

Manuscript version: Author's Accepted Manuscript

The version presented in WRAP is the author's accepted manuscript and may differ from the published version or Version of Record.

Persistent WRAP URL:

<http://wrap.warwick.ac.uk/163521>

How to cite:

Please refer to published version for the most recent bibliographic citation information. If a published version is known of, the repository item page linked to above, will contain details on accessing it.

Copyright and reuse:

The Warwick Research Archive Portal (WRAP) makes this work by researchers of the University of Warwick available open access under the following conditions.

Licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International <http://creativecommons.org/licenses/by-nc-nd/4.0/>.



Publisher's statement:

Please refer to the repository item page, publisher's statement section, for further information.

For more information, please contact the WRAP Team at: wrap@warwick.ac.uk.

Missing Incomes in the UK: Evidence and Policy Implications

Abstract

Policymakers are liable to ‘treasure what is measured’ and overlook phenomena that are not. In an era of increased reliance on administrative data, existing policies also often determine what is measured in the first place. We explore this two-way interaction between measurement and policy in the context of the investment incomes and capital gains that are missing from the UK’s official income statistics. We show that these ‘missing incomes’ change the established picture of economic inequality over the past decade, revealing rising top income shares during the period of austerity. The underestimation of these forms of income in official statistics has hidden the impact of tax policies that disproportionately benefit the wealthiest. We urge a renewed focus on how policy affects and is affected by measurement.

tax policy – investment income – capital gains – top incomes – welfare measurement – income inequality

1. Introduction

In the UK, the claim that income inequality remained broadly stable during the period of austerity that followed the Global Financial Crisis has had a major impact on political debates. Successive Chancellors cited official income statistics showing that the Gini coefficient and top income shares barely shifted during the 2010s (Osborne, 2015, Hammond, 2017). Reports by the Institute for Fiscal Studies, as well as articles in mainstream media, relied on these statistics to ‘correct’ the public perception that inequality had been rising (Hood & Waters, 2017; BBC, 2017). In 2016, Channel 4’s fact-checker website summarised that ‘Despite the rhetoric from the opposition benches, the official statistics do not support the view that income inequality has worsened since David Cameron became Prime Minister’ (Worrall, 2016).

But as Richard Titmuss questioned in 1962:

To what extent and in what respects do these statistics represent reality? How faithfully do they depict the changing constituents of income and wealth, and changes in rewards and ways of spending, giving and saving? ... How valid are the concepts and the data in relation to the uses to which they are put? (Titmuss, 1962)

Titmuss’ target was official statistics showing that income inequality had fallen in post-war Britain. He pointed out that income from wealth (or ‘capital income’) was poorly measured in these statistics, and that capital gains, various types of investment income, and inheritances – were missing altogether. Since these ‘missing incomes’ were concentrated amongst those at the top of the distribution, Titmuss argued, official statistics were failing to capture the true nature and extent of inequality in the UK.

Sixty years on, how well do today’s official income statistics capture incomes from wealth? To answer this question, we study coverage of investment incomes and capital gains in the Office for National

Statistics' (ONS) official income series (known as the 'Effects of Taxes and Benefits' (ETB) series). These statistics recently incorporated a new 'top incomes adjustment' using tax data to supplement survey data for the top 3% of the distribution (Webber & Beha, 2020). We therefore focus on two key questions. First, to what extent are investment incomes missing from the survey data that official statisticians, academic researchers and policymakers use to measure the incomes of the majority of the UK population? Second, what is the effect of excluding capital gains from the definition of income conventionally adopted when measuring top incomes using tax data, including within the ONS' new top incomes adjustment?

We begin by comparing the investment incomes recorded in survey data with administrative data on incomes assessable for Income Tax. This enables us to quantify, on a component-by-component basis, the extent of survey undercoverage of (taxable) investment incomes across the entire taxpayer population. Then, we use novel access to administrative data from the full tax records of the universe of taxpayers to construct a broader measure of income that includes taxable capital gains in addition to incomes assessable for Income Tax. This allows us to estimate the impact of missing capital gains on observed top income shares in the UK over the past two decades, and thereby assess the extent to which the ONS's current approach to top income adjustment may still be obscuring important trends in top-end inequality.

Our results demonstrate that, despite major advances in income measurement over recent decades, the problem of missing incomes from wealth – identified by Titmuss in the 1960s – remains at large. We find that in aggregate 70% of all investment income (as observed from tax data) was missing from the survey data used in official statistics for 2017, and that 44% remains missing even after correcting the incomes of the top 3%, indicating that underestimation of investment income is still a major problem below the level of the ONS's new top incomes adjustment. Moreover, the exclusion of taxable capital gains from the definition of income used by official statisticians has seriously distorted understandings of top-end inequality. Once capital gains are included, we find that top income shares *did* increase during the austerity period of the 2010s, contrary to the established narrative. In other words, inequality had not abated, but just taken a different form – one which official statistics failed to capture.

What policy lessons can be learned from these findings? The most obvious is the need to implement further reforms to official income statistics to fill gaps in coverage. But there are also more far-reaching implications. In this paper, we do not attempt to supply direct causal evidence on the impact of measurement issues on policy development. However, we do hypothesise several mechanisms by which the phenomenon of missing investment income and capital gains may have contributed to their current favourable tax treatment. Moreover, we emphasise the importance of considering this relationship in reverse: existing policies can constrain what is measured in the first place, and risk skewing the conclusions that policymakers and other researchers draw from available statistics. This concern is of growing importance in an era when administrative data is being used more and more widely in social policy research.

Our focus on the tax treatment of incomes from wealth reflects a recent resurgence of interest in tax as a central topic of social policy (Ruane, Collins & Sinfield, 2020), following related calls to test the boundaries of the discipline (Farnsworth, 2013). It also links to recognition by social policy scholars of the need to study 'the problem of riches'¹ by turning a critical lens on the top of the income and wealth

¹ As Tawney put it: 'what thoughtful rich people call the problem of poverty, thoughtful poor people call with equal justice a problem of riches' (Tawney 1913).

distributions (Orton & Rowlingson, 2007; Rowlingson & McKay, 2011). Finally, we also contribute to the re-emerging literature within social policy that looks specifically at the impact of (lack of) measurement on tax policymaking, for example in the context of ‘fiscal welfare’² (Sinfield, 2020) and the taxation of intergenerational transfers of wealth (Nolan et al., 2020).

The paper is structured as follows. Section 2 reviews the existing progress on income measurement by academics and official statisticians since Titmuss’s intervention in 1962, highlighting some remaining deficiencies. Sections 3 and 4 discuss our key empirical findings on missing investment income and capital gains, respectively. Section 5 concludes with broader implications for the two-way interaction between measurement and tax policy.

2. UK income measurement, 1962-present

(a) The legacy of Titmuss and Atkinson

Titmuss’s 1962 critique of official income statistics drew on the concept of ‘comprehensive income’, which includes all additions to wealth regardless of their source (Haig, 1921; Simons, 1938). Titmuss argued that, for the purpose of assessing relative living standards, this definition is more appropriate than the narrower concept of ‘fiscal income’, which instead tracks how income is defined for tax purposes. In particular, reliance on fiscal income risked obscuring changes in the ways that wealth was accumulated from sources outside the scope of Income Tax. Titmuss painstakingly catalogued these missing sources, but concluded that attempts to quantify their impact on the true distribution of (comprehensive) income were purely speculative, due to a lack of reliable data.

