

<b>Institution:</b> London School of Economics and Political Science		
<b>Unit of Assessment:</b> 20 – Social Work and Social Policy		
<b>Title of case study:</b> Better measurement of income inequality levels and trends		
<b>Period when the underpinning research was undertaken:</b> 2014–2018		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Stephen P. Jenkins	Professor of Economic and Social Policy	2011 to present
<b>Period when the claimed impact occurred:</b> 2018–2020		
<b>Is this case study continued from a case study submitted in 2014?</b> No		
<b>1. Summary of the impact</b> (indicative maximum 100 words)		
<p>LSE research led directly to changes in how the UK Office for National Statistics (ONS) derives its official income distribution series. Because the ONS's series are widely used by government departments, think tanks (e.g. Resolution Foundation), pressure groups (e.g. Child Poverty Action Group), media, and the general public, the research has substantial impact beyond the ONS as well as within it. Specifically, the research by Jenkins and colleagues underpinned the ONS's development of new procedures for estimating income inequality from household survey data and incorporation of these procedures in official statistics from 2020 onwards. Household surveys do not capture incomes at the very top of the income range very well. To address this under-coverage, the research showed how to supplement household survey data with income information from administrative data held by Her Majesty's Revenue and Customs (HMRC) – for which top income coverage is excellent – and its recommendations heavily influenced ONS.</p>		
<b>2. Underpinning research</b> (indicative maximum 500 words)		
<p>Productive debate about what is happening to inequality requires reliable estimates. The “go-to” sources for information about UK income inequality levels and trends are the data and statistics produced annually by the ONS and Department for Work and Pensions (DWP). They have been cited by, for example, a Deputy Governor of the Bank of England when claiming that income inequality is “broadly unchanged” over the past quarter century (Broadbent, “The distributional implications of low structural interest rates and some remarks about monetary policy trade-offs”, speech at the Society of Business Economists Annual Conference, 18 November 2016, p. 2). Many other commentators have drawn similar conclusions referring to the same ONS and DWP series. And yet inequality levels and trends are not fully captured by the “go-to” sources. The share of total income held by the very richest groups in the UK has increased dramatically over the same period – the main source for this finding is administrative record data from personal income tax returns held by HMRC (the Survey of Personal Incomes (SPI)). Reconciling the survey and tax data sources, as this research has done, tells us that household surveys are increasingly bad at capturing the income of the very richest people (“survey under-coverage”). By contrast, the forte of tax data is their very much better top-income coverage.</p> <p>Research underpinning impacts described here shows how to exploit the complementary strengths of survey and tax data: combine tax data about the very highest income ranges with survey data about the rest of the income range. Papers [1] and [2] summarise the distribution of “top incomes” using a non-parametric approach; papers [3] and [4] instead use estimates from Pareto distribution models to do this.</p> <p>[2] and [3] show that UK income inequality is greater than shown by the two official series and, moreover, has increased since the mid-1990s to a greater extent than most people claim (see above). [4] splices together combined-data series with earlier series and concludes that inequality today is as high as it was just before World War Two.</p> <p>An important product of this research has been its recommendations for improving the quality of official income distribution series. [1] takes the DWP's “HBAI” (Households Below Average Income) series as its focus (see, for example, <a href="#">DWP 2020</a>). Since the 1990s, DWP estimates incorporate some information from tax data using an “SPI adjustment” which modifies the incomes of at most the top 0.5% of incomes. By contrast, this research shows that, <b>first</b>, in order to properly</p>		

address top income under-coverage, you need to adjust more, around 3% to 5% of top incomes. **Second**, you need to take better account of the inequality among the very rich group. **Third**, the research argued that the DWP's separate adjustments to survey top incomes for groups defined by country (Northern Ireland versus Great Britain) and whether of pension age were unnecessary (these characteristics were poor markers of top income status), recommending they be dropped. **Fourth**, the research indicated that using HMRC SPI data from a past year (because current year SPI are unavailable when the ONS and DWP prepare their statistics) introduced systematic biases, and recommended further work on this. **[1]** discusses the research team's and the DWP's adjustments in more detail and is the source of the recommendations cited above, and **[2]-[4]** implement the team's methods for combining tax and survey data (several variants), with **[2]** in particular providing the benchmark for the ONS's revised procedures. Collectively, these papers provide additional core evidence to underpin the recommendations made in **[1]**, and they also demonstrate that implementing the research team's methods has substantive effects on distributional summary statistics: with the adjusted (improved) data, estimates of income inequality levels are higher, and inequality trends differ, by comparison with existing series.

