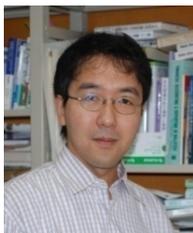


【Grant-in-Aid for Young Scientists(S)】

Humanities and Social Sciences (Social sciences)



Title of Project : An Investigation into Household Consumption and the Labor Supply Using High-frequency Marketing Data of Household Consumption and Labor Supply

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Research Area : Applied Economics

Keyword : Household Consumption, Savings, Panel Data

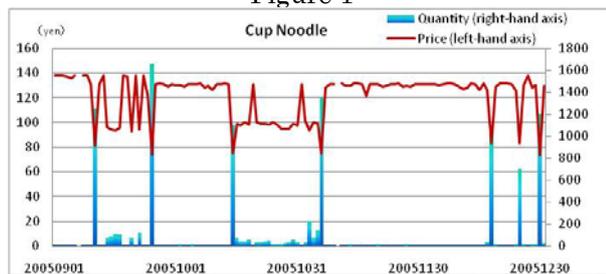
【Purpose and Background of the Research】

Many panel surveys of family expenditure use "recall" data; that is, the surveyed households are required to recall their expenditure on foods, clothes, etc., in the previous month. In general, the expenditure data in panel surveys exhibit strong volatility, and this contradicts standard consumption theory. However, the reasons for the volatility are difficult to identify. This is because the measurement errors and the transitive components in the expenditure are difficult to separate. In this project, we use detailed marketing data based on a commodity-level long-run panel survey, supposedly less subject to measurement errors, to estimate a dynamic household model of consumption and labor supply. We pay special attention to the span of consumption smoothing, the household level price index, and time allocation

【Research Methods】

For the causes of the strong expenditure volatility found in many panel surveys, we can consider: (1) measurement errors in the data; and (2) that the expenditure itself is volatile. Because the scanner reader generates marketing data on consumption, the data gathered are supposed to be more accurate than standard recall-based consumption data. We compare these marketing data with standard recall and diary surveys, such as the Family Income and Expenditure Survey, to measure the significance of the measurement errors for each type of data.

Figure 1



To investigate the mechanisms underlying the strong volatility in expenditure, we pay attention to the concentration of purchases when commodities are on bargain sale. Figure 1 shows the price and the number of units sold of Nissin Cup Noodle at a supermarket over four months. As shown, more than 1,000 units of cup noodles sell in bargain sales, while only a few sell at regular prices. No research known has yet taken into account the importance of the bargain sales of processed food in the analysis of consumption smoothing. With the marketing data, we can evaluate the importance of bargain sales in the volatility of the consumption data. More specifically, we construct a model of multiple consumption goods with different degrees of durability and estimate the dynamic decision model. In addition, we simultaneously investigate

the dynamic process of commodity price. Next, in this project, we investigate the heterogeneity in price levels among households. Even in inflationary and deflationary periods, commodity prices generally exhibit different movements; that is, the prices of some goods increase while others stay constant or decrease. If the elasticity of substitution of prices is different among households, the household price level may also differ across households. Because we can utilize information on household level actual transaction prices, it is possible to investigate the relationship between the price level and household characteristics such as labor status. The third topic to investigate in this project is the time allocation of households. Based on information on the price differential between convenience stores and supermarkets, we estimate the opportunity cost of shopping and its determinations in the form of household characteristics, such as the number of small children in the household.

【Expected Research Achievements and Scientific Significance】

Commodity-level household scanner data enable us to investigate detailed dynamic behaviors in consumption. For example, the estimation of dynamic demand functions for processed foods with durability is only possible with such data. Through comparison between these data and standard recall-based panel data, we can evaluate potential problems in relying on monthly recall expenditure data in estimating consumption functions. In addition, the heterogeneity of the price level and its determinants may be decisive in estimating "real" wages and the distribution of real income deflated by a price level that differs across households. We can then use the project results in evaluating the distributional effects of monetary policy along with other policies that affect decisions on labor supply and childbearing.

【Publications Relevant to the Project】

Abe, Naohito and Yamada, T., "Nonlinear Income Variance Profiles and Consumption Inequality over the Life Cycle," 2009, *Journal of Japanese and International Economies*, forthcoming.

Abe, Naohito and Inakura, N., "The Cause of Volatility in Panel Data of Household Expenditure," 2008, *Economic Review*, No.59.3, pp.228-239.

Abe, Naohito and Inakura, N., "The Covariance Structure of Earning and Hours Changes," 2007, *Economic Review*, No. 58.1, pp.15-30.

【Term of Project】 FY2009- 2013

【Budget Allocation】 70,000 Thousand Yen

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