Commodity Markets in a Post COVID-19 World

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Introduction

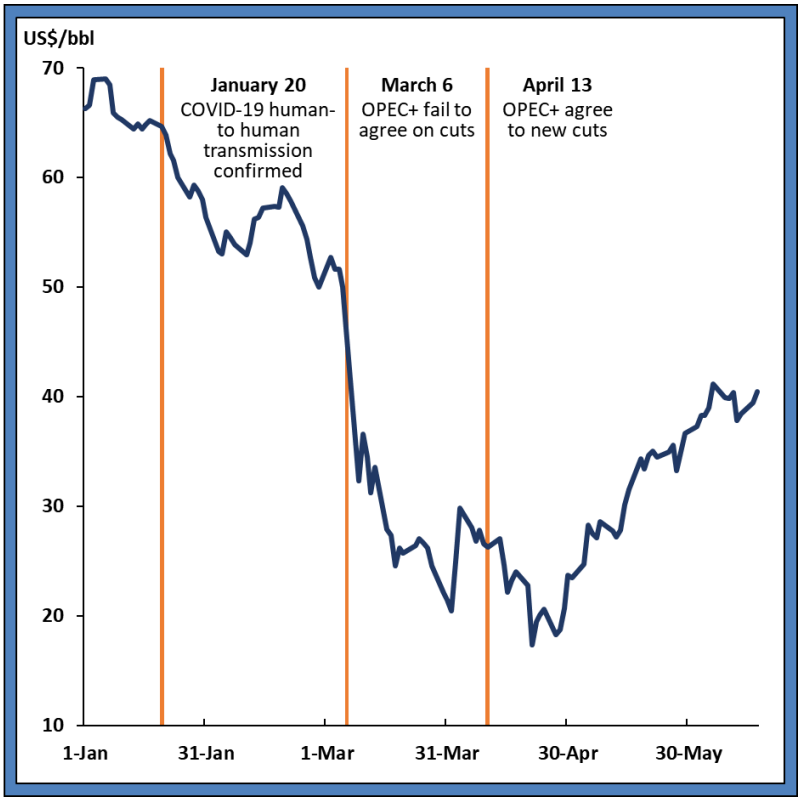
The COVID-19 pandemic delivered an enormous shock to the global economy and triggered the deepest global recession since the second world war, far surpassing the recession in 2009 that was triggered by the global financial crisis. The pandemic impacted commodity markets as well, but its effect on prices has been uneven. Oil prices, which dropped 60 percent following the pandemic, recovered somewhat, but are still considerably lower than their pre-pandemic average. Prices for metals experienced a moderate decline initially but recovered relatively quickly, following a quicker-than-expected rebound in China's economic activity. Agricultural and food prices have remained broadly stable, reflecting the fact that markets for most main crops (maize, rice, wheat, and soybeans) are well-supplied and demand for food commodities was not affected as much by the pandemic. However, the wedge between prices paid by consumers with those received by producers widened considerably for some commodities, especially the ones that were subjected to supply chain disruptions. Moving forward, COVID-19's impact on energy markets is likely to leave a permanent scar. Its effect on other commodity markets, however, most likely will be transitory. Nevertheless, the pandemic is likely to have lasting consequences for commodity

markets, including lower oil consumption, changes in the cost of transport, unwinding of supply chains, and, in the longer term, substitution among commodities due to changes in consumer preferences. The rest of this essay elaborates on recent developments and how the pandemic is likely to affect the three main commodity markets – energy, agriculture, and metals.

Energy

Crude oil prices have plummeted since the start of the year, dropping 65 percent between January and April. Brent crude oil prices averaged $23/bbl in April, a multi-decade low. Demand for oil collapsed as a result of shutdowns resulting from the coronavirus pandemic (COVID-19), which has sharply reduced transportation. The decline in prices was exacerbated by the breakdown of OPEC+ talks in early March, and a new production agreement announced on April 12 failed to boost prices. Prices recovered modestly during the first week of May as lockdown measures started to be lifted in some countries, but they remain at very low levels. See Figure 1.

