



Rising cereal prices in Ethiopia

An assessment and possible contributing factors

Bart Minten and Paul Dorosh

Abstract

Nominal cereal prices in Ethiopia in July 2019 were significantly higher than the year before – maize prices had risen by 32 percent; sorghum by 39 percent; teff by 35 percent; and wheat by 2 percent. Moreover, there is anecdotal evidence that nominal cereal prices have increased rapidly since. A number of factors help explain this pattern:

- Overall inflation has been high both for food and non-food items. This general high inflation is linked to macro factors related to broad money and credit growth.
- Overall changes in prices for inputs, labor, and transport have important impacts on production costs for agricultural products, thereby putting upward pressure on prices.

However, controlling for inflation, real prices are close to average real prices over the last ten years, indicating little change in supply relative to demand.

- Seasonality is important in Ethiopian cereal markets, with mostly higher prices in August and September, just before the new *Meher* harvest comes in. The current (September 2019) high prices for food are partly a seasonal phenomenon.
- There are no signs of increased real marketing costs.

Nonetheless, given their importance for food security, close monitoring and assessments of the functioning of Ethiopia's food markets remains necessary.

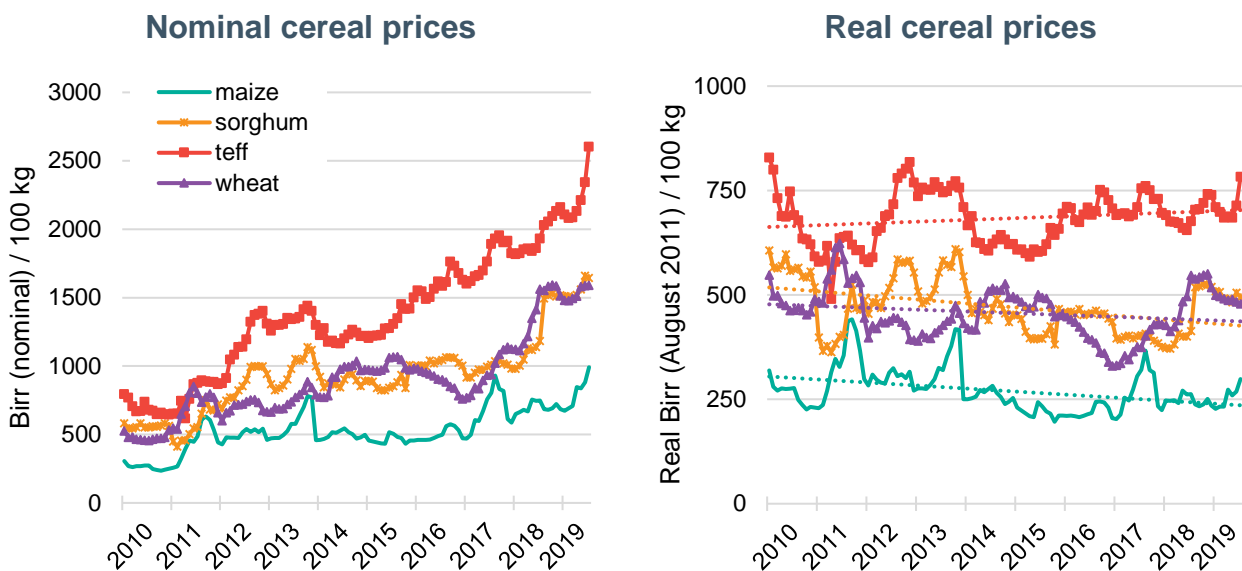
Introduction

Prices of most cereals, and indeed of most products in Ethiopia, have risen sharply since mid-2018. Many hypotheses have been offered to explain the reasons for these increases, including shortfalls in supply and breakdowns in markets. Prices of most cereals have not increased faster than average prices in the overall economy (as measured by the Consumer Price Index), however, suggesting that a major cause of the cereal price increase in overall macro-economic inflation is related to macro-economic shocks and policies. This note focuses mainly on the real prices of cereals, i.e., actual (nominal) prices adjusted for overall inflation.

