Reading Notes 4

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Over the past decade, numbers of influential studies have assumed intertemporally separable preference to show discrepancies between predictions of models; while nowadays researchers are more interested in studying consumption behavior and assuming time non-separable preference. However, whether preference is intertemporally separable or not has not been proved convincingly. Because of lack of information on consumption, some researchers turn to use aggregate data, but aggregation problems and simple life-cycle concerns arise. Other researchers only provide food consumption information and hypothetically believe the preference separability between food and other nondurable goods, but this hypothesis has been strongly rejected (Attanasio and Weber, 1995). Moreover, previous literature either did not take time invariant unobserved heterogeneity into account (Naik and Moore, 1996), or use limited number of consecutive quarters which are not enough to control for the heterogeneity (Meghir and Weber, 1996).

In the paper *Consumption and Habits: Evidence from Panel Data*, authors Raquel Carrasco, Jose M. Labeaga and J. David Lopez-Salido follow the model setting created by Meghir and Weber (1996) and apply GMM regression for model estimation. They solve the above-mentioned problems through ECPF dataset. It is a longer panel dataset collected by INE and provides detailed consumption information including food, transport, service, and several conditioning goods. In maximum, the authors can extract eight consecutive quarters to analyze the effect of time invariant unobserved heterogeneity. The dataset also contains demographic and labor supply variables, which are closely related to the consumption behavior. In the regression model, their lagged values perform as instrument variables to avoid endogeneity.

Two types of estimation results are presented, one is the estimates of MRS and Euler equations in levels. The authors find that preferences are intertemporally separable with no habit formation, and there is no evidence for homothetic and additive separability. Without controlling for unobserved heterogeneity, the authors obtain consistent results with Meghir and Weber (1996). However, the rejection of the Sargan test for the validity of instruments implies model misspecification and weak identification. The authors then move the discussion to dynamic changes of estimations. By deleting the weak instruments and controlling for the unobserved heterogeneity, the model becomes correctly specified. The results show that preferences are

intertemporally non-separable for food and services, so the habit formation indeed exists in food and services. Different from food and services, the preference is intertemporally separable for transport because it cannot be separated from some durable goods, vehicles for example. Once the durable goods are explicitly controlled, preference of transport is also intertemporally non-separable. Compared with the results in levels, unobserved heterogeneity hides the true dependence intertemporally, therefore, studies results based intertemporally separable preference assumption should be questioned and cautiously quoted.

Households encounter liquidity constraints in the real world and it may change previous estimation results. So the authors further investigate a group of individuals which is more likely to have these constraints. They select individuals younger than 40 and find that preferences of food, services and transport are all intertemporally non-separable. With estimated coefficients, within period elasticities of income and price, intertemporally elasticities for three nondurable goods, strength of habits are calculated. The food has 0.72 strength of habit, which to some extent explains the "excess smoothness" and equity premium puzzle.

In conclusion, this paper makes good advantage of ECPF dataset and gives a more convincing support for intertemporally non-separable preference assumption. By controlling for the time invariant unobserved heterogeneity, true state dependence of nondurable goods consumption is uncovered. The authors emphasize the importance of addressing unobserved heterogeneity and it is worthwhile for us to take care in future studies.