The intrinsic food price: A new metric for global food policy

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Unhealthy and unsustainable dietary trends

Note: Each point is an annual datum for 1961 to 2009 for India, China, and six economic groups containing 98 other nations.
Motivate healthy and sustainable food consumption behaviours

• Debates on food price
  • Price changes may shift diets
  • Food price elasticity is low

• Underlying assumptions of the neoclassical consumption theory
  • Independence of utilities (the utilities of goods are well presented by monetary values, perfect market)
  • Homogeneity (structure of demand does not change)
  • Consistency (preference does not change)
Value the intrinsic characteristics

• Any food item possesses more than one intrinsic characteristic and these intrinsic characteristics can provide the satisfaction that a consumer requires, while the food item represents a combination of these intrinsic characteristics (Lancaster, 1966)

• Food contains many intrinsic characteristics, such as nutrients, ecology, outlook etc. and these intrinsic characteristics are the drivers of food consumption behaviour
A new metric - Intrinsic food price

• Food price is $P/\text{kg}$
• Calorie content per kg is $N\text{ (Kcal/kg)}$
• $\text{CO}_2$ emission per calorie is $S\text{ (gCO}_2/\text{Kcal)}$
• Intrinsic food price is measure by $P/N/S\text{ ($/gCO}_2/\text{Kcal)}$
Market imperfections—unhealthy food is cheaper

Note: Log of NDS/LIM indicates the quality of food. The higher of the index, the more nutritious of the food. Nutrient Density Score (NDS) and Limited Nutrient Score (LIM).
Market imperfections—unsustainable food is cheaper

Source: USDA (2016). Unit: $/CO₂/Kcal
Market imperfections – unsightly food is cheaper
Outlook

• Analyse dietary patterns under food market imperfections

• Estimate the impacts of intrinsic prices on the structural change of food consumption

Thank you very much for your attention!

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