Writing for the *Journal of Social Policy* in 1975, Tony Atkinson later reflected on this limitation of Titmuss’ work:

A 240-page catalogue of the deficiencies of the available statistics might have been expected to lead to major efforts by official statisticians or independent investigators to improve their quality, but in fact it has not... The failure of ‘Income Distribution and Social Change’ to provoke a more determined effort may stem from a certain ambivalence on Titmuss’s part about the role of quantification. (Atkinson 1975).

Atkinson’s own legacy is a vast economic literature and dynamic network of economists working on income measurement around the world, embodied by the World Inequality Database (WID) that Atkinson co-founded in 2011. WID has made an unparalleled contribution to the improvement of inequality statistics along several frontiers; however, its move towards harmonising methods for measuring income across countries – via the innovation of ‘Distributional National Accounts’ (DINA) – has had the unintended side-effect of drawing attention *away* from the issues that Titmuss originally identified, which by their nature are highly country-specific.

In this paper, we aim to resurface the issue of missing incomes from wealth identified by Titmuss, and to quantify its impact on the UK’s income statistics using the best available data. Before turning to our empirical analysis, we provide below a brief review of the relative strengths and weaknesses of the two main types of data source on incomes – household survey data and administrative tax data – and their respective roles in the UK’s official income statistics.

² The term ‘fiscal welfare’ was coined by Titmuss (1958) to describe tax exemptions and reliefs that are intended (or claimed) to promote social objectives.

(b) The UK's official income statistics: a hybrid approach

A key advantage of survey data is that it is not limited to the fiscal definition of income. Instead, household surveys typically apply the 'Canberra' income definition resulting from recommendations developed by the UN to improve international comparability of statistics. This definition comprises 'all receipts whether monetary or in kind ... received at annual or more frequent intervals' (United Nations, 2011). Survey data therefore include – or at least aim to include – sources of income such as non-taxable social security benefits, which are missing by definition from tax data. Survey data also allows incomes to be observed at the household level, and (at least in principle) covers a representative sample of the entire adult population, rather than only taxpayers. These features explain why household surveys are the primary data source on incomes for many statistical and research purposes.

A known disadvantage of survey data, however, concerns underestimation of top incomes. Top incomes are underestimated in survey data due to a combination of unit non-response and underreporting (Bourguignon, 2018; Lustig, 2020; Ooms, 2021). Tax data offer key advantages in both of these respects, because for tax purposes all individuals with income above the personal allowance (£12,570 in 2021-22) are legally required to report their (taxable) income. Methods for adjusting survey data using tax data are discussed in detail by Jenkins (2017, 2021). Their application tends to result in significant upward revisions of top income shares, although these corrections have a more muted impact on the Gini coefficient (Anand & Segal, 2015; Bourguignon, 2018; Burkhauser et al., 2018b; Jenkins, 2017, 2021; Lustig, 2020).

Recognising this issue, in 2020 the ONS introduced a new 'top income adjustment' using tax data, as part of its official income statistics (Webber & Beha, 2020). This hybrid approach – using tax data to supplement survey data – built on the method pioneered by the DWP in its Households Below Average Income (HBAI) series (DWP, 2018), and subsequently refined by Jenkins and co-authors (Jenkins, 2017; Burkhauser et al., 2018a; Atkinson & Jenkins, 2019). Although there are some differences between each method,³ in general terms the adjustment works as follows. First, a threshold is chosen (for example, the top 3%) above which the incomes observed in the survey data will be adjusted. This group is then divided into several sub-groups,⁴ and the average income of each sub-group in the survey data is replaced with the average income of the corresponding sub-group in the tax data. Finally, where the sub-groups have been defined using nominal income thresholds, individuals' survey weights are adjusted such that the (weighted) population in each income range matches the tax data.

(c) Remaining deficiencies in official income statistics

Even after the adoption of a top incomes adjustment, there remain two important deficiencies in the ONS's measurement of incomes from wealth, which form the focus of this paper. The first concerns income missing from the survey data. Although there is evidence of missing benefit income compared with administrative (social security) totals (Corlett, 2021), it is otherwise assumed that incomes are measured accurately in survey data for most of the population below the top. Recent analysis by the

³ See Jenkins (2021) for a full discussion.

⁴ Under the 'replacement' method used by DWP and Burkhauser et al (2018a), sub-groups are defined using quantiles of the income distribution taken from the survey data. Under the 'reweighting' method used by the ONS, sub-groups are instead defined using nominal thresholds based on the quantile thresholds in the tax data (Webber & Beha 2020).

ONS shows that in aggregate, survey underestimation is only significant for the top 3% (Webber and Beha, 2020). However, this overlooks that if surveys undercover or underreport certain *types* of income in particular, then for those individuals who are most reliant on these sources, the errors lower down the distribution could still be substantial, and important for policy purposes.

The second deficiency is a direct reprise of Titmuss's concerns. The tax data used by the ONS to adjust top incomes only capture fiscal income. They miss entirely (by definition) any sources that are not assessable for Income Tax, including tax-exempt savings and investments, capital gains and inheritances. Recent evidence for the US shows that two thirds of all capital income is missed by administrative tax data (Piketty, Saez & Zucman, 2018). Other international studies show that including capital gains and the retained earnings of the corporate sector within income measures can result in significant upward revisions to estimates of top end inequality (Alstadsæter & Jacob, 2016; Roine & Waldenström, 2012). Such comparisons are suggestive of the position in the UK, but the definition of fiscal income is highly sensitive to legal and institutional settings, and there are no existing studies that quantify non-fiscal incomes in the UK context.

These two issues highlight a clear need for more evidence on the UK's missing incomes. In this paper, we focus on investment incomes and capital gains in particular – acknowledging that other areas, such as social security income and inheritances, also require further work.

3. Missing investment incomes

(a) What is investment income?

'Investment income' encompasses all forms of income received from owning assets, including for example interest from savings, dividends from shares and rent from property. 'Investment' or 'capital' incomes are conventionally defined dichotomously with 'labour income', which comprises all forms of income received in exchange for work. The distinction between capital and labour income can be difficult to draw in practice because, for example, a dividend paid to a small business owner may reflect partly their financial investment and partly their own effort. Nevertheless, just like labour incomes, investment incomes are clearly within the comprehensive income definition that we set as the benchmark for inclusion in income statistics.

(b) Data and methods

To investigate the extent to which investment incomes are missing from survey data, we compare coverage in the Family Resources Survey (FRS)⁵ with administrative tax data on incomes assessable for Income Tax collected by HMRC, known as the Survey of Personal Incomes Public Use Tape (SPI), for the period 1997-2017.⁶ The SPI comprises a stratified sample of tax records from HMRC's self-assessment (SA) and payroll (PAYE) administrative systems. According to HMRC, for individuals with income above personal allowance, 'the SPI provides the most comprehensive and accurate official source of data on personal incomes assessable for Income Tax' (HMRC, 2021). Accordingly, we treat the SPI as a benchmark against which to assess the (taxable) investment incomes that are missing from the FRS.

