

NUTRITION

Retail prices track food and nutrition security

Food price data at the retail level are critical to assessing the impacts of covariate shocks on people's access to healthy, nutritious diets. Through the calculation of cost and affordability, retail food prices can also help identify entry points to improve food and nutrition security, such as in the context of COVID-19.

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People's access to healthy, nutritious diets is determined by physical access to diverse foods — that is, what is available in their food environment — and by the affordability of foods that make up such a diet, which is a function of their prices and people's expenditure on food. Covariate shocks can weaken the functionality of food systems, negatively impacting both availability and affordability of nutritious diets. Now, more than two years into the coronavirus disease 2019 (COVID-19) pandemic, data are allowing us to increasingly understand how food systems responded to the unprecedented scale of disruption created by the pandemic, including the economic and social effects of the control measures.

Writing in *Nature Food*, Bai and colleagues¹ analyse consumer price index (CPI) and food CPI information reported by 181 and 179 countries, respectively. They observed that food CPI rose more than CPI when the COVID-19 infection rate (number of cases in a month per million people) in the population was higher, whereas the Food and Agriculture Organization of the United Nations (FAO) food price index, which is based on wholesale commodity price indices of basic food items, before processing, did not show a clear pattern¹. This indicates that the relationship between supply and demand at the retail level, which increased consumer prices, was more likely to have been influenced by constraints in the off-farm parts of the food system rather than by farm production changes. Such constraints could have included measures at the processing stage, including closures of meat processing plants to control infection among workers² and dumping of perishables by farmers, as they were unable to repackage perishables for retail sale after restaurant closures³. Subsequent constraints at the distribution and retail stage, such as curfews restricting the transport of goods to markets during cooler overnight hours⁴ and a reduction in retail outlets due to government-mandated closures of public spaces, further reduced availability of fresh foods, probably resulting in higher prices⁵.

CPI data are constructed and reported by countries' bureaux of statistics based on price monitoring of an assortment of commodities in sentinel sites and weighted to represent a typical, country-specific basket of foods and goods purchased by consumers. These underlying consumer prices are not typically made available for third-party analyses, and the baskets of foods and goods, although similar, are not standardized across countries. Bai and colleagues accessed consumer prices for individual foods for 109 low- and middle-income countries from early warning system datasets that are made available by the United Nations World Food Programme (WFP), the FAO and the Famine Early Warning Systems Network (FEWSNET) (United States Agency for International Development (USAID)-funded), to analyse whether and how the price of different food groups was affected by countries' COVID-19 infection rate. While geographic representativeness, food lists, data collection and reporting systems differ among early warning system data, the data allowed for tracking of prices of specific foods over time and in relation to COVID-19 infection rate. Bai and colleagues were therefore able to conclude that the prices of all food groups increased more than those of bread and cereals, which increases the cost of a healthy, nutritious diet more than that of a basic diet.

In combination with reduced incomes during COVID-19, especially for daily wage earners, people employed in the informal sector and in countries with reduced remittances, increased prices of non-staple foods will have further reduced the affordability of healthy diets and increased the affordability gap for those that were already unable to afford a healthy diet. This suggests that the prediction of the increased affordability gap of a healthy diet due to COVID-19 in another recent study for 63 low- and middle-income countries will have been higher, as the authors used overall food CPI rather than food-group-specific price increases (as not reported by most countries

in the analysis) and the reduced affordability was mainly due to the modelled reductions of food expenditure⁶.

As Bai and colleagues state, "Analysis of retail prices by food group complements data on farm commodity prices and overall consumer price indexes", and they have shown how analysis of these retail prices by food group was able to identify that COVID-19 infection rate affected people's access to foods that are essential for healthy, nutritious diets more than to basic foods. This illustrates two points: (1) collecting food prices from retail markets for a variety of foods across different food groups enables an analysis of the cost of healthy and nutrient-adequate diets, which is required for estimating affordability of such diets⁷; and (2) by collecting such prices regularly it is possible to assess the impact of covariate shocks such as the COVID-19 pandemic, but also of climate-change-related shocks or conflict, on their cost and affordability.

