

Patterns and change in retail food prices across 165 countries, 2011-2017

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Background and objectives

Healthier foods are widely thought to be more expensive than unhealthy foods, but previous research has been limited to cross-sectional data or small samples.

We test for price differences associated with a wide range of food attributes globally, using prices from 2011 and 2017.

- Item definitions are standardized, for precise measurement of cost per calorie.
- Items attributes allow classifications relevant to diet quality and food choice.

Results

Change over time

- On average, prices rose slightly from 2011 to 2017, by an average of 0.05 USD/100 kcal, but the increase was not statistically significant.

Differences by region and national income

- Price levels are similar in all regions and income levels, but on average are lower in North America and Europe & Central Asia and higher in the Middle East & North Africa and Latin America & the Caribbean.

Differences by food category

- Cereal grains are the least costly source of dietary energy, followed by fats and oils, starchy roots, other grains, and legumes.
- Legumes, followed by dried fruits and nuts and seeds, are the least costly nutrient-rich plant-source foods.
- Salty and sugary snacks are less expensive than fresh fruits and vegetables, and sugary snacks are more expensive than dried fruit.
- Milk is the least costly animal-source food, followed by eggs, small fish, organ meat, poultry, and dairy products. More expensive animal foods are red and processed meats, followed by fresh fish and crustaceans.
- Infant foods, which are pre-mixed blends of cereal grain plus roasted soybeans or other legumes, have similar cost per calorie to soy, eggs, and sugary snacks.

