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**Developments in devolved income tax**

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Office for Budget Responsibility

## Abstract

*We take a comprehensive look at the evolution of the significant and widening gap in the amount of income tax paid per person in Scotland and Wales relative to the UK as a whole, exploring the drivers behind the changes in order to identify trends that should be factored into our devolved income tax forecasts. We primarily do this by using data from HMRC's Survey of Personal Incomes covering the 14-year period from 2007-08 onwards. We split this into four different income sources and then decompose year-on-year changes into changes in overall and taxpayer populations, and in income tax per taxpayer. For employment income, the biggest driver of the changes, we also assess the respective roles of average earnings and their tax-richness, and composition by sector, age and highest qualification.*

*Overall, our analysis is supportive of our current approach to forecasting Scottish and Welsh income tax revenues in primarily focusing on employment income via HMRC's monthly real time information (RTI) on PAYE earnings. As there are few supporting information sources on the other forms of income, this therefore remains a source of uncertainty for our forecasts. Other areas for further investigation include monitoring the emerging data on the composition of employee earnings in Scotland and Wales compared to the UK as a whole, and exploring whether changes in UK Government policy have contributed to the divergence in income tax paid per person.*

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# 1 Overview

- 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, which are published in our *Economic and fiscal outlook (EFO)*.
- 1.2 As set out in the fiscal frameworks agreed between the UK Government and the Scottish and Welsh Governments respectively, we also produce forecasts for the devolved taxes, including Scottish income tax and the Welsh rates of income tax.<sup>1</sup> These devolved taxes contribute to our overall UK receipts forecast, as reported in the *EFO*.<sup>2</sup>
- 1.3 Our Scottish and Welsh income tax forecasts involve three steps.<sup>3</sup> First, we generate a UK-wide forecast for non-savings, non-dividend (NSND) income tax liabilities.<sup>4</sup> Second, we calculate the Welsh and Scottish shares of UK-wide NSND liabilities. Third, we add the effects of new policy measures. It is the second of these steps that we focus on in this paper. We take a comprehensive look at the evolution of the widening gap in the amount of income tax paid per person in Scotland and Wales relative to the UK as a whole, over the period from 2007-08 to 2020-21, exploring the drivers of these changes in detail.
- 1.4 The purpose of undertaking the analysis in this paper is to identify any trends that are sufficiently persistent and robust that they should be factored into our devolved income tax forecasts. At present, these forecasts are based on predictions about the share of UK-wide income tax that will be raised in Scotland and Wales. The initial share is derived from HMRC's Survey of Personal Incomes (SPI) and then updated in line with the most recent Scottish and Welsh income tax receipts outturn data. We then factor in: (i) insights from HMRC's real-time information (RTI) on tax paid via the PAYE system on employee earnings; (ii) future trends in population growth and the shares of adults aged above and below the State Pension age; and (iii) different per person impacts of newly announced policy measures.

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<sup>1</sup> *Fiscal framework: agreement between the Scottish and UK Governments, August 2023; The agreement between the Welsh Government and the United Kingdom Government on the Welsh Government's fiscal framework, December 2016.* In terms of funding for Scotland and Wales it is our forecast of income tax receipts from *England and Northern Ireland* that directly affects funding for the devolved administrations. This is because the calculation of the block grant adjustment, as outlined in the respective fiscal frameworks, depends on that, rather than our forecasts for Scotland and Wales. However, our England and Northern Ireland forecast is derived by subtracting the Scottish and Welsh forecasts from the UK forecast, so the performance of their respective tax bases matters for their ultimate level of funding. The Scottish Government's fiscal framework also specifies that there is a 'reconciliation' that (using outturn receipts data) compares the block grant adjustment, which relies on our England and Northern Ireland income tax forecast, to the Scottish income tax forecast produced by the Scottish Fiscal Commission. Given the lag in publishing outturn data, the reconciliation affects the Scottish Government's annual Budget and funding requirement and is an ongoing source of uncertainty.

<sup>2</sup> Discussed in detail in our *Devolved taxes and spending*, which is published alongside each *EFO*.

<sup>3</sup> The methodology is discussed in more detail in Annex A.

<sup>4</sup> Income tax derived from savings and dividends income has not been devolved.

- 1.5 In preparing our forecasts we consult with officials in HMRC, the Scottish and Welsh Governments and the Scottish Fiscal Commission and can make further adjustments to our forecast if that engagement (or evidence from other sources) identifies effects that asymmetrically impact either nation’s economy, such as differential earnings growth.
- 1.6 Our forecast methodology therefore already includes several mechanisms that enable us to adjust the Scottish and Welsh shares to reflect new information. This includes near-term developments relevant to the in-year estimate as well as medium-term changes, some of which may arise in our discussions with devolved authorities. This paper seeks to further inform our approach by looking at longer-term trends in Scottish and Welsh income taxes, relative to the UK as a whole, that we could usefully incorporate in our forecasts.
- 1.7 The analysis in this paper finds that the gaps between income tax raised per person in Scotland and in Wales relative to the UK are significant and growing in both nations. In Scotland, the gap in income tax per person has risen from £358 (13.5 per cent lower) in 2007-08 to £553 (19.0 per cent lower) in 2020-21. The same metric for Wales has risen from £939 (35.4 per cent lower) in 2007-08 to £1,221 (41.9 per cent lower) in 2020-21.

Chart 1.1: Gap in income tax paid person in Scotland and Wales relative to the UK



Source: HMRC, OBR calculations

- 1.8 In both nations, income tax paid on employment incomes is the largest source of difference in levels terms (contributing to 62 per cent of the gap in Scotland and 72 per cent in Wales) and also the largest source of the widening in the gap over time (contributing to around seven-tenths of the widening for each). But the reasons for the rise vary across each nation. In Scotland, it is the sharper relative decline in the share of the population that are employees which is the largest contributor and accounts for 43 per cent of the total growth. In contrast, for Wales the primary driver is the much weaker relative growth in employment income tax per taxpayer, which accounts for two-thirds of the total. Trends in the relative performance of self-employment, pensions, and other income, are of second-order importance.

- 1.9 Deeper analysis of employee earnings identifies some interesting trends, but none that are material to the overall changes when quantified. We explore compositional differences by sector, age group, and highest qualification, and how they have changed over time. This reveals that sector and age group differences typically explain modest differences in the level of income tax paid per person, while the qualifications difference is more material in Wales. Sectoral changes account for 3 per cent and 5 per cent of the widening income tax per person gap between the UK and Scotland and Wales respectively. Qualification changes explain 8 per cent of the widening earnings gap for Wales.<sup>5</sup>
- 1.10 Overall, the analysis in this working paper supports the case for continuing to focus primarily on employment income via RTI earnings data when forecasting the Scottish and Welsh shares of UK-wide income tax revenues. But we will continue to supplement this with additional timely information on the labour market given the importance of employment income on the forecast. Our analysis also points to modest potential gains from deeper analysis of timely data on employee earnings in the period between the lagged full outturn data on devolved income tax and the year in progress. But it reminds us that there are few supporting information sources on other forms of income, for which the tax system itself is the main data source, and that these sources of income, while smaller than employee earnings, are more volatile from year to year. They will therefore remain a source of uncertainty in our devolved income tax forecasts and are difficult to incorporate into our forecast in a timely manner.
- 1.11 While our forecast methodology does account for the large and growing gap between income tax per person in Scotland and Wales relative to the UK, we will continue to closely monitor each of these data sources, and other relevant factors, and adjust our forecasts accordingly if we find that any are consistent drivers of earnings differentials. Avenues for further research include: the relative trends in the shares of adults with different qualifications in the devolved nations compared to the UK as a whole, which we know is an issue for Wales; whether UK Government policy decisions, such as the above-inflation rises in the personal allowance during the 2010s has played a part in the widening gap; and whether drilling down into the RTI data on a sub-national level reveals more insights.
- 1.12 We will also continue to engage with the wider devolved fiscal community, especially the Scottish Fiscal Commission whose own Scottish income tax forecast relies on a bottom-up approach that is built on a forecast of the Scottish economy. This collaboration is a further source of valuable evidence that we can bring to bear in our devolved income tax forecasts.

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<sup>5</sup> Due to data limitations, we have used two separate sources to conduct the sectoral and qualification analysis. This means these estimates cannot simply be added together to arrive at an overall 'sectoral plus qualification' impact.

## 2 Introduction

### Background

- 2.1 Income tax is the largest of the taxes to have been devolved to the Scottish and Welsh Governments under the process of fiscal devolution since the 2010s. It has been devolved in stages:
- The Scotland Act 1998 initially gave the Scottish Parliament the power to vary income tax rates by plus or minus 3 pence, a power that was never used. The Scotland Act 2012 granted the Scottish Parliament the power to vary the rates by up to 10 pence in each band, from April 2016, again this power was not used. The Scotland Act 2016 established, from April 2017, the system of income tax currently in place, with the Scottish Government receiving full non-savings, non-dividend (NSND) income tax liabilities from taxpayers in Scotland. These reforms also gave the Scottish Parliament the power to vary all rates and thresholds separately (other than the personal allowance) and to create new bands paying different rates.<sup>1</sup>
  - The Welsh rates of income tax have been devolved to the Welsh Government since April 2019. Unlike in Scotland, the existing basic, higher, and additional rates of income tax levied by the UK Government are reduced by 10p in the pound for those individuals defined as Welsh taxpayers. The Welsh rates levied on top of these reduced UK rates are set by the Welsh Senedd and currently remain at 10p for each band of income tax, thereby keeping income tax rates in Wales at the same levels as those that are paid by taxpayers in England and Northern Ireland.
- 2.2 Tax devolution allows the devolved administrations to generate their own tax receipts, which contribute directly to their budgets, but have been accompanied by a reduction in the level of block grant funding that they receive from the UK Government.<sup>2</sup> The block grant remains the single largest component of funding for the devolved administrations.
- 2.3 The fiscal frameworks agreed between the Scottish and Welsh Governments and the UK Government<sup>3</sup> mean that the Scottish and Welsh budgets are sensitive to changes in the amounts of income tax raised *per person* in each, *relative to* the amounts that are raised per person by the UK Government's income tax regime (referred to as the 'rest of the UK', which for income tax purposes means England and Northern Ireland).

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<sup>1</sup> The Scottish Government is able to utilise a zero-rate band that gives them effective control over the personal allowance.

<sup>2</sup> Similarly, the devolution of some elements of welfare spending to Scotland was accompanied by an increase in block grant funding.

<sup>3</sup> *Fiscal framework: agreement between the Scottish and UK Governments, August 2023; The agreement between the Welsh Government and the United Kingdom Government on the Welsh Government's fiscal framework, December 2016.*

- 2.4 There are two further sources of uncertainty in the calculation. First, because the taxes have been devolved on a ‘liabilities basis’ (i.e. aligning the budget to the year in which the liability was incurred, rather than when the tax was paid) outturn data are only available with a considerable lag (i.e. once accrued liabilities are known). This requires forecasters to bridge the period between full accrual outturn and the year in progress (for which cash receipts data are available) at the start of each forecast. Second, the Scottish fiscal framework’s reconciliation mechanism compares the Scottish Fiscal Commission’s Scottish income tax revenue forecast with the forecast of the block grant adjustment, which relies on the OBR’s forecast for tax receipts from England and Northern Ireland. We have seen that reconciling on this basis can lead to material impacts for the Scottish budget. For these reasons, there is value in understanding any differences in the path of income tax raised per person in Scotland and Wales relative to that raised in the UK as a whole (in this paper ‘UK as a whole’ is referring to England, Scotland, Wales and Northern Ireland combined).
- 2.5 We therefore take a comprehensive look at how differences in income tax per person in Scotland relative to the UK as a whole, and in Wales relative to the UK as a whole, have evolved since 2007-08, exploring the drivers of these changes over time. While it is our England and Northern Ireland forecast, and not our forecasts for Scotland or Wales, that feeds into the calculations for the block grant adjustment, the former is derived by subtracting the latter from our UK forecast. Therefore, any improvements to the Scottish and Welsh forecasts will directly benefit our England and Northern Ireland forecast too.
- 2.6 Due to the constraints in the available data, our analysis has been done on the basis of *all* income tax paid, rather than confining it to the *NSND liabilities* that have been devolved. But given the dominance of employment income in both total and NSND income tax liabilities, this limitation does not undermine the value of the conclusions we reach.

## How we forecast devolved income tax

- 2.7 We forecast income tax using a ‘top-down’ approach. There are three main stages in generating our forecasts for Scottish and Welsh income tax:<sup>4</sup>
- First, we generate a **UK-wide forecast for NSND income tax liabilities** from the full UK income tax forecast published in our *Economic and fiscal outlook (EFO)*. We derive this from our full-UK income tax forecast by time-shifting our self-assessment forecast so that it is on a liabilities basis (rather than cash) and then remove the savings and dividends components of income tax (that are not devolved).
  - Second, we calculate the **Scottish and Welsh shares of UK liabilities** and apply these to the UK forecast, using HMRC’s annual Survey of Personal Incomes (SPI) data as a starting point. We then supplement this with in-year monthly RTI earnings data (derived from HMRC’s PAYE tax system), which we scale up using monthly tax profiles (based on patterns from previous years) to generate a full-year forecast. We then align to the latest outturn year for Welsh and Scottish income tax liabilities and grow the share in

<sup>4</sup> See Annex A for a more detailed outline of our methodology.



line with ONS population projections, reflecting different growth rates in the adult populations for Scotland and Wales above and below the State Pension age, weighted by the proportion of NSND income tax they pay.

- Third, we add on the effects of **policy measures** announced since our previous forecast.

2.8 The Scottish Fiscal Commission (SFC) provide the income tax forecast that the Scottish Government uses when setting its Budget. Their modelling is underpinned by their forecast of the Scottish economy, including the path of Scottish GDP, rates of employment and earnings growth. In other words, they use a ‘bottom-up’ methodology based on a micro-simulation forecast. As well as using a different approach, the SFC’s forecast also takes place at different times to ours and relies on the judgements of its commissioners, while we rely on those of our Budget Responsibility Committee. For these reasons and more, our forecasts will not be the same as those from the SFC’s – but the evidence to date shows the overall forecasting performance has been similar. Comparing the outturn data to each organisation’s forecast over the past four years shows that the average annual difference, in absolute terms, is 5.3 per cent for the SFC and 6.7 per cent for the OBR. Those differences drop to 3.1 per cent and 3.6 per cent respectively if we omit the pandemic-impacted 2021-22 forecasts.<sup>5</sup>

## Rationale for this paper

2.9 Our forecasts for devolved income tax rely on applying the Scottish and Welsh shares of UK liability to our UK forecast. In this paper we explore whether drilling deeper into the SPI and other data sources identifies trends that we should be incorporating when projecting these shares over our 5-year forecast, particularly those relating to differential growth rates in income tax per person across the different nations of the UK. We also ask whether there is more we can be doing with the existing data.

2.10 Our present forecast methodology includes several mechanisms that allow us to adjust the Scottish and Welsh shares. The first is that the initial shares are derived from the most recent SPI, which for our November 2023 forecast covers 2020-21, so the shares are updated with each new vintage of the SPI. Income tax outturn data is available for 2021-22, so we then align to that. We use RTI data to bridge the gap between the outturn data and the current forecast year, so across 2022-23 and 2023-24 for the November 2023 forecast. The relative rates of population growth apply from 2023-24 onwards. So there are several ways that we factor in near-term shifts in the Scottish and Welsh shares into our forecast.

2.11 Asymmetric medium-term effects are captured in four ways: first, the changes that we make to the short term flow through to the medium term; second, the impact of relative population growth continues across the forecast; third, we include different per-person impacts of new policy measures; and fourth, by making explicit forecast judgements, for example around earnings growth at the top end of the income distribution. In theory,

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<sup>5</sup> These differences relate to each organisation’s ‘Budget-setting’ forecast (which usually take place during the autumn ahead of the respective Government’s fiscal events).

making asymmetric Scottish and Welsh economy judgement should compensate for any limitations from our reliance on an all-UK forecast, and in the former's case bring us closer to the SFC's bottom-up forecast that is built on their Scottish economy forecast. Indeed, one of the ways that we are able to incorporate such effects is through direct engagement with the SFC and other experts in Scotland and Wales.

2.12 In practice, the assumed shares have not greatly deviated over our medium term forecasts, whereas the analysis we present in this paper shows that UK-wide income tax per person *has* grown more strongly than that in either Scotland or Wales over the past decade. We therefore review these past trends in detail and consider whether we should factor in the continuation of any longer-term trends more explicitly.

2.13 Our analysis does not identify a 'silver bullet' solution that we can use to immediately improve our forecasts, though it does support our current focus on employment income via RTI earnings. It also identifies several areas for further research, including the relative changes in sectoral compositions, trends in the shares of adults with different qualifications, interrogating the RTI data at a sub-national level and exploring whether past policy decisions, such as the UK Government's above-inflation rises in the personal allowance during the 2010s has played a part in the widening gap. We will closely monitor each of these data sources, and other relevant factors, and adjust our forecasts accordingly if we find that any are consistent drivers of earnings differentials.

## Outline of our approach

2.14 In this paper we analyse developments in the Scottish and Welsh income tax bases, starting with a high-level disaggregation of each into their shares of the UK-wide population and income tax liabilities per person. We explore differential trends in income-tax-per-person gap between Scotland (in Chapter 2) and Wales (Chapter 3) and the UK as a whole in more detail, splitting by income source:<sup>6</sup>

- **employment** income;
- **self-employment** income;
- **pension** income; and
- **other** income.

2.15 We then decompose year-on-year changes in this gap into:

- changes in the **relevant population** (e.g. employees, self-employed people and pensioners) relative to the total population;
- changes in the **share of that relevant population who are taxpayers**;

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<sup>6</sup> Annex A presents more information on our forecast methodology.

- changes in average **income tax per taxpayer**; and
- for **employment income** (the largest income source, and the biggest driver of changes), we further explore the respective roles of **average earnings**, and their **tax-richness**, and explore the role of changes in the **composition by sector, age and highest qualification**.

2.16 Our analysis is largely based on the SPI, which draws on several administrative tax systems. The data spans a 14-year period from just before the financial crisis to the first year of the pandemic, which therefore spans the devolution of income tax to the Scottish and Welsh Governments, as well as the Scottish Government's subsequent changes to the Scottish income tax schedule. While we forecast NSND income tax, the SPI data covers all income tax, including savings and dividends components that are not devolved. Unfortunately, it is not possible to split out savings and dividends income tax from other non-employment, non-pension forms of income in the SPI, but this limitation does not affect our analysis or conclusions as the majority of income tax is derived from employment, for which there is a rich source of data that we have explored in this paper.

# 3 The Scottish income tax base

## Introduction

- 3.1 As set out in Chapter 2, our approach to forecasting Scottish income tax is based on forecasting the Scottish share of UK liabilities, which is itself based on forecasts for the Scottish share of the UK-wide population and for income tax paid per adult.<sup>1</sup> This provides the foundation for our forecasts of the specific elements of income tax in Scotland and the rest of the UK that feature in the devolution of income tax to the Scottish Government.
- 3.2 It is year-on-year changes in Scottish income tax revenues relative to those in the rest of the UK that influence the revenues available to the Scottish Government in each Budget year, though as we explain in Chapters 1 and 2, the actual funding calculations do not rely on our Scottish income tax forecast.
- 3.3 Understanding trends in the Scottish share of the population and the ratio of income tax liabilities per person in Scotland versus the UK as a whole is therefore central to identifying the factors that drive this share and potential improvements to our forecast methodologies.
- 3.4 In this chapter, we:
- analyse **developments in the overall Scottish income tax base**;
  - carry out a high-level **disaggregation of the Scottish tax base relative to that of the UK** as a whole;
  - **explore the underlying drivers of changes to the tax base**, splitting by employment income, self-employment income, pension income and other income sources; and
  - **draw some conclusions** from our analysis.

## What does the Scottish income tax base look like?

### The Scottish share of income tax

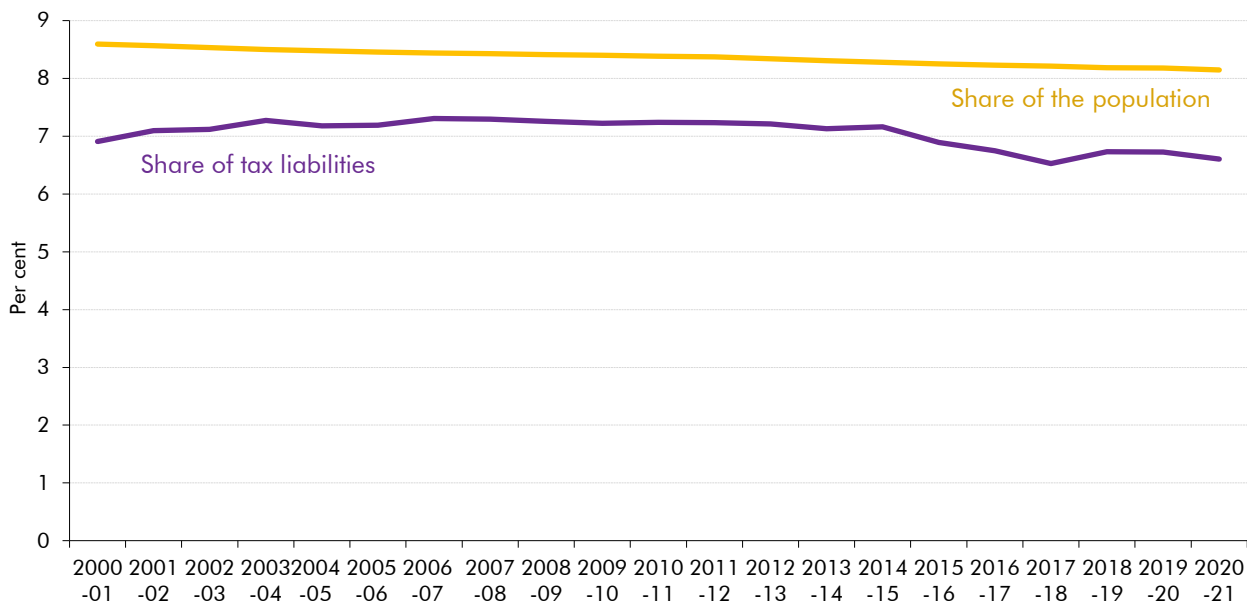
- 3.5 Between 2000-01 and 2020-21, the Scottish share of total UK income tax liabilities was consistently lower than Scotland's share of the UK population, and both shares fell over the period (Chart 3.1). The Scottish share of the UK population has declined steadily from 8.6 per cent in 2000-01 to 8.4 in 2007-08 (the starting point for the analysis in the remainder of this chapter) and further to 8.1 per cent in 2020-21. The Scottish share of income tax

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<sup>1</sup> Annex A goes into more detail on our forecast methodology.

liabilities rose slightly from 6.9 per cent in 2000-01 to 7.3 per cent in 2007-08, before falling to 6.6 per cent in 2020-21. So, over the whole of the past twenty years, Scotland’s share of income tax liabilities has declined more rapidly than its share of the total UK population, with much of that decline occurring since the onset of the financial crisis. This has meant that the amount of income tax paid *per person* in Scotland has fallen in relative terms over this period.<sup>2</sup>

Chart 3.1: The Scottish shares of UK income tax liabilities and population

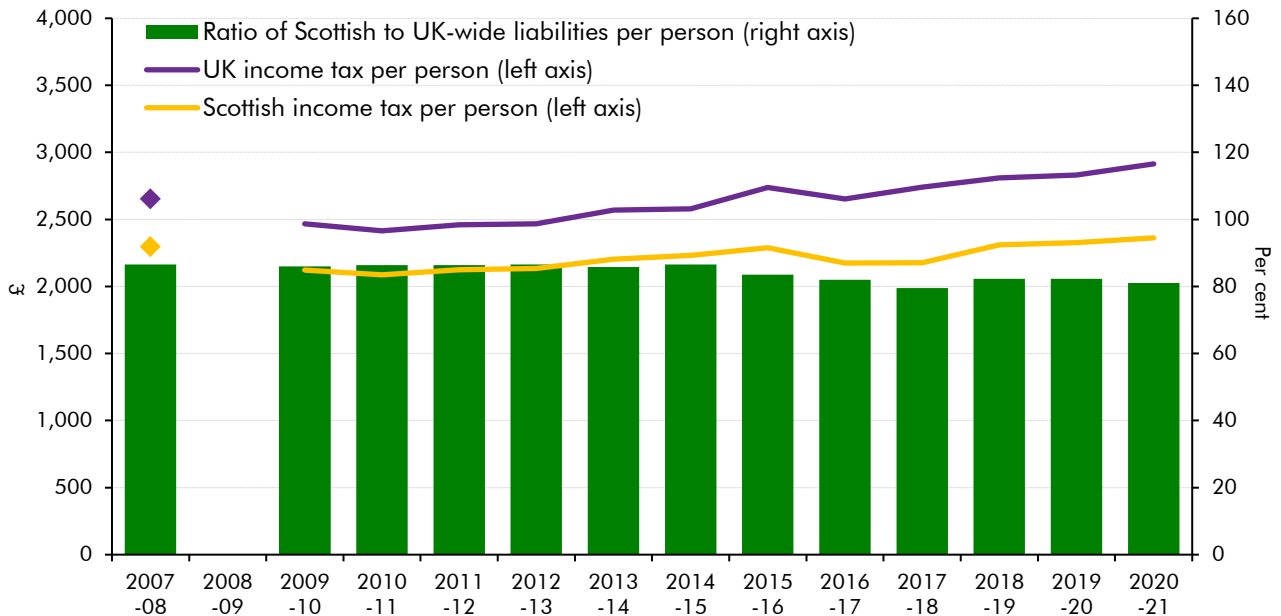


Note: HMRC did not publish SPI data for 2008-09 so the shares are based on interpolation from the adjacent years.  
Source: HMRC, ONS

3.6 While the level of average income tax paid per person has always been higher UK-wide than in Scotland, Chart 3.2 shows that changes in this measure in Scotland (yellow line) and the UK (purple line) were very similar between 2007-08 and 2014-15, but then diverged. Since 2014-15, the gap has widened as the Scottish figure rose by less than that for the UK as a whole (an increase of 5.8 per cent or £130 in Scotland, compared to 13.0 per cent or £335 in the UK between 2014-15 and 2020-21). This meant that having remained stable at around 86 per cent between 2007-08 and 2014-15, the ratio of Scottish to UK-wide liabilities per person (the green bars) dropped to an average of 82 per cent between 2015-16 to 2020-21. The Scottish Government introduced its 5-band income tax schedule in 2018-19, which may have contributed to the slight uptick in the latest years.

<sup>2</sup> Most of the analysis in this paper is on a *per person* basis. The population data that underpins this does not capture the latest census data.

Chart 3.2: Income tax liabilities per person in Scotland and the UK



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

### Income tax liabilities per person: Scotland versus the UK

3.7 Income tax liabilities per person were also lower in Scotland than in the UK as a whole across the entire period, with the gap rising from £358 (13.5 per cent) in 2007-08 to £553 (19.0 per cent) in 2020-21 (shown in the two panels of Chart 3.3). For both years the largest difference is explained by lower tax from employment income (58 per cent in 2007-08, rising slightly to 62 per cent in 2020-21), which outweighs the combined impact of the other three income streams: self-employment, pension, and other income.<sup>3</sup>

3.8 Other income streams include property income (taxation of which is devolved) and income from savings and dividends (taxation of which is reserved to the UK Government). While the full SPI data (available only to HMRC) does allow us to further disaggregate ‘other income’ (though not in the ‘public use tape’ version of the data) we decided against asking HMRC analysts to drill further into the stream. This was a pragmatic decision that reflects our view that this is unlikely to be a major limitation in our analysis, given that employment income is clearly the most important factor.<sup>4</sup> However, this does make it harder to interpret the differences identified within that stream and also means it is not possible to focus solely on non-savings, non-dividend income – the elements of income tax that have been devolved to the Scottish and Welsh Governments.

<sup>3</sup> We have previously shown the difference in terms of income tax liabilities per person by separating differences relating to the share of the population paying tax and their average incomes, with a residual effective tax rate term that captures all other reasons for “less tax per pound of income” (see our 2019 *Welsh taxes outlook*). In this paper we instead look at the four different income streams separately, going into more detail on the drivers of trends in each, using the relevant data.

<sup>4</sup> Further investigating ‘other’ income is an area for future research.

Chart 3.3: Scottish and UK income tax liabilities per person

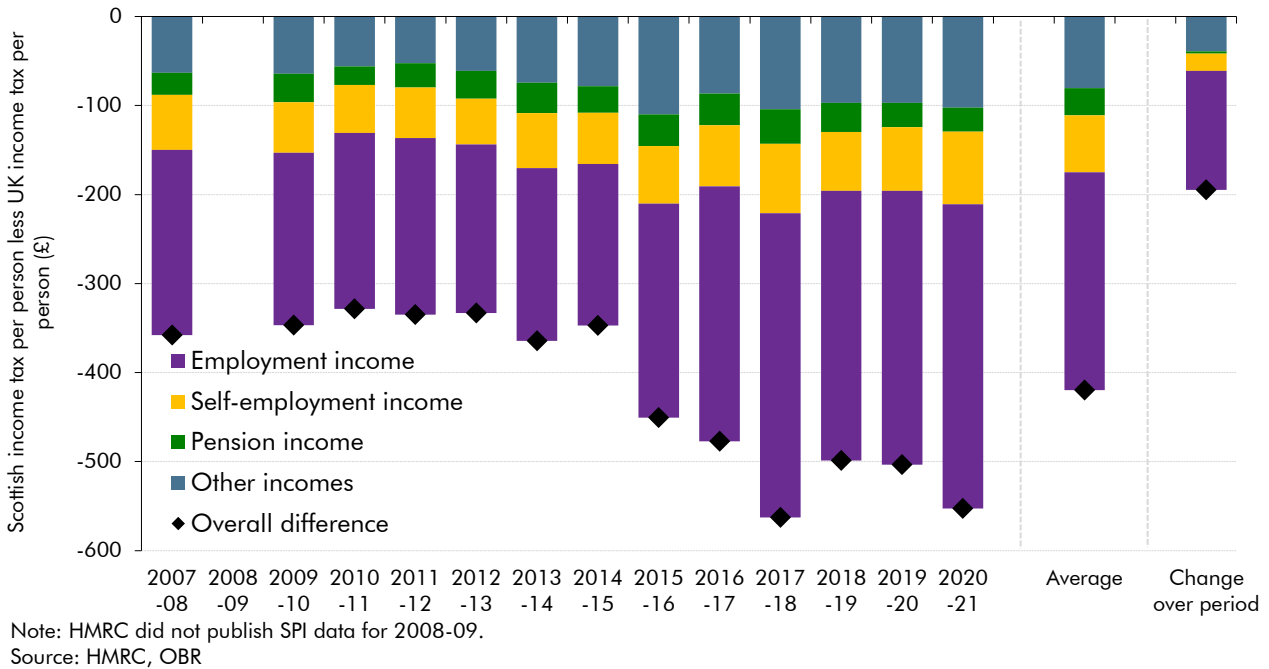


Source: HMRC. OBR calculations

3.9 Chart 3.4 extends this analysis of the difference between the income tax per person in Scotland and the UK, split by income stream, to all years. It shows that:

- Scottish **income tax per person** was lower than that in the UK as a whole over this period by an average of £420 (16 per cent). This difference rose from an average of £345 (14 per cent) between 2007-08 and 2014-15 to £508 (18 per cent) from 2015-16 onwards.
- Tax on **income from employment** is the biggest source of difference in every year, contributing an average of £245 a year (58 per cent of the total).
- The combined impact of **the other three streams** is to lower income tax per person in Scotland relative to the UK by an average of £175 a year across the whole period (£80 from other income, £64 from self-employment and £31 from pension income).
- Of the £195 **change between 2007-08 and 2020-21** in the Scotland-UK income tax per person gap, almost seven-tenths was driven by tax on income from employment.

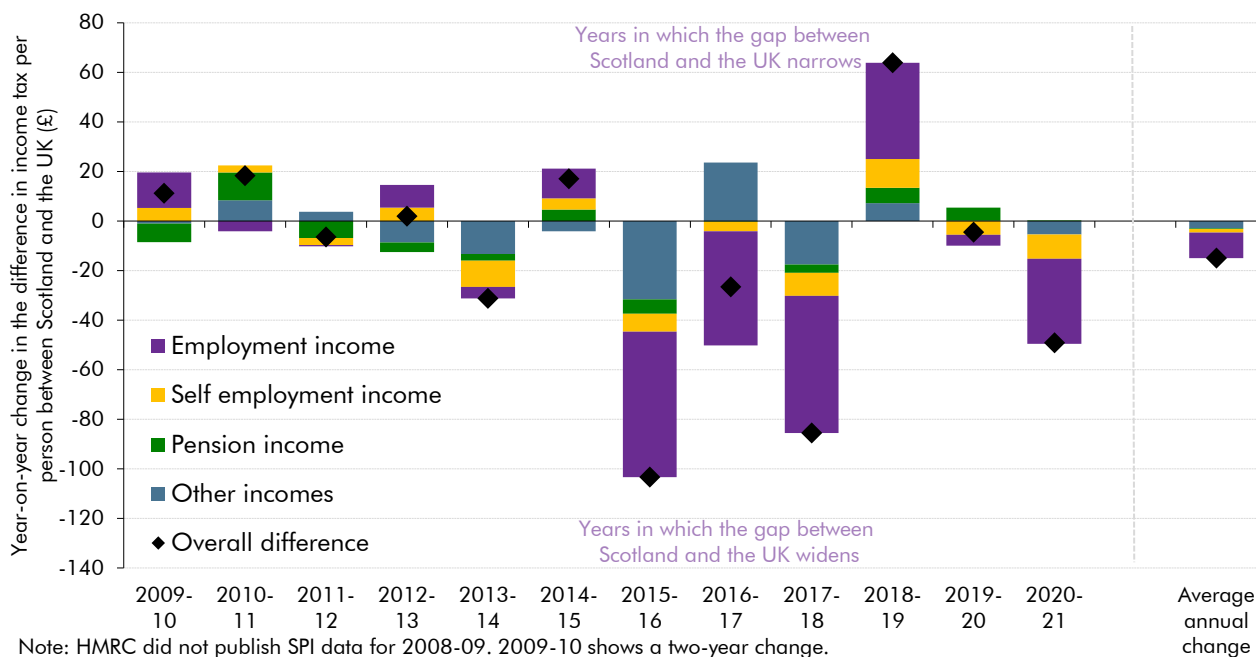
Chart 3.4: Differences in income tax per person between Scotland and the UK



3.10 While income tax per person in Scotland is lower than that in the UK in every year and the overall trend since the late 2000s is of a growing gap, Chart 3.5 shows that the year-to-year movements are uneven, especially in more recent years. The difference in income tax per person widened by an average of £15 a year (again, mostly due to income from employment). But while there are seven years in which the difference widens, there are also five in which it narrows. These fluctuations matter since we must judge how the Scottish share evolves over the five years of our medium-term forecasts (and the years between the latest outturn data and the current year), which requires attempting to determine how much of any change in the most recent year will persist.



