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Commodity Markets Outlook

*The Role of Substitution
in Commodity Demand*

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WORLD BANK GROUP

The cutoff date for the data used in this report was October 25, 2019.

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Acknowledgments

The World Bank's *Commodity Markets Outlook* is published twice a year, in April and October. The report provides detailed market analysis for major commodity groups, including energy, agriculture, fertilizers, metals, and precious metals. Price forecasts to 2030 for 46 commodities are presented, together with historical price data. The report also contains production, consumption, and trade statistics for major commodities. Commodity price data updates are published separately at the beginning of each month.

The report and data can be accessed at:
www.worldbank.org/commodities

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commodities@worldbank.org

Executive Summary

Almost all major commodity price indexes fell in the third quarter of 2019, led by energy, which declined more than 8 percent (q/q). Trade tensions and weakness in global trade, manufacturing, and output growth are weighing on commodity demand. In line with subdued global growth prospects, most price forecasts have been revised down. Crude oil prices are forecast to average $60/bbl in 2019 and $58/bbl in 2020—a sharp downward revision since April. Amid heightened risks of a sharper-than-expected global downturn, the likelihood of a further slowdown in oil demand, and therefore lower oil prices, has risen. Non-energy prices are projected to fall in 2019 before stabilizing in 2020, although metals prices are forecast to be lower next year. A Special Focus examines the role of innovation and substitution in commodity consumption. It shows that, historically, demand surges have been accompanied by investment and innovation, in turn causing substitution both within commodity groups (for example, from coal to natural gas for energy) and across commodity groups (such as between paper, metal, and plastic in packaging).

Recent trends

Prices of almost 60 percent of commodities fell in the third quarter of 2019 amid mounting concerns about slowing global growth. This was a marked turnaround relative to the April *Commodity Markets Outlook* report, when a series of commodity-specific supply shocks boosted prices of many commodities, including oil. The current deteriorating macroeconomic environment, including a sharp slowdown in manufacturing and goods trade, has weighed heavily on commodity demand.

Energy prices fell more than 8 percent (q/q) in the third quarter, with similar declines across all three energy commodities (Figure 1). *Crude oil prices* averaged $60/bbl in the third quarter, 8 percent weaker than in the previous quarter. The fall in prices occurred despite an attack on Saudi Arabia's oil infrastructure, which triggered the largest one-day price rise in Brent crude oil since 1988 (the year when Brent crude futures began trading on futures exchanges). The spike unwound rapidly as market participants concluded that the impact would not be long-lasting. Also, on the supply side, growth in the United States has been much weaker than the record pace of 2018, and OPEC and its partners have agreed to continue with their production cuts. While oil production growth has slowed, the weakness in demand has been more severe. Demand growth expectations have been repeatedly revised downward and are now around 1 percent, or 1 million barrels per day—the weakest growth rate since 2012. *Coal* and *natural*

gas prices have also continued to weaken, amid ample supply.

Most *non-energy prices* fell in the third quarter of 2019. *Base metals* and *ore prices* fell 2 percent, largely reflecting concerns about demand and trade tensions. Iron ore prices fell sharply as supply bottlenecks resulting from the Vale dam accident in Brazil eased. Nickel prices, as an exception to the broader base metals price weakness, surged after Indonesia (the world's largest nickel ore producer) announced a ban on nickel exports from the start of 2020. *Precious metal prices* surged in response to trade tensions and monetary policy loosening in advanced economies. Most *agricultural commodity prices* fell in the third quarter, as production expectations were revised upward and global stocks of key grains, notably rice and wheat, remained at multi-year highs. An exception was soybeans, whose prices rose on news that China had restarted purchasing U.S. crops—as a result of trade tensions, China had switched soybean purchases from the United States to alternative suppliers, and also to substitute commodities (see *Special Focus* for the role of substitution).

Outlook and risks

Energy prices are expected to average almost 15 percent lower in 2019 than in 2018 (a substantial downward revision from April) and continue to decline in 2020 (Table 1). *Non-energy prices* are projected to decline 5 percent in 2019 (a smaller downward revision from April) and stabilize in

FIGURE 1 Commodity market developments

Broad-based weakness in global demand pushed most commodity prices lower in the third quarter of 2019. Although demand for oil has been repeatedly revised downward this year, growth is expected to accelerate in 2020. A material disappointment in demand, however, poses the key downside risk to the price forecast. The price forecasts for the three main commodity indexes—energy, agriculture, and metals—have been revised down since the April report, and prices are expected to fall or stabilize next year.

A. Commodity price indexes, monthly
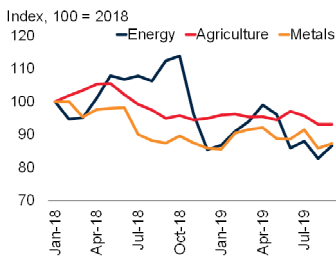
B. Evolution of 2019 oil demand forecasts
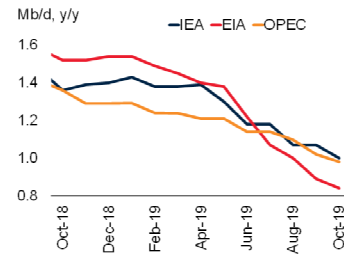
C. Oil demand growth
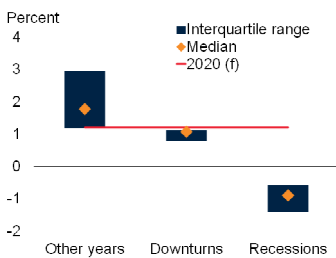
D. Commodity price forecasts
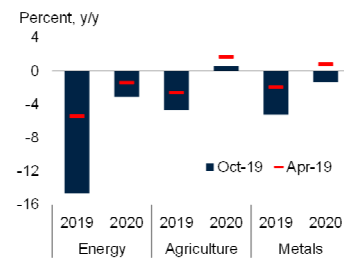
Source: Bloomberg, EIA, IEA, OPEC, World Bank.
A. Last observation is September 2019.
C. Figure shows annual oil demand grouped by component of the global business cycle from 1971 to 2018. Over the time period, there were four global recessions (defined as a contraction in global per capita GDP growth), in 1975, 1982, 1991, and 2009, and three global slowdowns (defined by very low global per capita GDP growth), in 1998, 2001, and 2012. The forecast for 2020 is an average of the EIA, IEA, and OPEC's October 2019 forecast.
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2020. The outlook for commodity prices, especially oil and metals, is vulnerable to a larger-than-expected slowdown in global growth, particularly in EMDEs.

