

## Background Quality Report: Income Tax Liabilities Statistics

<p><b>Introduction</b></p>	<p><b><i>Context for the quality report.</i></b></p> <p>HM Revenue &amp; Customs (HMRC) Income Tax Liabilities Statistics (ITLS) provides survey-based outturn statistics and also projections to the current tax year of individual income taxpayer numbers, income tax liabilities and average rates of tax in the United Kingdom (UK) broken down by taxpayer characteristics such as age, gender and country/region, income levels and groupings (e.g. the richest 10%), and by marginal rate of tax (e.g. basic rate taxpayers). As a complement to the survey-based statistics, ITLS also sets out trends in income tax burdens for a selection of illustrative family types and earnings levels.</p> <p>These statistics are based on HMRC's annual Survey of Personal Incomes (SPI), an annual representative sample survey of the tax records of individuals in HMRC's Pay As You Earn (PAYE), Self Assessment (SA) and repayment claims administrative systems for income tax. Income tax liabilities are estimated at individual case level using the information SPI provides on taxpayer incomes and circumstances.</p> <p>A detailed description of data sources and methods is provided in the ITLS statistical bulletin (Annex B), available at:</p> <p><a href="#">ITLS Statistical Bulletin</a></p> <p>The bulletin also provides (Annex C) further information on use and quality, including summary quality measures.</p> <p>ITLS is published twice yearly in December/January and April/May, each publication containing revised projections based on the Office for Budgetary Responsibility's (OBR) most recent published economic forecast, until final statistics based on outturn SPI data for each tax year can be published.</p> <p>The United Kingdom Statistics Authority (UKSA) has confirmed that the ITLS statistics and projections can be designated as National Statistics, subject to HMRC implementing enhancements as set out in its two recent assessment reports covering ITLS, AR157 <i>Statistics on Income Tax</i> and AR 241 <i>Income Tax Projections</i>, available at:</p> <p><a href="#">AR157 Statistics on Income Tax and AR 241 Income Tax Projections</a></p>
<p><b>Relevance</b></p>	<p><b><i>The degree to which the statistical product meets user needs in both coverage and content.</i></b></p> <p>ITLS provides various analyses of the distribution of UK income tax liabilities across individual taxpayers, e.g. by taxpayer characteristics, income levels and marginal rate of tax. These breakdowns are based on analyses of individual tax records, and</p>

	<p>are not available through other published income tax statistics, e.g. on income tax receipts, which are based on more aggregate administrative data sources.</p> <p>These breakdowns of UK income tax will be of interest to tax policy makers and commentators in and outside Government, and those with an interest in income tax developments and trends, as well as longer-term sustainability of UK tax revenues.</p> <p>Due to the time needed to receive and process tax returns and other source data, SPI survey outturns are subject to a lag of several years. Projected statistics are provided in ITLS up to the current tax year only, where the structure and parameters of the tax system are known. This permits genuinely useful updating of the distributions of tax (e.g. by income levels or groupings) for known changes in the income tax policy regime that occurred after the base survey data year. Provision of projections of total tax by contrast is not a key purpose or use of ITLS, and the use of other data sources and methods would be required to make them suitable for that particular purpose.</p> <p>ITLS is focussed on <i>income tax liabilities</i>, which are amounts of tax due in respect of individuals' incomes arising in a particular tax year, and reflecting the structure and parameters (e.g. rates, allowances and thresholds) of the UK income tax system in force for each tax year.</p> <p>ITLS statistics for a particular tax year therefore may differ appreciably from <i>income tax receipts</i>, which are amounts of tax paid and collected in the same year. These differences occur for a variety of reasons including timing, where there are lags in the payment and collection of tax, particularly under SA, or when over or underpayments of tax occur which are repaid or recovered in later years. In addition, there are some specific differences in measurement, e.g. liabilities includes those arising at the 10% ordinary rate on dividends income which in practice are covered by a non-reclaimable tax credit, meaning there is no corresponding tax receipt.</p> <p>The unit of analysis for ITLS is individuals, reflecting the system of individual income taxation in operation in the UK since 1990-91.</p>
<p><b>Accuracy and Reliability</b></p>	<p><b><i>The proximity between an estimate and the unknown true value.</i></b></p> <p>Outturn ITLS statistics are published when SPI survey data for the relevant tax year become available, and are not revised except in the case of errors being found.</p> <p>ITLS outturn statistics and projections are nonetheless subject to a number of potential estimation errors, summarised below under the following headings:</p> <ul style="list-style-type: none"> <li>• sampling error</li> <li>• coverage error</li> <li>• model error</li> </ul>

