

## Reading Notes

### Consumption and Habits: Evidence from Panel Data

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Consumption behavior is of increasing interest to scholars. However, one of the challenges for the consumption literature is data availability. When preferences are assumed to be time non-separable, most empirical work has been done using aggregate data. Besides, some data sets for the consumption study contain minimal information about consumption. Thus, this paper uses household panel data from the Spanish Continuous Family Expenditure Survey (Encuesta Continua de Presupuestos Familiares, ECPF) to test habit formation in consumption decisions. The result confirms that it is vital to account for fixed effects when analyzing inter-temporal consumption decisions. When time-invariant unobserved heterogeneity across households is not taken into account, preferences seem to be intertemporally separable. But, after controlling for the fixed effect, this paper obtains significance for the parameters reflecting habits. According to the MRS for food and services, the authors find evidence of habit formation, while for transport, the parameter is not significant at standard levels. The Euler equations also show evidence of habits for food, but not for transport and services.

The authors focus on studying three non-durable goods: food at home, transport and services. First, they assume that preference for these three goods is described by a utility function allowing for non-separabilities and preference shocks and thus get the MRS between two goods. Then, the authors analyze the role of unobserved heterogeneity and use the GMM model to estimate the two models, the food versus services model and the transport versus services model. After introducing the model and the empirical strategy, the authors detailed present the long panel data set ECPF, which allows for ruling out fixed effects and obtaining consistent estimates of the parameters. Plotting three non-durable goods, they find an upward trend and different seasonality patterns for these goods. Besides, through the correlation between food and transport prices relative to service, it seems possible to find the MRS of goods. Finally, the authors check the time dependence by OLS models.

Using data from ECPF, the authors estimate different models. First, without taking time invariant unobserved heterogeneity across households into account, the estimation of MRS and Euler in levels shows that preferences are intertemporally separable. Thus, the habit formation hypotheses would be rejected, but there is evidence of misspecification. Subsequently, to see whether the bias

in estimation could be attributed to correlated fixed effects, the authors conduct the estimation of models including time unobserved invariant heterogeneity in the preference specification. The dynamic effects obtained from the MRS offer evidence of habit formation in food and service, and the dynamic effects obtained from the Euler equation show evidence of habit formation in food. Besides, the Sargan test does not show misspecification, and thus, there is habit formation when controlling for the fixed effect. Moreover, the comparison of the MRS coefficients and the Euler equation coefficients shows that liquidity constraints are binding. After estimating the model in levels and differences, the authors calculate the within period elasticities, including price elasticity and income elasticity. Finally, the authors calculate the intertemporal elasticity of substitution and the degree of habit formation, which is computed by the fraction of past consumption that explains current consumption.

In conclusion, this paper finds that it is important to control for fixed effects when analyzing inter-temporal consumption decisions allowing for time non-separabilities. Using the household panel data from ECPF, the authors test for the presence of habit formation in consumption decisions. They find that preferences are intertemporally separable without controlling for the fixed effect, and there is evidence of misspecification. However, this paper obtains significance for the parameters reflecting habits after controlling for the fixed effect. The authors find evidence of habit formation according to the MRS for food and services, while for transport, the parameter is not significant at standard levels. The Euler equations also show evidence of habits for food, but not for transport and services.

This paper also has limitations. The three non-durable goods, food at home, transport and service, need to be compared at the same time. Although the two models, the food versus services model and the transport versus services model, can show the results, a direct comparison is more intuitive.