2.1 of our November 2017 *Devolved taxes forecast* document.

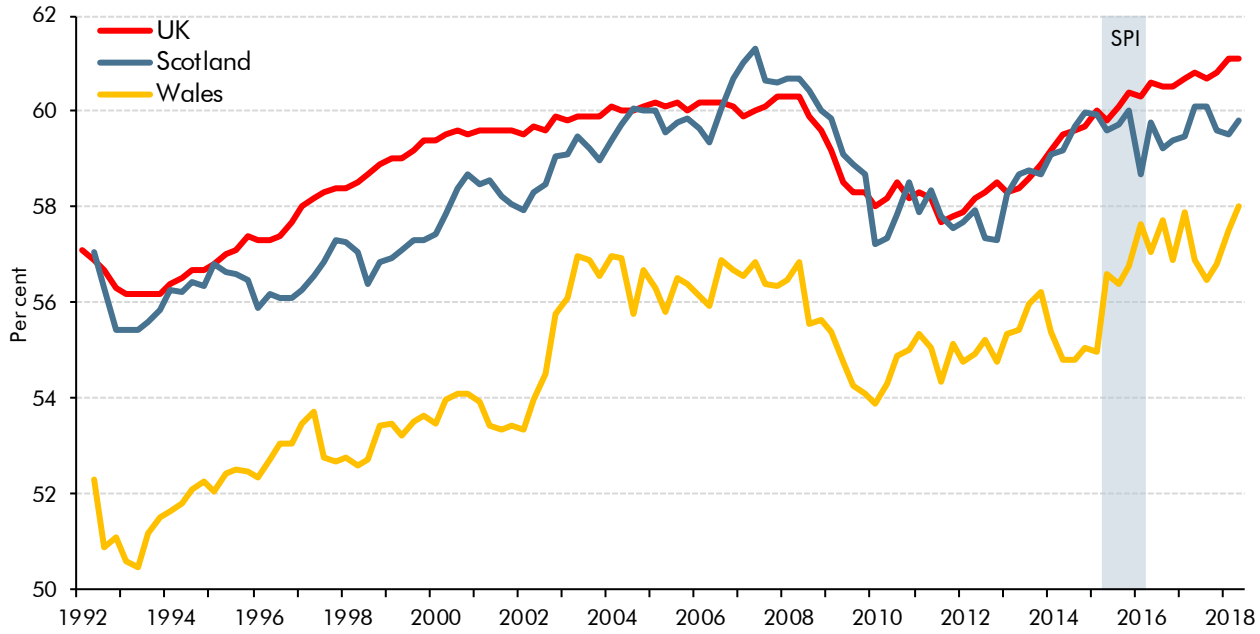
2.19 We continue to use the projection for 'adults aged 16 and over' for this adjustment, but our results are not sensitive to using the 'total' or 'working-age' populations. This is a relatively simple adjustment that should improve forecast accuracy, but many factors remain that we have not tried to adjust for, such as the knock-on effects from demographic trends to employment rates or wider differences in labour markets or the earnings distribution.

Labour market trends

2.20 After considering the overall size of the population, the proportion of the population in employment and their productivity will also be key influences on the relative share of NSND income. We implicitly assume that employment rates and output-per-worker in Scotland and Wales grow at the same pace as the UK as a whole – so differences in these in the base data persist across the forecast. Chart 2.2 shows that the employment rate in Scotland has generally been similar to that in the UK as a whole, while in Wales it has typically been lower. Unemployment rates are similar in Scotland and Wales, so the lower Welsh employment rate mainly reflects a higher inactivity rate.

2.21 Smaller sample sizes in the Labour Force Survey mean that measured employment rates fluctuate more in Scotland and Wales than in the UK as a whole, which makes assessing trends more difficult. Since 2015-16, the year from which the SPI-derived share must be projected, employment rates in Scotland and in Wales appear to have followed a slightly flatter trend than the UK average. We do not adjust for different employment rate paths in our Scottish and Welsh forecasts since they would capture only one factor of the many that determine total income per person. Capturing trends in employment without also capturing potentially offsetting trends in average hours worked or productivity could bias our forecasts. In our UK forecasts, we have often seen upside surprises in employment accompanied by downside surprises in output and in earnings per worker.

Chart 2.2: Employment rates in the UK, Scotland and Wales



Source: ONS, HMRC Survey of Personal Incomes (SPI)

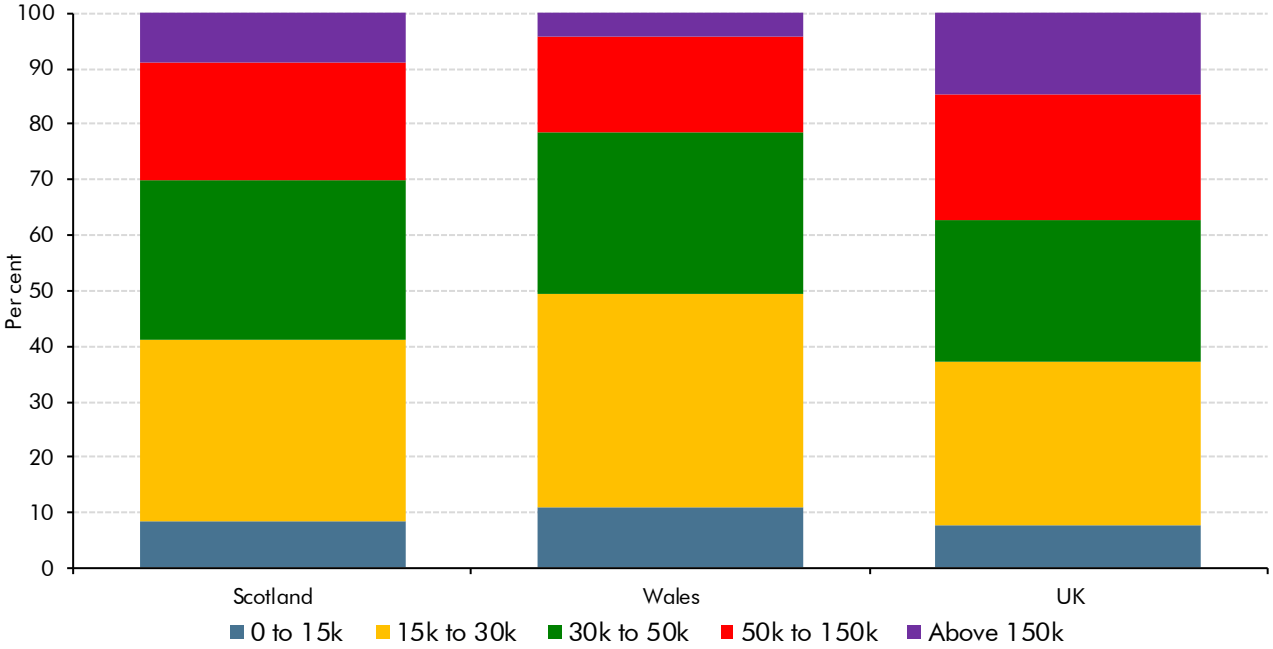
The income distribution

2.22 The income distribution differs between Scotland, Wales and the UK as a whole. While income tax rates and thresholds have varied over time, those on higher incomes have always been subject to higher marginal tax rates. Chart 2.3 shows the proportion of taxpayer income by income bands in the 2015-16 SPI. Compared to the UK, the proportion of taxpayer income attributable to individuals with incomes below £30,000 is higher in Scotland, and more so in Wales. That pattern is reversed for incomes over £50,000 – and particularly for those over £150,000.

2.23 The starting distribution has consequences for the forecast, because the more of the distribution that is in the higher marginal tax brackets, the faster income tax receipts will grow for a given change in average earnings increase, all else equal. As the 2016-17 outturn suggested there were fewer high marginal rate Scottish taxpayers than the SPI would have suggested, we reduced the assumed extent of fiscal drag. This effect was small.

2.24 Higher income individuals have a stronger incentive for tax-motivated incorporation (TMI), given the greater differential between their effective income tax rate and the rate of corporation tax.[5] Over recent years TMIs have been increasing and we include a TMI adjustment in our Scottish and Welsh forecasts to account for this.

Chart 2.3: Proportion of taxpayer income by income band in 2015-16



Source: HMRC

Policy changes since 2015-16

2.25 Changes to tax policy can have different effects in Scotland or Wales relative to the rest of the UK. We have adjusted the Scottish and Welsh shares used in our forecast to reflect the asymmetric effect of policies that have been implemented since 2015-16 and whose effects are therefore not captured in the latest available SPI data.

2.26 The Scottish outturn data for 2016-17 only contain a high-level estimate of receipts and do not contain the granular individual level information necessary to re-cost all relevant policies, so we continue to rely mainly on the 2015-16 SPI. In light of the outturn we have revised down our estimate of the revenue generated by the Scottish Government's increases to the higher and additional/top rates down by around £30 million a year. But these measures still raise money, so temporarily offset the downward trend in the Scottish share.

UK forecast

2.27 Table 2.1 shows our UK forecast of tax liabilities on NSND income before the effects of the UK Government's policy measures announced at this Budget.

[5] For more information on tax-motivated incorporations see Chapter 5 of our 2017 *Fiscal risks report*.

Table 2.1: Whole UK forecast of tax liabilities on non-savings, non-dividend income

	£ billion							
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast[1]	162.8	168.5	173.3	177.9	184.1	190.5	198.5	
October forecast[2]	160.4	165.8	173.2	177.4	183.7	190.2	198.1	207.0
October forecast[1]	161.7	167.0	176.1	179.3	185.0	191.3	199.2	207.6
Forecast difference	-1.2	-1.6	2.8	1.4	0.8	0.8	0.7	
March post-measures forecast	**160.4**	**165.8**	**173.2**	**173.7**	**182.9**	**189.3**	**197.0**	**205.6**

[1] Excluding March measures.

[2] Including March measures.

2.28 Our pre-measures forecast changes reflect several factors. First, our estimate of NSND liabilities has been revised down modestly in past years to reflect the latest outturn data. But we have substantially increased our in-year estimate of 2018-19 NSND liabilities, by £2.8 billion, thanks to stronger-than-expected receipts so far this year. This reflects stronger employment growth this year, but also the one-off effects of measures such as 'PAYE refresh', an operational scheme that allows for in-year corrections to underpayments and overpayments, and higher tax receipts from pension withdrawals.

2.29 We do not push all this strength from 2018-19 through the forecast. Employment growth is expected to slow in future years, while we expect the yield from pensions drawdown to fall back as the initial cohorts cease withdrawing. The effect of PAYE refresh on receipts is expected to turn negative as it brings receipts forward to 2018-19 from future years. These changes are described in more detail in our *EFO*.

Pre-measures forecast

2.30 Our pre-measures Scottish income tax forecast is generated by applying our forecast of the Scottish share to the UK forecast described in the previous section. As Table 2.2 shows, the lower-than-expected Scottish outturn in 2016-17 has resulted in a large downward revision throughout the forecast compared with March. The share rises year-on-year in 2017-18 and 2018-19 due to the Scottish Government's announced tax increases. These estimates do not account for measures announced by the UK Government at this Budget, the effect of which is added at the end of the forecast process.

Table 2.2: Pre-measures Scottish share of NSND income tax

	Per cent of UK total for non-savings, non-dividend liabilities								
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	7.12	7.08	7.13	7.12	7.11	7.10	7.09	7.08	
October forecast	6.73	6.68	6.71	6.82	6.81	6.80	6.79	6.78	6.76
Change	-0.39	-0.40	-0.42	-0.29	-0.30	-0.30	-0.30	-0.30	
of which:									
Outturn calibration	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	
Scottish Government 2018-19 measures				0.15	0.15	0.15	0.15	0.15	
Other factors including other previously announced measures	0.00	-0.02	-0.03	-0.05	-0.06	-0.06	-0.06	-0.06	
Memo: Index relative population growth (2016-17 = 100)		*100.0*	*99.9*	*99.8*	*99.6*	*99.4*	*99.2*	*99.0*	*98.7*

Policy measures

2.31 There are now several differences in the tax schedule for NSND income between Scotland and the rest of the UK. In 2017-18 the Scottish Government froze the higher rate threshold in cash terms (at £43,000) whereas it increased in line with CPI inflation in the rest of the UK (to £45,000). In 2018-19 the Scottish Government introduced more substantial changes to rates and thresholds applied in Scotland, the key features being:

- **the introduction of two new bands within the basic rate** – a starter rate of 19 per cent and an intermediate rate of 21 per cent;
- **limiting the increase in the higher rate threshold** (HRT) to below inflation; and
- **increasing the higher and the additional/top rate** by one percentage point to 41 per cent and 46 per cent respectively.

2.32 This resulted in small cash giveaways (at most £20 in 2018-19) to just over half of Scottish taxpayers, but larger cash takeaways from taxpayers higher up the income distribution. It therefore raises revenue overall.

2.33 The UK Government's policy assumption is that income tax thresholds are uprated in line with CPI inflation for years in which it has not set specific parameters, so our pre-measures forecast adopts this assumption. At this Budget the UK Government announced an increase in the personal allowance (PA) to £12,500 (£340 above CPI indexation) and the higher rate threshold to £50,000 (£2,440 above CPI indexation) in 2019-20. These thresholds will then be frozen in cash terms in 2020-21, reducing the size of the giveaway in that year relative to CPI indexation. Default CPI indexation then applies over the rest of the forecast.

2.34 Table 2.3 shows the UK and Scottish income tax rates and thresholds that we have therefore used in this forecast. The UK parameters from 2021-22 onwards rise in line with CPI inflation, while the additional rate threshold remains fixed in cash terms. For the Scottish parameters we also assume the additional/top rate threshold remains constant in cash terms, while the HRT increases in line with CPI inflation from its 2018-19 level. Powers over the PA have not been devolved to the Scottish Government so it increases in line with the UK Government's policy settings. The Scottish Government could raise the effective PA by introducing a zero rate income tax band and has a stated policy intention to do this to raise the effective PA to £12,750 in 2021-22. Our current forecast for CPI inflation suggests it will reach £12,760 in that year, so it would only take a small downside surprise relative to that inflation forecast for default indexation to leave the PA below £12,750 in 2021-22.

2.35 The parameters we have used for the Scottish Government's forecast are simply forecast assumptions. The Scottish Government will announce actual parameters for 2019-20 on 12 December 2018 as part of its draft budget. We have no prior information on the parameters to be announced so will include any changes in our next forecast.

