

Reading note 4: Consumption and Habits: Evidence From Panel Data

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This paper uses panel data to test the existence of habit formation indicated by consumption theory. With the consumption data in foods, transportation, and service from the Spanish Continuous Family Expenditure Survey (ECPF), the paper tests whether the time-series correlation in such goods' consumption reflects the individual's habits. Unlike the aggregate data usually used in the previous research on consumption behaviors, the panel data of ECPF allows the author to control for the household fixed effects in estimations to avoid biases caused by time-invariant unobservable variables. With the GMM estimations with time-invariant fixed effects, the paper finds that the preferences are not inter-temporally separable when using either the Euler equation or Marginal Rates of Substitution (MRS).

Theoretically, this paper assumes households maximize their utility across a lifetime in three non-durable goods: food, transport, and services, as the previous literature suggests. More specifically, the consumption preferences of those three goods are sketched by a flexible direct translog utility function that allows time-series dependence and preference shocks. There are three coefficients representing different separability to be estimated in this model. In hypothesis, $\gamma_j = 0$ represents the inter-temporal separability in which j is the type of goods; $\beta_{jj} = 0$ implies the homothetic separability, and $\beta_{jk} = 0$ refers to the additive separability for any two goods. The model also assumes two stochastic terms: the expectation errors $\mu_{j,t+1}^t$ that are orthogonal to variables at time t and the preference shocks Q_{jt} . From this model, the authors induce the MRS and Euler equation for the test.

In the empirical section, the paper uses the ECPF data, a rotating panel survey conducted by the Spanish National Statistics Office. The ECPF interviews about 3,200 households every quarter that randomly rotate at 12.5% every quarter. This feature allows the author to chase a family for at most eight successive quarters. The authors restrain the data to smaller samples: married couples reporting complete information for at least five consecutive quarters, aged 25 to 60. The authors further delete the sample with low expenditure. After this process, the final data set includes 2,606 observations. The paper adopts the GMM to test the hypotheses. The results indicate that the preferences are intertemporally separable without controlling the household fixed

effects. Nevertheless, once the fixed effects are controlled, the results confirm the evidence of habit formation in food and services consumption. Still, the results obtained from the MRS and Euler Equation are different, rejecting the equality between those two indicated by the model. Focusing on the group of household whose head is younger than 40, the authors find the non-separation in only the Euler Equation.

In conclusion, the paper confirms the inter-time-period dependence of consumption, at least when considering the household fixed effects. Nevertheless, the results of this paper support only a part of the hypothesis indicated by the microeconomic theory, given the limited samples. This sample considers the consumption of only three goods, and the authors restrain the sample to the married groups in Spain. More extensive research should be done for external validity for other goods and societies in which external features such as culture may affect the consumer's decision.