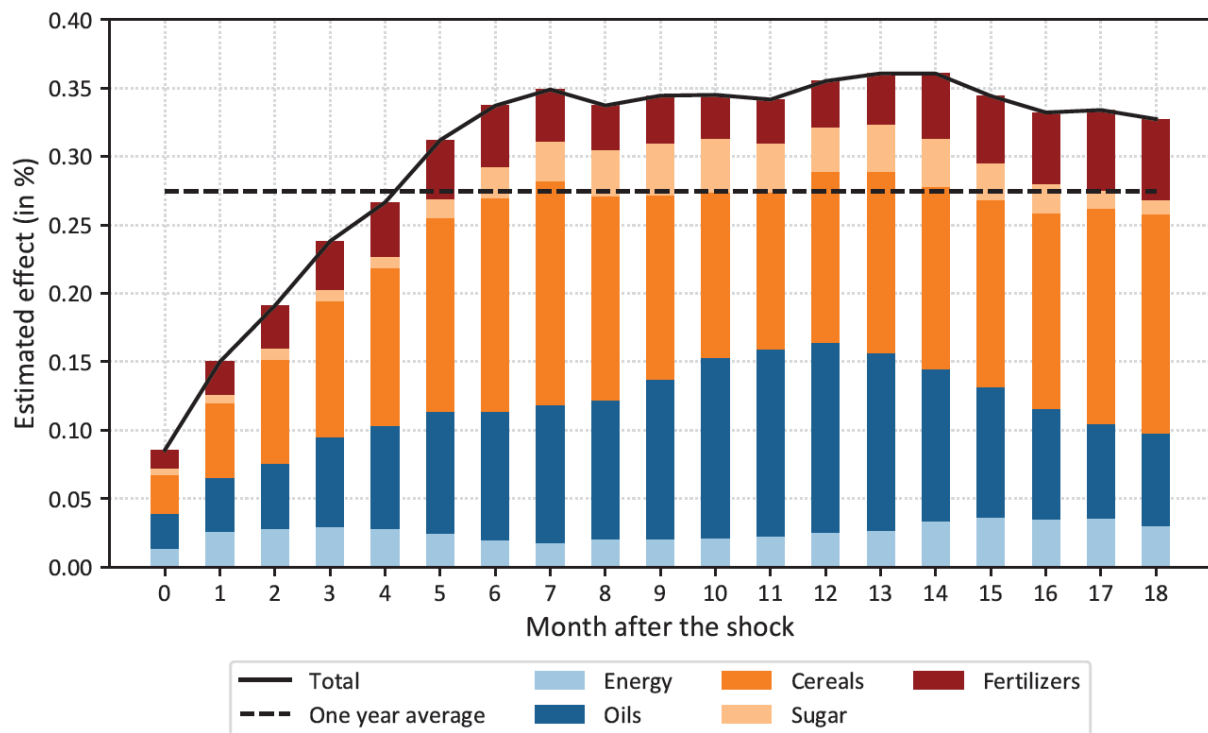


The pass-through of commodity prices to inflation in Africa

By [Thibault Lemaire](#) and Paul Vertier

The rise in world commodity prices since mid-2020 has fuelled inflation in Africa. A new estimation strategy shows a pass-through of about 30% from commodity prices to consumer prices on the continent, which is higher than existing estimates. The impact is greater in low-income countries and in those countries where the food share in the consumption basket is the largest.