Table 2.3: NSND income tax parameters

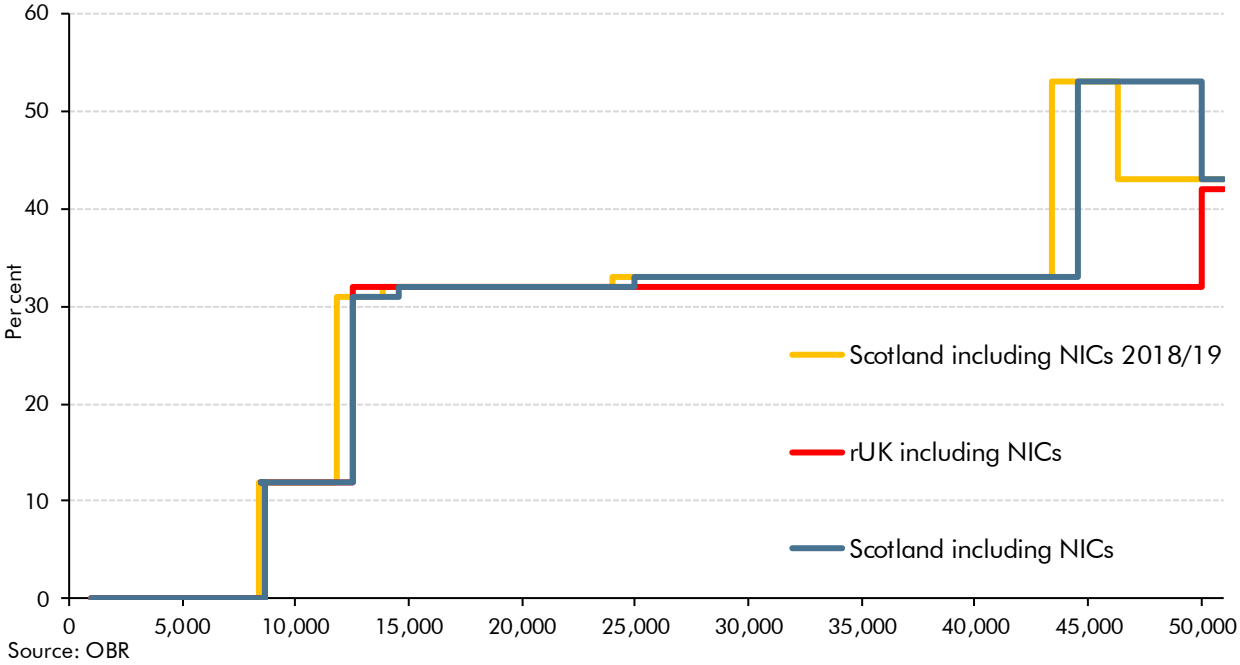
	Per cent					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
UK Government tax rates						
Basic rate	20	20	20	20	20	20
Higher rate	40	40	40	40	40	40
Additional rate	45	45	45	45	45	45
Scottish Government tax rate						
Starter rate	n/a	19	19	19	19	19
Basic rate	20	20	20	20	20	20
Intermediate rate	n/a	21	21	21	21	21
Higher rate	40	41	41	41	41	41
Additional/ top rate	45	46	46	46	46	46
	£					
UK Government tax thresholds (pre-measures)						
Personal allowance	11850	12160	12400	12660	12930	13200
Higher rate	46350	47560	48500	49560	50630	51700
Additional rate	150000	150000	150000	150000	150000	150000
UK Government tax thresholds (post-measures)						
Personal allowance	11850	12500	12500	12760	13030	13310
Higher rate	46350	50000	50000	51060	52230	53410
Additional rate	150000	150000	150000	150000	150000	150000
Scottish Government tax thresholds						
Personal allowance	11850	12500	12500	12760	13030	13310
Basic rate	13850	14552	14593	14896	15212	15538
Intermediate rate	24000	24961	25205	25722	26267	26822
Higher rate	43430	44539	45410	46328	47308	48291
Additional/ top rate	150000	150000	150000	150000	150000	150000

Shaded cells represent estimated policy assumptions needed for forecasting purposes. For Scotland we have assumed that all tax band thresholds rise in line with CPI inflation except the additional/ top rate, which remains constant in cash terms.

2.36 Charts 2.4 to 2.5 compare the income tax regimes in Scotland and the rest of the UK in 2018-19 and 2019-20, including National Insurance contributions (NICs). Chart 2.4 shows the respective income tax and NICs schedules on NSND income up to £55,000 – just beyond the higher rate threshold. The marginal rate in Scotland is lower on the first £2,052 of income above the personal allowance; equal on the next £10,150 of taxable income; and higher thereafter (on all income above £24,961). The largest difference in marginal tax rates is on incomes between the two higher-rate thresholds (from £44,529 to £50,000) where the rate in Scotland will be 21 percentage points higher than in the rest of the UK. The width of the band between the two higher rate thresholds will nearly double next year thanks to the rise in the higher-rate threshold announced in the UK Government's Budget.

2.37 For the behavioural response in the rest of the UK to this income tax cut we use our standard estimates of taxable income elasticities. These suggest modest behavioural responses for changes at the low end of the income distribution, particularly when there is minimal change in marginal rates for most taxpayers. We have included a small additional behavioural reduction in our Scottish-specific income tax forecast to account for marginal rate effects between the two HRTs. The effect is also small. We assume that the measures announced by the UK Government have no effect on migration between Scotland and the rest of the UK as the cash amounts to be gained per taxpayer would be relatively small.

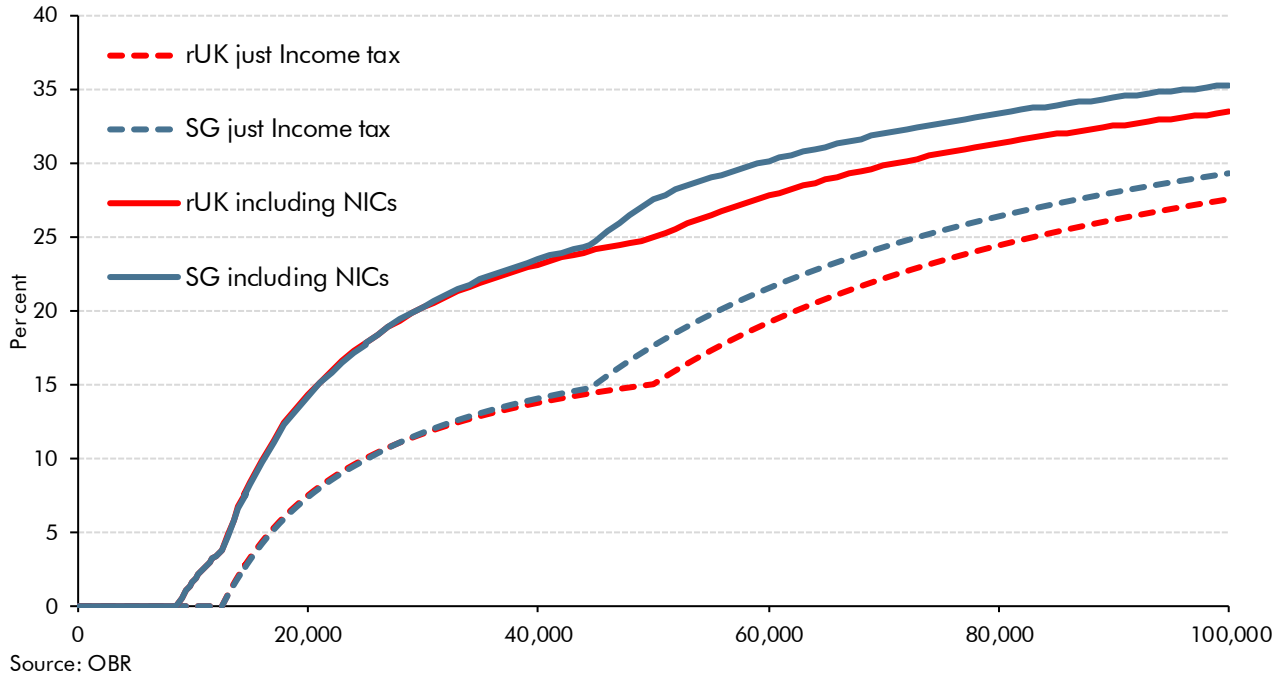
Chart 2.4: Marginal tax rates on NSND earnings in Scotland and the rest of the UK



Source: OBR

2.38 Chart 2.5 shows the average tax rates on employee earnings that result from the respective tax schedules. These are very similar at the lower end of the income distribution, but then diverge on incomes above the Scottish HRT.

Chart 2.5: Effective tax rates on NSND employee earnings in 2019-20



Source: OBR

2.39 Table 2.4 sets out the effect of the UK Government's Budget measures that are expected to have a non-negligible impact on Scottish income tax in any year.[6] The profile across the forecast differs from that presented in our main *EFO* forecast because SA income tax is accounted for on a liabilities basis here. For example, raising the personal allowance in 2019-20 does not affect SA receipts until 2020-21, but it will affect SA liabilities in 2019-20. For most measures we assume that the effect on Scottish income tax is proportional to our pre-measures forecast of total UK NSND income tax or SA income tax based on analysis of the SPI. The main exceptions are:

- **'Personal Allowance and Higher Rate Threshold: increase to £12,500 and £50,000 for 2019-20 and 2020-21** – the effect on our Scottish forecast has been modelled directly using HMRC's Personal Tax Model (PTM), which uses the 2015-16 SPI base data. We have not calibrated this estimate to outturn given the lack of granularity in the outturn estimate. In theory this could bias our estimate, though the effect is likely to be small as the main surprise in the outturn appears to relate to taxpayers with much higher incomes than those affected by this measure. As set out above the only static effect of this measure in Scotland is the change to the PA. There is a small behavioural effect from the widening of the 52 per cent marginal tax rate band between the two HRTs. The PTM was also directly used to estimate the effect of **'NICs: delay NICs Bill by one year and maintain Class 2 NICs'**, which cancels the abolition of Class 2 NICs and delays the imposition of NICs on certain termination payments by a year. These NICs measure do not directly change income tax with the effect occurring because of the behavioural response.

[6] This excludes any measure with an effect of less than £3 million in all years, in line with the Treasury's definition of 'negligible'.

- **'Off-payroll working: extend reforms to private sector in 2020-21, excluding small businesses'** – this measure relates to the taxation of off-payroll workers who work for a private sector client through their own intermediary, such as a personal service company. This allows them to pay less tax and NICs than employees. Rules are already in place to ensure that when a worker can be shown to work in effect as an employee, then the tax and NICs due would be broadly the same as an employee. This measure moves the burden of responsibility for determining whether existing rules apply to the engager (i.e. the private sector business) rather than the intermediary (i.e. the individual benefiting from the current tax status). This is expected to increase compliance and revenue. HMRC provided bespoke analysis to estimate the Scottish share of this measure based on the data sources underlying the full UK costing

Table 2.4: Effect of UK Government policy changes on Scottish income tax

	£ million					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Pre-measures forecast	11820	12084	12490	12919	13431	13993
Total UK Government policy change	neg	-186	5	7	neg	-6
of which:						
Personal Allowance and Higher Rate Threshold: increase to £12,500 and £50,000 for 2019-20 and 2020-21	0	-174	-52	-52	-53	-60
Annual Investment Allowance: temporary increase to £1m for two years from January 2019	neg	-4	neg	neg	neg	neg
Structures and Buildings Allowance: permanent capital allowance for new structures and buildings	neg	neg	neg	-4	-5	-5
Special Writing Down Allowance rate reduction (8% to 6%) - interaction with £1m AIA	neg	5	4	4	4	4
Off-payroll working: extend reforms to private sector in 2020-21, excluding small businesses	neg	neg	69	70	69	76
NICs: delay NICs Bill by one year and maintain Class 2 NICs	neg	-8	-10	-16	-21	-27
Childcare Vouchers: extension to the closure for new entrants to October 2018	neg	-4	-3	neg	neg	neg
Other	neg	neg	neg	8	7	6
Post-measures forecast	11817	11898	12495	12926	13430	13988

Final post-measures Scottish income tax forecast

2.40 Table 2.5 sets out our new forecast for Scottish income tax liabilities, taking into account the pre-measures revisions to the Scottish share and the policy measures announced by the UK Government. The table shows that the lower Scottish share has reduced the forecast significantly, but that this has been partly offset by a higher UK-wide NSND income tax forecast. In 2019-20, the UK Government's income tax policies reduce the forecast, primarily due to the increase in the PA. From 2020-21 onwards the effect of measures broadly nets out. The one year-freeze in the PA substantially reduces the cost of this measure and this cost is largely offset by the off-payroll working measure.

Table 2.5: Changes in full Scottish NSND income tax since March

	£ million								
	Outturn estimate		Forecast						
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	10957	11415	11873	12403	12712	13139	13575	14116	
October forecast	10379	10719	11122	11817	11898	12495	12926	13430	13988
Change	**-578**	**-696**	**-751**	**-586**	**-814**	**-644**	**-649**	**-686**	
of which:									
Scottish outturn [1]	-588	-593	-613	-776	-714	-690	-704	-730	
UK NSND forecast	2	-82	-112	201	97	58	54	47	
UKG policy costings				neg	-186	5	7	neg	
Other[2]	7	-21	-27	-8	-11	-17	-7	-2	

[1] Excludes the effect of outturn and previous Scottish Government measures.
[2] Includes gift aid estimates and recostings of previous measures.

Comparison with Scottish Fiscal Commission forecasts

2.41 The SFC's tax forecast, published in May, is an average of £0.4 billion a year (3 per cent) higher than our pre-measures forecast between 2018-19 and 2023-24 (see Table 2.6). The SFC's forecast is initially flatter than ours but rises more rapidly from 2018-19 onwards. This difference will be dominated by the fact that the SFC has not yet published an updated forecast taking on the lower-than-expected HMRC outturn estimate for 2016-17 liabilities.

2.42 There are many other factors that will contribute to the differences between our forecasts that may work in either direction and in different ways across the forecast. It is not possible to quantify all the effects, but key ones include:

- **Timing and data**: Our forecasts take place at different times with different economic and receipts input data. On top of the 2016-17 outturn surprise, the SFC forecast was produced before the stronger-than-expected UK-wide receipts for the first half of 2018-19 or the UK Government's Budget measures were known.

- **Economy forecast**: We assume that determinants of the Scottish tax forecast (such as employment or average earnings) grow in line with those in the rest of the UK, drawn from our UK-wide economic forecast. The SFC's forecast uses its own Scottish-specific economy and labour market forecasts.

- **Modelling**: The SFC uses a micro-simulation forecast, whereas we build up our forecast from specific receipts streams (i.e. PAYE, SA, repayments) with additional components estimated using HMRC's personal tax model. As well as having different modelling approaches, we have fed different judgements into our respective models.

