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# The Demand for Nutrients in China: A Direct Approach

Xu Tian, Xiaohua Yu

Department of Agricultural Economics and Rural Development

And Courant Research Centre "Poverty, Equity and Growth"

University of Gättingen

xtian@uni-goettingen.de, xyu@uni-goettingen.de

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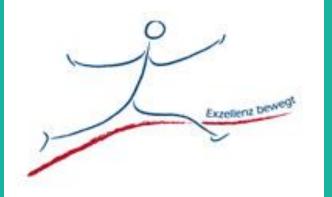
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### The Demand for Nutrients in China: A Direct Approach

Xu Tian, and Xiaohua Yu

Department of Agricultural Economics and Rural Development Courant Research Centre "Poverty, Equity and Growth" University of Göttingen



#### 1 Background

- □ Dramatical change in the structure of food consumption in China along with its rapid economic growth.
- ☐ The demand for nutrients also changes significantly.
- ☐ Whether malnutrition can be eliminated by economic growth is still controversial.
- ☐ Current literature mainly focus on macronutrients.
- ☐ Estimation in indirect approach is biased.

#### 3 Method

- ☐ There are two commonly used econometric approaches to estimate income elasticity of nutrient.
- ➤ Indirect approach: convert food elasticity to nutrient elasticity.
- ➤ Direct approach: covert food consumption to nutrient intake and then regress nutrient intake directly on income.

$$N_{\mathrm{k}} = \sum_{i} C_{ki} * F_{i}$$
  $E_{i} = F_{i} * P_{i}$ 

$$\begin{split} \mathcal{E}_{N_k M} &= \sum_{i} S_{ki} * \mathcal{E}_{F_i M} + \sum_{i} S_{ki} * \mathcal{E}_{C_{ki} M} \\ \mathcal{E}_{N_k M} &= \sum_{i} S_{ki} * \mathcal{E}_{E_i M} + \sum_{i} S_{ki} * \mathcal{E}_{C_{ki} M} - \sum_{i} S_{ki} * \mathcal{E}_{P_i M} \end{split} \qquad S_{ki} &= \frac{N_{ki}}{N_k} = \frac{C_{ki} * F_i}{\sum_{i} C_{ki} * F_i} \end{split}$$

$$arepsilon_{N_k M} = \sum_i S_{ki} * arepsilon_{E_i M} - \sum_i S_{ki} * arepsilon_{q_{ki} M} \qquad \qquad q_{ki} = rac{P_i * heta_{ki}}{C_{ki}} \quad rac{d \ln heta_{ki}}{d \ln C_{ki}} = 0$$

## 7 Reference

- ☐ Comparing the nutrient elasticity of different income group.

2 Objective

- ☐ Behrman, J. R., Deolalikar, A. B., 1987. Will developing country nutrition improve with income-a case study for rural south India. The Journal of Political Economy 95(3), 492-507.
- ☐Subramanian, S., Deaton, A., 1996. The demand for food and calories. The Journal of Political Economy 104(1), 133-162.

#### 4 Results

Nutrients	Elasticity		
	Full sample	Below	Above
Energy	0.1224***	0.3222***	0.0637
Protein	0.1273***	0.2460**	0.0976
Fat	0.1487***	0.2099	0.0837
Carbohydrate	0.1066***	0.3076**	0.0731
Fiber	0.1305***	0.4406***	0.0566
Cholesterol	0.2927***	0.3089	0.4328**
Vitamin A	0.1397	0.3060	0.1938
Thiamin-B1	0.1545***	0.1183	0.1536
Riboflavin-B2	0.1256***	0.3250**	0.0667
Niacin-B3	0.1542***	0.2248*	0.1487
Vitamin C	0.1345**	0.0864	0.1665
Vitamin E	0.1471**	0.2149	0.0256
Calcium	0.0606	0.2395	-0.0573
Phosphorus Phosphorus Phosphorus	0.1318***	0.2246**	0.1164
Potassium Potassium	0.1029***	0.1110	0.0818
Magnesium <b>State</b>	0.1048***	0.3109**	0.0662
Sodium	0.0122	-0.0602	-0.1069
Iron	0.1352***	0.2410**	0.1658*
Zinc	0.1303***	0.2188**	0.1129
Selenium	0.1664***	0.3062**	0.1550
Copper	0.1189***	0.2454**	0.0079
<u>Manganese</u>	0.0879	0.2130*	0.0304

#### **5** Conclusions

- ☐ Income elasticities of most nutrients are quite small.
- ☐ Poor people have higher nutrient elasticity than rich ones.
- ☐Most nutrient elasticities are not significant for rich people.

#### **6 Implication**

- ☐ Income will not result in substantial improvements in nutrient intakes.
- ☐ More direct government intervention aiming at improve the nutritive status should be developed.