Measuring household disposable income: Developing adjustments using tax data which improve the measurement of top incomes

Martin Shine & Peter Matejic

Office for National Statistics & Department for Work and Pensions

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Please note that all results and figures in this presentation are provisional results from experimentally applying a new top income adjustment and are NOT official government statistics.

Background

The need for a top income adjustment

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UK Household income statistics

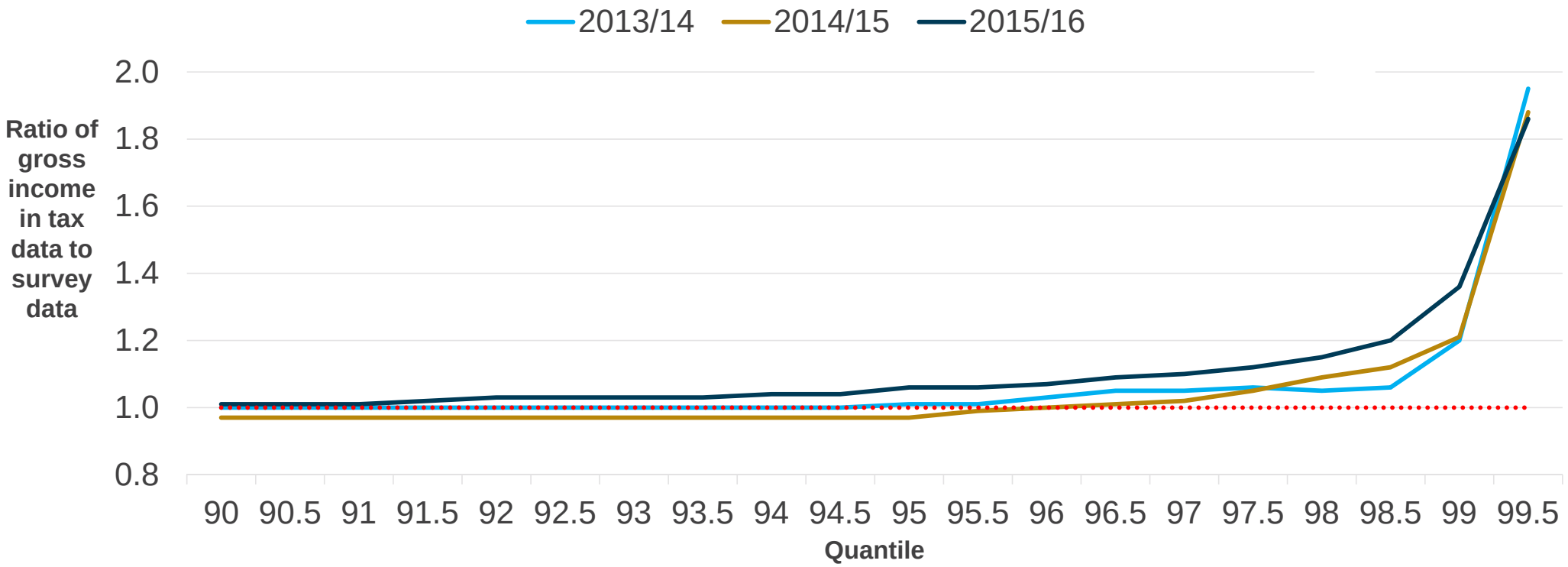
Two main sources:

1) *Households Below Average Income* (HBAI) produced by Department for Work and Pensions based on the *Family Resources Survey*.
2) *Effects of Taxes and Benefits* (ETB) produces by Office for National Statistics based on the *Living Costs and Food Survey*.

Issues measuring incomes of top earners:

- Well reported issue that survey data under-reports and has under-coverage of individuals with top incomes
- This has consequent impacts that the income of highest income households and overall inequality are both higher than reported

Those with highest incomes under-report their income in surveys



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Source: Office for National Statistics

Current status of top income adjustments

- DWP already have a top income adjustment in place for HBAI
- ONS in process of introducing top income adjustment
- Both make use of HMRC's *Survey of Personal Incomes* (SPI), a stratified sample of tax records, hence top income adjustment known as "SPI adjustment"

The current HBAI top income adjustment

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Current HBAI top income adjustment

Two steps:

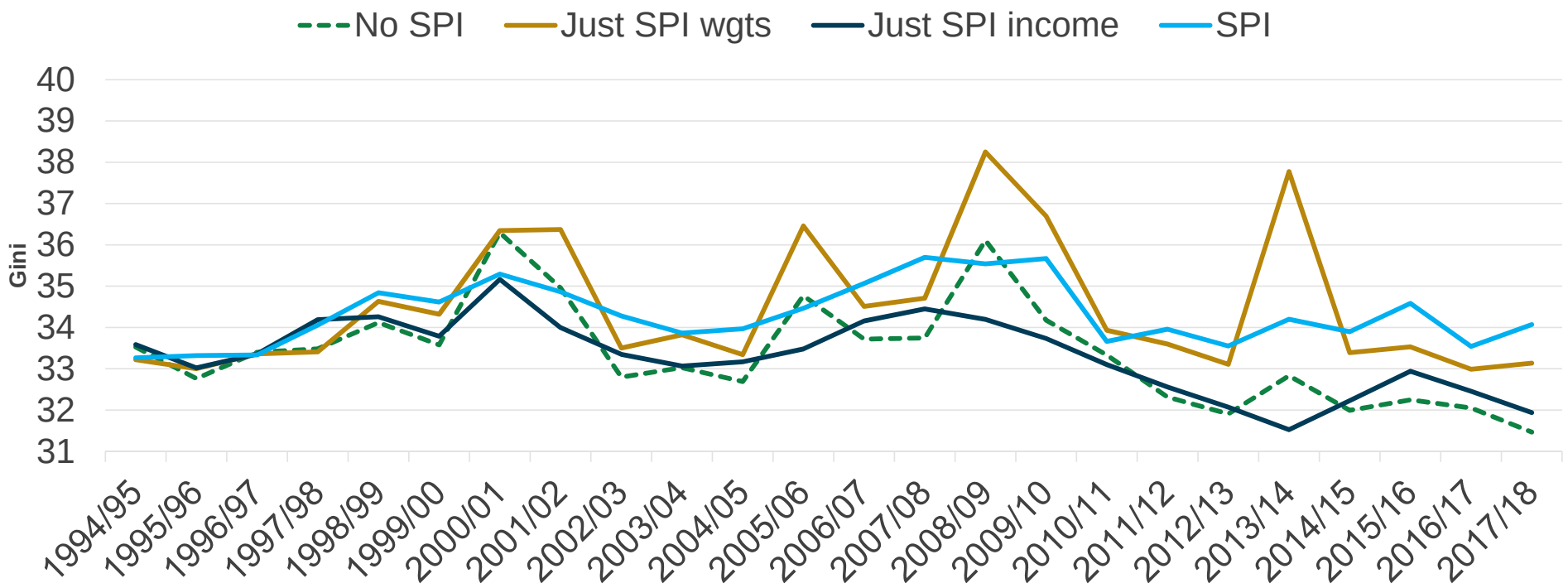
- Replace a fixed top proportion of the survey data with averages from the SPI
  - ➢ This tackles under-reporting of incomes by individuals, as well as volatility
- Regrosses so number of ‘rich’ households agrees with SPI
  - ➢ This tackles under-coverage of ‘rich’ households

