



Food inflation and global poverty

New challenges for the world food system

The authors

DEREK HEADEY
INTERNATIONAL FOOD
POLICY RESEARCH
INSTITUTE

KALLE HIRVONEN
INTERNATIONAL FOOD
POLICY RESEARCH
INSTITUTE

If food prices increase, do poverty rates go up or down? In 2022 this is a question of paramount importance to developing economies and international aid agencies. Even prior to Russia's invasion of Ukraine, the interconnected prices of food, fuel, and fertilizers were already rising on the tailwinds of Covid-19's inflationary pressures in 2021. However, by March 2022, a month after the war between two of the world's biggest food exporters began, the FAO's vegetable oil price index was 150% higher than its 2014-16 baseline,

while cereals were 70% higher and the composite food price index 60% higher (see the figure). In recent months, international prices have started to come down. However, the outlook for domestic food prices remains uncertain, since many emerging market currencies have weakened against the dollar, creating further scope for these economies to import food inflation.

While such rapid rates of food inflation are disconcerting, they are hardly new to the twenty-first century. 2007-8 saw the first global food and fuel price spike



since the 1970s. The then-head of the WFP cited a “perfect storm”, the media reported on food riots and potential famine, the FAO projected one billion hungry by 2009. For their part, economists produced a litany of simulation studies using Angus Deaton’s formula for assessing the short-run welfare impacts of a change in food prices, the “net benefit ratio”: higher food prices hurt net food consumers and help net food producers. But in 2008 these studies all seemed to find more hurt than help, and the World Bank concluded that over 100 million people could be thrown into poverty by rising prices.

Yet in the aftermath of 2008, a number of studies started to question these findings. Jo Swinnen wrote a sceptical essay on “The right price of food”, observing that “Only a few years ago the widely

“
Even prior to Russia’s invasion of Ukraine, the interconnected prices of food, fuel, and fertilizers were already rising on the tailwinds of Covid-19’s inflationary pressures in 2021

”
shared view was that low food prices were a curse to developing countries and the poor”. If the bulk of the world’s poor were rural, and agricultural performance so crucial for global poverty reduction, surely higher food prices would amount

to a positive terms of trade gain for the average poor household?

In our view, the early net benefit simulations of 2008 and 2009 did not accurately predict the welfare impacts of higher prices for several reasons.

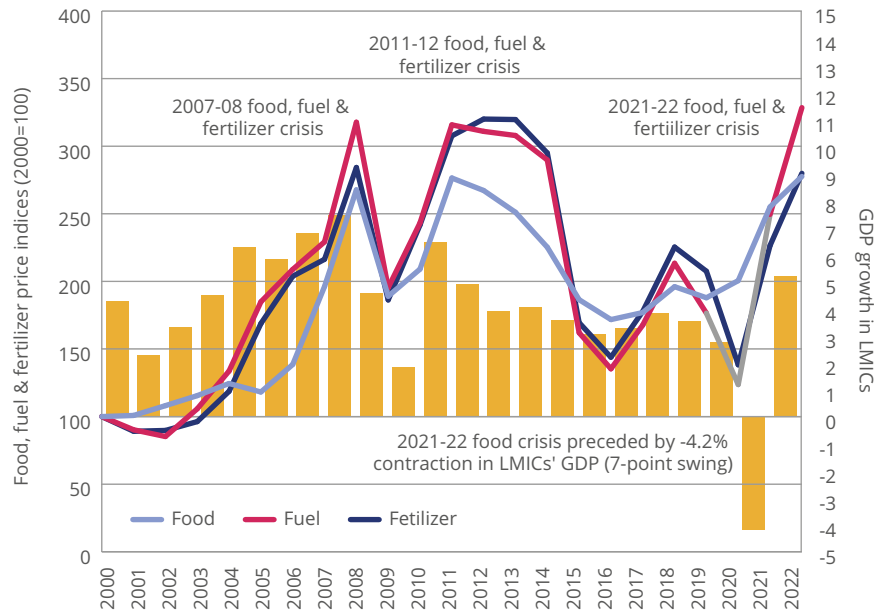
First, international prices don’t neatly translate into domestic price increases. Many countries are naturally or unnaturally somewhat insulated from international price movements, and there are ample policy levers available to smooth out transmission in an emergency, though some are certainly costly.

Second, measuring net benefit ratios accurately is extremely challenging. Food consumption is measured with a 1- or 2-week recall, food production often with a 6- or 12-month recall. Estimating what your family consumed in the past week is difficult but

feasible; accurately recalling everything your diversified farm produced in the past year is close to impossible: *how many bananas did you pick in the last 12 months?* A 2011 World Bank study from Uganda found that high-frequency farmer diaries resulted in average food production estimates that were 65% larger than those of the standard recall method (disturbingly, seasonal crop production was 120% larger when the diary method was used). On that evidence, one might reasonably conclude that net benefit ratios are empirically impractical with standard survey instruments.

Third, Deaton's net benefit ratio deliberately focused on the short run, abstracting from general equilibrium adjustments. However, as Hanan Jacoby demonstrated, higher food prices incentivize agricultural supply responses that necessitate hiring more unskilled labour. If the agricultural sector is a large consumer of that labour, rural wages can rise rapidly, compensating rural non-farm households (including the landless poor) for food price increases. In Bangladesh we found that increases in food prices led to increases in rural wages in the space of six months; long enough to hurt, but short enough to help.