Cereal price evolution

Prices of the major cereals in Ethiopia in mid-2019 were significantly higher than in mid-2018. Maize prices rose by 32 percent; while sorghum, teff, and wheat prices rose by 39, 35 and 2 percent, respectively. These increases in nominal prices are part of a long run price trend. Over the last 10 years (from January 2010 until May 2019, the last month that data were available), prices in Addis Ababa, the biggest city in the country and therefore a price setter for food prices nationally, have increased significantly. Cereal prices in July 2019 were from 2.8 to 3.3 times higher than in January 2010 (Figure 1, left panel). In nominal terms, we therefore see important price changes over the long- and the short-term. Moreover, anecdotal reports from cereal wholesale markets indicate that prices have since been rising further.

Figure 1: Nominal and real cereal price evolution from January 2010 to May 2019, wholesale price, Addis Ababa, Birr



Source: Calculations based on EGTE wholesale price data

When we control for overall inflation and use real_cereal prices,¹ comparing the real price level of this year (July 2019) with the same time last year (July 2018), the right panel in Figure 1 shows that the changes are smaller but still substantial – prices for maize, sorghum, and teff rose by 13, 19, and 15 percent, respectively, while that of wheat fell by 13 percent. Three of the four cereals had nominal price increases over the year to July 2019 that were higher than the overall inflation rate (as measured by the Consumer Price Index (CPI)). However, in the longer term from 2010 to 2019, linear trends in the real prices of cereals show that prices decreased for maize, wheat, and sorghum (Figure 1, right panel). But, they did increase for teff.

Factors associated with cereal price movement

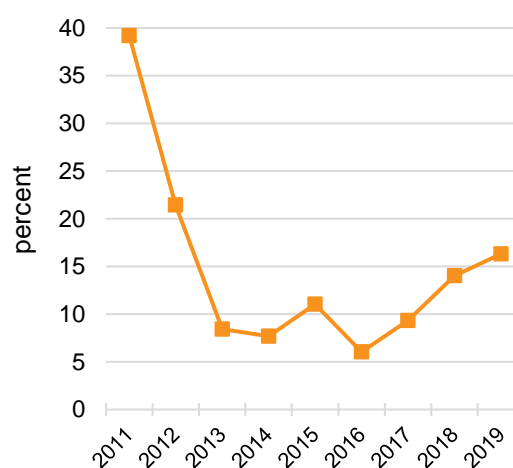
Overall inflation

The considerable difference between nominal and real prices indicates significant inflation in Ethiopia in recent years. Figure 2 show how annual inflation evolved between 2011 and 2019 using the annual inflation rate as of July each year. Inflation rates were very high at the beginning of the

¹ The real price of a commodity, such as teff, is the nominal price (Pteff) divided by a price index (we use the CPI for Ethiopia): P_{teff} / CPI .

period, reaching 35 percent in 2011. However, they were brought down significantly thereafter. In recent years, inflation rates have been on the rise again, which analysts have linked to broad money and credit growth (IMF 2018).² Over the period July 2018 to July 2019, an inflation rate of 16 percent was observed. These numbers have since increased: Year-on-year inflation in August 2019 was estimated at 18 percent, with food prices having risen more, at 23 percent, than prices for non-food items, at 12 percent. The causes of macro-economic inflation are complex and are beyond the scope of this note. However, it is worth noting that, of the major cereals, only for wheat does international trade account for more than 1 percent of supply or overall demand. Consequently, most of the factors driving the recent increase in cereal prices in Ethiopia are domestic.

Figure 2: National annual inflation rate, Ethiopia, 2011 to 2019

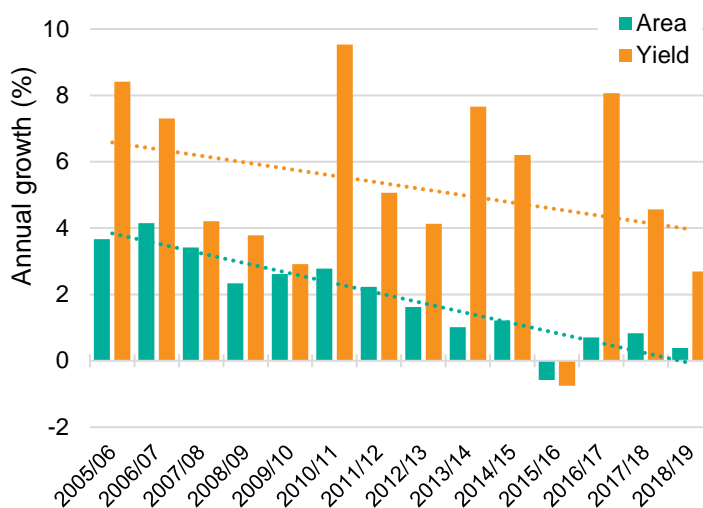


Source: Calculations based on CSA CPI data
 Note: The year-on-year inflation rate as estimated in the month of July each year is used to construct this graph.

