China’s Nutrition Intake Inequality: 1989-2004

John A. Bishop, Haiyong Liu
East Carolina University

Buhong Zheng
University of Colorado-Denver

Contact: John A. Bishop, Department of Economics, East Carolina University, Greenville, NC 27858; Tel: 252-328-6756; Fax: 252-328-6743; Email: bishopj@ecu.edu

China has experienced a dramatic income growth over the past two decades. However, several economic factors confounded with the overall economic growth and the low income groups could have failed to improve their health and nutrition status. These factors include widening income inequality, rising food costs, and income uncertainty.

Malnutrition is one of the most important measures of poverty and, therefore, it is crucial to examine the nutrition status of families at risk during this period (Meng et al. 2004; Popkin et al. 1993). The empirical analysis uses the panel data from the China Health and Nutrition Survey (CHNS) 1989-2004. The surveys were conducted by the University of North Carolina in 1989, 1991, 1993, 1997, 2000, and 2004 in nine provinces. Detailed demographic, economic, and nutritional information was collected on about 4,400 households (16,000 individuals) in each wave of survey. In particular, dietary intakes were measured using a combination of the weighing method and three consecutive 24-hour recalls and then converted into equivalent amount of nutrients.

This paper applies two approaches to the of under-nutrition. First, we apply the tools of stochastic dominance (Kakwani, 1989; Ravallion, 1991; Bishop et al, 1996 & 2000) to evaluate changes in nutrition status over time. These tools allow us to measure both the degree and depth of under-nutrition cross-sectionally. Our preliminary results indicate that the calorie consumption declined for the low income group in the early 1990s and have plateaued since mid-1990s.

Secondly, we propose a new method of evaluating under-nutrition. We recognize that counting the number of people below the recommended daily allowance of energy and nutrients, while useful, does not capture all the dimensions of nutritional deprivation. For example, it is well-known that the long-term health effects of sustained periods of under-nutrition are more severe than a periodic episode of malnourishment. Given the rich data in the CHNS, we can follow specific individuals to examine their transitions in and out of under-nutrition.

In particular, we adopt a measure of nutrition status inequality that is analogous to the transition matrix used in the measurement of income mobility (c.f., Formby, Smith, and Zheng, 2004). Specifically, an income-nutrition status matrix is constructed to relate
socioeconomic class with nutrition status; each row of the matrix represents an income
group and consists of respective probability distribution of nutrition status. We are able to
directly compare China’s welfare distributions across years by ranking these income-
nutrition status matrices. Formal statistical inferences are also provided for our estimates
of nutrition mobility.

References

Bishop, John A., Formby, John P., and Buhong Zheng. “Regional Income Inequality and
November 1996.

Bishop, John A., Formby, John P., and Lester Zeager. “The Effect of Food Stamp


528-552, 1989.

of Labor (IZA), 2004.