Table 2.6: Income tax forecast comparison

	£ billion, unless otherwise stated							
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
SFC May forecast	11.3	11.5	12.0	12.3	12.8	13.3	13.9	14.5
OBR October forecast	10.7	11.1	11.8	11.9	12.5	12.9	13.4	14.0
Difference	**-0.5**	**-0.3**	**-0.2**	**-0.4**	**-0.3**	**-0.4**	**-0.5**	**-0.6**
Difference (per cent)	*-4.9*	*-3.0*	*-1.3*	*-3.6*	*-2.4*	*-3.1*	*-3.6*	*-3.8*

Welsh forecast

2.43 Our forecast for the share of income tax that will fall under the WRIT has remained virtually unchanged since March. As noted above the factors that contributed to the downside surprise in the Scottish outturn for 2016-17 could be repeated in our estimate of the Welsh share of income tax. But in the absence of any evidence on the factors that caused the drop in the Scottish share relative to what was projected using the SPI, we have not adjusted the forecast. For example, if the cause were an anticipatory behavioural response to the prospect of higher marginal rates increasing, we would not expect it to be repeated in Wales where there has not been the same debate about raising tax rates. The 2019-20 Welsh taxpayer liabilities outturn will not be available until 2021. We have made no change to our adjustment for relatively slower population growth.

2.44 Table 2.7 shows our latest Welsh income tax forecast and provides a breakdown of the changes since March. The forecast is marginally higher this year, reflecting our higher UK-wide NSND pre-measures forecast. In 2019-20 the forecast is lower, largely due to the increases in the PA and HRT. From 2020-21 onwards the forecast is little changed as the freeze in the PA and HRT in that year reduces the cost of the measures, while much of the remaining cost is offset by yield from changes to off-payroll working rules.

2.45 We include an effect from tax-motivated incorporations that is proportional to the Welsh share of income tax under the WRIT. Analysis from HMRC using Welsh-specific data show that incorporations in Wales have followed a similar trend to those in the UK as a whole.

Table 2.7: Changes in Welsh income tax since March

	£ million								
	Estimated	Forecast							
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	1890	1952	2006	2053	2099	2165	2232	2317	
October forecast	1893	1935	1983	2062	2059	2163	2232	2315	2406
Change	**2**	**-18**	**-23**	**9**	**-41**	**-1**	**1**	**-2**	
of which:									
Welsh share	0	0	0	0	1	1	1	0	
UK NSND forecast	1	-14	-19	34	16	10	9	8	
UKG policy costings				neg	-47	-8	-10	-11	
Other[1]	1	-3	-4	-24	-11	-4	0	2	
[1] Includes gift aid estimates and recosting of previous measures.									
Memo: WRIT percentage share of UK	*1.23*	*1.22*	*1.21*	*1.20*	*1.20*	*1.19*	*1.19*	*1.18*	*1.18*
Memo: Index relative population growth (2015-16 =100)	*100.0*	*99.7*	*99.6*	*99.5*	*99.3*	*99.1*	*98.9*	*98.6*	*98.3*

2.46 Table 2.8 shows the effect of the UK Government's policy decisions on the WRIT. As the WRIT automatically follows the thresholds set by the UK, unlike for our Scottish tax forecast, the changes to the HRT path affect WRIT revenues, rather than just the changes to the PA. The effect on the WRIT from these measures and those on NICs have been modelled using the PTM. The only other measure that has a non-negligible effect is the change to off-payroll working, where the Welsh share was modelled using bespoke analysis from HMRC that drew on the same data sources that were used in the UK-wide costing.

Table 2.8: Effect of UK Government policy changes on the WRIT since March

	£ million					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Pre-measures forecast	2063	2106	2172	2242	2326	2419
Total UK Government policy change	neg	-47	-8	-10	-11	-13
of which:						
Personal Allowance and Higher Rate Threshold: increase to £12,500 and £50,000 for 2019-20 and 2020-21	neg	-44	-13	-13	-14	-15
Off-payroll working: extend reforms to private sector in 2020-21, excluding small businesses	neg	neg	7	7	7	7
NICs: delay NICs Bill by one year and maintain Class 2 NICs	neg	neg	neg	-3	-4	-6
Other	neg	neg	neg	neg	neg	neg
Post-measures forecast	2062	2059	2163	2232	2315	2406

2.47 The Welsh Government published its own forecasts on 2 October to accompany its draft Budget. These were independently scrutinised by academics at Bangor University. While the overall difference is small, this comprises the largely offsetting effects of our more pessimistic commercial property forecast and our more optimistic residential forecast.

2.48 As with the SFC forecast there are many reasons for the differences. Notably, the Welsh Government's forecast uses a different model, economy forecast and does not reflect the policies announced by the UK Government.

Table 2.9: Comparison between Welsh Government and OBR forecasts

	£ million, unless otherwise stated			
	2019-20	2020-21	2021-22	2022-23
WG forecast	2099	2164	2237	2320
OBR forecast	2059	2163	2232	2315
Difference	**-40**	**-1**	**-5**	**-5**
Difference (per cent)	*-1.9*	*0.0*	*-0.2*	*-0.2*

2.49 As required by the Welsh Government's fiscal framework, we have also produced an estimate of the WRIT, and England and Northern Ireland forecast split by tax band. This is set out in tables 2.10 and 2.12 and use the methodology we set out in our September working paper. The shares in the working paper were estimated on the basis of UK Government tax policy as reflected in our March forecast, so the measures announced in this Budget have necessitated an update to the shares to account for the higher PA and HRT. There is uncertainty around the adjustments made to the shares, which could only be generated once the final Budget policy package had been settled.

Table 2.10: WRIT forecast of tax liabilities on NSND income by tax band

	£ million								
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
October forecast	1893	1935	1983	2062	2059	2163	2232	2315	2406
of which:									
Basic rate	1616	1642	1692	1760	1778	1863	1922	1993	2068
Higher rate	245	258	253	261	237	254	261	270	282
Additional rate	32	35	38	41	44	46	49	52	56
	Per cent								
Basic rate	85.4	84.9	85.3	85.3	86.4	86.1	86.1	86.1	85.9
Higher rate	12.9	13.3	12.8	12.7	11.5	11.8	11.7	11.7	11.7
Additional rate	1.7	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.3

Shaded cells represent notional estimates for years when tax devolution has not occurred.

Table 2.11: England and Northern Ireland forecast of tax liabilities on NSND income by tax band

	£ billion								
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
October forecast	139.5	145.2	150.1	156.6	157.0	165.4	171.2	178.2	186.1
of which:									
Basic rate	72.3	74.1	77.3	80.5	82.4	86.6	89.7	93.3	97.2
Higher rate	42.7	45.0	45.0	46.3	43.5	46.1	47.4	48.9	50.8
Additional rate	24.5	26.2	27.8	29.7	31.0	32.6	34.1	36.0	38.0
	Per cent								
Basic rate	51.8	51.0	51.5	51.4	52.5	52.4	52.4	52.4	52.3
Higher rate	30.6	31.0	30.0	29.6	27.7	27.9	27.7	27.4	27.3
Additional rate	17.6	18.0	18.5	19.0	19.7	19.7	19.9	20.2	20.4

Shaded cells represent notional estimates for years when tax devolution has not occurred.

Table 2.12: England and Northern Ireland forecast of tax liabilities on non-savings, non-dividend income by tax band WRIT equivalent

	£ billion								
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
October forecast	52.3	54.1	56.1	58.5	59.0	62.1	64.3	66.9	69.8
of which:									
Basic rate	36.1	37.0	38.6	40.3	41.2	43.3	44.8	46.7	48.6
Higher rate	10.7	11.2	11.3	11.6	10.9	11.5	11.8	12.2	12.7
Additional rate	5.4	5.8	6.2	6.6	6.9	7.3	7.6	8.0	8.4
	Per cent								
Basic rate	69.1	68.5	68.9	68.9	69.9	69.8	69.8	69.8	69.7
Higher rate	20.4	20.8	20.1	19.8	18.5	18.6	18.4	18.3	18.2
Additional rate	10.4	10.8	11.0	11.3	11.7	11.7	11.8	12.0	12.1

Shaded cells represent notional estimates for years when tax devolution has not occurred.

3 Taxes on property transactions

Introduction

3.1 There are three different property transactions tax systems operating in the UK: stamp duty land tax (SDLT) in England and Northern Ireland; land and buildings transaction tax in Scotland (LBTT) and land transaction tax (LTT) in Wales. This chapter compares their structures and sets out our latest forecast for each.

Scottish land and buildings transaction tax

3.2 In April 2015 LBTT replaced SDLT in Scotland. LBTT is similar to SDLT in terms of surcharges, reliefs and exemptions and different treatment for residential and commercial transactions. In April 2016, the Scottish Government introduced a 3 per cent additional dwelling supplement (ADS), which was also introduced into SDLT at the same time. It applies to purchases of second homes and buy-to-let properties. On 30 June 2018, an LBTT first-time buyers' relief came into effect, raising the starting threshold for first-time buyers from £145,000 to £175,000. This is lower than the threshold in SDLT, but it applies to all first-time buyers unlike the SDLT version, which does not apply to purchases over £500,000. LBTT is collected by Revenue Scotland rather than by HMRC.

Welsh land transaction tax

3.1 In April 2018 LTT replaced SDLT in Wales. It also maintains broadly the same features as SDLT, including a 3 per cent additional properties surcharge, but does not include a first-time buyers' relief. It is collected by the Welsh Revenue Authority rather than by HMRC.

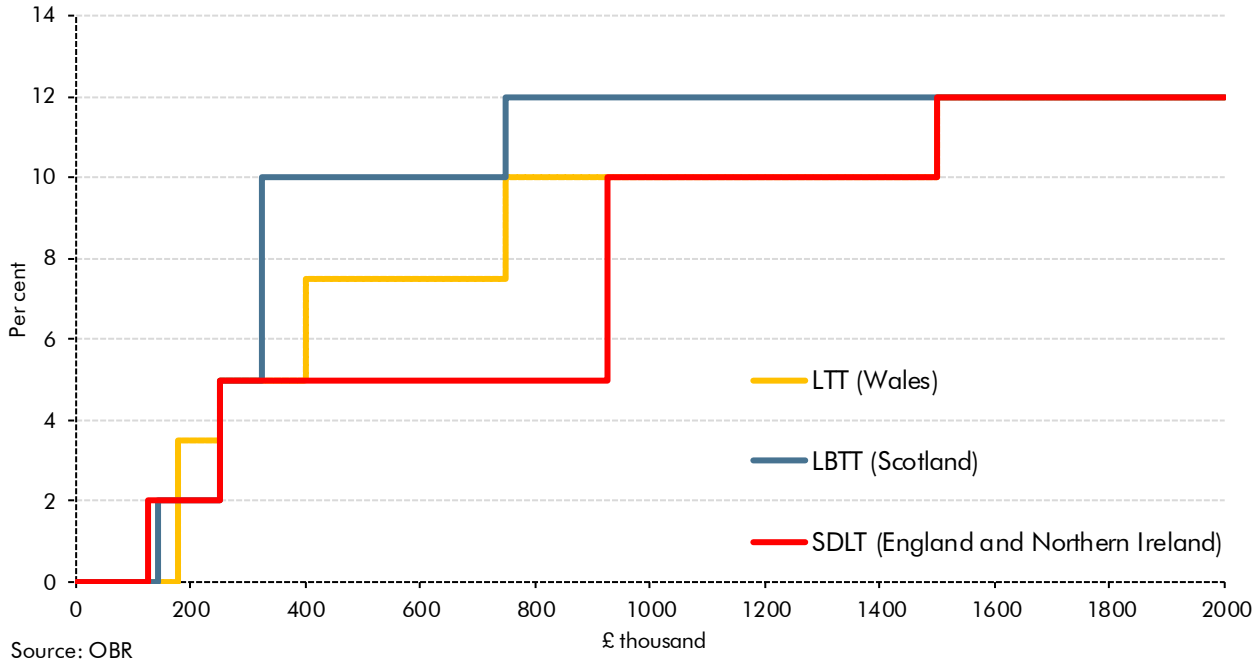
Comparison of the tax regimes

3.2 Chart 3.1 shows the marginal tax rates on residential property in SDLT, LBTT and LTT, excluding supplements and reliefs. Chart 3.2 shows the corresponding average effective tax rates. Compared with SDLT, both LTT and LBTT are more progressive, with lower rates on lower value transactions, and higher rates on more expensive ones. The effect of this on receipts is compounded by the distribution of transactions, with around two-thirds of those in Wales being below the first LTT threshold of £180,000, half of those in Scotland being below the first LBTT threshold of £145,000, but just a quarter of those in the rest of the UK being below the first SDLT threshold of £125,000.

3.3 Since the thresholds for all three are fixed in cash terms, house price inflation over time will lead to increases in the share of transactions in the higher tax bands, increasing the average effective tax rate. This is known as 'fiscal drag', which results in receipts rising faster

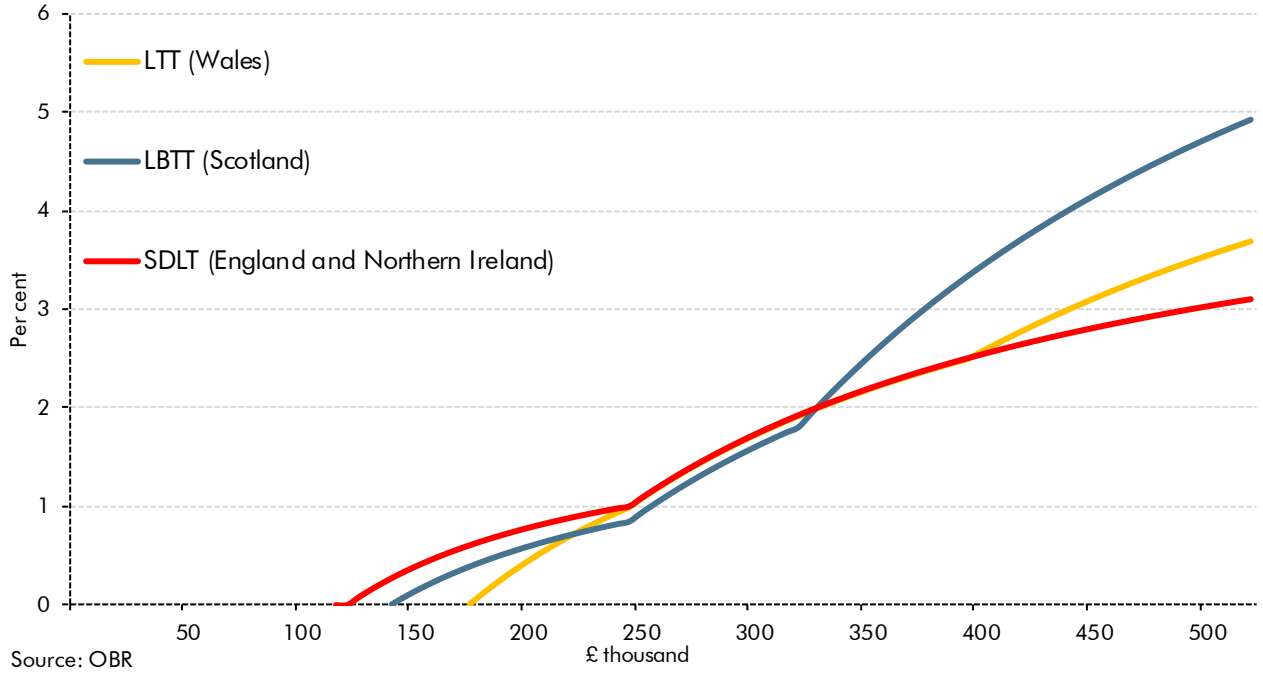
than house prices over time. When compared to SDLT, the more progressive nature of LTT and LBTT may lead to greater fiscal drag as higher marginal rates apply at lower prices.