Chart 1: Impact of a 1% rise in commodity prices on consumer prices in Africa



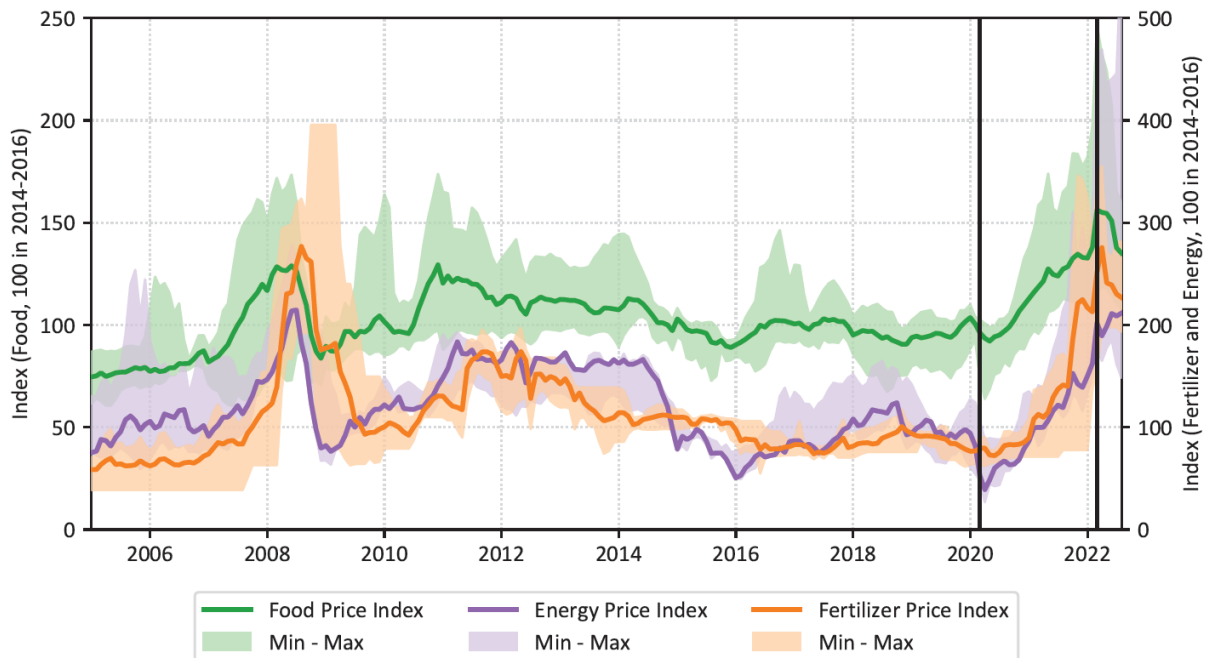
Source: Authors' calculations based on the local projection method. Data from the World Bank, International Monetary Fund (IMF), International Disaster Database (EM-DAT), and Armed Conflict Location and Event Data Project (ACLED).

Strong and heterogeneous exposure of Africa to the recent commodity price rise

After falling markedly at the start of the Covid-19 pandemic, commodity prices rebounded as of mid-2020, and reached historical highs in the spring of 2022 following Russia's invasion of Ukraine: rise of 53% in the United Nations Food and Agriculture Organization's (FAO) food

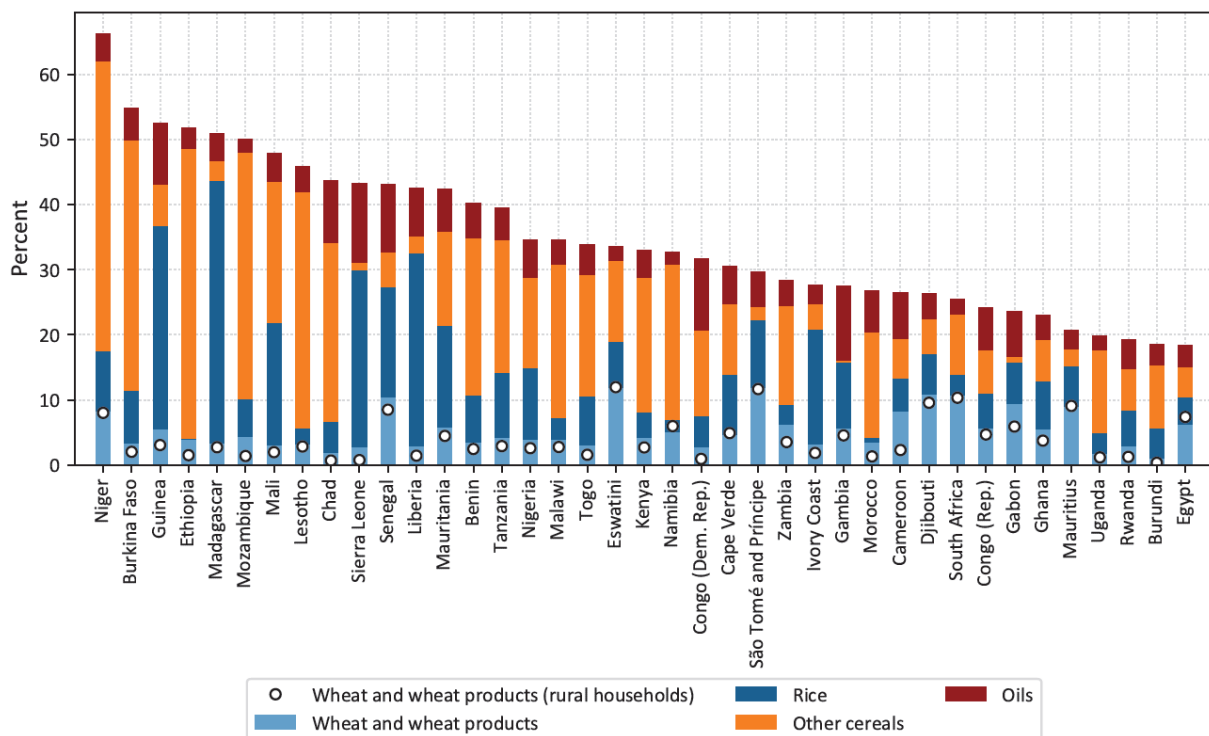
price index between the first half of 2020 and first half of 2022; rises of 196% and 214% respectively in the World Bank energy price and fertilizer price indices (see Chart 2).