- projection error

### ***Sampling error***

The SPI is an annual sample survey of individuals in contact with HMRC for income tax purposes (the sample covered around 675,000 individuals in 2009-10). While relatively large in relation to the estimated 30.6 million UK population of taxpayers, SPI-based statistics are subject to sampling variation meaning that estimated totals and other sample statistics would vary from one sample to the next if repeated random samples were drawn, and in all cases would differ to some degree from the corresponding UK population totals purely by chance.

95% confidence intervals for SPI-based estimates of the number of UK income taxpayers and mean, median and total tax liabilities by region and county in 2009-10 are published in HMRC Table 3.13a:

#### [Table 3.13a](#)

At the UK level, the width of the 95% confidence intervals for numbers of taxpayers and total income tax liabilities in 2009-10 are 100 thousand and £1 billion (0.3% and 0.6% of the central estimates respectively). As shown in the table, precision declines for smaller estimated totals, e.g. for numbers of taxpayers and tax liabilities in specific countries and regions.

### ***Coverage error***

Users should note that the SPI survey is fully representative only of UK taxpayers, and not the entire UK population (though there is partial coverage of non-taxpayers within SPI). Statistics are therefore published only for taxpayers.

As a sample survey of administrative records, issues of survey non-response do not arise. However, for the SPI sub-sample of individuals drawn from PAYE only, certain data items are not recorded in administrative tax records because these are not needed for the operation of the income tax system. These missing data items are imputed for most SPI sample cases in PAYE only as described in Annex B of the ITLS statistical bulletin.

Annex C of the ITLS statistical bulletin summarises the extent of imputation in SPI 2009-10. The main affected items are: bank/building society interest (£4.7 billion imputed within the £11.8 billion total); dividends income (£4.2 billion out of £50.6 billion) and occupational pension contributions (£2.9 billion out of £7.3 billion). Overall, imputation contributes around £23 billion to grossed total income of taxpayers of £869 billion in 2009-10 (2.6%).

### ***Model error***

Income tax liabilities in ITLS are estimated at case level on the

	<p>basis of the SPI survey data using HMRC's Personal Tax Model (PTM). The PTM tax modelling process attempts to capture all of the significant features of the UK income tax system, but inevitably this involves certain simplifications and omissions.</p> <p>PTM model outputs are regularly benchmarked at case level against income liabilities recorded as due in HMRC's SA system for the SPI sub-sample in SA. For 2007-08 data, differences arise for known and specific reasons and only in a small minority of sample cases. The impact of these simplifications is judged to be small for key aggregates at UK level, and for most UK taxpayer sub-populations.</p> <p><b>Projection error</b></p> <p>Simplifications and potential errors: (a) in projection processes; and also (b) the economic assumptions employed in those processes are likely to induce larger errors in ITLS projections compared with outturn statistics.</p> <p>Summary statistics describing ex post ITLS absolute projection errors across key aggregates for projections released following spring Budgets since 2001 are shown in Annex C of the ITLS statistical bulletin. The projection horizon is defined with respect to the latest SPI outturn data available, e.g. the latest ITLS release uses 2009-10 SPI outturn survey data, which gives projections 'one-year ahead' (for 2010-11) up to 'three-years ahead' (for 2012-13).</p> <p>At the one year-ahead horizon, average absolute errors are 640,000 for total taxpayer numbers (2% of outturn), £4.6 billion for total liabilities (4%) and £20.8 billion for total income (3%). These errors approximately double at the three-year horizon.</p> <p>Users of the projections should note that the projection methods are suited to analysis of tax liabilities at UK geographic level. Projection of potential taxpayer numbers and incomes by income source is based on factors determined at UK level and applied generally uniformly at case level, irrespective of factors such as geography or industry (for working taxpayers). Published breakdowns of projected taxpayer numbers by country and region (Table 2.2) therefore are indicative.</p> <p>Similarly, the projections will not capture some potentially important shifts in the distribution of incomes occurring after the SPI outturn year. ITLS projected shares of total income and tax across taxpayer income groupings (Table 2.4) are therefore likewise indicative, but do allow for differential growth in earnings across the pay distribution consistent with past trends, and possible responses of high income taxpayers to subsequent changes in the tax policy regime.</p>
<p><b>Timeliness and Punctuality</b></p>	<p><b><i>Timeliness refers to the time gap between publication and the reference period. Punctuality refers to the gap between planned and actual publication dates.</i></b></p>