⁵ The FRS is used to construct the DWP's HBAI official income statistics. A key advantage of this data source for the purposes of our analysis is that it is more decomposable than the survey data used to compile the ONS's ETB series.

⁶ We refer to the tax year 2015-16 as 2016, consistent with HMRC's labelling.

Our analysis uses individuals as the unit of observation, since it is not possible to create household units in the SPI. We also exclude from our analysis individuals with (total) income below the personal allowance, because of their incomplete coverage in the SPI. To create a consistent income definition, we use the SPI ‘fiscal income’ definition in both datasets,⁷ excluding non-taxable income from the FRS data. Although this entails a move away from comprehensive income, it allows us to pinpoint the taxable income sources that are missing from the survey data by providing a common denominator for comparison. We discuss the impact of non-taxable investment income on inequality statistics separately below.

Having harmonised our population and income definitions in both datasets, we then compare income totals across equivalent quantiles of the total income distribution, following the methodology in Burkhauser et al (2018a) and using a quantile width of 0.1%. To compare the coverage of investment incomes on a component-by-component basis, we harmonise the FRS income components based on the definition of ‘total investment income’ and its sub-components (for example, interest, dividends, rent) as used in the SPI. Finally, in order to construct quantiles of the full UK income distribution, we use the ONS mid-year population estimates (for individuals aged 15+) and adopt the income control totals computed by Advani, Summers & Tarrant (2021), which are defined on a fiscal income basis, consistently with our numerators.

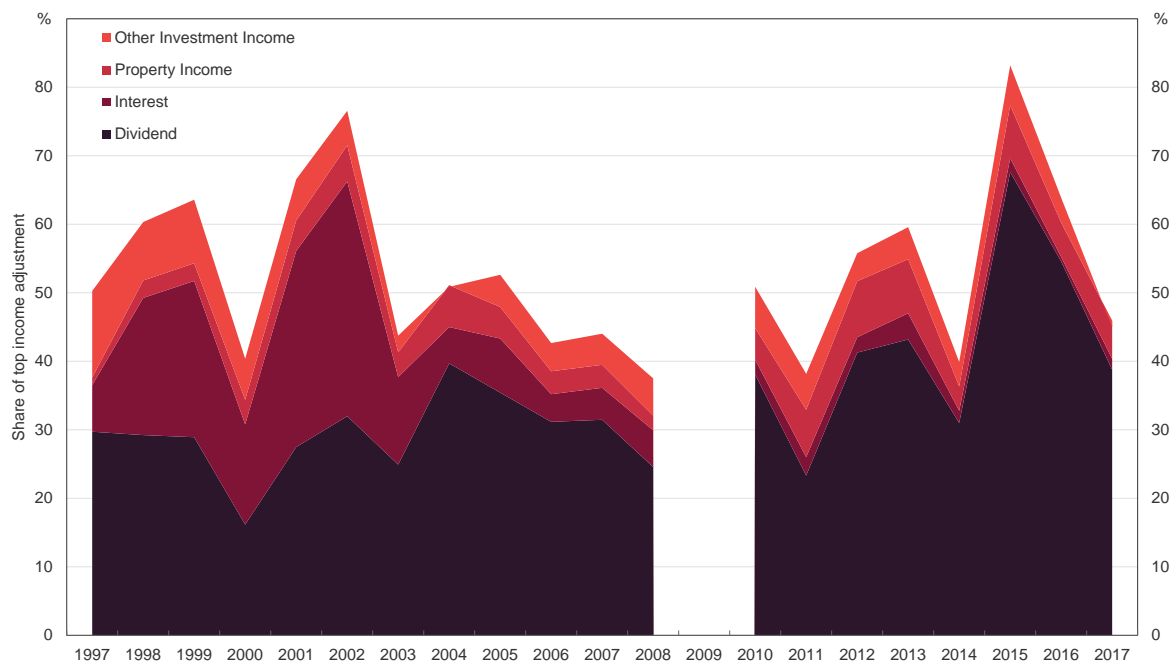
(c) The role of missing investment income in the UK’s top income adjustment

The ONS top income adjustment, like its predecessors, was conceived to correct for the underestimation of *total* income in survey data at the top of the distribution. Building on analysis by Ooms (2021), we estimate to what extent such corrections are attributable to missing *investment income* in particular. We find that on average, over the period 1997-2017, around half of the total income imputed to the top 3% through the process of top income adjustment consists of missing investment income. As the shaded area in Figure 1 shows, this share has fluctuated significantly from year to year, likely as a result of changes in taxation and macroeconomic conditions, to which investment incomes are highly sensitive.

Our analysis also allows us – for the first time – to provide a full decomposition of missing investment incomes. We find that in the late 1990s and early 2000s, missing interest income made up a significant proportion of all missing investment income; however, its importance has diminished since 2009, likely due to the precipitous fall in interest rates that followed the Global Financial Crisis. Meanwhile, missing dividend income has grown in importance and is now by far the largest sub-component of all missing investment income at the top. This trend coincides with the well-documented rise in ‘self-incorporation’ (i.e. providing one’s personal services via a company) that has occurred since the early 2000s (Cribb, Miller & Pope, 2019).

⁷ In line with Advani, Summers & Tarrant (2021), we also adjust the dividend income recorded in the SPI to correct for the ‘notional’ dividend tax credit that forms part of taxable income but which is not actually received by individuals.

Figure 1: The role of investment income in the top income adjustment



Notes: The SPI dataset was not released for 2009. The figure shows the percentage of total income imputed by the top income adjustment that is attributable to each investment income component. For 1997-2004, the decomposition of investment income is partially imputed using tabulated data from HMRC’s Personal Income Statistics, as some investment income components were aggregated in the microdata in these years.

Source: Authors' calculations based on FRS and SPI data

(d) Missing investment income below the top

The problem of missing investment income is also significant *below* the threshold of the ONS top income adjustment (i.e. below the top 3%). As Figure 2 shows, the top income adjustment only reduces the total amount of investment income that is missing by approximately half. A substantial proportion of all investment income that is missing from survey data accrues to individuals within the bottom 97% by total income, so remains missing even after the adjustment. This share has also been rising over time, from 17% in 1997 to 44% in 2017.

Figure 2: Total missing investment income, before and after top income adjustment



Notes: The SPI dataset was not released for 2009. The figure shows the percentage of all investment income observed in the SPI that is missing from the unadjusted FRS data ('before top adjustment'), and that remains missing from the series after the top income adjustment has been applied to the top 3% ('after top adjustment').