Chart 3.5: Year-on-year changes in the difference between income tax per person in Scotland and the UK as a whole



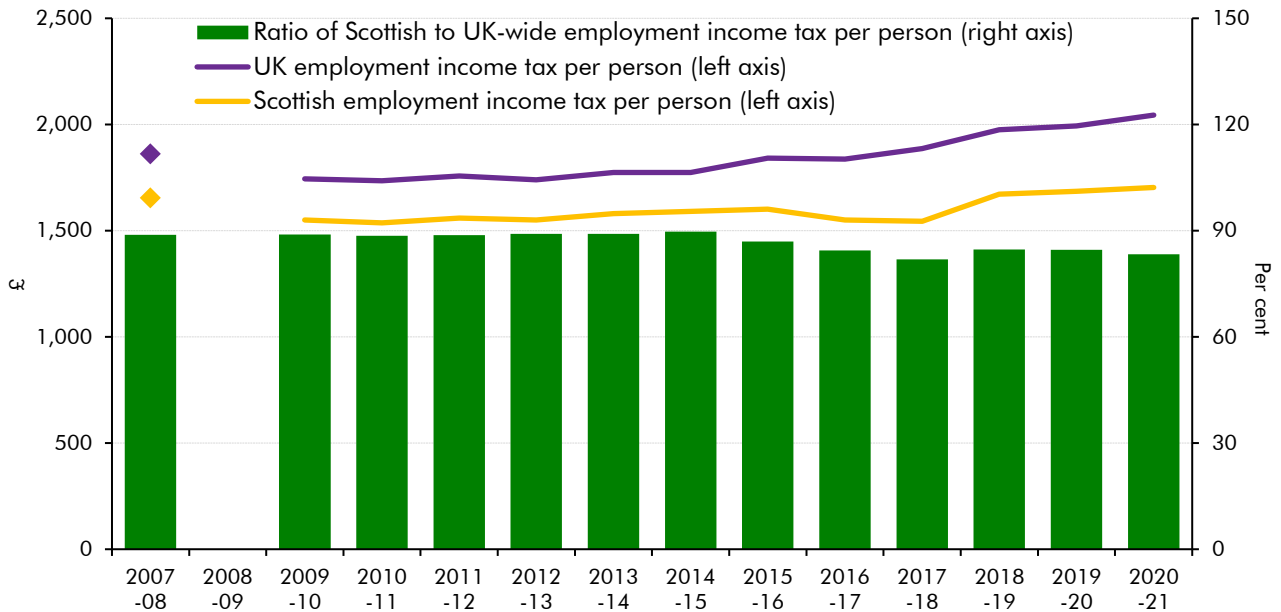
3.11 The following sections examine these changes in more detail, assessing the drivers within each of the four income tax streams.

## Income tax from employment

3.12 Income from employment (very largely comprising employee earnings, but also including small amounts of contributory benefit payments) is comfortably the largest income stream within the SPI, accounting for around 70 per cent of total UK-wide income and 72 per cent in Scotland. These proportions have been reasonably stable since 2007-08.

3.13 Chart 3.6 shows that income tax per person from employment in Scotland was lower than that in the UK in every year, with the gap widening in recent years (Chart 3.7, left panel). In 2020-21, the gap was £342 (16.7 per cent), up from £208 (11.2 per cent) in 2007-08; it averaged £245 over the whole period. While tax on employment income per person grew by £183 (10 per cent) in the UK overall between 2007-08 and 2020-21, it was considerably slower in Scotland, only growing by £50 (3 per cent). This has driven a fall in the ratio of Scottish to UK-wide employment income tax per person (the green bars) of 5.5 percentage points.

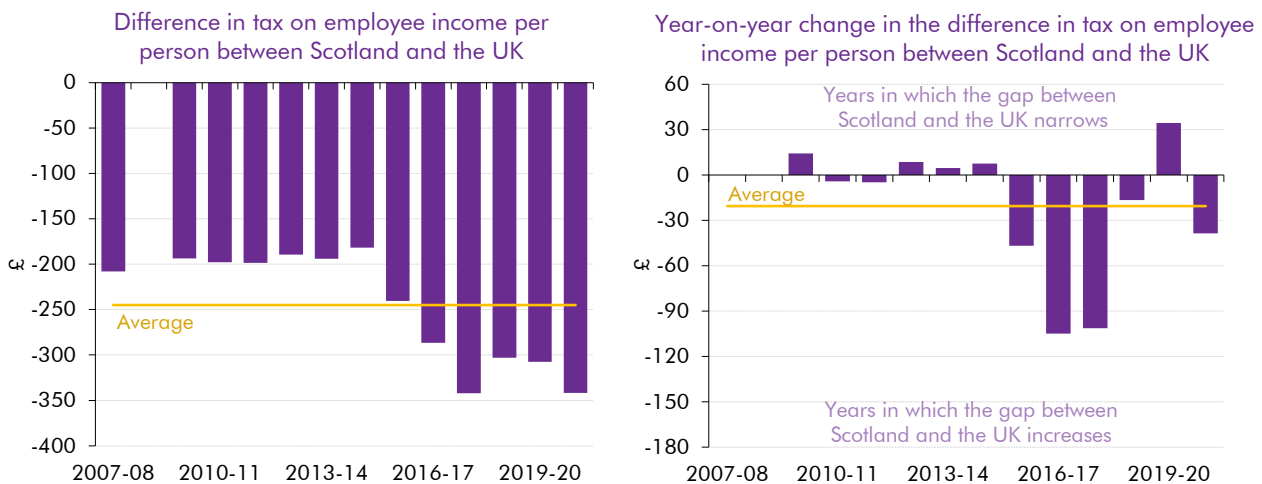
Chart 3.6: Employment income tax per person in Scotland and the UK



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

3.14 In terms of year-on-year changes, the difference between income tax per person from employment in Scotland and the UK widened in seven of the years since 2007-08 but also narrowed in five (Chart 3.7, right panel). The majority of the divergence in income tax from employment per person has occurred since 2014-15 – a period in which the gap widened in six out of seven years.

Chart 3.7: Differences in employment income tax per person in Scotland and the UK



Note: HMRC did not publish SPI data for 2008-09. 2009-10 on right hand chart shows a two-year change.  
Source: HMRC, OBR

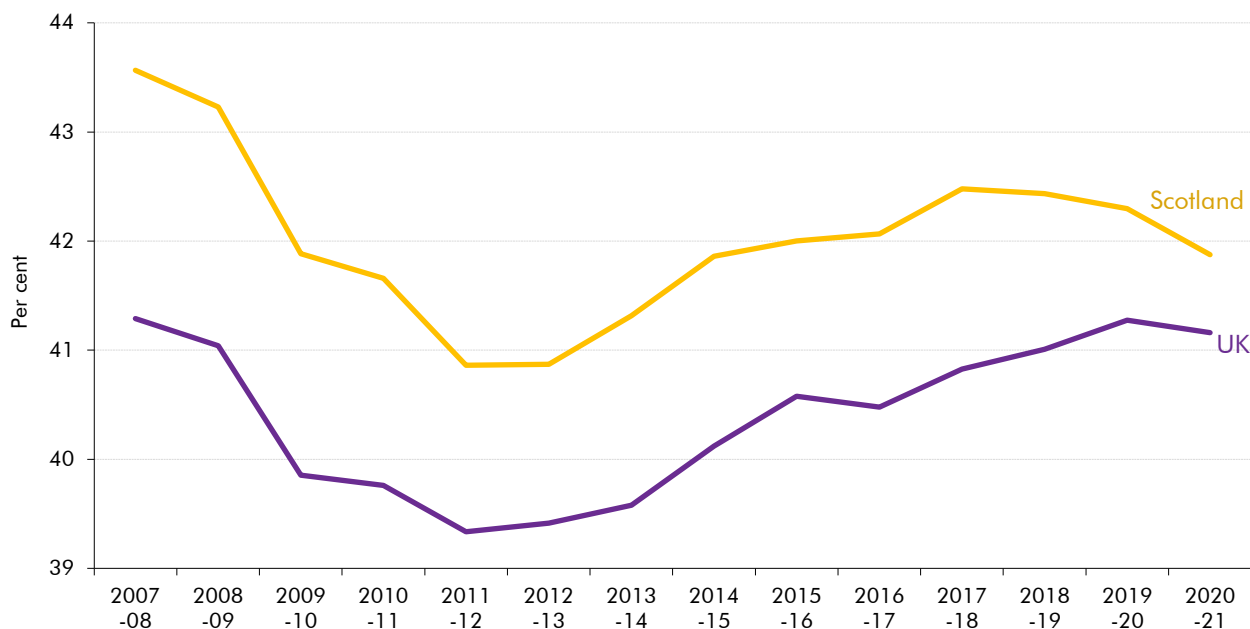
3.15 The following sub-sections drill down into the factors that explain the substantial and widening gap seen in Chart 3.7, bringing data other than the SPI to bear, such as employee numbers and average earnings. These alternatives are also generally timelier than the SPI data (and outturn income tax data for Scotland) and therefore have the potential to inform

forecast judgements for the years between the most recent SPI and the start of the forecast. Specifically, we explore the role of the proportion of the population who are employees, the proportion of employees that pay employment income tax, and the average employment income tax of those taxpayers. For the latter, we explore the extent to which average employee earnings, and their tax-richness, helps us understand changes.

### Proportion of the population that pays income tax from employment

**3.16** A sharper decline in the share of the population that are employees in Scotland relative to the UK as a whole has played a role in the growing Scotland-UK gap in income tax per person from employment. Employees represented 41.9 per cent of the total population in Scotland in 2020-21, slightly higher than the 41.2 per cent figure for the UK overall, but this gap is around one-third the size it was in the late 2000s (Chart 3.8). Scotland’s population grew by 5.7 per cent (around six-tenths of the 9.4 per cent UK-wide growth) but the growth in Scottish employees was just 1.6 per cent (six times slower than the 9.1 per cent growth in the UK as a whole). If the employee-to-population ratio in Scotland had moved in step with that in the UK as a whole (i.e. declining by just 0.1 percentage point over the period, maintaining the 2.3 percentage point positive gap that was observed in 2007-08), and holding all else constant, the gap between Scottish and UK-wide employment income tax per person would have been £66 (19 per cent) narrower at £275 in 2020-21.

Chart 3.8: Employees as a share of the total population

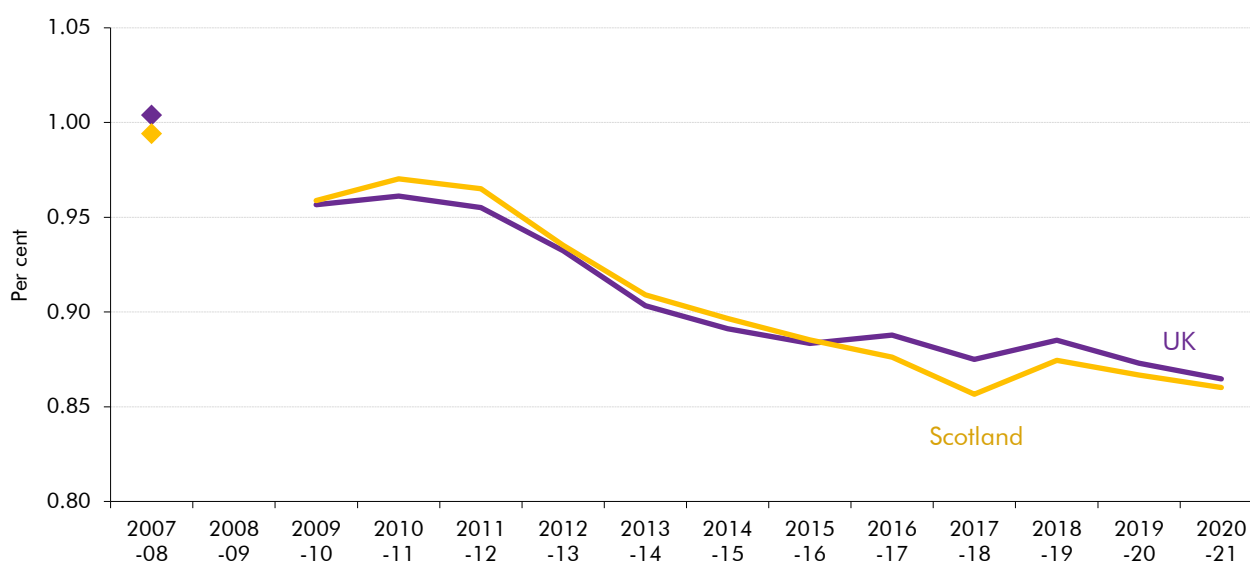


Source: ONS

**3.17** By contrast, changes in the proportion of employees that pay income tax have not contributed to the widening gap between Scottish and UK employment income tax per person since 2007-08, indeed pushing slightly in the other direction. Chart 3.9 shows that the proportion of employees that pay income tax in Scotland is similar to that in the UK (86.1 per cent for both in 2020-21), with the Scottish proportion very slightly higher on

average and having fallen by slightly less since 2007-08. In both series, we can also see the impact of the succession of above-inflation rises in the personal allowance that were implemented by UK Governments over this period, removing lower-income employees from the tax base. Given the limited divergence here, there would be similarly limited impact had the taxpayer-to-employee ratio in Scotland moved precisely in step with that of the UK as a whole.

**Chart 3.9: Ratio of the number of employment income taxpayers to the number of employees**



Note: The ratio is useful to track the implied change in the taxpayer levels over time, but is not a precise estimate of the actual proportion of employees that pay income tax. For example, the numbers of employees and taxpayers are sourced from different surveys. HMRC did not publish SPI data for 2008-09.

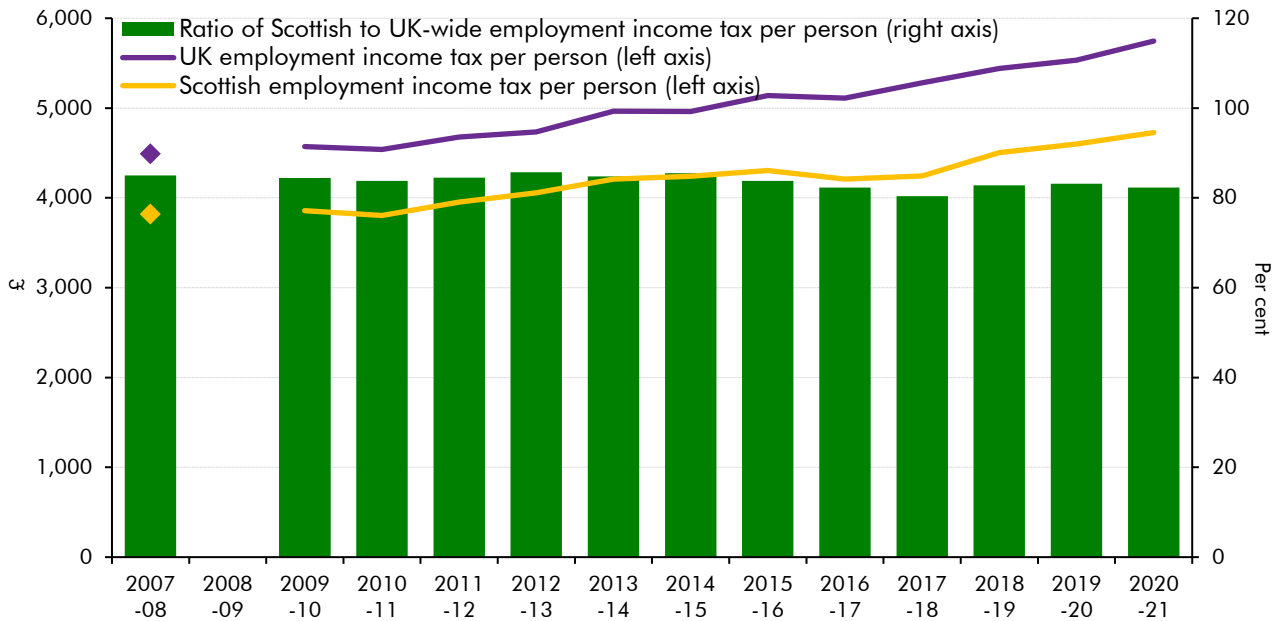
Source: HMRC, ONS

## Average employment income tax per taxpayer

**3.18** Having looked at the journey from the overall population to employment income taxpayers, the other key driver of any potential difference in income tax liabilities between the UK and Scotland is the average amount of income tax paid by each of these taxpayers. We can think of this in two parts: each employment income taxpayer's average income from employment; and the income tax levied on that income. In both cases we can bring other, more timely, sources of data than the SPI data we use to conduct most of the analysis in this paper to bear to understand recent trends, notably data on employee earnings, and their compositional drivers and distribution.

**3.19** Scottish employment income tax per taxpayer has grown by 24 per cent since 2007-08, a weaker rate than the 28 per cent seen in the UK as whole (Chart 3.10). If average employment income tax per taxpayer in Scotland had moved in step with that in the UK as a whole since 2007-08, and holding all else constant, the gap between Scottish and UK-wide employment income tax per person would have been £113 (33 per cent) narrower at £229 in 2020-21.

Chart 3.10: Employment income tax per taxpayer

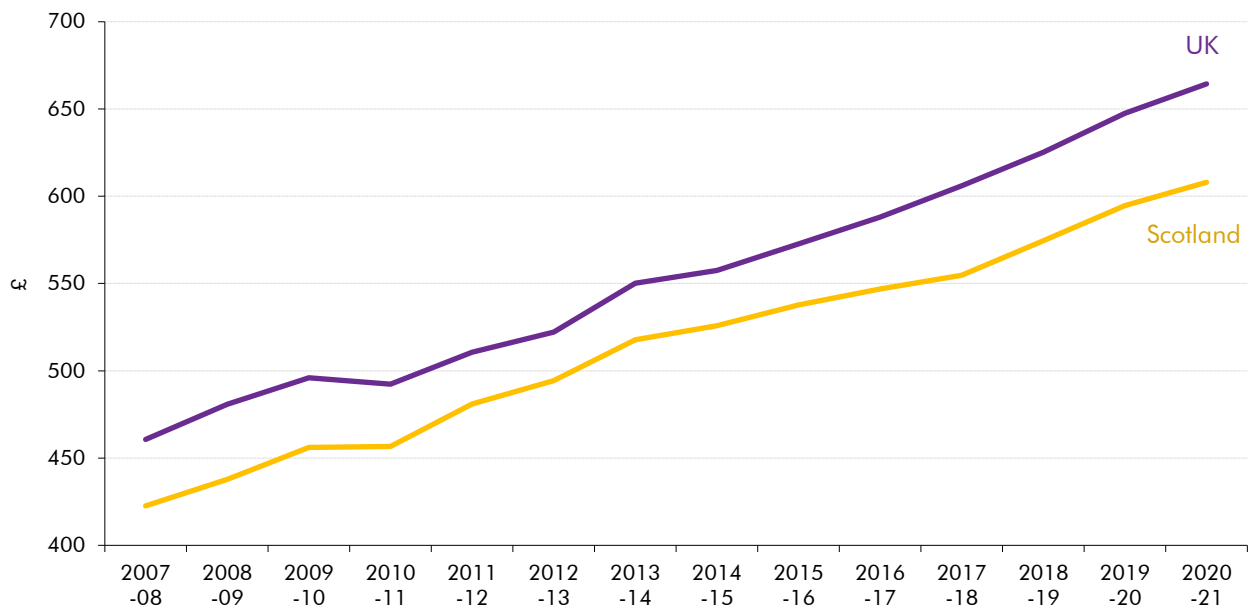


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

Average employment income per taxpayer, and average employee earnings

3.20 Part of this seems to be a result of average income from employment per employment income taxpayer (which we shorten to ‘average income from employment’ for the remainder of the Chapter) in Scotland being notably lower than it is in the UK as a whole. Chart 3.11, which is derived from the SPI, shows that the gap in average weekly employment income has widened in nominal terms over the period, from £1,979 a year (£38 a week) in 2007-08 to £2,939 a year (£56 a week) in 2020-21. In percentage terms the gap has widened from 8.2 per cent to 8.5 per cent.

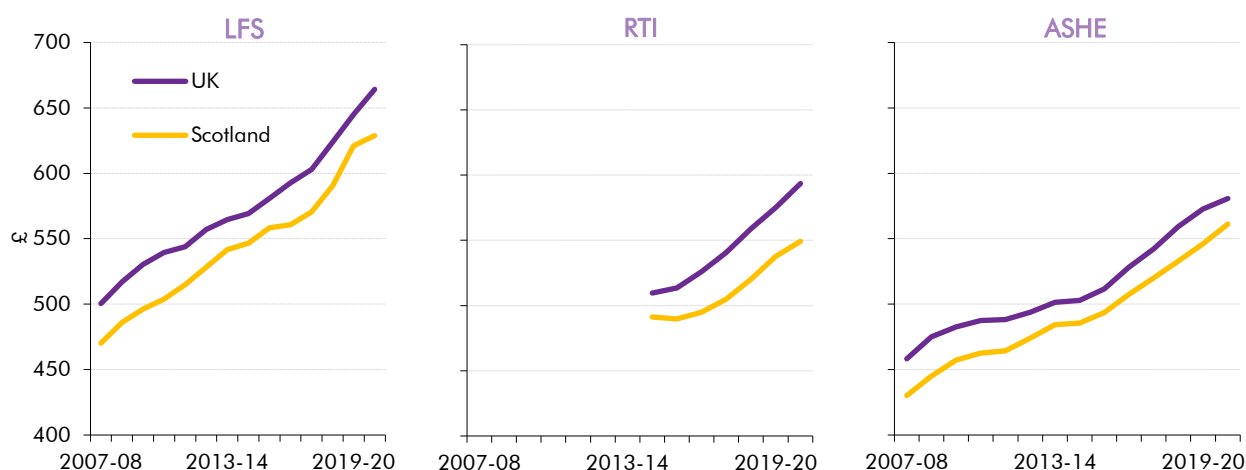
Chart 3.11: Average weekly employment income per taxpayer



Note: HMRC did not publish SPI data for 2008-09. Earnings in that year have been interpolated using ASHE growth rates.  
Source: HMRC, OBR

3.21 Chart 3.12 shows that the scale of the differences in average employment income per taxpayer between Scotland and the UK shown in Chart 3.11 are mirrored in trends in the similar, but not identical, metric of *average employee earnings* that is more commonly monitored via official statistics. This can be seen across three different data sources: the ONS’s Labour Force Survey (LFS), where Scottish earnings in 2020-21 are 5 per cent lower; HMRC’s real-time information from the PAYE system (RTI, 7 per cent lower); and the ONS’s Annual Survey of Hours and Earnings (ASHE, 3 per cent lower).<sup>5</sup> However, there are differences in the paths of Scottish and UK average earnings over time. For example, since 2014-15 the RTI suggests the gap has widened (RTI data is only available from 2014-15 onwards), from 4 to 7 per cent in 2020-21, with the LFS showing a similar picture, whereas the gap has narrowed marginally over that period according to the ASHE data.

Chart 3.12: Average employee earnings across different data sources



Source: HMRC, ONS

3.22 Of the three, the RTI is the most relevant data source for our purposes since it comes directly from PAYE records, and it supports our SPI-based conclusion that the Scottish-UK gap (in the similar metric of average income from employment) has widened, as does the LFS data. We therefore use these sources to explore whether compositional changes in the employee workforce – in relation to sector, age and qualification level – can help us to understand the divergence in employment income tax per taxpayer in Scotland and the UK in recent years.

### Composition of employment income: by sector

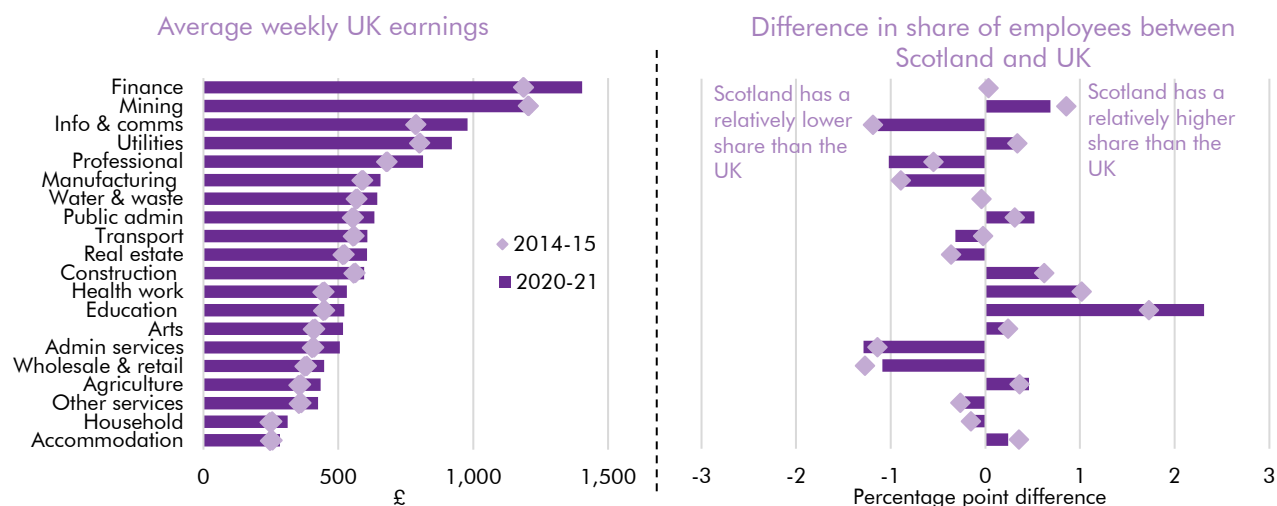
3.23 Have changes in the sectoral composition of the Scottish employee workforce, relative to that across the UK as a whole, driven this average earnings divergence since the mid-2010s as measured in the RTI data? Charts 3.13 and 3.14 explore this question. Chart 3.13 shows the average UK weekly pay in different sectors in 2014-15 and 2020-21 (left panel) and how Scotland’s share of employment in each sector differs from that of the UK as a whole in those two years (right panel). Chart 3.14 plots the change in Scotland’s employee share across each sector, relative to the change in the UK’s share, between 2014-15 and 2020-21, against those sectoral weekly pay levels, to assess whether differences in sectoral

<sup>5</sup> The three sources differ in several ways and are therefore not directly comparable with each other or with the SPI.

employment shifts are likely to have driven changes in the Scotland-UK average weekly earnings differential at the whole-economy level.

3.24 Chart 3.13 shows a mixed pattern of differences between Scotland and the UK in 2020-21 (the bars), meaning that sectoral composition does little to explain overall differences in average earnings levels between the two places. Scotland has a higher share of employees in the high-paying ‘mining’ and ‘utilities’ sectors (the first of which largely comprises the oil and gas extraction industry), but other than those it generally has fewer employees in the other higher-paying sectors. The pattern is also mixed for lower-paying sectors, with Scotland having a higher proportion of employees than the UK average in sectors like education and agriculture, but a lower share in administrative services and wholesale and retail. This mixed pattern suggests that the overall impact of sectoral composition on the earnings differential between Scotland and the UK in 2020-21 is negligible.

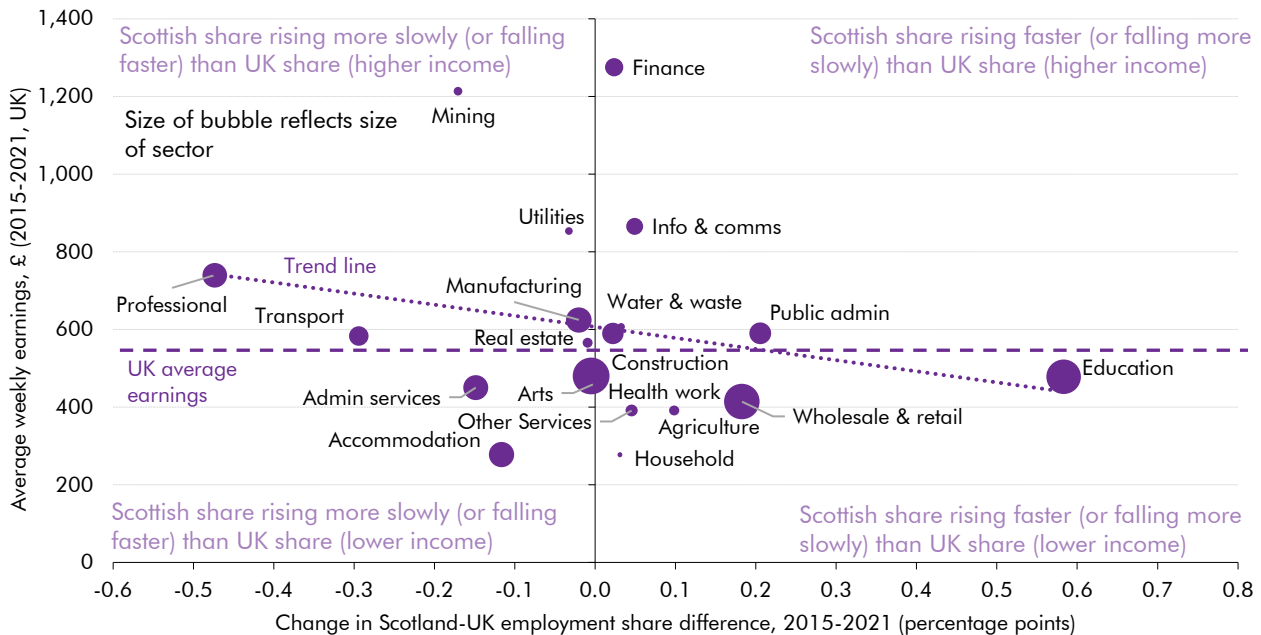
Chart 3.13: Earnings and share of employees by sector, 2014-15 and 2020-21



Source: HMRC

3.25 While sectoral composition does little to explain differences in earnings levels between Scotland and the UK, it is somewhat more informative in understanding changes in this earnings differential between 2014-15 and 2020-21 (as implied by the differences between the bars and diamonds in the right panel of Chart 3.13, which are shown more clearly in the patterns in Chart 3.14). Chart 3.14 contains fewer sectors in the upper-right quadrant (higher-paying sectors where Scotland’s share increased relative to the UK’s over the period) than the upper-left (higher-paying sectors where Scotland’s share decreased relative to the UK’s). The pattern is reversed for lower-paying sectors, where Scotland’s share of employment has increased relative to the UK’s over the period (with more sectors in the bottom-right quadrant than in the bottom-left). Overall, the share of employees in higher-paying sectors (those sectors in the top half when ranked in order) in Scotland between 2014-15 and 2020-21 fell by 0.7 percentage points relative to that in the UK.

Chart 3.14: Change in Scotland’s employee share by sector, relative to the change in the UK’s share, 2014-15 to 2020-21



Source: HMRC

3.26 While unfavourable sectoral trends in Scotland relative to the UK appear to have played a role in driving the divergence in average earnings between the two places, they only explain a small part of it. This is demonstrated in Table 3.1, which uses simple decomposition methods to quantify the role of sectoral composition, relative to other factors, in explaining the Scotland-UK earnings differential in each year. It shows that of the £26 widening in the Scotland-UK earnings gap in this data between 2014-15 and 2020-21 (from -£18 to -£44), only £3 can be explained by changes in the sectoral composition component (which fell from +£5 to +£1). And this pattern has continued in the most recent two years of data (that extend beyond the latest SPI data that underpins this analysis, and the latest income tax outturn data for Scotland, and can therefore inform our forecasts), with a further £10 widening in the overall earnings gap of which £3 is explained by changes in sectoral composition. This suggests that changes in sectoral composition are a relevant factor that we should monitor for our devolved income tax forecasts, but that changing sectoral composition has not been so strong or consistent a driver of earnings differentials that it should obviously feature in our medium-term forecast judgements.



Table 3.1: Sectoral decomposition of the Scotland-UK employee earnings gap

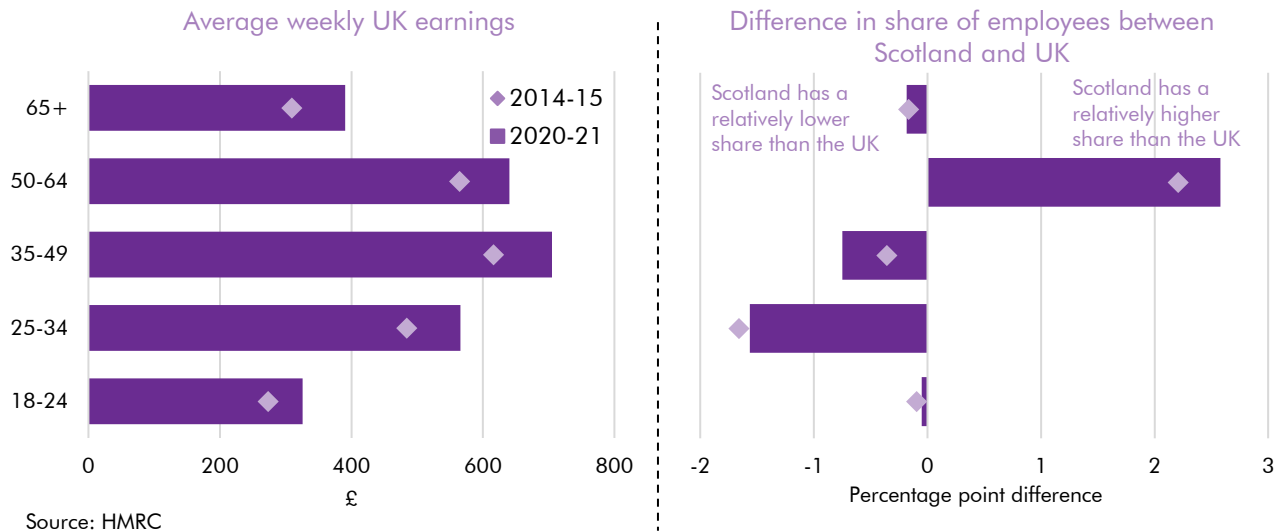
Year	£ per week					
	Employee earnings in Scotland	Employee earnings in the UK	Total earnings difference	Of which:		
				Due to sectoral composition	Due to other factors	
2014-15	491	510	-18	5	-23	
2015-16	490	514	-24	4	-27	
2016-17	495	526	-31	3	-34	
2017-18	505	541	-36	2	-38	
2018-19	520	559	-39	2	-40	
2019-20	538	575	-38	2	-39	
2020-21	549	594	-44	1	-46	
2021-22	582	635	-53	-1	-52	
2022-23	619	673	-54	-1	-53	

Note: Sectoral composition is derived by multiplying the difference in the individual percentage that each sector represents for Scotland relative to England by the average earnings in Scotland and the UK and summing up every sector.

## Composition of employment income: by age

- 3.27 Next, we consider the relative age composition of employees in Scotland and the UK in explaining the gap in average income from employment, again using the RTI data. We already include an age-specific index in our forecast (see Annex A), reflecting differences in average earnings across the age distribution (working-age people generally earn more than pensioners) and demographic factors (Scotland has a relatively older population that is ageing relatively faster). This analysis allows us to explore the impact of more granular age-related differences in earnings across the age spectrum.
- 3.28 Chart 3.15 shows the wide variation in average weekly earnings by age group at the UK level (left panel) and Scotland's relative share of employees in each group (right panel) in both 2014-15 and 2020-21. Of the three higher-earning age groups, Scotland had a significantly higher share of employees among 50-to-64-year-olds and relatively lower shares among 25-to-34- and 35-to-49-year-olds in 2020-21. These differences are only very slightly favourable for Scotland in terms of average employee earnings levels relative to the UK – using the same decomposition methods as in Table 3.1, we find that they are positive but add just £2 a week to the average, compared with the negative overall average earnings gap of £44 a week in 2020-21.
- 3.29 The differences between the diamonds and the bars in the right panel of Chart 3.15 further show that, unlike in the case of sectors, there has been little discernible change in this age composition effect over recent years. Indeed, simple decomposition methods show that the very small boost to average weekly earnings from age composition in Scotland relative to the UK (+£2) has remained constant between 2014-15 and 2020-21 (since when it has fallen modestly to +£1 in 2022-23).

