Reading Note 4

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*Consumption and Habits: Evidence from Panel Data* by Raquel Carrosco, Jose Labega, and J. David Lopez-Salido

In this paper, the authors utilize Spanish panel data to test whether household preferences are time-separable, or if they reflect habit formation over time. As opposed to past work, they utilize microeconomic-level data and a fixed-effect specification to take into account unobserved household-level variation in consumption. The authors show evidence of habit formation over time; moreover, they find that prior contrasting results may be attributable to a failure to incorporate fixed effects.

Typical models of consumption behavior assume that preferences are time-separable, meaning that preferences in past periods do not affect current preferences, however these models have not been well-supported by empirical evidence. Based on these discrepancies, some authors have argued that preference formation models ought to incorporate habit formation, thus making current preferences dependent to some extent on prior preferences. Studies testing this assertion have seen mixed results, potentially because of limited data availability and unrealistic assumptions. This paper overcomes these challenges by using a quarterly Spanish Panel dataset which tracks households over up to 8 time-periods, thereby providing the necessary temporal variation to incorporate time invariant unobserved heterogeneity in preferences.

As previously noted, the models are estimated using an unbalanced Spanish panel dataset which records household consumption across up to 8 consecutive quarters. The panel is unbalanced because it is subject to some attrition, and the authors limited the estimation sample to include only households that reported data in 5 consecutive quarters. The authors focus on household consumption of three non-durable goods, namely food, transport, and services. Households’ consumption of these goods is assumed to maximize the present value of their lifetime utility, while also incorporating variation based on household characteristics such as family composition and labor force participation, and seasonal dummies. A key feature of the model is that it accounts for two forms of household-level stochastic variability, that associated with household expectations as well as the existence of preference shocks. To pin down whether preferences are intertemporally separable, the authors use the generalized method of moments (GMM) to estimate two equations representing the marginal rate of substitution between two goods, and the associated Euler equation.

The authors present two sets of model estimates; the first being an estimate in ‘levels’ where consumption decisions are assumed to be free from autocorrelation and thus previous decisions are valid instruments of current behavior. The ‘levels’ model provides some support for the idea that preferences are intertemporally separable, which matches prior work that used a similar estimation strategy. However, in the second model, the authors incorporate time invariant unobserved heterogeneity - some households have greater/lower propensity to consume than others. Thereby allowing them to test whether the intertemporal separability result from the ‘levels’ model is attributable to correlated unit-level fixed-effects which implicitly biased the estimation. The second model estimation indeed indicates that habit formation occurs in the consumption of food and services, and that one cannot separate preferences between time-periods.

A major assumption of many consumption models is that one’s current preferences are independent from those of previous periods, yet the empirical evidence has been less than supportive. Recent work has suggested the presence of behavioral habits, and the importance of allowing for such habit formation to accurately investigate how preferences behave over time. This paper leverages a Spanish panel dataset to investigate whether the relationship between current and prior consumption decisions reflects habits or if consumption is based merely on heterogenous state variables. Importantly, they also test this premise under the assumption that households have time invariant unobserved heterogeneity in their consumption. They find that under this fixed-effect specification the results indicate that habits form and households’ current decisions are to some extent a reflection of their previous ones. They also show that if one neglects to allow for time-invariant household heterogeneity, they may find erroneous support for time-separable preferences. This paper provides new household-level evidence supporting the theory of habit formation, and also demonstrates how limitations of prior specifications may have elicited opposite results.