Changes in supply

There is substantial evidence that production has been increasing over the last decade, although perhaps not by as much as official statistics indicate. However, agricultural growth has been slowing as shown by the linear trend lines in Figure 3. In the short-term, FEWS NET assessments (<http://fews.net/east-africa/ethiopia>), however, do not indicate that there was a significant reduction in the 2019 harvest at national level compared to earlier periods. In fact, available evidence shows that there have been yield increases for almost all cereals in recent years.

Figure 3: Area and yield growth for grains in Ethiopia



Source: Calculations based on CSA data

Changes in demand

Data from national Household Consumption and Expenditure Surveys (HCES) confirms that there has been an increase in consumption expenditures and a decrease in poverty in the country over recent years (Figure 4).³ When incomes grow, food consumption goes up – however, consumption increases with rising incomes are generally less for cereals and greater for high-value crops, such as dairy, meat, fruits, and vegetables.⁴ Other surveys – such as the recently released mini-DHS

² <https://www.imf.org/en/Publications/CR/Issues/2018/12/04/The-Federal-Democratic-Republic-of-Ethiopia-2018-Article-IV-Consultation-Press-Release-Staff-46434>

³ World Bank, 2018. Ethiopia Economic Update 7: Special Topic: Poverty and Household Welfare in Ethiopia, 2011-2016, Washington DC: World Bank.

⁴ Worku, I., Dereje, M., Minten, B., Hirvonen, K. 2017. Diet transformation in Africa: The case of Ethiopia. Agricultural Economics 48 (2017) supplement 73–86

(Demographic and Health Survey) – show recent and continuing improvements in a number of nutrition indicators. This suggests that improvements in food consumption and broader welfare continue. As such, there are no indications of recent significant shocks to demand that might have influenced prices in 2018 and 2019.

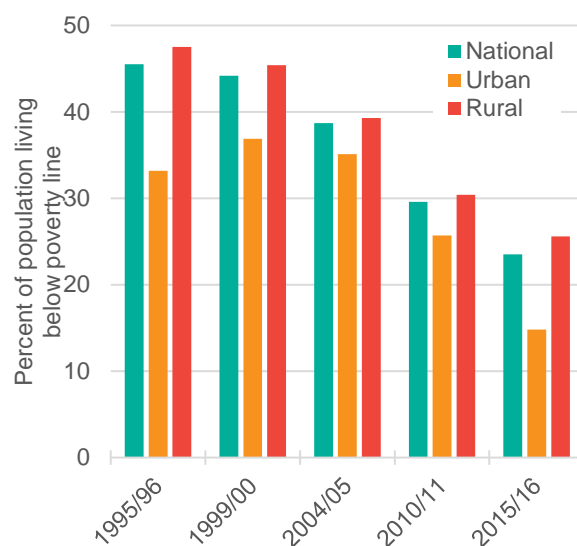
Seasonality

Seasonal indices for the four cereals for the last decade are shown in Figure 5. They indicate that prices for maize, sorghum and teff are typically highest in the month of August and September. Prices in real terms for maize are typically 20 percent higher in August than in December and January. For wheat, the seasonal peak usually comes earlier in June. The current high cereal prices therefore are likely a seasonal phenomenon. Prices can be expected to drop when the Meher harvest comes in later in 2019.