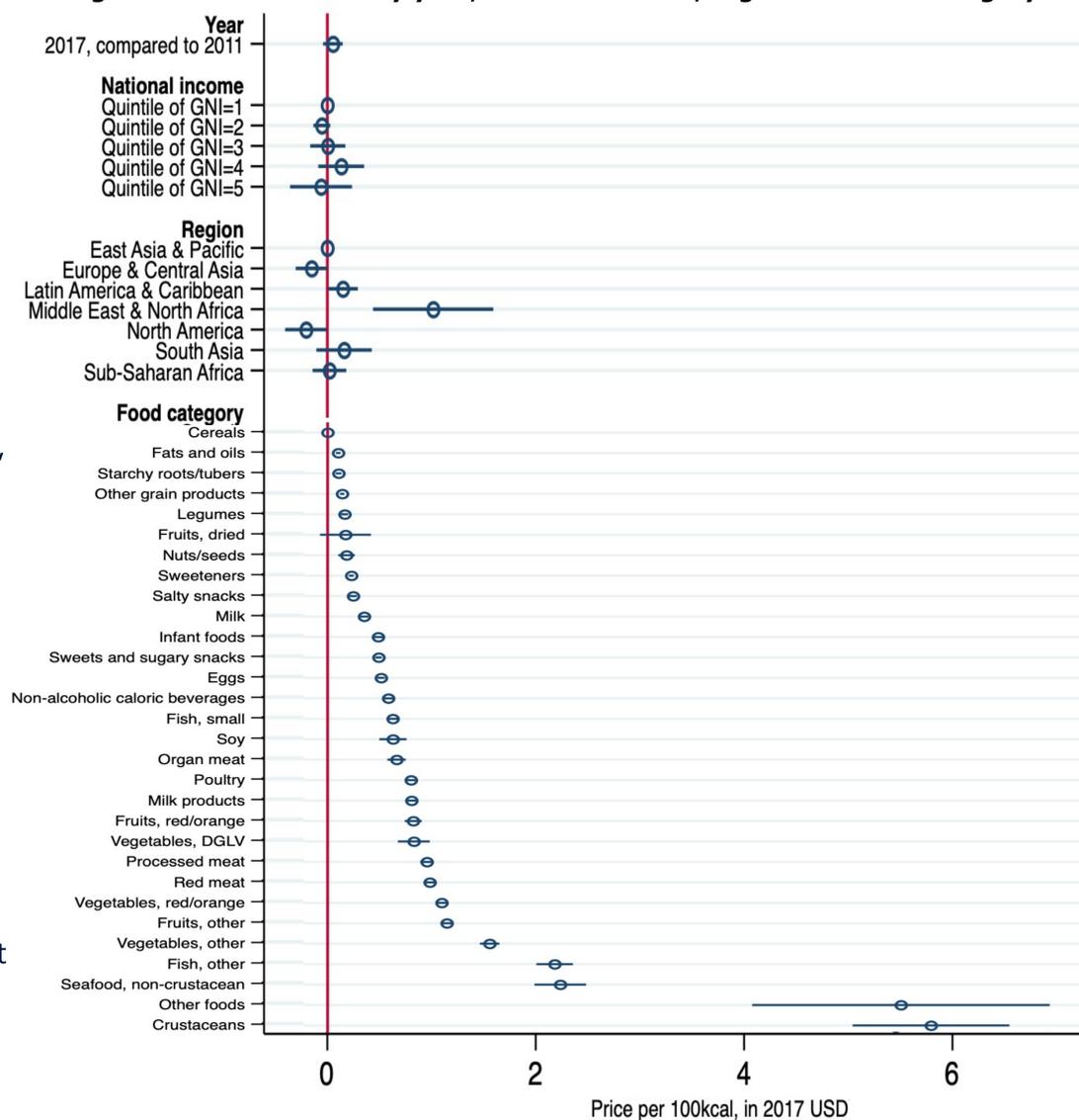
Changes within Africa and South Asia

- In these regions most food categories rose in price, with notable exceptions such as poultry and eggs, which declined in price as shown in Figure 2 below.

Data and methods

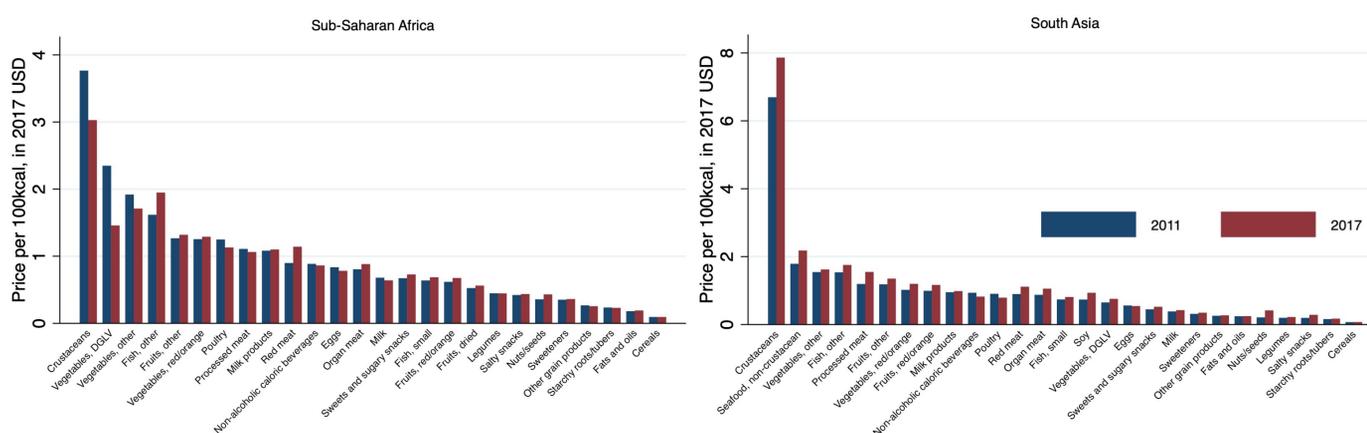
- We use consumer prices for 2011 and 2017 reported by national statistical agencies in 165 countries through the International Comparison Program (ICP) and the World Bank.
- We match items to their nutritional attributes using food composition data from the US Department of Agriculture.
- We convert prices to cost per kilocalorie in 2017 USD using purchasing power parity exchange rates for comparability among foods relative to all other household expenditures, and test for differences in price levels using OLS regression.
- All results shown here are for a balanced panel of n=32,949 price observations on 385 unique items reported for both years in n=165 countries

Fig 1. Price differences by year, national income, region and food category



Note: Data shown are estimated coefficients and confidence intervals from an OLS regression of cost per kilocalorie on each food category, with additional controls (not shown) for year, quintiles of ln(GNI), and geographic region, for a matched panel of n=32,949 price observations reported for both years on 385 unique items in n=165 countries. Further analyses use an additional 12,819 item prices reported by some countries for 2011 only, and 6,404 item prices reported for 2017 only.

Fig. 2: Price levels and changes from 2011 and 2017 in Africa and South Asia



Note: Data shown are average prices per 100 kcal, for matched items in each food category within each region. Some categories may be poorly represented, most notably in Africa only one country (Sudan) reported a prices in both 2011 and 2017 for the same item in the category of "Vegetables, DGLV." That item was spinach, which is not the most widely consumed DLGV in Africa.

Conclusions

- Food prices reveal differences in the real costs of production and distribution, relative to all other goods and services.
- More nutritious foods are not always more expensive, suggesting opportunities to improve diet quality through substitution among and within food categories.
- Gaps in coverage reveal need for more systematic price reporting.