

Volatile coffee prices: covid-19 and market fundamentals

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and the International Food Policy Research Institute (IFPRI).*

Over the past three months, coffee prices have experienced multiple spikes and high volatility. This is in contrast to [world market prices of major staple foods, which have remained relatively stable](#). While experts initially attributed the instability of coffee prices to supply-side uncertainty and market tightening, the covid-19 pandemic seems to have aggravated coffee's price fluctuations. The novel coronavirus represents an unprecedented joint supply and demand shock to the global coffee sector, constituting an enormous challenge to coffee growers, farm workers, and downstream value chain actors. These various supply and demand impacts will be felt at different points in time further contributing to global market uncertainties and the ongoing price volatility. The pandemic may also have major implications for poverty and food insecurity for the world's 25 million coffee producers, most of whom are smallholders in low- and middle-income countries that are unprepared to respond to a public health crisis of this proportion.

Recent evolution of coffee prices and high volatility

The ICO Composite Indicator Price², which is a weighted average of all major coffee origins and types, has shown a fluctuating but upward trend since February. After a 6.9 percent month-to-month increase in March (averaging 109.05 US cents/pound), the composite indicator averaged 108.91 US cents/pound in April – the third highest monthly average in crop year 2019/20 and 15.3 percent higher

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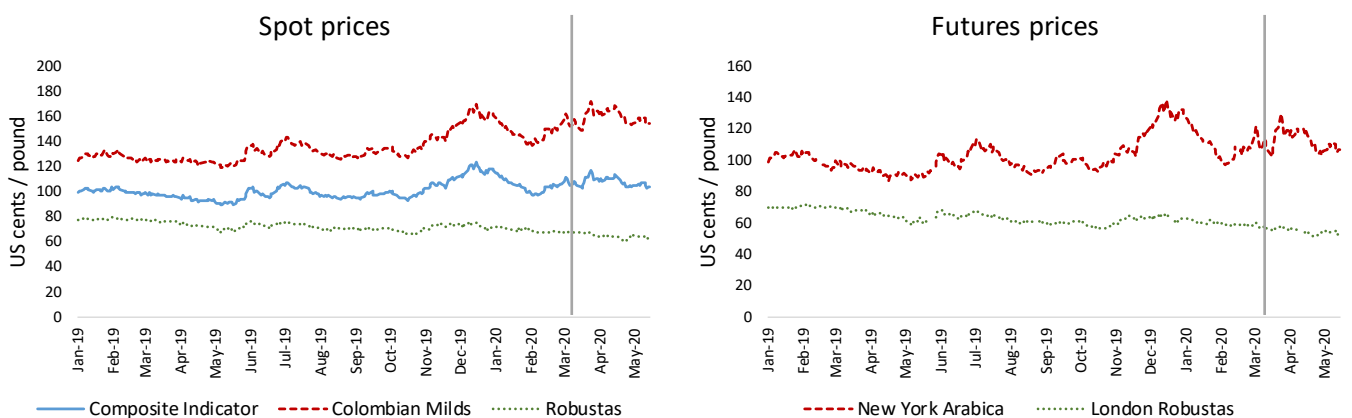
² The ICO Composite Indicator is based on prices for prompt shipment, that is, shipment within 30 calendar days from the date of contract.

than one year ago. These shifts in spot prices are essentially being driven by Arabica coffee, which represents around 60 percent of globally traded coffee and about which there have been more concerns about supply disruptions (combined with ongoing demand uncertainties) compared to Robustas. The price of Colombian Milds, for example, increased by 8.6 percent in March and 1.8 percent in April, averaging 161.92 US cents/pound. Other Milds and Brazilian Naturals showed a rather similar trend, while Robusta prices decreased by 0.9 percent in March and 5.2 percent in April, averaging 63.97 US cents/pound (see the [ICO Coffee Market Report](#)).

Futures prices have followed a similar pattern. The closest-to-maturity Arabica futures price in the New York market increased by 10.8 percent in March and decreased slightly by 1.2 percent in April, averaging 113.61 US cents/pound, while the Robustas 2nd- and 3rd-position average futures price in the London market decreased by 2.8 percent in March and 5.2 percent in April, averaging 54.4 US cents/pound.

