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Obesity and Health-Related Decisions: An Empirical Model of the Determinants of Weight Status

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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.

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