Chart 3.15: Earnings and share of employees by age, 2014-15 and 2020-21

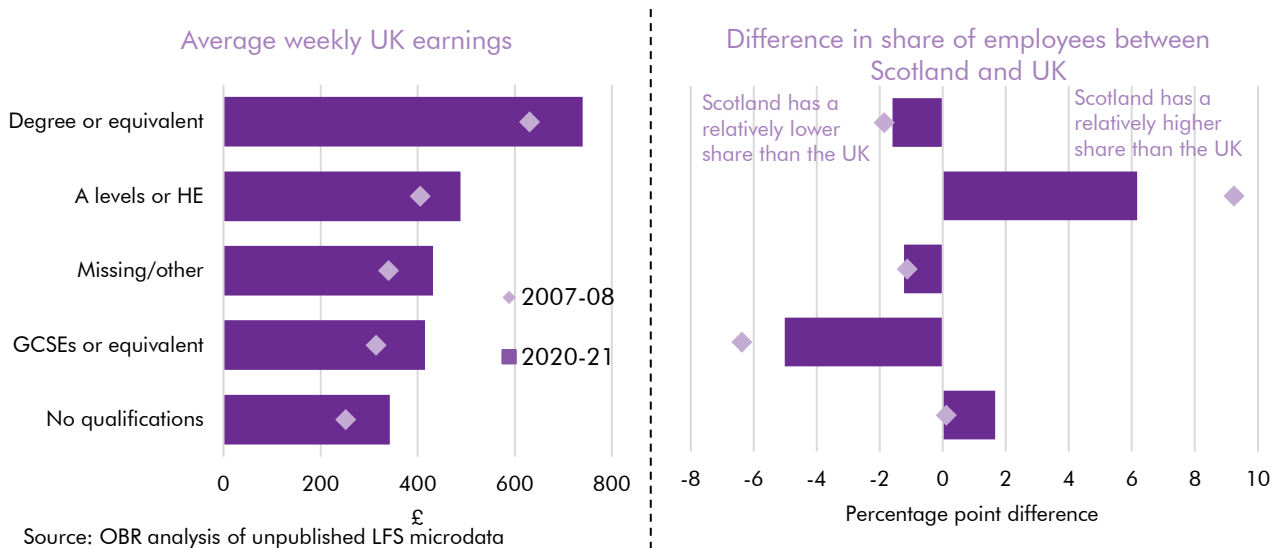


### Composition of employment income: by qualification

3.30 Finally, we consider the relative composition of employees by highest qualification level in Scotland and the UK in explaining the gap in average income from employment. In this case we use the LFS data as RTI data does not contain information on the qualification levels of employees. Using LFS data allows us to take the analysis back to 2007-08.

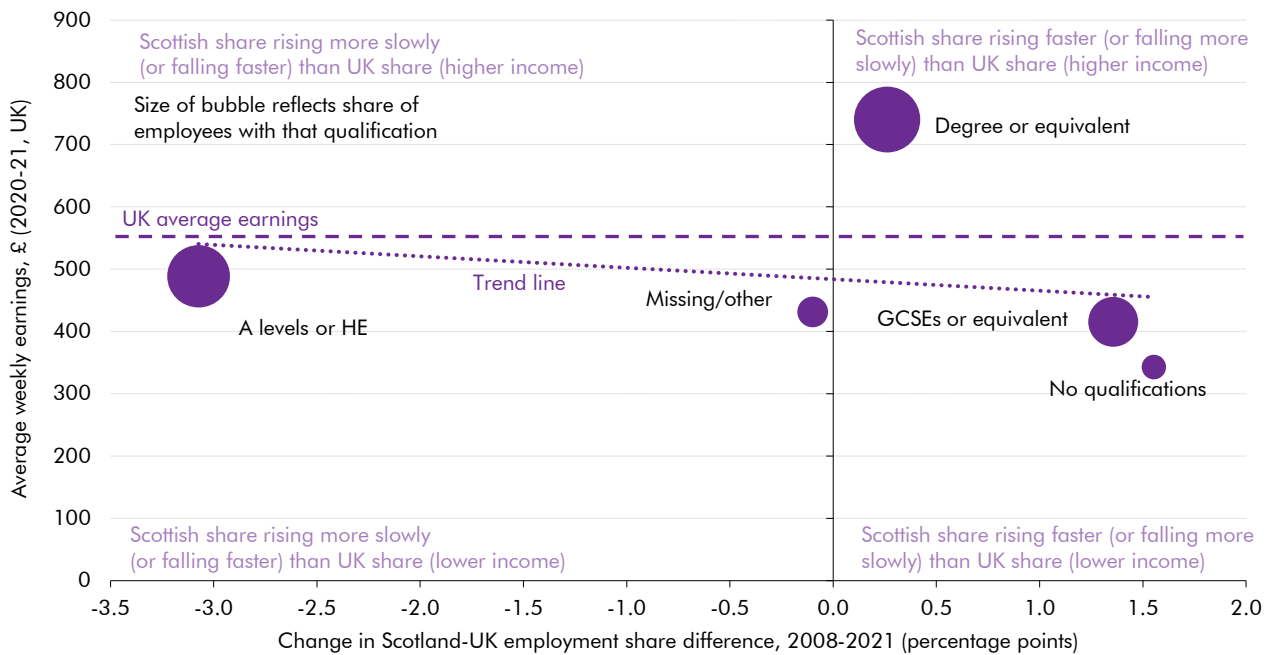
3.31 Chart 3.16 shows the wide variation in average weekly earnings by highest qualification group at the UK level (left panel) and Scotland’s relative share of employees in each group (right panel) in both 2007-08 and 2020-21. In line with our findings in relation to sector and age, we see a mixed picture: Scotland had a relatively lower share in the highest-earning qualification group (holding at least degree level or an equivalent qualification, where the earnings gap to the other groups is particularly large) in 2020-21, but a much higher share in the next-highest group (at least A-level qualifications or equivalent). And Scotland had a higher proportion of employees with no qualifications than the UK, but a lower share with just GCSE or equivalent qualifications. Using simple decomposition methods, we find that this mix resulted in a very small (£1) compositional drag on average weekly earnings from qualifications in Scotland relative to the UK in 2020-21, explaining only a tiny part of the overall £31 a week negative earnings gap as measured in the LFS data. So as with sector and age group, it is within-qualification-group factors that explain the great majority of the difference in average earnings levels between Scotland and the UK.

Chart 3.16: Earnings and share of employees by qualification, 2007-08 and 2020-21



3.32 While qualifications composition explains little of the levels difference in average earnings between Scotland and the UK, it has contributed very modestly to the growing differential since 2007-08. This can be seen in the differences between the diamonds and the bars in the right panel of Chart 3.16, and more clearly in the patterns shown in Chart 3.17. The very slight growth in degree-level qualifications in Scotland relative to the UK over the period has been more than offset by larger relative increases in the three lowest-paying qualification groups, contributing modestly to a widening earnings gap between Scotland and the UK. Simple decomposition methods show that a £2 compositional boost to earnings from qualifications in Scotland relative to the UK in 2007-08 had switched to a £1 compositional drag by 2020-21, underscoring that this effect is small relative to the £16 widening in the weekly earnings differential measured in the LFS data over this period (from -£17 to -£33). Interestingly, this compositional drag widened further to £6 per week by 2022-23, driven by a rise in the proportion of employees holding degree-or-equivalent qualifications in the UK that, according to the LFS data, has not been mirrored in Scotland. This suggests that despite limited effects over the period for which we have SPI data and income tax outturn data for Scotland, it may still be worth monitoring relative developments in qualifications between Scotland and the UK in the coming years.

Chart 3.17: Change in Scotland’s employee share by qualification, relative to change in the UK’s share, 2007-08 to 2020-21



Source: OBR analysis of LFS microdata

### The role of differences in employee composition: conclusion

3.33 Taken together, these three compositional analyses point to within-sector, within-age-group and within-qualification-group factors as the more important sources of difference between average employee earnings *levels* in Scotland versus the UK than differences in the sectoral, age group, or qualification levels themselves. These unexplained differences could reflect other factors that influence the productivity of firms and their employees, such as agglomeration effects that are particularly strong in London and the South East. In terms of *changes* over the past decade or so, unfavourable trends in sectoral composition in Scotland relative to the UK, and to a lesser extent some falling behind on the highest qualification level of employees, have made only small contributions to the widening Scotland-UK earnings differential (and therefore implicitly the growing gap in average income from employment). This suggests that while these characteristics of the workforces in Scotland and the UK are worth keeping under review, there is not strong evidence at present to calibrate our forecasts for any such trends continuing.

### The tax levied on taxpayers’ employment income

3.34 Having considered average income from employment (and the richer and more timely data on average employee earnings that we can exploit to understand trends in this tax-specific metric), the final step in our analysis is the amount of tax levied on that employment income. There are three factors to consider here:

- **The amount of tax revenue generated from each pound of average employment income.** As set out above, average income from employment has consistently been

higher in the UK than in Scotland. This means that even if there were no change in the Scotland-UK employment income gap (in relative terms), the general trend of rising average employment incomes over time, and the progressive structure of the income tax system, mean that *employment income tax* per taxpayer will grow faster in the UK than in Scotland. The strength of this effect is typically captured by 'average effective tax rates' and 'marginal effective tax rates'. As a proxy for the former, the SPI data for employment income taxpayers imply that *employment income tax* was 15 per cent of *employment income* in Scotland in 2020-21, whereas the equivalent figure for the UK was 17 per cent.

- **The distribution of employment incomes around the average.** The effects described above can be amplified by changes in the distribution of incomes around the average, again given the progressive structure of the income tax system. To explore this factor, we return to the related concept of average employee earnings, this time using the ASHE data.<sup>6</sup> Chart 3.18 shows the overall growth in earnings at different percentiles of the distribution between the three years from 2006-08 and from 2020-22, comparing Scotland to the UK. In both places, there has been faster growth at the bottom of the distribution than at the top, in large part thanks to the introduction of and rapid rises in the National Living Wage since 2016. And at all percentiles shown above the 10<sup>th</sup> (which is of little relevance for income tax, given earnings at the 10<sup>th</sup> percentile are below the threshold for paying income tax), growth has been slightly faster in Scotland than in the UK.<sup>7</sup> This gap narrows towards the top of the distribution however, with the 90<sup>th</sup> percentile (and above), which are by far the most important for income tax considerations, as it includes most higher-rate tax payers and all those that pay the additional rate. This might tentatively suggest that distributional trends around the average in the UK have been slightly more tax-rich than in Scotland, but this effect appears to be quite modest over the time period in question.
- **Change in the structure of the tax system in Scotland relative to the UK.** Beyond the tax-richness of average earnings and the distribution around the average, different changes in tax structures (that increase or decrease their progressivity) further contribute to the amount of tax levied on each taxpayer's employment income. Since the Scottish Government has received full non-savings, non-dividend income tax liabilities and the ability to vary rates and thresholds, the higher rate has been increased by two percentage points to 42 per cent, while the UK rate has remained fixed at 40 per cent. The higher rate threshold has also risen by just 1.5 per cent, to £43,662, significantly less than the rise seen in the rest of the UK (16.9 per cent since 2016, with the threshold now being £50,270) resulting in relatively greater fiscal drag drawing more Scottish taxpayers into paying the higher rate. The additional rate has also increased by two percentage points to 47 per cent with the UK rate again remaining fixed at 45 per cent. Additionally, in April 2018 Scotland introduced two

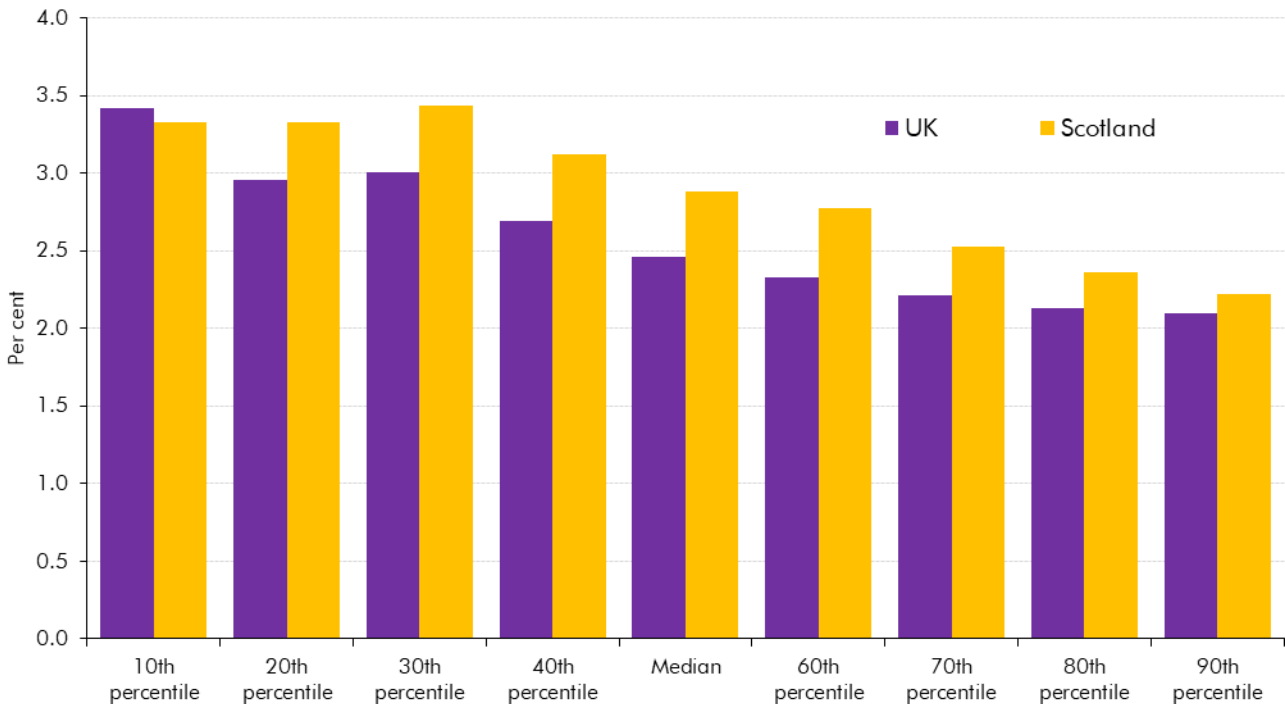
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<sup>6</sup> We do not have access to information on the distribution of employment income per taxpayer in the SPI data, or the distribution of employee earnings in Scotland in the published RTI data, and the LFS is less good at measuring earnings distributions than the ASHE.

<sup>7</sup> As mentioned above, this slightly faster growth in Scotland than in the UK is also reflected in mean earnings, which show different trends over this period in the ASHE data to other earnings and employment income data sources, so this analysis of the distribution should be treated as tentative.

new bands within the basic rate – a starter rate of 19 per cent and an intermediate rate of 21 per cent. These changes partly help to offset the overall Scotland-UK employment income tax per person divergence that we observe. This aspect is already built into our forecasting approach, where we explicitly account for tax rates and thresholds.

Chart 3.18: Annual change in weekly employee earnings by percentile of the earnings distribution, 2006-08 to 2020-22



Note: We compare two three-year averages to smooth over some year-to-year variability.  
Source: ONS

### Explaining the difference in employment income tax per person between Scotland and the UK

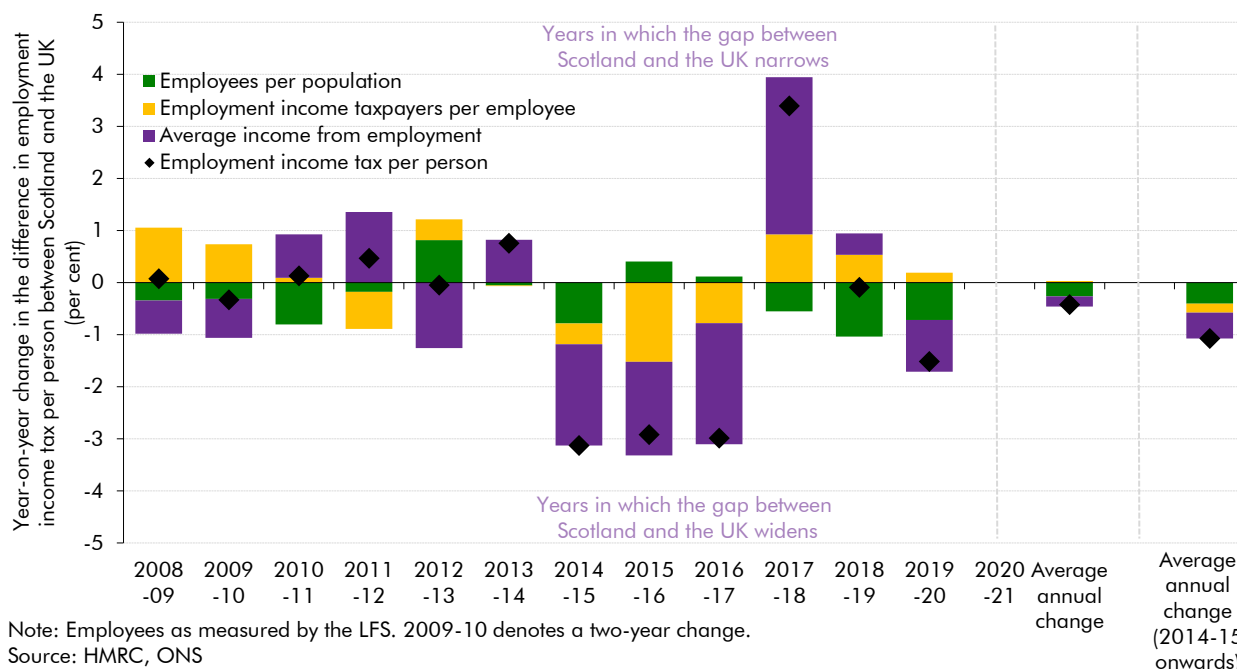
3.35 Chart 3.19 brings together our analysis of income tax from employment, decomposing the year-on-year changes in the difference between employment income tax per person in Scotland and the UK. Positive values represent years where the gap between Scotland and the UK narrowed, while in years with negative values it widened.

3.36 Between 2007-08 and 2020-21, the difference in income tax from employment per person in Scotland relative to the UK widened by 5.5 percentage points (taking the ratio between the two down from 88.8 to 83.3 per cent) – a 0.4-percentage-point-a-year average widening. This is more than explained by the large widening in each of the three years from 2015-16 to 2017-18, with only 2018-19 showing a large narrowing in the gap (thanks to Scottish Government tax measures, discussed above), while changes in all other years were relatively modest.

3.37 In terms of contributions to the 0.4-percentage-point-a-year average widening in the gap:

- **0.3 percentage points is attributable to the number of employees as a share of the population falling more in Scotland than in the UK since 2007-08, accounting for around three-fifths of the overall change.** While Scotland has more employees per person than the UK overall, the gap narrowed in nine of the 12 years since 2007-08.
- **0.2 percentage points is attributable to the amount of employment income tax paid per taxpayer rising more slowly in Scotland than in the UK as a whole since 2007-08, accounting for a little under half of the overall change.** This net change masks some larger year-to-year variations, especially since 2014-15, when the right-most bars on Chart 3.19 show that this factor accounts for just under half the growth. Our analysis above suggests that this is partly explained by the divergence between average employment incomes per taxpayer (as also evidenced in the more familiar measures of average employee earnings) in Scotland and the UK since 2014-15, alongside the amplifying effects of the greater tax-richness of average earnings in the UK than in Scotland, partially offset by the effects of changes in the income tax schedules.
- These two effects are slightly offset by a **0.03 percentage point narrowing attributable to the proportion of employees that pay employment income tax falling more slowly in Scotland than in the UK as a whole since 2007-08.**

Chart 3.19: Differences in income tax from employment per person between Scotland and the UK: year-on-year changes

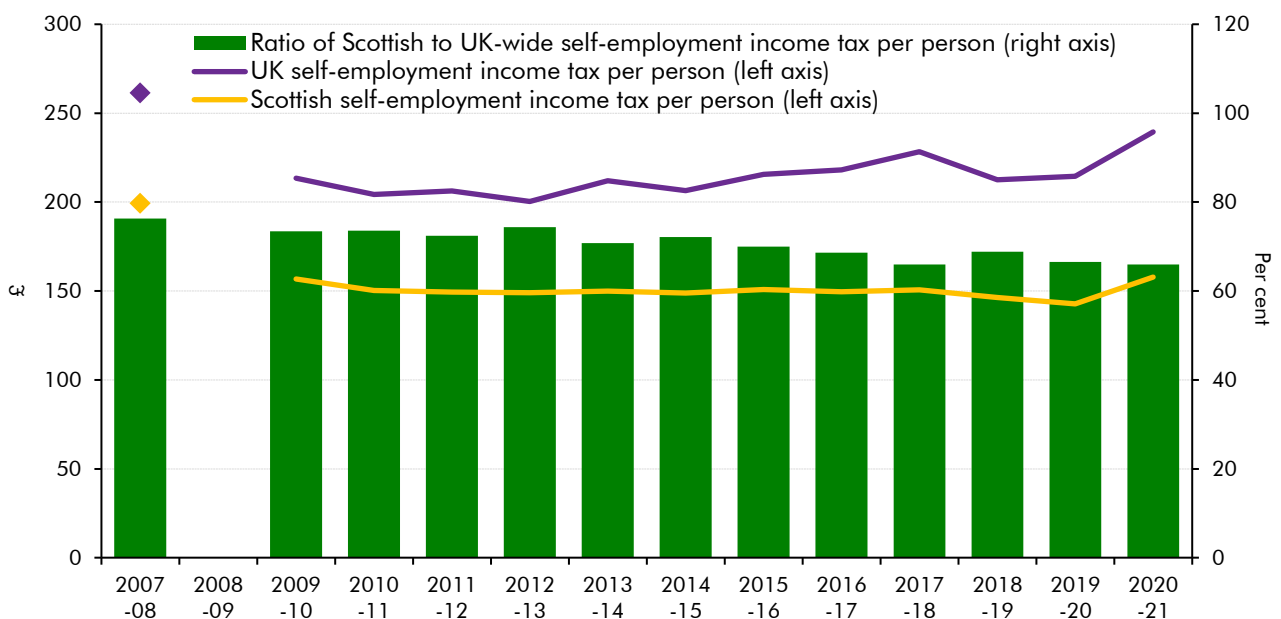


## Income tax from self-employment

3.38 We next turn to tax on self-employment income, which accounted for 15 per cent of the overall difference in income tax per person between Scotland and the UK in 2020-21, and 10 per cent of the widening of the Scotland-UK divergence on this metric since 2007-08.

3.39 Self-employment income tax per person stood at £158 per week in Scotland in 2020-21, down from £199 in 2007-08, a fall of 21 per cent, although with a large uptick in 2020-21 itself (as in the UK as a whole), perhaps owing to distortions due to the self-employment income support scheme (Chart 3.20). Self-employment income tax per person for the UK as a whole stood at £239 per week in 2020-21, 8 per cent lower than its level in 2007-08, a somewhat shallower fall than for Scottish self-employment income tax per person. This smaller fall means the ratio of Scottish to UK-wide self-employment income tax per person fell from 76 per cent in 2007-08 to 66 per cent in 2020-21.

Chart 3.20: Self-employment income tax per person in Scotland and the UK

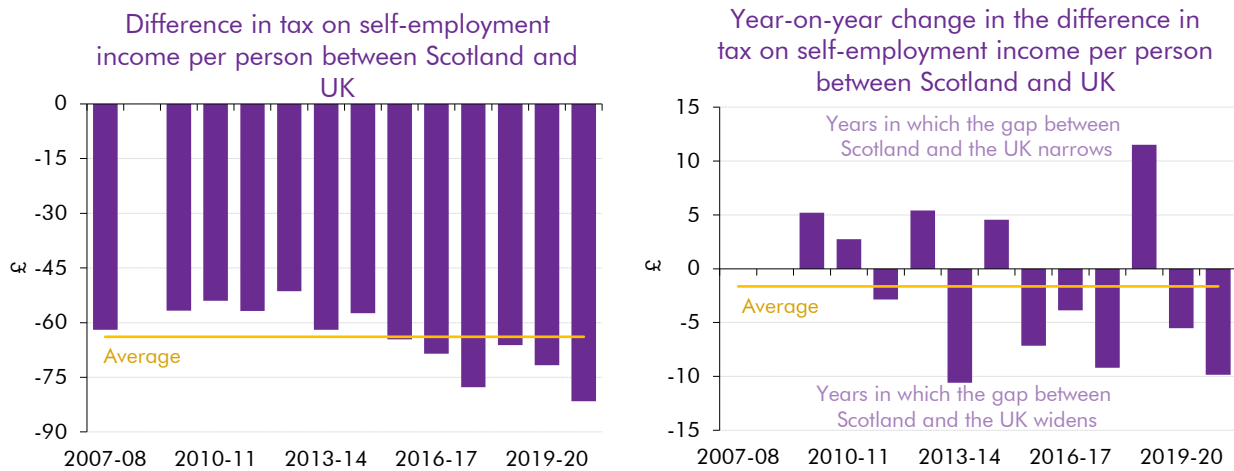


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

3.40 Chart 3.21 (left panel) similarly shows that self-employment income tax per person in Scotland was lower than the UK in every year and that the difference has increased over time, from £62 in 2007-08 to £82 in 2020-21, with an average difference of £64. There have been five years in which the gap narrowed (right panel), mostly in the early part of the period, and seven in which it widened, with larger absolute year-on-year changes later in the period. As with income tax from employment, the following sub-sections explore the role of first population and then income-related factors in explaining this divergence in self-employment income tax per person between Scotland and the UK since 2007-08. Self-employment incomes are an area where we do not have timely information from alternative sources to support our forecast judgements (in particular, there is no equivalent of RTI), so we have tended to rely on timely information about income from employment as a proxy.



Chart 3.21: Differences in income tax per person from self-employment



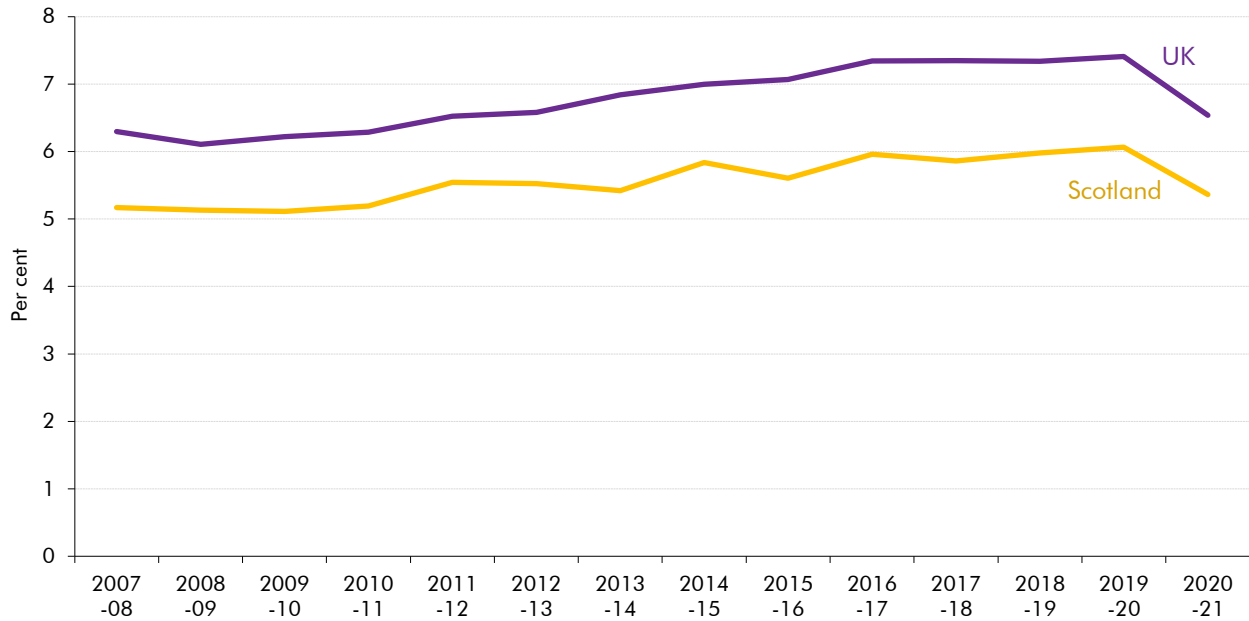
Note: HMRC did not publish SPI data for 2008-09. 2009-10 on right hand chart shows a two-year change.  
Source: HMRC, OBR

## Proportion of the population that pays income tax from self-employment

3.41 Self-employment (as measured in the Annual Population Survey (APS)) as a share of the population has been consistently lower in Scotland than the UK (Chart 3.22), by an average of 1.2 percentage points between 2007-08 and 2020-21. The Scottish and UK shares increased in most years, but the sharp falls in the most recent years mean that the overall increase across the period is relatively modest.<sup>8</sup> The gap between Scotland and the UK widened slightly over the period, with the UK share rising by slightly more (from 6.3 per cent in 2007-08 to 6.5 per cent in 2020-21) than the Scottish share (which rose from 5.2 to 5.4 per cent). Over the period as a whole, the number of self-employed individuals increased by 26,000 (9.7 per cent) in Scotland and by 526,000 (13.6 per cent) in the UK, compared to overall population growth of 5.7 and 9.4 per cent respectively.

<sup>8</sup> Self-assessment tax returns suggest that the number of self-employments was much higher than that recorded in the LFS during the pandemic, affecting the 2021 data (see paragraph 4.15 from our March 2023 *Economic and fiscal outlook* on self-assessment income tax). We implicitly assume that this does not affect the Scotland-UK difference.

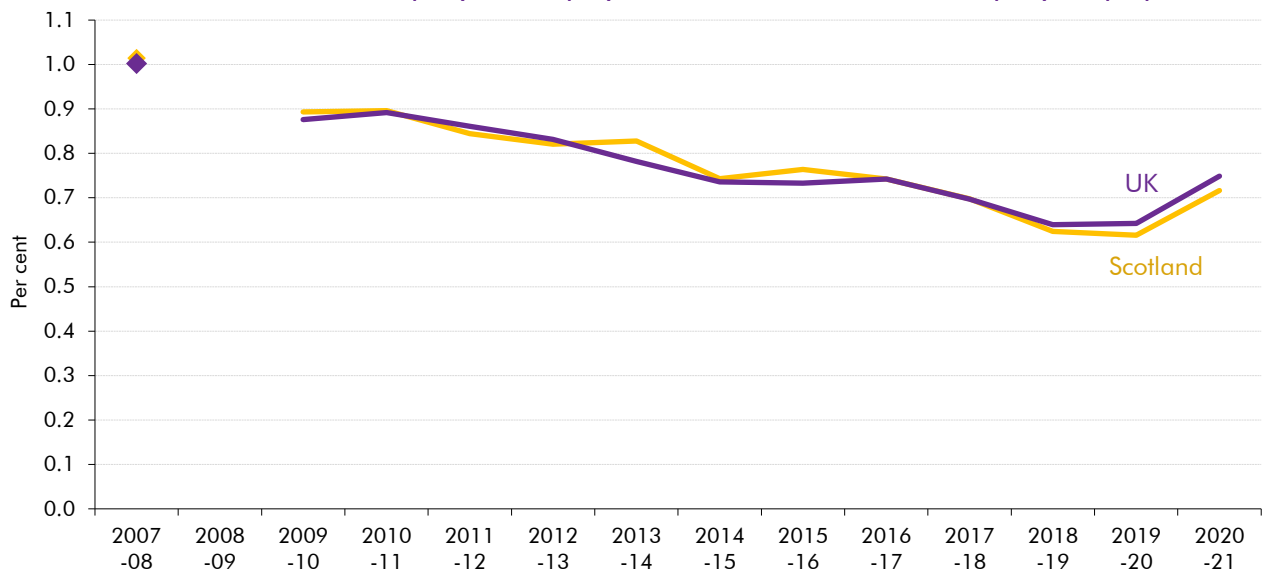
Chart 3.22: The self-employed as a share of the total population



Source: HMRC, ONS

3.42 The ratio of self-employed taxpayers (as reported in the SPI based on tax definitions) to the overall numbers in self-employment (as reported in the APS based on survey responses) is close to identical in Scotland and the UK, both in levels and in trends over time, so this does not help explain the differences in income tax (Chart 3.23). There is some minor year-on-year variation but the pattern is similar, with declining proportions over most of the period, followed by a rise in the most recent years. Once again, one of the factors behind the steadily declining proportions is the above-inflation rises in the personal allowance over the period, taking increasing numbers of self-employed people on lower incomes out of paying income tax altogether.

Chart 3.23: Ratio of self-employed taxpayers to the overall self-employed population



Note: The ratio is useful to track the implied change in the taxpayer levels over time, but is not a precise estimate of the actual proportion of employees that pay income tax. For example, the numbers of employees and taxpayers are sourced from different surveys. HMRC did not publish SPI data for 2008-09.

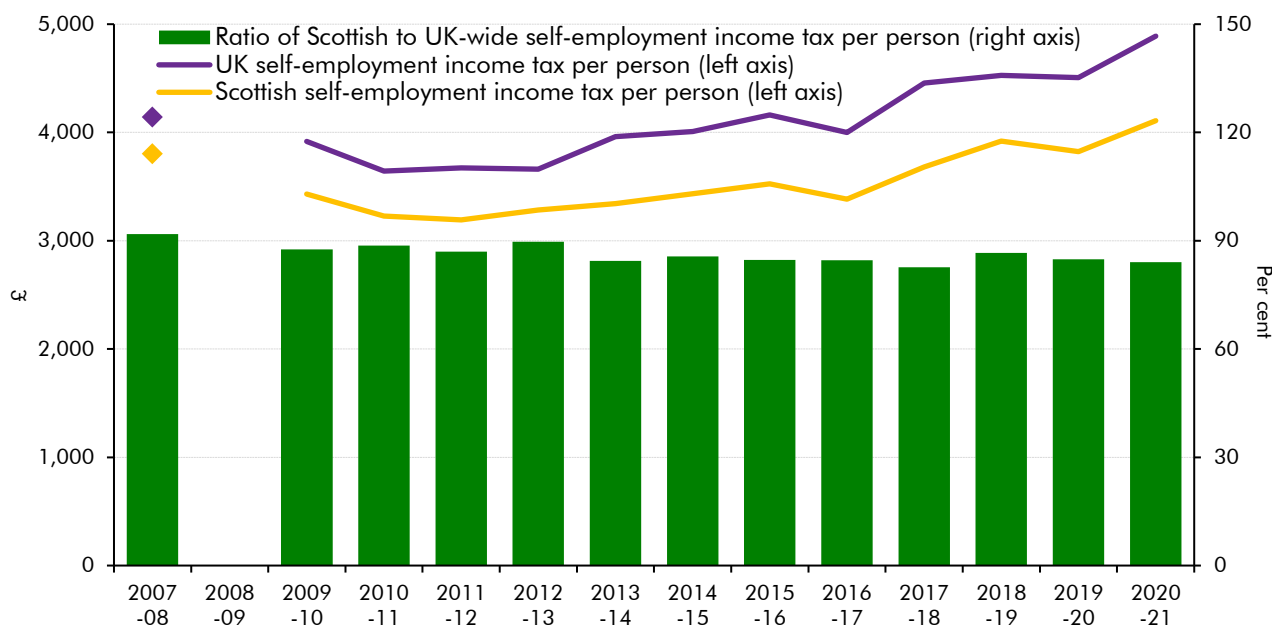
Source: HMRC, ONS

### Average self-employment income tax per taxpayer

3.43 As in relation to employment income above, the other part of the equation to population-related factors is the average self-employment income per taxpayer, and the tax levied on that income. Here our investigation is much more limited as there are relatively few sources of data on self-employment incomes (and none that are significantly more timely) beyond what is available from the tax system via the SPI.<sup>9</sup>

3.44 Scottish self-employment income tax per taxpayer has grown by 8 per cent since 2007-08, a much weaker rate than the 18 per cent seen in the UK as a whole (Chart 3.24). If self-employment income growth per taxpayer in Scotland had kept pace with the UK-wide trend over that period, and holding all else equal, the gap between self-employment income tax per person in Scotland and the UK in 2020-21 would have been narrower by £381.