	<p>Due to the time needed to receive and process tax returns and information provided by employers, SPI survey results are not available until typically 20 months after the tax year to which the survey data relate. Note that Self Assessment tax returns are filed on-line some 9 months after the end of the tax year.</p> <p>The latest available SPI survey data is for tax year 2009-10, and was first published in February 2012 in <i>Personal Income Statistics 2009-10</i>. First publication of the 2009-10 SPI results was delayed by around three months from its originally scheduled publication in December 2011.</p> <p>The timing of publication of ITLS reflects availability of new SPI survey data (incorporated annually in the December/January ITLS publication) and publication of revised economic forecasts by the OBR (incorporated in revised projections in the December/January and April/May ITLS publications). ITLS projections are released typically 6-8 weeks following publication of the OBR's economic forecast. Definitive publication dates for ITLS are announced not less than four weeks in advance of publication:</p> <p><a href="#">National and Official Statistics: Scheduled updates</a></p> <p>The latest edition of ITLS is <i>Income Tax Liabilities Statistics 2009-10 to 2012-13</i>, and was published according to schedule in April 2012. The previous edition, due to be published in December 2011/January 2012, was not published due to delays in availability of the 2009-10 SPI survey data.</p>
<p><b>Accessibility and Clarity</b></p>	<p><b><i>Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.</i></b></p> <p>ITLS is available free to users via the National and Official Statistics section of the HMRC website:</p> <p><a href="#">National and Official Statistics</a></p> <p>ITLS statistics are released via a comprehensive statistical bulletin which includes statistical commentary and a detailed description of data sources, methods, quality indicators and contextual information (e.g. describing the UK income tax system):</p> <p><a href="#">Income Tax Statistics</a></p> <p>The detailed tables are available separately in PDF and Excel format via the ITLS menu page:</p> <p><a href="#">Income Tax Statistics tables</a></p>

<p><b>Coherence and Comparability</b></p>	<p><b><i>Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain.</i></b></p>
	<p>ITLS is based on SPI survey data. The ITLS statistics are fully consistent with more detailed SPI-based analyses of taxpayer incomes published annually by HMRC in <i>Personal Income Statistics</i>:</p> <p><a href="#">Personal Income Statistics</a></p> <p>HMRC also publishes statistics on income tax receipts, which differ from ITLS tax liabilities, as described earlier:</p> <p><a href="#">Income Tax Receipts</a></p> <p>Users sometimes interpret ITLS total liabilities as the amount of income tax that is actually collected in a given tax year, whereas it is a survey-based estimate of the amount of tax that is due on incomes arising in the year.</p> <p>Note also that ITLS Table 2.6 provides projections of liabilities arising in each income tax band. Some users misinterpret liabilities arising at the additional rate of tax as the yield arising from the introduction of the additional rate, or derive incorrect estimates of that yield from the table. Because Table 2.6 shows a projection of additional rate liabilities arising for given taxpayer incomes, it is not possible to infer from Table 2.6 the additional rate yield, which must take account of likely behavioural responses which will reduce incomes and liabilities.</p> <p>ITLS is based on SPI data which is an annual cross section sample of potential UK income taxpayers. Changes in estimates between tax years will partly reflect sampling variation (see above). Changes in SPI survey methodology may also affect comparisons of SPI-based statistics over time. A summary of methodological changes in 2009-10 is provided in <i>Personal Incomes Statistics, 2009-10</i>:</p> <p><a href="#">Personal Income Statistics, 2009-10</a></p> <p>Estimates of taxpayers and tax liabilities across domains are generally comparable over time, e.g. estimates by country or region.</p> <p>Certain classifications adopted in ITLS, however, are subject to periodic change. Classification of non-higher rate taxpayers by marginal rate of tax, in particular, is subject to some changes in definitions over time reflecting changes to the structure of the UK income tax system, as described in Annex B of the ITLS statistical bulletin. In addition, ITLS estimates of taxpayers aged over State Pension Age (SPA) reflects the changing SPA age in the UK, as described in the notes to ITLS Table 2.1.</p>