Details of current adjustment

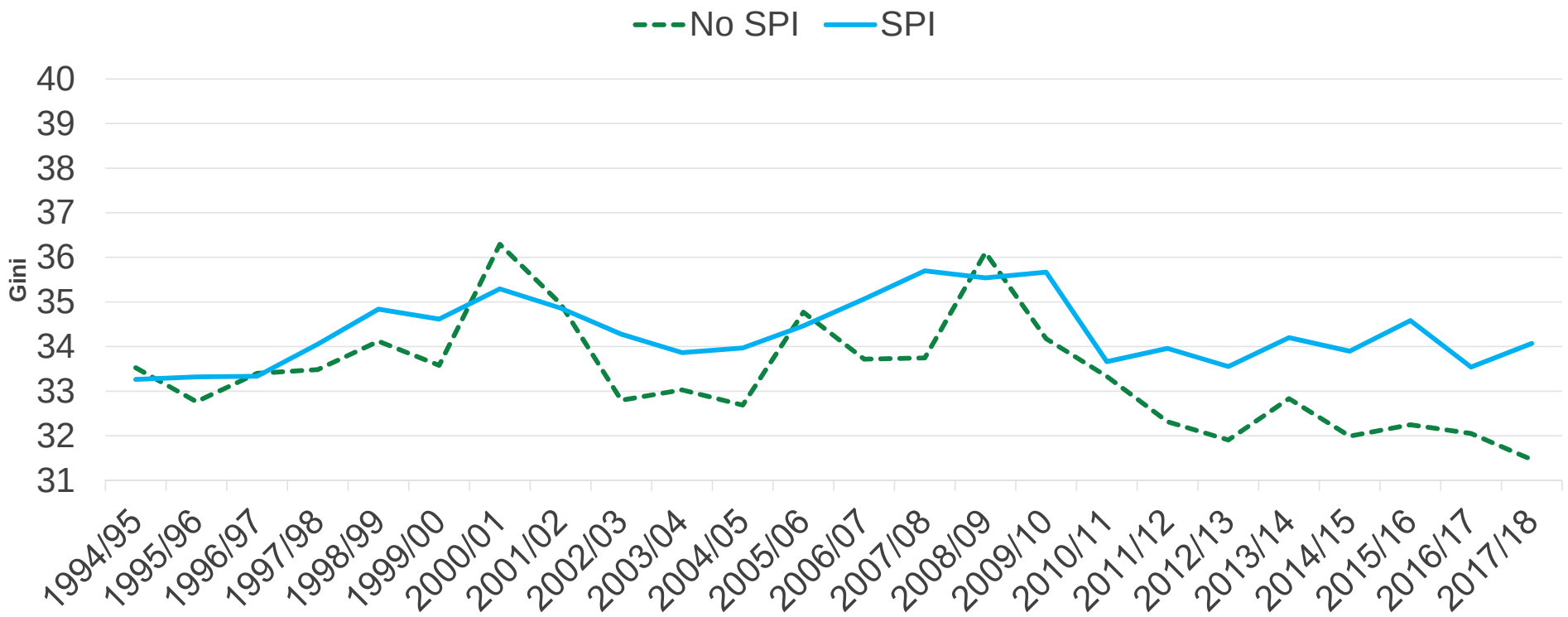
Currently ‘SPI adjust’ separately for:

- Top 0.36% of non-pensioner adults
  - Separately for GB and NI
- Top 1.16% of pensioners
  - Separately for GB and NI

Top income adjustment - impacts



Top income adjustment - impacts



Proposed new top income adjustment

Analysis on ONS data

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Developing new adjustment:

Criteria:

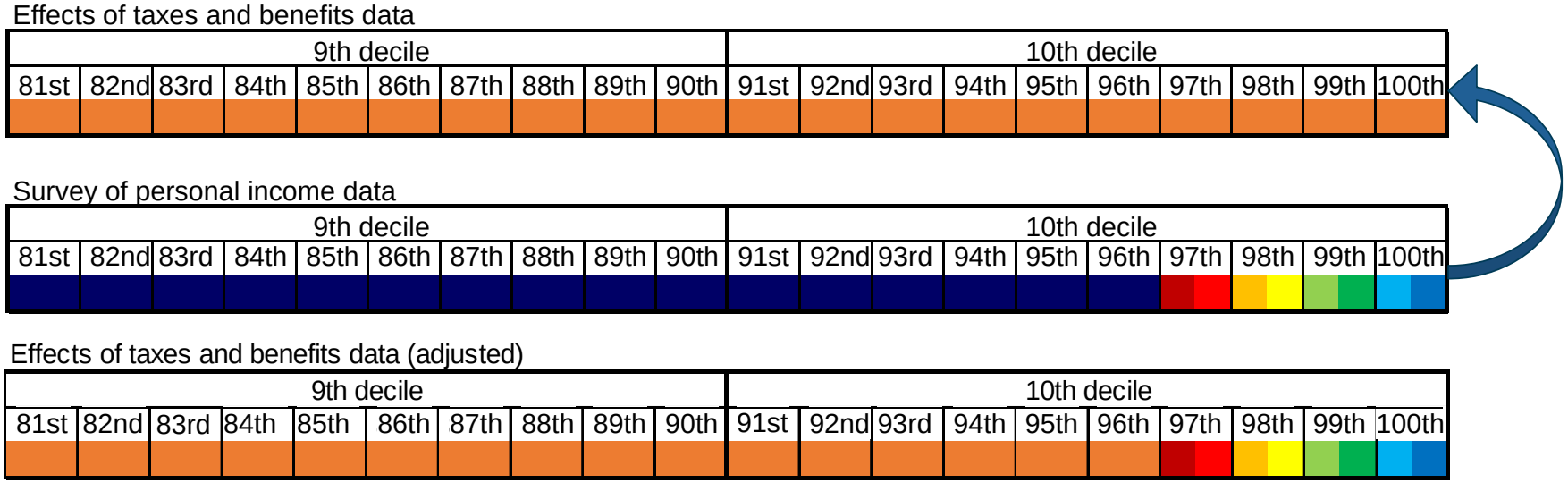
1) methodologically sound, based on academic standards
2) transparent and understandable by users
3) adjustment is made on underlying microdata rather than aggregates