Oil prices are projected to average $60/bbl in 2019 and are forecast to weaken to $58/bbl in 2020, $7/bbl lower than the previous forecast. The downward revision reflects the weaker outlook for global growth and therefore for oil demand. On the supply side, although U.S. production increases have been modest in 2019, they are expected to rise substantially by 2020 as new pipelines come into operation. The forecast

assumes that production cuts by OPEC and its partners will be sustained into 2020. Risks to the oil price outlook are to the downside. Oil consumption growth is expected to increase slightly next year at a level usually associated with global downturns. If economic growth deteriorates further, oil demand could be substantially weaker. Conversely, the recent attack on Saudi Arabia's oil processing facilities serves as a reminder that geopolitical events remain a major risk that could drive up oil prices, despite the short-lived impact of the recent attack.

Metal prices are projected to fall 5 percent in 2019 and are forecast to fall further in 2020, as slowing global demand weighs heavily on the market. Risks to this outlook are to the downside. A greater-than-expected slowdown in global growth, particularly in China, poses the biggest risk.

Agricultural prices are expected to stabilize in 2020 following a projected fall in 2019, on reduced crop plantings. Risks to this outlook are on the downside. A resolution of trade tensions presents an upside risk for some commodities, such as soybeans and corn, while lower energy prices could reduce fuel costs and fertilizer prices, reducing prices of energy intensive crops such as oilseeds.

Special topics

This edition of the *Commodity Markets Outlook* features a *Special Focus* on the role of substitution in commodity demand and a *Box* on the impact of the September 14 strike on Saudi Arabia's oil infrastructure.

Special focus: The role of substitution in commodity demand

Understanding the drivers of commodity demand growth is of critical importance for EMDEs and especially commodity exporters. This *Special Focus* examines the role of innovation and substitution in commodity markets. It shows that, historically, demand surges have been accompanied by investment and innovation, in turn causing substitution both within commodity groups (for example, from coal to natural gas for energy) and

TABLE 1 Nominal price indexes and forecast revisions

	Price Indexes (2010=100)[1]					Change (%) q/q		Change (%) y/y		Forecast revision[3]	
	2016	**2017**	**2018**	**2019f[2]**	**2020f[2]**	**2019Q2**	**2019Q3**	**2019f[2]**	**2020f[2]**	**2019f[2]**	**2020f[2]**
Energy	55	68	87	74	72	3.4	-8.4	-14.6	-3.1	-9.2	-1.7
Non-Energy[4]	79	84	85	81	81	0.1	-1.9	-4.7	0.1	-2.6	-1.3
Agriculture	87	87	87	83	83	-0.2	-1.8	-4.7	0.6	-2.1	-1.1
Fertilizers	78	74	82	82	84	-1.2	-4.2	-0.6	2.2	-5.3	0.5
Metals and minerals	63	78	83	78	77	0.8	-1.8	-5.2	-1.4	-3.4	-2.1
Precious metals	97	98	97	105	111	-0.2	12.7	8.3	5.6	5.8	2.5
Memorandum items											
Crude oil ($/bbl)	43	53	68	60	58	7.5	-8.2	-12.2	-3.3	-8.8	-1.8
Gold ($/toz)	1,249	1,258	1,269	1,390	1,470	0.4	12.6	9.5	5.8	6.3	1.9

Source: World Bank.
Notes: (1) Numbers may differ from tables A.1-4 due to rounding. (2) "f" denotes forecasts. (3) Denotes percentage points revision to the growth forecasts from the April 2019 report. (4) The non-energy price index excludes precious metals. See Appendix C for definitions of prices and indexes.
Download data and charts.

across commodity groups (such as between paper, metal, and plastic for packaging). The *Special Focus* also provides empirical evidence for substitution between individual energy and metal commodities by examining the response of demand for a single commodity (e.g., copper) to the prices of its known substitutes (e.g., aluminum).

Box: The impact of the September 14 strike on Saudi Arabia's oil infrastructure

The September 14 strike on Saudi Arabia's oil facilities temporarily halved the country's production capacity—about 6 percent of global supply. Brent futures gained nearly 15 percent on the first trading day following the attack, their largest one-day increase. However, by the end of September, prices had returned to pre-attack levels as Saudi Arabia swiftly restored production. The backdrop of slowing demand also helped contain prices. Long-term futures prices are also unchanged, suggesting either geopolitical risk plays less of a role in risk premium of oil prices, that oil supplies have become more diversified (reducing risks associated with disruptions), or that other fundamental factors such as weaker global growth are weighing on oil prices. Despite their limited impact, the attacks highlight the oil market's dependence on critical infrastructure and transport bottlenecks that could be vulnerable to disruption.

SPECIAL FOCUS

The Role of Substitution in Commodity Demand

The Role of Substitution in Commodity Demand

Consumption of non-renewable resources surged over the past two decades, mostly as a result of strong growth in emerging markets and developing economies, especially China. This Focus examines how energy and metals consumption respond to changes in income and prices by accounting for substitutability and complementarity among commodities. It shows that, historically, demand surges have been accompanied by investment and innovation, in turn causing substitution both within commodity groups (for example, from coal to natural gas for energy) and across commodity groups (such as paper for plastic). The Focus concludes that, apart from income, prices of substitute commodities are as important in explaining the variation in commodity consumption as own prices.

Introduction

Consumption of non-renewable resources surged over the past two decades, notably as a result of strong growth in emerging markets and developing economies (EMDEs). The surge was pronounced in metals, where consumption grew 150 percent during this period (Figure SF.1) This increase was driven by China, whose share of world metals consumption reached 50 percent in 2015, up from 10 percent two decades earlier. Similar increases took place in coal consumption, driven by China and India (World Bank 2018).

