

## Box 3 Recent Dynamics in Colombian Beef Prices<sup>1</sup>

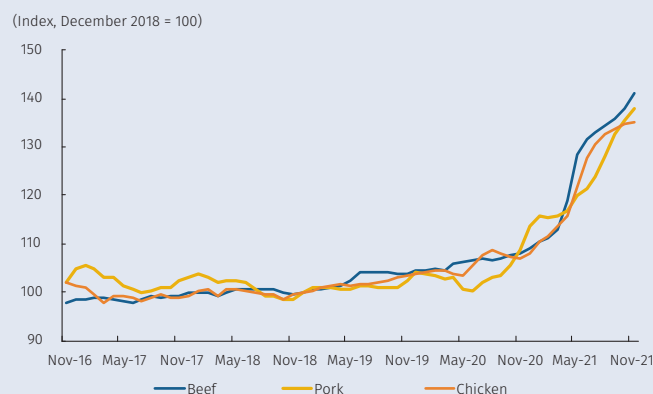
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This box provides a descriptive analysis of recent dynamics in Colombian beef prices. It first highlights price behavior for beef and its main substitutes, then discusses possible hypotheses for recent developments. Finally, it offers a medium-term outlook for price behavior.

Graph B3.1 illustrates consumer price indices (CPIs) for different animal proteins in Colombia. The graph suggests that chicken, pork, and beef prices grew below 1% annually between July 2017 and July 2019, before substantial increases in 2021. Between January and November 2021, beef prices rose 29.5%, chicken 24.9%, and pork 21.5%.

The recent increase in domestic meat prices coincides with rising international prices (Graph B3.2). These have been associated with high commodity prices for corn and soy, which are important in meat production, and with demand pressures as economies recover from COVID-19. This external price environment could affect Colombian beef prices directly, through increased foreign demand and higher production costs, and indirectly through higher prices for protein substitutes.

Graph B3.1  
CPI for meat by type

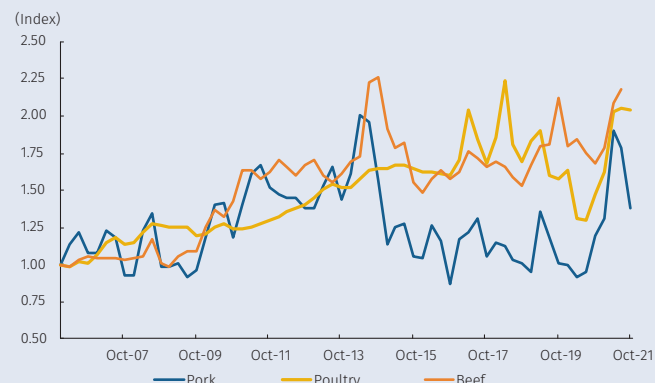


Source: DANE; calculations by the authors

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Graph B3.2  
International price index in dollars for meat by type<sup>a/</sup>  
(2006, Q4 = 100)



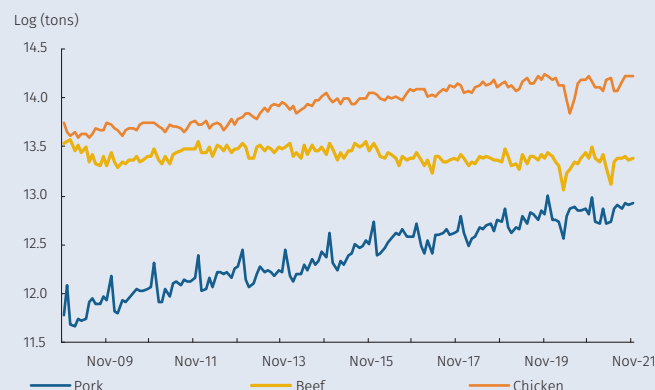
a/ Each price corresponds to the price for the main exporter of each product  
Source: International Monetary Fund; calculations by the authors

### 1. Production Shocks on Beef Substitutes

Between 2017 and 2020, Colombian pork and chicken production grew by 129.0% and 52.7%, respectively, while beef production declined 12.3% (Graph B3.3). Growth in the pork and chicken supply, associated partly with improvements in production technology, generated downward pressure on prices for these products and their substitutes, including beef. However, this effect may have been reversed in 2021 amid higher input costs and roadblocks associated with a national strike that particularly hampered chicken and pork production. According to the National Federation of Grain, Legume, and Soy Farmers (FENALCE for its initials in Spanish), the price to domestic producers for grains, legumes, and soy, all of which are important for pig- and chickenfeed, rose 56% from January 2020 to November 2021. Meanwhile, roadblocks in the second quarter of 2021 affected food deliveries to some poultry and pig farms in Colombia's southwest, affecting animal growth and reproduction cycles and leading to persistent effects in medium-term supply.

