

# Getting Real about Food Prices

by Andrew Dorward, Centre for Development, Environment and Policy, SOAS

## Are Food Prices High or Low?

International grain prices rose after 2007, reached a peak in mid 2008, and have subsequently remained high and unstable. At the beginning of 2011 we are again facing unprecedented international food prices. We now appear to be living in a world haunted by significant fears of widespread high food prices and food shortages as a result of the threat of global imbalances between supply and demand.

Understanding of this problem can be confused, however, by reports that routinely assert that current prices are not really high from a historical perspective, though they recognise the current severity of the food price crisis. Such reports, by a range of international development agencies, state that even at their mid-2008 peak, real grain prices were considerably lower than those during the last major peak in 1974, and were not even much higher than those prevailing at various times in the late 1980s and mid 1990s.

This Development Viewpoint, produced in cooperation with [Future Agricultures](#), argues that contradictory positions on the scale of the current food price crisis are caused, in part, by the use of inappropriate price indices for comparisons of real prices over time. A major implication is that we need to develop different price indices to describe and analyse changes in real food prices and their effects in different countries (high-income or low-income) and on different groups of people (poor or rich) within countries.

## Variations in Real Prices

Use of indices to calculate changes in real rather than nominal prices is needed to strip out the effects of inflation (the falling value of money) in historical analyses of changing prices. This is achieved by comparing changes in the nominal price of a particular good or service against some general price index, which measures changes in the average nominal prices of all goods or services consumed in an economy, weighted by their respective shares in the total basket of expenditures.

A difficulty arises here because food prices are affected by long-term structural processes of economic growth and changes in income. These processes lead to changes in the relative importance of different goods and services. For example, increasing incomes lead to falls in the relative value of expenditures on foods and low priced non-food items. Hence, the relative weights of the prices of various goods and services inevitably change in growing economies and for groups with growing incomes.

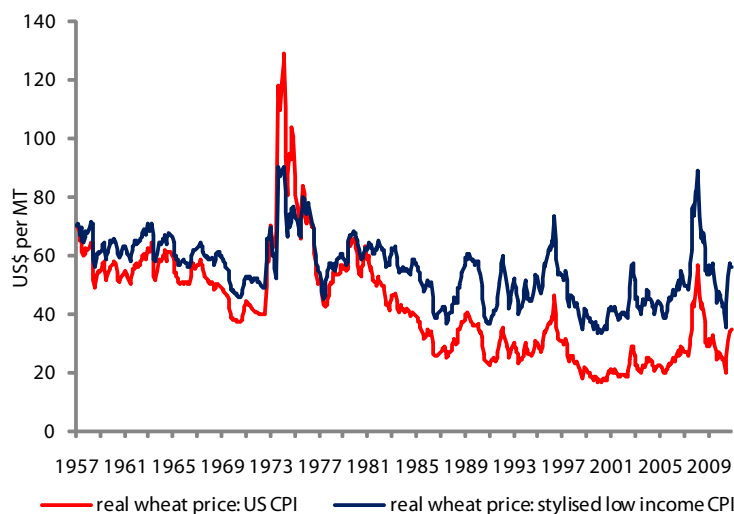
Different price indices should, therefore, be used for countries or income groups with different levels of incomes and varying income growth. These indices should reflect their different expenditure baskets and the differential way that their expenditure baskets are affected by changes in food prices. Such an approach can lead to different changes in real food prices even with the same changes in nominal food prices.

This need for differentiation between high- and low-income groups over time helps resolve the contradiction observed above between the perceived severity of the impacts of recent high food prices and claims that such prices are not particularly high in historical terms. The contradiction arises because global

real prices are generally calculated using price indices based on weights derived from the expenditure patterns of richer countries or richer income groups within countries. Prominent examples are the US consumer price index (CPI) or the World Bank's Manufactures Unit Value Index. The use of such price indices leads to historically low global estimates of current real food prices when the latter are not, in fact, low in historical terms for lower-income groups in low-income countries.

This situation is illustrated below in Figure 1, which compares prices for wheat calculated using the same international nominal price but different price indices. The standard 'real price' calculated with the US CPI is compared with a 'stylised low-income real price' calculated with a CPI that roughly approximates the relative importance of food and non-food expenditures for low-income groups in a low-income country. This is achieved by giving the US CPI a 30% weight and the world food price index a 70% weight.

**Figure 1: Wheat Prices Deflated with a US and a Stylised Low-Income CPI**



Source: Author calculations using a 1957 base and drawing on IMF data on prices and price index