Chart 3.24: Self-employment income tax per taxpayer



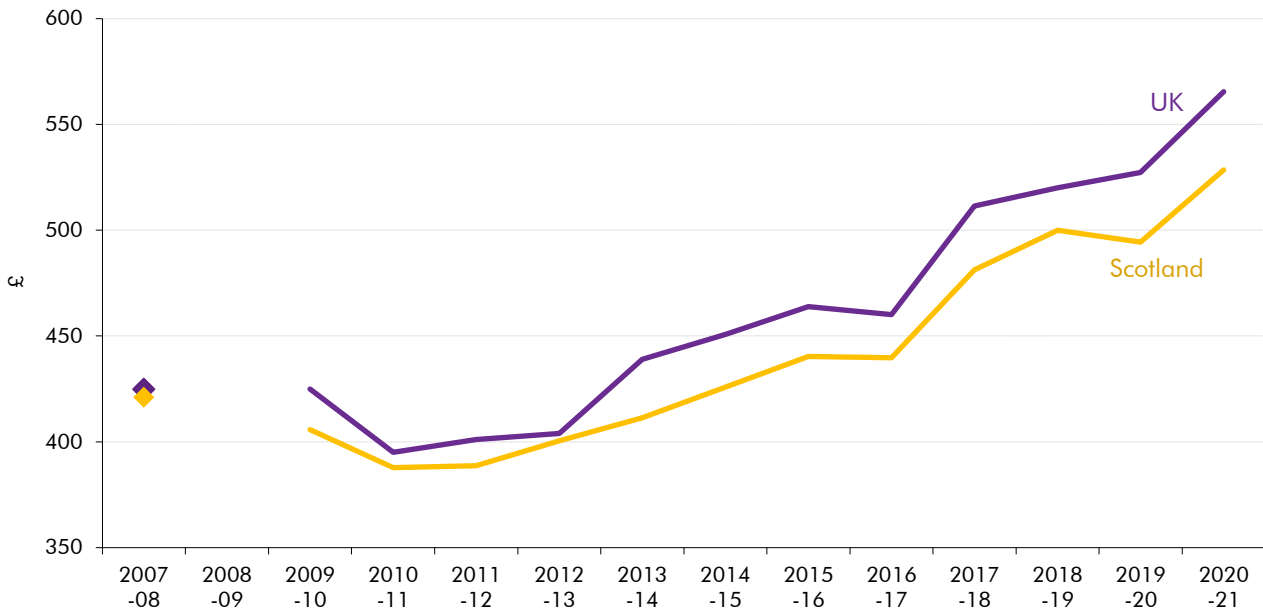
Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

3.45 Slower growth in the average incomes of self-employed taxpayers in Scotland relative to the UK does help explain the difference in income tax paid (Chart 3.25). Average self-employment incomes of taxpayers in Scotland grew by 26 per cent between 2007-08 and 2020-21 (from £421 a week to £528 a week) compared to 33 per cent in the UK (from £425 to £565). The steady rise in the real value of the personal allowance results in an upward trend for average incomes of self-employed taxpayers in both Scotland and the UK, because an increasing share of those on lower incomes are no longer required to pay

<sup>9</sup> There is less data available for incomes of the self-employed than for employees. Both ASHE and RTI data covers employees only, while the LFS only collects information about the incomes of employees. The Family Resources Survey and the Living Costs and Food Survey both collect data on incomes from self-employment, but we have been unable to disaggregate the data at the required geographical level, and it is not very timely so adds little value on top of the SPI relative to employee earnings sources. Therefore, our analysis is confined to SPI data.

income tax, but there is no reason to think this trend should have a materially different impact in Scotland relative to the UK as a whole.

Chart 3.25: Average weekly self-employment income per taxpayer



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC

3.46 Finally, this growth in average self-employment incomes is amplified in average self-employment *income tax* per taxpayer by two of the same factors highlighted in relation to employment incomes above: the greater amount of tax levied on each pound of income in the UK than Scotland given the UK’s higher level; marginally offset by changes to the Scottish tax regime relative to that in the UK that have made it more progressive.

### Explaining the difference in self-employment income tax per person between Scotland and the UK

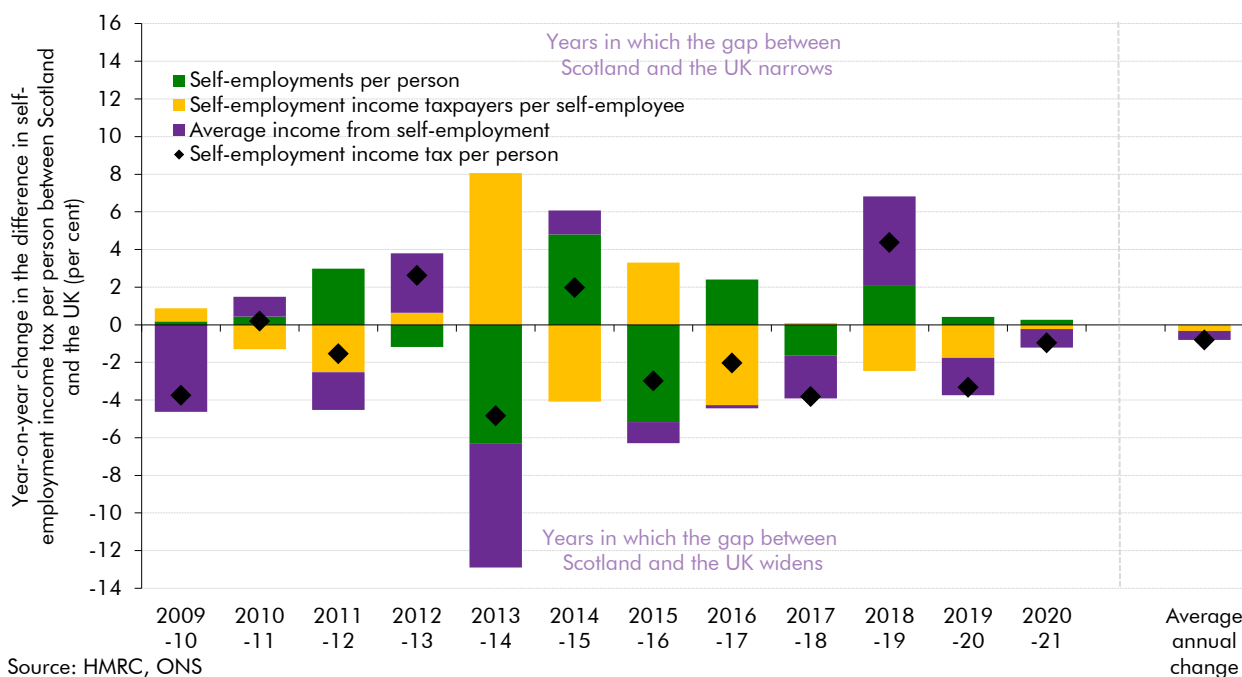
3.47 Chart 3.26 brings together our analysis of income tax from the self-employed, decomposing the year-on-year changes in the difference between self-employment income tax per person in Scotland and the UK. Positive values represent years where the gap between Scotland and the UK narrowed, while in years with negative values it widened.

3.48 Between 2007-08 and 2020-21, the difference in income tax from employment per person in Scotland relative to the UK widened by 10.4 percentage points (taking the ratio between the two down from 76.3 to 65.9) – a 0.8-percentage-point-a-year average widening. This relatively small average change reflects the largely offsetting effects of significant year-to-year variations – which are larger than for employment incomes and therefore more challenging to forecast.

3.49 The 0.8 percentage point a year average widening in the gap between Scotland and the UK as a whole over the period reflects:

- **A 0.5 percentage point contribution from lower growth in the average income tax paid by self-employed taxpayers** in Scotland relative to the UK. This element widened the Scotland-UK gap in eight of the 12 years.
- **A 0.3 percentage point contribution from lower growth in the proportion of the self-employed population that pay income tax** in Scotland relative to the UK. Chart 3.26 shows that this component is quite variable in terms of its year-on-year impact, contributing to widening the gap in seven years and narrowing it in the remaining five.
- **A negligible impact from relative changes in the self-employed share of the population.** Once again though, Chart 3.26 shows some year-on-year volatility.

Chart 3.26: Differences in income tax from self-employment per person between Scotland and the UK: year-on-year changes



## Income tax from pension income

**3.50** Tax on pension incomes accounted for 4.9 per cent of the overall difference in income tax per person between Scotland and the UK in 2020-21. But as shown in Chart 3.4 above, it made almost no contribution to the Scotland-UK divergence on this metric since 2007-08, so we explore it relatively briefly here.

**3.51** Chart 3.27 show that pension income tax per person stood at £376 per person in Scotland in 2020-21, up from £257 per person in 2007-08 (a 47 per cent increase). This is lower than in the UK as a whole, where it stands at £403 per person; indeed, it has been lower in Scotland in every year since 2007-08. But the gap between the two has remained relatively stable over time, with the ratio of Scottish to UK-wide pension income tax per person fluctuating modestly between 89 and 93 per cent across the whole period.

Chart 3.27: Pension income tax per person in Scotland and the UK



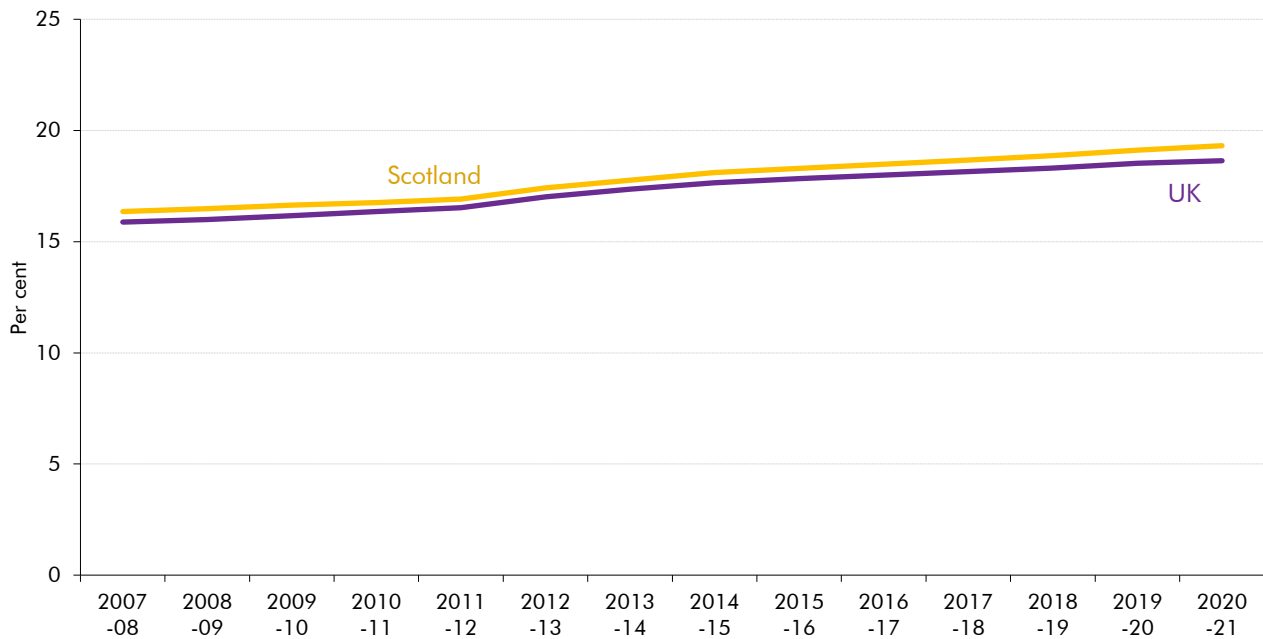
Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

### Proportion of the population that pays income tax from pension income

3.52 To explore population factors in relation to pension income, we look at the proportion of Scotland’s and the UK’s respective populations aged 65 and over, who we term ‘pensioners’,<sup>10</sup> as a rough proxy for those most likely to pay tax on pension income. (We factor prospective changes in this broad age split between pensioners and others into our forecast via an index derived from ONS population projections.) Chart 3.28 shows that Scotland has had a very slightly higher share of its population who were pensioners on this metric throughout the period – by an average of 0.5 percentage points. It also shows that the share has increased in every year (in both countries) and that the gap between the two has changed very little over time.

<sup>10</sup> This is different to the conventional definition of those above State Pension age, which has risen to 66 for both men and women in recent years.

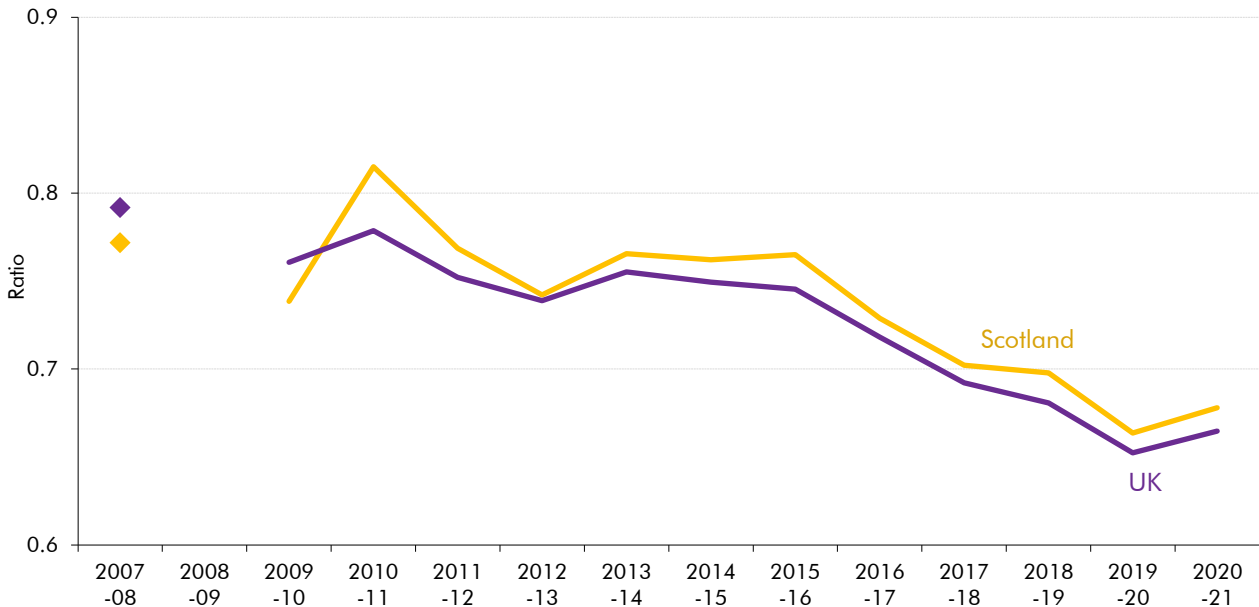
Chart 3.28: People aged 65 and over as a share of the total population



Source: ONS

**3.53** There has been somewhat more of a diverging trend in the ratio of pension income taxpayers to the pensioner population in Scotland and the UK (Chart 3.29). The ratio was higher in Scotland in 2020-21, and has been for most of the period, though initially the UK's ratio was higher. Since 2010-11 the ratio has trended downwards for both, to 67.8 per cent in Scotland in 2020-21 (down from 77.2 per cent in 2007-08) and 66.5 per cent in the UK (down from 79.2 per cent). As discussed above in relation to other income streams, the UK Government's personal allowance policy decisions are one of the likely drivers of this downward trend – in 2007-08, the income tax personal allowance of £5,225 was equivalent to 115 per cent of the full basic state pension; by 2020-21, its £12,500 level had risen to 179 per cent. With the personal allowance frozen in cash terms until April 2028 and the state pension rising materially in cash terms thanks to the triple lock, this trend in outturn reverses over our most recent five-year forecast period.

Chart 3.29: Ratio of pension income taxpayers to the population aged 65 and over

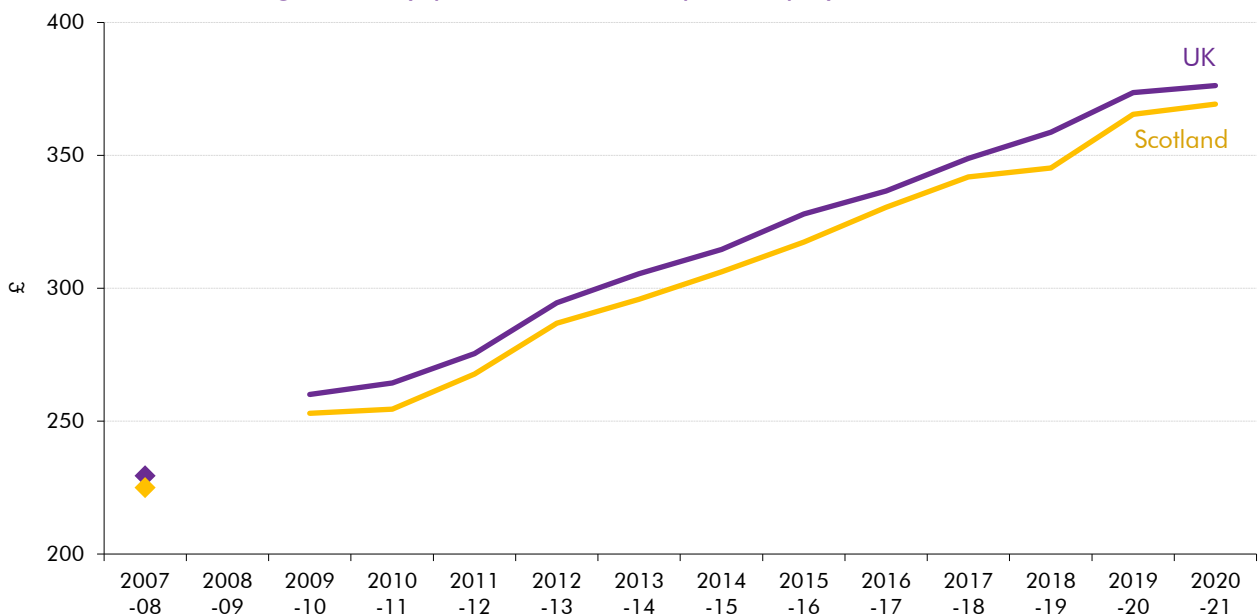


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, ONS

### Average pension income tax per taxpayer

3.54 Average weekly pension income per pension income taxpayer has grown very slightly more in the UK as a whole than in Scotland, which has contributed modestly to the widening gap in the amount of income tax collected per taxpayer (Chart 3.30). In Scotland, the average pension income increased by £144 (64.1 per cent) since 2007-08, compared to £147 (64.0 per cent) in the UK as a whole. The very slightly higher level in the UK than in Scotland will mean that this is slightly amplified in the amount of tax levied on that income, given the progressive nature of the income tax system.

Chart 3.30: Average weekly pension income per taxpayer



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC



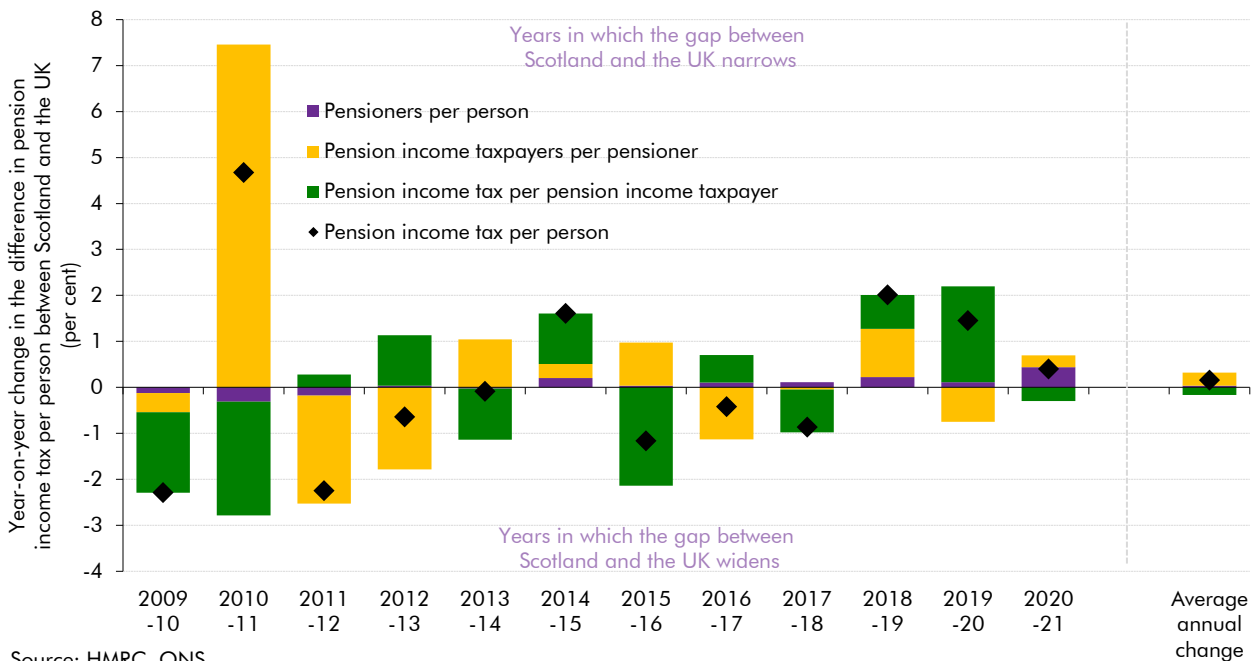
## Explaining the difference in pension income tax per person between Scotland and the UK

3.55 Chart 3.31 shows that between 2007-08 to 2020-21, the difference in income tax from pension income per person in Scotland relative to the UK narrowed by 2.0 percentage points (taking the ratio between the two from 91.3 per cent to 93.3 per cent) – a 0.2 percentage-point-a-year average narrowing.

3.56 The 0.2-percentage-point-a-year average narrowing in the gap reflects:

- A contribution of **0.3 percentage points from the proportion of pensioners that pay tax** falling more slowly in Scotland than in the UK as a whole.
- An offsetting **0.2 percentage point widening due to average pension income tax per taxpayer** in Scotland rising by slightly less than the average across the UK as a whole.
- **Minimal contribution from the pensioner share of the population**, which has been rising at a similar pace in Scotland to the UK as a whole.

Chart 3.31: Differences in income tax from pension income between Scotland and the UK: year-on-year changes

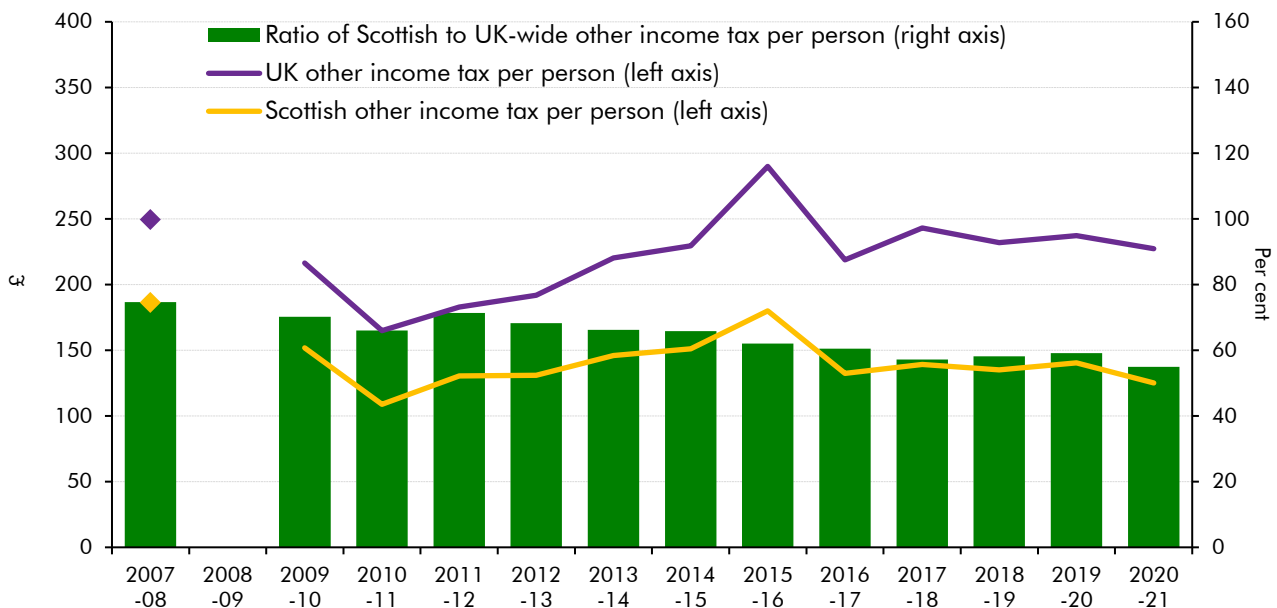


## Income tax from other income streams

3.57 Other income streams include some whose taxation has been devolved (such as property income) and some whose taxation is reserved to the UK Government (such as savings and dividends income). As discussed above, we made the pragmatic decision to not explicitly separate these out in our analysis of the SPI data and instead analyse them together. While this slightly weakens our findings for this income stream, we do not believe it greatly impacts our conclusions overall. And we do intend to conduct further analysis on other income in the future. Tax on other income accounted for 19 per cent of the overall difference in income tax per person between Scotland and the UK in 2020-21, and 20 per cent of the Scotland-UK divergence on this metric since 2007-08.

3.58 Chart 3.32 show that other income tax per person stood at £125 in Scotland in 2020-21, down from £186 per person in 2007-08 (a 33 per cent fall). This is lower than the UK as a whole, where it stands at £227 per person, and has been lower in every year since 2007-08. The gap between the two has widened, driving a fall in the ratio of Scottish to UK-wide other income tax per person from 75 per cent to 55 per cent.

Chart 3.32: Other income tax per person in Scotland and the UK



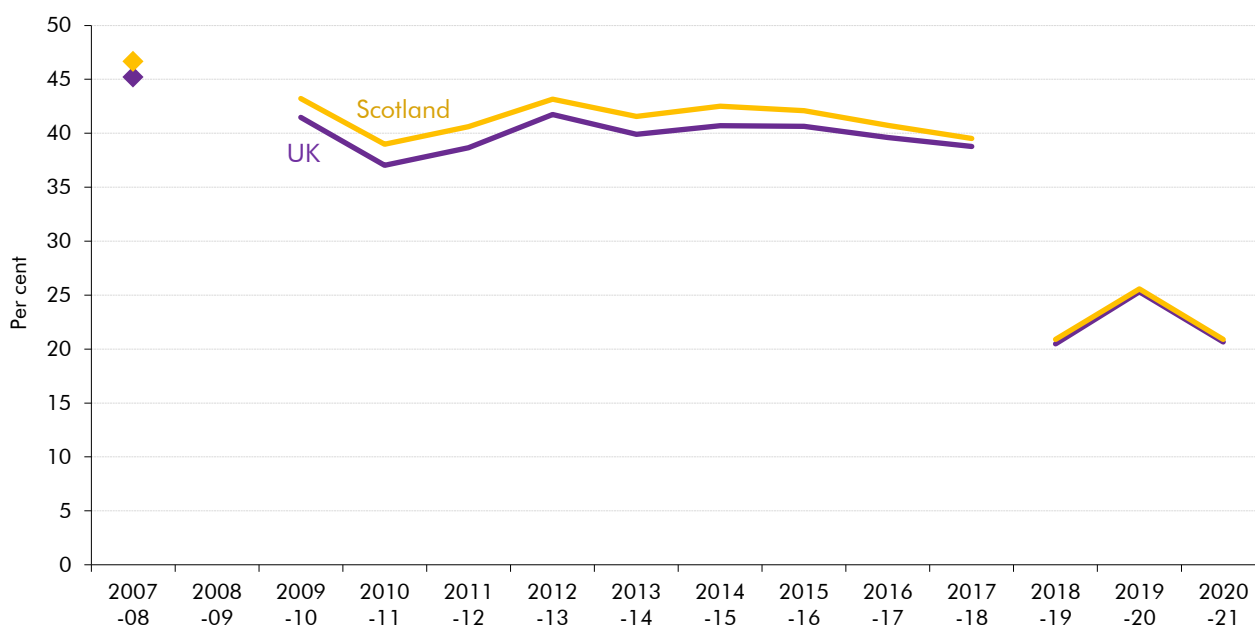
Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

## Proportion of the population that pay income tax on other income streams

3.59 The proportion of people in Scotland with other income streams recorded in the SPI has fallen from 1.5 percentage points higher than the UK-wide proportion in 2007-08 to just 0.2 percentage points higher in 2020-21. It therefore contributes modestly to the widening in the difference in income tax per person from other income between Scotland and the UK (Chart 3.33). There is no equivalent data on the number of people earning income from sources other than employment, self-employment and pensions. There is also a discontinuity

in the series due to some SPI methodological changes that reduced the shares from 2018-19 onwards, which resulted in a large decline in the number of individuals reporting income from savings, from 23.2 million to 10.5 million at the UK level with a similar proportional decline in Scotland. This is likely to reflect two factors. First, banks and building societies started reporting savings income in the SPI data rather than the number of individuals being estimated, as was done prior to then. Second, individuals with savings interest of below £1 were no longer reported in the SPI. Despite the large numbers involved, this inconsistency has little impact on our analysis.

Chart 3.33: Individuals with other income as a share of the total population

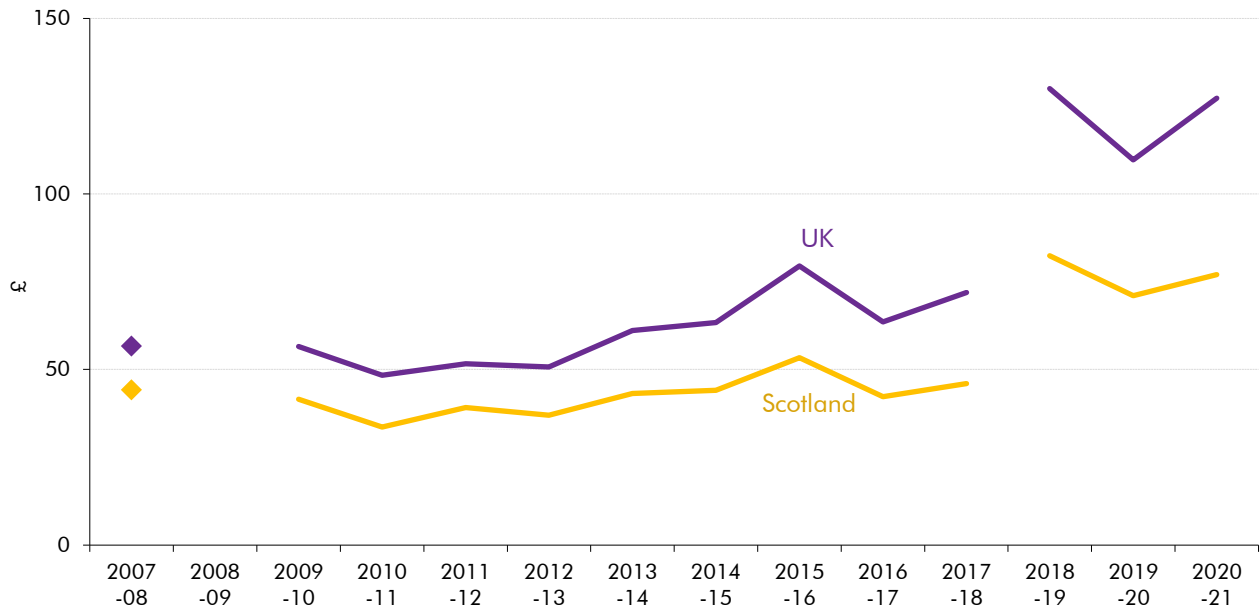


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC

### Average income tax on other income per taxpayer

3.60 Growth in average incomes from other streams is distorted by the same discontinuity that affects the share of the population described above. But since there is no reason to believe that this discontinuity would have had a materially different impact in Scotland than in the UK as a whole, we can still use the change in average incomes over time to analyse the extent to which this explains how the ratio of income tax liabilities per person in Scotland versus the UK has evolved. While the precise figures are not meaningful, the fact that the level in 2020-21 is 125 per cent higher than 2007-08 for the UK, but only 74 per cent higher for Scotland, shows that this is a source of widening differences between the two (Chart 3.34). And as in relation to the other income streams discussed above, the higher level of average incomes from other income streams in the UK than in Scotland means that this divergence will be amplified in relation to average income tax, with more tax levied on each pound of average income in the UK than Scotland given the progressivity of the system.

Chart 3.34: Average other income per taxpayer



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC

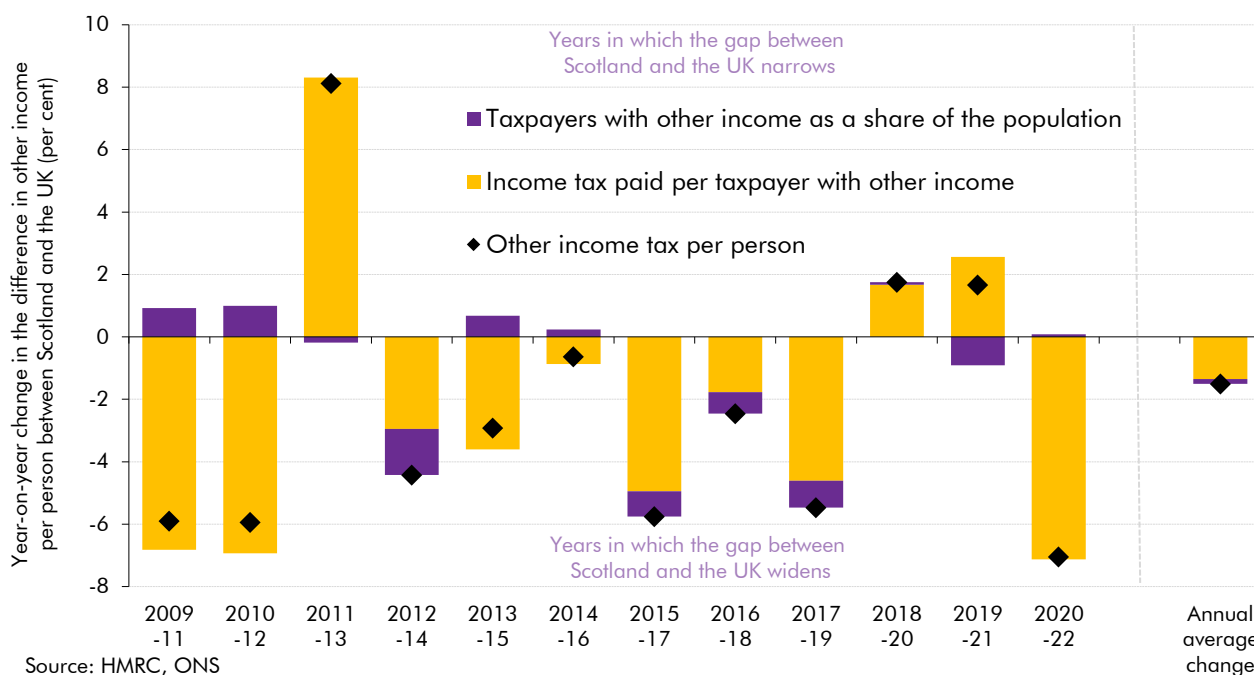
## Explaining the difference in other income tax per person between Scotland and the UK

**3.61** Chart 3.35 shows that between 2007-08 to 2020-21, the difference in income tax from other income per person in Scotland relative to the UK widened by 19.6 percentage points (taking the ratio between the two from 74.6 per cent to 55.0 per cent) a 1.5 percentage-point-a-year average widening.