Builds on methods implemented by DWP and later adapted by Burkhauser *et al.* (2018)

How it works – quantile method

1) Rank ETB and SPI data by gross income

2) Decide a threshold, and size of quantile groups above threshold, e.g. 96% threshold, 0.5% quantile groups



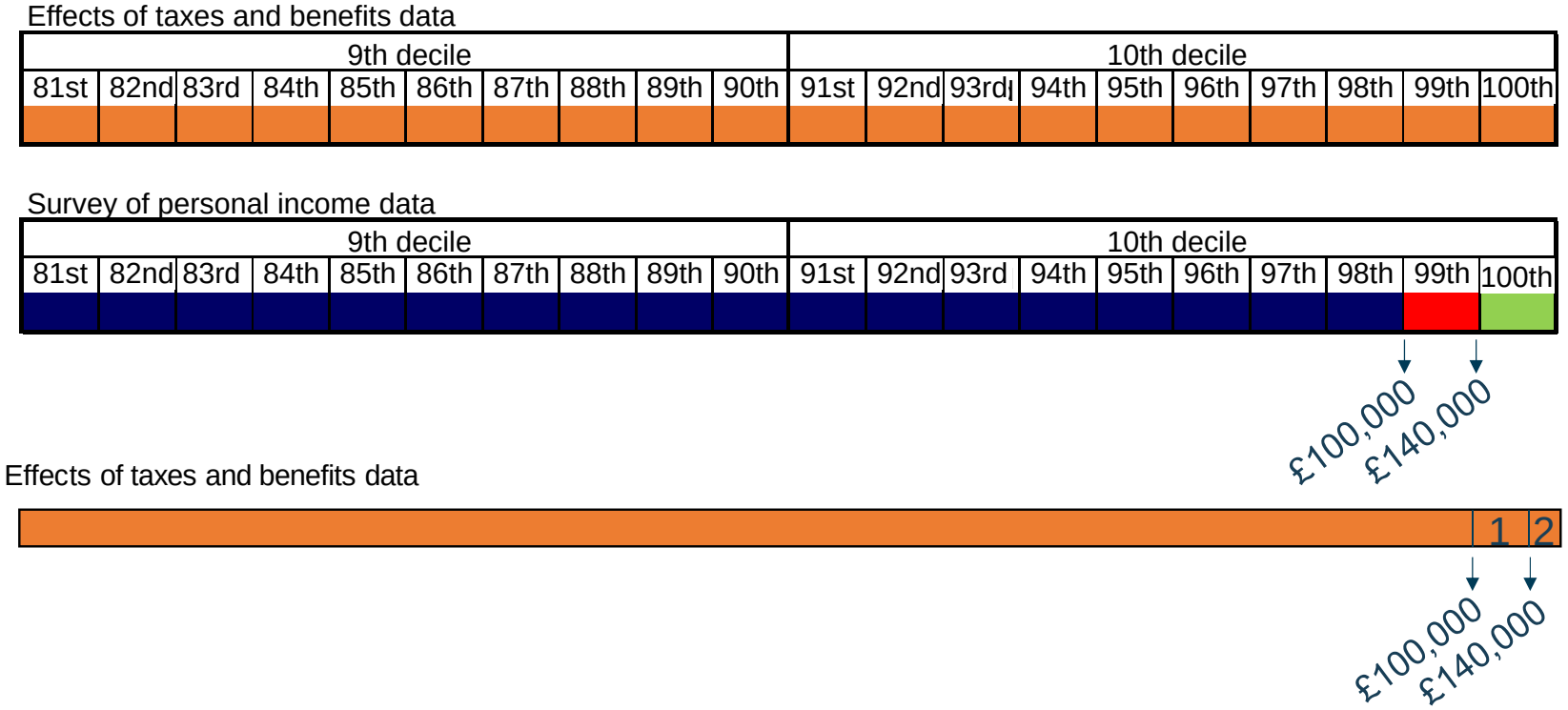
3) Impute the mean average for each SPI quantile group onto individuals in equivalent survey quantile groups