As in earlier booms, high commodity prices induced investment and innovation on the supply side as well as efficiency gains, substitution, and reduced consumption on the demand side. As a result, commodity prices fell—non-energy prices in a smooth decline since 2011 and crude oil prices in a steep plunge in 2014. This created concerns about the challenges posed by low commodity prices for commodity exporting countries, and about suitable policies for addressing them (Baffes et al. 2015; Christensen 2016). Meanwhile, discussions intensified regarding environmental concerns about the sustainability of production and consumption of certain commodities. Such concerns include the consequences of climate change, air and water pollution, and plastic waste.

The relationship between commodity consumption, income growth, and commodity prices has typically been studied from a single commodity perspective. In an earlier *Focus* (October 2018 edition of the *Commodity Markets Outlook*), such a

relationship was studied by applying the same modeling framework to several individual energy and metal commodities. This analysis expanded on existing literature by explicitly accounting for a "plateauing effect" on commodity consumption, i.e., a level of income at which per capita consumption no longer grows. In this *Focus*, we extend the analysis further by accounting for substitution among commodities through the inclusions of cross-price effects—an area of research that has not been explored widely for industrial commodities. Specifically, the *Focus* addresses the following questions: (1) How has substitution in commodity demand evolved? (2) What is the empirical evidence of substitution in commodity consumption?

Commodity substitution: Historical perspective

Innovation and substitution between commodities have been key features of commodity markets.[1] Substitution among commodities is a complex process and can take place at short- and long-term horizons as well as within and across commodity groups (Tilton and Guzmán 2016). It can occur from a change in relative prices in the short-term (if alternative materials are readily available), with an extended lag (if the production of new materials entails significant costs), and in the

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[1] Discussions of substitutability go back to Hicks (1932), who argued that a change in the relative prices of the factors of production spurs innovation. Hicks' hypothesis, known as the induced innovation hypothesis, has been tested extensively, including in Hayami and Ruttan (1970); Olmstead and Rhode (1993); Hanlon (2015); and Newell, Jaffe, and Stavins (1999).

FIGURE SF.1 Commodity prices and consumption

During the past two decades, commodity prices experienced the longest and broadest cycle after WWII. The price cycle was associated with a consumption surge in several energy and metal commodities, including aluminum, coal, and copper. This surge was in response to strong income growth by emerging and developing economies, notably China.

A. Price indexes
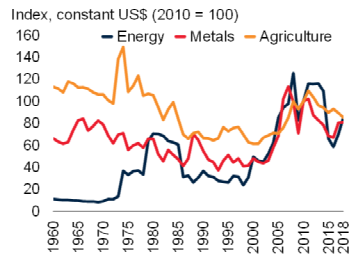
B. Energy consumption
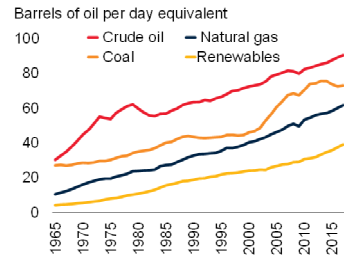
C. Aluminum, copper, zinc consumption
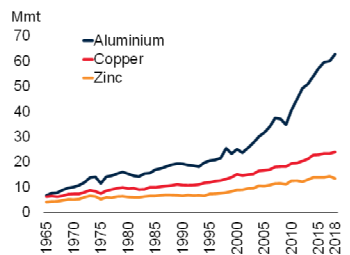
D. Lead, nickel, tin consumption
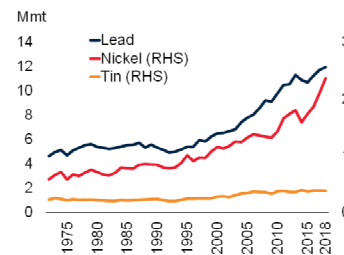
Source: BP Statistical Review, World Bank, World Bureau of Metal Statistics.
A. Deflated by the World Bank's manufacturing unit value index.
B. Renewables includes hydroelectric and nuclear energy (in addition to biofuels, biomass, geothermal, solar, and wind sources).
Download data and charts.

longer term (from development of new technologies and innovation). Substitution can also emerge from exogenous technological shocks.

Within-commodity group substitution is common in agriculture (e.g., soybean oil has replaced palm oil for human consumption, and soybean meal has replaced maize for animal feed); energy (e.g., substitution of coal by natural gas in electricity generation); and metals (e.g., substitution of tin by aluminum for containers or copper by aluminum in electricity transmission). Substitution across commodity groups is common as well.

Apart from innovation, substitution among commodities can be caused by other factors. Domestic policies often change the relative prices

of commodities. For example, many oil-producing countries subsidize oil, thus encouraging its consumption at the expense of other energy sources. Trade policies (such as tariffs) and macroeconomic policies (such as exchange rate management) can alter the terms of trade and hence induce substitution. Changing consumer preferences can also lead to substitution. For example, following environmental concerns, consumers have been seeking to minimize the use of petrochemical-based materials (such as plastic) by natural alternatives (such as paper).

The rest of this section elaborates on how innovation and substitution altered consumption paths of commodities in the transport as well industry and consumer products. It also sets the stage for the second section of this *Focus*, which provides evidence in favor substitution by including the prices of substitute commodities based on a commodity demand model. Box SF.1 delves deeper into substitutability by examining three episodes: the beverage and can industry during the 1960s; the oil price crises of the 1970s; and the ongoing changes in the energy mix due to environmental concerns.

Transport

Innovation and substitutability in the transport industry goes back to the industrial revolution. With the invention of the steam engine, animal traction was replaced by trains. As a result, the agricultural commodities used to feed animals were replaced by coal to power the steam engines. The wooden frames along with the cotton- and linen-based sail cloth of sail ships were replaced by steel and iron ore structures and by steam engines (Lundgren 1996) (Figure SF.2).

In the early twentieth century, further substitution between food and energy commodities resulted when electric vehicles began replacing animal traction, which meant that food commodities were substituted by electricity. Later, the first-generation internal combustion engine vehicles that used biofuels substituted for electric vehicles (Kovarik 2013). Later, vehicles powered by gasoline and diesel dominated ground transport and expanded to water transport (diesel and

BOX SF.1 Innovation, disruptive technologies, and substitution among commodities

Substitution is a key feature of commodity markets. There have been three broad episodes of substitution during the last half century that affected commodity consumption in a significant way. The first episode impacted beverage containers. Glass, tin, and steel were gradually replaced by aluminum, plastics, recyclable glass, and (more recently) paper following advances in technology. The second originated with the oil crisis of the 1970s and induced substitution of crude oil by coal (and other energy sources) in electricity generation. The third involves the increasing share of renewable energy for electricity generation (due to environmental considerations) and the substitution of oil by electricity, following advances in electric vehicle and battery technology.