Figure 1
Brent Prices During COVID-19

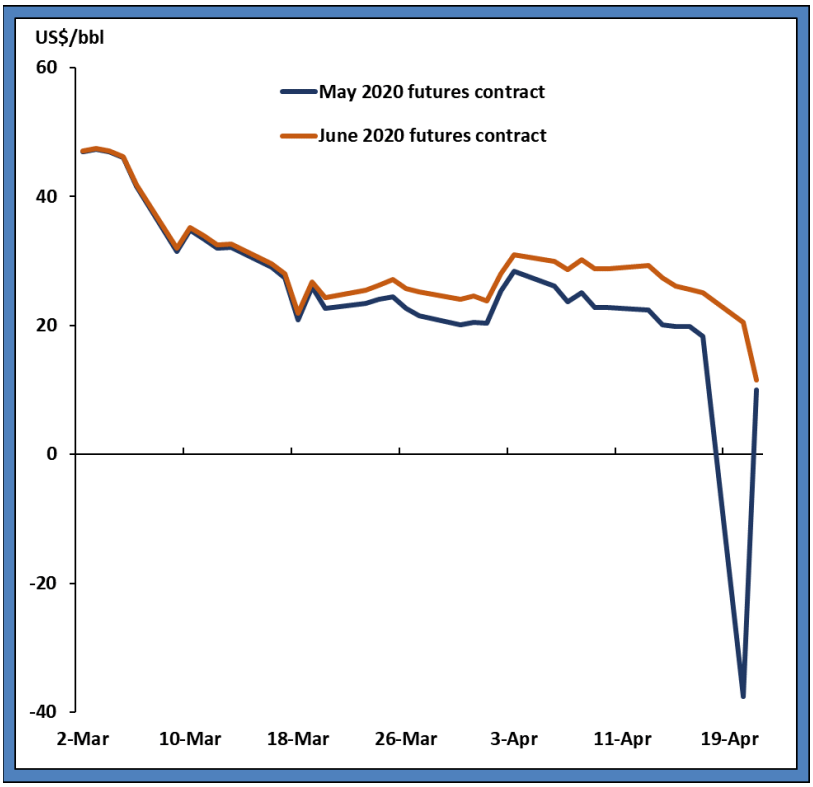


Sources: Bloomberg and World Bank.

Note: Last observation is June 16 (Brent).

Other benchmark prices have seen even more dramatic declines. On April 20, the WTI Cushing contract for delivery in May fell to nearly -$40/barrel. The magnitude of the collapse was due to both fundamentals – weak demand and limited storage capacity – and technical factors associated with the futures market. On the technical side, the drop reflected the fact that the May contract expired on April 21, and there was minimal storage capacity available for physical deliveries for the contract. Prices rebounded the following day, and the contract price for delivery in June (less immediately affected by these issues), did not see a decline of the same magnitude. But the drop nonetheless highlights the immense strain on the market. See Figure 2.