Chart 3.1: Residential property marginal tax rates: main rates



Source: OBR

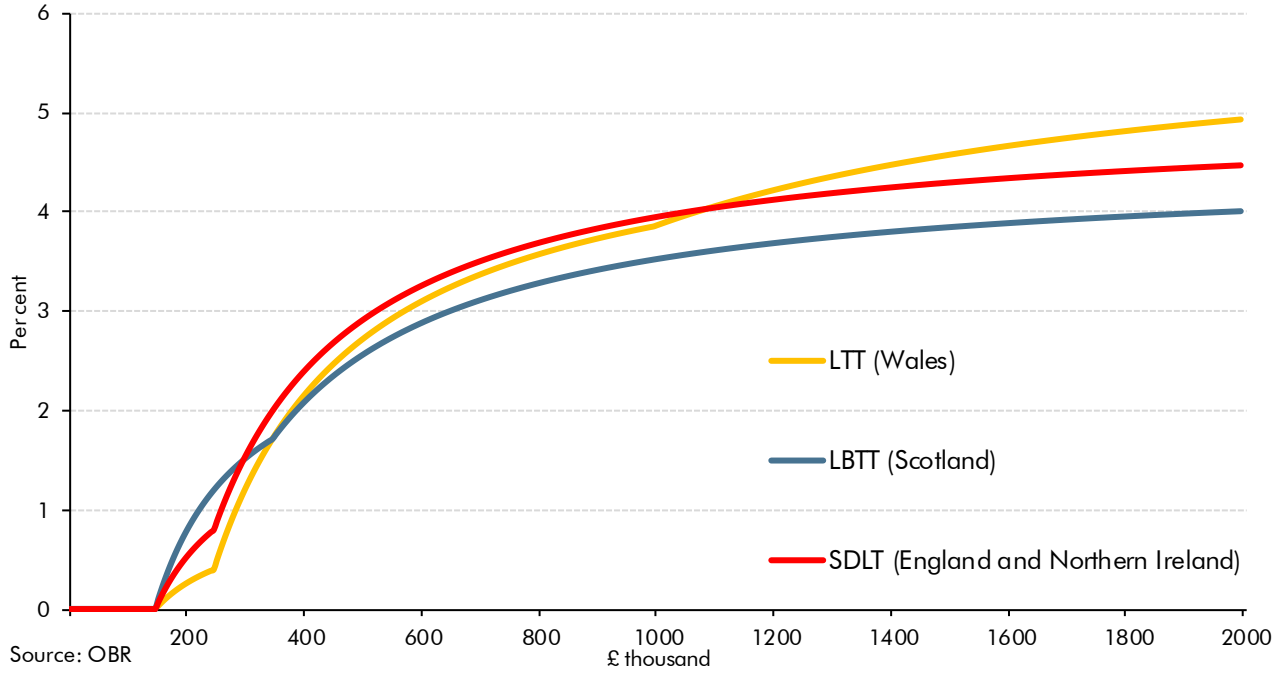
Chart 3.2: Residential property effective tax rates: main rates



Source: OBR

3.4 Chart 3.3 shows the effective tax rates for commercial property, where the differences are considerably smaller at a given price point across the three tax regimes.

Chart 3.3: Commercial property effective tax rates: main rates



Source: OBR

Methodology

3.5 We use different models for each of the property tax forecasts. For our SDLT forecasts we use a microsimulation based on a full sample of individual transactions from a given base year, which are grown in line with our property price and transactions forecasts before the application of the appropriate tax schedules to calculate revenue. This model is run on our behalf by HMRC. At this event we are using a new separate microsimulation to forecast the effect of first-time buyers' relief.

3.6 Our approach to forecasting LBTT is unchanged from March although we have updated the base data from calendar year 2015 to financial year 2017-18. Our model for the main residential rates uses mean and median price data from Registers for Scotland to calculate a log-normal distribution for the Scottish housing market. The distribution is then grown by our house price and transactions forecast before applying the tax schedule. We assume the ratio of mean to median prices remains constant. The Scottish Fiscal Commission (SFC) uses a similar method. For the additional property surcharge and commercial LBTT we grow recent outturn in line with our relevant price and transactions forecasts.

3.7 We have changed our approach to forecasting Welsh LTT. Our forecasts were previously produced by HMRC using its microsimulation model, limited to Welsh transactions. We have switched to using a 'price bins' model operated on our behalf by the Welsh Government. It is conceptually similar to a microsimulation except that it models aggregate transactions within relatively small 'bins' rather than individual transactions, calculating the tax due on the average price in the bin, and then projecting that forward in line with our forecasts for prices and transactions. There are separate models for residential and commercial properties. Like the LBTT forecast, the price-bins model is based on data from 2017-18.

3.8 We assume that Scottish and Welsh prices and transactions rise in line with those for the UK as a whole. While house prices start at different levels, we assume that prices neither converge nor diverge any further, either between countries or within them. We add any additional effects from new policy measures to produce the post-measures forecast.

Stamp duty land tax forecast

3.9 We have revised down our SDLT forecast since March. Residential receipts and housing transactions have been weaker than expected so far this year, lowering the base from which the forecast grows. However, our forecast for house price inflation is higher from 2019-20 onwards, reflecting stronger employment and average earnings growth. We have updated the base year of the microsimulation from calendar year 2015 to a year spanning the fourth quarter of 2016 until the third quarter of 2017. This choice reflects the distorted pattern of receipts in the last quarter of 2017 and the first quarter of 2018 caused by the introduction of first-time buyer's relief. We have remodelled the relief based on outturn data. This has slightly reduced the estimated cost.

3.10 We have retained our judgement that 20 per cent of initial additional properties surcharge payments will ultimately be refunded. Steady-state outturns will still not be known for some time due to the 36-month window for claims.

3.11 Our commercial forecast is little changed from March. Final outturn for 2017-18 was slightly higher than expected, but commercial property prices and transactions are now forecast to be weaker, which reduces the forecast. The two effects are largely offsetting. There are several measures that have very small effects on the SDLT forecast, directly from a small change to the first-time buyer's relief rules and indirectly from the anticipated behavioural responses to several capital gains tax measures.

Table 3.1: SDLT forecast

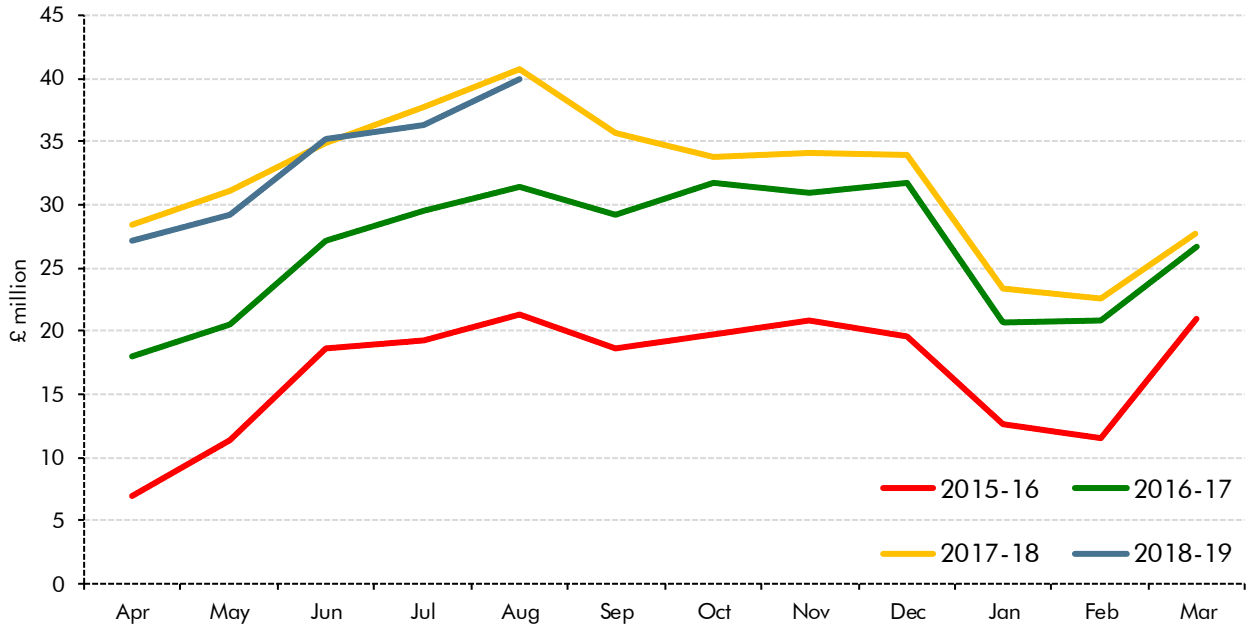
	£ billion						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total SDLT							
March forecast	13.0	12.8	13.2	13.8	14.4	15.1	
October forecast	12.9	11.9	12.3	13.0	13.8	14.6	15.9
Change	**0.0**	**-0.9**	**-0.9**	**-0.8**	**-0.5**	**-0.4**	
Residential SDLT (excluding additional properties)							
March forecast	7.6	7.4	7.8	8.1	8.5	9.0	
October forecast	7.4	6.6	7.0	7.5	8.1	8.7	9.6
Change	**-0.2**	**-0.9**	**-0.8**	**-0.6**	**-0.4**	**-0.4**	
Additional properties							
March forecast	1.9	1.8	1.9	1.9	2.0	2.2	
October forecast	1.9	1.7	1.7	1.9	2.0	2.1	2.3
Change	**0.0**	**-0.1**	**0.0**	**0.0**	**0.1**	**0.1**	
Commercial SDLT							
March forecast	3.4	3.5	3.6	3.7	3.8	3.9	
October forecast	3.6	3.6	3.6	3.7	3.8	3.9	4.0
Change	**0.2**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	

Land and buildings transaction tax forecast

Latest LBTT outturn data

3.12 The latest LBTT tax data published by Revenue Scotland are presented in Charts 3.4 and 3.5.[1] Chart 3.3 shows the monthly profile of residential receipts. This was distorted by forestalling in both 2015-16 and 2016-17. A large number of high-value residential transactions were brought forward before the April 2015 introduction of LBTT. This boosted SDLT receipts in March 2015 at the expense of LBTT receipts in the following months. The same behaviour was observed at the end of 2015-16, when buyers moved transactions forward to avoid the ADS that came into effect in April 2016. Compared to 2017-18 residential receipts in 2018-19 have so far followed a similar, though slightly weaker, trend.

Chart 3.4: Residential LBTT including initial ADS payments but excluding refunds

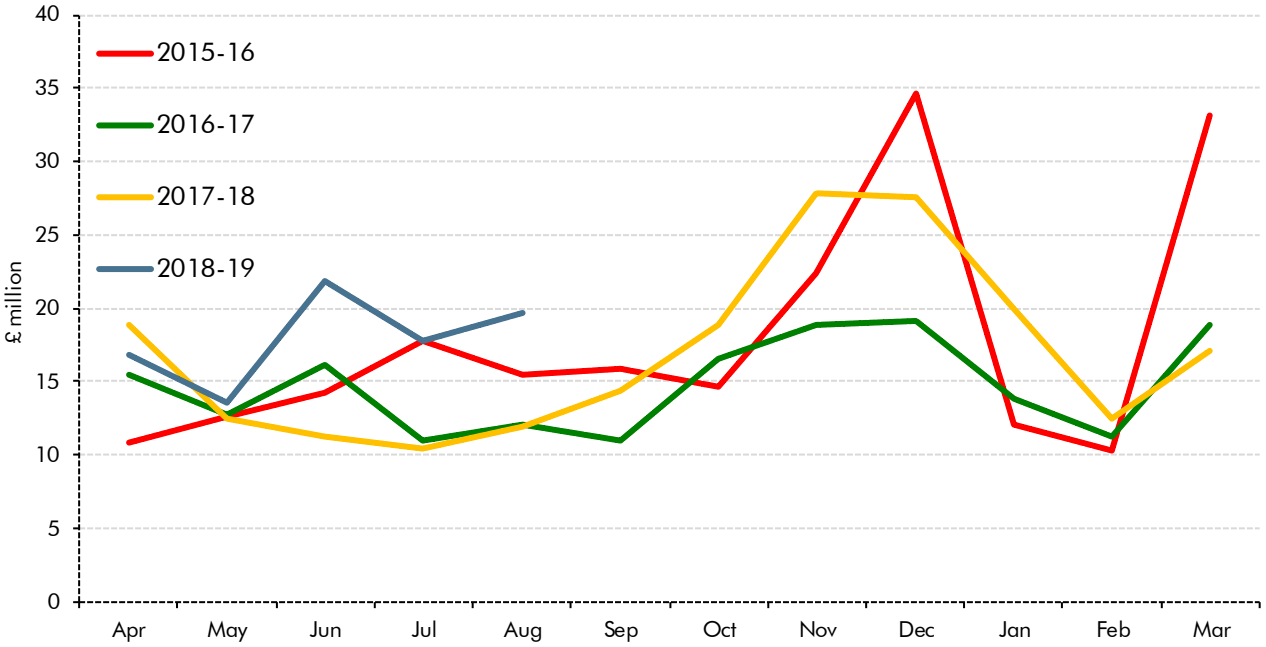


Source: Revenue Scotland

3.13 Chart 3.5 shows the monthly profile of commercial LBTT receipts. Receipts from June to August 2018 have been stronger than in previous years, with June receipts almost double the outturn from last year. The monthly profile can be distorted by a small number of large transactions, which seems to have been the case in these months. In previous years the larger transactions have tended to occur in the second half of the financial year.

[1] A small amount of revenue from the additional dwelling supplement is reported in Revenue Scotland statistics as occurring from commercial transactions. We include this revenue within commercial outturn for these charts, but it is contained within residential transactions for our forecast. Throughout we use information from Revenue Scotland's monthly statistics publication. Revenue Scotland published receipts for September 2018 after we had closed our forecast.

Chart 3.5: Commercial LBTT receipts



Source: Revenue Scotland

LBTT forecast

3.14 Table 3.2 shows our latest forecasts for residential and commercial LBTT. Relative to March the overall forecast is very similar, though the composition has changed with relatively weaker residential receipts and stronger commercial receipts.