Introduction

Substitution, which has been a key feature of commodity markets, can occur from a change in relative prices: (1) in the short-term if alternative materials are readily available; (2) with an extensive lag if significant costs are involved; and (3) in the longer term following the development of new technologies and innovation. Substitution could also emerge from innovation, not necessarily related to price changes.

Against this backdrop, this box examines the following questions:

i.   How has substitutability affected the beverage can and bottle industries?

ii.   How have oil price shocks affected substitutability in electricity generation?

iii. How has substitutability affected the vehicle industry?

How has substitutability evolved in the beverage can and bottle industries?

Until the 1960s, glass, tin, and steel were the dominant materials used in the manufacturing of beverage containers (principally soft drinks and beer). However, the emergence of aluminum in the 1960s, with its superior light-weight properties, ease of recycling, and technological developments (pull-up and crimp can) significantly changed the beer industry, and to a lesser

extent the soft drink sector (Nappi 1990). For example, the share of aluminum cans in beer shipments in the U.S. reached 80 percent by 1986, following their introduction two decades earlier (Figure Box SF1.A).

More recently, the dramatic rise of plastic bottles since their introduction in the late 1970s has limited the share of aluminum cans for soft drinks. Innovation continues today, particularly for soft drinks. Recyclable glass and plastics (and increasingly paper, e.g., Tetrapak) dominate the bottle market while aluminum is the key input in the can industry. Thus, what initially began as substitution among metals turned into substitution between metals and energy (plastics) and, recently, between metals/energy and agriculture (paper).

Aluminum's expanded use at the expense of tin was also aided by the International Tin Agreement, which kept tin prices artificially high through the management of buffer stocks. The agreement, first negotiated in 1954 with the objective of maintaining tin prices within a desired range through the management of buffer stocks, collapsed in 1985 following several years of insufficient funds to maintain stocks (Chandrasekhar 1989). Tin lost market share not only from technological advances of its competitors, but also by its own pricing decisions. Commodity agreements were common throughout the twentieth century, both for metals (Tilton and Guzman 2016) and agricultural commodities (Gilbert 1996). All have ceased activity.

How have oil price shocks affected substitutability in electricity generation?

In the decade prior to 1972, global oil consumption was growing at almost 8 percent a year in response to the rapid post-war expansion of transport, industry, and electricity consumption. The expansion was aided by low oil prices (during 1945-72 oil prices averaged about $16/bbl in 2017 constant terms). The 1973 and 1979 energy crises, which resulted in a seven-fold increase in oil prices, set in motion powerful market forces and policies to reduce oil consumption and seek alternative supplies (Figure Box SF1.B). Efficiency improvements led to reductions in the amount of oil used by the transport sector, while the use of oil for electricity generation was displaced by coal, nuclear power, and

BOX SF.1 Innovation, disruptive technologies, and substitution among commodities *(continued)*

FIGURE BOX SF.1 Broad-based substitution across commodities

Following the introduction of aluminum cans in beer packaging in the mid-1960s, their share reached three-quarters of all beer shipments by 1986 (they replaced refillable glass bottles and tin cans). When prices of oil increased seven-fold after the oil crises of the 1970s, crude oil's share in electricity generation reversed its upward trend, mainly in advanced economies (globally around 1990). Aided by improvements in battery technology, charging infrastructure, and government incentives, hybrid and electric vehicles have enjoyed impressive demand growth.

A. Proportion of packaged shipments of beer in aluminum cans in the U.S.
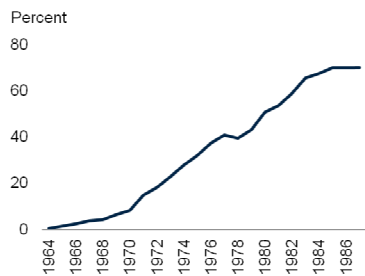
B. Global electricity generation by fuel
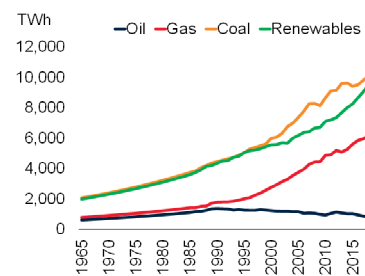
C. Sales of alternative vehicles in the U.S.
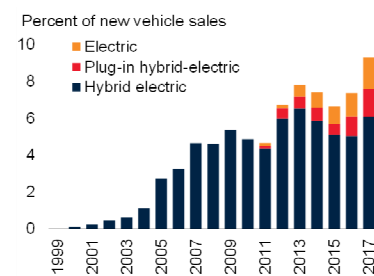
Source: BP Statistical Review; Nappi (1990); U.S. Department of Commerce (Bureau of Economic Analysis); World Bank.
A. During 1964-87, the aluminum consumption by beer containers in the U.S. increased from 2.6 to 634 thousand metric tons.
B. Renewables includes hydroelectric and nuclear energy (in addition to biofuels, biomass, geothermal, solar, and wind).
Download data and charts.

renewable and natural gas. Global oil consumption, which peaked at nearly 64 mb/d in 1979, declined by a cumulative 10 percent (or 6.3 mb/d) in the subsequent four years. Meanwhile the share of coal in global energy consumption increased by 8 percent (the equivalent of 2.9 mb/d) while nuclear energy consumption rose 60 percent (the equivalent of 1.8 mb/d). Thus, the oil price shocks induced the substitution of the equivalent of 4.7 mb/d of oil by other energy sources, plus a net decline of 1.6 mb/d in crude oil consumption (Figure Box SF.1.B).

Coal's increasing use in electricity generation was encouraged by the International Energy Agency's decision to ban its member countries from building new oil-fired electricity plants under the *Principles for IEA Action on Coal* directive (IEA 1979). Coal's use was further aided by domestic policies, such as the U.S. *Powerplant and Industrial Fuel Use Act* of 1978, which provided that no new baseload electric power plant may be constructed or operated without the capability to use coal or another non-oil/gas alternate fuel as a primary energy source. The Act was repealed in 1987.

