IDENTIFICATION AND ESTIMATION OF FORWARD-LOOKING BEHAVIOR: THE CASE OF CONSUMER STOCKPILING

ABSTRACT: We develop a new empirical strategy for identifying the parameters of dynamic structural models in markets for storable goods, with a focus on identification of the discount factor. The identification strategy rests on an exclusion restriction generated by discontinuities in package sizes: In storable goods product categories where consumption rates are exogenous and small relative to package sizes, a consumer's current utility does not depend on inventory most of the time, his/her expected future payoff does. We demonstrate the feasibility of our identification strategy with an empirical exercise, where we estimate a stockpiling model using scanner data on laundry detergents. Our estimates suggest that consumers are not as forward-looking as most papers in the literature assumes; our estimates of weekly discount factors average at about 0.73, which is significantly lower than the value used in previous research (it typically is set at 0.99, using the market interest rate). We also find significant unobserved heterogeneity in discount factors across individuals.