As of May 15, the spot (ICO Composite) price remained on 104.5 US cents/pound and the futures (Arabica) price on 106.85 US cents/pound.

Figure 1. Evolution of daily spot and futures coffee prices (January 2, 2019 – May 15, 2020)

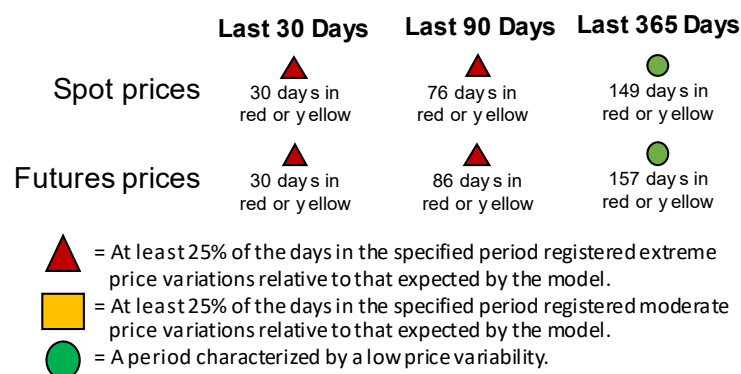


Note: The vertical line indicates the date covid-19 was declared a global pandemic (March 11, 2020).
Source: ICO, Bloomberg.

In terms of day-to-day fluctuations, the ICO Composite Indicator ranged between 103.22 and 117.41 US cents/pound in the past two months (between 149.17-172.56 US cents/pound in the case of Colombian Milds and 60.78-68.9 US cents/pound in

the case of Robustas), while the futures price of Arabica ranged between 102.6 and 129.95 US cents/pound (between 51.35-60.71 US cents/pounds in the case of Robustas futures). These high fluctuations in coffee prices have also raised a red flag on the **Excessive Food Price Variability Early Warning System**, maintained by IFPRI's [Food Security Portal](#), which identifies periods of unusual price variability in different commodity markets (i.e. price variability that exceeds a pre-established estimated band). By May 15, futures coffee (Arabica) prices had shown 83 consecutive days of excessive or moderate variability, while spot (ICO Composite) prices had shown 73 consecutive days of excessive or moderate variability.

Box 1. Spot and futures daily coffee price variability (as of May 15, 2020)



Note: The spot price is the ICO Composite Indicator price and the futures price is the New York Arabica price. The excessive (red) and moderate (yellow) price variability periods are identified through a statistical model of daily fluctuations in price variations.

Source: Authors' calculations based on Excessive Food Price Variability Early Warning System maintained by IFPRI's Food Security Portal.

Covid-19's impact on coffee prices: a joint supply and demand shock with varying effects over time

In early 2020, higher and more volatile coffee prices seemed to stem from poor harvest prospects in some producing countries (e.g., bad weather in Brazil) at a point in time when inventories were running seasonally low. Covid-19 appears to be maintaining and exacerbating these price fluctuations (especially for Arabica coffees) from both the supply and the demand side.

Since the Covid-19 outbreak was declared a global pandemic by the World Health Organization in mid-March, the virus has spread to virtually all coffee exporting

and importing countries. This has resulted in a global shock. While the pandemic is likely to affect all stages of the coffee value chain to a greater or lesser extent – from on-farm operations (coffee cultivation and harvest), post-harvest processing, and domestic and international logistics to intermediate and final demand – the specific impacts on regional and local markets will be felt at different points in time. The overall effects will ultimately depend on the interaction between multiple supply and demand factors, how market actors anticipate and respond to these, and the capacity of individual countries to detect and contain the virus while moving into the harvest season when labor demand peaks.

Key factors driving the high volatility in coffee prices

To identify the major supply- and demand-side factors through which covid-19 seems to be contributing to coffee market volatility, we build on a recent [assessment of channels of transmission into food and agriculture](#) by the Food and Agriculture Organization of the United Nations and on the impact pathways identified by the World Bank in the [evaluation of the 2014 Ebola outbreak in West-African countries](#).