Table 3.2: Land and buildings transaction tax forecast

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total LBTT							
March forecast	561	586	619	653	692	736	
October forecast	558	591	617	652	696	747	808
Change	**-3**	**4**	**-2**	**-1**	**3**	**11**	
Residential LBTT (excluding ADS)							
March forecast	257	278	300	323	351	386	
October forecast	260	251	273	300	331	367	412
Change	**3**	**-27**	**-27**	**-23**	**-20**	**-19**	
Additional dwellings supplement (ADS)							
March forecast	96	99	103	108	113	119	
October forecast	95	93	98	104	110	117	125
Change	**-1**	**-6**	**-5**	**-4**	**-3**	**-2**	
Commercial LBTT							
March forecast	208	210	216	222	229	230	
October forecast	203	247	246	248	255	262	271
Change	**-5**	**37**	**30**	**26**	**26**	**32**	

3.15 Table 3.3 breaks down the changes in our residential LBTT forecast since March. The 2017-18 outturn, weaker in-year receipts and lower-than-expected property transactions all act to reduce receipts across the forecast period. Our house price inflation forecast is higher from 2019-20 onwards, which slightly offsets the effects of these other changes.

Table 3.3: Changes in residential LBTT since March

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	353	376	403	431	463	505	
October forecast	355	344	371	404	441	485	538
Change	**2**	**-33**	**-32**	**-27**	**-23**	**-21**	
of which:							
Base year		-4	-8	-11	-16	-21	
Receipts outturn		-13	-13	-13	-13	-13	
House prices		-3	-2	2	7	13	
Property transactions		-8	-8	-7	-5	-3	
Other changes		-5	-1	2	3	4	

3.16 Table 3.4 breaks down the revisions to our commercial LBTT forecast since March. The main changes are from the strength in receipts so far this year. We assume some of this is due to 'one-off' large transactions so have not pushed all the increase through the forecast. Doing so would have generated an in-year estimate of almost £280 million in 2018-19 – a nearly 40 per cent rise on 2017-18 – which we did not judge to be reasonable. Lower price growth and transaction volumes partially offset the increase from the strong in-year receipts.

Table 3.4: Changes in commercial LBTT since March

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	208	210	216	222	229	230	
October forecast	203	247	246	248	255	262	271
Change	**-5**	**37**	**30**	**26**	**26**	**32**	
of which:							
Receipts and modelling		40	41	41	42	48	
Property prices		6	-1	-6	-6	-6	
Property transactions		-9	-10	-10	-10	-10	

Comparison with SFC forecasts

3.17 The SFC published its second LBTT forecast in May 2018. Our latest forecast is slightly lower, but this comprises a more optimistic commercial forecast and a more pessimistic residential one, which largely offset one another. Property transaction taxes are one of the most volatile revenue streams, so forecasts for them are subject to considerable uncertainty.[2] Despite using similar models our forecasts will differ as they are normally produced at different times and so based on different outturn data, and we may make different

[2] See Box 3.1 of our 2016 *Forecast evaluation report* for more information on forecasting property transaction taxes.

assumptions and judgements. We may also reflect different policy baselines, for example if there have been announcements made between our respective forecasts being published. Surprises in outturn data for 2018-19 would explain the majority of the differences between our latest forecast and the SFC's May forecasts.

Table 3.5: Comparison between Scottish Fiscal Commission and OBR forecasts

	£ million					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
SFC May 2018	614	656	697	738	781	827
OBR October 2018	591	617	652	696	747	808
Difference	**-23**	**-43**	**-52**	**-51**	**-43**	**-29**
of which:						
Residential	-59	-68	-73	-73	-67	-54
Commercial	41	32	27	29	31	32

Land transaction tax forecast

3.18 Our Welsh LTT forecasts are now produced on our behalf by Welsh Government analysts using price-bins models for residential and commercial transactions, consistent with our UK-wide property price and transactions forecasts. Unlike our SDLT forecast, the base year for the residential LTT forecast is 2017-18.

3.19 Our overall forecasts for Welsh LTT are set out in Table 3.6, with the last year of Welsh SDLT shown for comparison. Receipts are weaker across the forecast, mainly due to lower-than-expected commercial property receipts. The forecast for the main residential rates is also lower, but this is largely offset by higher additional properties surcharge receipts.

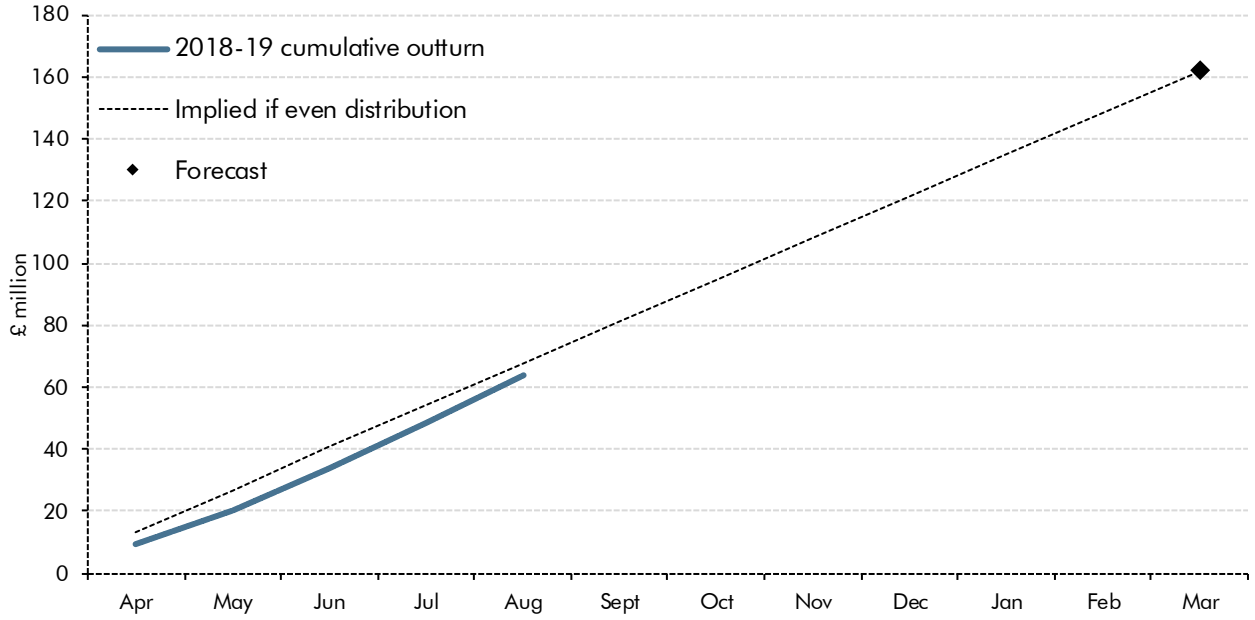
Table 3.6: Welsh LTT forecasts

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total SDLT / LTT							
March forecast	258	264	282	302	322	346	
October forecast	258	238	255	269	290	316	348
Change	**0**	**-25**	**-27**	**-33**	**-32**	**-29**	
Residential (excluding additional properties)							
March forecast	106	106	116	127	143	158	
October forecast	101	97	112	125	140	159	182
Change	**-5**	**-10**	**-4**	**-2**	**-3**	**1**	
Additional properties							
March forecast	57	55	58	60	62	66	
October forecast	58	65	64	64	68	72	77
Change	**1**	**10**	**7**	**4**	**5**	**6**	
Commercial							
March forecast	95	102	108	115	117	122	
October forecast	99	76	79	80	83	86	89
Change	**4**	**-26**	**-29**	**-35**	**-35**	**-36**	

Shadded cells represent national estimates for years when SDLT devolution has not occurred.

3.20 At the time we closed our forecast five months of residential receipts data had been published by the Welsh Revenue Authority.[3] This is shown in Chart 3.6. As a new tax it is difficult to predict the monthly distribution of receipts across the year, and due to forestalling ahead of the introduction of the new tax we would expect receipts to have been depressed in the first few months of 2018-19. For illustration, the chart compares outturns to date with a uniform distribution of our March forecast across each month of the year. Assuming some forestalling effects, this suggests that our March residential forecast is broadly on track so we have not altered our forecast of receipts this year.

Chart 3.6: Residential LTT in 2018-19



Source: Welsh Revenue Authority, OBR

3.21 Table 3.7 breaks down the changes in our residential forecast since March. The overall revision is small, but this is due to several offsetting effects. Moving our forecasts to the Welsh Government's models has altered the composition of receipts, with less expected from the main rates and more from the additional properties surcharge. These modelling changes slightly increase receipts in the short term, but reduce them in the longer term. The recent weakness in transactions is largely pushed through the forecast, while changes in our house price inflation forecast reduce receipts in the near term but raise them thereafter.

[3] The Welsh Revenue Authority published receipts from September 2018 after we had closed our forecast.

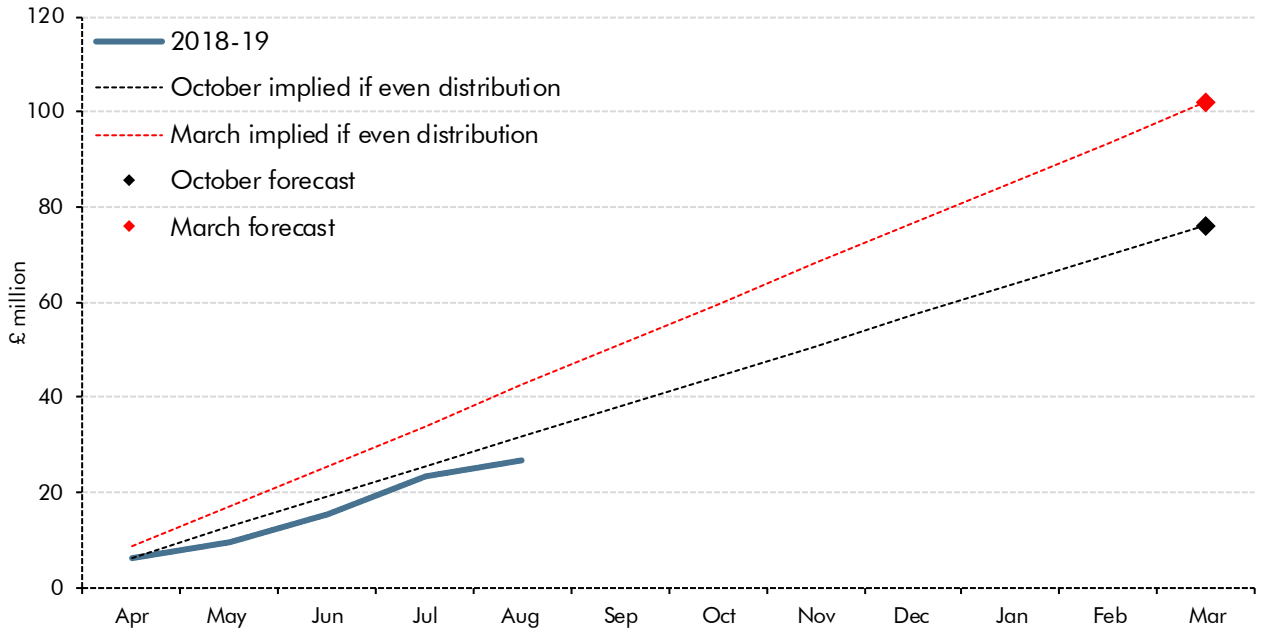
Table 3.7: Changes in residential Welsh SDLT and LTT since March

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	**163**	162	174	187	205	224	
October forecast	**159**	162	176	189	208	231	259
Change	**-4**	**0**	**2**	**2**	**3**	**7**	
of which:							
Main rates modeling		-6	-3	-4	-8	-8	
Additional properties modelling		9	5	1	2	2	
House prices		-1	2	5	9	13	
Property transactions		-4	-5	-4	-3	-2	
Receipts and other adjustments		2	3	3	2	3	

Shaded cells represent estimates for years when SDLT devolution has not occurred.

3.22 Chart 3.7 shows the first five months of commercial LTT receipts, which have been relatively weak. This suggests our March estimate for 2018-19 was too high. Commercial LTT receipts are likely to be volatile through the year due to the potential for a small number of high-value transactions to distort the profile. As with residential LTT receipts we have sense-checked our updated forecast using a simple monthly extrapolation to the full-year total.

Chart 3.7: Commercial LTT in 2018-19



Source: Welsh Revenue Authority, OBR

3.23 Table 3.12 shows the changes in our Welsh commercial LTT forecast since March. The main change is our reduced in-year estimate. The latest data suggest that 2017-18 may have been an outlier year for commercial property transactions in Wales with SDLT receipts of nearly £100 million, whereas receipts in the previous two years were around £70 million a year. We assume that receipts return to this level before rising relatively slowly across the forecast. Moving to using the Welsh Government's forecast model and our weaker forecast for the commercial property market have also reduced our commercial LTT forecast.

Table 3.8: Changes in commercial Welsh SDLT and LTT since March

	£ million						
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	95	102	108	115	117	122	
October forecast	99	76	79	80	83	86	89
Change	**4**	**-26**	**-29**	**-35**	**-35**	**-36**	
of which:							
Receipts outturn		-20	-21	-21	-22	-23	
Property market determinants		-1	-5	-8	-8	-9	
Other modelling		-5	-3	-6	-4	-5	

Shaded cells represent national estimates for years when SDLT devolution has not occurred.

Comparison with the Welsh Government LTT forecast

3.24 The Welsh Government published its own forecasts on 2 October to accompany its draft Budget. These were independently scrutinised by academics at Bangor University. While the overall difference is small, this comprises the largely offsetting effects of our more pessimistic commercial property forecast and our more optimistic residential forecast.

3.25 Despite using the same models there are several reasons for the differences. First, the Welsh Government's forecast drew on our March 2018 economy forecast. Second, we have made slightly different judgements on the in-year profile of receipts. Third, we use a 2017-18 base year, whereas the Welsh Government's forecast used 2016-17 as its base year.

Table 3.9: Comparison between Welsh Government and OBR LTT forecasts

	£ million					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
WG October 2018	240	258	269	287	309	
OBR October 2018	238	255	269	290	316	348
Difference	**-2**	**-3**	**0**	**3**	**7**	
of which:						
Residential	**8**	**9**	**14**	**18**	**22**	
Commercial	**-9**	**-12**	**-14**	**-13**	**-14**	

4 Environmental and transport taxes

Landfill taxes

Background

4.1 Landfill tax applies to waste disposed of at a licensed landfill site unless the waste is specifically exempt. Our forecast is driven by the tax base (the amount of waste sent to landfill) and the effective tax rate that will be paid (largely driven by policy decisions on rates, but also by the composition of waste sent to landfill as there are two different rates). Both elements represent sources of uncertainty. The volume of waste sent to landfill has been on a downward trend, both in absolute terms and relative to the size of the economy.

