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Reading Note 4

When analyzing people's intertemporal consumption decisions, it is always debatable whether an individual's preferences over consumption in one period are independent of consumption in another period. Previous research has found that the predictions of time-separable models deviate from empirical results. Literature assumed habit formation improves the predictions but lacks empirical microeconomic evidence. This paper addresses this issue by controlling time-invariant unobserved heterogeneity across households. After controlling fixed effects and using a correct set of instruments, the results imply habit formation occurs in the demand system.

Different from previous research by Meghir and Weber (1996), this paper studies three non-durable goods: food, service, and transportation. The authors present a utility maximization model with a discount factor. After taking the first-order conditions, the Euler equation will be violated if liquidity constraints exist, but MRS will remain robust. Therefore, a difference in MRS and the Euler equation estimates suggests liquidity constraints. Then authors account for unobserved heterogeneity, which comes from expectational errors and the presence of preference shocks. After controlling the fixed effects, the valid instruments for MRS are dated at t-2, and Euler equations are dated at t-1. Using the GMM method, the authors perform estimation by imposing equality in both MRS and Euler equations.

The sampling data in the analysis comes from Spanish Continuous Family Expenditure Survey, which contains household consumption information for eight consecutive quarters. Using household panel data could control fixed effects among households and analyze the relationship between present and previous consumption. When performing estimations, the authors find that preferences are intertemporally separable if they do not account for unobserved heterogeneity, and the Sargan test suggests that the instruments are not valid. After controlling fixed effects and using valid instruments, the result of MRS shows intertemporally non-separable preferences for food and transport. Furthermore, this GMM regression does not detect weak instruments and is not rejected by the Sargan test. The authors also find evidence of habit formation in food when utilizing the Euler equations, and they fail to reject the equivalence of

two sets of coefficients. The authors test the groups are more likely to be constrained to examine the importance of liquidity constraints. As a result, the test statistics of Euler equations imply non-separabilities but reject the equality of coefficients, which means binding liquidity constraints. Lastly, the authors investigate the intertemporal elasticity of substitution and the degree of habit formation and find that services generate IES in agreement with the empirical evidence.

Based on the analysis, the authors conclude that accounting for time-invariant unobserved heterogeneity is deterministic. When controlling the fixed effects and utilizing adequate instruments, the authors find evidence of habit formation in food and service. The limitation would be that the habit formation evidence from MRS and Euler is slightly different, which is against the result from the Wald test.