Developing indicators of shared prosperity & poverty consistent with the National Accounts

International seminar on measuring shared prosperity and inclusion: Challenges and innovative approaches

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Why use distributional indicators consistent with national accounts?
Why national accounts-based indicators?

- Alignment to SNA aids international comparability
- Distributions consistent with economy-wide totals beneficial for coherence within countries
- Potential for more frequent & more timely measures of poverty & living conditions
Distributional National Accounts

- Area of growing research by international organisations, NSIs & academics
- Methodology developed by OECD-Eurostat Expert Group on Disparities in a National Accounts framework (EG DNA)

**Step 1:** Adjust NA totals

**Step 2:** Determine relevant variables from micro data sources

**Step 3:** Impute for missing elements & scale micro to adjusted NA totals

**Step 4:** Clustering households

**Step 5:** Derive relevant distributional indicators
Microdata coverage
Micro statistics coverage rates

- Mapping micro variables onto NA concepts reveals substantial differences in amounts for some components.
- This can necessitate large assumptions when producing distributional analysis, particularly if scaling microdata to NA totals.

Source: ONS – LCFS & National Accounts Blue Book
Atkinson Commission

- Highlights two reasons why coverage differences occur:
  - **Differences in recorded amounts** – may reflect survey coverage, non-response & under-reporting as well as NA measurement error
  - **Definitional differences** – reflects different purposes to which sources traditionally put
- This paper presents work to address both sets of reasons to produce data that allows production of indicators of inequality & poverty consistent with National Accounts
Differences in recorded amounts

Adjusting for under-reporting and under-coverage at the top & bottom of the distribution
Under-reporting of social transfers

- Widely recognised issues of under-reporting of incomes at bottom of distribution (e.g. Brewer et al. 2017 - UK; Meyer & Sullivan, 2011 – US)

- In part reflects under-reporting of benefits – highlighted by comparison of survey & admin data

Source: ONS – Living Costs & Food Survey
Adjusting for under-reporting of social security transfers

1. Adjust administrative totals for those outside UK private household population

2. Allocate benefits to those not in receipt, based on personal characteristics
   a) apply eligibility rules then use logistic regression model to generate odds of not reporting receipt
   b) Rank non-recipients by odds (+ random element) and allocate to bring caseload total in line with admin data

3. Scale up reported values where spending per recipient too low
Coverage gap before & after adjustment

Source: ONS – Living Costs & Food Survey
Under-reporting of top incomes

Source: ONS – Living Costs & Food Survey
Adjusting top incomes

- Using methods described in Webber et al. (2020)
  - Build on Burkhauser et al. (2018)
  - Use SPI – anonymised c. 1% sample of individual tax records

At simplest level:

1. Rank individuals in SPI & survey by gross income
2. For each quantile group (e.g. 0.5%) above given threshold (e.g. 97%) replace survey data with SPI mean average
3. Add in missing income components, recalculate taxes & reaggregate to household level
Impact of adjustments

- Significant improvement in coverage of many income components
- Some gaps remain
  - Mainly reflect imputed items & those where no micro equivalent exists
  - Many net out in calculation of disposable income

Source: ONS – LCFS & National Accounts Blue Book
Definitional Differences

Creating a real household disposable income measure based on micro-concepts
Cash-basis RHDI

- Definitional differences between micro & macro household income concepts reflect different purposes & needs
- Micro-statistics view transactions from perspective of individual - NA take broader macroeconomic perspective - e.g.
  - intra-household transfers important for many households
  - FISIM not directly relevant for household economic well-being
- Created ‘cash-basis’ RHDI, removing imputed transactions, to best reflect household perspective
Same broad pattern of growth, however:

- Cash-basis RHDI grew more quickly in the years leading up to the 2008 financial crisis,
- Also fell more sharply in the period 2009-2011

Source: ONS – National Accounts Blue Book
Measures of Inequality, Shared Prosperity & Poverty
S80/S20 ratio for equivalised disposable income, 2003-2017, UK

- Lower level of inequality in NA-based measure but broadly similar trend following Great Recession
- Narrowing of gap between two measures in recent years

Source: ONS – LCFS & National Accounts Blue Book
• Shared Prosperity
  • SDG 10.1.1 & World Bank twin goal
  • Growth rate for per capita income/consumption for bottom 40% > national average

• Traditional approach to measurement relies on household surveys for both bottom 40% & overall population growth rates

Average annual growth rates of disposable income per capita among the bottom 40% & total population, UK

Source: ONS – Living Costs & Food Survey (LCFS)
• Use of national accounts-based measures provides a different perspective on recent trends
  • Lower growth for bottom 40% around 2008-2013 – closer to overall average
  • In more recent periods growth for total population may have outstripped bottom 40%

Source: ONS – LCFS & National Accounts Blue Book
Proportion of individuals with equivalised household disposable income less than 60% of national median, UK, 2003-2017

- Lower level of poverty in NA-based measure but comparable trend 2003-2009
- Series diverge in later years
  - Falling poverty 2009-2013 in microdata
  - Small increase in NA-based poverty rate

Source: ONS – LCFS & National Accounts Blue Book
Conclusions

& next steps
Conclusions

- National Accounts-based indicators of inequality & poverty can provide valuable new insights
  - Draw strength from NA in terms of coherence, comparability and frequency/timeliness
  - Retain micro statistics’ focus on distributions & experience of households
- Practical & conceptual challenges need to be addressed - need for focus on reasons for gaps between micro & macro estimates
  - Reconciliation where gaps due to measurement error (including survey under-coverage, under-reporting & non-response)
  - Development of measures based on concepts consistent with household perspective
Further reading


- See also:
Thank you