Figure 2
WTI Cushing Prices During COVID-19

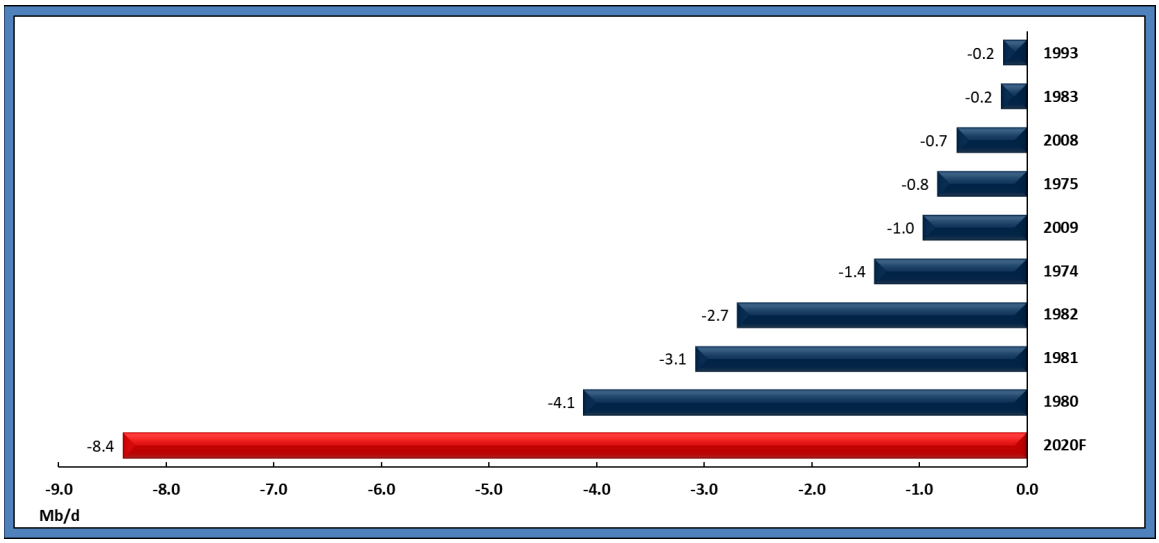


Sources: Bloomberg and World Bank.

Note: Last observation is April 21 (WTI).

The decrease in prices is due to a sharp fall in global consumption of crude oil. The International Energy Agency projects that for 2020 overall, global oil demand will fall by nearly 10 percent. This is more than twice as large as any previous decline, as illustrated in Figure 3. In addition, Figure 4 puts in further perspective the magnitude of the recent drop in oil prices. Mitigation measures to reduce the spread of COVID-19 have halted a large proportion of travel, with widespread flight cancellations, stay-at-home orders, and reduced global trade, all reducing demand for oil. For example, passenger journeys through Transportation Security Administration checkpoints in the United States initially fell to as low as 5 percent of their 2019 level.

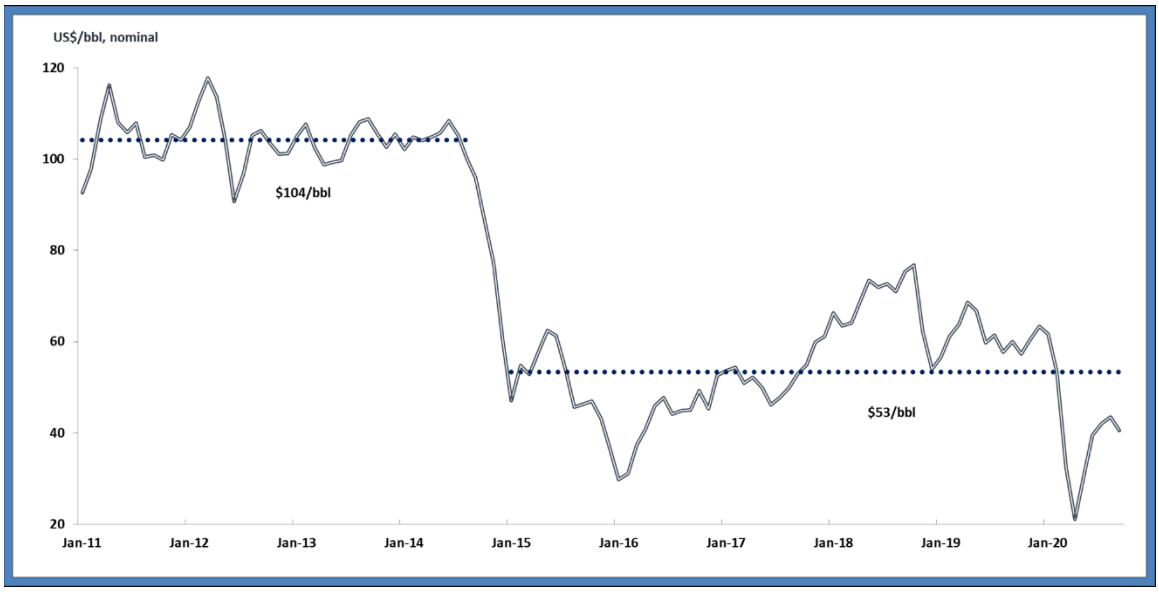
Figure 3
Episodes of Oil Demand Declines



Sources: International Energy Agency (September 2020 monthly report) and World Bank.