1. Supply-side factors

We are already observing supply-side impacts (to varying degrees) in the downstream value chain, including international shipping and local currency devaluations. Impacts in the upstream value chain will likely occur mostly when more countries enter the harvest season in the upcoming months.

Downstream value chain

Covid-19 infections have had direct impacts on the functioning of key export infrastructure, such as [warehouses and ports](#), as well as indirect effects due to social distancing and other measures imposed by governments to contain the virus. These have resulted in disruptions and delays, and subsequently in increased transaction and trade costs. Across a wide range of coffee-producing countries, businesses have reported that post-harvest processing and movement of crops to harbors for export are subject to delays (Table 1 provides some

anecdotal evidence providing a snapshot of disruptions). For example, in some ports, social distancing measures dictate that only one person at a time can access a container to load bags, resulting in lower packing density and thus one-third fewer bags per container. In addition, many port and customs authorities are working with reduced staff. Land-locked countries (e.g. Rwanda, Uganda, Burundi) have experienced delays for trucks crossing the borders of neighboring countries with sea access. While coffee in green form is less perishable than fruits and vegetables, [delays and hold-ups along the supply chain can still negatively affect coffee quality and thereby prices](#). In addition, these delays hinder the timely fulfillment of contracts.

Table 1: Impact of covid-19 pandemic on coffee supply chain in selected countries in April 2020

Country	Official measures taken	Harvest / delivery of coffee	Domestic trucking	Port operations / customs	Container availability
Brazil	Partial lockdown	Harvesting season delayed by 15-20 days in Minas Gerais	Normal	Normal at ports / customs operate with reduced staff	Delays in delivery and shortages with some shipping lines
Colombia	National lockdown until 11/05	Reduced mobility of seasonal workers / 87% of coffee delivery centers open	Minor delays	Operational capacity decreased due to shortage of staff	No major problems reported
India	Lockdown until 03/05	N/A	Trucks are now allowed to move as coffee is essential good	Slowed down operations but returning to normalcy	Number of incoming vessels is reduced
Indonesia	Roadblocks, curfews, social distancing (varies by district)	Robusta is reported to delay about a month	Normal	Normal	Shortage of containers
Kenya	National lockdown (until 05/05) / curfew	N/A	Slight delays	Operations slower due to health & safety protocol, quarantine and mass testing	Incoming vessels reduced as shipping lines cancelled port calls on their routing ex Asia
Peru	Partial lockdown	Restricted entry/exit within regional communities continues	Delays	N/A	No major problems reported
Rwanda	National lockdown until 30/04	No major problems reported	Delays due to covid-19 testing at borders	Delays: Special procedures for testing and truck cleaning at border add 2 days to transit	Normal
Vietnam	Partial lockdown	N/A	Normal	Reduced capacity at Tan Thanh border gate with China	Reduced capacity & frequency on shipping line routes

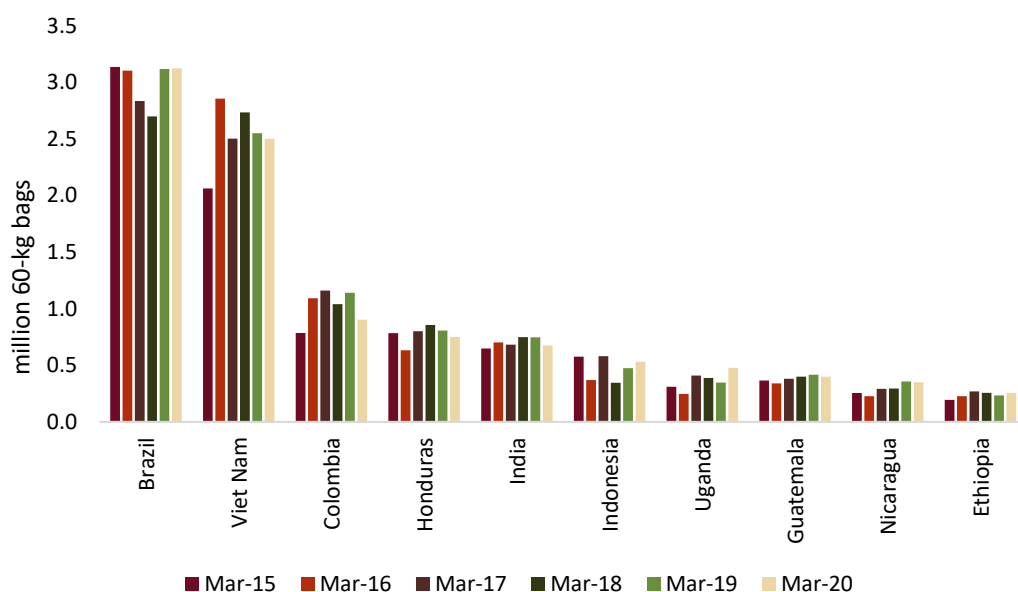
Note: N/A = Not applicable.