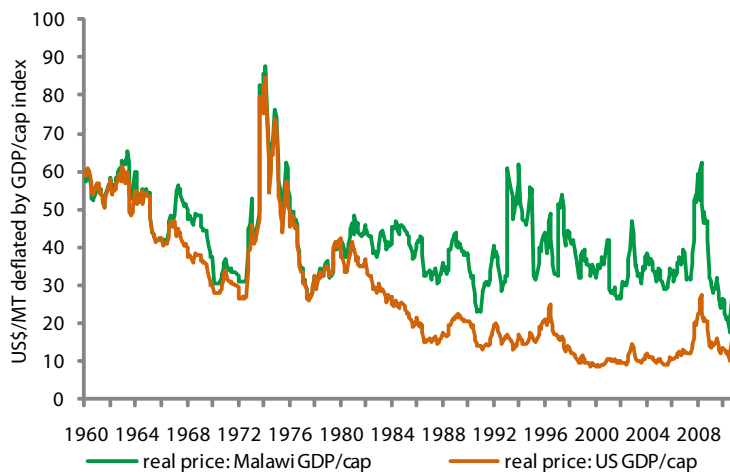
Real wheat prices deflated by the US CPI were generally declining prior to 2002, when the decline flattened, then began to turn up slightly, and had a sharp upturn in 2007. But at their peak in 2008, these real prices were still less than half their peak in 1974. However, the 'stylised low-income real price' series show a markedly different pattern. The lower sensitivity of real wheat prices to changes in nominal prices dampens both the 1974 peak and the subsequent decline in real prices. Hence, real prices remained relatively constant from the late 1970s to 2005, and then began to rise to a peak in 2008 that is very similar to their 1974 peak.

## The Importance of Income

Though this analysis provides valuable insights into differences in real price changes faced by different income groups, it does not address a more fundamental issue: the impacts of increases in food prices on the welfare of poor people are not determined *primarily* by changes in the prices of food relative to

the prices of other goods and services, but by changes in food prices relative to their incomes and expenditures. Hence, in order to investigate movements in real wheat prices based, at least, on differences in income levels between a rich country and a poor country, Figure 2 compares international wheat prices deflated by GDP per capita changes in (a) the United States and (b) Malawi.

**Figure 2: Real Wheat Prices Deflated by US and Malawi GDP Per Capita**



Source: Author calculations based on a 1960 index

Between 1960 and 1980, the two sets of real wheat prices tended to move together as economic growth was similar in both countries. Thereafter, however, they diverged sharply as Malawi's income per capita fell relative to that of the US. While real wheat prices deflated by US GDP per capita dropped sharply after 1980, those deflated by Malawi's GDP per capita remained much higher and more volatile. Then in 2009 and 2010 the two began to converge as the Malawi economy grew faster than the US economy (even though on average Malawians have remained considerably poorer than US citizens).

This kind of analysis is useful in showing how real wheat prices relative to income diverge between countries experiencing different rates of income growth. Like our earlier use of the stylised low-income price index, this approach demonstrates the importance of developing more appropriate measures of real food prices than those based on uniform and misleading applications of US or global price indices.

Its weakness is that it does not, of course, account for the effects of skewed income distributions within countries. So, neither of our two measures above adequately describes the differences in the vulnerabilities of low- and high-income groups to high food prices. These differences can be highlighted by examining the effects of price rises on income groups that deploy *different shares* of their income to buy food.

Let us compare the effect of food price increases on high- and low-income groups. For example, if a high-income household spending 10% of its income on basic foods is affected by a 100% rise in food prices, then (without any change in income) it could adjust its food consumption in order to eat less food and/or less

expensive food, and/or reduce its non-food expenditure. If the household made no adjustments to its food consumption, its maximum required cut in non-food expenditures would be from 90% to 80% of its income, i.e. a cut of only 11%.

However, for a low-income household spending 50% of its income on basic foods, the options for responding to the same 100% rise in food prices would be much more limited. It would already be consuming a low-cost diet, with limited options to reduce food expenditures without seriously affecting already low nutrient intakes. If it could not make significant cuts in the costs of its food consumption, it would have to face very serious cuts in non-food expenditures, such as on clothing, housing, energy and other essential items.

#### Alternative Real Price Measures

This Development Viewpoint demonstrates the difficulties in using a single real food price measure when considering the implications of changes in food prices for different income groups. So, what measures of real food prices could provide a better reading of the effects of changes in food prices on the poor? Alternative measures more relevant to the conditions of poorer people differ as regards the data requirements, the availability of data, and the validity and relevance of their results.

Calculation of real food prices deflated by a CPI calculated for the US but using an expenditure basket appropriate for a relatively low-income group could provide a more globally applicable measure. However, constructing such an index over a significant historical time period would present challenges. Another option would be to calculate real food prices relative to differences in income levels among groups. Such an approach faces similar, though surmountable, challenges in defining appropriate income classes and their levels of income.

Both of the above measures would, however, ignore the relationship of food prices and income to differences in the *shares* of expenditures on food of different groups. Hence, they could not accurately depict the critical impact of food prices on the real incomes and welfare of poor people. The ideal measure would define real food prices relative to the expenditure shares of high- and low-income groups within both high- and low-income countries. Developing such a measure, with a reliable and accessible database, should thus be an important goal for analysing and reporting on the real effects of changes in global food price across different countries and people.

#### For a full presentation of the arguments summarised here, with full bibliographic details, see:

Andrew Dorward (2011) *Getting Real about Food Prices*, Working Paper. London: School of Oriental and African Studies, February 2011, <http://eprints.soas.ac.uk/11094/>.

For more information about the Future Agricultures Consortium, please consult:



[www.future-agricultures.org](http://www.future-agricultures.org)