Note: The data show declines in oil demand from previous year's consumption levels.

Figure 4
Oil Prices: 2011-2020



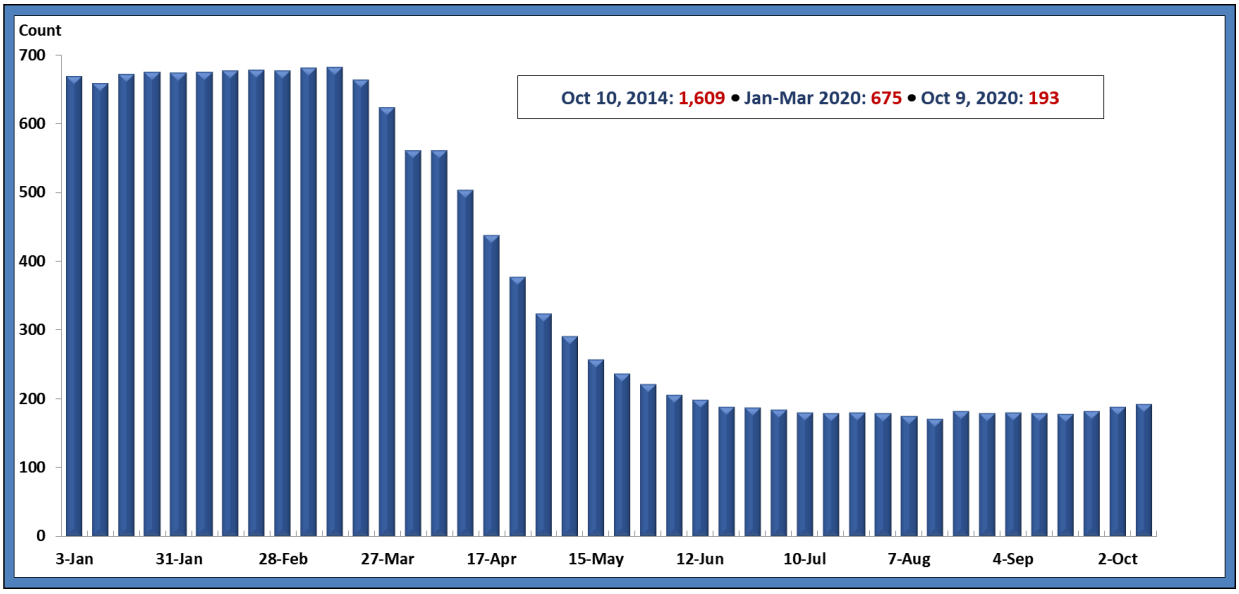
Source: World Bank.

Note: The dotted lines represent averages for January 2011 to August 2014 and January 2015 to September 2020.

Initially, global oil production was slower to fall than demand as producers can be reluctant to close oil wells, even when prices fall below operating costs, as wells can be prohibitively costly to shut down and reopen. Also, the breakdown of the OPEC+ agreement in March triggered an end to their existing production cuts and led to Saudi Arabia announcing it would increase production in April to 12 mb/d.

However, oil production followed suit soon. OPEC+ reached a new production agreement in April that included cuts of 9.7 million barrels per day (mb/d) in May and June 2020, with Russia and Saudi Arabia each reducing production to 8.5 mb/d, a sharp drop from existing levels. The groups' cuts are set to ease to 7.7 mb/d for the second half of 2020 and 5.8 mb/d from January 2021 to April 2022. Among non-OPEC+ countries, most oil companies have implemented substantial cuts in capital expenditure. For example, the rig count in the United States has fallen drastically since March. See Figure 5. Other producers undertook cuts as well. For example, Norway undertook a 0.25 mb/d reduction in June, followed by an expected 0.13 mb/d reduction during the second half of 2020. The U.S. Energy Information Administration expects U.S. production to fall to a low of 11 mb/d in 2020Q4.