4) Results in dataset which represents original data, but incomes at top are adjusted to represent the top data

How it works – reweighting method part 1

1) Rank ETB and SPI data by gross income

2) Decide a threshold, and size of quantile groups above threshold, e.g. 98% threshold, 1% quantile groups

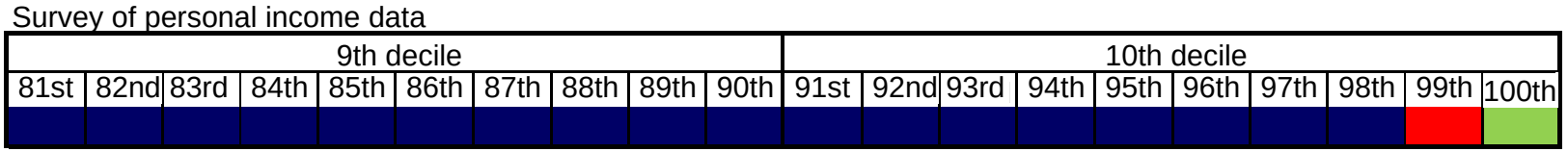


3)Calculate income boundaries for quantile groups in SPI

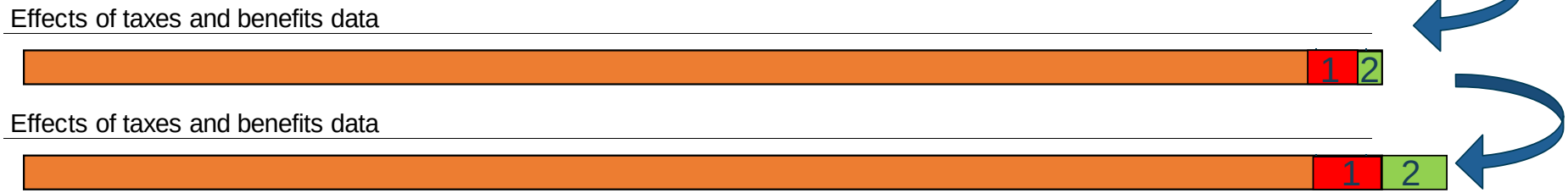
4) Create bands in ETB using these boundaries

How it works – reweighting method part 2

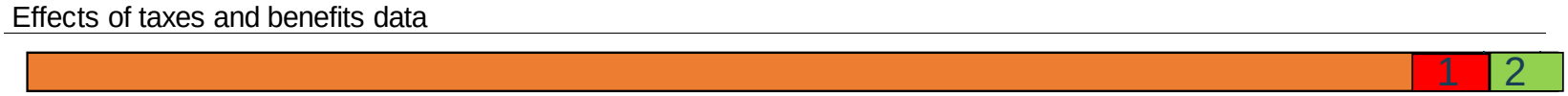
5) Impute the mean average for each SPI quantile group onto individuals in equivalent survey bands



6) Reweight ETB bands, so that their weights are the same as the SPI quantiles



7) Reweight rest of dataset to population totals



8) Results in dataset with top incomes adjusted and reweighted to match top of SPI data

Things to note:

- Both methods impute separate SPI incomes for retired and non-retired individuals
- For most recent years (2016/17 and 2017/18) projected SPI data is used as full outturn data is not yet available
- There is currently no SPI data available for 2008/09

To be determined about adjustment:

- Threshold – How far down should data be adjusted? 95%-99%.
- Width – What size should the quantile groups be? 0.25%,0.5%,1%.
- Method – Quantile or reweighting?