How has substitutability evolved in the vehicle industry?

Substitutability among commodities is also driven by environmental concerns. First, the fuel mix for electricity generation is changing. This comes in response to a preference for cleaner fuels like natural gas and for renewable sources (e.g., solar) instead of coal and other polluting energy sources such as firewood (Burke and Csereklyei 2016). Natural gas generates 53 kgs of CO_2 per mmbtu, compared to 71 kgs from oil and 93 kgs from coal, and also produces fewer particulate emissions (EIA 2016). In transport, numerous countries have legislated biofuel policies, mostly in the form of mandates. Such policies promoted maize-based ethanol in the United States, edible oil-based biodiesel in the European Union, and sugarcane-based ethanol in Brazil. About 4 percent of global grain and oilseed supplies have been diverted to fuel production and they account for 1.6 percent of global liquid energy consumption.

Second, transitioning toward a lower carbon energy environment is expected to significantly impact the

BOX SF.1 Innovation, disruptive technologies, and substitution among commodities *(continued)*

transportation industry, especially through the gradual replacement of internal combustion engine vehicles by electric vehicles (either fully battery-powered or through some form of hybrid technology).

Initially, electric vehicles faced numerous headwinds, including high prices, long charging times, and limited driving range. However, aided by improvements in battery technology and charging infrastructure, along with government incentives, electric vehicles have enjoyed impressive demand growth. In 2018, the global electric car fleet exceeded 5 million units, up 2 million from the previous year (IEA 2019). In the United States, electric and hybrid vehicles account for nearly 10 percent of total passenger vehicle purchases (Figure Box SF.1.C). China is currently the world's largest electric vehicle market, followed by the Europe and the United States, with Norway having the highest market share at 46 percent. Numerous countries (and car companies) have set high targets for electric vehicle penetration.

Not only will electric vehicles induce substitution of oil by other sources of energy (for electricity generation), but they will also induce substitution among metals for its components. An electric vehicle contains five-times more copper (battery, electric motor, and wiring) than an internal-combustion engine vehicle, and large volumes of copper will also be needed for power grid

extensions and electric vehicle charging infrastructure. For a standard battery pack with the most common battery chemistry, the main materials are aluminum, copper, cobalt, graphite/carbon, lithium, nickel, and manganese. The chemistry of lithium-ion electric vehicle batteries is moving toward higher nickel content to generate higher energy density.

The transition to cleaner fuels is impacting the ocean transport industry as well. New regulations implemented by the International Maritime Organization, known as IMO 2020, will restrict emissions of sulfur by marine vessels, and come into force on January 1, 2020. Vessel operators have three options to comply with the regulations: install scrubbers to remove the sulfur from ships' exhaust, thereby allowing the continued use of high-sulfur fuels; switch from using high sulfur fuel to a lower sulfur fuel, such as marine gasoil/diesel; or convert vessels to run on alternative fuels, such as liquefied natural gas. Most ships are expected to switch to using lower sulfur fuel. Although the impact of IMO 2020 on the energy mix used in ocean travel will be minimal, the regulation regarding sulfur emissions marks the beginning of an era of ocean transport regulation analogues to the emissions and efficiency standards regulation implemented in ground transport following the 1970s oil crises and, more recently, environmental concerns.

bunker fuel) and air transport (gasoline and jet kerosene). Recent innovations in battery tech-nology and charging infrastructure coupled with environmental concerns are altering the landscape of the transportation industry once again, this time by the rapid growth of hybrid and electric vehicles.

Industrial and consumer products

Innovation and substitutability in various industrial and consumer products have been widespread since the mid-twentieth century. In response to scientific advancements in chemistry, especially petrochemicals, there has been considerable substitution of both agricultural and

metal commodities by energy products and composite materials. Synthetic fibers, mostly derived from crude oil and natural gas, currently account for nearly two-thirds of global fiber consumption, while before the 1950s cotton was the dominant fiber (Baffes and Gohou 2006). Synthetic rubber, a key input to tire manufacturing and derived from crude oil, currently accounts for more than half of total rubber consumption. Synthetic fertilizers (mostly nitrogen-based), a product of innovations in the early twentieth century, replaced natural nutrients and have become an indispensable part of food production. Plastics (derived from crude oil and natural gas) have penetrated a vast number of consumer products.

FIGURE SF.2 Innovation and substitution across commodity groups

The invention of the steam engine revolutionized ocean travel in terms of speed and carrying capacity but also altered the composition of commodity consumption. Wooden frames along with cotton- and linen-based sail cloth used in sail ships (all agricultural commodities) were replaced by steel frames (made from iron ore) and steam engines (running on coal instead of renewable energy, i.e., wind) used in steamers. Innovations in chemistry introduced numerous oil-based synthetic materials that displaced primary commodities. Synthetic rubber (made from crude oil) displaced natural rubber (agricultural commodity). Biofuels (made from maize, sugarcane, and edible oils, all agricultural commodities) are replacing crude oil. Copper (used in solar panels and wind turbines) is displacing the use of fossil fuels in electricity generation.

A. Shipping capacity in the United Kingdom
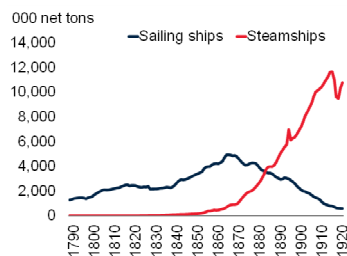
B. Share of synthetic rubber in global rubber consumption
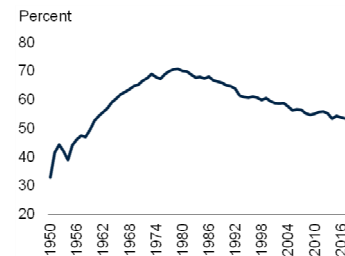
C. Share of biofuels in global liquid energy consumption
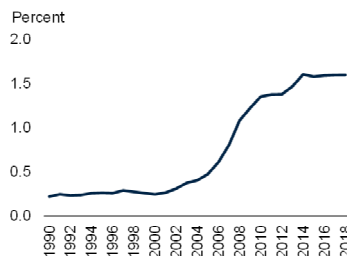
D. Copper requirements of different energy sources
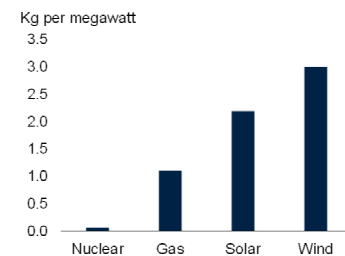
Source: BP Statistical Review, Mitchell (1988), World Bank, World Rubber Statistics Handbook.
A. Denotes ocean transport capacity of ships registered in the U.K.
B. Synthetic rubber is a substitute of natural rubber.
C. Consists mostly of maize- and sugar-based ethanol and edible oil-based biodiesel.
D. Denotes the amount of copper used in nuclear facilities, natural gas generation facilities, solar panels, and wind turbines.
Download data and charts.

