

# Nowcasting Household Median Income: A Comparison of Microsimulation and Time Series Approaches

Lee Mallett  
Office for National Statistics  
Email: [lee.mallett@ons.gov.uk](mailto:lee.mallett@ons.gov.uk)

Martin Weale  
King's College London

In order to properly understand changes in households' material living conditions, it is important to have measures which reflect the experience of the typical household and can also provide a description of the distribution. However, the complexities of producing such measures means they are typically only available with a significant time lag. This has led to techniques such as 'nowcasting' becoming increasingly popular for providing initial estimates of household income indicators. Unlike forecasting, 'nowcasting' makes use of data that are already available for the period of study, rather than relying heavily on projections and assumptions about the future economic situation. The Office for National Statistics (ONS) produces annual 'nowcast' estimates of income, typically within a few months of the end of the reference period. This paper presents the results of work to further increase the timeliness of these indicators by producing quarterly 'nowcast' estimates. It describes three approaches for deriving 'nowcast' estimates. The first is an adaptation of the micro simulation methodology currently used by ONS in the production of annual estimates. The other two approaches are based on regression techniques. The first is a simple recursive regression model which relates real household median income to the macro-economic aggregates, real gross household disposable income per capita and real weekly average earnings. The second method uses a regression model with time-varying coefficients.

The results of these different approaches are presented and compared. The forecast errors are shown to be low relative to the effects of sampling variation on estimates of median household income.