

The series Working Papers on Economics is published by the Office for Economic Studies at the *Banco de la República* (Central Bank of *Colombia*). The works published are provisional, and their authors are fully responsible for the opinions expressed in them, as well as for possible mistakes. The opinions expressed herein are those of the authors and do not necessarily reflect the views of Banco de la República or its Board of Directors.

AUTHOR OR EDITOR

Leonardo Fabio Morales

Penny Gordon

David Guilkey

AUTHORS AND/OR EDITORS

[Penny Gordon](#)

[David Guilkey](#)

Using Add Health, a very comprehensive longitudinal data set of teenagers and young adults in the United States, we estimate a structural dynamic model of the determinants of obesity. In addition to including many of the well-recognized endogenous factors mentioned in the literature as obesity determinants, i.e., physical activity, smoking, a proxy for food consumption, and childbearing, we also model the residential location as a choice variable, relevant to the young-to middle-aged adult, as a major component. This allows us to control for an individual's self-selection into communities which possess the types of amenities in the built environment which in turn affect their behaviors such as physical activity and fast food consumption. We specify reduced form equations for all these endogenous demand decisions, together with an obesity structural equation. The whole system of equations is jointly estimated by a semi-parametric full information log-likelihood method that allows for a general pattern of correlation in the errors across equations. Simulations are then used to allow us to quantify the effects of these endogenous factors on the probability of obesity. A key finding is that controlling for residential self-selection has important substantive implications. To our knowledge, this has not been yet documented within a full information maximum likelihood framework.

The opinions expressed here do not necessarily correspond neither to the Banco de la República nor its Board of Directors.

Updated: 18/09/2014 16:28