In metals, copper has been increasingly replaced by plastic tubing in plumbing, while aluminum has displaced heavier materials in the manufacturing, construction, packaging, and transport sectors. In the beverage and food packaging sectors, there is large competition between aluminum, composites, glass, paper, plastic, tin, and other materials. Recent advances in information technology have also led to new types of substitution: paper (made from timber), which was used for information storage in the

form of books, is being rapidly replaced by digital storage (which uses energy and metals in its processes). In the telecommunications industry, cables (made mostly from copper) are being replaced by fiber optic lines (made from petrochemicals) and, more recently, by wireless communication devices and satellites, which use rare-earth metals and composite materials.

Commodity substitution: Empirical estimates

This section empirically examines the role of substitution in commodity consumption. The econometric exercise considers how demand for individual commodities responds to changes in their own price, and that of similar commodities. If substitution occurs between commodities, it is likely that an increase in the price of one commodity would result in an increase in demand for its close substitutes. As such, a negative coefficient for the price of another commodity may weakly indicate the presence of complementarity.[2] The exercise focuses on the two largest energy commodities (crude oil and coal) and two largest metals (aluminum and copper). It confirms that prices of substitute commodities are as important in explaining variations in commodity consumption as own prices. Detailed parameter estimates, which are based on a commodity demand model, are reported in the Appendix.

Energy

As noted earlier (and discussed below in Box SF.1), oil and coal are expected to be substitutes, given that both energy sources are used in electricity generation. Indeed, the results (reported in Table SF.1 and summarized in Figure SF.3) confirm such expectations. For oil, the coefficient on its own price is negative, as expected, suggesting demand falls (rises) as prices increase (decrease). The coefficient on the price of coal is positive, indicating substitution, since a rise in the price of coal results in an increase in demand for

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[2] It is also possible for commodities to be complements, where an increase in demand for one commodity leads to an increase in demand for another. For example, some metals are combined into alloys (e.g., copper and zinc are alloyed to make brass).

oil. Likewise, for coal, the coefficient on the price of oil is positive, suggesting a rise in coal demand when oil prices increase, and indicating substitution. Coal's own price coefficient is negative, as expected, suggesting demand increases (decreases) as its price falls (rises). These findings confirm the pattern of replacing oil with other energy sources, notably coal, in electricity generation that began after the oil crises of the 1970s. Indeed, prior to 1979, oil's share in electricity generation was nearly 15 percent while in 2018 it was only 3 percent.

Metals

Detailed results for the two metals are reported in Appendix Table SF.2. For aluminum, while its own price is negative, as expected, the coefficient on the price of copper was not significantly different from zero, suggesting changes in its price have no impact on aluminum consumption. This is not surprising given the much larger volume of aluminum consumption relative to copper (Figure SF.1). In contrast, for copper, the coefficient of the price of aluminum was positive and significant, suggesting that when the price of aluminum rises (falls), demand for copper increases (decreases). This is consistent with the fact that copper has increasingly been replaced by lower priced aluminum in the electrical industry, particularly for high voltage electrical cables.

Conclusion

The *Focus* analyzed the role played by substitution in determining demand for different commodities. It documents the historical evolution of substitution and showed that it occurs both within commodity groups (for example, from coal to natural gas for energy), and across commodity groups (such as paper for plastic). The *Focus* also finds empirical evidence in favor of substitution among commodities, notably between oil and coal and between aluminum and copper.

The findings confirm that inter-commodity substitution means that demand surges for a single commodity typically set in motion market forces that result in a reallocation of resources, either through direct substitution, or through investment and innovation, thus ensuring that the world's

FIGURE SF.3 Own and cross-price elasticity estimates

Apart from income, prices of substitute commodities are as important in explaining the variation in commodity consumption as own prices. For example, a 10 percent increase (decline) in the price of coal is associated with 4 percent decline (increase) in coal consumption and 4.2 percent increase (decline) in oil consumption.
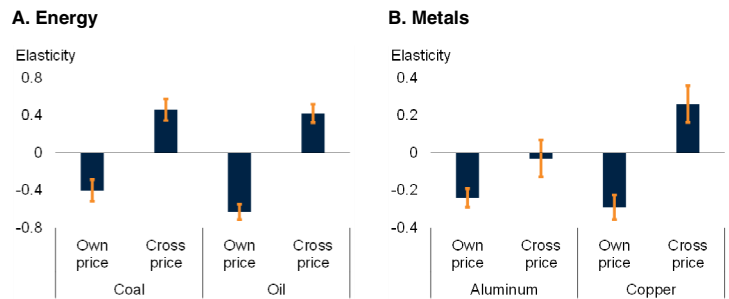
Source: Authors' calculations, BP Statistical Review, World Bank data, World Bureau of Metal Statistics.
A.B. Based on estimated long-run coefficients from autoregressive distributed lag estimation for up to 63 countries for 1965-2017 (Annex SF1.1). Blue bars denote elasticity estimates (i.e., a percent change in consumption in response to 1 percent change in income); yellow lines indicate 10 percent confidence intervals.
Download data and charts.

commodity supply needs are met. Given expected trends in population and income growth, commodity consumption is likely to continue to grow for several decades before it plateaus. For example, the world's population is expected to reach 9.8 billion by 2050 (from its current level of 7.6 billion), according to United Nations projections. Almost all of the population growth will take place in EMDEs, especially in low income regions such as Sub-Saharan Africa. Furthermore, income growth is projected to continue, especially in EMDSs, albeit at a slower pace compared to the past two decades. Previous research has shown that EMDEs have high income elasticities of demand compared to advanced economies.