Source: The table contains a non-exhaustive list of supply chain disruptions compiled by the authors based on publicly available information by coffee traders Olam Specialty Coffee, Sucafina S.A. and Falcon Coffees (as of 30 April).

International shipping

In February, before the novel coronavirus had spread significantly beyond the initial epicenter in China, market participants reported reductions in the availability of container space as China reduced exports. So far, the impact of the pandemic on shipping activities does not seem to have been dramatic. [Global coffee exports in March totaled 11.06 million bags, which is 3.7 percent lower than the total bags shipped in March 2019.](#) Several top exporting countries have reported significant drops in shipments, including Colombia (20 percent), India (10 percent), and Honduras (7 percent), but others have seen more modest declines, such as Guatemala (4 percent), and Vietnam (2 percent). These reductions need not all be on account of covid-19 and disruptions in international logistics, but also caused by other factors such as lower availability of coffee for export from previous harvest and current stocks.

Figure 2. March shipment volumes of top-10 coffee exporting countries (2015-2020)



Note: All forms in Green Bean Equivalent (GBE).

Source: ICO (based on official export statistics from countries).

Local currency devaluations

[Local currencies of some coffee producing countries have sharply devalued against the US dollar](#) in which coffee is traded internationally. For example, in the

first quarter of 2020, the Brazilian real lost around 15% against the US dollar. The [correlation between international coffee prices and movements in the Brazilian real](#) has been previously documented. Farmers and exporters in countries that experience devaluation tend to become more competitive in the world market as a result of this exogenous shock. However, it remains to be observed whether these farmers will indeed benefit in terms of higher farm-gate prices. As long as domestic supply chains are severely disrupted, increasing labor and trade costs as well as higher costs of imported intermediate inputs may off-set initial gains from currency devaluation.

More generally, previous studies have also shown that [price variations and volatility in international agricultural markets do not necessarily transmit to all domestic and local markets in developing countries](#). In the case of coffee in Ethiopia, for instance, there is a [low degree of correlation between international and farm-gate price fluctuations](#).

Upstream value chain (farm level)

Access to seasonal and migrant labor is vital in many coffee production systems. Even in Brazil, the world's largest producer and exporter of coffee where mechanical harvesting is more widespread, some of the Arabica coffee and the entire Robusta crop is still picked by hand.

The spread of the virus could reduce labor supply due to social distancing and lockdown measures and, to a lesser extent, illness. Experiences from previous epidemics (e.g., the Ebola outbreak) have shown that the indirect impact of avoidance strategies is more significant since a large share of the workforce has to stay home. [Social distancing measures are expected to affect the internal movement of seasonal labor in Brazil](#). Similar constraints are reported for cross-border movements in Central and South America.

Fewer pickers in the fields could translate to [harvest delays](#) or [extended harvest periods](#), negatively affecting quality and producer prices. A reduction of labor supply could also raise wage levels, thereby increasing labor costs, with a knock-on effect on profitability as [labor already makes up more than 50 percent of total production costs in various origins](#).

This poses an immediate threat to countries currently in or entering the harvest cycle such as Brazil, Colombia (mitaca crop), Ecuador, Indonesia, and Peru. [The National Federation of Coffee Growers of Colombia has already noted a decline of 28 percent in Colombia's harvest for April, compared to the same month one year ago.](#) Harvests will begin in another group of small producer countries in July. Over half of producers begin the harvest in the last quarter of the year, however, at which time the initial peak of the pandemic is expected to be over.