Figure 5
Oil Rig Count in the United States



Source: Baker Hughes.

Note: First and last observations are January 3 and October 9, 2020, respectively.

Oil prices have recovered since their April lows, albeit partially, and are projected to average a little higher than $40/bbl in 2020 according to various estimates, followed by a slightly higher average in 2021. These averages stand substantially lower than forecasts made prior to the pandemic. More importantly, the recovery in oil prices may be one of the weakest in history following a major collapse in oil prices (i.e., compared with 1986, 1998, and 2008), reflecting the weakness in oil demand, which dominates any supply response. The price recovery will depend crucially on how much mitigation measures lessen.

However, there are numerous risks to the assumed path of oil prices. These risks include a slower end to the pandemic that could lead to much lower demand than previously forecast. Production could also be higher than expected, particularly if there is non-compliance with cuts among OPEC+ producers. To the upside, substantially weaker investment in new production or a permanent shutdown of some oil wells this year could reduce future production capacity, resulting in a sharper rebound in prices in 2021.

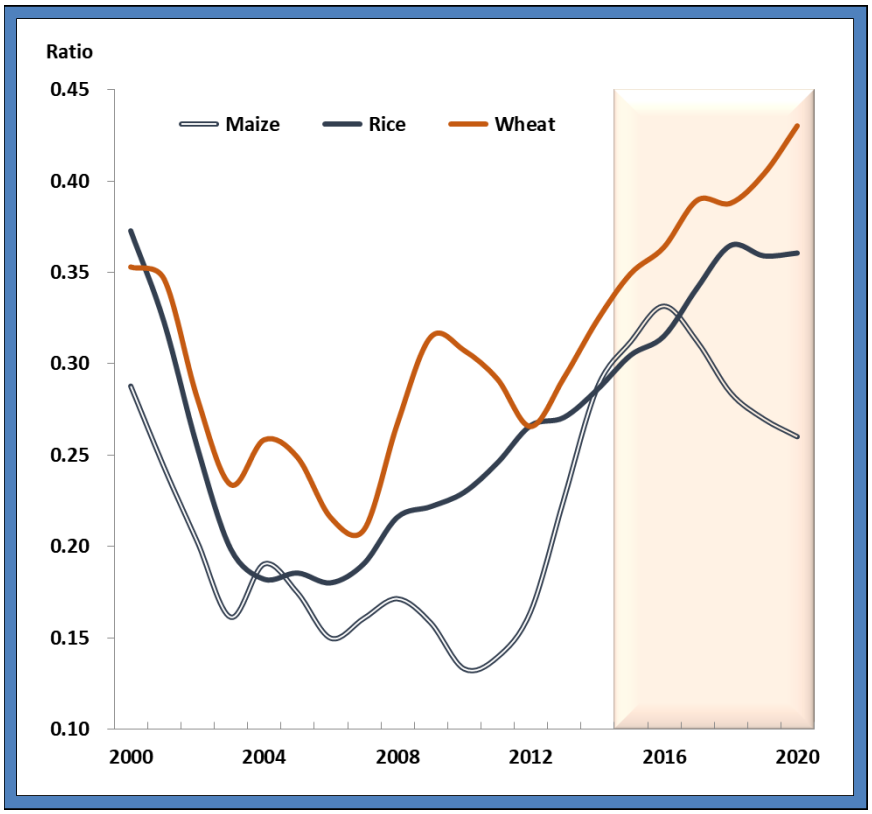
The prices of other energy components declined as well, including natural gas and coal prices, which also fell sharply since the start of 2020 due to weak demand and ample supply. European natural gas prices have fallen to multi-decade lows and are down almost 40 percent since the start of 2020. U.S. natural gas prices experienced smaller declines, in part reflecting their already low levels. Price differentials between regional natural gas benchmarks have continued to decline, helped by the increasing availability of liquefied natural gas (LNG). Coal prices (Australian) declined by around 15 percent over the same period, with weaker demand partially offset by reduced production in China.