The Systems Analysis for Nutrition team of the WFP, together with governments and other stakeholders, have analysed subnational food price data for a substantial number of foods across food groups in conjunction with subnational food expenditure data in more than 35 countries. In combination with a review of secondary information on different aspects of food systems, these analyses have been used to inform food systems transformation pathways, including sector-specific actions for social protection, health and education⁸. Sources of the food price data used for those analyses varied by country and included data shared by bureaux of statistics as collected for CPI calculation, food price market monitoring systems from ministries of agriculture, household consumption and expenditure surveys (Household Consumption and Expenditure Surveys or Living Standard Measurement Studies), and primary food price data collection (Z.T., J. Klemm and S.d.P., manuscript in preparation).

For primary food prices, data collection was exhaustive, meaning that all staple and nutritious foods were included.

Secondary information on local food-system characteristics were also reviewed, providing insights on the range of foods available and on the functionality of markets. This provides answers to questions such as what limits availability of nutritious foods in markets in part of the country — is it distance, seasonal road closure or conflict that hinders access to markets? Or, is there no supply of certain foods because of low consumer demand due to poor purchasing power? Does climate change affect production of certain items? An evidence-based understanding of barriers to food availability and functionality of markets, as well as barriers people face to meet their essential needs, including the affordability gap of a healthy, nutritious diet, is foundational for the design of benefit packages for social assistance or food assistance programmes. That includes decisions on the transfer value, combination of modalities (cash/in-kind/vouchers for specific food groups) and complementary programmes to meet needs of target groups with higher nutritional needs, such as young

children, and women and girls who are pregnant or breastfeeding⁹.

Regularly collecting, reporting and analysing retail prices of foods across different food groups, and estimating the cost and affordability of healthy, nutritious diets is and will continue to be important to monitoring food and nutrition security. The world is suffering the consequences of climate change, conflict and COVID-19; now, already-challenging circumstances are being further aggravated by the conflict in Ukraine, which is affecting the prices of food, fuel and fertilizers on the global market, of which impacts on consumer prices in retail markets are just beginning to unfold¹⁰. □

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References

1. Bai, Y. et al. *Nat. Food* <https://doi.org/10.1038/s43016-022-00502-1> (2022).
2. Ijaz, M. et al. *Front. Vet. Sci.* <https://doi.org/10.3389/fvets.2021.660736> (2021).
3. Mogues, T. *Food Markets During COVID-19* (IMF, 2020); <https://go.nature.com/3rRTxes>
4. Bouët, A., Kurtz, J. E. & Traoré, F. *COVID-19 Impact on Informal Trade: Disruptions to Livelihoods and Food Security in Africa* (IFPRI, 2020); <https://go.nature.com/3xXP6ma>
5. Dikoda & WFP *Food Security and Diets in Urban Asia: How Resilient are Food Systems in Times of COVID 19?* (WFP, 2022); <https://go.nature.com/3vKtc2Z>
6. Laborde, D., Herforth, A., Headey, D. & de Pee, S. *Nat. Food* **2**, 473–475 (2021).
7. Herforth, A. et al. *Cost and Affordability of Healthy Diets Across and Within Countries: Background Paper for the State of Food Security and Nutrition in the World* FAO Agricultural Development Economics Technical Study No. 9 (FAO, 2020); <https://go.nature.com/36QC11p>
8. Bose, I., Baldi, G., Kiess, L. & de Pee, S. *Matern. Child Nutr.* **15**, e12793 (2019).
9. Food Systems Summit Working Group on Social Protection *Leveraging Social Protection for Poverty Reduction, Food Security, Nutrition and Decent Work* (USP2030, 2021); <https://go.nature.com/3kjgsLf>
10. Glauber, D. & Laborde, D. *How will Russia's Invasion of Ukraine Affect Global Food Security?* (IFPRI, 2022); <https://go.nature.com/36UrhR4>

Competing interests

The authors declare no competing interests.