

Micro to Macro Mapping and Distributional Estimates of Household Expenditure

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There are at least three reasons that an explicit link between micro and macro data on household expenditure and savings is highly desirable. First, there is much interest in complementing National Accounts with distributional measures that are consistent with those accounts, for the purposes of tracking the evolution of material living standards over time. This has become a priority following Stiglitz et al., 2009 (see also, OECD, 2013, ONS 2014, Piketty et al., 2015 and Fixler et al, 2016). That the micro data aggregate to the national accounts is necessary so that researchers and policy makers can see how the growth in national income or expenditure is apportioned across the distribution of households. Moreover, consistency with National Accounts facilitates international comparison because the National Accounts of most countries align with international standards.

Second, macroeconomic phenomena such as the decline, and then rise (after the financial crisis), in the household saving rate admit multiple explanations, and these explanations cannot be tested using macro-time-series data. To test alternative hypotheses about the mechanisms behind such phenomena it is necessary to have micro-data on households of, for example, different ages and cohorts. However, for conclusions about macroeconomic phenomena based on micro data to be credible, a necessary condition is that the micro data, when aggregated, reproduce the macroeconomic phenomena under study.

Finally, there has been much recent concern about the reliability of survey data (see, eg., Meyer et al, 2015). With household expenditure data concern has focussed on under-reporting, and, with a paucity of other potential comparators, coverage of National Accounts measures of household expenditure and saving is often used as a benchmark.

It is worth noting that each of these different motivations may require a different reconciliation of micro and macro data. While micro data taken to national accounts concepts is useful for apportioning aggregate growth and for international comparison, it may be less suitable for testing macroeconomic models. In particular, measures that correspond to a “micro concept” of

household cash flows maybe more suitable assessing household responses to macroeconomic developments, as emphasized by Cynamon and Fazarri (2017). Similarly, for gauging the degree of underreporting in household surveys, it may be most useful to take National accounts data to the micro concept, or to take both the micro data and the National Accounts data to some intermediate concept, where they can be most closely aligned.

This paper considers the link between micro data measures of household expenditure and savings in the UK. The time series of household saving in the UK provides a striking illustration of the challenge. When a measure of the aggregate household saving rate is calculated using microdata on expenditure and income from the Living Costs and Food Survey (and its predecessors), the rate is found to rise continually between 1992 and 2007, whereas the National Accounts data indicate a continual decline over this period. The correlation between the two series (which are designed to capture similar measures of household saving) over this period is - 0.7 (Crossley & O’Dea, 2010).

The proximate cause of the divergence in the two measures of saving is the that aggregate expenditures, estimated using micro data from the LCFS are substantially lower total than those recorded in the National Accounts. This ‘micro data coverage’ of the National Accounts data is below 70% in the UK and has been falling over time. Income coverage has not been falling – which yields (apparently) growing saving rates (Crossley & O’Dea., 2010; Barrett et al., 2015). There are many potential reasons for these divergences, including differences in source, coverage and concept; survey non-response and under-reporting as well as adjustments applied to the raw survey data in the production of national accounts. However, without being able to trace through the sources of divergence, we are left unable to draw confident conclusions about the mechanisms underlying key macroeconomic phenomena. Passero et al. (2015) document similarly falling rates of coverage of National Account aggregates in the US and highlight the importance (using US data) of adjusting for differing definitions of spending categories between the two sources.

Our analysis builds on two existing ONS initiatives. First, as part of an OECD working group the ONS carried out a research exercise to develop distributional accounts for household income and consumption (ONS, 2015; Zwiijnenburg et al, 2017). In this exercise, the micro data is largely taken to the National Accounts concept, and then scaled to National Accounts totals, so that those totals can then be apportioned to quintiles of households. In a separate exercise, the ONS has developed experimental alternative measures of disposable income and the household saving ratio (ONS, 2017). These measures exclude transactions that are imputed or unobserved by households, and so, like the series developed by Cynamon and Fazarri, are close to a household cash flow basis.

We extend this work by, first by bringing these two streams together, and then by:

- Taking advantage of the recently completed separation of the NPISH and Household Sector accounts in the UK National Accounts
- Where household surveys are a primary input to the National Accounts, documenting the adjustments to survey data (through, for example, supply-use balancing) in the production of

national accounts. The idea here is to maximize our understanding of the discrepancies between micro data and national accounts.

- Evaluating third data sources that might be used as additional evidence where large discrepancies between micro and national account data remain.