<b>Trade-offs between Output Quality Components</b>	<p><b><i>Trade-offs are the extent to which different aspects of quality are balanced against each other.</i></b></p> <p>SPI outturn survey data are available only with a significant lag, meaning the latest outturn relates to several tax years previous (e.g. SPI data for 2009-10 was first published in February 2012). ITLS therefore includes projections to improve the timeliness and relevance of the statistics. There is a trade-off with accuracy and reliability in that provision of projections inevitably introduces new sources of error above those present in the outturn data, relating both to projection methods and uncertainty in economic developments and other factors that help determine UK income tax liabilities.</p> <p>The ITLS convention is to publish projections only to the current tax year so that changes in the UK tax system which postdate the survey outturn data but are known with certainty may be fully reflected in the published statistics. This approach helps to avoid increasing errors that would be associated with longer horizon projections, due to unforeseen changes in the income tax regime, as well as generally increasing levels of uncertainty concerning likely economic trends. These projections are made available across all ITLS outputs, as the known tax policy changes are relevant in all cases, and may be assessed with reasonable accuracy. However, other factors are not fully reflected in the ITLS projection processes, meaning some projections should be treated with caution (e.g. projections by country and region, or projections for high income groups).</p>
<b>Assessment of User Needs and Perceptions</b>	<p><b><i>The processes for finding out about users and uses, and their views on the statistical products.</i></b></p> <p>The ITLS statistical bulletin and associated webpages invite feedback from users and the production team maintains a log of user enquiries which is reviewed annually. Dedicated user surveys are held periodically, and the results published.</p> <p>Information on responses the most recent survey of users of HMRC income tax statistics, held during April to July 2011, is available here:</p> <p><a href="#">Results of User Survey of Income Tax Statistics</a></p> <p>This survey showed that the majority of responding users were satisfied both with the clarity of the published tables and usefulness of the ITLS statistical bulletin. Specific user suggestions for improvements were addressed in the HMRC response to the survey, and changes were introduced to some ITLS Tables in the next publication.</p>
<b>Performance, Cost and Respondent</b>	<p><b><i>The effectiveness, efficiency and economy of the statistical output.</i></b></p>

<p><b>Burden</b></p>	<p>ITLS statistics are based on HMRC administrative data sources.</p> <p>The annual HMRC staff cost of producing ITLS is estimated at around £6,000.</p> <p>This represents the marginal costs of production and dissemination of the ITLS statistics themselves, and does not include the costs of production of the SPI survey or the costs of maintenance and development of relevant models and other methods, all of which support other functions and would be incurred in any event.</p>
<p><b>Confidentiality, Transparency and Security</b></p>	<p><b><i>The procedures and policy used to ensure sound confidentiality, security and transparent practices.</i></b></p> <p>Production and dissemination of ITLS follows the HMRC's published policy on Confidentiality and Access, including use of statistical disclosure control methods:</p> <p><a href="#">Confidentiality and Access</a></p> <p>A list of individuals who have pre-release access to ITLS statistics is published on the HMRC website:</p> <p><a href="#">Pre-Release Access</a></p>