## What Leads to Measurement Error? Evidence from Reports of Program Participation in Three Surveys

By PABLO CELHAY, BRUCE D. MEYER, AND NIKOLAS MITTAG\*

## Abstract

Measurement error is often a large source of bias in survey data. Lack of knowledge of the determinants of such errors makes it difficult for data producers to reduce the extent of errors and for data users to assess the validity of analyses using the data. We study the causes of survey error using high quality administrative data on government transfers linked to three major U.S. surveys. The differences between survey and administrative records show that up to six out of ten cash welfare recipients are missed by the surveys. We find that misreporting by respondents, survey design features, and imputation of missing data induce substantial error. Our results for non-imputed respondents confirm several theories of misreporting, e.g. that errors are related to event recall, forward and backward telescoping, salience of receipt, respondent's degree of cooperation, and the stigma of reporting participation in welfare programs. Our results provide guidance on the conditions under which survey data are likely to be accurate and suggest different ways to reduce survey errors. (JEL C8, C18, H53, I3)

## This draft: January 2, 17

Key Words: Measurement Error, Welfare Programs, Survey Methods, Validation, Imputation.

\*Celhay: School of Government, P. Universidad Católica de Chile, Avda. Vicuña Mackenna 4860 – Macul, Santiago, Chile, (email: pacelhay@uc.cl). Meyer: Harris School of Public Policy Studies, University of Chicago, 1155 E. 60th Street, Chicago, IL 60637, (email: bdmeyer@uchicago.edu). Mittag: CERGE-EI, joint workplace of Charles University Prague and the Economics Institute of the Czech Academy of Sciences, Politickýchv vězňů 7, Praha, Czech Republic, (email: <u>nikolas.mittag@cerge-ei.cz</u>). We are grateful for the assistance of current and former Census Bureau employees including David Johnson, Amy O'Hara, Graton Gathright and Frank Limehouse and New York OTDA employees Dave Dlugolecki and George Falco. The data analysis was conducted at the Chicago FSRDC and the results have been screened to avoid revealing confidential information. The authors also thank Dan Black, Jeff Grogger, and participants in seminars at The University of Chicago, IAAE, EEA-ESEM and the Joint Statistical Meetings for helpful comments. Celhay would like to thank participants in seminars at Universidad Adolfo Ibañez, School of Government. Mittag is grateful for financial support from the Czech Science Foundation (through grant no. 16-07603Y) and the Czech Academy of Sciences (through institutional support RVO 67985998). The authors declare that they have no financial or material interests in the results of this paper.