4.2 Scottish landfill tax replaced the UK equivalent with effect from April 2015. Landfill tax in Wales was replaced with landfill disposals tax (LDT) from April 2018. The Scottish and Welsh Governments have so far both set rates that match those in the rest of the UK. Other than the treatment of payments to respective communities funds in lieu of tax, which have small fiscal effects, landfill taxation is very similar across the UK. We have set out more information on our landfill taxes forecasts in the 'forecasts in-depth' pages on our website.

Methodology

4.3 In our March forecast we used a model for Scottish landfill tax developed by the Scottish Fiscal Commission (SFC) rather than applying a simple percentage share based on landfill tax in the UK as a whole. The SFC model is structured in a similar way to the model operated on our behalf by HMRC that forecasts landfill tax in England and Northern Ireland. Both start with assumptions about the growth in waste arising, then make reductions for recycling, incineration and other non-landfill waste treatment infrastructure. It is assumed the remaining tonnage enters landfill and forecasts for effective tax rates are applied to this remaining tonnage. The SFC model has the benefit of using more Scottish-specific information and assumptions. The HMRC model includes an explicit forecast for growth in waste exports, which the SFC model assumes are flat across the forecast period.

4.4 Our forecast for LDT has been produced on our behalf by the Welsh Government. This model does not take into account trends in waste arising or recycling – implicitly assuming the net level remains constant across the forecast – but is able to take more explicit account for changes in Welsh infrastructure such as incineration capacity affecting the tax base.

4.5 The tax rates are assumed to rise in line with RPI inflation each year, consistent with the Governments' default indexation assumptions.

4.6 We add the effect of any new policy measures to produce our post-measures forecast.

UK Government landfill tax forecast

4.7 Table 4.1 shows our latest forecast for landfill tax from disposals in England and Northern Ireland. Since our March forecast was produced receipts appear to have been stronger than expected, but recent changes to the relevant HMRC accounting system have changed the monthly profile of payments, so it is hard to compare against previous years.

4.8 The underlying forecast has been revised up primarily due to waste treatment infrastructure coming online more slowly than expected and lower exports of waste leading to more waste being sent to landfill. But this is more than offset in 2018-19 and 2019-20, where we have removed an assumption about the effect of the Chinese Government's ban on plastic waste imports, as it is now partly captured in outturn and there is some evidence that other countries have already largely replaced China as a destination for exported plastic waste. Landfill tax receipts are still expected to fall year-on-year throughout the forecast.

4.9 There are no measures that directly affect landfill tax at this budget.

Table 4.1: England and Northern Ireland landfill tax forecast – liabilities basis

	£ million						
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	699	684	594	526	506	463	
October forecast	717	672	591	538	527	482	404
Change	**17**	**-12**	**-2**	**12**	**21**	**19**	
of which:							
Removing China ban	0	-24	-24	0	0	0	
Other modelling	17	12	22	12	21	19	

Scottish landfill tax receipts in 2018-19

4.10 Revenue Scotland publishes quarterly data on the tax declared. Full 2017-18 outturn was not available when we closed our March forecast, and is slightly higher than expected. Since then receipts for the first quarter of 2018-19 have also been published, and were 9.4 per cent higher than the same quarter last year. In March we forecast that full-year receipts in 2018-19 would be 22 per cent lower than last year.

Scottish landfill tax forecast

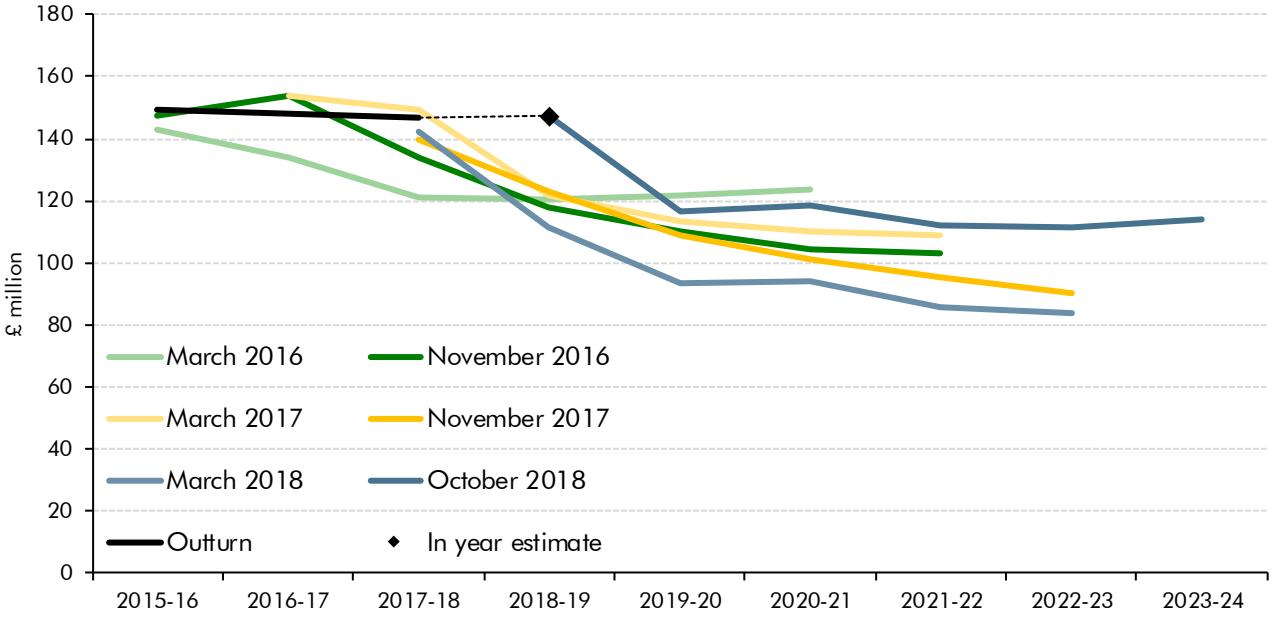
4.11 Table 4.2 sets out our forecast for Scottish landfill tax receipts, which has been revised up since March primarily due to the stronger-than-expected receipts so far this year. If receipts in the rest of 2018-19 were to follow the same quarterly profile as in 2017-18, they would reach £162 million. We have instead assumed that receipts later in the year will be depressed by new incineration infrastructure coming online, so assume £147 million of receipts this year. This forecast has benefited from the SFC's detailed infrastructure assumptions, which use information from the Scottish Environment Protection Agency. As this additional incineration capacity will affect all of 2019-20, we expect receipts to fall sharply relative to 2018-19. Thereafter the forecast is relatively flat in cash terms.

Table 4.2: Scottish landfill tax forecast

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	142	111	93	94	86	84	
October forecast	147	147	116	119	112	112	114
Change	**4**	**36**	**23**	**25**	**26**	**28**	

4.12 Chart 4.1 sets out successive OBR forecasts for Scottish landfill tax receipts. It shows that we have consistently forecast sustained reductions in receipts, which reflects assumed declines in Scottish landfilled waste, in part due to expectations about the growth of alternative treatment infrastructure. These reductions have yet to be realised. Our latest forecast is subject to similar risks if the infrastructure capacity on which it is based does not come online as quickly as assumed.

Chart 4.1: Scottish landfill tax forecasts



Source: Revenue Scotland, OBR

4.13 The SFC published its most recent landfill tax forecast in May 2018, before the latest receipts data became available. Table 4.3 compares the SFC's forecast with our own. The large difference in the starting point leads to a fairly stable difference across the forecast.

Table 4.3: Comparison to Scottish Fiscal Commission forecast

	£ million						
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
SFC May 2018	142	114	93	95	87	87	88
OBR October 2018	147	147	116	119	112	112	114
Difference	**5**	**33**	**24**	**24**	**25**	**25**	**26**

4.14 Neither forecast currently makes any allowance for the Scottish Government's legislated ban on biodegradable municipal waste being landfilled from January 2021. The SFC states that it will only include the ban once a sufficient evidence base has been developed to understand the profile of waste diverted from landfill. We have taken the same approach. If the Scottish Government announces further policies detailing how reductions in landfill tonnage are to be achieved, backed by sufficiently robust evidence, we would factor these into our forecast too. For now, we note the ban, and the general aspiration of the Scottish Government to reduce landfill tonnages, as policy risks to the forecast.

Welsh LDT receipts in 2018-19

4.15 In March we forecast that liabilities in 2018-19 would be the same as 2017-18 at £27 million. Since the tax started in April 2018 only one quarter of receipts data on LDT has been published by the Welsh Revenue Authority (WRA). At £11.7 million, they were substantially higher than expected by the Welsh Government or implied by our March forecast (£6.6 million if receipts were evenly distribution across the year). The Welsh Government had estimated that the share of landfill waste in Wales subject to the (much higher) standard rate of tax was considerably lower than in the rest of the UK. In fact, 31 per cent of Welsh landfill in this quarter attracted the standard rate, close to the 33 per cent of landfill attracting the standard rate in England, Wales and Northern Ireland in 2017-18.

Welsh LDT forecast

4.16 One outturn data point is a difficult starting position from which to base a forecast. It is not clear whether the pattern of receipts differs now the tax is collected by the WRA, but the WRA has informed us it does not know of any one-off effects around the introduction of the tax. We have therefore pushed these larger-than-expected receipts through the forecast.

4.17 This implies a year-on-year increase of 51 per cent between 2017-18 and 2018-19. It is possible that this large increase is because the WRA's landfill tax compliance activity in Wales is greater than HMRC's was, so the tax gap in Wales has been reduced. But it is also quite likely that the historical estimates of the Welsh share of landfill tax for 2017-18 and earlier were wrong. Prior to devolution taxpayers submitted UK-wide returns to HMRC so the tax from Wales had to be inferred using information from Natural Resources Wales and making assumptions of the likely tax liability based on descriptions of the waste.

4.18 In the absence of further evidence we have not adjusted our historical receipts estimates except to increase them proportionately in line with HMRC's estimate for 2017-18 for UK-wide landfill tax receipts. This estimate is just as uncertain as the forecast.

4.19 Table 4.4 sets out our estimate for landfill tax receipts in Wales in 2017-18 and for LDT receipts thereafter. Given the relatively smaller tax base, our LDT forecast is likely to be more volatile than our combined England and Northern Ireland forecast. Nevertheless it is clearly a worry that first quarter receipts have prompted a 62 per cent upward revision to 2018-19 receipts relative to March. Once more outturn data are available we will work with

the Welsh Government to understand the source of the surprise and any implications it has for our forecasting methodology.

Table 4.4: Welsh share of landfill tax and LDT forecast

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	27	27	23	21	20	18	
October forecast	29	44	40	36	34	32	31
Difference	**2**	**17**	**16**	**16**	**14**	**14**	

4.20 The Welsh Government published its latest forecast of LDT on 2 October 2018 as part of its draft budget. It took the same judgement as us about the full-year implications of the higher-than-expected first quarter receipts, so the only difference between the forecasts stems from our updated RPI inflation forecast, which has relatively little effect.

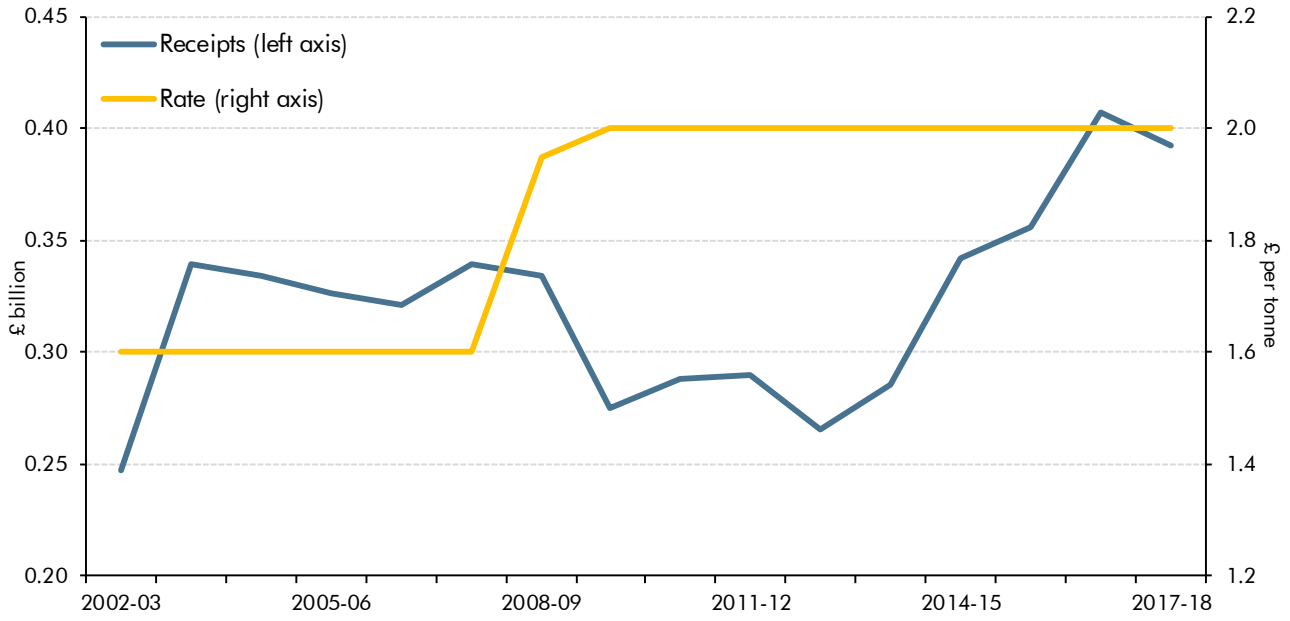
Aggregates levy

Background

4.21 The aggregates levy is a tax on the commercial exploitation of rock, sand and gravel. It is due from any business that quarries, dredges or imports these products. Our forecast for UK aggregates levy receipts is driven by the tax base (the volume of aggregates exploited) and the effective tax rate that will be paid (largely driven by policy decisions on the rates paid, but also by the composition of the tax base as some aggregates are relieved or exempt from the levy). The tax base represents the main source of uncertainty in the forecast, while the levy rate is subject to policy risk.

4.22 As Chart 4.1 shows, aggregates levy receipts fell significantly after 2008-09 but have now risen above their pre-crisis levels in cash terms. The increases in the rate per tonne in 2008-09 and 2009-10 were not sufficient to offset the fall in the tax base in 2009-10. While the UK Government's stated indexation policy is to increase the aggregates levy rate each year by RPI inflation, it has actually been frozen at £2 per tonne since 2009-10. Indeed, in the 17 years since its inception the rate has only been increased twice.