Chart 2: World food and fertilizer prices



Source: FAO (food prices), World Bank (energy and fertilizer prices). Produced by the authors.

African economies are vulnerable to commodity price increases. The majority of countries are net importers of food products and, on average, food accounts for nearly half of household consumption baskets. In addition, according to the International Monetary Fund (IMF), 12% of the population of Sub-Saharan Africa live in severe food insecurity in 2022, an increase of 30% since the start of 2020. Nevertheless, as commodity price rises vary in size (e.g. rises of 58% for cereals and 137% for oils between the first half of 2020 and first half of 2022), individual countries' exposure may differ due to disparities in the structure of their household consumption baskets. The share of cereals and vegetable oils in food consumption, for example, exceeds 50% in six African countries, but is below 20% in four other countries (see Chart 3). The share of food and energy in total consumption also varies widely, from over 70% in four countries to less than 30% in three other countries.

Chart 3: Share of cereals and oils in food consumption

Source: World Bank (*Global Consumption Database, 1996-2011*), authors' calculations.

Measuring the pass-through of commodity prices to inflation: a complex exercise

Various studies have tried to measure the pass-through of food and energy commodity prices to consumer price indices (including [Bekkers et al., 2017](#) and [Gelos and Ustyugova, 2017](#)). The results generally find a pass-through of between 5% and 15%. However, these pass-throughs are likely to be underestimated, as they are based on aggregate commodity price indices that use a weighting scheme that is representative at the global level, and hence do not reflect local realities. More recently, [Okou et al., 2022](#) have found an almost complete pass-through of certain world staple food prices to the prices observed in local markets in Sub-Saharan Africa. However, this type of approach does not capture potential indirect effects on the prices of other consumer goods (e.g. processed food). Lastly, existing studies generally do not take into account shocks to fertilizer prices, which can have a longer-term impact on local production.

In an article in the *Rapport annuel des coopérations monétaires Afrique-France 2021*, we estimate, country by country, the pass-through of global commodity prices to consumer prices in Africa, incorporating simultaneously 17 commodities grouped into five categories (cereals, vegetable oils, sugar, energy, fertilizer).

The use of disaggregated price indices allows us to better capture the heterogeneity of global price variations, as well as cross-correlations between commodity categories and between goods within categories. Using these indices in estimated country-by-country

regressions also allows us to better capture the heterogeneity of consumption baskets' compositions across African countries. The impacts are estimated net of exchange rate effects, natural disasters, civil conflicts and interest rate changes. However, they do not take into account the measures implemented to mitigate price rises (subsidies, price caps, etc.), or the relatively strong prevalence of self-sufficiency across the continent.