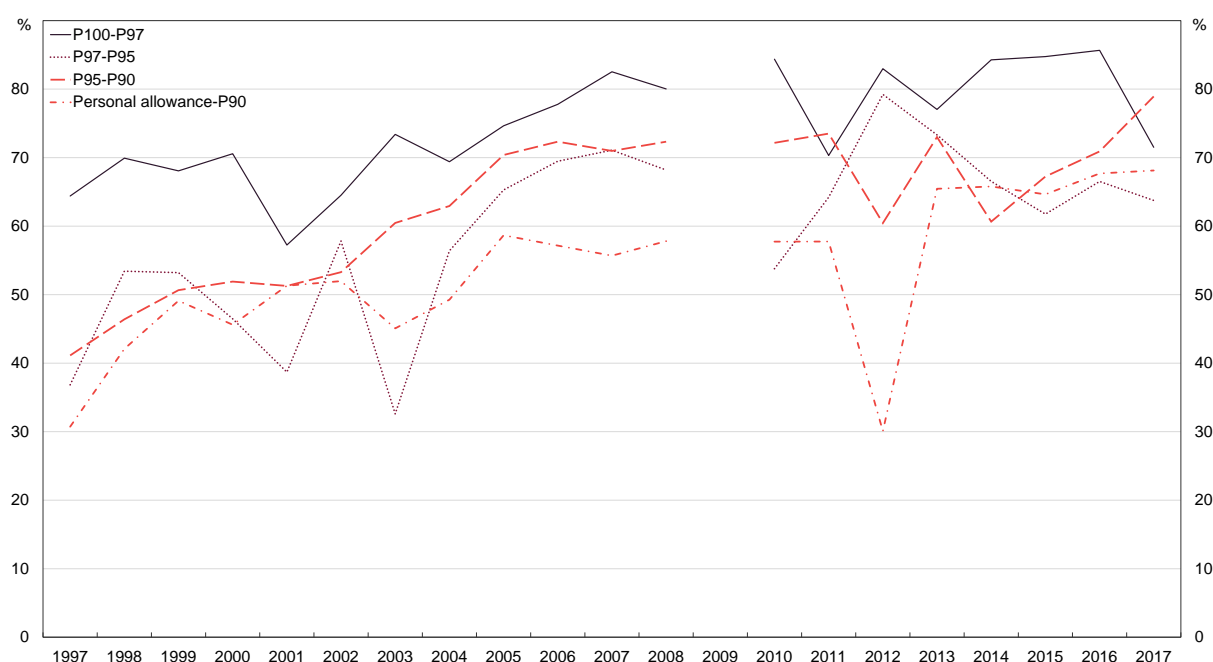
Source: Authors' calculations based on FRS and SPI data

Although in cash terms, missing investment income is most significant at the top of the income distribution,⁸ the *proportion* of investment income that is missing from survey data is broadly similar for both higher and lower income groups. As Figure 3 shows, in 2017, 72% of investment income held by the top 3% was missing, while 68% of investment income held by the bottom 90% (excluding those below the personal allowance) was missing.

These findings emphasise the importance of taking seriously the problem of missing investment incomes, as distinct from the more well-known issue of underestimation of top incomes. To address this problem, we suggest that the ONS should develop an additional adjustment, beyond the top incomes adjustment, to stochastically impute investment income to the survey microdata based on the conditional distribution observed in tax data.

⁸ This is because total incomes are higher and also because investment income makes up a larger share of total income for those at the top.

Figure 3: Percentage of missing investment income, across different income groups (by total income)



Notes: The SPI dataset was not released for 2009. The figure shows the percentage of all investment income observed in the SPI that is missing from the unadjusted FRS data, across different percentile groups of the total income distribution. The lowest group ('personal allowance – P90') excludes those with total income below the personal allowance because the SPI does not have full coverage of these individuals.

Source: Authors' calculations based on FRS and SPI data.

(e) Non-taxable investment incomes

The SPI, which we use as our benchmark for identifying 'missing' investment income, only includes incomes that are assessable for Income Tax. Our analysis above therefore provides a lower bound on the true extent of investment income that is missing from survey data. A more comprehensive estimate would require additional information about non-taxable investment incomes such as those from tax-exempt investment schemes e.g. Individual Savings Accounts (ISAs) and Venture Capital Trusts (VCTs), and the unremitted foreign investment income of individuals who are resident but not domiciled in the UK ('non-doms').

At present, such information is not available to researchers. In some cases, such as ISAs and VCTs, relevant data is collected by HMRC; however, only aggregate statistics have been published, meaning that the impact on the distribution of income remains unknown. In other cases, such as non-dom foreign income, there is no requirement to report the income to HMRC, and so no direct data sources exist, either for administrative or research purposes.

In these respects, hardly any progress has been made in addressing the concern first highlighted by Titmuss regarding the impact of tax-exempt income on inequality statistics. However, one major additional source of income (falling within the comprehensive income definition) can now be incorporated into income statistics, even though it is not assessable for Income Tax: this is taxable capital gains, which we address in the following section.

4. Missing capital gains

(a) What are capital gains?

A ‘capital gain’ refers to the increase in value of an asset. In economic terms, capital gains contribute to an individual’s comprehensive income because they increase the funds available for the owner to consume. However, in the UK, capital gains are taxed differently from other forms of income. Capital gains are taxed only when they are ‘realised’ through a sale (or other disposal) of the asset, and the tax rate is substantially lower than under Income Tax. Moreover, some assets and types of transaction are exempt from Capital Gains Tax: we discuss these sources separately below.

Even though capital gains clearly provide an economic benefit to their recipients, their impact has been entirely overlooked in the UK’s inequality statistics. Capital gains are excluded from the Canberra income definition used in household surveys (United Nations, 2011). Because capital gains are not liable to Income Tax they are also excluded from the SPI. However, because individuals are liable to Capital Gains Tax when they sell or otherwise dispose of assets, HMRC does collect administrative data on realised capital gains. These data can be aggregated with information about taxable incomes to provide a more complete picture of the economic resources that individuals receive.

(b) Data and methods

To investigate the impact of taxable capital gains on measured inequality, we use administrative tax microdata accessed via HMRC, which are not publicly available and have not previously been used for inequality measurement. The data comprise the universe of self-assessment tax records filed from 1997-2018, combined with employer payroll (‘PAYE’) records covering non-filers.⁹ They include detailed information on both the taxable incomes and taxable capital gains of all individuals who received taxable capital gains above the ‘annual exempt amount’ (currently set at £12,300). We can thus use the data to analyse the combined taxable income and gains of each individual in the entire UK taxpayer population.

We first reconstruct the SPI definition of ‘total income’ within the administrative microdata. Combining this with the population and income control totals computed by Advani, Summers & Tarrant (2021), we are able to reproduce existing estimates of the share of all fiscal income that goes to the top 1% (Alvaredo, 2017; Brewer & Samano-Robles, 2019). We then construct ‘total remuneration’, by adding to an individual’s taxable income any taxable capital gains they received. To produce an income control total (denominator) that includes gains, we add the aggregate taxable gains reported to HMRC to the standard income control.

(c) Top income shares including gains

In 2018, the top 1% of adults (around 500,000 people) received 13.8% of all income, when measuring taxable income only (Figure 4). To be in this group required an income of above £125,000. However, including the taxable capital gains of these same people, their share of all income plus gains was 15.2%. This implies that each individual who ranked within the top 1% by taxable income, received on average an additional £47,000 in gains.