On the other hand, the production and consumption of commodities are often associated with environmental externalities, both at the local and global level. Local externalities are typically easier to address since they require policy actions by a single government (although they can still prove controversial and be politically difficult to implement). For example, China has implemented a range of policies to improve air pollution in cities, including restrictions on metal smelting (as discussed in the metals section of this report).

Similarly, many countries implement recycling policies to reduce the amount of waste going to landfills. For global externalities, however, such as increased CO_2, ocean plastic waste, or water pollution, global policy actions are required. Because these externalities extend beyond the polluting country, the key policy concern is how to ensure that the production and consumption of commodities is environmentally sustainable rather than on ensuring commodity production meets growing demand.

Appendix

A standard demand equation is used (Adeyemi and Hunt 2007; Burke and Csereklyei 2016; Crompton 2015; Evans and Lewis, 2005; Fernandez, 2018; Stuermer 2017):

$$c_t = \mu + \theta_1 y_t + \theta_2 y_t^2 + \theta_3 p_t + \varphi' X_t + \varepsilon_t,$$

where c_t denotes per capita commodity consumption at year t; y_t^2 is real per capita income; p_t is the real price of the commodity; X_t is a $h \times 1$ vector of control variables, such as fixed effects and cross-price impacts; ε_t is the stochastic error term; and μ, θ_1, θ_2, θ_3 denote parameters and φ' a vector, all to be estimated. The quadratic income term, y_t, allows the calculation of income elasticities that vary across income levels (Baffes et al 2018). Most variables have been expressed in logarithmic terms.

The autoregressive-distributed lag model is estimated by a pool mean group estimation procedure (Pesaran, Shin, and Smith 1999). The procedure assumes homogeneity across all long-run estimators but allows for differences across countries in the short term—an appropriate assumption because commodity demand tends to be more similar across countries over the longer term than in the short term, where it may be heterogeneous. The Hausman test is used to assess the performance of the long-run homogeneity assumption while the Bayesian information criterion (BIC) is invoked to determine the lag structure (Pesaran and Shin 1999).

The model is applied to two energy commodities (coal and oil) and two metals (aluminum and copper). Oil, which accounts for about one-third of global energy consumption (measured by energy content), is primarily used for transport and, to a lesser degree, industrial applications including petrochemicals. Most coal (27 percent share of global consumption) is used for electricity generation and less for industrial purposes. Aluminum, by far the most important base metal in volumetric terms (it accounts for 55 percent of global metal consumption), is used in transport, followed by construction, packaging, and electrical grids. Copper (22 percent share of global

APPENDIX TABLE SF.1 Parameter estimates for energy

	Coal		Oil	
y_t	-0.87	6.54***	1.81***	1.40***
	(0.64)	(1.02)	(0.37)	(0.39)
y_t^2	0.08**	-0.39***	-0.07***	-0.04*
	(0.03)	(0.05)	(0.02)	(0.02)
p_t^{COAL}	0.01	-0.40***	–	0.42***
	(0.06)	(0.07)		(0.06)
p_t^{OIL}	–	0.46***	-0.41***	-0.63***
		(0.07)	(0.03)	(0.05)
ρ	-0.09***	-0.09***	-0.07***	-0.07***
	(0.02)	(0.01)	(0.01)	(0.00)
Log-likelihood	1,930	2,005	5,195	5,248
Observations	2,898	2,898	3,235	3,235
Countries	57	57	63	63

Note: The dependent variable is the logarithm of the respective commodity. Three (***), two (**), and one (*) asterisks denote significance of parameter estimates at 1, 5, and 10 percent level, respectively. Standard errors in parentheses. "–" indicates that the corresponding variable was not included in the model.

APPENDIX TABLE SF.2 Parameter estimates for metals

	Aluminum		Copper	
y_t	3.98***	3.84***	3.67***	3.07***
	(0.39)	(0.41)	(0.67)	(0.61)
y_t^2	-0.17***	-0.17***	-0.18***	-0.15***
	(0.02)	(0.02)	(0.03)	(0.03)
$p_t^{ALUMINUM}$	-0.21***	-0.24***	–	0.26***
	(0.03)	(0.03)		(0.06)
p_t^{COPPER}	–	-0.03	-0.27***	-0.29***
		(0.06)	(0.04)	(0.04)
ρ	-0.26***	-0.26***	-0.13***	-0.14***
	(0.03)	(0.02)	(0.02)	(0.02)
Log-likelihood	964	1,058	472	512
Observations	2,525	2,525	2,300	2,300
Countries	52	52	49	49

Note: The dependent variable is the logarithm of consumption of the respective commodity. Each commodity reports the "best fit" model. Three (***), two (**), and one (*) asterisks denote significance of parameter estimates at 1, 5, and 10 percent level, respectively. Standard errors in parentheses. "–" indicates that the corresponding variable was not included in the model.

consumption) is used extensively in the electrical sector, including power cables, generators and motors, as well as in construction and electronics.

Annual data for 1965–2017 for up to 63 countries (depending on the commodity) were used. Data sources include the BP Statistical Review (coal and oil consumption), the St. Louis Federal Reserve Bank (exchange rates), World Bank's Commodity Price Data (world commodity prices, converted into real terms by using country-specific GDP deflators), World Bank's World Development Indicators (per capita income and exchange rates); and World Bureau of Metal Statistics (aluminum and copper consumption). Tables SF.1 and SF.1 report parameter estimates for energy and metals, respectively, both with and without cross-price effects.

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Commodity Market
Developments and Outlook

Energy

Energy prices, both in aggregate and for individual energy commodities, fell sharply in the third quarter of 2019, reaching their lowest level in two years. Oil prices dropped by 8 percent on the quarter, as worries about slowing global demand outweighed temporary production disruptions in Saudi Arabia. Prices are expected to average $60/bbl in 2019 and $58/bbl in 2020, down from $68/bbl in 2018, with concerns about the weak global growth outlook and robust oil production weighing on the market. In contrast, natural gas consumption continues to grow strongly, supporting stable prices into 2020, while coal prices are expected to continue to fall. A further slowdown in global growth is the key downside risk to energy price forecasts.