The ONS's methodological work underpinning its new series examined these four recommendations explicitly (ONS 2019, 2020a). In the new official income distribution series that resulted, Recommendations 1 and 2 were adopted. Recommendation 3 was partly adopted (stratification by pension age was retained). Addressing Recommendation 4, ONS also found biases, and recognised these as an issue that would "need to be closely monitored ... to determine whether [their proposed] revision policy needs re-evaluating" (2020a, p. 15).

This research has also drawn attention to problems with other proposed approaches to addressing top income under-coverage, notably one that OECD were developing (Ruiz and Woloszko, 2015, "What do household surveys suggest about the top 1% incomes and inequality in OECD countries?", Economics Department Working Paper no. 1265). **[3]** critiques the OECD approach. The problem is that their method involves a (model-based) extrapolation from the survey data available, but because these data are flawed – there is intrinsic top income under-coverage – the extrapolation also leads to flawed estimates. **[3]** also points out that a proposal to address under-coverage in EU-SILC data – used for Eurostat's official income statistics for all EU Member States – suffers from the same problems as the OECD approach (Alfons, Templ, and Filzmoser, 2013, "Robust estimation of economic indicators from survey samples based on Pareto tail modelling", *Journal of the Royal Statistical Society: Series C*, 62, pp. 271–286).

In sum, this research provides new estimates of UK inequality levels and trends, reveals what the DWP's SPI adjustment does and doesn't do (it's largely undocumented), critiques other proposed methods, and makes constructive proposals about how to get better measures of income inequality. The research team's recommendations have been taken up by the ONS: see above and Section 4, below.

#### *Note on LSE contribution to the research*

The impacts derive from research undertaken by an international team based at the LSE (Jenkins) and the Melbourne Institute (Burkhauser, Hérault, and Wilkins). Jenkins is responsible for the development of the analytical approach in **[1]** and **[3]** and he co-led the development of **[2]** (with Burkhauser and Hérault) and **[4]** (with Atkinson). The detailed data work was undertaken by Hérault. Jenkins led the drafting of **[1]** and **[3]** and co-wrote **[2]** and **[4]**. Jenkins has been responsible for all the impact activities.

### **3. References to the research** (indicative maximum of six references)

- [1]** Burkhauser, R. V., Hérault, N., Jenkins, S. P., and Wilkins, R. (2018). Survey Under-Coverage of Top Incomes and Estimation of Inequality: What is the Role of the UK's SPI Adjustment? *Fiscal Studies*, 39, pp. 213-240. DOI: 10.1111/1475-5890.12158.
- [2]** Burkhauser, R. V., Hérault, N., Jenkins, S. P., and Wilkins, R. (2018). Top Incomes and Inequality in the UK: Reconciling Estimates from Household Survey and Tax Return Data. *Oxford Economic Papers*, 70(2), pp. 301–326. DOI: 10.1093/oep/gpx041.
- [3]** Jenkins, S. P. (2017). Pareto Models, Top Incomes and Recent Trends in UK Income Inequality. *Economica*, 84, pp. 261-289. DOI: 10.1111/ecca.12217.

[4] Atkinson, A. B. and Jenkins, S. P. (2020). A Different Perspective on the Evolution of UK Income Inequality. *Review of Income and Wealth*, 66, pp. 253-266. DOI: 10.1111/roiw.12412.

#### 4. Details of the impact (indicative maximum 750 words)

The underpinning research has led directly to changes in how the ONS derives its official income distribution series. (ONS cites no other academic work as contributing to these changes.) The culmination is the embedding of the research's methods in the derivation of ONS's headline inequality series from 2020 onwards, and hence impact on users of these series such as government departments, think tanks, pressure groups, media, and the general public.

##### Impacts on ONS

At the beginning of the process, there were substantive discussions between Jenkins and a joint ONS/DWP working group about methods. There were emails plus a face-to-face meeting at LSE on 28 June 2018, attended by Dominic Webber, Callum Clark, and Richard Tonkin (from ONS), plus Peter Matejic (then leader, DWP's HBAI team). The initial contacts for the meeting were via Tonkin – he and Jenkins have often met at conferences and workshops about income data and income distribution series in the past. In addition, Matejic and Jenkins have been discussing HBAI data and distributional series for over a decade. When the underpinning research was being done, Jenkins discussed it with Matejic and his HBAI team and shared early drafts of papers with them. In particular, [1] acknowledges helpful discussions with Matejic about intricacies of the DWP's SPI-adjustment used to derive the HBAI series, and Matejic shared the small amount of SPI-adjustment documentation he had with Jenkins. Tonkin [A] testifies that *"the expert advice provided in this [June] meeting, and in subsequent correspondence, was critical in helping the joint ONS/DWP work refine its priorities and success criteria and also the methodological framework set out in [[1] and [2]] as being the most appropriate potential approach"*. He also wrote that the research and presentations to OECD [B] and Resolution Foundation were *"invaluable to me in making the case to add work to address these challenges to (the ONS) work programme"* and *"...helped convince the Director General for Regulation at the UK Statistics Authority of the importance of the issue being addressed"* [A].