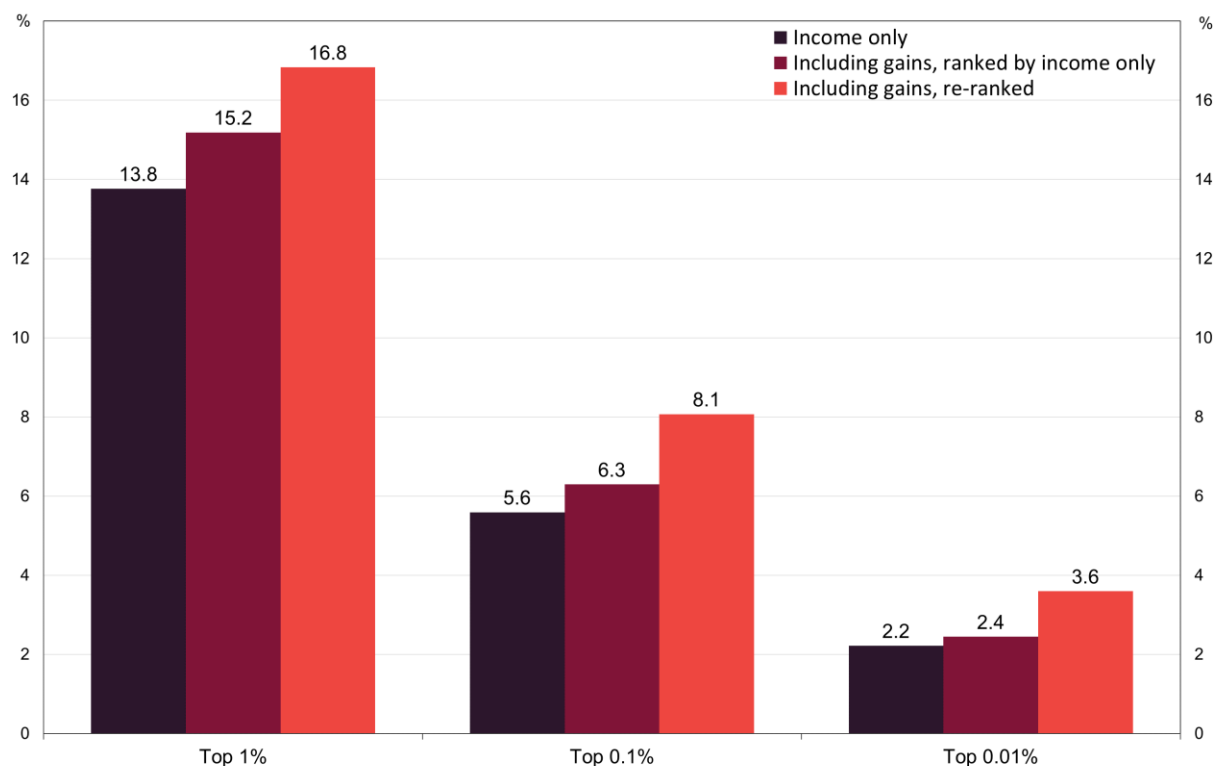
Individuals with very large gains but relatively low incomes are absent from the top 1% when ranked on taxable income only. Re-ranking the population based on individuals’ total remuneration (i.e. including gains), one in ten people from the ‘old’ top 1% (on income only) are replaced by these high-

⁹ PAYE records are a 5% sample for 2001, a 10% sample for 2002-2014, and the universe from 2015 onwards.

gainers. The remaining nine in ten who were in the income-only top 1% remain at the top, indicating that gains are mostly concentrated amongst those who already have high incomes.

We find that when re-ranking the population on income plus gains, the share of total remuneration going to the top 1% increases even further: from 15.2% (ranking on income only) to 16.8% ranking on income plus gains. In 2018, the average remuneration of each individual in the top 1% was £85,000 higher than if we measure (and rank on) income only.

Figure 4. Top 1%, 0.1% and 0.01% shares, based on income-only; income plus gains (ranked on income only); and income plus gains (re-ranked), 2018



Notes: The figure shows the share of all income going to the top 1%, 0.1%, 0.01% of the UK population aged 15+, under different definitions of income, for the tax year 2017-18. ‘Income only’ includes only fiscal income. ‘Including gains, ranked by income only’ adds taxable capital gains to the definition of income but still ranks individuals on their fiscal income only, whereas ‘including gains, re-ranked’ ranks individuals on the sum of their fiscal income plus taxable capital gains.

Source: Authors' calculations based on HMRC administrative datasets and ONS 15+ population estimates.

The impact of gains is even larger when looking towards the very top. Focusing on the top 0.01%, the top share increases by 60%, from 2.2% when measured and ranked on income, to 3.6% when measured and ranked on total remuneration. This effect is mainly driven by re-ranking: before re-ranking the top share becomes 2.4%. This highlights the extent to which including gains not only changes top shares, but also affects *who* is at the top.¹⁰

(d) Impact on trends in inequality

As we noted in our introduction, official statistics on income inequality have played an important role in shaping political narratives surrounding the austerity agenda that characterised the 2010s. The

¹⁰ See further Advani & Summers, 2020a.

refrain that ‘we’re all in this together’ traded heavily on the claim – supported by official statistics – that income inequality had not worsened despite the cuts faced by those at the bottom of the distribution.

When looking at (taxable) income only, our analysis corroborates the prevailing view derived from both official statistics and the academic literature, that the top 1% share has remained flat or even slightly declined since 2010 (Brewer & Samano-Robles, 2019). However, once (taxable) capital gains are included, a different picture emerges: the top 1% share is consistently higher than when measuring fiscal income only, and it also continued to rise through the austerity period of the 2010s (Figure 5a). This pattern is even more striking the top 0.1% and 0.01% (Figures 5b and 5c).

Just as Titmuss identified over half a century earlier, the focus of official statisticians on taxable income has thus served to mask an important shift in the way that the richest received their remuneration, distorting our understanding of underlying trends in economic inequality. To redress this, we suggest that the ONS should develop a parallel income series – published alongside its existing official statistics – that includes taxable capital gains, so that such trends can be laid open to scrutiny by academic researchers and as part of public debate.¹¹

¹¹ Using administrative tax data, Advani & Summers (2020) tabulate the joint distribution of taxable income and taxable capital gains (Tables A1 and A2). These tables (or the underlying source data) could be used by official statisticians and academic researchers to apply a stochastic imputation of taxable capital gains into microdata on fiscal incomes.

Figure 5a. Top 1% share based on income-only and income plus gains (re-ranked), 1997-2018