Effect on ETB estimates

The impact of including a top income adjustment on ONS' data

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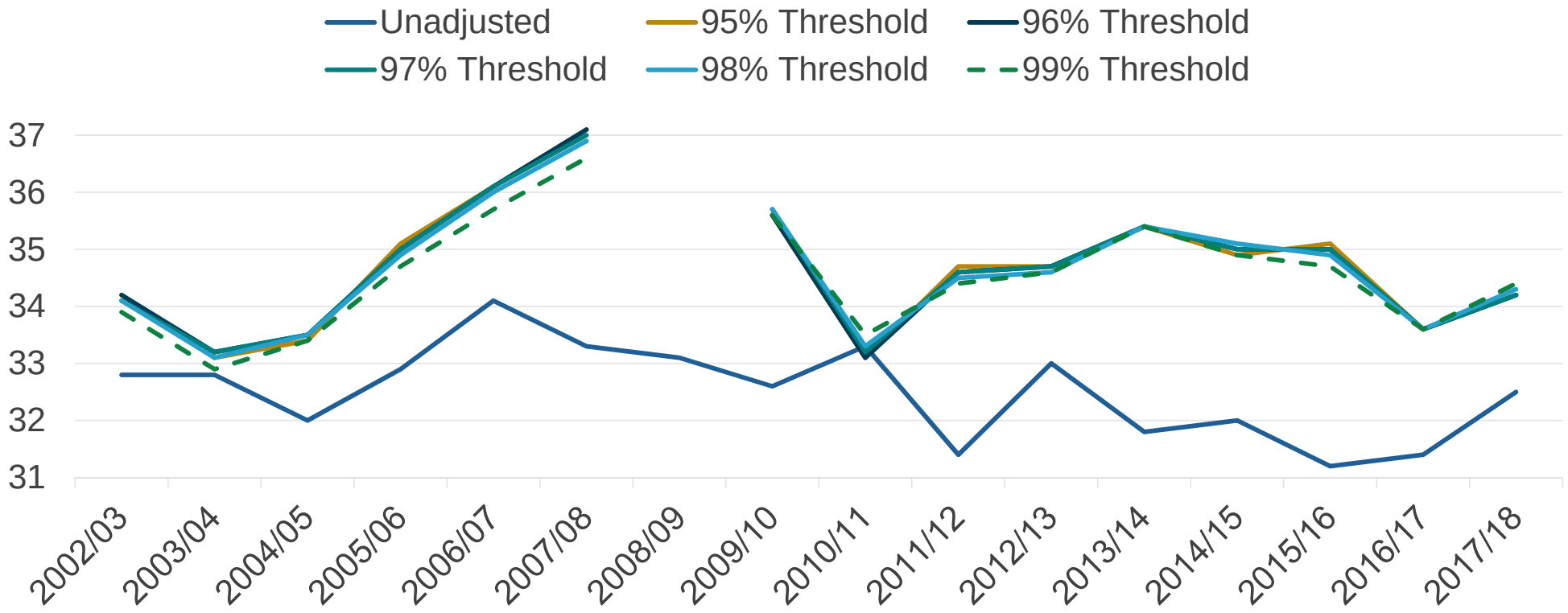
Increase in top earners' income and inequality

- Large change in measures of inequality and top decile income regardless of method of adjustment
- Variation by adjustment type needs exploring to know what best method is