Before the ONS introduced the changes to their official series, the ONS/DWP working group "road tested" their revised methods. Reporting on this, ONS (2018) state: *"[I]n line with research into using administrative data to tackle potential under-reporting of high-income earners in surveys, (for example, Burkhauser and others (2018)), we are planning to prioritise the development of an adjustment for the income of high earners in the next year. We will work closely with DWP on this research"* [C].

ONS's resulting work was summarised in their 2019 report [D]. This states that they build on the work of Burkhauser and others in [2], cites [1]-[3], and the Acknowledgements refer to the *"incredibly helpful input"* of Jenkins (who also peer-reviewed the pre-publication draft of this ONS document). Tonkin testifies that *"the final methodology decided upon directly builds on the non-parametric approach established in your research"* [A]. The leading series in the 2019 publication is derived in an almost identical manner to the way [2] does; the ONS work includes additional sensitivity analyses and extends the analysis to later years' data. The ONS confirm the research team's findings regarding estimates of higher inequality levels when combined data are used and also show that inequality trends differ. For example, the ONS old-basis series shows an inequality decline between 2010/11 and 2015/16 whereas the new series shows a rise.

The culmination of the ONS's development work has been their release of four bulletins in 2020 (three substantive and one methodological), signalling that their methods based on this research are now part of official statistics. The substantive bulletins are part of series published annually (at a minimum): there are two on "Household Income Inequality" and one on "Effects of taxes and benefits on the distribution of household incomes" containing charts and data based on the new methods and series [E] [F] [G]. These ONS bulletins refer back to earlier ONS work [C] [D] [H] and hence there is a direct line tracing the ONS innovations back to the underpinning research.

##### UK impacts beyond the ONS

The underpinning research has substantial societal significance because of the way ONS income distribution statistics are used. As the [ONS website](#) explains, ONS statistics are used, inter alia, to:

- “give citizens a view of society and of the work and performance of government, allowing them to assess the impact of government policies and actions;
- inform parliaments and political assemblies about the state of the nation, giving a window on the work and performance of governments, to assess their policies’ impact;
- allow government and its agencies to carry out their business, making informed decisions based on evidence;
- give ministers a picture of the economy and society, so they can develop and evaluate economic and social policies; and
- provide businesses with the information to help them run effectively and efficiently.”

More specifically, the ONS (and DWP) series are very widely relied upon as sources of information about fairness in contemporary society, and about how much redistribution is undertaken by the UK’s income tax and benefit systems. Research users include government departments, think tanks (e.g. Resolution Foundation), pressure groups (e.g. Child Poverty Action Group), academics, and the general public.

It is impossible to document the full reach and influence of the new statistics on income distribution and inequality because the official series are so “well known” and commonly used, often without the source being named. Nonetheless, Matejic (now Joseph Rowntree Foundation Deputy Director, Evidence and Impact), testifies that the underpinning research “*had an important role in improving the quality and coherence of statistics in this area*” and “[t]he improvement of the official statistics in terms of accuracy and coherence has fed through to into wider understanding of changes in income inequality” [I]. Tonkin testifies that the “*scale of the impact of your research on discussions around income inequality in the UK, while difficult to quantify, is considerable*” [A]. The release of the new ONS series made national newspapers, (e.g. Richard Partington in *The Guardian*: “UK income inequality greater than previously thought, says ONS” [J]). Writing in the *Financial Times*, Valentina Romei stated that “[t]he new ONS data benefit from an improved methodology using data from the tax authority to help adjust the estimates of the highest paid, a group which has been less likely to respond to the ONS survey” [K]. An example of a think tank using the research is the Resolution Foundation report, the Acknowledgements of which state: “*The discussion of top income measurement... draws heavily on two papers by Richard Burkhauser, Nicolas Hérault, Stephen Jenkins and Roger Wilkins. Special thanks to Stephen Jenkins*” [L]. Working paper versions of [1] and [3] are cited in the report’s References.

The DWP were involved in the original working group that ONS and DWP assembled to consider methods to address top-income under-coverage in household surveys (see above). The DWP originally planned to revisit its SPI-adjustment, but this further work (cited as ongoing by [D]) has halted for reasons related to the Covid-19 pandemic. Had it continued, it is likely that the research would have had a substantial influence on potential changes to the DWP’s widely-cited HBAI inequality series since that is underpinned by the SPI-adjustment (see discussion of [1] in Section 2, above) and because the DWP and ONS wish to maintain consistency between their income distribution series.

