

THE LAW OF ONE FOOD PRICE

by

Kenneth W. Clements, Jiawei Si and Long H. Vo
Department of Economics, UWA Business School

Extended Abstract

Objective or research question

An efficient market allocates resources to equalise prices of the same good. Are food prices – important to literally everyone in the world, and especially the poor – equalised across countries? In view of the substantial distortions to international trade in agriculture and the large swings of currencies away from long-term equilibrium values, equalisation would seem an unlikely proposition. But the forces of arbitrage – buying low and selling high – could still govern a tendency towards food prices equalisation over the long term. In this paper, we ask, are these forces sufficiently strong to more or less overcome trade barriers and currency volatility, thereby equalising *changes* in food prices over the longer term?

Background

Despite the fall in average tariffs globally after nine rounds of WTO trade negotiations, non-tariff distortions to agricultural trade remain significant. Examples include the long-standing import restrictions of Japan resulting in many food prices substantially above world prices, and Europe's massive export subsidies under the Common Agricultural Policy. Add to this is the pronounced gyrations of currency values, large transport and distribution costs, trade taxes and other wedges, and it would seem that segmented food markets with different prices in different countries would be the norm, at least in the short term. What of the long-run situation?

Methods

To investigate the validity of the law of one food price (LOFP), we employ the prices of food and agricultural products in cross-sectional regressions and panel unit-root and co-integration tests. We also use impulse response functions and simulations of prices within a vector error-correction framework to examine the adjustment paths of price and exchange rates toward LOFP.

Results and conclusions

We find considerable support for LOFP. This result is obtained in three basic ways. First, retail prices from the International Comparisons Program (World Bank, 2013, unpublished) were used in cross-country and cross-commodity regressions for a large number of food items and countries. Second, producer prices over time, countries and products from the Food and Agriculture Organisation (2018) were employed in panel unit-roots tests. Third, a vector error-correction approach was used for wheat prices in Australia and the US to examine in detail the dynamics of the adjustment process of prices and exchange rates. We found that variations in the exchange rate were relatively more important than wheat prices in bringing about adjustments to LOFP.

Given the apparently stringent requirements for LOFP to hold, the results are surprising, but they need careful interpretation. We do not claim LOFP holds in the short run, nor that it holds for all commodities, but only as a long-run tendency for the majority of commodities in the sense that departures from parity are short-lived. It takes time for prices to be arbitrated across countries because of three reasons. First, there can be difficulties in collecting reliable market information and for participants to be convinced price divergences are worthwhile acting upon, especially when driven by currency movements (are they likely to reverse direction?). Second, some trade costs are essentially fixed, and so overcoming this hurdle is also likely to be time-consuming (if, for example, local agents have to be engaged to deal with importing-country regulations). Third, food and agricultural prices can have costly nontraded components, and devising innovative ways to deal with these costs (such as bypassing the traditional retail model with on-line sales technologies) can incur significant trial-and-error learning costs, further adding to delays.