**3.62** The decomposition of changes in tax from other income sources is subject to greater uncertainty due to the discontinuity in the underlying SPI data, but with that caveat borne in mind, the 1.5 percentage point a year average widening in the gap reflects:

- **A 1.4 percentage point contribution from income tax per taxpayer from other sources** rising by less in Scotland than in the UK as a whole. This component widened the Scotland-UK gap in nine of the 12 years.
- **A much smaller 0.2 percentage point contribution from the share of the population that pays tax on other income sources** falling more quickly in Scotland than in the UK as a whole. This component also widened the Scotland-UK gap in nine of the 12 years.

Chart 3.35: Differences in income tax from other income between Scotland and the UK: year-on-year changes



## Conclusions

3.63 The Scottish share of UK-wide income tax revenues has fallen from 7.3 per cent in 2007-08 to 6.6 per cent in 2020-21. With Scotland’s share of the population having fallen more modestly over that period, from 8.4 to 8.1 per cent, the main driver of the decline has been the average amount of income tax paid per person rising more slowly in Scotland (by 3 per cent over those 13 years) than in the UK as a whole (where it has risen by 10 per cent). The importance of these trends has been amplified by the terms of income tax devolution under the Scottish Government’s fiscal framework, where it is changes in per capita income tax revenues in Scotland relative to the rest of the UK that affect the Scottish Government’s Budget (albeit for non-savings, non-dividend incomes only).

3.64 In exploring the drivers of this growing gap between UK and Scottish income tax per person, in this chapter, we have shown that:

- The 54 per cent widening in the income-tax-per-person gap between Scotland and the UK between 2007-08 and 2020-21 has largely been driven by employment income (which accounts for almost seven-tenths of the overall widening).
- In turn, this has been driven by a combination of stronger growth in the proportion of employees to the total population in the UK than in Scotland (which accounts for over six-tenths of the widening due to employment income), and faster growth in average income tax per employment income taxpayer in the UK than Scotland (which accounts for under half of the widening).

- The latter is partly driven by faster growth in average income from employment in the UK than in Scotland, particularly since 2014-15, which is mirrored in trends in richer and more timely data on average employee earnings. Compositional factors in relation to the sector, age and qualifications group of employees contribute only marginally to these changes and explain little of the overall levels difference in employee earnings between the UK and Scotland.
- The other factor driving the faster growth in average employment income tax per taxpayer in the UK than in Scotland is the greater tax-richness of each pound of average employment income, given the higher levels of income in the UK and the progressivity of the tax system. This has been marginally offset by changes to the Scottish tax system that have made it more progressive relative to the system in the UK in recent years.
- Self-employment income and ‘other’ income together contribute just under one-third of the overall widening of the income-tax-per-person gap. Self-employment changes are largely a result of a widening gap in average self-employment incomes between Scotland and the UK, rather than a change in the number of self-employed people relative to the population as a whole. Changes in other incomes are harder to analyse because of a methodological change in how numbers of taxpayers are reported.

3.65 As with all of our forecasts, we continually monitor developments in the latest data. Few of the trends identified in this chapter currently look like particularly strong candidates for adding to our standard forecasting methodology, which does already factor in the most recent RTI data on earnings from employment and prospective changes in the size and broad age composition of populations, changes that persist and grow over the medium term. We also include differential impacts from UK Government policies.

3.66 We are confident that our approach is capturing the effect of the most recent trends. As we showed in Chart 3.4, there was a step-change in the Scottish-UK income tax per person gap from 2015-16 onwards. The gap between 2007-08 and 2014-15 was £345 and that rose to £508 between 2015-16 and 2020-21. Though the gap during that second period seems to be trending up, it is doing so slowly, staying between around £450 and £550 each year. Since our forecast starts with the most recent SPI data point, we are including not only the largest source of the widening Scottish-UK gap (the step-change) but also the more recent, but steadier, upward trend. This is reinforced by using RTI data to capture even more recent trends in employment income.

3.67 From a forecasting perspective, the key conclusion for us is that the largest source of income tax – tax on employee’s incomes – is also the largest source of changes in the Scottish share of UK-wide income tax revenues. And this is the source of income for which we can draw on other timely data sources to inform and refine our forecasts. This reinforces the value of the analysis of trends in RTI-derived shares of incomes and income tax receipts that we already undertake when producing our devolved income tax forecasts. We should be able to utilise this and other sources to produce reasonably accurate estimates for how tax on employment

incomes in Scotland has evolved relative to the UK-wide total for the years between the latest SPI and Scottish income tax outturn and the beginning of the forecast.

3.68 This conclusion, that we are confident that our existing modelling approach provides us with an accurate launch point for (by far) the most important income stream, coupled with the fact that we are able to grow the impact of short-term trends into the medium term, is reassuring. Despite that, our analysis also identifies several areas that warrant further investigation, with a view to identifying any persistent drivers of the widening gap in average income tax per person that we can include in our modelling. These areas include:

- On employment income, we will explore if there is more we can do with the RTI data, particularly at a more disaggregated level. RTI has proven to be a rich and valuable source of information that helps bridge the gap between the SPI and outturn data and our forecast, but our use of it for forecasting devolved income tax remains relatively new, so there is potential for further gains.
- We will continue to closely monitor changes in the composition of employment income. Results to date suggest that relative changes in sectoral, age and qualification do not warrant an immediate change to our forecast methodology. But if the evidence around one or more of these strengthens to the extent that we can be sure they are an important driver of earnings differentials between Scotland and the UK as a whole, then we will incorporate that into our forecast.
- We recognise that trends in non-employment incomes also explain variations in the Scottish share of UK-wide income tax revenues – and that these can be volatile from year to year and cannot be cross-checked against timely alternative data sources. This means there will always be a degree of uncertainty in the steps we take to bridge the gap between the latest Scottish income tax outturn and the year in progress, and this is an area of our forecast that we can improve. One avenue for future work is delving further into the ‘other’ income stream and asking whether removing savings and dividends income reveals any useful insights.
- One way we will mitigate against the limitations in our forecasting methodology is by continuing to work closely with fiscal experts in the devolved administrations and the Scottish Fiscal Commission (SFC) in particular. The SFC’s Scottish economy forecast and the greater Scottish-specific intelligence that they can bring to bear, including through their more regular engagement with the Scottish Government, is a valuable source of additional evidence that we can use to improve our forecast.
- Lastly, we will continue to seek improvements in the way that we incorporate the effects of new policy decisions, including learning from the effects of past policies, most prominently the UK Government’s above-inflation rises in the personal allowance during the 2010s. The personal allowance clearly impacts the lower end of the income distribution, so we would expect any effects to be greater for those areas with a higher concentration of those on lower incomes.

# 4 The Welsh income tax base

## Introduction

- 4.1 We forecast Welsh income tax based on the Welsh share of UK liabilities, which is based on forecasts of the Welsh share of the UK-wide population and for income tax paid per adult.<sup>1</sup> This provides the foundation for our forecasts of the specific elements of income tax in Wales and the rest of the UK that feature in the partial devolution of income tax to the Welsh Government under the Welsh rates of income tax.
- 4.2 Understanding trends in the Welsh share of the population and the ratio of income tax liabilities per person in Wales versus the UK as a whole is therefore central to identifying the factors that drive this share and potential improvements to our forecast methodology. As with Scotland, year-on-year changes in Welsh income tax revenues relative to those in the rest of the UK influence the revenues available to the Welsh Government in each Budget year.<sup>2</sup>
- 4.3 One important institutional distinction between Wales and Scotland is that the OBR serves as the independent forecaster for the Welsh Government.<sup>3</sup> That role requires us to produce a forecast alongside the Welsh Government's draft Budget, which we do in our annual *Welsh taxes outlook*, which is updated ahead of the final Budget. We support these publications by providing evidence to the Welsh Senedd. Our UK-wide forecasting remit means that we also report on the Welsh taxes in our *Devolved taxes and spending* report.
- 4.4 In this chapter, we seek to refine and improve those forecasts by:
- analysing **developments in the Welsh income tax base**;
  - conducting a high-level **disaggregation of the Welsh tax base relative to that in the UK** as a whole;
  - **exploring the underlying drivers of changes to the tax base** splitting by employment income, self-employment income, pension income and other income sources; and
  - **drawing some conclusions** from our analysis.

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<sup>1</sup> Annex A goes into more detail on our forecast methodology.

<sup>2</sup> Unlike in Scotland, both sides of the calculation – the Welsh forecast and the England and Northern Ireland forecast – rely solely on OBR forecasts, which removes one source of uncertainty, though reconciliations can still be material for the Welsh Budget.

<sup>3</sup> An independent forecaster, though not necessarily the OBR, was specified under the terms of the fiscal framework agreement between the Welsh and UK Governments.

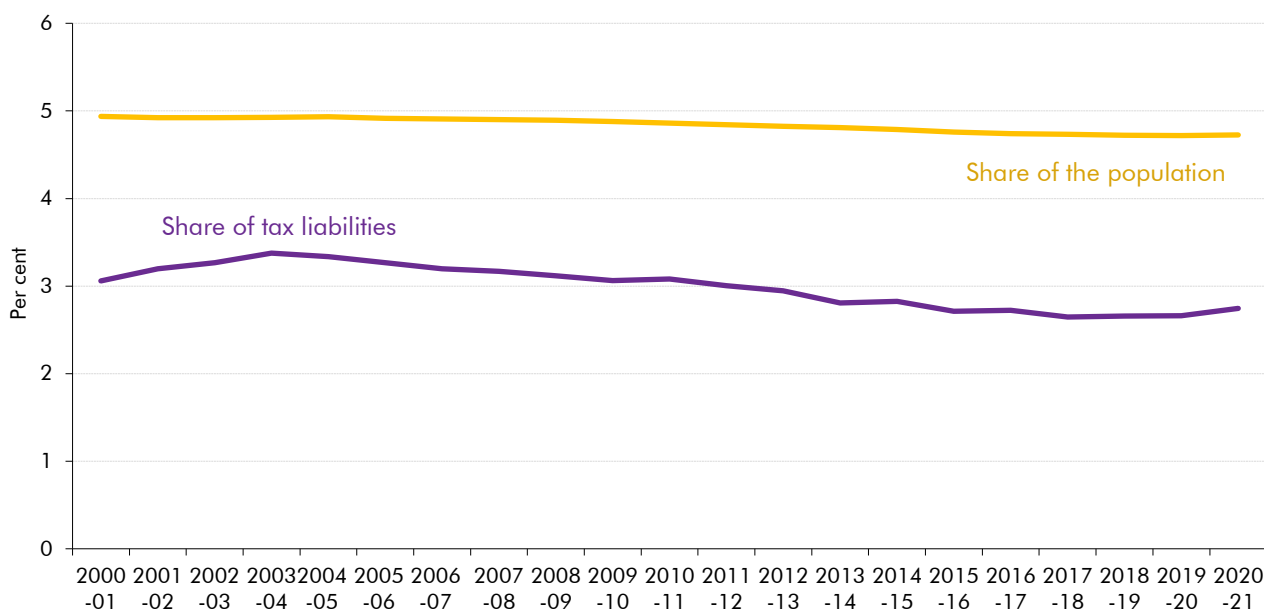


## What does the Welsh income tax base look like?

### The Welsh share of income tax

4.5 Between 2000-01 and 2020-21, the Welsh share of total UK income tax liabilities was consistently lower than Wales's share of the UK population, with both falling over the period, while the gap between the two increased slightly (Chart 4.1). The Welsh share of the UK population remained broadly unchanged at 4.9 per cent between 2000-01 and 2007-08 (the starting point for the analysis in the remainder of this chapter) before declining to 4.7 per cent in 2020-21. The Welsh share of income tax liabilities rose slightly from 3.1 per cent in 2000-01 to 3.2 per cent in 2007-08, before falling to 2.7 per cent in 2020-21, but with more variation from year to year. So as was the case in Scotland, Wales's share of income tax liabilities has declined more rapidly than its share of the total UK population since the onset of the financial crisis, which reflects falls in income tax paid per person in Wales relative to the UK as a whole.<sup>4</sup>

Chart 4.1: The Welsh shares of UK income tax liabilities and population



Note: HMRC did not publish SPI data for 2008-09 so the shares are based on interpolation from the adjacent years.

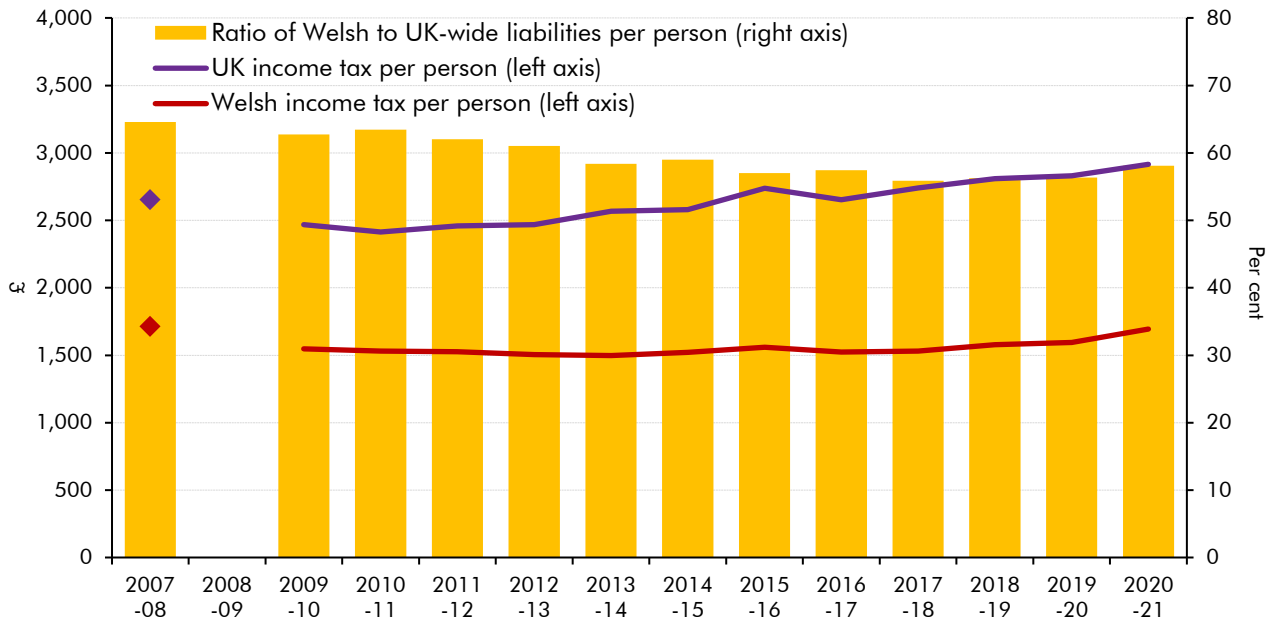
Source: HMRC, ONS

4.6 While the level of average income tax paid *per person* has always been higher UK-wide than in Wales, Chart 4.2 shows that changes in this measure in Wales (red line) and the UK (purple line) were very similar between 2007-08 and around 2011-12, but then diverged. The gap has widened by an average of 0.6 per cent a year over the full period. While both Wales and the UK saw falls in income tax per person in the first few years of the period in the aftermath of the financial crisis, Wales saw a sharper fall, with the level in 2016-17 being 11 per cent below that in 2007-08 compared to a peak fall of 3 per cent for the UK as a whole. UK-wide income tax per person has since rebounded and reached 10 per cent

<sup>4</sup> Most of the analysis in this paper is on a *per person* basis. The population data that underpins this does not capture the latest census data.

above the 2007-08 level in 2020-21. But Welsh income tax per person remains well below the level seen at the start of the period, being 1 per cent below 2007-08 levels. This has helped drive a fall in the ratio of Welsh to UK-wide income tax liabilities per person (the yellow bars) from 65 per cent to 58 per cent.

Chart 4.2: Income tax liabilities per person in Wales and the UK



Note: HMRC did not publish SPI data for 2008-09.  
Source: OBR, HMRC

### Income tax liabilities per person: Wales versus the UK

4.7 Income tax liabilities per person were considerably lower in Wales than in the UK as a whole across the entire period. The gap widened from £939 (35 per cent) in 2007-08 to £1,221 (42 per cent) in 2020-21 (shown in the two panels of Chart 4.3). The largest component of the difference in both years is lower tax paid on employment income (72 per cent each year). This explains most of the overall difference, far outweighing the impact from the three other streams combined (self-employment income, pension income and other income).<sup>5</sup>

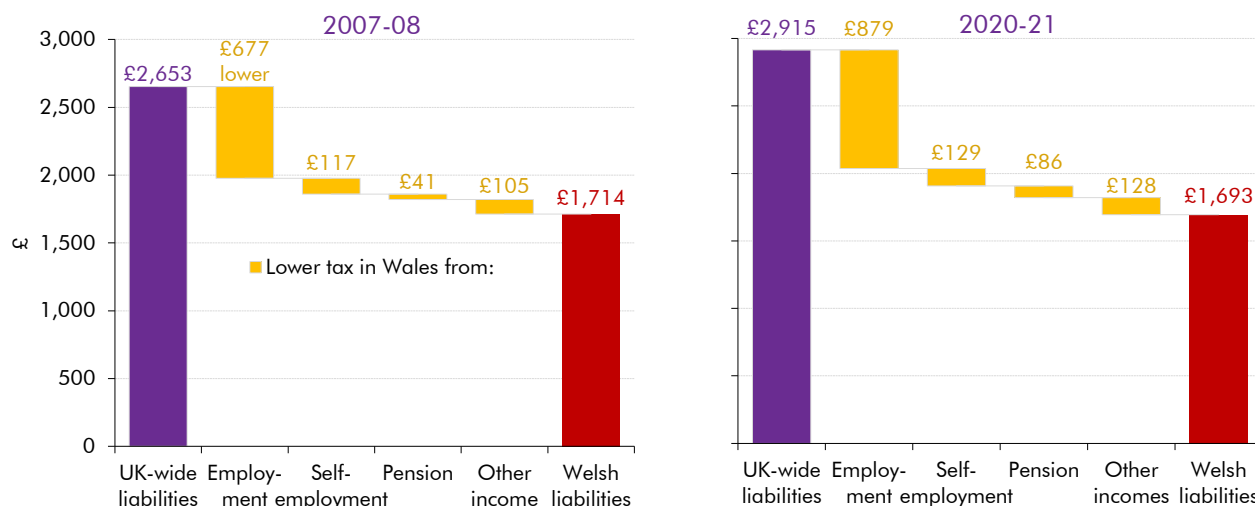
4.8 Other income streams include property income (taxation of which is devolved) and income from savings and dividends (taxation of which is reserved to the UK Government). While the full SPI data (available only to HMRC) does allow us to further disaggregate ‘other income’ (though not in the ‘public use tape’ version of the data) we decided against asking HMRC analysts to drill further into the stream. This was a pragmatic decision that reflects our view that this is unlikely to be a major limitation in our analysis, given that employment income is clearly the most important factor.<sup>6</sup> However, this does make it harder to interpret the differences identified within that stream and also means it is not possible to focus solely on

<sup>5</sup> As set out in Chapter 2, we have previously shown the difference in terms of income tax liabilities per person by separating differences relating to the share of the population paying tax and their average incomes, with a residual effective tax rate term that captures all other reasons for “less tax per pound of income” (see our 2019 *Welsh taxes outlook*). In this paper we instead look at the four different income streams separately, going into more detail on the drivers of trends in each, using the relevant data.

<sup>6</sup> Further investigating ‘other’ income is an area for future research.

non-savings, non-dividend income – the elements of income tax that have been devolved to the Scottish and Welsh Governments

Chart 4.3: Welsh and UK income tax liabilities per person

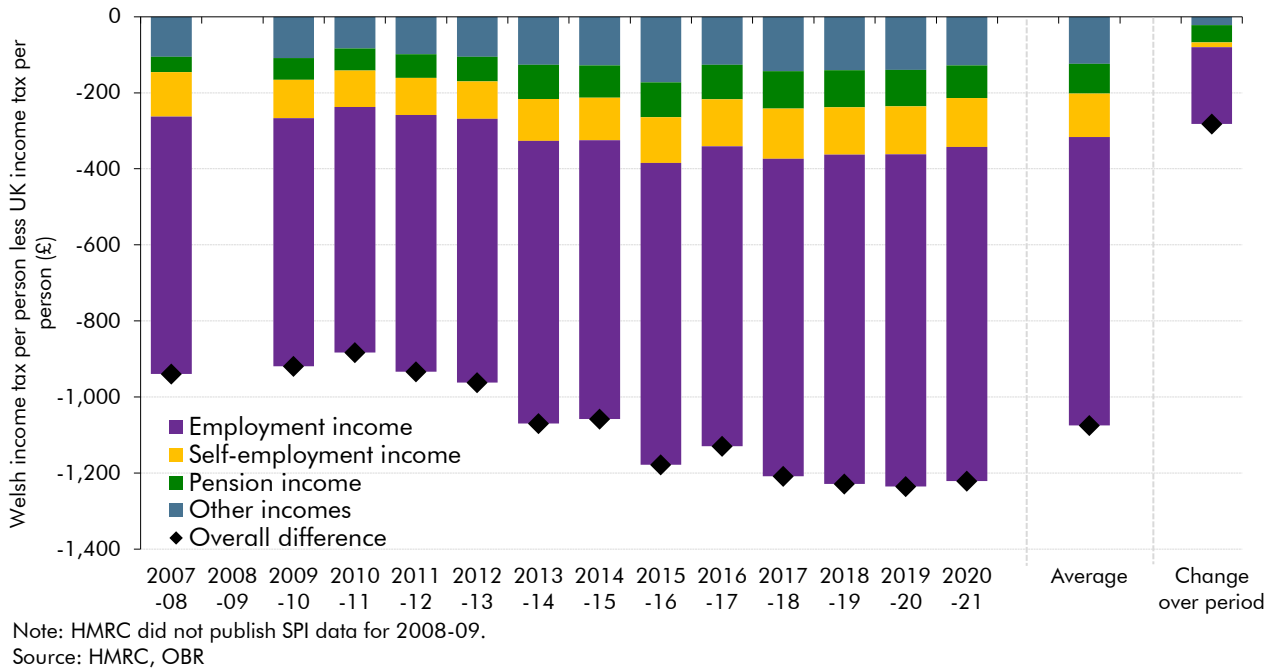


Source: HMRC, OBR calculations

4.9 Chart 4.4 extends this analysis of the difference between the income tax per person in Wales and the UK, split by income stream, to all years. It shows that:

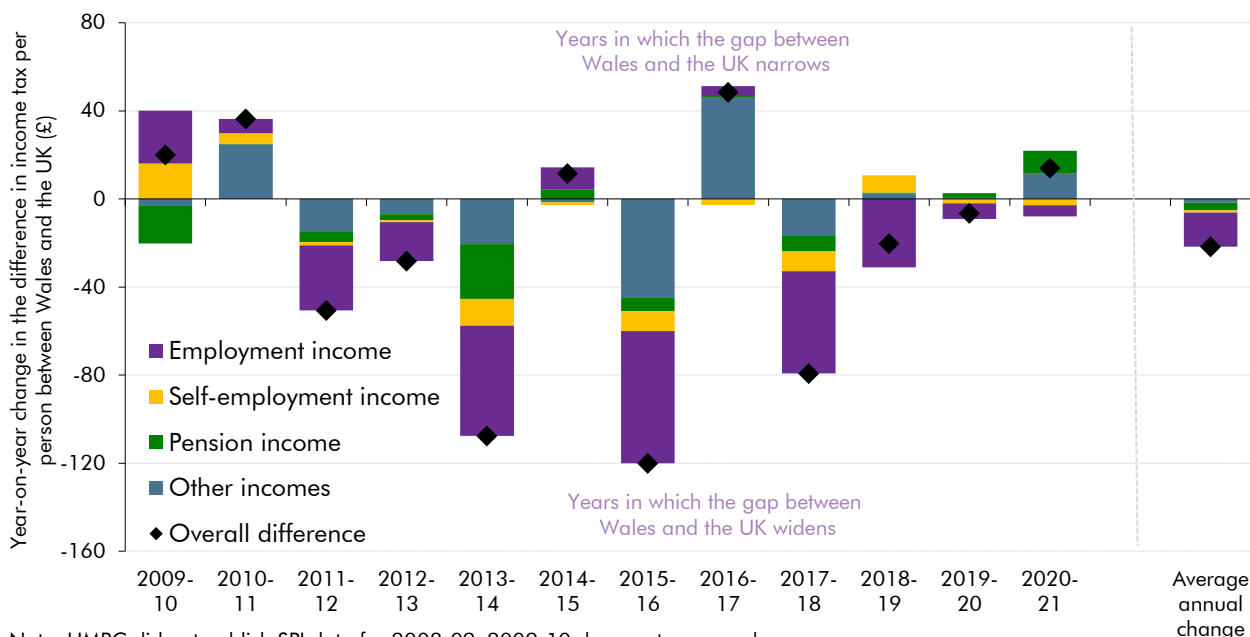
- Welsh **income tax per person** was lower than that in the UK as a whole over this period by an average of £1,074 (41 per cent). This gap began widening significantly after 2012-13, when it increased to £1,166 on average, up from £928 prior to then.
- Tax on **income from employment** is the biggest source of difference in every year, contributing an average of £758 (71 per cent of the total).
- The combined impact of **the other three income streams** is to lower income tax per person relative to the UK by an average of £316 across the whole period (£123 from other income, £114 is from self-employment income, £78 is from pension income).
- Of the £282 **widening between 2007-08 and 2020-21** in the Wales-UK income tax per person gap, over seven-tenths is due to tax on income from employment.

Chart 4.4: Differences in income tax per person between Wales and the UK



4.10 While income tax per person in Wales is lower than that in the UK in every year and the gap has largely been widening since the late 2000s, Chart 4.5 shows that the year-to-year movements are uneven, with narrowing years often followed by widening years, and with the gap widening in seven years but narrowing in five. But the years in which the gap widened have been of a far greater magnitude, generating the difference in income tax per person rising by an average of £22 a year (again, mostly due to earnings from employment). As with Scotland, these fluctuations matter since we must judge how the Welsh share evolves over the five years of our medium-term forecasts (and the years between the latest outturn data and the current year), which requires attempting to determine how much of any change in the most recent available year will persist.

Chart 4.5: Year-on-year changes in the difference between income tax per person in Wales and the UK as a whole



Note: HMRC did not publish SPI data for 2008-09. 2009-10 shows a two-year change.  
Source: HMRC, OBR

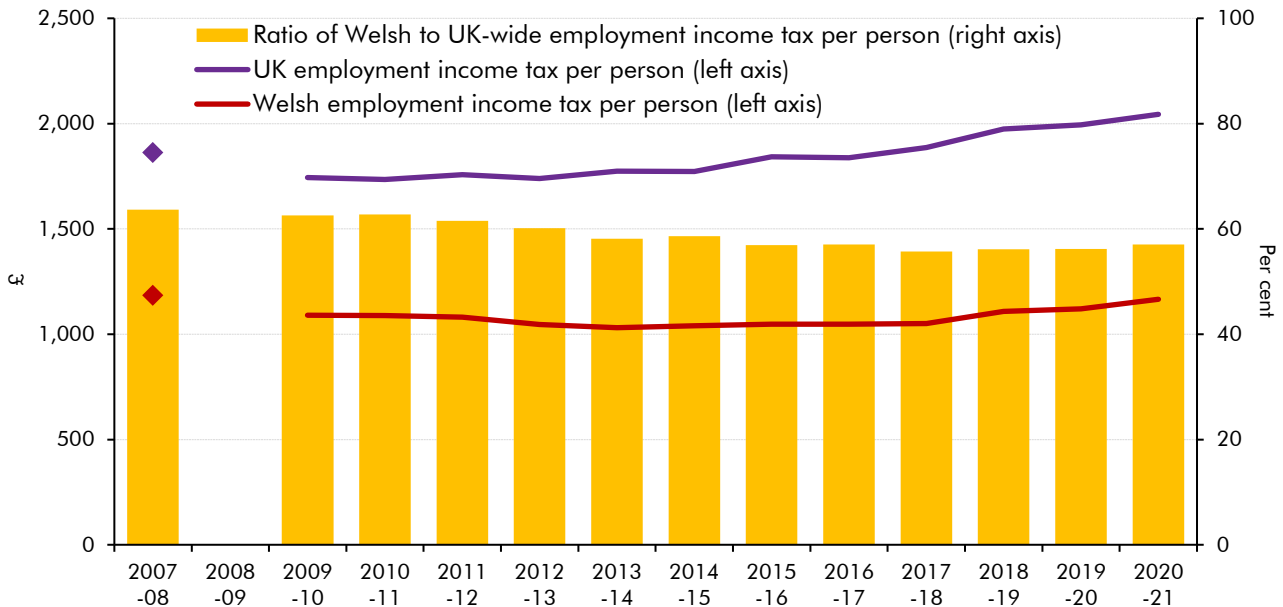
4.11 The following sections examine the changes depicted in Chart 4.5 in more detail, assessing the drivers within each of the four income tax streams.

## Income tax from employment

4.12 Income from employment (very largely comprising employee earnings, but also including small amounts of contributory benefit payments) is comfortably the largest income stream within the SPI, accounting for around 70 per cent of total UK-wide income and 69 per cent in Wales. These proportions have been reasonably stable since 2007-08.

4.13 Chart 4.6 shows that while employment income tax per person has increased by £183 (10 per cent) in the UK overall between 2007-08 and 2020-21, it actually fell in Wales, by £19 (two per cent). This has driven a fall in the ratio of Welsh to UK-wide employment income tax per person (the yellow bars) of 6.6 percentage points.

Chart 4.6: Employment income tax per person in Wales and the UK

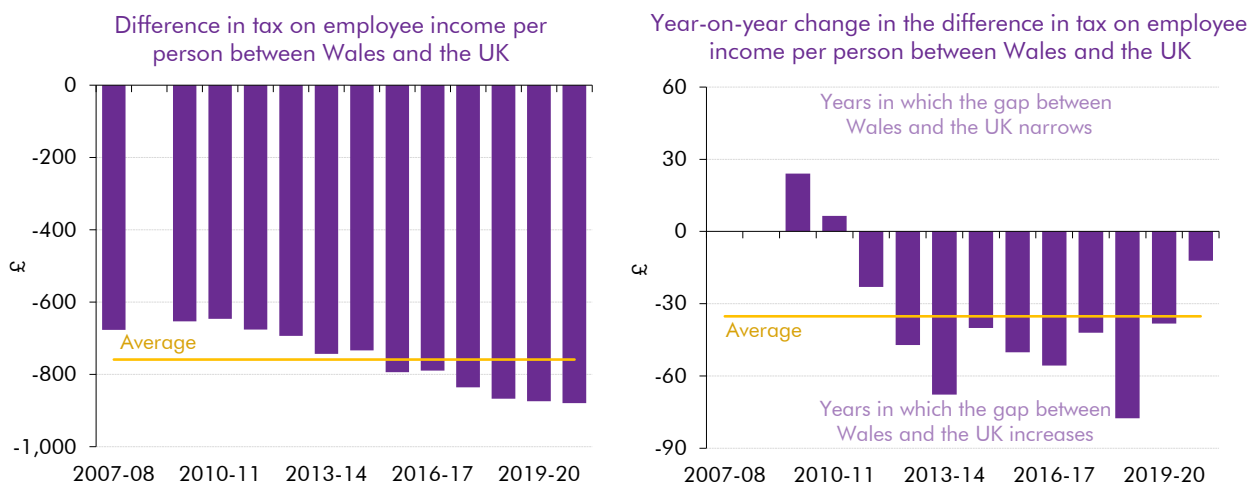


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

4.14 Income tax per person from employment in Wales was lower than that in the UK in every year, with the gap widening in recent years (Chart 4.7, left panel). In 2020-21, the gap was £879 (43.0 per cent), widening from the £677 (36.3 per cent) in 2007-08, and is £758 a year lower on average over the whole period.

4.15 In terms of year-on-year changes, the difference between income tax per person from employment in Wales and the UK widened in most years, ten out of twelve, (Chart 4.7, right panel), and in every year since 2011-12. The gap has widened by £45 a year on average since then.

Chart 4.7: Differences in employment income tax per person in Wales and the UK



Note: HMRC did not publish SPI data for 2008-09. 2009-10 on right hand chart shows a two-year change.  
Source: HMRC, OBR

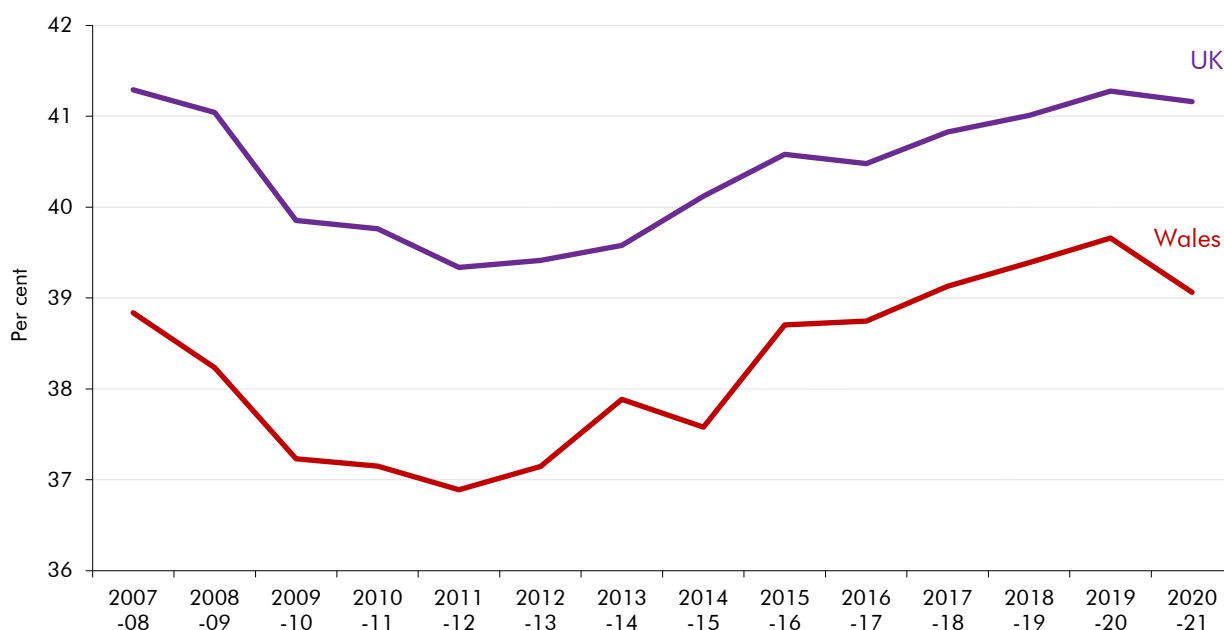
4.16 As we did for Scotland, the following sub-sections drill down into the factors that explain the substantial and widening gap seen in Chart 4.7, bringing other, timelier data than the SPI to bear (and therefore data that are relevant to forecast judgements for the years between the most recent SPI and the year in progress that forms the start of our forecast). Specifically, we explore the role of the proportion of the population who are employees, the proportion of employees that pay employment income tax, and the average employment income tax of those taxpayers. For the latter, we explore the extent to which average employee earnings, and their tax-richness, helps us understand year-on-year fluctuations.