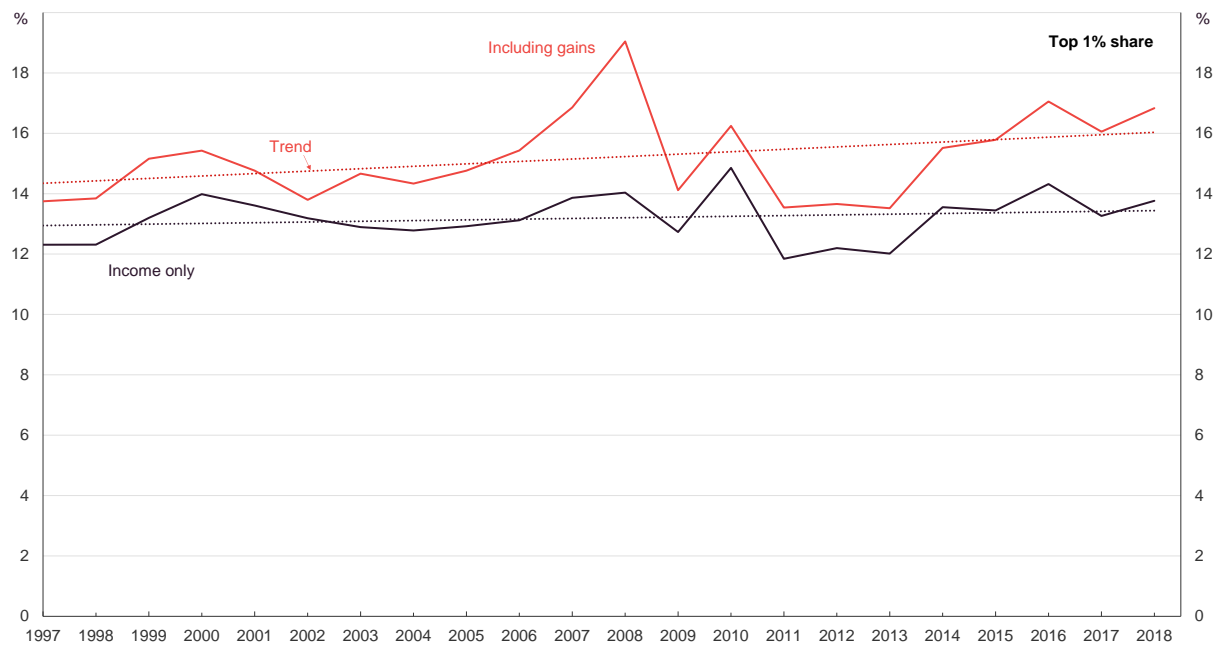


Figure 5b. Top 0.1% share based on income-only and income plus gains (re-ranked), 1997-2018



Figure 5c. Top 0.01% share based on income-only and income plus gains (re-ranked), 1997-2018

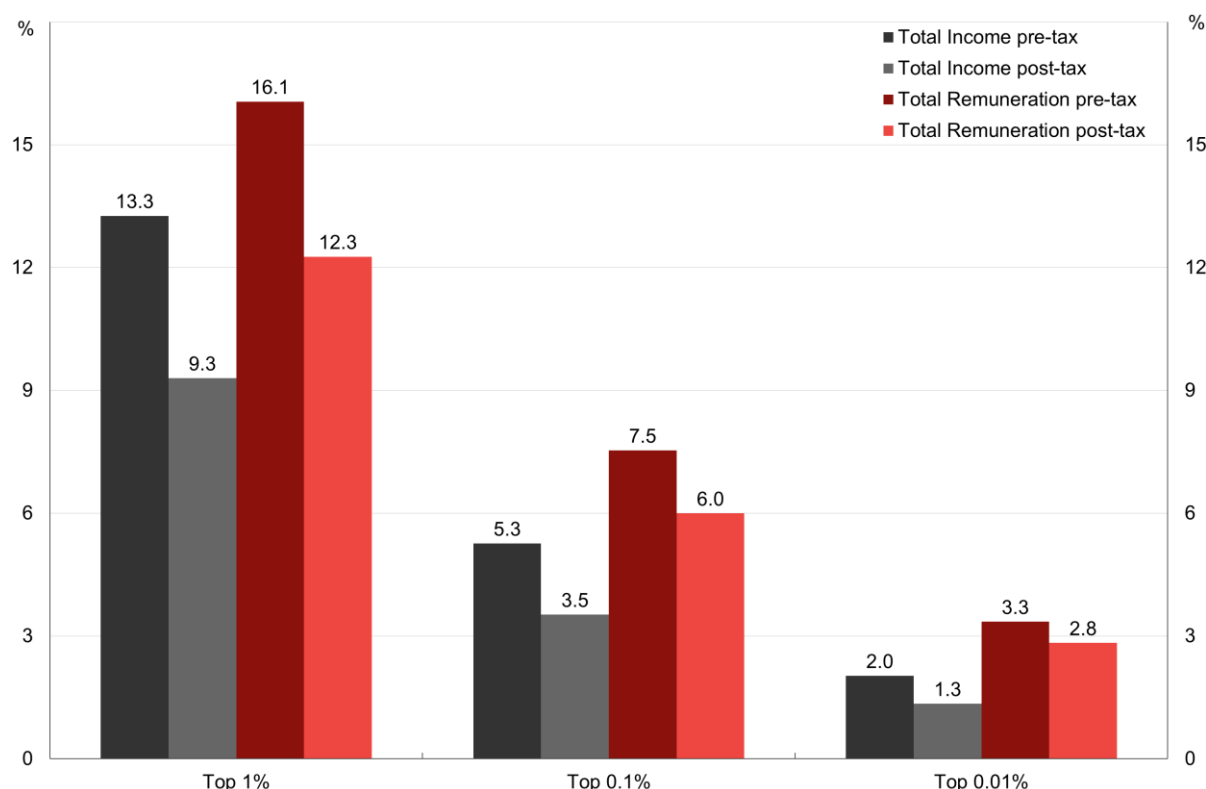


Notes: The figure shows the share of all income going to the top 1%, 0.1%, 0.01% of the UK population aged 15+, under different definitions of income, for tax years 1996-97 to 2017-18. 'Income only' includes only fiscal income. 'Including gains' adds taxable capital gains to the definition of income and re-ranks individuals based on the sum of their fiscal income plus taxable capital gains.

Source: Authors' calculations based on HMRC administrative datasets and ONS 15+ population estimates.

The impact of excluding capital gains from inequality statistics is proportionally even larger when considering post-tax incomes. Since capital gains are taxed much more lightly than other forms of income, the tax system does relatively little redistribution of gains. Figure 6 shows that whereas the tax system reduces the top 1% share of (taxable) income by 30%, once (taxable) gains are included it reduces the top share by only 23%. This pattern of reduced redistribution is even more pronounced among the extremely rich.

Figure 6. Top shares of income and remuneration before and after tax, 2017



Notes: The figure shows the share of all income going to the top 1%, 0.1%, 0.01% of the UK population aged 15+, under different definitions of income, pre- and post-tax, for the tax year 2016-17. ‘Total Income’ includes only fiscal income. ‘Total Remuneration’ is the sum of fiscal income plus taxable capital gains, and re-ranks individuals based on this total. ‘Total income post-tax’ deducts Income Tax and National Insurance Contributions (excluding employer contributions). ‘Total remuneration post-tax’ additionally deducts Capital Gains Tax.

Source: Authors’ calculations based on HMRC administrative datasets and ONS 15+ population estimates.

(e) Non-taxable capital gains

Our analysis using administrative tax microdata necessarily excludes the impact of non-taxable capital gains, since these are not generally reported to HMRC. Largest among these are gains made on people’s main homes, followed by gains on assets held in ISAs, and those that are realised by making transfers to a spouse, a charity, or on death (Corlett, Advani and Summers, 2020). Any gains that are below the tax-free allowance – currently £12,300 i.e. about half the median income – are also not taxable and typically are missing from tax data.

These non-taxable gains are substantial in aggregate, although it is unclear in which direction they would affect inequality measures. Gains on main homes are likely to be weighted towards the upper-middle of the distribution, making our estimates of top shares too high. However, other exclusions, in particular gains on assets held within tax-exempt investment schemes (such as ISAs and VCTs), are likely to be weighted heavily towards the very top, and so push in the other direction. Without individually linkable data on non-taxable gains, it is not possible to know which effect dominates.