However, the fall in natural gas and coal prices has been smaller than for crude oil, which have declined by around 65 percent since January. Natural gas and coal are primarily used for electricity generation and industrial purposes, rather than transport. As such, lockdowns and travel restrictions have had a smaller impact on demand for these commodities than oil.

Agriculture

With a few exceptions, agricultural prices have been remarkably stable since 2015, a reflection of good crops and rebuilding of stocks. The global assessment for the current season (beginning in September 2020), points to abundant supplies for most key grains. According to the U.S. Department of Agriculture's October 2020 update, global production of the three main grains—wheat, maize, and rice—is projected to increase 3.6 percent during this season. Although consumption is set to increase at the same pace, the stocks-to-use ratios for most grains and oilseeds (an approximate measure of supply relative to demand) are expected to reach near historically high levels. See Figures 6 and 7.

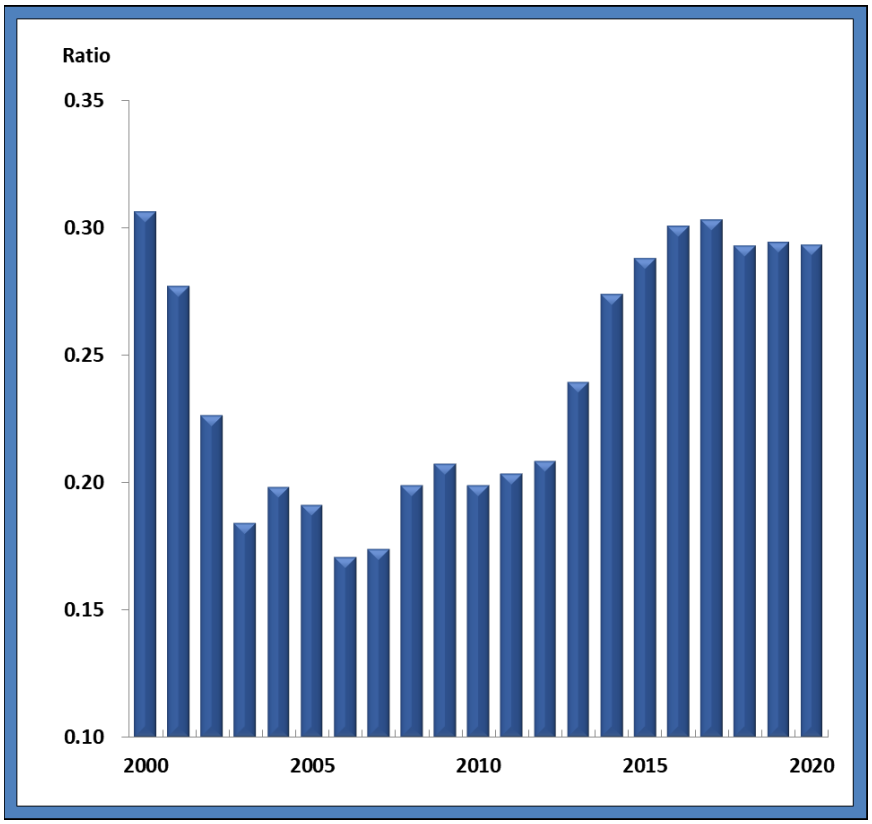
Figure 6
Stocks-to-Use Ratios: Main Grains



Source: U.S. Department of Agriculture (October 2020 update).

Note: Years denote crop seasons (i.e., 2020 refers to the 2020-21 crop season).

