Changes in Food, Alcohol and Cigarettes Consumption During Transition: Evidence from Russia

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The goal of the paper is to analyze individual socio-economic and regional macro-economic determinants of changes in nutritional behavior for Russian adults. In the empirical analysis, we examine the change in the shares of fat and protein intake in the diet, an index of food consumption diversity, alcohol consumption, and cigarette smoking using data from the Russian Longitudinal Monitoring Survey (RLMS) between 1994 and 2004. Our analysis aims to quantify the influence of individual determinants, as well as the relative impacts of micro and macro determinants, on nutritional behavior changes. We explicitly consider the combined impact of individual and regional characteristics in explaining the changes.

Our empirical model is based on several theoretical models, that explain an individual’s decision to consume a certain food or to choose a certain lifestyle, developed by Contoyannis and Jones (2004), Arnade and Gopinath (2006). Becker and Murphy (1988) also point to elements of addictive behavior influencing individual decisions. To control for the addiction element in a consumer’s behavior, lagged consumption is included as an argument. Habit persistence that is a higher current consumption level due to previously high consumption and the influence of past consumption on current preferences are found to have an impact as well (Edgerton et al., 1996). Deteriorating macroeconomic conditions such as declining Gross Regional Product (GRP) per capita and rising regional unemployment are expected to stimulate higher alcohol and cigarettes consumption (Ruhm, 1995; Brainerd and Cutler, 2005).

The relationship between changes in nutritional behavior and micro and regional economic indicators will be tested in the following econometric model. The dependent variables are alcohol consumption, smoking and dietary quality, which is approximated by three variables—share of fat in diet; share of proteins in diet; and food diversity, measured by a Berry index $BI = 1 - \sum s_j^2$ where $s_j$ is the share of good $j$ in total consumption expenditures (Thiele and Weiss, 2003).

The estimated econometric model is: $\Delta Y_it = \alpha Y_{i,t-1} + \beta \Delta X_it + \gamma \Delta M_it + Z_{it-1} + \epsilon_i$, where “$\Delta$” refers to the ten year $t$ difference operator for individual $i$ such that $\Delta Y_it = Y_{i2004} - Y_{i1994}$, for fat and protein, and $\Delta Y_it = \ln(Y_{i2004}/Y_{i1994})$, for food diversity, consumption of alcohol and cigarettes smoking. $X_i$ is a vector of micro or socioeconomic variables such as household income and size measured in 1994 and 2004. $M_i$ is a vector of changes in regional economic indicators such as real GRP per capita, inflation and unemployment rate. $Z_{it-1}$ is a vector of initial level (fixed effects) micro variables such as education, age, gender, marital status, access to land and $\epsilon_i$ is a random error term. The initial level of the dependent variables accounts for dynamics in the model and allows testing the addiction hypotheses by Becker and Murphy (1988) versus the accumulation hypotheses by Arnade and Gopinath (2006). Non-truncated dependent variables like share of fats and proteins are explained using Ordinary Least Square, and interval regression is applied to explain the truncated variables alcohol and cigarette consumption.

Our main findings suggest that among the micro determinants, initial levels of consumption, holding a university degree, gender and having access to a garden plot all have a significant impact on changes in nutritional behavior in Russia. Regarding the regional determinants, changes in real GRP per capita has a significant impact only on changes in fat and protein consumption, alcohol consumption and food diversity, while changes in unemployment significantly impact only protein and alcohol consumption as well as food diversity.