5. Conclusion

An established literature has addressed the production and communication of statistics as a ‘general sociological phenomenon’ (Espeland & Stevens, 2008; Berman & Hirschman, 2018). However, the

interaction between measurement and policymaking, specifically, remains relatively underexplored (a recent exception is Sinfield, 2020). We urge renewed attention to this issue within social policy, reprising the agendas of Titmuss and Atkinson, amongst others. Accordingly, we conclude by discussing some of the mechanisms by which choices over measurement could impact substantive policymaking, and vice versa, using the issue of missing incomes from wealth as our case study.

(a) The impact of measurement on policy

Electoral debates about the tax system typically gravitate towards the headline rates of Income Tax levied on wages. The Labour government's decision to raise the top rate of Income Tax to 50p was an important talking-point at the 2010 General Election; the Conservative-led government's decision to cut this rate to 45p has been a prominent dividing-line between the major parties in each election since. However, throughout this period there was relatively little public debate about the tax treatment of investment income and capital gains. These forms of income are taxed at much lower rates than wages. Additionally, they can qualify for tax reliefs or exemptions that are not available on other forms of income.

The amount of tax that people pay therefore depends not only on the total income they receive, but also where it comes from. Investment income and capital gains – the lowest taxed forms of income – are highly concentrated at the top of the income distribution, reducing the effective tax rates paid by this group well below headline rates (Advani & Summers, 2020b). One might expect that post-tax incomes would be distributed much more equally than pre-tax incomes, given the progressive rate structure of Income Tax. In fact, as we have shown (Figure 6), the UK's personal tax system achieves hardly any redistribution at the very top. This is mostly due to the favourable tax treatment of investment income and capital gains compared with other forms of income.

The electoral focus on headline rates of Income Tax may be explained partly by the fact that for large swathes of the population, wages make up their main or only source of income. The lower rates of tax applied to incomes from wealth are therefore outside most voters' own lived experience. But the underestimation of these sources in the UK's official income statistics has also had the effect of sheltering them from public scrutiny. Statistics have the power to draw public attention to phenomena that are beyond the perception of most people's own lived experiences, but in this instance our official statistics have had the opposite effect: reinforcing a misperception that investment income and capital gains do not matter for inequality.

Another mechanism by which (lack of) measurement may affect policymaking concerns the difficulties of evaluating policies whose costs and/or benefits are not measured. A good example is Entrepreneurs Relief (now renamed 'Business Asset Disposal Relief'), which was introduced in 2008 to provide a 10% tax rate on capital gains arising from qualifying business investments. This tax relief cost over £20 billion in foregone revenue between 2008-2018, of which more than half went to individuals who received more than £1million in gains each. And yet during this period, the supposed benefits of the relief were not measured by government. In 2019, the Institute for Fiscal Studies published independent research (using tax data) showing that the positive impact on business investment was negligible (Miller & Smith 2019). The Chancellor has since acknowledged that this relief was 'expensive ... ineffective ... and unfair' (Sunak 2020), and taken steps to curtail its scope.

Titmuss referred to schemes like Entrepreneurs Relief as ‘fiscal welfare’ (Titmuss 1958: p44-45).¹² As Sinfield emphasises ‘The ways that social spending policies are run by fiscal welfare through the tax system remain relatively neglected, while the costs and impact of public expenditure are constantly under scrutiny’ (Sinfield, 2020). Following criticisms by the National Audit Office, Office for Budget Responsibility and Public Accounts Committee, HMRC has recently committed to collecting and publishing more information about the groups and sectors benefitting from significant reliefs (Thompson, 2019). Within government, this is a necessary precursor to adoption of the ‘Green book’ standard of evaluation that applies to other forms of public spending (HM Treasury, 2020). Following Titmuss and Sinfield, we urge a greater focus on tax expenditures as a field of social policy research, and regard measurement as critical to this agenda.

(b) The impact of policy on measurement

The increased availability and use of administrative data for statistical purposes has huge potential to enhance social scientific research (Halford & Savage, 2017). However, unless used carefully with awareness of its context, reliance on these new data sources also carries risks. It is easy for academic researchers and official statisticians to forget the divergence between what one is conceptually trying to measure, and the – often very different – purposes for which the relevant data were collected, especially where pinpointing such divergences requires specific technical expertise (as in the context of tax). This was essentially Titmuss’ critique in the 1960s, and despite many other advances in official income statistics, we have shown that this problem remains at large.

We see at least two mechanisms by which policy can affect measurement using administrative data. First, administrative data are by their nature anchored to the policies that we already have, and so to evaluate options for reform it will often be necessary to draw on other sources in addition. Second, administrative data are often seen as a ‘gold standard’, especially given their universal coverage over individuals to whom the relevant policy applies. However, as we have shown in the context of income measurement, ignoring phenomena that are not easily measured using administrative data is not – in practice – a ‘conservative’ or ‘neutral’ approach. Instead, it introduces systematic biases arising from the shape of the existing policy landscape. In the context of missing incomes from wealth, the reliance on administrative definitions tends to be to the benefit of those currently advantaged by the tax system; in other areas of social policy this effect is likely to be reversed, further marginalising groups that are outside the scope of existing support.

The recent innovation of Distributional National Accounts (DINA) – developed by Piketty, Saez & Zucman (2018) and subsequently taken up more widely via the World Inequality Database (WID) – has heralded a revolution in inequality measurement. Since DINA involves allocating for distributional purposes *all* sources of income recorded at aggregate level within national accounts, it might be thought to overcome the problems that we have identified regarding ‘missing’ incomes. However, the DINA methodology is not a panacea. First, legal and institutional context still matters and is required to make sensible assumptions about how to allocate components from national accounts that are not observed from individual-level data. Second, DINA does not capture transfers that are excluded from

¹² The term used by HMRC is ‘tax expenditure’, which is defined as a relief or exemption that seek to ‘help or encourage particular types of individuals, activities or products in order to achieve economic or social objectives’ (HMRC, 2020).

the national accounts definition of income, most notably capital gains and inheritances.¹³ In these respects, Titmuss' concerns are not obviated by DINA; indeed, they may be more important than ever.

Finally, we urge a shift in the mindset of government officials in the collection of administrative data. In the tax context at least, collecting data appears to be viewed too often as a burden and expense rather than an integral aspect of the government's policymaking capacity. HMRC's approach is, in effect, to collect the bare minimum information required to apply current tax legislation, justified by a perceived imperative of minimising compliance costs on taxpayers. As a result, government persistently lacks the information needed to model changes to the tax system effectively, generating a powerful force of inertia. We see an important role for official statisticians, working in concert with government departments, to lead an agenda for collecting the additional data required to evaluate and reform policy, rather than seeing their function as primarily to report the status quo.

¹³ Where gains in the value of shares are attributable to the retention of corporate profits, these are indirectly captured by DINA (on an accruals basis) since DINA allocates retained profits to individuals.