### Impacts outside the UK

The underpinning research and its influence on the revised ONS method have stimulated and contributed to debate about income distribution measurement among other national and international statistical agencies too. Income distribution series are produced by OECD, Eurostat, and national statistical agencies around the world.

At OECD, Jenkins [B] gave a lecture to an international meeting of data producers outlining his approaches to data combination and pointing out problems with the OECD’s nascent in-house methods (the Ruiz-Woloszko approach cited earlier). The OECD hosts the High-Level Group on the Measurement of Economic Performance and Social Progress (HLEG), created in 2013 to continue the “Beyond GDP” agenda of the Stiglitz-Sen-Fitoussi Commission. HLEG are working to improve national statistical agencies’ measures of income, and the underpinning research is heavily cited in the HLEG review by Lustig [M] as part of her explanation of and recommendations for adjustments for top-income under-coverage by household surveys.

The US Bureau of Economic Analysis (BEA) is currently working on “Improving the measure of the distribution of personal income” (Fixler et al., [N]), focusing in particular on ways to address issues of under-coverage in household surveys. The BEA paper cites [2] and [3] in its discussion of how to best enhance the information currently derived from the US Current Population Survey. The ONS team responsible for the new top-income-adjusted series cited the underpinning research (Webber et al., [O]) when presenting their work at the conference on “Measuring and Understanding the Distribution and Intra/Inter-Generational Mobility of Income and Wealth” (Washington DC, 5-6 March 2020), attended by staff from US statistical agencies such as the Census Bureau, BEA, Bureau of Labor Statistics, and Federal Reserve.

#### 5. Sources to corroborate the impact (indicative maximum of 10 references)

[A] Supporting statement from Richard Tonkin, Former Assistant Divisional Director, Public Policy Analysis and Head of Income & Wealth, ONS (2016-2020), 19 December 2020.

[B] Jenkins, S. P. (2016). [Taking better account of top incomes when measuring inequality levels and trends](#). Presentation at 2nd Meeting of Providers of OECD Income Distribution Data, Paris, 19 February 2016.

[C] ONS (2018). [Transformation of ONS household financial statistics: ONS statistical outputs workplan, 2018 to 2019](#), 20 June 2018.

[D] ONS (2019). [Using tax data to better capture top earners in household income inequality statistics. Adjustments to deal with issues of under-reporting of UK top incomes](#), 26 February 2019.

[E] ONS (2020). [Household income inequality, UK: financial year ending 2019](#), 5 March 2020.

[F] ONS (2020). [Effects of taxes and benefits on UK household income: financial year ending 2019](#), 23 June 2020.

[G] ONS (2020). [Household income inequality, UK: financial year ending 2020 \(provisional\)](#). 22 July 2020.

[H] ONS (2020). [Top income adjustment in effects of taxes and benefits data: methodology. Analysis of a recently introduced approach to addressing survey under-coverage of the highest earners in effects of taxes and benefits data, using tax record information](#), 23 February 2020.

[I] Supporting statement from Peter Matejic, former Head of the Households Below Average Income (HBAI) team at Department of Work and Pensions, 30 November 2020.

[J] “UK income inequality greater than previously thought, says ONS”, [The Guardian](#), 25 February 2020.

[K] “Income inequality increases in UK”, [Financial Times](#), 5 March 2020.

[L] Corlett, A. (2017). [Unequal Results. Improving and Reconciling the UK’s Household Income Statistics](#). London: Resolution Foundation.

[M] Lustig, N. (2018). Measuring the distribution of household income, consumption and wealth. In: Stiglitz, J. E., Fitoussi, J.-P., and Durand, M. (Eds.). [For Good Measure. Advancing Research on Well-Being Metrics Beyond GDP](#) (pp. 49-84). OECD. DOI: 10.1787/9789264307278-en.

[N] Fixler, D., Gindelsky, M., Johnson, D. (2019). [Improving the measure of the distribution of personal income](#). *American Economic Review Papers and Proceedings*, 109, pp. 302–306. DOI: 10.1257/pandp.20191037.

[O] Webber, D., Tonkin, R., and Shine, M. (2020). Using tax data to better capture top incomes in official UK income inequality statistics. In: Chetty, R., Friedman, J. N., Gornick, J. C., Johnson, B., and Kennickell, A. (Eds.) [Measuring and Understanding the Distribution and Intra/Inter-Generational Mobility of Income and Wealth](#). National Bureau of Economic Research, forthcoming.