A strong and lasting pass-through of commodity prices to consumer prices

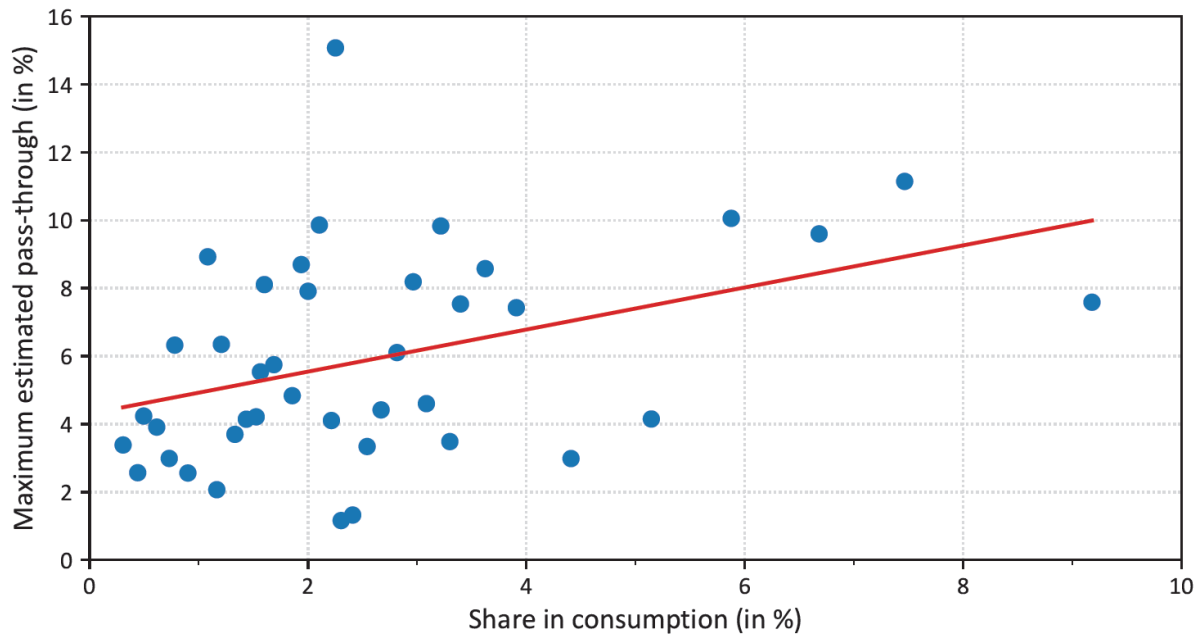
Chart 1 shows, for Africa as a whole, the cumulative impact on consumer prices of a simultaneous 1% rise in the world prices of 17 commodities, with the results aggregated by category (using GDP at purchasing power parity in 2021). Only positive impacts that exceed the 10% significance threshold are taken into account.

Such a 1% rise leads, across Africa, to a rapid and lasting increase in consumer prices of about 0.3% on average, corresponding to a pass-through of 30%. The pass-through to domestic prices increases in the seven months following the shock and then reaches a plateau. Adding the negative or non-significant coefficients, the pass-through would reach 20% to 25%.

Cereal and vegetable oil prices have the largest impact, with average pass-throughs of 11% and 9%, respectively, over one year. These two categories account for more than two-thirds of the total impact over the period. Rises in energy commodity prices have a limited effect on consumer prices, with an average pass-through of 2% over one year. This might be attributable to the high prevalence of fuel subsidies across the continent. The impact of a rise in fertilizer prices is moderate over one year (3% on average), but then increases towards the end of the horizon, reaching 6% after 18 months. This illustrates the impact that higher fertilizer prices can have on subsequent harvests.

The results show significant cross-country disparities, with a pass-through of close to 10% for Maghreb economies and South Africa, and of over 45% in many countries, including Chad, Burundi, Kenya and several island economies.

Chart 4: Correlation between estimated pass-through and goods shares in consumption baskets in Africa



Source: World Bank (consumption shares), pass-through rates calculated by the authors based on local projection methods and data from the World Bank, IMF, EM-DAT and ACLED.

The pass-through of world commodity prices to consumer prices in Africa appears to be related to a number of structural factors. Higher income per capita is associated with a lower pass-through, and a higher share of goods produced from a given commodity in the consumption basket is associated with a higher pass-through for this commodity (see Chart 4). In addition, pass-throughs are higher on average in countries with the highest levels of food insecurity.

The IMF's estimates in its October 2022 *World Economic Outlook* imply a pass-through of food commodity prices to inflation of between 15% and 20% in low-income countries, which is below our estimates. The IMF also estimates that, on average in 2022, African inflation rates should be between 4 and 4.5 percentage points higher than in 2020. These price increases come at a time when the continent is particularly vulnerable, having seen a sharp drop in income per capita during the Covid-19 pandemic, and with little fiscal policy space. Africa's future food resilience will depend in large part on its ability to implement ambitious strategies to capitalise on its many assets and achieve Sustainable Development Goal 2 of zero hunger.