### Proportion of the population that pays income tax from employment

4.17 The share of the population who are employees has actually grown at a marginally stronger rate in Wales than the UK as a whole, in contrast to Scotland where growth has been weaker in relative terms. Employees represented 39.2 per cent of the total population in Wales in 2020-21, which while lower than in the UK as a whole, has increased from 38.8 per cent in 2007-08, compared to a slight fall in the share in the UK (Chart 4.8). Wales’s population grew by 5.4 per cent (almost six-tenths of the 9.4 per cent growth in the UK as a whole) but the growth in Welsh employee numbers was stronger than its population growth over the period, 6.4 per cent, whereas in the UK as a whole growth in employee numbers (9.0 per cent) was a little slower than overall population growth.

4.18 If the employee-to-population ratio in Wales had moved in step with that in the UK as a whole (i.e. declining by 0.1 percentage point over the period, maintaining the 2.5 percentage point positive gap that was observed in 2007-08), and holding all else constant, the gap between Welsh and UK-wide employment income tax per person would have widened even further to £894 in 2020-21 (a widening of £15, giving a 2 per cent larger gap).

Chart 4.8: Employees as a share of the total population

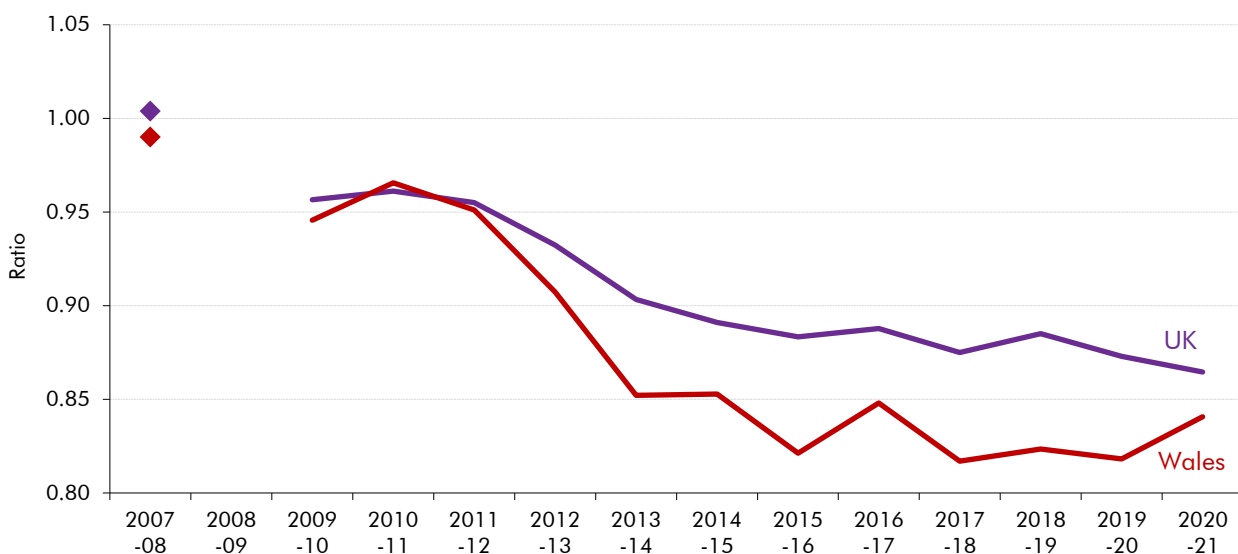


Source: ONS

4.19 In contrast, the gap between Wales and the UK in the proportion of employees that pay income tax has risen over the period, therefore contributing to the widening gap between Welsh and UK income tax per person from employment. While the proportion of employees paying income tax in Wales was just below that of the UK in 2007-08, and then rose above that of the UK in 2010-11, it has now fallen below that of the UK again, albeit with the gap narrowing in 2020-21 (Chart 4.9). One area that we plan to explore as part of our forecast evaluation is whether the successive above-inflation rises in the personal allowance that were implemented by UK governments over this period had a greater effect in Wales than in the UK.

4.20 If the taxpayer-to-employee ratio in Wales had moved in step with that in the UK as a whole (i.e. falling by 13.9 percentage points over the period, maintaining the 1.4 percentage point positive gap that was observed in 2007-08), and holding all else constant, the gap between Welsh and UK-wide employment income tax per person would have been £19 (2 per cent) narrower in 2020-21 at £859.

Chart 4.9: Ratio of the number of employment income taxpayers to the number of employees



Note: The ratio is useful to track the implied change in the taxpayer levels over time, but is not a precise estimate of the actual proportion of employees that pay income tax. For example, the numbers of employees and taxpayers are sourced from different surveys. HMRC did not publish SPI data for 2008-09.  
Source: HMRC, ONS

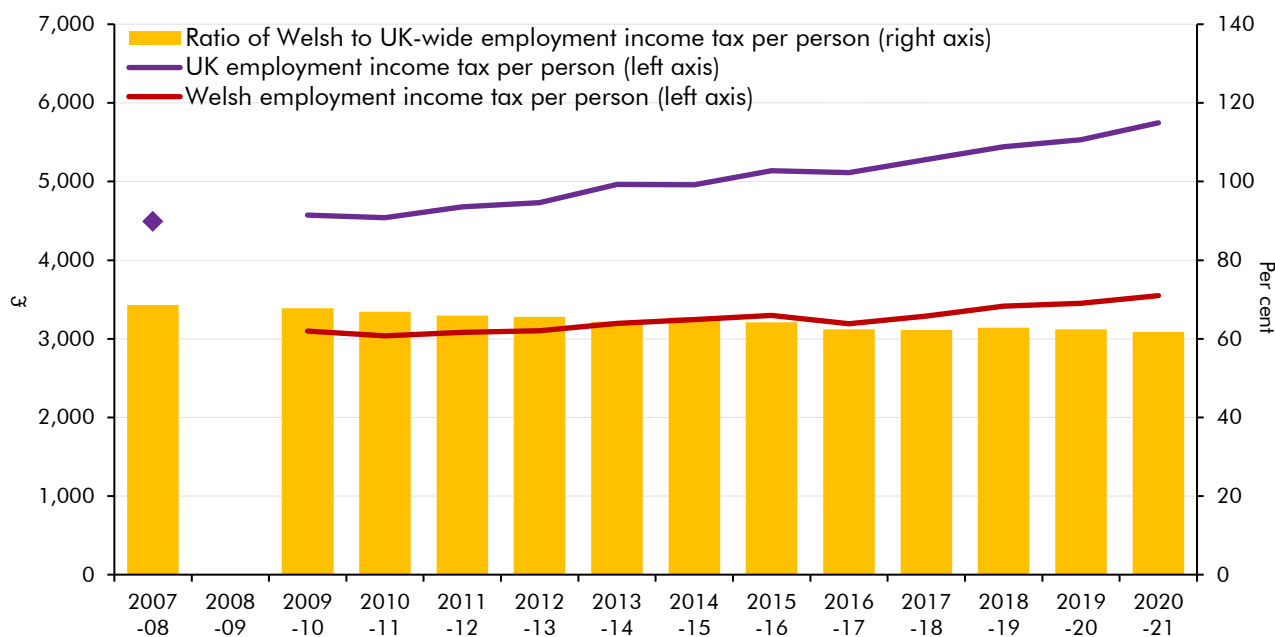
### Average employment income tax per taxpayer

4.21 We now explore the amount of income tax each taxpayer pays. This can be thought of in two parts: each employment income taxpayer’s average income from employment; and the average rate of income tax levied on that income. In both cases we can bring other, more timely sources of data to bear to understand recent trends, notably data on employee earnings, and their compositional drivers and distribution.



4.22 Welsh employment income tax per taxpayer has risen by 15 per cent since 2007-08, in comparison to the 28 per cent rise seen in the UK as a whole (Chart 4.10). If average employment income tax per taxpayer in Wales had moved in step with that in the UK as a whole since 2007-08, and holding all else constant, the gap between Welsh and UK-wide employment income tax per person would have been £392 (18 per cent) narrower in 2020-21 at £1,803.

Chart 4.10: Employment income tax per taxpayer

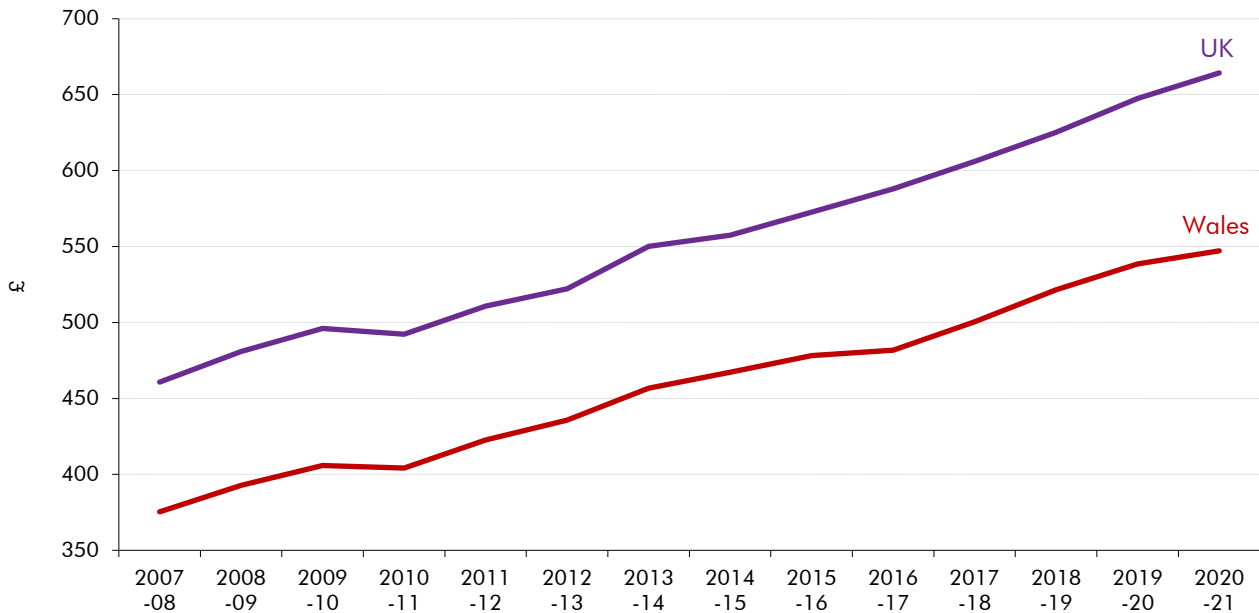


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

### Average employment income per taxpayer, and average employee earnings

4.23 Average income from employment per employment income taxpayer (which we shorten to ‘average income from employment’ for the remainder of the Chapter) in Wales is notably lower than it is in the UK as a whole and this is an important factor in explaining the gap between UK and Welsh income tax per person. Chart 4.11, which is derived from the SPI, shows that Welsh average weekly income from employment was £547 in 2020-21, 17.6 per cent lower than the average in the UK as a whole of £664. This has slightly narrowed in percentage terms, with the gap being 18.5 per cent in 2007-08. But despite this narrowing in percentage terms, the gap still widened in cash terms due to the higher UK starting point (which matters for our assessment of the absolute or cash change in the Wales-UK income tax per person gap). Average earnings from employment in Wales were £117 a week lower than those in the UK in 2020-21, compared to £85 in 2007-08.

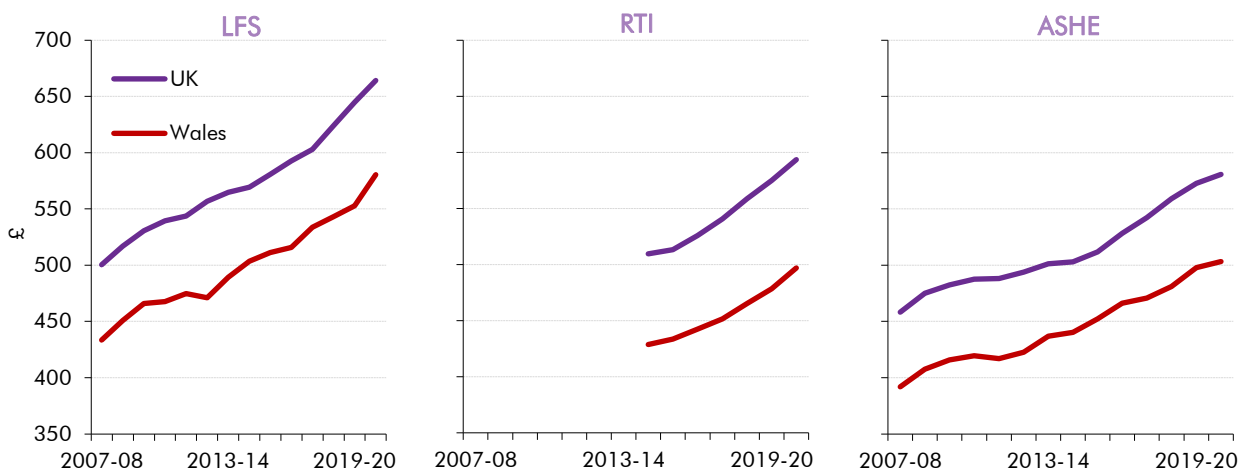
Chart 4.11: Average weekly employment income per taxpayer



Note: HMRC did not publish SPI data for 2008-09. Earnings in that year have been interpolated using ASHE growth rates.  
Source: HMRC, OBR

4.24 Chart 4.12 shows that the scale of the differences in average employment income per taxpayer between Wales and the UK shown in Chart 4.11 hold when looking at the related-but-different concept of *average employee earnings*. This can be seen across three different data sources: the ONS’s Labour Force Survey (LFS), where Welsh earnings in 2020-21 are 13 per cent lower; HMRC’s real-time information from the PAYE system (RTI, 16 per cent lower); and the ONS’s Annual Survey of Hours and Earnings (ASHE, which is also 13 per cent lower).<sup>7</sup> The pattern across all three data sources is similar, with Welsh and UK earnings growing at roughly the same rate (in percentage terms) across the period.

Chart 4.12: Average weekly employee earnings across different data sources



Source: HMRC, ONS

<sup>7</sup> The three sources differ in several ways and are therefore not directly comparable with each other or with the SPI.

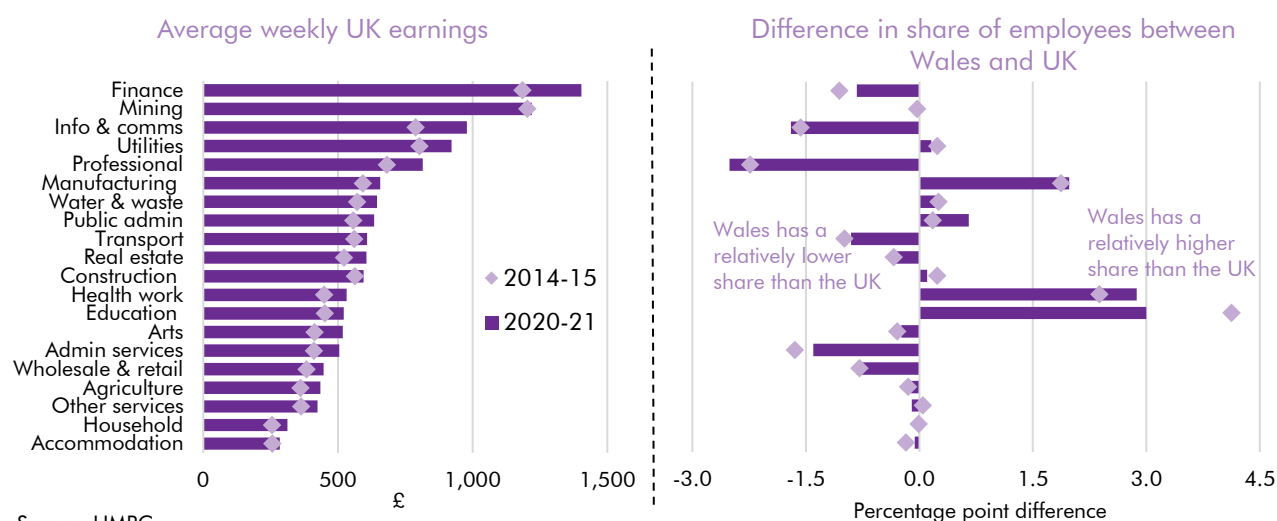
4.25 While the trends in average earnings are not as divergent between Wales and the UK as was the case for Scotland, it is still informative to make use of the rich and timely earnings data that are available to understand how compositional changes in the employee workforce have contributed to the trends we observe (and might be expected to do so in future). So in the following sections we do so for sectoral composition, and the age groups and highest qualification levels of employees, in order to better understand developments in employment income tax per taxpayer in Wales and the UK in recent years.

### Composition of employment income: by sector

4.26 How does the sectoral composition of the Welsh employee workforce, relative to that across the UK as a whole, affect the Wales-UK earnings gap and any developments in it? Chart 4.13 explores this, showing the average UK weekly pay in different sectors in 2014-15 and 2020-21 (left panel) and how Wales’s share of employment in each sector differs from that of the UK as a whole in those two years (right panel). It shows a mixed pattern of differences between Wales and the UK: Wales has a much lower share of employees in the sectors with the highest average earnings, particularly ‘information and communication’ and ‘professional services’, but a higher share in some mid-high-paying sectors like manufacturing. And at the other end of the earnings scale, Wales has a lower share of employees than the UK in six of the seven lowest-paying sectors.

4.27 The simple decomposition presented in Table 4.1, below, brings this picture together, showing that overall, the sectoral make-up of employees in Wales in 2020-21 caused a relatively modest (£9 a week) compositional drag on whole-economy earnings relative to the UK, meaning that the vast majority of the difference in employee earnings between Wales and the UK is explained by other factors, as was the case in Scotland.

Chart 4.13: Earnings and share of employees by sector, 2014-15 and 2020-21



Source: HMRC

4.28 This sectoral effect has changed little in recent years, shown by the relatively minor differences between the bars and the diamonds in the right panel of Chart 4.13. This is mirrored in Table 4.1, which shows that of the £16 widening in the Wales-UK earnings gap

in this data between 2014-15 and 2020-21 (from -£81 to -£97), only £3 can be explained by changes in the sectoral composition component (from -£6 to -£9).

4.29 But notably, the role of sectoral composition in driving earnings differences has strengthened somewhat in the most recent years of data, 2021-22 and 2022-23 (that extend beyond the latest SPI data that underpins this analysis, and the latest income tax outturn data for Wales, and are therefore relevant to forecast judgements). There has been a further £21 widening in the Wales-UK earnings gap, of which £6 is explained by changes in sectoral composition. This largely reflects the Welsh share of employment in lower-paying sectors increasing by more than that in the UK as a whole (for example in the accommodation sector, which is the second-lowest-paying, as well as health work and the arts).

Table 4.1: Sectoral decomposition of the Wales-UK employee earnings gap

Year	Employee earnings in Wales (£ per week)	Employee earnings in the UK (£ per week)	Total earnings difference (£ per week)	Of which:	
				Due to sectoral composition (£ per week)	Due to sectoral composition (percentage)
2014-15	429	510	-81	-6	8
2015-16	434	514	-80	-6	8
2016-17	443	526	-84	-7	8
2017-18	452	541	-89	-8	9
2018-19	465	559	-94	-8	9
2019-20	479	575	-97	-8	8
2020-21	497	594	-97	-9	9
2021-22	525	635	-110	-14	12
2022-23	555	673	-118	-15	13

Note: Sectoral composition is derived by multiplying the difference in the individual percentage that each sector represents for Wales relative to England by the average earnings in Wales and the UK and summing up every sector.

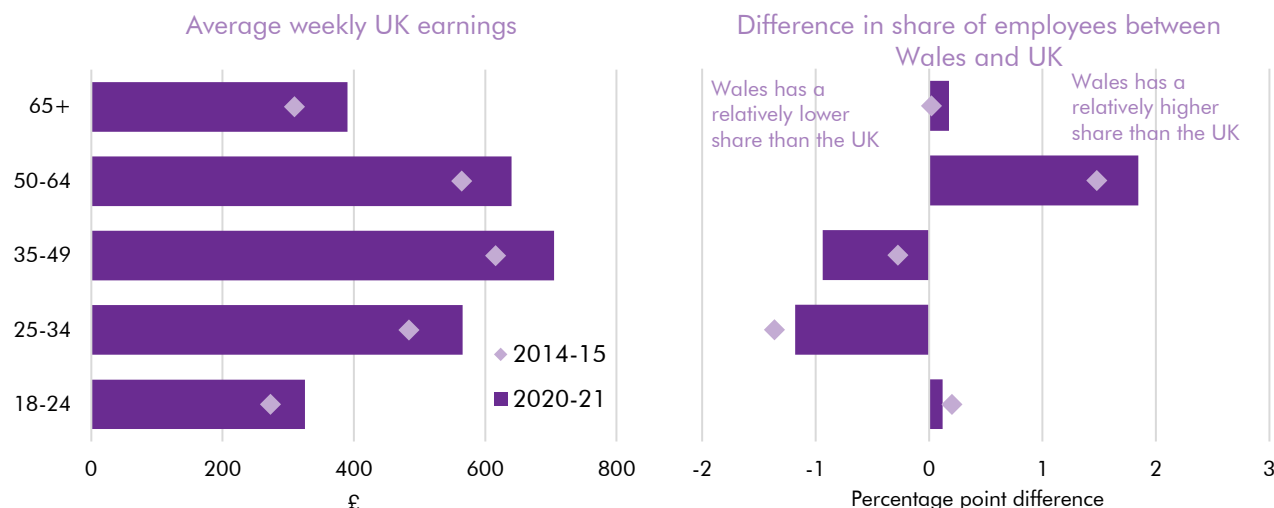
## Composition of employment income: by age

4.30 We now consider the relative age composition of employees in Wales and the UK in explaining the gap in average income from employment. As explained in relation to Scotland, we already have an age-specific index in our forecast that captures prospective changes in working-age versus pension-age adults on the Welsh share of income tax.

4.31 Chart 4.14 shows the wide variation in average weekly earnings by age group at the UK level (left panel) and Wales's relative share of employees in each group (right panel) in both 2014-15 and 2020-21. The picture in 2020-21 is very similar to that in Scotland: of the three higher-earning age groups, Wales had a significantly higher share of employees among 50-to-64-year-olds and relatively lower shares among 25-to-34- and 35-to-49-year-olds. These differences net out in terms of Wales's average employee earnings levels relative to the UK – using the same decomposition methods as in Table 4.1, we find that they contribute £0 to the -£97 weekly earnings gap in 2020-21.

4.32 The differences between the diamonds and the bars in the right panel of Chart 4.14 further show that there has been little discernible change in this age composition effect over recent years. Indeed, simple decomposition methods show that the effect on average weekly earnings from age composition in Wales relative to the UK is negligible in all years between 2014-15 and 2022-23.

Chart 4.14: Earnings and share of employees by age, 2014-15 and 2020-21



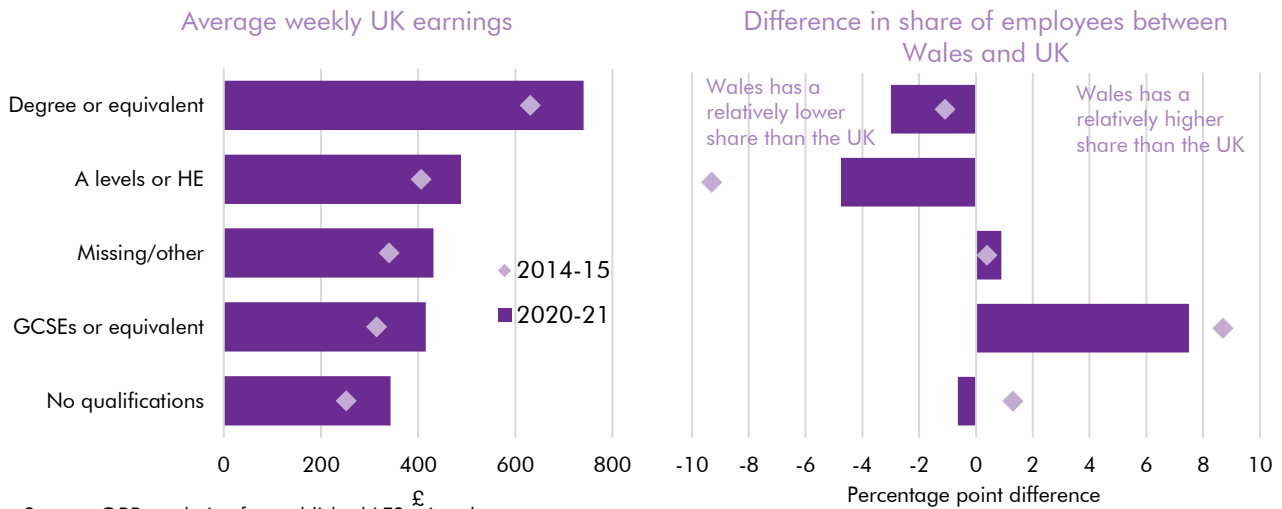
Source: HMRC

### Composition of employment: by qualification

4.33 Finally, we consider the relative composition of employees by highest qualification level in Wales and the UK in explaining the gap in average income from employment. In this case we use the LFS data as RTI data does not contain information on the qualification levels of employees. Use of LFS data allows us to take the analysis back to 2007-08.

4.34 Chart 4.15 shows the wide variation in average weekly earnings by qualification group at the UK level (left panel) and Wales's relative share of employees in each group (right panel) in both 2007-08 and 2020-21. Wales had a relatively lower share of employees in the highest-earning qualification group (holding at least degree level or equivalent qualification) in 2020-21 and a higher share in the two lower-earning qualification groups, particularly among those with GCSE-level qualifications as their highest. Using the simple decomposition presented in Table 4.2 below, we find that this qualifications mix resulted in a modest (£13) compositional drag on average earnings in Wales relative to the UK in 2020-21, explaining only a minority of the overall £76 a week gap as measured in the LFS data. So as with sector and age group, it is within-qualification-group factors that explain the great majority of the difference in average earnings levels between Wales and the UK.

Chart 4.15: Earnings and share of employees by qualification, 2007-08 and 2020-21

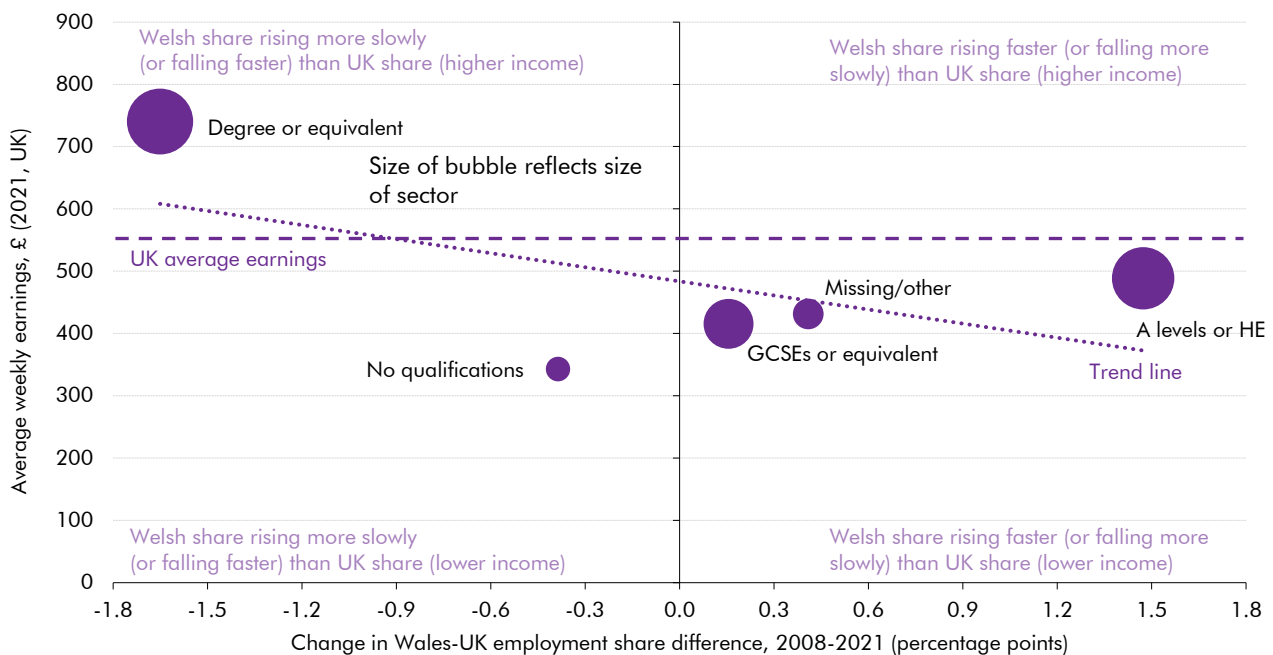


Source: OBR analysis of unpublished LFS microdata

4.35 Qualifications composition has also contributed modestly to the growing cash difference between average earnings in Wales and the UK since 2007-08. This can be seen in the differences between the diamonds and the bars in the right panel of Chart 4.15, and more clearly in the patterns shown in Chart 4.16. The decline in degree-level qualifications in Wales relative to the UK over the period, combined with the relative growth in Wales in the three middle-paying (but all below-average) qualification groups has contributed to a widening earnings gap between Wales and the UK.

4.36 The decomposition in Table 4.2, below, shows that a £9 compositional drag on earnings from qualifications in Wales relative to the UK in 2007-08 had risen to a £13 drag by 2020-21, underscoring that this effect is small relative to the £16 widening in the weekly earnings differential measured in the LFS data over this period (from -£60 to -£76). This compositional drag increased further to £19 per week by 2022-23. This suggests that despite limited effects over the period for which we have SPI data and income tax outturn data for Wales, it is possible that this trend is a persistent one that could be factored into our forecasts. We will therefore explore the underlying drivers of this trend in more detail in future analysis.

Chart 4.16: Change in Wales’s employee share by qualification, relative to change in the UK’s share, 2007-08 to 2020-21



Source: OBR analysis of LFS microdata

Table 4.2: Qualification decomposition of the Wales-UK earnings gap

Year	Employee earnings in Wales (£ per week)	Employee earnings in the UK (£ per week)	Total earnings difference (£ per week)	Of which:	
				Due to qualification composition (£ per week)	Due to qualification composition (percentage)
2007-08	366	425	-60	-9	15
2008-09	379	429	-51	-4	9
2009-10	380	438	-58	-3	6
2010-11	381	444	-63	-4	6
2011-12	388	449	-61	-7	12
2012-13	395	459	-64	-12	18
2013-14	398	466	-68	-8	11
2014-15	419	472	-54	-7	13
2015-16	426	483	-58	-10	17
2016-17	436	493	-57	-13	22
2017-18	443	505	-62	-12	19
2018-19	455	524	-69	-11	16
2019-20	467	543	-76	-13	17
2020-21	498	569	-71	-12	17
2021-22	525	591	-66	-13	19
2022-23	549	627	-79	-18	23

Note: Qualification composition is derived by multiplying the difference in the individual percentage that each qualification represents for Wales relative to England by the average earnings in Wales and the UK and summing up every qualification.

## The role of differences in employee composition: conclusion

4.37 To a large extent mirroring our conclusions for Scotland, these three compositional analyses taken together point to within-sector, within-age-group and within-qualification-group factors as the main sources of difference between average employee earnings *levels* in Wales and the UK, although both sector and qualification cause a larger compositional drag in Wales than they do in Scotland. In terms of changes over the past decade or so, unfavourable trends in sectoral and qualifications composition in Wales relative to the UK have made only small (negative) contributions to the Wales-UK earnings differential (and therefore implicitly the widening cash gap in average income from employment). The further widening of these compositional gaps in the most recent years is something we will consider in relation to our future forecasts.

## The tax levied on taxpayers' employment income

4.38 Having considered average income from employment (and the richer and more timely data on average employee earnings that we can exploit to understand trends in this metric), the final step in our analysis is the amount of tax levied on that employment income. There are three factors to consider here:

- **The amount of tax revenue generated from each pound of average employment income.** As set out above, average income from employment has consistently been higher in the UK than in Wales. This means that even if there were no change in the Wales-UK employment income gap in relative terms, the general trend of rising average employment incomes over time, and the progressive structure of the income tax system, mean that *employment income tax* per taxpayer will grow faster in the UK than in Wales. As a proxy for this 'average effective tax rate', the SPI data imply that *employment income tax* was 12 per cent of *employment income* in Wales in 2020-21, whereas the equivalent figure for the UK was 17 per cent. This effect is therefore stronger for Wales than Scotland, where the equivalent figure is 15 per cent.)
- **The distribution of employment incomes around the average.** The effects described above can be amplified by changes in the distribution of incomes around the average, again given the progressive structure of the income tax system. To explore this factor, we return to the related concept of average employee earnings, this time using the ASHE data.<sup>8</sup> Chart 4.17 shows the overall growth in earnings at different percentiles of the distribution between 2006-08 and 2020-22, comparing Wales to the UK, showing progressive changes over the period in both places. At percentiles 20-80 (we can ignore the 10<sup>th</sup> percentile for this analysis given it is below the threshold for paying income tax), growth has been slightly faster in Wales than in the UK. But at the 90<sup>th</sup> percentile – by far the most important for income tax considerations, as it includes most higher-rate tax payers and all those that pay the additional rate – growth has been slower. This suggests (more convincingly than the comparison of Scotland to the

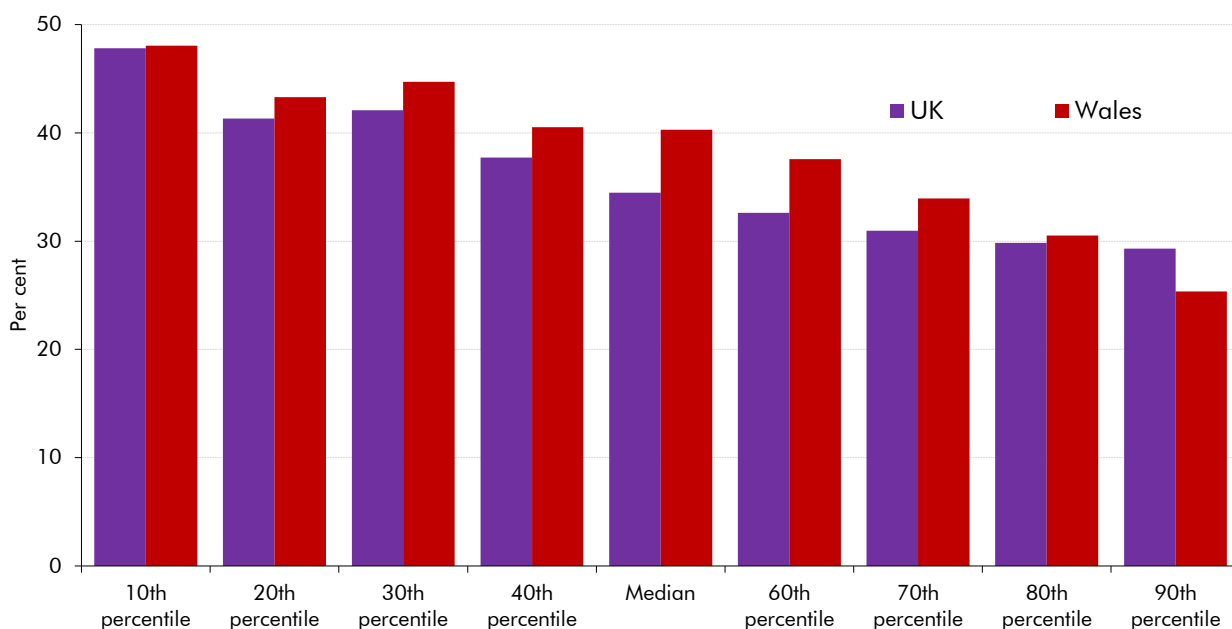
<sup>8</sup> We don't have access to detailed information on the distribution of employment income per taxpayer in the SPI data, or the distribution of employee earnings in Wales in the RTI data, and the LFS is less good at measuring earnings distributions than the ASHE.