In addition to reducing access to labor, the covid-19 pandemic could constrain coffee growers' access to credit. [Interest rates on fresh credits have increased recently in low-income countries.](#) This could raise production costs and limit credit access, reducing farmers' use of fertilizer and pesticides and thereby affect yields (and prices). In some cases, it may postpone or cancel long-term investments in the replanting of coffee trees.

Lastly, social distancing measures reduce farmers' access to public extension services as well as technical assistance provided by coffee buyers (traders and roasters), and international and non-governmental organizations (NGOs), as field visits are temporarily suspended in many countries.

2. Demand-side factors

The coffee market saw a surge in demand in the first weeks of the covid-19 crisis. However, this increase was mainly driven by higher supermarket sales resulting from [panic buying and stockpiling](#) and by [substituting out-of-home with at-home consumption](#) in the face of social distancing measures.

In the upcoming months, [with worldwide negative growth forecasts for 2020](#), a looming global recession could [impact overall coffee consumption](#). Rising unemployment and lower household incomes will probably make consumers more price sensitive. This could lead to reduced sales in the high-end market segment (including specialty coffee and some certified sustainable coffees) as consumer demand shifts to cheaper market segments. However, demand for food items like coffee tends to be relatively inelastic, and the demand-side effects are likely to materialize with a time lag depending on the level of household savings and social safety nets.

3. Potential speculation

Besides supply and demand factors, non-fundamental factors such as speculation could also potentially aggravate coffee price volatility. Like to other agricultural commodities, [coffee futures markets are subject to financialization](#). As seen in the [food price crisis of 2007-08](#), sudden movements in coffee prices during the covid-19 pandemic may attract speculators (i.e. non-commercial traders). Previous research has documented causal effects between non-commercial traders' activity in futures coffee markets in New York (Arabica) and London (Robusta) and spot prices. However, this effect is short-term and has occurred both in periods of falling and rising prices; in the long run, market fundamentals have been shown to prevail. Research is on-going to assess the link between potential speculation and price volatility in coffee markets, as well as any subsequent impacts along the value chain.

Looking forward

The covid-19 pandemic represents a severe joint supply and demand shock to the global coffee sector. This shock already seems to be contributing to coffee price spikes and high volatility. However, the effects of the pandemic will continue to materialize in different places at different times. Policymakers should recognize this in order to prepare for effective responses.

The timing of major supply-side measures depends on the start of the harvesting cycle, which begins in October in over half of coffee-producing countries. Specific interventions could be field-tested among those countries in which harvest is currently ongoing (or imminent); successful programs could then be extended to other countries that start their harvest later in the year. Similarly, if major demand-side effects are likely to come into effect with a lag that will depend on the extent of social distancing measures and the severity of the global recession (and recovery scenarios), there is still a time window in which to devise and implement specific actions.

Potential policy responses include:

- **Establishing emergency responses to mitigate the impact of the pandemic and support countries with lower institutional capacity.** This includes implementing safety guidelines that protect farmers and workers along the value chain during the upcoming harvest period and providing short-term social safety nets to protect the incomes of vulnerable groups.
- **Facilitating recovery while fostering long-term sustainability.** This includes supporting vital links along the value chain and increasing the resilience against external shocks (e.g., market, climate, pandemics). In addition, international financial institutions (IFIs), including multilateral development banks, could support the coffee sector in the replanting and rehabilitation of coffee plantations during the upcoming period of slowing global demand growth. This would temporarily reduce supply in order to stabilize prices and incomes in the medium term while fostering climate change adaptation and productivity growth in the long term. Finally, policymakers could facilitate investment in mechanization and automatization of harvest and supply chain processes (where possible) to ensure that safety protocols are being met; in addition, digitalization of business transactions as well as port and customs procedures can help to reduce transaction and trade costs.
- **Supporting the demand for coffee.** A (temporary) reduction of taxes on coffee could help reduce prices to the consumer. This would partially offset households' decreased income due to the looming recession and support the at-home and out-of-home demand for coffee in key consuming countries, helping to stabilize the market.

By taking such actions and working together with sector stakeholders, policymakers can help attenuate the likely negative impacts of covid-19 on poverty and food insecurity among millions of coffee-producing smallholders worldwide.