Chart 4.2: UK aggregates levy rate and receipts



Source: HMRC, OBR

Scottish and Welsh rates

4.23 The UK Government has legislated to devolve the levy to Scotland and has committed to keeping devolution to Wales under review. The levy is currently subject to legal challenge in the European courts. Devolution will not take place until this has been resolved. Our forecasts are therefore illustrative since we do not know when devolution will occur.

Methodology

4.24 The UK forecast is generated from a projection of the tax base, which broadly follows real GDP, that is multiplied by the tax rate. The rate is assumed to be uprated by RPI inflation, consistent with the UK Government's default indexation policy. As noted, this represents a source of policy risk since the rate has in fact been frozen every year since 2009-10.

4.25 The Scottish and Welsh shares of aggregates levy are not available from tax data, since taxpayers submit returns covering all their UK operations. We use HMRC's estimates of relevant aggregates production in Wales and Scotland, based on data from the 'UK minerals yearbook' (set out in Table 4.5). Unfortunately, the latest information relates to 2014-15 as the yearbook has not been published for several years.

4.26 There are small differences between the total UK tonnage reported in the yearbook and that in HMRC's statistics based on tax returns, but it appears to be the best data source available. The Scottish Government bases its estimates on data from the yearbook in its 'Government Expenditure and Revenue Scotland' (GERS) publication. To produce the Scottish and Welsh forecasts, we apply the latest estimated share to the UK forecast.

Table 4.5: Aggregates tonnage in the UK

	Tonnes (million)							
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
England	140.1	136.8	106.2	95.4	104.8	95.9	99.1	113.3
Scotland	37.2	32.3	28.4	28.6	27.5	24.8	22.2	24.9
Wales	20.8	18.0	12.2	12.6	13.6	12.3	13.0	16.4
Northern Ireland	29.5	23.0	20.4	16.2	20.0	18.4	17.9	16.8
UK	227.6	210.2	167.2	152.8	165.9	151.4	152.3	171.4
	Per cent of UK total							
Scotland	16.3	15.4	17.0	18.7	16.6	16.4	14.6	14.5
Wales	9.2	8.6	7.3	8.3	8.2	8.1	8.5	9.6

4.27 Finally, we add the Scottish and Welsh element of any policy measures to produce the post-measures forecast.

UK forecast

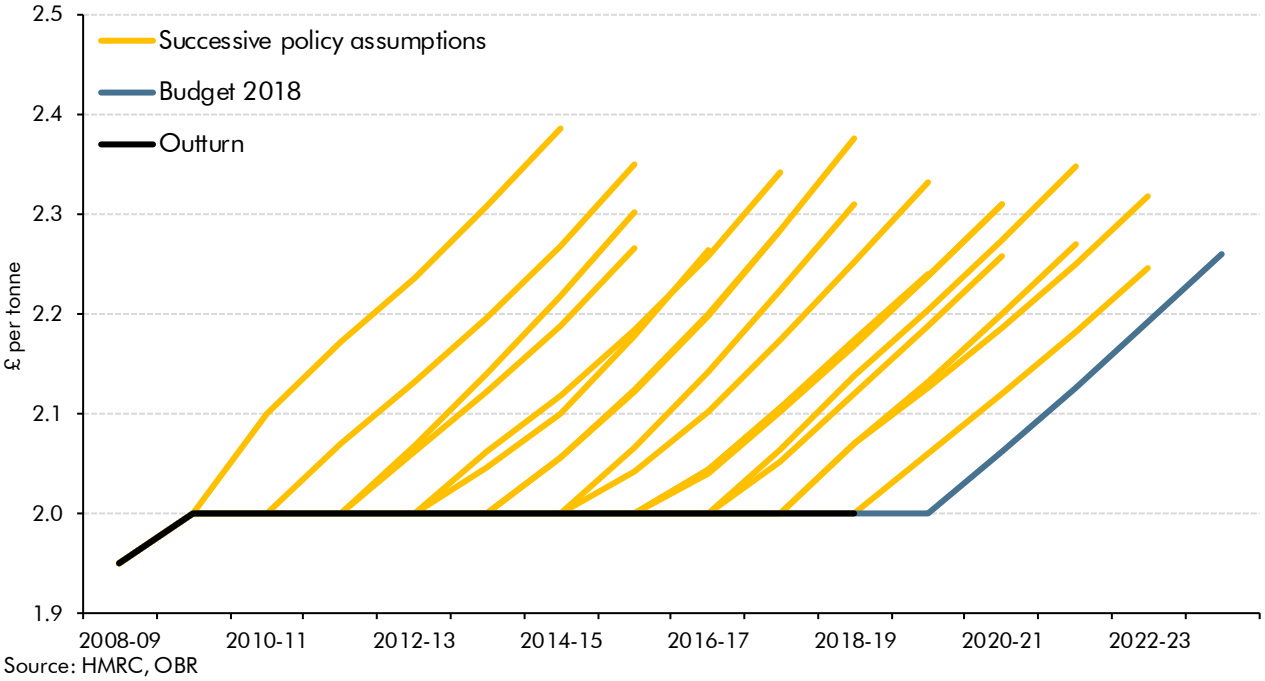
4.28 Table 4.6 shows that we have revised up our UK forecast since March from 2019-20 onwards. Previously our forecast included a modest downward trend to reflect assumed increases in the recycling of aggregate material. This assumption has not been supported by the data, so we have removed it from the model and now assume that aggregate tonnages grow in line with real GDP instead.

4.29 In this Budget, the rate for 2019-20 has again been set at £2 per tonne rather than applying the RPI-linked indexation policy assumption. This is the tenth consecutive year that the rate has been frozen. As stipulated by the UK Parliament, our forecasts are based on the default indexation parameters that are detailed at each Budget in the Treasury's *Policy costings document*. The rise in receipts over the forecast period is largely due to the duty rate rising in line with the Government's policy assumption. Chart 4.3 shows the successive policy assumptions for aggregates levy uprating across our previous forecasts.

Table 4.6: UK aggregates levy forecast

	£ million						
	Outturn estimate	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	371	383	380	384	388	391	
October forecast	372	382	388	405	424	444	464
Change	**1**	**-1**	**8**	**22**	**36**	**53**	
of which:							
Pre-measures forecast	1	-1	20	34	49	66	
Measures	0	0	-12	-13	-13	-14	

Chart 4.3: Successive aggregates levy uprating assumptions



Source: HMRC, OBR

Scottish forecast

4.30 Table 4.5 showed that the Scottish share of UK aggregates tonnage is relatively high, but that it has been on a declining, if uneven, path. According to the most recent data currently available it was 14.5 per cent in 2014-15. We assume that the share remains constant so the Scottish forecast follows the UK's and increases across the forecast period.

Table 4.7: Scottish aggregates levy forecast

	£ million						
	Outturn estimate	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	54	56	55	56	56	57	
October forecast	54	55	56	59	61	64	67
Change	**0**	**0**	**1**	**3**	**5**	**8**	

Welsh forecast

4.31 We hold the Welsh share of aggregates levy constant throughout the forecast at the latest available level of 9.6 per cent (in 2014-15). The Welsh forecast also follows that for the UK.

Table 4.8: Welsh aggregates levy forecast

	£ million						
	Outturn estimate	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	35	37	36	37	37	37	
October forecast	36	37	37	39	40	42	44
Change	**0**	**0**	**1**	**2**	**3**	**5**	

Air passenger duty

Background

4.32 APD is an excise duty that applies to passengers on flights leaving UK airports. Many passengers such as children or those connecting between flights are exempt. The tax paid is determined by the final destination and class of travel. Destinations fall into two bands based on flight distance from London, with the higher duty rate applying to flights of more than 2,000 miles.

4.33 Our APD forecast assumes passenger numbers grow broadly in line with real GDP, with some adjustments for recent trends. Passenger numbers are multiplied by the duty rates in each financial year, which we assume will increase in line with RPI inflation, as the Government's default indexation assumptions stipulate. We have set out more information on our APD forecasts in the 'forecast in-depth' pages on our website.

4.34 Table 4.9 shows that UK receipts have increased steadily since the recession, although they fell in 2015-16 following a change to the long-haul bands that reduced the effective duty rate. The table also shows the estimated proportion of APD attributable to Scotland using methodologies developed by HMRC, the Scottish Government and the ONS:

- The **HMRC approach** uses unpublished data from the Civil Aviation Authority (CAA) on the number and destination of passengers departing from UK airports, adjusted to reflect CAA international air passenger route analysis and the ONS international passenger survey for flight bands and exemptions for interconnecting passengers. The Scottish share based on this approach has fluctuated – HMRC's latest estimates show an increase, from 8.4 per cent in 2011-12 to 9.6 per cent in 2016-17.[1]

- The **Scottish Government approach** is presented in its GERS publication. This uses published CAA data and different assumptions about the composition of flights by band and interconnecting passengers. The share on this basis was recently revised down substantially, although it still rises in recent years. In 2016-17, the Scottish Government estimate is 1.3 percentage points lower than the HMRC estimate.

- The **ONS approach** is similar to the approach taken in GERS using CAA input data, but for the whole of the UK and with different assumptions used when applying the estimated number of passengers to the amount of tax paid.

[1] These latest HMRC estimates are lower in the most recent two years than those published in its 'Disaggregation of tax receipts' publication in October 2017. This reflects subsequent analysis suggesting the Scottish share should be adjusted downwards to account for the exemption for child passengers.

Table 4.9: Estimates of air passenger duty receipts

	£ million								
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Total UK	1856	2155	2607	2791	3013	3175	3077	3157	3352
of which, Scotland:									
HMRC	169	184	219	235	257	285	275	304	323
GERS	152	166	195	211	226	240	250	265	275
ONS	137	136	167	170	212	228	241	245	n/a
	Per cent of total UK								
HMRC	9.1	8.5	8.4	8.4	8.5	9.0	8.9	9.6	9.6
GERS	8.1	7.6	7.4	7.5	7.5	7.5	8.2	8.2	8.2
ONS	7.3	6.2	6.3	6.0	7.1	7.1	7.9	7.6	n/a

Scottish tax rates

4.35 The Scotland Act 2016 includes provisions for the devolution of APD to Scotland. Our Scottish APD forecast is illustrative as the final timing of devolution remains uncertain.

4.36 When it is devolved, the Scottish Government has a stated policy intention to reduce the rates by 50 per cent and eventually to abolish the tax. But we do not yet have specific details or a timescale for how and when these cuts will be implemented. When such details become sufficiently clear we will reflect them in our forecast.

4.37 For now, our forecast illustrates the potential revenue for Scotland on the basis of maintaining APD rates in line with those set by the UK Government. If rates in Scotland were to differ from those in the rest of the UK, estimating the effect on receipts would not be straightforward as there could be significant behavioural responses that we would need to take into account as passengers chose to use different airports and flight routes.

Methodology

4.38 We continue to use the mid-point between the HMRC and Scottish Government approaches to estimate the Scottish share of APD receipts to produce our central forecast, but now use 2017-18. On this basis, the Scottish share of APD receipts used in the forecast is 8.9 per cent. There are risks to the forecast. On the downside, population growth in Scotland is projected to be slower than in the rest of the UK. This means that our forecast implies APD receipts per capita increasing faster in Scotland than the rest of the UK, although not all passengers paying APD at Scottish airports will be Scottish residents. On the upside, Scottish airport capacity is less constrained than in some parts of the UK, which could lead to relatively faster growth in air passengers departing from Scottish airports.

4.39 We add the Scottish element of any policy measures to produce the post-measures forecast.

UK and Scotland forecasts

4.40 Table 4.10 sets out our APD forecast for the UK, which we have revised up since March. The higher 2018-19 forecast reflects strong growth in passenger numbers in recent months. This is assumed to persist over the rest of the forecast. We have also adjusted our model to reflect a rising trend in Band B 'premium economy' passengers who pay more tax.

4.41 There are no measures that directly affect air passenger duty at this Budget.

Table 4.10: UK air passenger duty forecast

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	3387	3520	3667	3795	3932	4073	
October forecast	3360	3659	3846	3987	4175	4361	4565
Change	**-27**	**139**	**179**	**192**	**243**	**288**	

4.42 Our methodology means the Scottish forecast moves in line with the UK forecast, so it has been revised up as well.

Table 4.11: Scottish air passenger duty forecasts

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	295	307	319	331	342	355	
October forecast	299	326	343	355	372	389	407
Change	**4**	**20**	**23**	**25**	**30**	**34**	

4.43 The SFC produced its most recent forecasts in May 2018, and these are substantially lower than ours, as set out in Table 4.12. There are two main reasons for the differences between our forecasts. First, the SFC use a lower share in line with the GERS historical estimate, whereas we use an average of the HMRC and GERS figures. Second, we have used more recent information at the UK level on stronger-than-expected receipts in 2018-19.

4.44 Our forecasts may converge or diverge in future, since they will be produced at different times of the year – with potentially different data and policies being included – and we may come to different forecast judgements even when presented with the same data and policies. Detailed Scottish data for 2018 is being collected by the CAA that should resolve some of the differences between the three methods reported in Table 4.9.

Table 4.12: Comparison between OBR and SFC forecasts

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
SFC May 2018	277	285	292	301	311	322	335
OBR October 2018	299	326	343	355	372	389	407
Difference	**23**	**41**	**51**	**54**	**61**	**67**	**72**

5 Social security spending

Devolution of social security expenditure

5.1 The Scotland Act 2016 makes provision for several social security benefits to be devolved to the Scottish Government. These benefits are overwhelmingly those that support people who are disabled or in ill-health, or for those people who care for them.[1] The Scottish Parliament also has powers to create new benefits, top up reserved benefits and change some aspects of universal credit. The precise timetable for social security devolution is yet to be agreed between the UK and Scottish Governments.

5.2 Social security is already separately administered in Northern Ireland, so we focus here on social security spending that is administered by the Department for Work and Pensions (DWP) in Great Britain and is subject to devolution. Currently the only benefit that the Treasury has asked us to forecast explicitly for Scotland is carer's allowance, which is the first annually managed expenditure (AME) benefit to be devolved.

Carer's allowance

Background

5.3 Carer's allowance supports individuals providing full-time care for others. The rate for 2018-19 is £64.60 a week, with the rate for future years uprated in line with CPI inflation. Eligibility is contingent on both the carer and the recipient of care meeting several conditions. The recipient of care must already receive the relevant rate of a qualifying benefit.[2] The carer must provide care for at least 35 hours a week and earn less than £120 a week after deductions. Carer's allowance is also subject to various overlapping benefit rules. For example, claimants are not usually able to receive the state pension and carer's allowance at the same time, meaning that most claimants are of working age. Carer's allowance can also not be received where the recipient of care receives a severe disability premium in a means-tested benefit.

[1] The Scotland Act 2016 set out the following benefits to be devolved: attendance allowance, carer's allowance, disability living allowance, personal independence payment, industrial injuries disablement allowance, severe disablement allowance, cold weather payment, funeral payment, sure start maternity grant, winter fuel payment and discretionary housing payments. The Act also provides for other areas to be devolved to the Scottish Government, including payments made under the Scottish welfare fund, the healthy start vouchers scheme and employability programmes.