UK) that distributional trends around the average in the UK have been more tax-rich than in Wales. It is important to note that this distributional channel affects *total* income tax paid by Welsh taxpayers relative to those in the UK as a whole, but not the Welsh rates of income tax that have been devolved, since those have been levied at a flat 10 per cent across all incomes.

- Unlike in Scotland, there is no effect from **changes in the tax structure in Wales relative to the UK**, since the Welsh Government has not altered the Welsh rates of income tax since they were devolved in April 2019.

Chart 4.17: Annual change in weekly employee earnings by percentile of the earnings distribution for the UK and Wales, 2006-08 to 2020-22



Source: ONS

## Explaining the difference in employment income tax per person between Wales and the UK

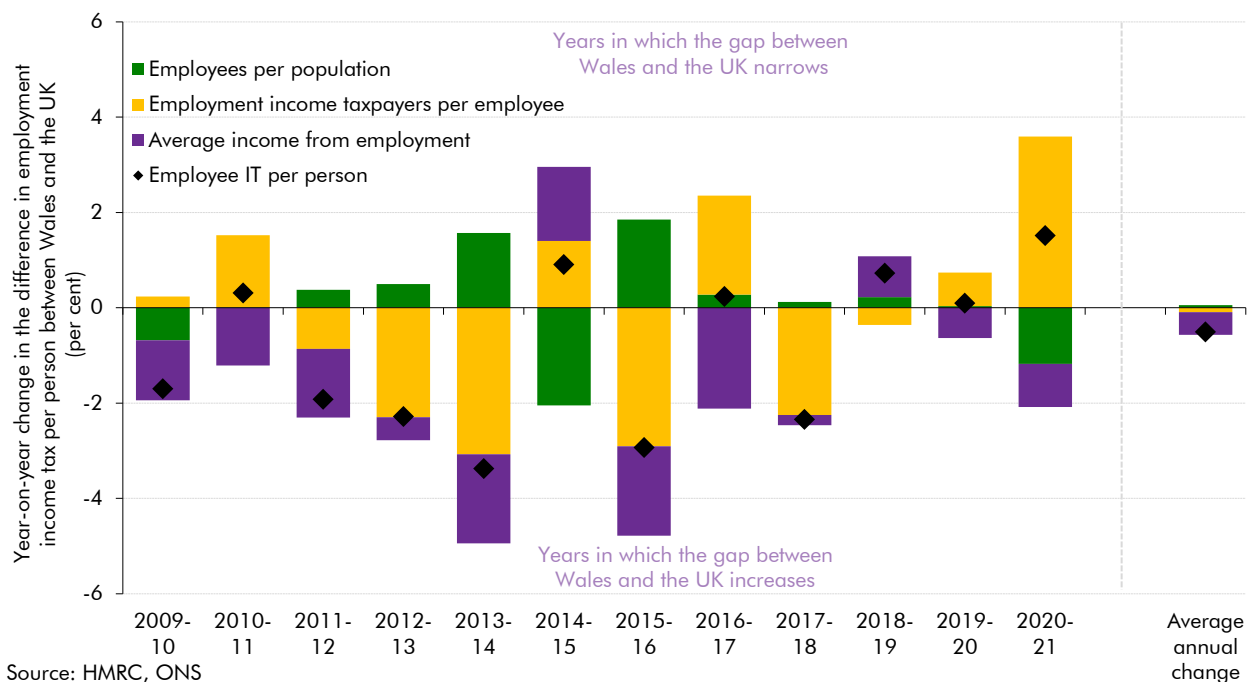
4.39 Chart 4.18 brings together our analysis of income tax from employment, decomposing the year-on-year changes in the difference between employment income tax per person in Wales and the UK. Positive values represent years where the gap between Wales and the UK narrowed, while in years with negative values it widened.

4.40 Between 2007-08 and 2020-21, the difference in income tax from employment per person in Wales relative to the UK widened by 6.6 percentage points (taking the ratio down from 63.7 to 57.0 per cent) – a 0.5 percentage-point-a-year average widening.

4.41 In terms of contributions to the 0.5 percentage point a year widening in the gap:

- **0.5 percentage points are attributable to the amount of employment income tax paid per taxpayer rising more slowly in Wales than in the UK as a whole** since 2007-08, therefore accounting for almost all of the overall change, with the gap widening in ten out of twelve years.
- **0.1 percentage point is attributable to the faster decline in the proportion of employees that pay employment income tax in Wales than in the UK.** While the gap between Wales and the UK as a whole did widen during the period, from a difference of 0.01 in the ratio in 2007-08 to a 0.06 difference in 2015-16, this then sharply narrowed again in 2020-21 and now stands at a difference of 0.02.
- This is offset by a **0.1 percentage point narrowing attributable to the number of employees as a share of the population rising very slightly faster in Wales than in the UK as a whole** since 2007-08. While Wales still has fewer employees per person than the UK overall, the gap has narrowed from a 2.7 percentage point gap in 2007-08 to a 2.2 percentage point gap in 2020-21.

Chart 4.18: Differences in income tax from employment per person between Wales and the UK: year-on-year changes



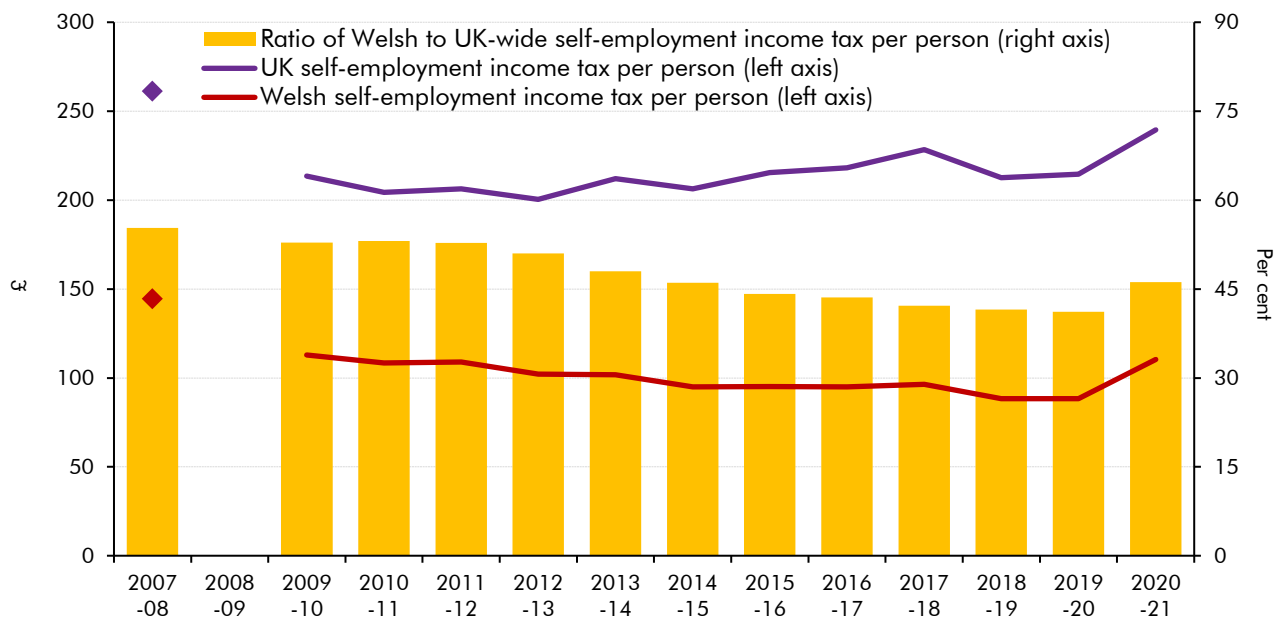
## Income tax from self-employment

- 4.42 We next turn to tax from self-employment income, which accounted for 11 per cent of overall difference in income tax per person between Wales and the UK in 2020-21, but only a small proportion (4 per cent) of the Wales-UK divergence on this metric since 2007-08.
- 4.43 Chart 4.19 shows that self-employment income tax per person stood at £110 per person in Wales in 2020-21, down from £145 per person in 2007-08, a fall of 24 per cent, although

## The Welsh income tax base

with a large uptick in 2020-21, perhaps owing to distortions associated with the self-employment income support scheme (SEISS). Self-employment income tax per person for the UK as a whole is over twice the amount in Wales in 2020-21, and stood at £239 per person. This was down 8 per cent since 2007-08, a shallower fall than in Wales. As a result, the ratio of Welsh to UK-wide self-employment income tax per person fell from 55 per cent in 2007-08 to 46 per cent in 2020-21, having fallen as low as 41 per cent in 2019-20.

Chart 4.19: Self-employment income tax per person in Wales and the UK

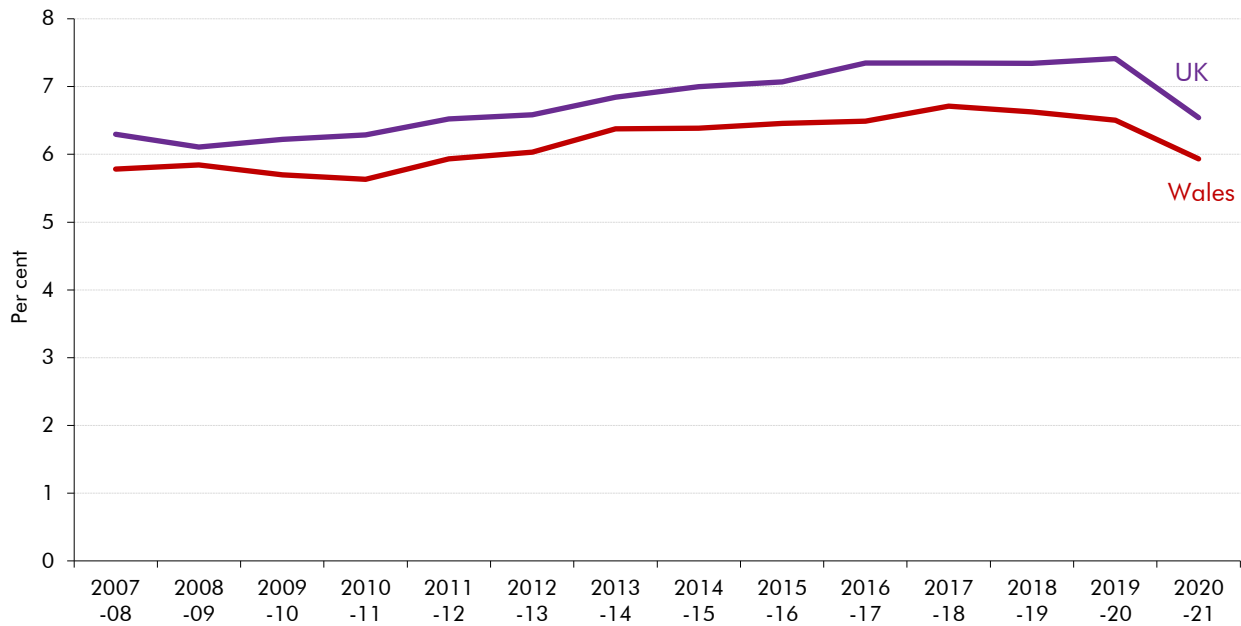


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

## Proportion of the population that pays income tax from self-employment

4.44 Chart 4.20 shows that self-employment (as measured in the LFS) as a share of the population has been lower in Wales than in the UK in every year since 2007-08, standing at 5.9 per cent in Wales in 2020-21 versus 6.5 per cent in the UK as a whole, a gap of 0.6 percentage points. This gap has widened from 0.5 percentage points in 2007-08.

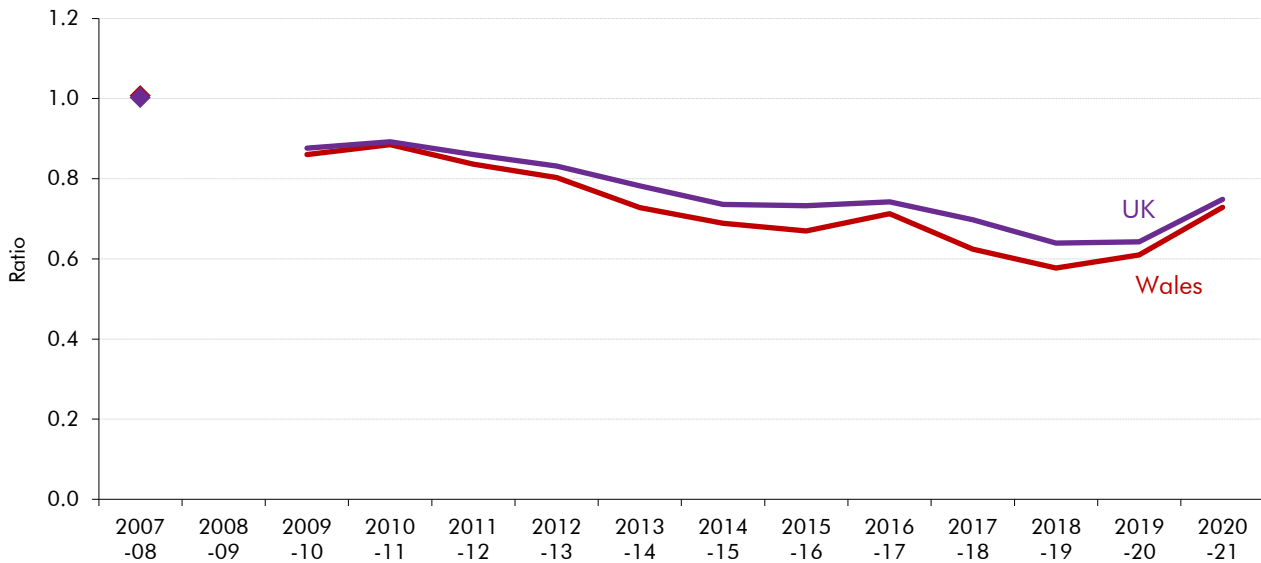
Chart 4.20: The self-employed as a share of the total population



Source: HMRC, ONS

4.45 Chart 4.21 shows that the ratio of self-employed taxpayers (as reported in the SPI based on tax definitions) to the overall numbers in self-employment (as reported in the Annual Population Survey (APS)) is broadly similar in Wales and the UK in 2020-21, standing at 0.73 in Wales and 0.75 in the UK as a whole, and was broadly similar in 2007-08 too (at 1.01 and 1.00 respectively). The gap did widen during the period, reaching 0.07 in 2017-18 but has since narrowed again. As discussed above, one of the factors behind the steadily declining proportions in both Wales and the UK as a whole is the above-inflation rises in the personal allowance over the period, taking increasing numbers of self-employed people on lower incomes out of paying income tax altogether.

Chart 4.21: Ratio of self-employed taxpayers to the overall self-employed population



Note: The ratio is useful to track the implied change in the taxpayer levels over time, but is not a precise estimate of the actual proportion of employees that pay income tax. For example, the numbers of employees and taxpayers are sourced from different surveys. HMRC did not publish SPI data for 2008-09.

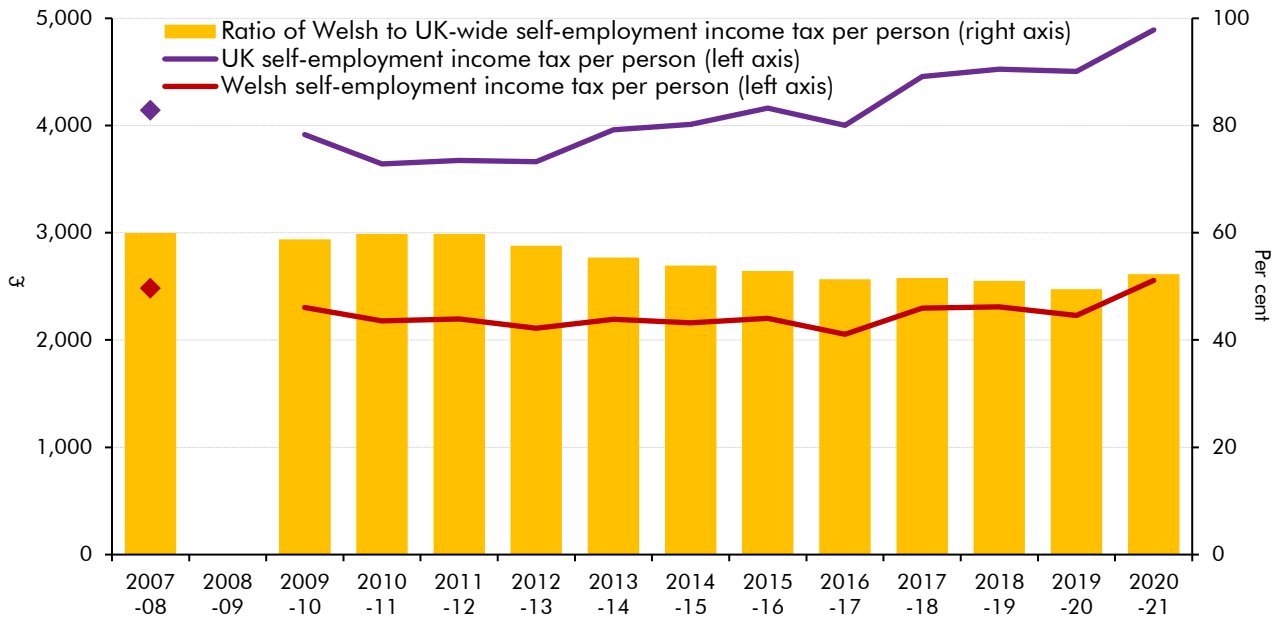
Source: HMRC, ONS

## Average self-employment income tax per taxpayer

- 4.46 As in relation to employment income above, the other part of the equation to population-related factors is the average self-employment income per taxpayer, and the tax levied on that income. Here our investigation is much more limited as there are relatively few sources of data on self-employment incomes (and none that are significantly more timely) beyond what is available from the tax system via the SPI.<sup>9</sup>
- 4.47 Welsh self-employment income tax growth has grown by 3 per cent since 2007-08, a much weaker rate than the 18 per cent seen in the UK as a whole (Chart 4.22). If self-employment income growth in Wales had kept pace with the UK-wide trend over that period, and holding all else equal, the gap between self-employment income tax per person in Wales and the UK in 2020-21 would have been narrower by £376.

<sup>9</sup> There is less data available for incomes of the self-employed than for employees. Both ASHE and RTI data covers employees only, while the LFS only collects information about the incomes of employees. The Family Resources Survey and the Living Costs and Food Survey both collect data on incomes from self-employment, but we have been unable to disaggregate the data at the required geographical level, and it is not very timely so adds little value on top of the SPI relative to employee earnings sources. Therefore, our analysis is confined to SPI data.

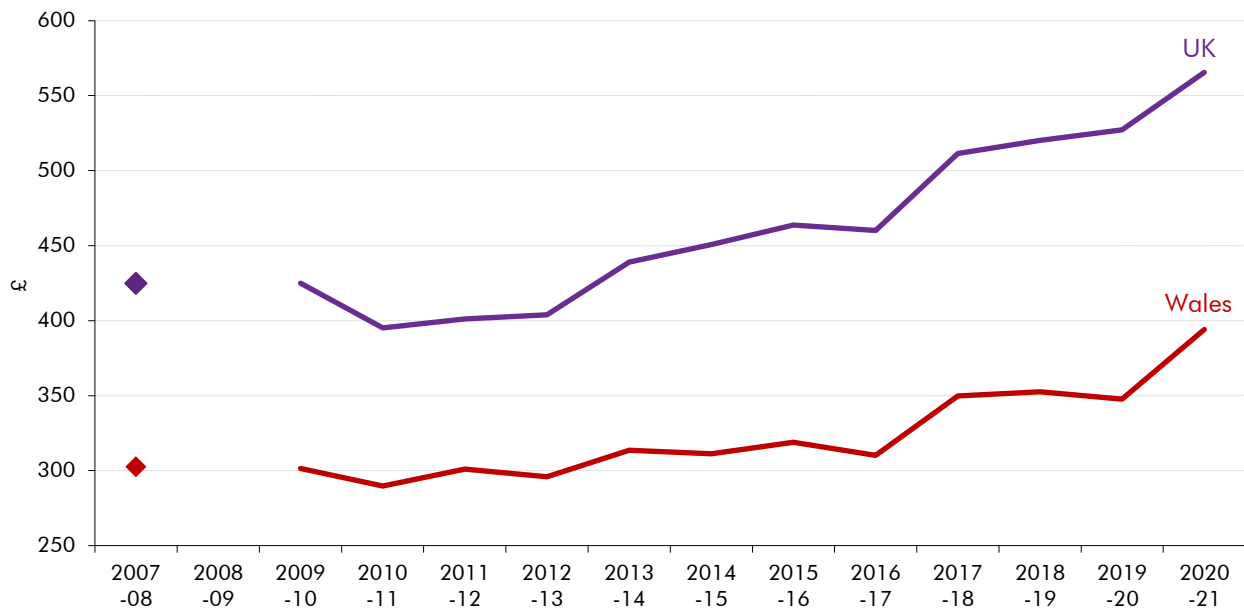
Chart 4.22: Self-employment income tax per taxpayer



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

4.48 Chart 4.23 shows that growth in the average incomes of self-employed taxpayers in Wales has been marginally slower than that in the UK. Average self-employment incomes in Wales grew by 30.3 per cent between 2007-08 and 2020-21 (from £302 per week to £394 per week) compared to 33.1 per cent in the UK (from £425 per week to £565 per week), meaning that the gap between Wales and the UK as a whole has widened from 28.8 to 30.3 per cent. As discussed in relation to Scotland, the steady rise in the real value of the personal allowance results in an upward trend for average incomes of self-employed taxpayers in both Wales and the UK, because those on lower incomes have been taken out of paying income tax, but there is no reason to think this trend should have a materially different impact in Wales (or Scotland) relative to the UK as a whole.

Chart 4.23: Average self-employment income per taxpayer



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC

## Explaining the difference in self-employment income tax per person between Wales and the UK

4.49 Chart 4.24 brings together our analysis of income tax from the self-employed, decomposing the year-on-year changes in the difference between self-employment income tax per person in Wales and the UK. Positive values represent years where the gap between Wales and the UK narrowed, while in years with negative values it widened.

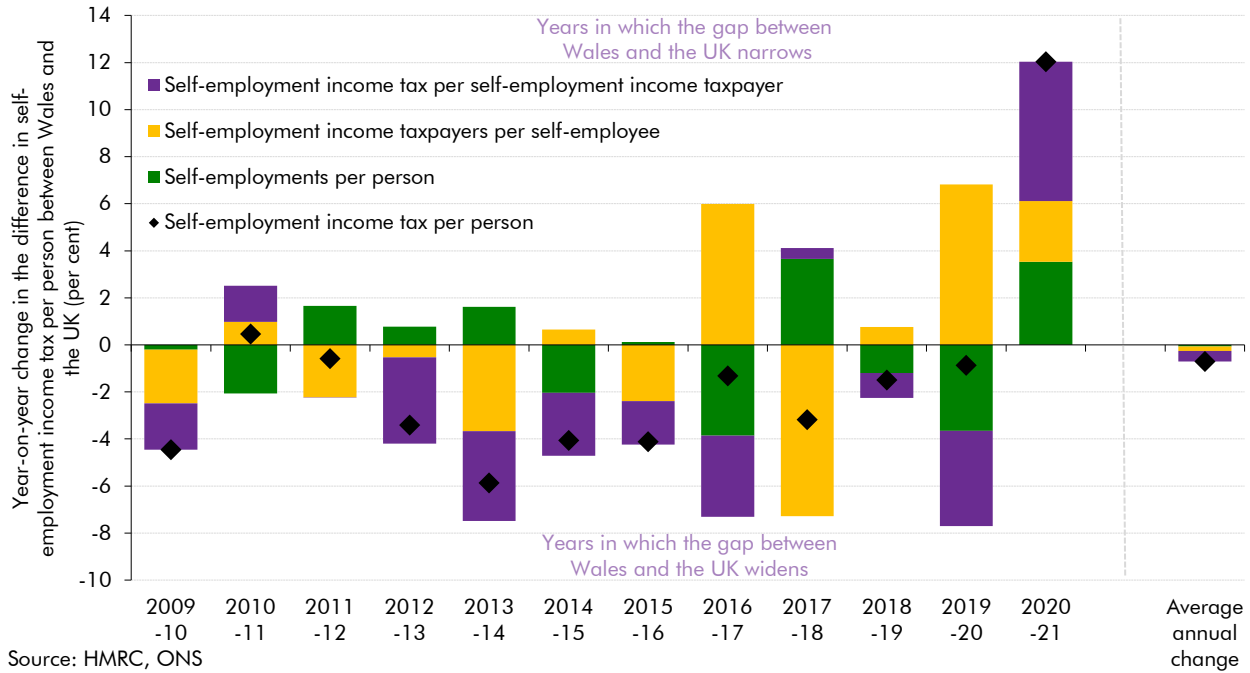
4.50 Between 2007-08 and 2020-21, the difference in income tax from self-employment per person in Wales relative to the UK widened by 9.2 percentage points (taking the ratio down from 55.3 to 46.1 per cent – a 0.7 percentage-point-a-year average widening, While most years have seen a widening of the gap, there was a sharp narrowing in 2020-21, which is likely to be due in part to pandemic-related effects associated with the SEISS scheme.

4.51 The 0.7 percentage point a year average widening in the gap between Wales and the UK as a whole over the period reflects:

- **A 0.5 percentage point contribution from lower growth in the average income tax paid by self-employed taxpayers** in Wales relative to the UK. This element widened the Wales-UK gap in nine of the 12 years.
- **A 0.2 percentage point contribution from relative changes in the proportion of the self-employed that pay income tax.** Chart 4.24 shows that this component is quite variable in terms of its year-on-year impact.

- **A 0.1 percentage point contribution from a lower growth in the self-employed population** in Wales relative to the UK. Once again though, chart 4.24 shows that this component is quite variable in terms of its year-on-year impact, contributing to widening the gap in six years and narrowing it in the remaining six.

Chart 4.24: Differences in income tax from self-employment per person between Wales and the UK: year-on-year changes

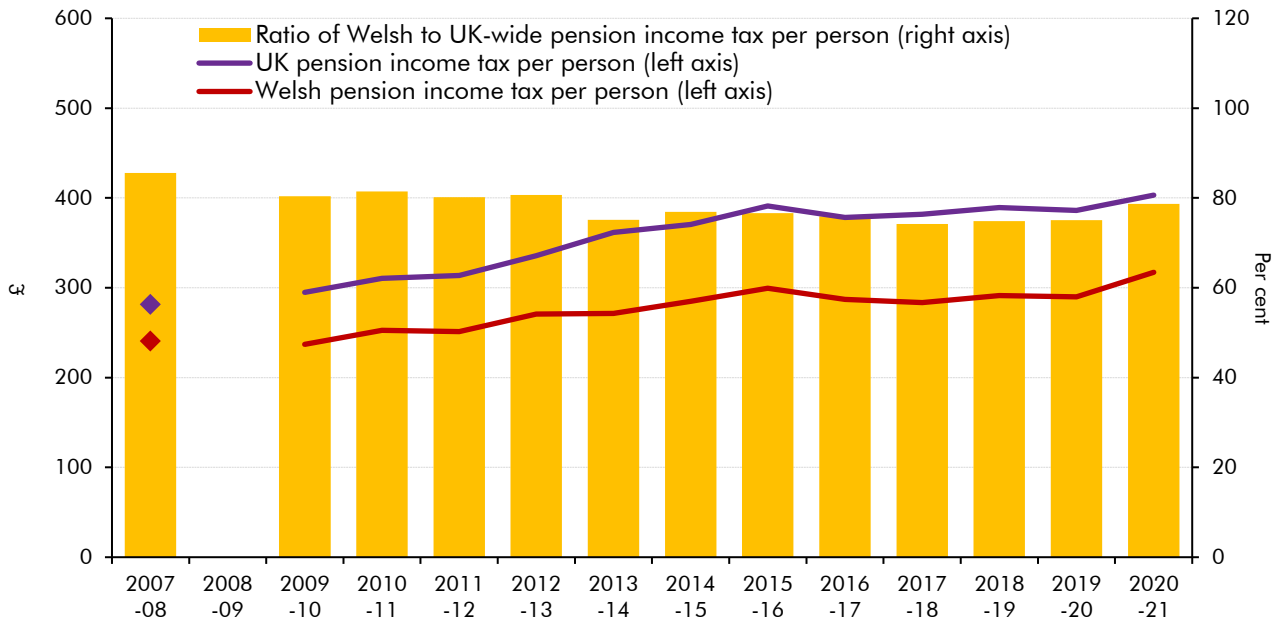


## Income tax from pension income

- 4.52 Tax on pension incomes accounted for 7 per cent of the overall difference in income tax per person between Wales and the UK in 2020-21, and 16 per cent of the Wales-UK divergence on this metric since 2007-08.
- 4.53 Chart 4.25 shows that pension income tax per person stood at £317 per person in Wales in 2020-21, up from £241 per person in 2007-08 (a 32 per cent increase). This is lower than the UK as a whole, where it stands at £403 per person, and has been lower in every year since 2007-08. The gap between the two has widened slightly, driving a fall in the ratio of Welsh to UK-wide pension income tax per person from 86 per cent to 79 per cent.



Chart 4.25: Pension income tax per person in Wales and the UK



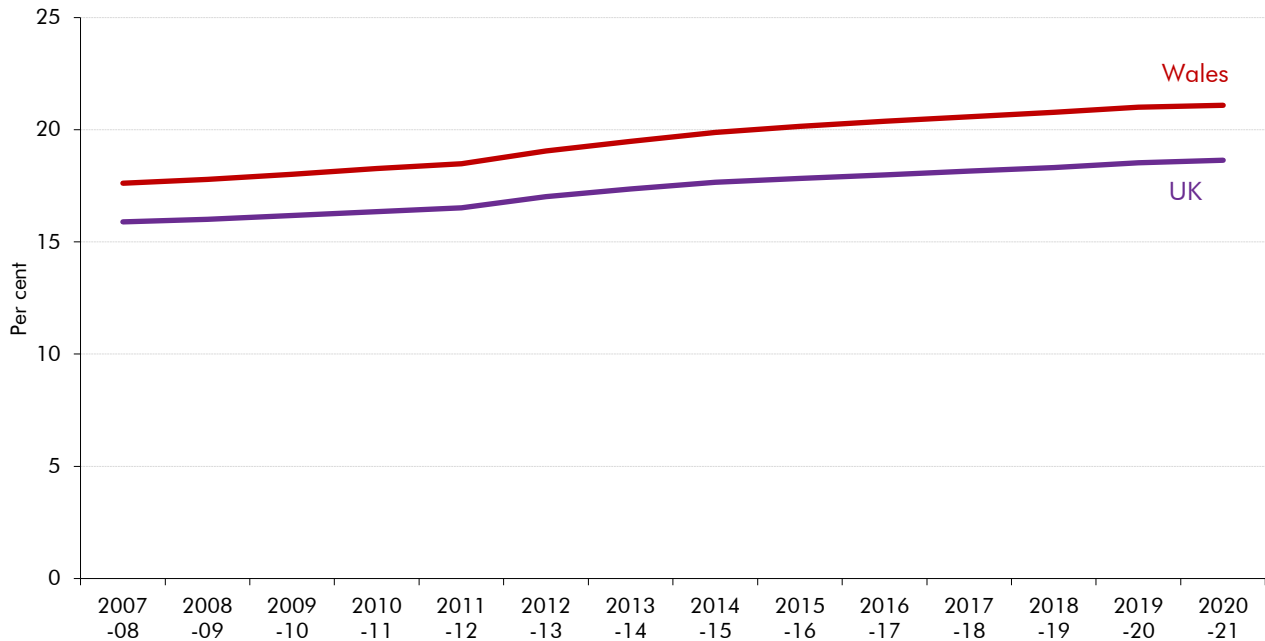
Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

### Proportion of the population that pays income tax from pension income

4.54 As for Scotland, to explore population factors in relation to pension income, we look at the proportion of Wales's and the UK's respective populations aged 65 and over, who we term 'pensioners',<sup>10</sup> as a rough proxy for those most likely to pay tax on pension income. We factor prospective changes in this broad age split between pensioners and others into our forecast via an index derived from ONS population projections. Chart 4.26 shows that Wales has had a higher share of its population aged 65 and over throughout the period – by an average of 2.2 percentage points. It also shows that the share has increased in every year (in both countries) and that the gap between the two has widened slightly, with the share increasing by 3.5 percentage points in Wales compared to 2.8 percentage points in the UK (reaching 21.1 and 18.6 per cent respectively in 2020-21).

<sup>10</sup> This is different to the conventional definition of those above State Pension age, which has risen to 66 for both men and women in recent years.

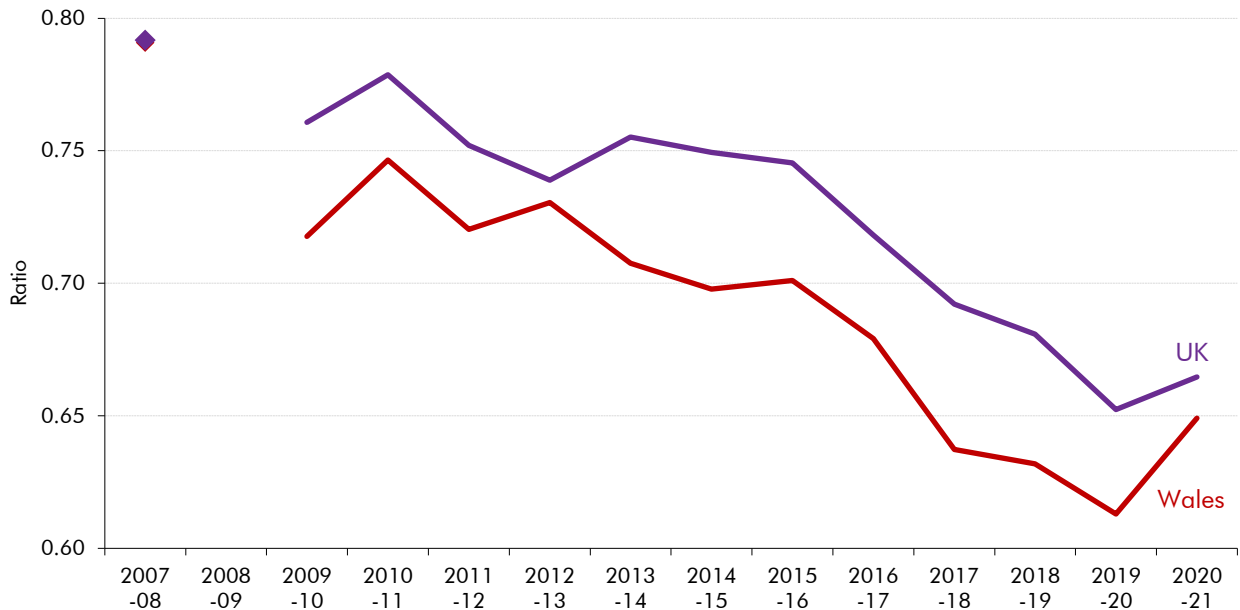
Chart 4.26: People aged 65 and over as a share of the total population



Source: ONS

**4.55** There has been somewhat more of a diverging trend in the ratio of pension income taxpayers to the pensioner population in Wales relative to the UK as a whole (Chart 4.27). The ratio was higher in the UK than in Wales in 2020-21, whereas it was very similar in both in 2007-08. Since 2010-11 the ratio has trended downwards for both, to 64.9 per cent in Wales in 2020-21 (down from 79.1 per cent in 2007-08) and 66.5 per cent in the UK (down from 79.2 per cent). The UK Government's personal allowance policy decisions are one of the likely causes behind the downward trend – in 2007-08, the income tax personal allowance of £5,225 was equivalent to 115 per cent of the full basic state pension; by 2020-21, its £12,500 level had risen to 179 per cent. With the personal allowance frozen in cash terms until 2027-28 and the state pension rising materially in cash terms thanks to the triple lock, this trend in outturn is going into reverse over our most recent five-year forecast period.

