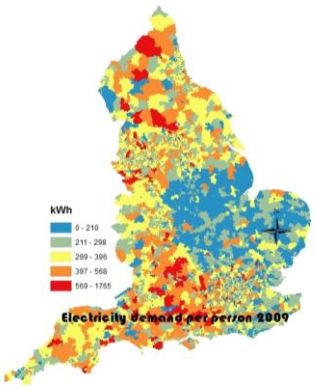
CERTIFIED BENCHMARKING PROFESSIONAL

Fact sheet: Advanced Data Adjustment for Benchmarking



Temporal disaggregation

- the process of deriving high frequency data from low frequency data

Example from practice: The spatiotemporal patterns of energy demand and supply in the UK →

It covers:

1. Interpolation
2. Retrospective benchmarking
3. Extrapolation

Example: the disaggregation of less frequent data (quarterly, annual, five yearly) into time series of a higher frequency (weekly, monthly, quarterly)

Interpolation

- When no genuine quarterly/monthly measures exist for a target variable.

Solution: annual totals are distributed across quarters/months, where the indicator of quarterly pattern is not a current measure of the same variable.

The pattern may be derived from:

- previous (discontinued) survey data
- proxy variables
- as a smooth mathematical function

Retrospective benchmarking

- when there are two sources of data for the same target variable, with different frequencies

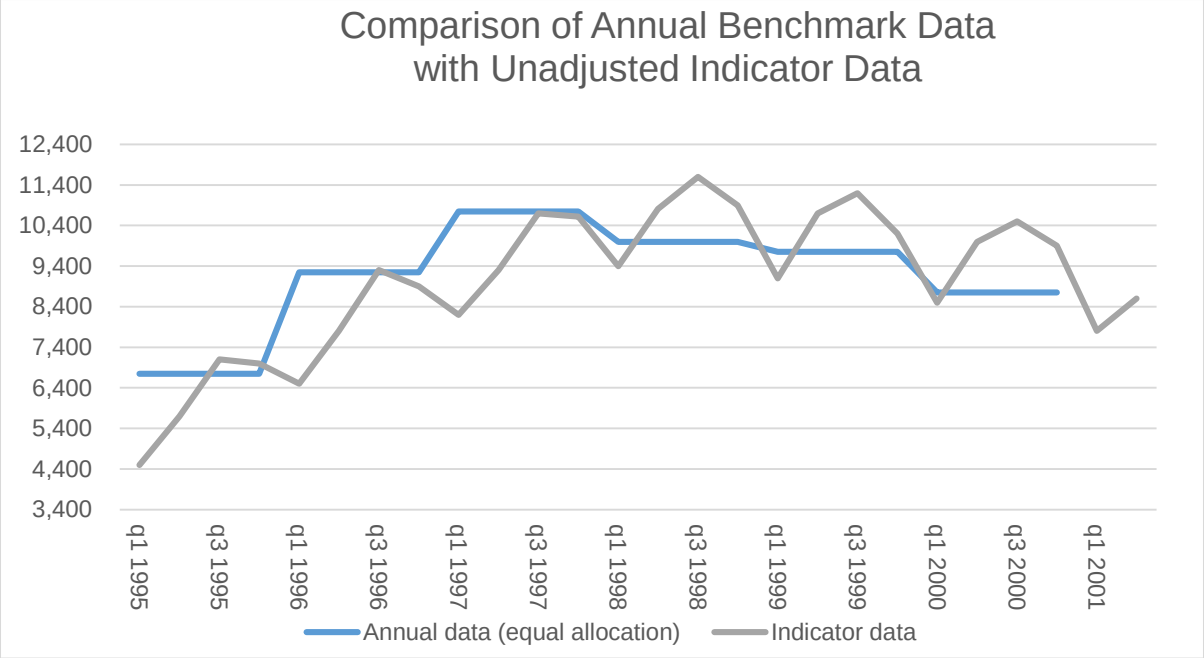
- Annual benchmark values
- Indicator data are faster and cheaper, but less accurate
  - short-term movements and the 'quarterly/monthly path'

Example: the accuracy / timeliness trade-off

Solutions

1. Reduce the indicator bias by correcting as many of the causes as possible at source

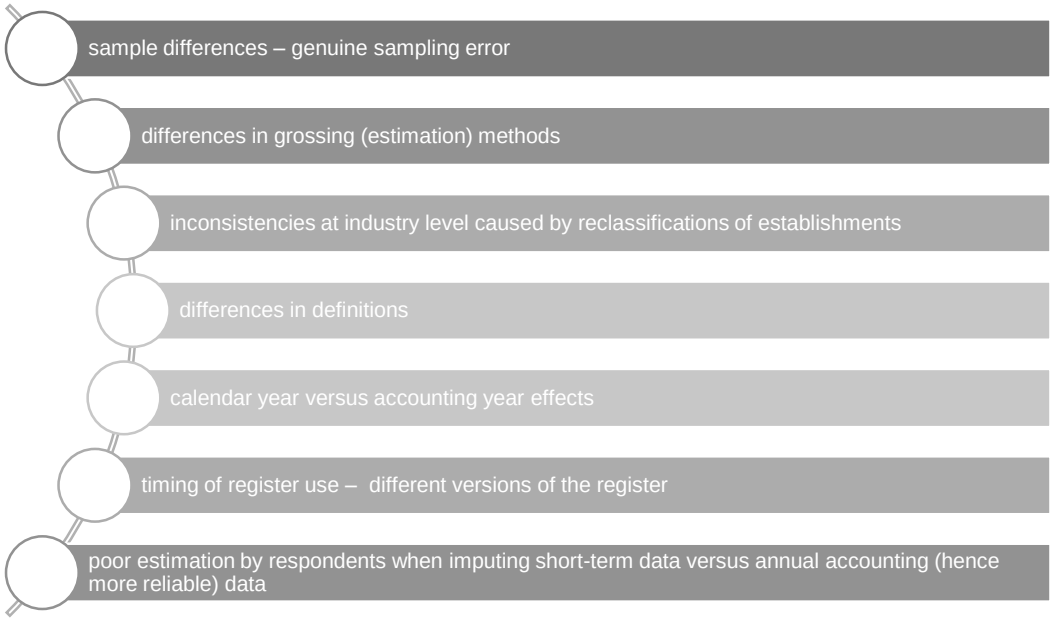
2. Correct remaining discrepancies and bias through statistical methods



- **Pro-rata distribution** = distributing annual level data according to how the indicator data is distributed in a single year only, taking no account of neighboring years
- pro-rata distribution ⇒ the **'step' problem**
- i.e. the growth between Q4 of one year and Q1 of the next will be **biased**, reflecting the change in BI ratio (pro-rata adjustment) in addition to genuine growth

$$Adjusted \quad Q^{i}GDP^{*} \quad = \quad \frac{Q^{i}GDP}{\sum_{i=1}^{4} Q^{i}GDP} \; x \; AGDP$$

Causes of data inconsistencies (lack of congruence)



Sources:

- London Loughborough University, 2014
- Office for National Statistics, 2010