Fourth, despite so much talk of rapid urbanization in emerging economies, 80% of the world's extreme poor were still rural in 2013, and often working in agriculture. The urban poor (or near-poor) are certainly closer to the news cameras and undoubtedly hard hit by rising food prices, but they are well outnumbered by the rural poor. If the rural masses typically benefit from higher food prices – after economic adjustments – then it's likely that poverty falls in aggregate terms, except perhaps in the most heavily urbanized emerging economies. In a new IFPRI discussion paper we corroborate that prediction in an annual panel of 33 middle income countries: higher



Food, fuel and fertilizer prices (left axis) and economic growth rates in low and middle-income countries (LMICs) from 2000 to July 2022

*Commodity prices are IMF Commodity Price Indices up until July 2022. The LMIC economic growth rate is the average growth rate across 149 countries from the World Bank's Global Economic Prospects.

“
If the rural masses typically benefit from higher food prices – after economic adjustments – then it's likely that poverty falls in aggregate terms

”

food prices moderately reduce poverty in more rural economies, but that predicted impact attenuates or even reverses in highly urban economies. These results are broadly consistent with an earlier cross-country study by Headey (2018) focused on medium-run (2-5 years) poverty responses, as well as World Bank country case studies for Bangladesh, Cambodia, Ethiopia, and Uganda.

Of course, the evidence above is (recent) history, not 2022, and the post-pandemic global economy is

precarious. Prior to 2008 emerging economies experienced record growth rates (see the figure); in contrast, 2020 saw almost every economy in the world contract in the wake of the pandemic, and recovery has been fitful. The pandemic hit the world's urban poor especially hard – and they are being hit hard again by food inflation. The most food-insecure countries in the world are conflict-affected (Afghanistan, Ethiopia, Somalia, Yemen) or disaster-affected (Madagascar, Pakistan) and therefore highly dependent on food aid and cereal imports that are now much more costly to acquire. However, even many “normal” emerging economies are now encumbered by broader macroeconomic challenges (high debt, acute foreign exchange shortages, weakening currencies) that severely limit their ability to respond proactively to the challenges of food, fuel, and fertilizer inflation. The weak global economy also means that stagflation is a far greater threat than food inflation alone. So

2022 *is* different to 2008; history doesn't always repeat itself.

There is no single remedy for this more complex food-cum-macroeconomic crisis of 2022. Fragile states need additional humanitarian aid to compensate for higher food import prices and physical scarcities. Macroeconomically vulnerable economies need sizable, timely assistance from the IMF, debt restructuring, and additional social protection measures, including for the “new poor”. And lest we forget the “old poor”, farmers in the developing world require immediate assistance to stimulate a stronger agricultural supply response, particularly help with accessing farm inputs, but also sensible longer-term investments to address the persistent problems of poverty, hunger, and malnutrition.

Ironically, the largely urban food crisis of 2007-8 turned out to be a much-needed catalyst for renewed investments in agriculture and the rural economies of Africa and Asia – investments

“
Ironically, the largely urban food crisis of 2007-8 turned out to be a much-needed catalyst for renewed investments in agriculture and the rural economies of Africa and Asia

”
which had stagnated in the decades prior. With climate change now producing more extreme weather events on an alarmingly regular basis, and the global food and fuel economies becoming ever more volatile, larger and smarter investments in agriculture are needed to increase productivity, and to enhance food system resilience. Climate-smart investments in agricultural R&D, extension, and irrigation are critical on-farm

investments, but investments in a broad range of rural infrastructure (transport, electricity, ICTs, and physical food markets) are essential off-farm investments to improve the efficiency and resilience of agricultural value chains.

If it was not so in 2008, it is now abundantly clear that the twenty-first century global food system is facing unprecedented challenges: a tighter nexus between food and energy markets, rising food demand from multiple sources, the crippling economic effects of regional or global pandemics, and the shocking impacts of more frequent and more severe extreme weather events. Economics has a vital role to play in improving our understanding of this evolving food system; in identifying how food inflation and other food system shocks affect poverty, food security, and nutrition; and in designing and evaluating policies to better manage food systems for the benefit of food producers and food consumers alike.

About the authors

Derek Headey and Kalle Hirvonen are both Senior Research Fellows at the International Food Policy Research Institute, based in Sri Lanka and Finland, respectively. Their research mainly focuses on the linkages between agriculture, poverty, and malnutrition. Both have worked extensively on these issues in Ethiopia, and collaborated together on several global analyses of poverty and nutrition, including the economic challenges of improving diet quality.

Further reading

Deaton, A. (1989). Rice prices and income distribution in Thailand: a non-parametric analysis. *Economic Journal*, 99, 1-37.

Deininger, K., Carletto, C., Savastano, S. and Muwonge, J. (2012). Can diaries help improve agricultural production statistics? Evidence from Uganda. *Journal of Development Economics*, 98, 42-50.

Headey, D. (2018). Food prices and poverty. *World Bank Economic Review*, 32, 676-691.

Headey, D. and Hirvonen, K. (2022). Food inflation, poverty, and urbanization, IFPRI Discussion Paper No. 02134. Washington DC. <https://ebrary.ifpri.org/utills/getfile/collection/>

[p15738coll2/id/136356/filename/136566.pdf](https://ebrary.ifpri.org/utills/getfile/collection/p15738coll2/id/136356/filename/136566.pdf)

Headey, D. and Martin, W. J. (2016). Food prices, poverty, and food security. *Annual Review of Resource Economics*, 8, 329-351.

Ivanic, M. and Martin, W. J. (2008). Implications of higher global food prices for poverty in low-income countries. *Agricultural Economics*, 39(s1), 405-416.

Jacoby, H. G. (2016). Food prices, wages and welfare in rural India. *Economic Inquiry*, 54, 159-176.

Swinnen, J. and Squicciarini, P. (2012). Mixed messages on prices and food security. *Science*, 335, 405-406.