The shock to chicken and pork production may have set off a demand shock in the market for substitute proteins. Given

Graph B3.3  
Production volume for beef, pork, and chicken<sup>a/</sup>



a/ Weight for pork and beef includes production for domestic consumption and exports. Chicken production is measured as weight in meat  
Source: DANE and FENAVI; calculations by the authors

the lag between calf reproduction and cattle slaughter, and retention and liquidation cycles for livestock, the supply of beef is relatively inelastic in the short term. In this context, a demand shock might put upward pressure on beef prices.

Graph B3.4 shows the evolution of the margin between consumer and producer prices for beef in Colombia. This indicator, which serves as a proxy of commercial margins on domestic beef production, grew 5% between January and November 2021 after four years of relative stability. This increase, after a demand shock along the lines of what would be expected from increases in chicken and pork prices, would be consistent with imperfect competition in the beef market.

**Graph B3.4**  
Commercialization margin for beef<sup>a/</sup>  
(December 2018 = 100)

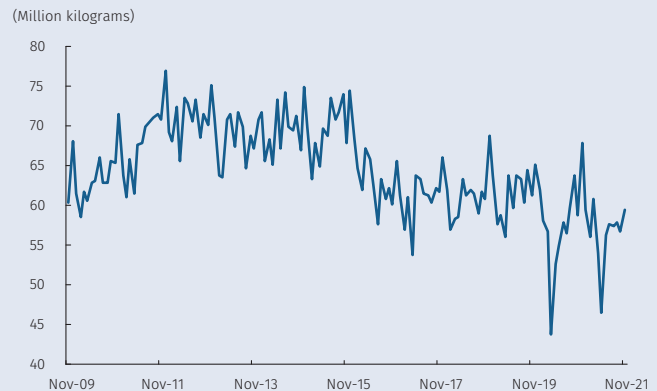


a/ Calculated as the CPI for beef over the PPI for beef for domestic supply  
Source: DANE; calculations by the authors

## 2. Exports

A reduction in the supply of beef intended for local consumption, amid increased exports, may also have put upward pressure on meat prices<sup>2</sup>. Graph B3.5 suggests that the volume of meat for local consumption indeed fell to a historical low in 2021. This decline was likely the result of a confluence of factors, including roadblocks in the second quarter of 2021; retention in the livestock cycle associated with expectations for higher prices in the medium term; and an increase in exports that displaced cattle for domestic consumption toward international markets.

**Graph B3.5**  
Weight of meat slaughter for domestic consumption<sup>a/</sup>

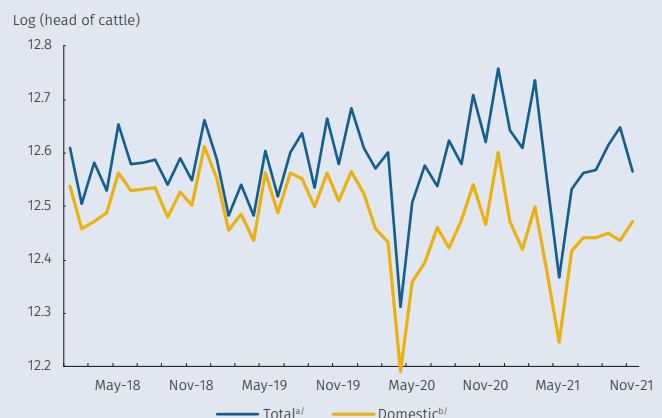


a/ Change in weight of cattle sacrificed for the domestic market  
Source: DANE

Graph B3.6 illustrates monthly changes in head of cattle withdrawn from the domestic inventory. The blue line shows the total number for domestic consumption and export (meat and live cattle). The yellow line shows slaughter intended for domestic consumption. The gap between the blue line and the yellow line represents total exports. Between June and October 2021, cattle exports grew 90%, while the figure for domestic consumption remained relatively stable. In 2020 and 2021 between 10% and 20% of cattle withdrawn from monthly inventory was exported. Of these, live cattle represented close to 50%. The most recent available data shows a small fall in exports to November 2021 and an increase in slaughter for domestic consumption.

Meanwhile, total export values increased 22% between 2020 and 2021 (to October), growing from USD 267,177 to USD 327,500. These values remained below those registered in 2008 and 2009 (between USD 600,000-USD 700,000) and in 2013 (close to USD 500,00) (Graph B3.7).