[2] Disability living allowance higher or middle care, personal independence payment daily living component, attendance allowance, constant attendance allowance (subject to certain criteria) or armed forces independence payment.

Scottish carer's allowance

5.4 Carer's allowance in Scotland is currently administered by DWP on behalf of the Scottish Government. It was devolved in September 2018 and its expenditure is now recorded under the Scottish Government's annually managed expenditure.

5.5 The Scottish Government has introduced a supplement for those who claim carer's allowance in Scotland, which will ensure they receive the same level of benefits as those claiming jobseeker's allowance. This was introduced in September 2018 (backdated to April 2018) and will be worth less than £10 a week over the forecast period. While the supplement seeks to support the same people, it is in effect a separate benefit rather than an increase in carer's allowance and will be subject to different operating procedures.[3] The increased generosity could raise take-up among those currently eligible but not claiming, including those receiving other benefits. The Scottish Government also intends to take over the administration of carer's allowance from DWP, with a stated aspiration to increase take-up. At this stage, we have insufficient information on either change to quantify the effects on our spending forecast.

Trends in carer's allowance expenditure

5.6 Table 5.1 sets out the caseload of carer's allowance payments in Great Britain and Scotland in recent years (i.e. the caseload excluding those who are eligible but do not receive a payment due to the overlapping benefit rules). The caseload in Scotland has been relatively stable at 8.7 to 8.8 per cent of the Great Britain total since 2012-13. This is very similar to Scotland's 8.7 per cent share of Great Britain's working-age population in 2016.

Table 5.1: Carer's allowance payment caseload in Great Britain and Scotland

	Carer's allowance payment caseload (thousands)							
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Great Britain	553	584	618	653	698	760	798	825
Scotland	50	52	54	57	61	66	70	73
	Per cent of Great Britain total							
Scotland	9.0	8.9	8.8	8.7	8.7	8.7	8.8	8.8

5.7 Table 5.2 shows DWP's estimates of carer's allowance expenditure, which similarly shows the Scottish share being relatively stable at 8.7 to 8.8 per cent in recent years.

[3] Carer's allowance supplement will be paid as two lump sum payments covering six months each, based on qualifying dates in April and October each year. The cost of the supplement will be met from the Scottish Government's existing block grant.

Table 5.2: Carer's allowance expenditure in Great Britain and Scotland

	Carer's allowance expenditure (£ millions)							
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Great Britain	1572	1733	1927	2088	2319	2545	2667	2830
Scotland	141	153	169	182	203	222	234	249
	Per cent of Great Britain total							
Scotland	8.9	8.8	8.8	8.7	8.7	8.7	8.8	8.8

Great Britain forecast

5.8 Since eligibility for carer's allowance is related to receipt of other benefits, our forecasts are sensitive to changes in those related forecasts. Our carer's allowance forecast has been affected by the upward revisions to our disability benefits forecasts in recent years. And since carer's allowance cannot be claimed alongside the state pension, spending is also sensitive to changes in state pension age. This has meant carers are more likely to be of working age in recent years, placing further pressure on spending. This was discussed in more detail in our October 2016 *Welfare trends report*. Carer's allowance may also be affected by the conditions attached to receipt of other benefits, and the potential for carers to be exempted from those conditions, though evidence on this is fairly limited at present.

5.9 Our carer's allowance forecast is lower than in March, which reflects partly offsetting changes. Outturns were slightly lower than expected for 2017-18 and we have revised down our qualifying benefit forecasts (reducing our carer's allowance forecast, especially in the near term), but we now allow for additional claims to carer's allowance as a result of there being no severe disability premium in universal credit (raising our carer's allowance forecast by increasing amounts as universal credit is rolled out). We discuss these changes in Chapter 4 of our main *Economic and fiscal outlook*.

5.10 There are no measures that directly affect carer's allowance in this Budget.

Table 5.3: Great Britain carer's allowance spending forecast (excluding Scottish Government supplement)

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	2872	3228	3457	3627	3807	4006	
October forecast	2830	3038	3304	3511	3757	3999	4134
Change	**-42**	**-190**	**-153**	**-115**	**-50**	**-7**	

Scottish forecast

5.11 We use the same methodology as in March for producing the Scottish share of spending on carer's allowance. This uses the most recent expenditure outturn but then allows for slower growth in Scotland's working-age population relative to Great Britain as a whole, based on the Office for National Statistics 2016-based principal population projections. This is similar to the approach we take for our Scottish income and landfill tax forecasts. It results in the

Scottish share decreasing slightly over the forecast period, with a modest effect on spending. Our forecast of carer's allowance expenditure in Scotland is set out in Table 5.4. The main change is due to the revisions in our Great Britain carer's allowance forecast.

Table 5.4: Scottish carer's allowance spending (excluding Scottish Government supplement)

	£ million						
	Outturn	Forecast					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March forecast	251	282	302	316	331	348	
October forecast	249	267	290	308	329	349	359
Change	**-2**	**-15**	**-12**	**-8**	**-3**	**1**	
	Per cent of Great Britain total						
March forecast	8.7	8.7	8.7	8.7	8.7	8.7	
October forecast	8.8	8.8	8.8	8.8	8.7	8.7	8.7
Change	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	

5.12 There are some further refinements that we plan to investigate, such as any Scotland-specific trends that affect the qualifying benefit caseloads, the likelihood of a disabled claimant having a carer who meets the qualifying conditions, and the propensity of eligible individuals to take up their entitlement and whether we should take more account of changes in the age structure of the population.

5.13 Table 5.5 compares our forecast with that published by the Scottish Fiscal Commission (SFC) in May 2018. The SFC forecast uses a different methodology and produces a slightly lower forecast for spending.[4]

Table 5.5: Comparison between OBR and SFC forecasts

	£ million					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
SFC May forecast	267	285	303	318	334	349
OBR October forecast	267	290	308	329	349	359
Difference	**1**	**5**	**5**	**10**	**15**	**10**

[4] The SFC used a more complex age-specific 'auto-regressive integrated moving average' (ARIMA) model.

A Assignment of VAT receipts

Devolution of VAT revenue

A.1 The Scotland Act 2016 makes provision for the first 10 percentage points of standard rate, and the first 2.5 percentage points of reduced rate, VAT receipts generated in Scotland to be assigned to the Scottish Government. VAT will continue to be collected by HMRC and the Scottish Government will not have the power to change the collection or administration of the VAT regime in Scotland, or the power or change VAT rates or the VAT base.

A.2 The UK and Scottish Governments have agreed in principle that VAT assignment will commence from 2019-20. This will be a transition year where the assignment methodology will be tested and there will be no effect on the Scottish Government's budget. Full implementation is then due to commence from 2020-21. Before it is fully implemented the Treasury has asked us to forecast the amount of VAT revenue in Scotland and the rest of the UK. We are not yet in a position to produce a fully considered forecast, so this annex presents an illustrative projection as a placeholder for such a future forecast.

Background

A.3 VAT was introduced in 1973. In broad terms it is a tax on consumption and is levied on the purchase of most goods and services. It is collected from traders and reflected in the price paid when items are purchased. Unlike a simple sales tax, it is levied – as the name implies – on the amount of value added at each stage of production. Around half of household expenditure is subject to the standard rate of VAT at 20 per cent, with the remainder being either exempt or zero-rated. Around three per cent of expenditure is subject to a reduced rate of 5 per cent, notably domestic fuel and power. Our VAT forecast is split into four main sectors: household, exempt, government and housing investment, with household being by far the largest. More information is available in the 'forecast in-depth' page on our website.

Scottish VAT assignment methodology

A.4 Unlike other devolved taxes and spending, VAT will continue to be collected on a UK basis, so taxpayers will not state on their VAT return the country in which the liabilities were generated. This means there is not – and never will be – any outturn VAT data available for Scottish-specific revenues. The amount of VAT assigned to the Scottish Government can therefore only be estimated using proxy analysis.

A.5 A methodology for this assignment is being developed by HMRC, the Treasury and the Scottish Government. We do not have a role in validating or approving the chosen methodology. HMRC analysts have shared initial workings and estimates, which underpin the illustrative projections in this annex. The share of VAT that will be assigned

to the Scottish Government will primarily be estimated from the relative spending of Scottish respondents to the Living Costs and Food survey (LCF). The LCF samples around 12,000 households in the UK. The response rate for the survey has been decreasing and now stands at less than 50 per cent. Recently there have been around 300 to 400 Scottish households among those responding. The LCF sample for Scotland has been doubled for the 2017-18 data collection in preparation for it being used in the VAT assignment calculations. Processing is not yet complete but the Scottish sample is expected to include between 1,000 and 2,000 households. Responses are weighted to compensate for non-response and to match the population distribution in terms of country or region, age group and sex, according to ONS population estimates.

A.6 This approach to assigning VAT receipts to the Scottish Government means that we will in effect need to forecast the share of expenditure of Scottish respondents in LCF. This has parallels to our devolved income tax forecasts that project forward results from HMRC's Survey of Personal Incomes, but in this instance the underlying survey is only a relatively loose proxy for VAT revenues rather than being drawn from taxpayer information.

A.7 The Scottish Fiscal Commission (SFC) will also be required to produce a forecast of VAT revenue assigned to Scotland and has published a paper on some of the issues related to doing so.[1]

An illustrative projection

A.8 HMRC's most recent estimate of the share of Scottish VAT that would be assigned to the Scottish Government under the proposed methodology relates to 2015-16 and was estimated to be 8.44 per cent of the UK total. This is a provisional estimate and is subject to change. As only the first 10 or 2.5 percentage points of the main and reduced VAT rates respectively will be assigned to the Scottish Government, this implies a share of 4.22 per cent would have applied in 2015-16.

A.9 As well as this assignment methodology, HMRC, the Scottish Government and the ONS have published estimates of the historical shares of VAT paid in Scotland. The assignment methodology share is slightly higher than Scotland's share of the UK population, and higher than previous HMRC and Scottish Government estimates, but slightly lower than ONS estimates. There are definitional differences relating to each of these estimates, but like Scotland's share of the UK population all three show a downward trend in the Scottish share since 2010. This is set out in Table A.1.

[1] *Value added Tax (VAT) Approach to Forecasting*, Scottish Fiscal Commission, September 2018.

Table A.1: Estimates of the historical share of net VAT generated in Scotland

	Per cent							
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
GERS estimate all Scotland (Aug 2018)	8.3	8.2	8.3	8.5	8.4	8.3	8.1	8.1
HMRC disaggregated stats estimate all Scotland (Oct 2017)	8.5	8.3	8.3	8.4	8.3	8.3	8.2	8.2
ONS country and regional public sector finances all Scotland (Aug 2018)	8.6	8.4	8.4	8.4	8.4	8.4	8.3	
Memo: Scottish population share	*8.4*	*8.4*	*8.3*	*8.3*	*8.3*	*8.3*	*8.2*	*8.2*

A.10 To produce an illustrative projection for assigned VAT receipts in Scotland, we have assumed that the assignment methodology's latest share is a reasonable starting point. We then make a simple adjustment to allow for slower growth in Scotland's total population relative to the UK as a whole, based on the latest ONS principal population projection. This is similar to the approach we take for our Scottish income, carer's allowance and landfill tax forecasts. It results in the Scottish share decreasing slightly over the forecast period. Our estimate of the share of Scottish VAT is then applied to our UK VAT forecast. We remove the VAT retained by the UK Government, which on current rates would be half of Scottish VAT, before finally adjusting for the effect of any policy costings.

A.11 Our UK VAT forecast has been revised up since March, primarily reflecting stronger in-year receipts and revisions to our forecasts for household spending and nominal GDP. We discuss this in Chapter 4 of our main *Economic and fiscal outlook (EFO)*.

A.12 Our projection is shown in Table A.2.

Table A.2: Illustrative Scottish VAT projection

	£ billion							
	Estimated outturn		Projection					
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
UK	121.6	125.3	132.2	137.2	141.9	146.4	150.8	155.3
of which:								
Assigned to Scottish Government	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.4
VAT from Scotland retained by UK Government	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.4
VAT from the rest of the UK	111.4	114.8	121.1	125.7	130.0	134.2	138.2	142.4
	Per cent							
Assigned to Scottish Government	4.21	4.20	4.19	4.19	4.18	4.17	4.16	4.15
Scottish population share	8.23	8.21	8.20	8.18	8.16	8.15	8.13	8.11
Memo: index Scottish population share 2015 = 100	*99.8*	*99.5*	*99.3*	*99.1*	*98.9*	*98.7*	*98.5*	*98.3*

A.13 The reliance on the LCF sample means that we can expect the 'outturn' estimates and so our forecasts to fluctuate from year-to-year solely as a result of updating the sample, on top of the usual forecast uncertainties that stem from real-world movements.

A.14 There are many refinements that we could be made to the forecast methodology, which could also generate substantial changes. The SFC methodology, for example, makes use of some Scotland-specific economic determinants where we use UK-level ones and would attempt to capture Scottish trends via the percentage share assumption. We could, for example, look to take into account the effect on VAT receipts of differences in the composition of population growth given the age profile on consumer spending reported in the LCF. We will review our methodology once information has been published from the larger LCF sample and the historical estimates and will work closely with HMRC, the Scottish Government and the SFC in doing so.

Effect of UK Government policy measures

A.15 The UK Government announced new policy measures in this Budget with a potential non-negligible impact on Scottish VAT revenues. For most, we assume that their effect on Scottish assigned VAT would proportional to our pre-measures forecast of total assigned VAT.

A.16 The exception is the measure VAT: ensuring proper adjustments. Part of this measure applies VAT to cases where a customer makes a full or part pre-payment for a service or good but then does not use or collect it. Much of the revenue is expected to be generated by the booking and subsequent cancellation of hotel rooms. The share of the yield from this measure is higher in Scotland than in the UK as a whole due to the relatively larger tourism sector in Scotland. Overall, the effect of this measure is highly uncertain due to limited data on which to base the estimate and the potential size of the behavioural response.

A.17 Other policies affecting VAT include maintaining the registration threshold at £85,000 for a further two years, rather than increasing it, and various compliance measures. These are assumed to boost VAT receipts in Scotland proportionately in line with those in the UK.

A.18 Table A.3 shows the impact of UK Government Budget measures on the illustrative assigned VAT forecast. More information can be found in Annex A of our October 2018 *EFO*.

Table A3: Policy costings for Scottish Government assigned VAT

	£ million					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Pre-measures forecast	5546	5728	5910	6079	6247	6419
Total UK Government policy change	neg	12	16	21	23	23
of which:						
VAT: ensuring proper adjustments	neg	9	9	9	9	9
Other	neg	neg	7	13	14	14
Post-measures forecast	5546	5740	5926	6100	6270	6442