Chart 4.27: Ratio of pension income taxpayers to the population aged 65 and over

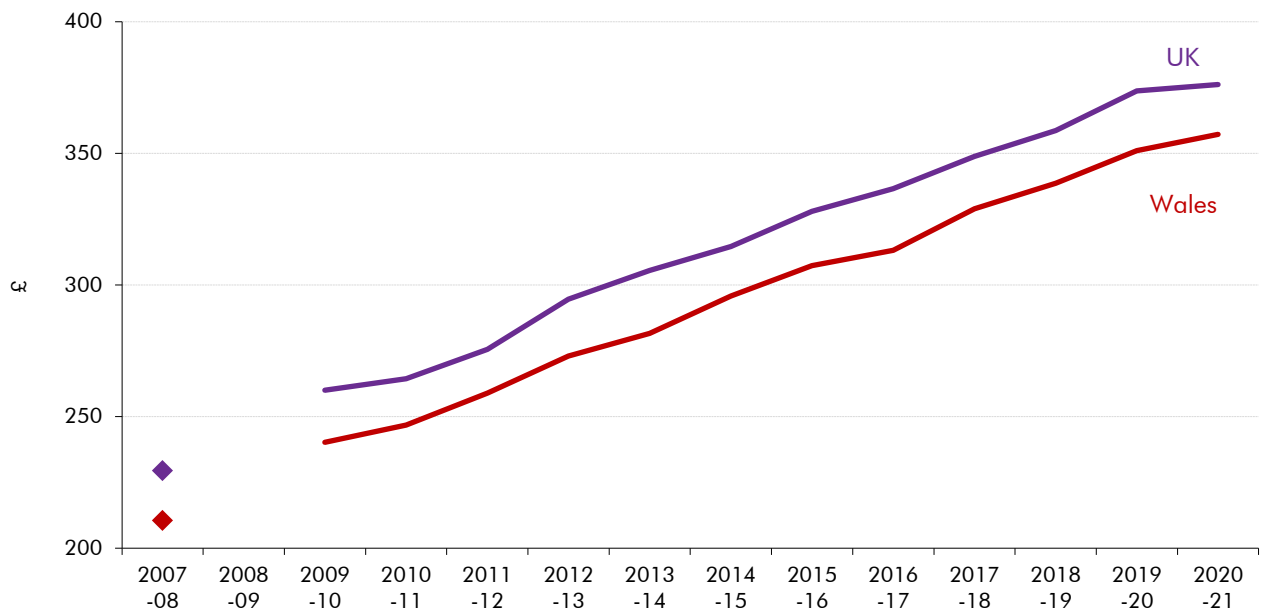


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, ONS

### Average pension income tax per taxpayer

4.56 Chart 4.28 shows that growth in average pension incomes per taxpayer in Wales (which now stands at £357 per week) has largely tracked changes in the UK, with the gap being 5.1 per cent in 2020-21 in comparison to 8.3 per cent in 2007-08, but remaining stable in cash terms at £19 per week. The higher level in the UK than in Wales will mean that this is amplified in the amount of tax levied on that income, given the progressive nature of the income tax system.

Chart 4.28: Average pension incomes per taxpayer



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC

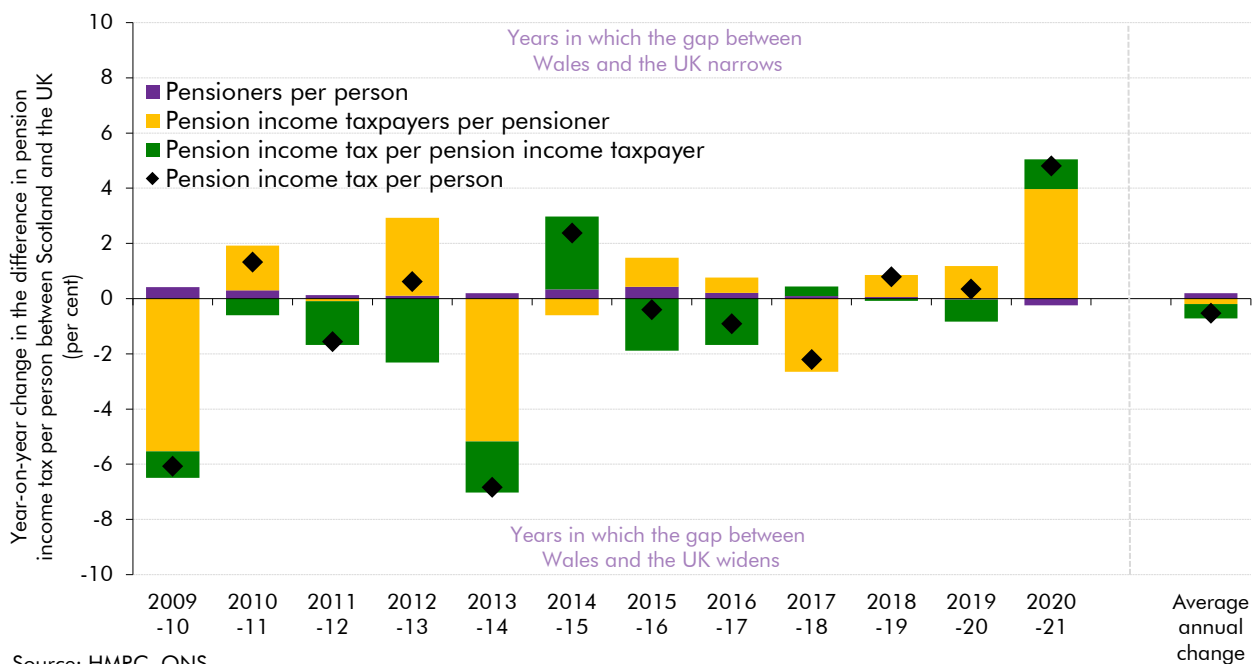
## Explaining the difference in pension income tax per person between Wales and the UK

4.57 Chart 4.29 shows that between 2007-08 to 2020-21, the difference in income tax from pension income per person in Wales relative to the UK widened by 6.9 percentage points (taking the ratio between the two from 85.6 per cent to 78.7 per cent – a 0.5 percentage-point-a-year average narrowing).

4.58 The 0.5-percentage-point-a-year average narrowing in the gap reflects:

- A contribution of **0.5 percentage points from average pension income tax per taxpayer** rising more slowly in Wales than in the UK as a whole.
- A contribution of **0.2 percentage points from the proportion of pensioners that pay tax** falling more slowly in Wales than in the UK as a whole.
- An offsetting **0.2 percentage point widening due to the pensioner share of the population** in Wales rising by slightly more than the average across the UK as a whole.

Chart 4.29: Differences in income tax from pension income between Wales and the UK: year-on-year changes



Source: HMRC, ONS

## Income tax from other income streams

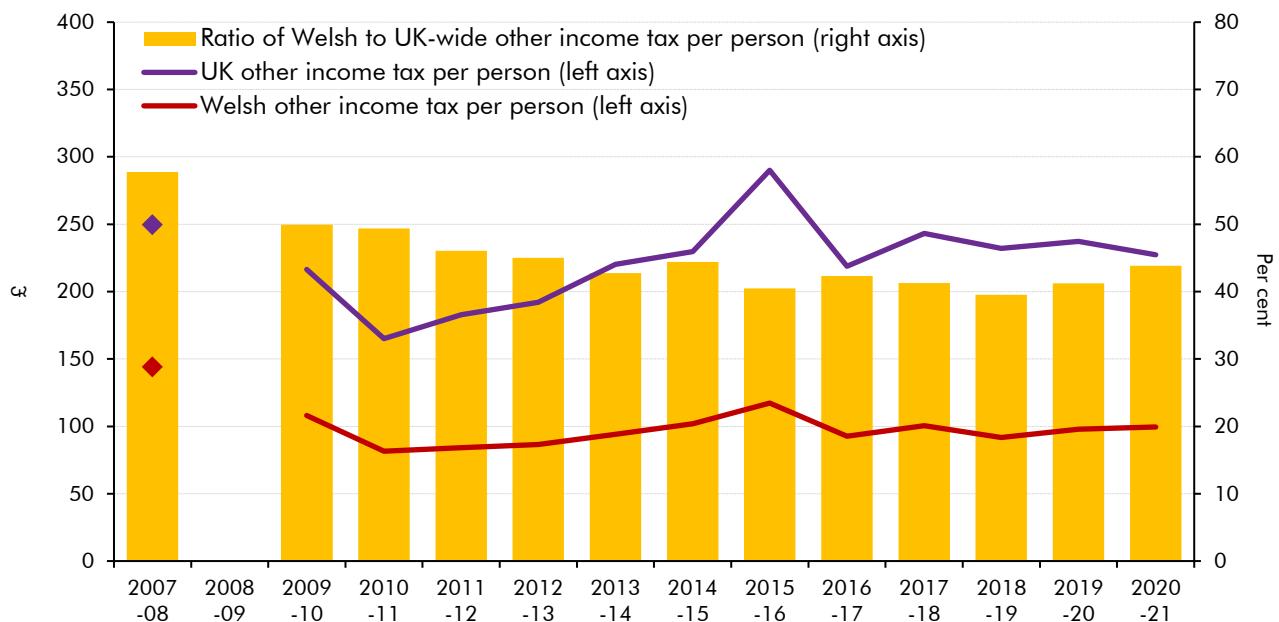
4.59 Tax on other income accounted for 10 per cent of the overall difference in income tax per person between Wales and the UK in 2020-21, and 8 per cent of the Wales-UK divergence on this metric since 2007-08. Other income streams include some whose taxation has been devolved (such as property income) and some whose taxation is reserved to the UK

## The Welsh income tax base

Government (such as savings and dividends income). As discussed above, we made the pragmatic decision to not explicitly separate these out in our analysis of the SPI data and instead analyse them together. While this slightly weakens our findings for this income stream, we do not believe it greatly impacts our conclusions overall. And we do intend to conduct further analysis on other income in the future.

4.60 Chart 4.30 shows that other income tax per person stood at £100 in Wales in 2020-21, down from £144 per person in 2007-08 (a 31 per cent fall). This is lower than the UK as a whole, where it stands at £227 per person, and has been lower in every year since 2007-08. The gap between the two has widened, driving a fall in the ratio of Welsh to UK-wide other income tax per person from 57.7 per cent to 43.8 per cent.

Chart 4.30: Other income tax per person in Wales and the UK

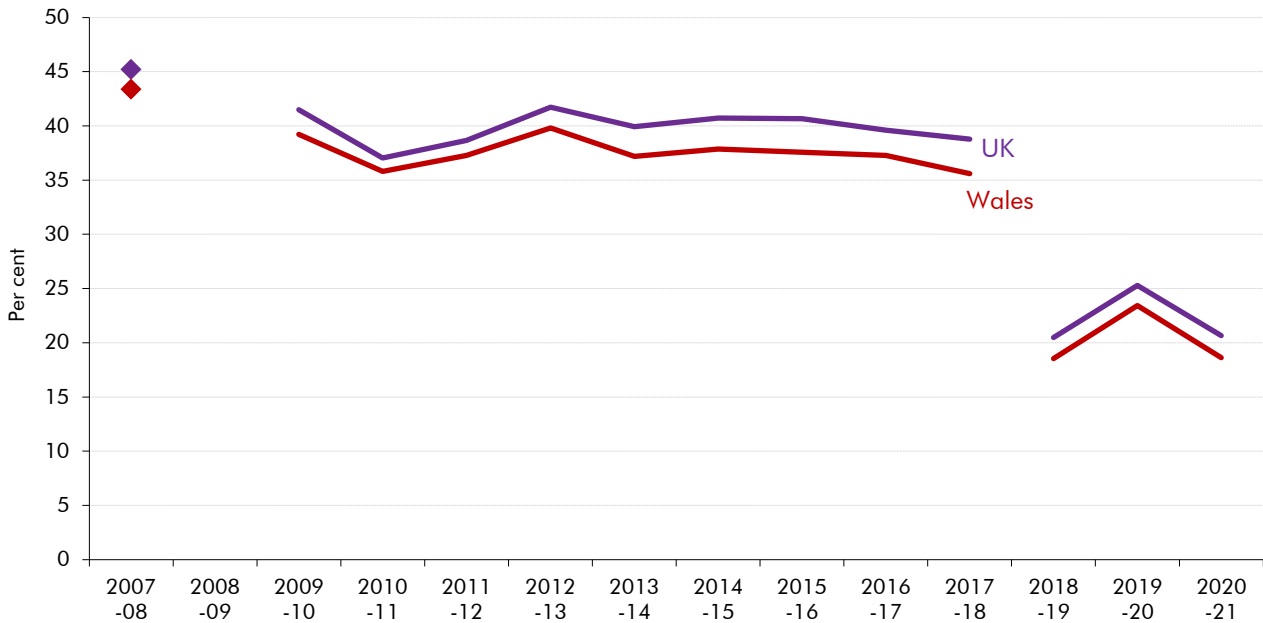


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC, OBR

## Proportion of the population that pay income tax on other income streams

4.61 The proportion of people in Wales with other income streams recorded in the SPI has fallen from 1.8 percentage points lower than the UK-wide proportion in 2007-08 to just 2.0 percentage points lower in 2020-21. It therefore contributes modestly to the widening in the difference in income tax per person from other income between Wales and the UK (Chart 4.31). As outlined in the previous chapter, there is no equivalent data on the number of people earning income from sources other than employment, self-employment and pensions. There is also a discontinuity in the series due to some SPI methodological changes that reduced the shares from 2018-19 onwards, which resulted in a large decline in the number of individuals reporting income from savings.

Chart 4.31: Individuals with other income as a share of the total population

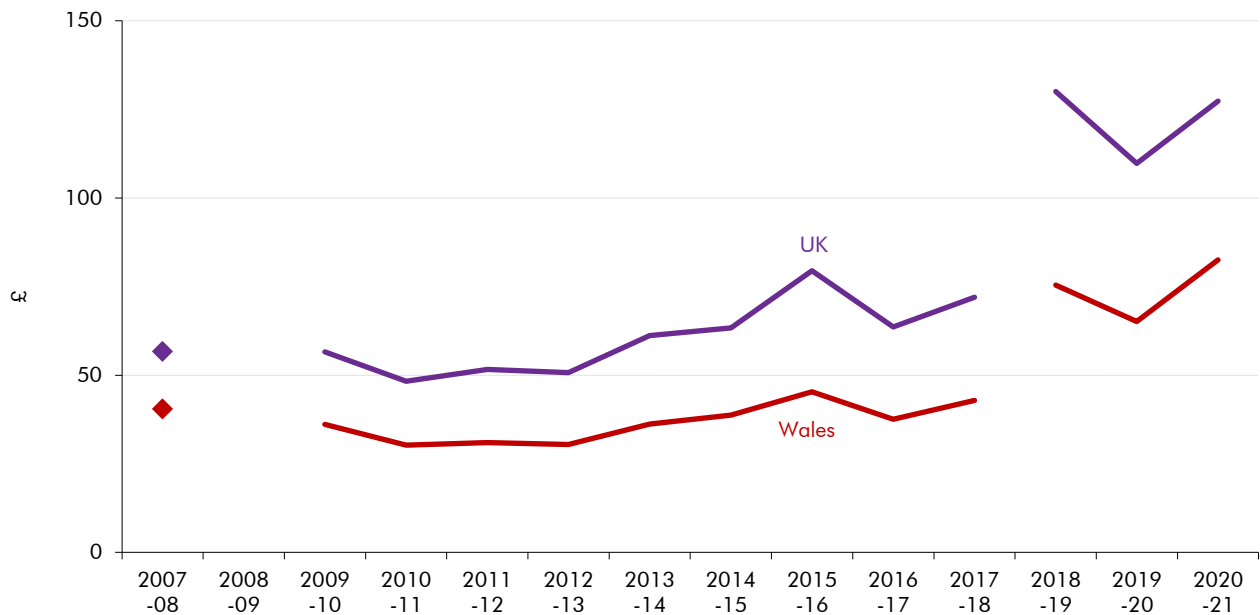


Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC

### Average income tax on other income per taxpayer

4.62 Growth in average incomes from other streams is distorted by the same discontinuity that affects the share of the population described in the previous chapter. While the precise figures are not meaningful, the fact that the level in 2020-21 is 125 per cent higher than 2007-08 for the UK, but only 104 per cent higher for Wales, shows that this is a source of widening differences between the two. And as in relation to the other income streams discussed above, the higher level of average incomes from other income streams in the UK than in Wales means that this divergence will be amplified in relation to average income tax, with more tax levied on each pound of average income in the UK than Wales given the progressivity of the system.

Chart 4.32: Average other income per taxpayer



Note: HMRC did not publish SPI data for 2008-09.  
Source: HMRC

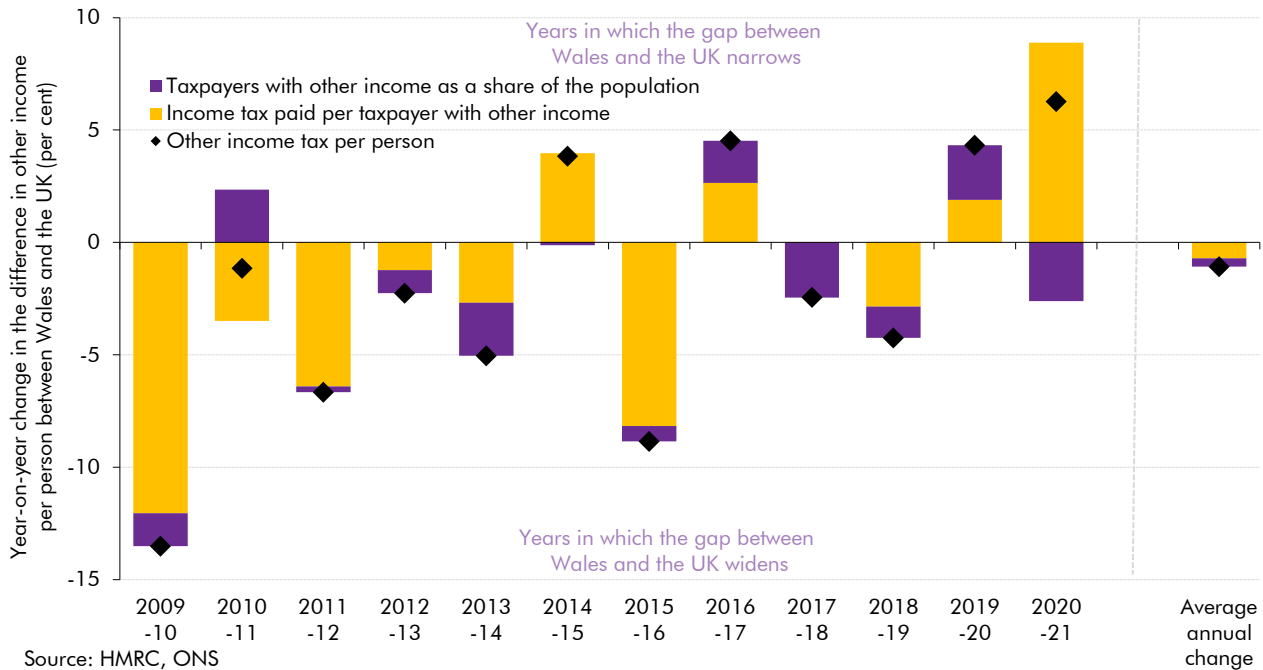
## Explaining the difference in other income tax per person between Wales and the UK

4.63 Chart 4.33 shows that between 2007-08 to 2020-21, the difference in income tax from other income per person in Wales relative to the UK widened by 13.9 percentage points (taking the ratio between the two from 57.7 per cent to 43.8 per cent) a 1.1 percentage-point-a-year average widening).

4.64 The 1.1 percentage point a year average widening in the gap reflects:

- **A 0.7 percentage point contribution from income tax per taxpayer from other sources** rising by less in Wales than in the UK as a whole. This component widened the gap between Wales and the UK in seven of the 12 years.
- **A much smaller 0.4 percentage point contribution from the share of the population that pays tax on other income sources** falling more quickly in Wales than in the UK as a whole. This component widened the Wales-UK gap in nine of the 12 years.

Chart 4.33: Differences in income tax from other income between Wales and the UK: year-on-year changes



## Conclusions

4.65 The Welsh share of UK-wide income tax revenues has fallen from 3.2 per cent in 2007-08 to 2.7 per cent in 2020-21. With Wales’s share of the population having fallen more modestly over that period, from 4.9 to 4.7 per cent, the main driver of the decline has been the average amount of income tax paid per person rising more slowly in Wales (actually *falling* by 1.2 per cent over those 13 years) than in the UK as a whole (a 9.8 per cent rise). The importance of these trends has been amplified by the terms of income tax devolution under the Welsh Government’s fiscal framework, where it is changes in income tax revenues in Wales relative to the rest of the UK that affect the Welsh Government’s Budget (albeit for non-savings, non-dividend incomes only, and for a flat Welsh rate of income tax of 10 per cent across all incomes). UK Government changes to the tax system, particularly in raising the personal allowance in recent years, may have played a role in the declining Welsh share, something we will investigate and report on in a future publication.

4.66 Our conclusions for this chapter largely mirror those in Chapter 3. We show that:

- The 30 per cent widening in the income-tax-per-person gap between Wales and the UK between 2007-08 and 2020-21 has been largely driven by employment income (which accounts for over seven-tenths of the widening). This is partly explained by a falling employment-income-taxpayer-to-employee ratio relative to the UK, but mainly a result of declines in employment income tax per taxpayer relative to the UK.
- The latter is to a limited extent driven by slightly faster cash growth in average employment income per taxpayer in the UK than in Wales, which is mirrored in trends



in richer and more timely data on average employee earnings. Compositional factors in relation to the sector and highest qualification of employees contribute marginally to these changes, explaining a minority of the overall levels difference in employee earnings between the UK and Wales.

- The other factors driving the faster growth in average employment income tax per taxpayer in the UK than in Wales are the greater tax-richness of each pound of average employment income given the higher levels in the UK and the progressivity of the tax system, and greater equalisation in the distribution of earnings (and by implication, employment income per taxpayer) in Wales than in the UK over the period. These factors are relevant to the portion of income tax from Welsh taxpayers that is reserved to the UK Government rather than to the part that is devolved to the Welsh Government because of the uniform 10 per cent Welsh rate across incomes.
- Pension income also contributes to the growth in the income-tax-per-person gap between Wales and the UK, mainly a result of diverging pension income tax per taxpayer, rather than the number of pensioners.

4.67 As with the Scottish chapter, the key conclusion for us is that the largest source of income tax – tax on employee’s incomes – is also the largest source of changes in the Welsh share of UK-wide income tax revenues. Once again, it is important to note that this is the source of income for which we can draw on other timely data sources to inform and refine our forecasts, which reinforces the value of the analysis of trends in RTI-derived shares of incomes and income tax receipts that we already undertake when producing our devolved income tax forecasts. Utilising these different data sources should allow us to produce reasonably accurate estimates for how tax on employment incomes in Wales has evolved relative to the UK-wide total for the years between the latest SPI, the most recent year of outturn data and the beginning of the forecast.

4.68 Few of the trends identified in this chapter currently look like particularly strong candidates for adding to our methodology for forecasting the Welsh rates for income tax, partly because we already factor in the most recent RTI data on earnings from employment and prospective changes in the size and broad age composition of populations, changes that persist and grow over the medium term. We also include differential impacts from UK Government policies.

4.69 We are confident that our approach is capturing the effect of the most recent trends. As we showed in Chart 4.4, the gap widened by 33 per cent between 2010-11 and 2015-16 (from £883 to £1,178) but has only grown by 0.7 per cent a year in the period to 2020-21 (to £1,221). So, most of the divergence seems to relate to the earlier time period and, in any case, since our forecast starts with the most recent SPI data point, we are including the more gradual recent upward trend, which is reinforced by using RTI data to capture the very latest trends in employment income.

4.70 Our analysis identifies several areas for future research, with a view to identifying any persistent drivers of the widening gap in average income tax per person that we can include in our modelling. These areas, which largely mirror those in Chapter 3, include:

- We will seek to make further gains from the use of RTI, particularly at a more disaggregated level. Of particular importance to Wales in the period that we have explored is the role that cash growth has played in the growth in average income tax per taxpayer. Therefore, we will look to explore the distribution of income in the RTI data for Wales relative to the UK to ascertain whether this can provide further insights that we can utilise to improve our forecasting performance.
- Our decomposition of employment income by sector, age and qualification shows that the trends in sectoral and qualifications composition in Wales relative to the UK have made only small contributions to the widening cash gap in average income from employment. However, the effect seems to have strengthened in the most recent years, particularly for qualifications, and this is something we will monitor closely. If the evidence becomes sufficiently robust then we will update our forecast accordingly.
- Trends in non-employment incomes explain less of the variation in the Welsh share of UK-wide income tax revenues but still warrants monitoring. One avenue for future work is delving further into the 'other' income stream and exploring whether isolating the purely NSND aspects yields any insights.
- The UK Government's successive above-inflation increases in the personal allowance during the 2010s is something that we will investigate and report on. Raising the personal allowance will take some lower-paid individuals out of the income tax system, so we might expect it to have a relatively greater impact on those areas with a relatively higher proportion of those on lower incomes. We will also continue to refine how we incorporate UK Government policies into our devolved income tax forecast more generally.

4.71 Consistently tracking the latest evidence and data sources is an approach we apply to every forecast, though one of the challenges around this for our devolved income tax forecast is the limited availability on non-employment incomes. Finally, we will maintain our approach of actively engaging with analysts within the Welsh Government and beyond as part of our ongoing evidence-gathering process. This approach allows us to harness a wide range of expertise and intelligence to enhance the quality of our forecasts.

# A Devolved income tax forecast methodology

A.1 Our forecasts for Scottish and Welsh income tax are produced on a ‘top-down’ basis and involve three steps:

- First, we **generate a UK-wide forecast for non-savings, non-dividend (NSND) income tax liabilities** from the full UK income tax forecast that is published in our *Economic and fiscal outlook*.
- Second, we **calculate the Welsh and Scottish shares of UK-wide NSND liabilities** and apply these to the UK forecast. Much of our analysis focuses on these shares and better understanding their determination is the focus of this paper. Applying the Scottish and Welsh shares to our UK-wide NSND income tax forecast generates our pre-measures Scottish and Welsh income tax forecasts.
- Third, we **add the effects of policy measures** announced since our previous forecast, which results in our post-measures forecast.

A.2 There are two main advantages to this approach. First, it provides a transparent way to ensure that our forecast is consistent with our UK-wide forecast, which in turn aligns with how HMRC administers the tax system separately for pay-as-you-earn (PAYE) and self-assessment (SA). This maximises our ability to monitor and act upon the timeliest outturn information about these tax receipts. Second, it provides an efficient way to ensure that our final UK-wide economy and fiscal forecast judgements are automatically reflected in our devolved income tax forecasts. This is important given the very tight deadlines to which the processes in the final stages of a Budget or other fiscal statement operate.

## UK non-savings non-dividend income tax forecast

A.3 HMRC’s latest published UK-wide NSND income tax liabilities outturn is the starting point for our pre-measures forecast. This relates to a tax year some distance in the past (currently 2021-22), given the lags between liabilities being incurred and tax being paid. To project liabilities between the outturn year and the year in progress, we produce an in-year estimate based on HMRC’s most recent monthly tax receipts data.

A.4 We forecast growth in the UK income tax base in line with our wider economy forecast. The key determinants are employment and average earnings growth, which determine the amount of labour income that can be taxed, and CPI inflation, which is used to uprate tax thresholds in the absence of other stated policies. Our short-term forecast for labour income growth relies on information from the latest data, while in the medium term movements are

more anchored to productivity growth (on an output-per-worker basis). Our short-term inflation forecast is constructed ‘bottom-up’ looking at prospects for different prices – for example, how oil price movements will affect petrol prices or how exchange rate movements will affect import prices – while medium-term assumptions typically assume that the Bank of England’s Monetary Policy Committee will return inflation to target over its two-to-three-year policy horizon.

**A.5** The UK-wide forecast models that we use for NSND income tax liabilities are operated on our behalf by officials in HMRC. The key components are:

- Total PAYE liabilities, which mainly represents the earnings of employees, accounts for around 90 per cent of the NSND income tax forecast. It is estimated using HMRC’s personal tax model (PTM) – a micro-simulation model based on HMRC’s annual Survey of Personal Incomes (SPI), which samples around 850,000 individuals in contact with HMRC during the year. The PTM calculates the average marginal tax rate on additional income by taking account of reliefs, allowances and our assumptions about inflation and any differences in earnings growth at different points in the distribution. The latter are informed by HMRC’s real-time information (RTI) about the PAYE population. The PTM applies the calculated tax rates to our forecast for income growth.
- SA liabilities on NSND income tax, which includes profits from self-employment and income from land and property, accounts for around 10 per cent of NSND income tax. We adjust it to be on a liabilities basis (i.e. when the taxable activity occurred) rather than on a cash basis (when HMRC receives the tax payment). This makes it different to our UK SA income tax forecast which is on a cash basis, consistent with the treatment of SA receipts in the National Accounts. The adjustment to a liabilities basis is done by applying the appropriate average effective tax rates that are estimated from the (PTM).
- PAYE repayments and repayments to pension providers, from our forecast of income tax repayments. These repayments can arise from several sources, including when employees have paid too much tax on their PAYE income or when someone has paid too much tax on their pension income.

## Establishing the Scottish and Welsh shares

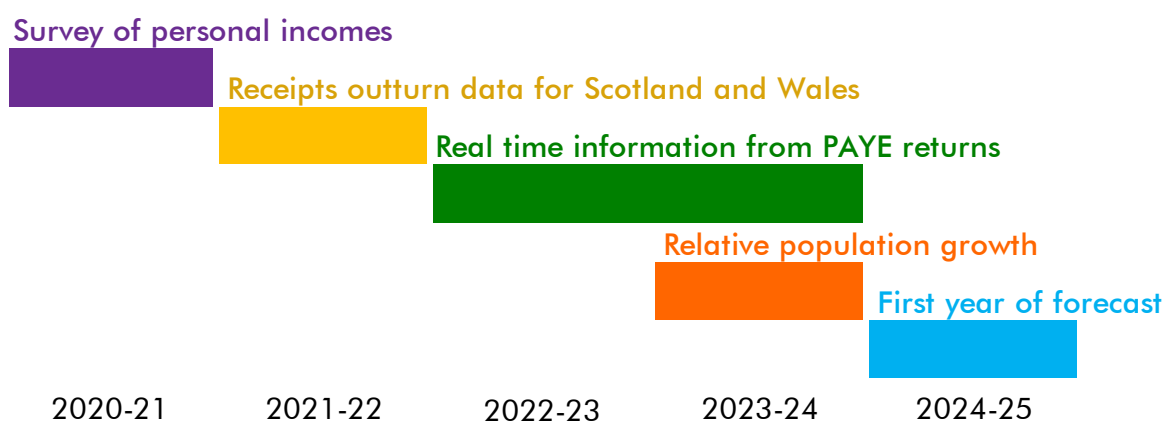
**A.6** Using the UK-level NSND forecast as a starting point, we forecast the Scottish and Welsh shares by using data from the SPI. For our forthcoming autumn 2023 forecast we will rely on the 2020-21 SPI, which is the most recent. The SPI data is used to calculate an initial share of UK NSND income tax liabilities for both Scotland and Wales. We then project these SPI-based shares over the forecast period by making several adjustments:

- We use **RTI earnings** to take us from the year of the SPI data to the current forecast year. In the absence of timely information on other forms of NSND income, we assume that the RTI earnings data are representative of the total.

- We adjust for **differential rates of population growth** by using an index based on the latest ONS population projections to reflect the different projected growth rates of the adult population in Scotland and Wales. This 'population index' combines two separate indices - one each for 'adults aged below-' and 'above the State Pension age of 66' - that are weighted by the proportion of NSND income tax paid by each group. This aims to capture the effects of different trends in population ageing on top of different trends in the overall size of the population on the Scottish and Welsh shares of income tax.
- For **gift aid and previously announced policies** that have been or will be implemented between the SPI base year (2020-21 for the autumn 2023 forecast) and the end of our forecasts (2028-29 for the autumn 2023 forecast) and that are expected to affect the Scottish or Welsh shares. These 'recostings' exacerbate the uncertainty associated with the data lag.
- Lastly, we align our forecasts to the latest available **outturn data**.

A.7 The paper focuses on how we forecast the Scottish and Welsh shares, from the SPI data to the beginning of the forecast and then beyond, to investigate the trends and assess whether we should incorporate those, that we do not already, into our methodology. Figure A.1 uses our November 2023 forecast to illustrate how we bridge the gap between the SPI data (2020-21) and the first year of our forecast (2024-25) with receipts outturn data (for 2021-22), RTI (from 2022-23 onwards) and relative population growth (2023-24 onwards). From the point we make the in-year estimate we hold RTI flat and index the numbers by relative population growth.<sup>1</sup>

Figure A.1: Using different data sources to bridge the gap between the SPI data and the start of the forecast



<sup>1</sup> Using RTI this way is more reliable than the population index on its own, since the latter does not tell us anything about tax contributions, whereas RTI captures movements in employment level, income and effective tax rates.

## The post-measures forecast

- A.8 Our post-measures forecast is produced by adding the effects of new policies announced since our previous forecast. Many of the general sources of uncertainty around policy costings that we routinely highlight are likely to be amplified as we disaggregate costings by geography and tax band. The introduction of the Welsh rates and the associated terms of the Welsh Government's fiscal framework has meant that we now need to assess the effect of new policies on the individual bands of income tax rather than simply their overall cost or yield, which adds a further layer of uncertainty.
- A.9 Given these uncertainties, we believe a relatively simple approach that makes sufficient allowance for asymmetric effects across countries and bands, while not seeking spurious precision, is appropriate. In part this reflects the relatively small sums involved – relative to our UK-wide forecast – and the fact that these estimates often need to be generated during the most time-pressured phase of a UK Budget forecast process.
- A.10 At each fiscal event we ask HMRC to provide us with a 'devolved scorecard' that contains the impact of the UK Government's policy decisions on devolved income tax. To simplify the process we agree 'standard splits' beforehand; in other words we approve several rule-of-thumb profiles developed by HMRC from its various sources of taxpayer information. These relate to different collection methods, income streams or taxpayer characteristics. Most of these profiles have been created using information from the PTM and SPI. For anti-avoidance measures we might adopt bespoke splits – for example for a measure targeting higher-earning individuals, the profiles might be based on taxpayers' postcodes, as recorded in HMRC's disclosure of tax avoidance schemes register. If we were to judge that a measure did not readily fit one of these pre-approved profiles, or if additional bespoke analysis were available, we would use an alternative profile. We update and add to the generic profiles periodically as new information becomes available.