Figure 7
Stocks-to-Use Ratios: Aggregate for 12 Commodities



Source: U.S. Department of Agriculture (October 2020 update).

Note: The aggregate stocks-to-use ratio comprises 12 grains and edible oils and has been aggregated according to calorific content. Years denote crop seasons (i.e., 2020 refers to the 2020-21 crop season.)

Numerous factors will affect agricultural commodity markets in the future. The historic decline in energy prices due to the coronavirus is expected to directly impact food commodity markets. Energy is a key input to grains and oilseeds, affecting production directly through fuel costs and indirectly through fertilizers and other chemical inputs. Extended weakness in energy and fertilizer prices could depress food commodity prices, especially grains and oilseeds. Given that the transmission elasticity between energy and food prices is estimated at 0.20, a 30 percent drop in energy prices, for example, could reduce food prices by 6 percent. Although both energy and fertilizer prices are expected to recover (albeit, modestly) in 2021, most of the price risks of these two inputs, especially the former, are on the downside.

Projected stabilization (or even decline) in biofuel production could result in subdued demand for certain food commodities. Biofuels have been a key source of demand growth for some food commodities, especially during 2005-15. In fact, biofuels have often been cited as one of the drivers of the 2007-08 and 2010-11 food price spikes. However, the collapse in the transport sector as a result of the pandemic implies less use of fuel and, hence, biofuels. Depending on the stringency of travel restrictions, the decline

in biofuel consumption could exert further downward pressure on some food commodities, especially maize, edible oils, and sugar.

Macroeconomic conditions could exacerbate downward price risks. The U.S. dollar will likely play an important role in most non-energy commodities, especially key grains and oilseeds that are traded internationally and are priced in U.S. dollars. Indeed, the weakness in some commodity prices during the first quarter of 2020 along with the recent recovery can, in part, be attributed to dollar movements. Research has shown that a 10 percent appreciation in the dollar against major currencies is associated with a 5 percent decline in prices of internationally traded commodities. Similarly, the price outlook will be affected by currency depreciations in countries that account for a large share of global trade in individual commodities.

Metals

Metals prices experienced declines following COVID-19 (albeit, much less than oil) but reversed course quickly following a quicker-than-expected rebound in China's industrial activity; China accounts for more than half of global metal demand, thus changes in its industrial activity affect most metal markets considerably. Demand for metals also began to pick up outside of China after lockdown measures eased in Europe and the United States. The improving sentiment for metals has been reflected in a recovery of copper prices – a barometer of the health of the global economy.

Copper and zinc prices have been supported by several pandemic-related mine closures. For example, Peru's zinc production plunged more than 85 percent and copper production fell 35 percent in April. Although Peruvian mines have started to reopen, supply concerns remain elevated due to the possibility of abrupt production stoppages as COVID-19 cases have yet to subside. Supply in Chile, the world's largest producer of copper, has held up relatively well as quarantines and movement restrictions have been less stringent and mines have largely maintained operational continuity. However, copper mine worker unions are demanding more transparency from the government on the COVID-19 outbreak following an alarming rise in COVID-19 cases among miners, leading the state operator Codelco to suspend one of its smelting and refinery operations.

Among base metals, tin has been the least affected by the pandemic. For example, tin prices in June were at about the same levels as the beginning of the year. Global tin supply concerns had already been brewing for some time, particularly after Indonesia tightened export regulations and amid declining mine production in Myanmar. COVID-19 lockdowns in Bolivia, Malaysia, and Peru further added to supply pressures, which have supported tin prices. Tin inventories at the London Metal Exchange and Shanghai Futures Exchange declined sharply during the pandemic. Global supply concerns have re-emerged despite the restart of operations at Vale's iron ore Itabira complex in Brazil. Vale's iron ore production had struggled to recover following a tailings dam accident in early 2019. As noted above, the dominant risk in metals markets emanates from China's industrial production activity, which as of early October turned out to be much more resilient than expected.