6. Bibliography

- Advani, A. & Summers, A. (2020a). Capital Gains and UK Inequality. CAGE Working Paper No. 465.
- Advani, A. & Summers, A. (2020b). How much tax do the rich really pay? New evidence from tax microdata in the UK. CAGE Policy Briefing No. 27.
- Advani, A., Corlett, A. & Summers, A. (2020). Who gains? The importance of accounting for capital gains. Resolution Foundation Report.
- Advani, A., Summers, A. & Tarrant, H. (2021). What has been happening to UK Top Incomes?. CAGE Working Paper No. 490.
- Alstadsæter, A., & Jacob, M. (2016). Dividend Taxes and Income Shifting. *Scandinavian Journal of Economics*, 118(4), 693–717.
- Alvaredo, F. (2017). UK estimates of top income shares 2013-2014 and 2014-2015: Note on methods. WID.world Technical Note Series.
- Anand, S., & Segal, P. (2015). The global distribution of income. In *Handbook of Income Distribution* (1st ed., Vol. 2). Elsevier.
- Atkinson, A. (1975). Income Distribution and Social Change Revisited. *Journal of Social Policy*, 4(1), 57-68.
- Atkinson, A. & Jenkins, S. (2019). A Different Perspective on the Evolution of UK Income Inequality. *The Review of Income and Wealth*, 66(2), 253-266.
- BBC. (2017). Reality Check: Has inequality been getting worse?
<https://www.bbc.co.uk/news/business-38570809>
- Berman, E., & Hirschman, D. (2018). The Sociology of Quantification: Where Are We Now?. *Contemporary Sociology* 47(3), 257–66.
- Bourguignon, F. (2018). Simple adjustments of observed distributions for missing income and missing people. *The Journal of Economic Inequality*, 16, 171–188.
- Brewer, M. & Samano-Robles, C. (2019) Top incomes in the UK: analysis of the 2015-16 Survey of Personal Incomes. ISER Working Paper Series 2019-06.
- Burkhauser, R., Hérault, N., Jenkins, S., & Wilkins, R. (2018a). Top incomes and inequality in the UK: reconciling estimates from household survey and tax return data. *Oxford Economic Papers*, 1–26.
- Burkhauser, R., Hérault, N., Jenkins, S. P., & Wilkins, R. (2018b). Survey Under-Coverage of Top Incomes and Estimation of Inequality: What is the Role of the UK's SPI Adjustment? *Fiscal Studies*, 39(2), 213–240.
- Corlett, A. (2021). Improving our understanding of UK poverty will require better data. Resolution Foundation Spotlight Report.
- Cribb, J., Miller, H., & Pope, T. (2019). Who are business owners and what are they doing?. Institute for Fiscal Studies Report.
- Department for Work & Pensions. (2018). Households Below Average Income (HBAI) Quality and Methodology Information Report – 2016/17. HBAI Quality and Methodology Information Report.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437251/households-below-average-income-quality-methodology-2013-14.pdf

Espeland, W., & Stevens, M. (2008). 'A Sociology of Quantification'. *European Journal of Sociology* 49, no. 3 (December 2008): 401–36.

Farnsworth, K. (2013). Bringing Corporate Welfare In. *Journal of Social Policy*, 42(1), 1-22.

Haig, R. (1921). The Concept of Income – Economic and Legal Aspects. In Haig, Robert M. (ed.), *The Federal Income Tax*, 1–28. Columbia University Press, New York, NY.

Halford, S. & Savage, M. (2017). Speaking Sociologically with Big Data: Symphonic Social Science and the Future for Big Data Research. *Sociology*, 51(6) 1132-1148.

Hammond, P. (2017). Autumn Budget 2017 Speech. <https://www.gov.uk/government/speeches/autumn-budget-2017-philip-hammonds-speech>.

HM Revenue & Customs. (2021). *Income Tax Liabilities Statistics: tax year 2018 to 2019 to tax year 2021 to 2022: Supporting Documentation*.

HM Treasury. (2020). *The Green Book: Central Government Guidance on Appraisal and Evaluation*.

Hood, A. and Waters, T. (2017). Incomes and inequality: the last decade and the next parliament. IFS Briefing Note BN202. <https://www.ifs.org.uk/uploads/publications/bns/BN202.pdf>.

Jenkins, S. (2017). Pareto Models, Top Incomes and Recent Trends in UK Income Inequality. *Economica*, 84(334), 261–289.

Jenkins, S. (2021). Top-Income Adjustments and Official Statistics on Income Distribution: The Case of the UK. IZA Discussion Paper 14951.

Lustig, N. (2020). The “missing rich” in household surveys: causes and correction approaches. *ECINEQ Working Paper Series*, 520.

Miller, H. & Smith, K. (2019). Low rates of capital gains tax on business income lead to large tax savings but do not boost investment. Institute for Fiscal Studies. <https://ifs.org.uk/publications/14511>

Nolan, B., Palomino, J., Van Kerm, P. & Morelli, S. (2020), “The wealth of families: The intergenerational transmission of wealth in Britain in comparative perspective”, Nuffield Foundation and INET at the Oxford Martin School.

Ooms, T. (2021) Correcting the Underestimation of Capital Incomes in Inequality Indicators: with an Application to the UK, 1997-2016. *Social Indicators Research* 1-25.

Orton, M., & Rowlingson, K. (2007). A Problem of Riches: Towards a new Social Policy Research Agenda on the Distribution of Economic Resources. *Journal of Social Policy*, 36(1), 59-77.

Osborne, G. (2015) Summer Budget 2015 Speech. <https://www.gov.uk/government/speeches/chancellor-george-osbornes-summer-budget-2015-speech>

Piketty, T., Saez, E., & Zucman, G. (2018). Distributional National Accounts: Methods and Estimates for the United States. *The Quarterly Journal of Economics*, 133(2), 553–609.

- Roine, J., & Waldenström, D. (2012). On the role of capital gains in Swedish income inequality. *Review of Income and Wealth*, 58(3), 569–587.
- Rowlingson, K. & McKay, S. (2011). *Wealth and the Wealthy: Exploring and Tackling Inequalities between Rich and Poor*. 1st ed., Bristol University Press.
- Ruane, S., Collins, M., & Sinfield, A. (2020). The Centrality of Taxation to Social Policy. *Social Policy and Society*, 19(3), 437-453.
- Simons, H. (1938). *Personal Income Taxation: The definition of income as a problem of fiscal policy*. Chicago University, Chicago.
- Sinfield, A. (2020). Building Social Policies in Fiscal Welfare. *Social Policy and Society*, 19(3), 487-499.
- Sunak, R. (2020). March 2020 Budget Speech. <https://www.gov.uk/government/speeches/budget-speech-2020>
- Tawney, R. (1913). Inaugural lecture on poverty as an industrial problem reproduced in memorandum on the problems of poverty. London, England: William Morris Press.
- Thompson, J. (2019). Sir Jonathan Thompson to Meg Hillier MP. 30 April 2019. <https://www.parliament.uk/globalassets/documents/commons-committees/public-accounts/Correspondence/2017-19/Letter-from-Sir-Jonathan-to-Chair-in-response-to-report-on-HMRCs-Performance-in-17-18-recommendation-13-and-4-190430.pdf>
- Titmuss, R. (1958). *Essays on 'the Welfare State'*. London: Allen and Unwin.
- Titmuss, R. (1962). *Income Distribution and Social Change*. London: George Allen and Unwin.
- United Nations (2011). *Canberra Group Handbook on Household Income Statistics*. Second Edition.
- Webber, D., & Beha, O. (2020). Top income adjustment in effects of taxes and benefits data: methodology. *ONS Compendium*, 1–17.
- Worrall, P. (2016). The surprising truth about inequality. <https://www.channel4.com/news/factcheck/factcheck-surprising-truth-inequality>