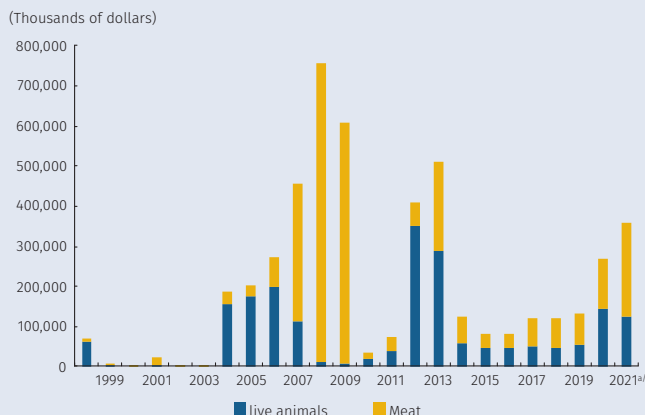
**Graph B3.6**  
Slaughter and export of head of cattle



a/ Total slaughter (for domestic consumption and export of meat) plus exports of live cattle  
b/ Cattle slaughter for domestic consumption  
Source: DANE and FEDEGAN; calculations by the authors.

2 In February 2020 Colombia recovered its designation as being free of foot-and-mouth disease, after temporarily losing that status in 2018.

**Graph B3.7**  
Value of beef exports: living animals and meat products



a/ Data through October 2021  
Source: FEDEGAN; calculations by the authors

The significant increase in livestock exports may not fully explain the increase in domestic meat prices. For starters, the volume of cattle for domestic consumption remains close to four times higher than the volume of exports. In fact, previous periods exhibited higher export levels without leading to substantial reductions in supply or higher prices (Graph B3.7). That said, increased exports in the context of high international prices, such as those that currently prevail, could have generated upward pressure on prices and contributed, to some degree, to the increases observed in 2021.

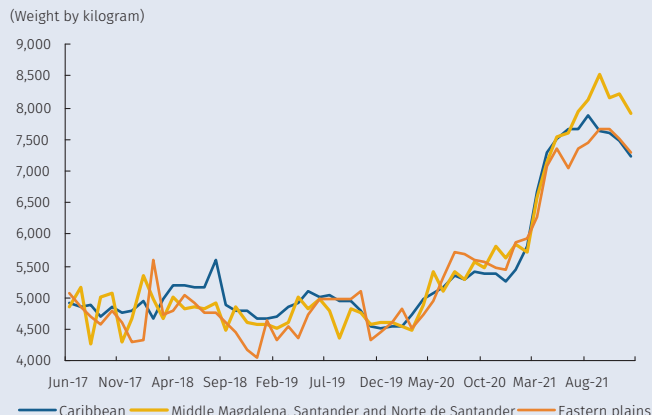
### 3. Direct Effects of Domestic and External Shocks

Graph B3.6 illustrates the decline in cattle slaughter in May 2021 that coincided with the national strike. Difficulties in transporting meat and live cattle could have explained this decline. However, these difficulties should have been resolved as roadblocks were lifted. It is unlikely that this would have had persistent effects on calf supply. Likewise, fattening cattle in Colombia feed primarily on grass, and as a result higher input prices on food concentrates would not be expected to lead to significant increases in production costs. While prices for some nutritional supplements and medicines would have increased, their contribution to total costs is relatively low.

### 4. Medium-term Outlook

According to information from FEDEGÁN, the domestic inventory in head of cattle rose 30.6% between 2015 and 2021, and the percentage of heifers sacrificed declined 2.63

**Graph B3.8**  
Average price of bull calves (Kilograms of living cattle)



Source: FEDEGAN; calculations by the authors.

percentage points in the same period. As a consequence, herd pressures are not expected in the immediate future. At the same time, while the price for bull calves increased close to 30% between January and May 2021, these price adjustments moderated starting in the second half of 2021 (Graph B3.8). This could suggest a possible deceleration in the growth of final beef prices in the medium term. Export dynamics in the medium term remain highly uncertain and will depend on the country's retention of its designation as being free from foot-and-mouth disease and the evolution of global demand, specifically for the type of environmental and quality certified beef produced in Colombia.

In conclusion, the upward trend in beef prices in 2021 was likely the result of a confluence of supply and demand factors. These include the recovery in international demand, and with it the increase in exports of meat and live cattle, and increased production costs of substitute goods such as chicken and pork, which could have put upward pressure on beef prices.

Looking forward, there do not appear to be pressures on livestock inventory that would affect supply in the medium term. As a result, the evolution of domestic prices for beef would depend largely on export behavior and the evolution of international prices on inputs such as corn and soy, which are important in the production of substitutes such as chicken and pork.