Different thresholds – Gini of ETB disposable income



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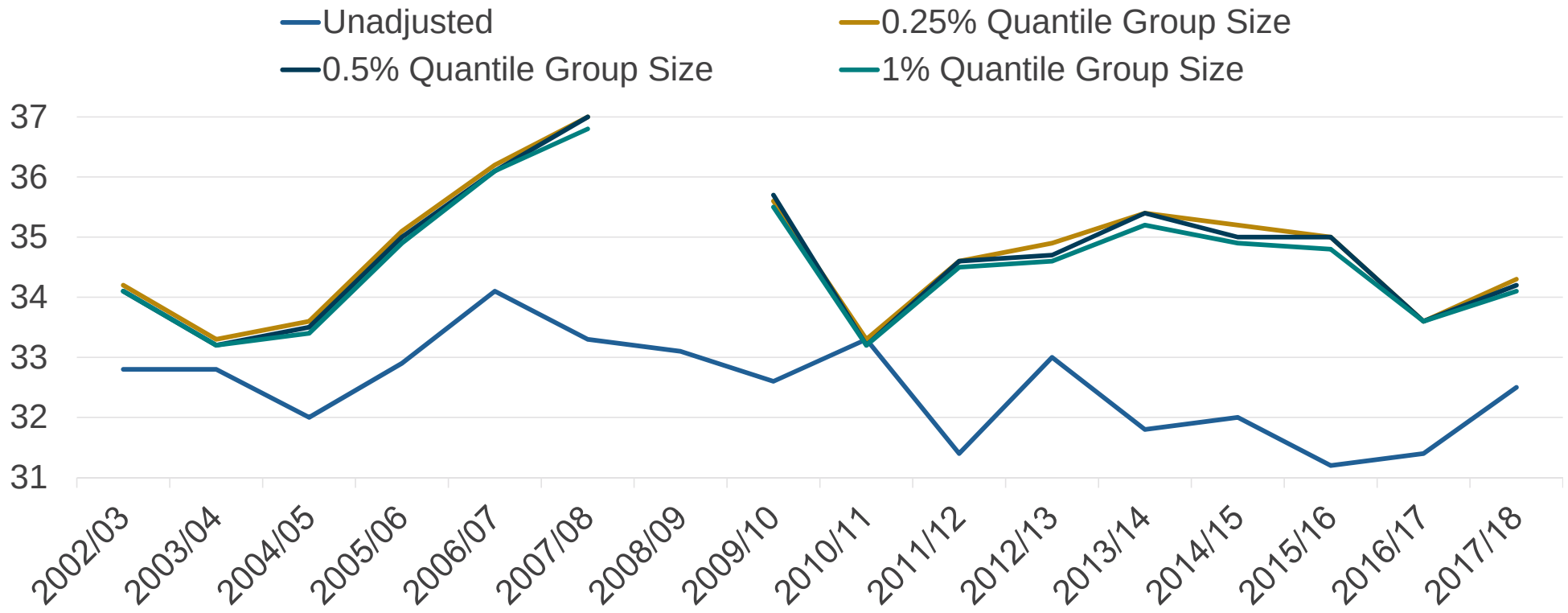
Quantile method, 0.5% width

Source: Office for National Statistics

Different widths – Gini of ETB disposable income



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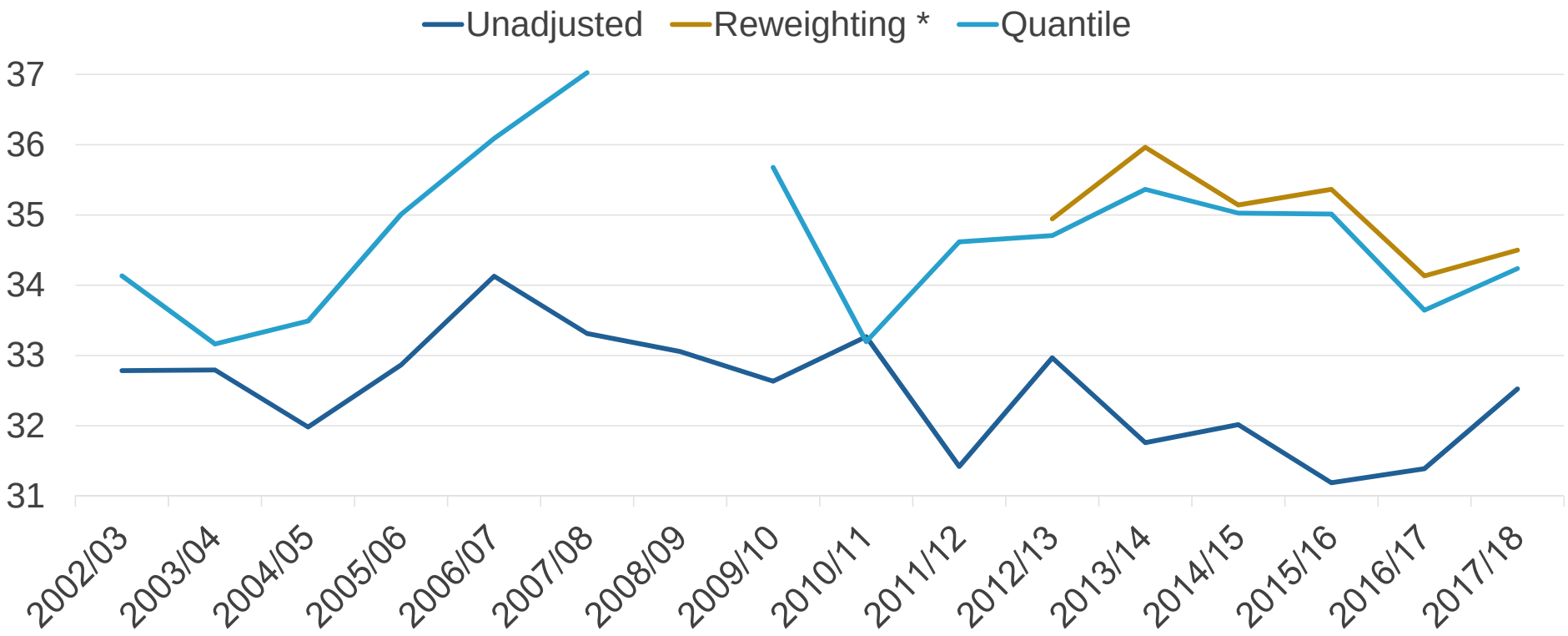
Quantile method, 97% threshold
Source: Office for National Statistics