Long Term Implications of the Pandemic

Moving forward, the impact of COVID-19 may lead to long-term shifts in global commodity markets, which will affect both commodity exporters and importers. Such shifts relate to oil consumption, transportation, unwinding of supply chains, increasing substitution among commodities, and most importantly, changes in consumer behavior.

Oil Consumption

Global oil consumption is projected to decline by as much as 10 percent in 2020 from its nearly 100 million barrels per day in 2019. Although some recovery is expected in 2020, several analysts have argued (including the 2020 edition of BP's Energy Outlook) that 2019 may have been the year during which global oil consumption peaked, marking a considerable revision to earlier projections which placed the "peak demand" year in the early 2030s. For example, in its 2019 Energy Outlook, the International Energy Agency projected that global oil consumption would plateau around 2030. It is worth noting how quickly the focus has turned to "peak demand" – which emerged after the 2014 price collapse – from "peak oil production" only a few years earlier.

Transport Costs

Enhanced border checks arising from COVID-19 concerns may permanently increase the cost of transporting commodities, thus reducing trade flows. This occurred in the aftermath of the September 11 attacks, when additional border checks and security measures were introduced, increasing transport costs. However, the ultimate effect of COVID-19 on transportation costs will also depend on the balance between office and home-based work arrangements, and the demand for services provided by the hospitality industry.

Unwinding Supply Chains

Companies with complex global supply chains may find that disruptions are too costly and opt to move operations back to their home countries ("reshoring"). This may be exacerbated by national security concerns regarding the reliability of supply of critical equipment, such as personal protective equipment, which would favor local production. These shifts could result in the unwinding of global value. For some commodity markets, such a development could potentially lower transport demand if it reduces shipping distances. All else equal, this would result in permanently lower oil demand, as value chains are more transport-intensive than other forms of trade.

Increasing Substitution among Commodities

Higher transport costs could induce substitution between domestic and imported commodities and thereby promote use of domestic resources. If exact replacements are costly or unavailable domestically, the use of substitutes may occur, such as the use of domestically produced glass in drinks packaging instead of imported aluminum. Substitution could take place within the same group of commodities (say,

among metals as some metals are heavily used in transportation while others are used in construction) or between natural and synthetic products.

Changing Consumer Preferences

The mitigation measures implemented in many countries may lead to shifts in consumer habits and the exacerbation of existing trends, especially if partial lockdowns are extended well into 2021. The trend toward remote working is likely to accelerate, as the pandemic has forced companies to invest in necessary equipment, infrastructure, and processes to facilitate it. Once mitigation measures are lifted, a greater number of workers may continue operating remotely, which would reduce commuter journeys and demand for fuel. Similarly, businesses may reduce foreign travel in favor of video conferencing and other remote alternatives. The reduction in pollution resulting from the current restrictions on travel may also lead to greater pressure to implement stricter environmental standards, as the benefits of lower fossil fuel consumption (and lower pollution) become more apparent. Eventually, how much consumer habits will change will depend on whether mitigation measures against COVID-19 (either treatment or vaccine) become effective and widely available.

Endnote

1 This article draws heavily from the April and October 2020 editions of the *Commodity Markets Outlook*. Responsibility for the content remains solely with the author and should not be attributed to the World Bank.

Author Biography

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Dr. John Baffes, currently a member of the World Bank's Prospects Group, heads the Commodities Unit and is in charge of the *Commodity Markets Outlook*, a World Bank publication focusing on commodity market analysis and price forecasts. Dr. Baffes' experience spans several regions and units, including Latin America, South Asia, East Africa, Evaluation, and Research. He specializes in commodity markets analysis and resource economics.

Dr. Baffes, whose work appears in media outlets and academic journals, also teaches an executive M.B.A. course on Applied Econometrics for Commodity Markets. Prior to entering graduate school, Dr. Baffes managed a commodity trading company. He holds degrees in Economics from the University of Athens, Greece (B.S.), University of Georgia, U.S. (M.S.), and University of Maryland, U.S. (Ph.D.).