Speculation and market power

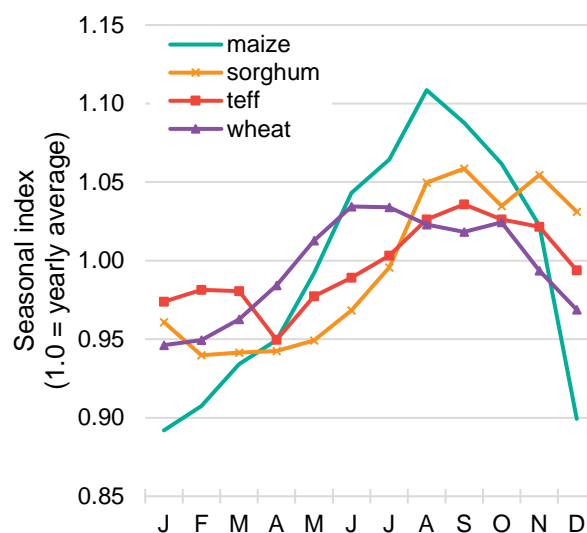
Given the large number of players in cereal markets, it is unlikely that cereal prices are linked to monopoly or oligopoly power or that this structure of cereals markets has deteriorated recently. Most of the farmers involved in major value chains indicated in recent surveys that they have a large number of choices between traders when selling their products. Moreover, their choices seem to have improved over time (Table 1). However, market power might be an issue for a number of niche food markets – such as for some vegetables or fruits – but more research would be warranted to confirm this.

Figure 4: Poverty headcount changes in Ethiopia, 1995/96 to 2015/16



Source: CSA data

Figure 5: Price indices for cereals in Addis Ababa, by month, January 2010 to May 2019



Source: Calculations based on EGTE wholesale price data

Table 1: Changes over time in choices of trade outlets for coffee and dairy farmers

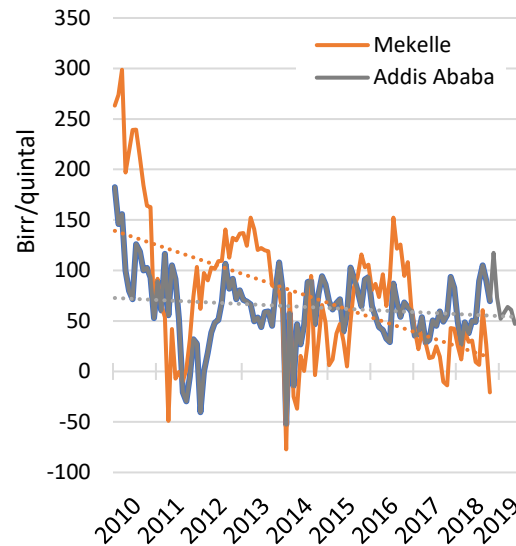
Choice between traders	Coffee farmers		Dairy farmers	
	Survey (2014)	Ten years earlier	Survey (2018)	Ten years earlier
considerable, %	69	27	73	19
a little, %	26	50	20	58
no choice, %	6	23	7	24

Source: ESSP surveys

Market breakdowns

Recent unrest in the country might have led to frictions in the functioning of markets. A number of empirical studies have been done on the functioning of agricultural markets over the years.⁵ The upshot of these studies is that they function relatively well, especially so for the major cereals. In the case of cereal markets, we see a decline in real marketing margins between surplus and deficit areas. For example, Figure 5 shows for wheat the price differences between Addis Ababa and Bale (a major supply region for wheat) and between Mekelle and Bale. Both lines show, on average, a reduction in real marketing margins over time. The graph also shows that there is no evidence that these marketing margins have increased in recent periods because of the problems in the country affecting marketing flows.⁶

Figure 5: Price differences for wheat between Bale and wholesale markets in Mekelle and Addis Ababa, 2010 to 2019



Source: Calculations based on EGTE wholesale price data

Further steps

Given their importance for food security, close monitoring and assessments of the functioning of food markets across Ethiopia must continue. Research on the following questions seems useful:

- To what extent is the macro-economic situation impacting the agricultural system and its performance, and what is the role of macro versus sectoral policies?
- What is driving inflation in the country? How can it be kept low?
- What is the price evolution for non-cereal crops?
- To what extent do transport issues, e.g., fuel price volatility, ban of trucks during the day in Addis Ababa, etc., impact price increases?
- What are the impacts on inflation of increasing forced shop closures in Addis Ababa?

⁵ Minten, B., Tamru, S., Stifel, D. (2014), Structural transformation in cereal markets in Ethiopia, *Journal of Development Studies*, 50(5): 611-629

⁶ The challenges for agricultural marketing have been especially apparent in the northern part of Ethiopia given some blockage of traffic between Amhara and Tigray. However, alternative transportation routes subsequently opened up.

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