Different methods - Gini of ETB disposable income



*Reweighting method is not finalised

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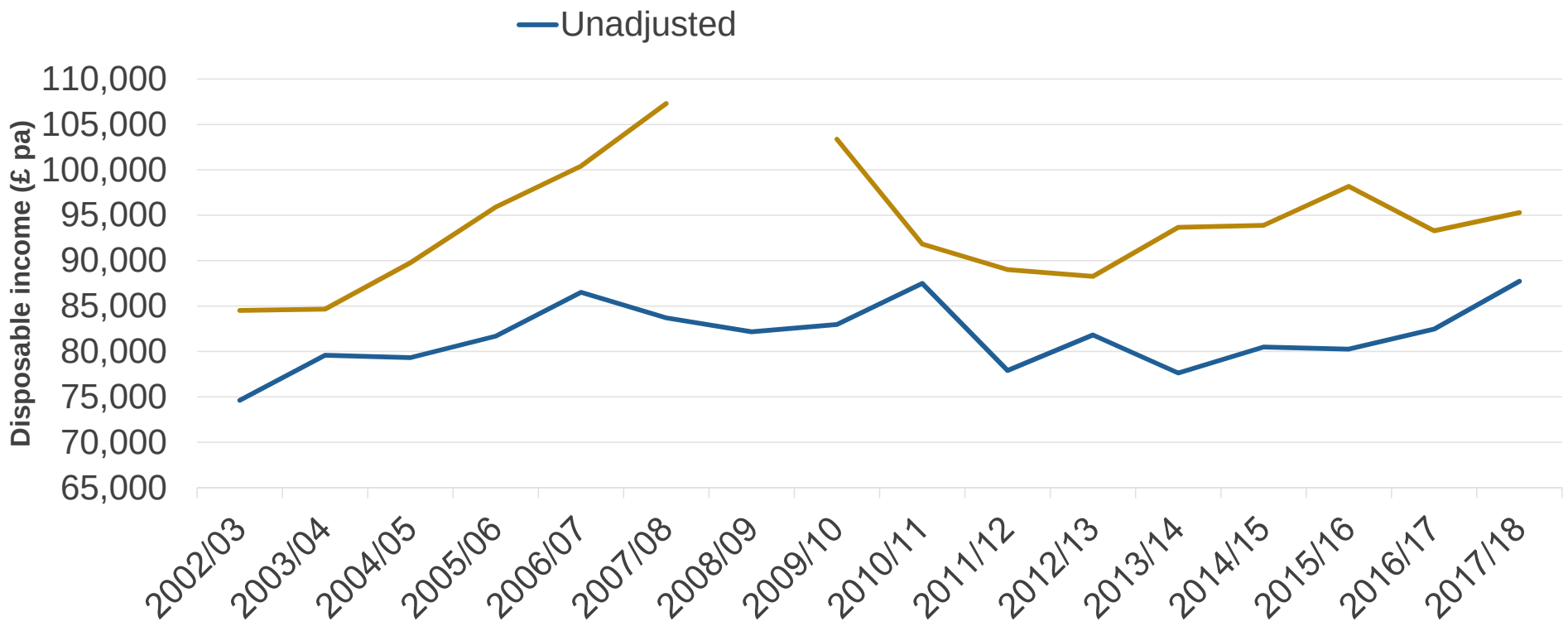
97% threshold, 0.5% width

Source: Office for National Statistics



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Quantile method, 97% threshold, 0.5% width
Source: Office for National Statistics