Crude oil

Recent developments

Crude oil prices fell 8 percent in the third quarter of 2019 (q/q) and are down 18 percent relative to 2018Q3 (Figure 2). Brent crude oil prices ranged from a low of $56/bbl in August to a high of $69/bbl in mid-September, as worries about demand competed with a major production disruption in Saudi Arabia (Box 1). However, the spike in prices in September proved short-lived and Brent crude oil prices averaged $59/bbl in the first half of October.

Global consumption of crude oil is projected to grow by 1 percent (1 mb/d) in 2019, a slight slowdown relative to 2018. Non-OECD countries are expected to account for all of the increase in consumption, with China alone accounting for half of the rise. In contrast, consumption in OECD countries is anticipated to remain flat, with declines in Japan and Europe balanced by an increase in the United States.

The expected increase in consumption is markedly slower than initially forecast by the EIA, IEA, and OPEC, and reflects a broad-based slowdown in global growth. Indicators of activity, such as industrial production, trade volumes, and business surveys, have deteriorated sharply this year. Global sales of passenger vehicles, a major barometer of oil demand growth, have continued to fall, with

FIGURE 2 **Developments in oil prices and consumption**

Oil prices fell in the third quarter of 2019, despite a short-lived spike in September arising from geopolitical events. Expectations for oil consumption growth in 2019 have been continuously revised down, reflecting a broad-based downturn in global economic activity, while global vehicle sales growth has continued to deteriorate.

A. Oil prices

B. Evolution of 2019 oil demand forecasts

C. Global economic activity

D. Passenger vehicle sales
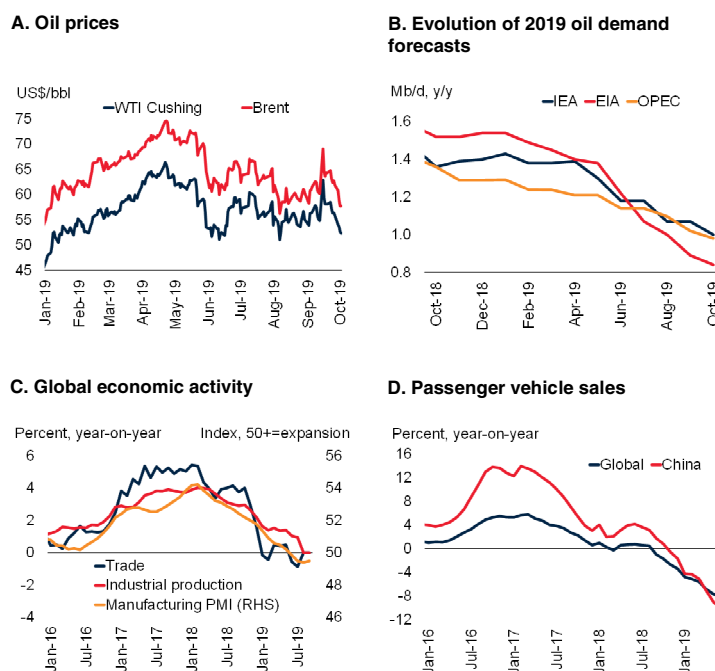
Source: Bloomberg, CPB Bureau of Economic Analysis, EIA, Haver, IEA, IMF, JP Morgan, OPEC, World Bank.
C. Figure shows 3-month moving averages. Trade is measured as an average of export and import volumes. Last observation is July 2019 for trade and industrial production and September 2019 for Manufacturing PMI.
D. 12-month moving average.
Download data and charts.

particularly large declines in China. Expectations for global growth both for 2019 and 2020 have been revised down substantially, including in emerging market and developing economies. Since these economies tend to have a larger income elasticity of demand for commodities than advanced economies, their slowdown has weighed disproportionately on energy demand (see October 2018 *Commodity Markets Outlook*).

Global oil production fell slightly in the third quarter of 2019 (q/q), and is down 1.3 percent relative to a year ago. OPEC output has tumbled 7 percent (2.7 mb/d) relative to last year, while non-OPEC production has increased 2 percent (1.4 mb/d), with the United States accounting for 80 percent of the gain (1.1 mb/d). Production in

FIGURE 3 Crude oil production

Crude oil production fell in the third quarter of 2019, as U.S. output growth slowed, and Saudi Arabia suffered production disruptions. Output in Iran continued to decline, with oil exports falling close to zero as a result of U.S. sanctions. Global tanker rates spiked after the U.S. placed sanctions on several Chinese shipping companies for allegedly shipping Iranian oil. The U.S. rig count continued to decline, and production growth slowed significantly.

A. Crude oil production in the three largest producers
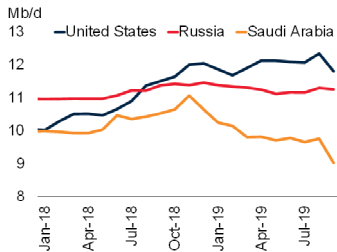
B. Destination of Iranian oil production
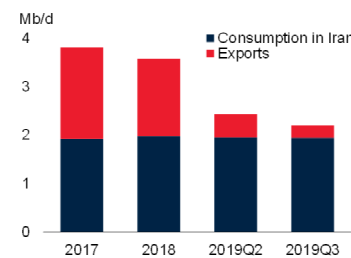
C. Global oil tanker shipping rates
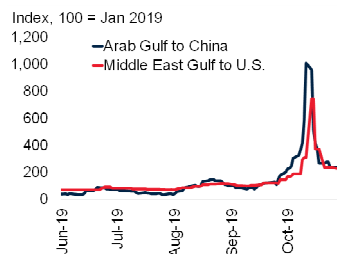
D. U.S. crude oil production and rig count
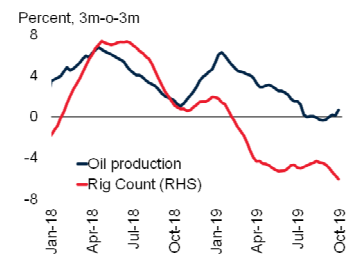
Source: Baker Hughes, Bloomberg, EIA, IEA.
Download data and charts.

Russia, the world's second largest producer of crude oil, weakened slightly in the middle of 2019 as a result of contamination of the Druzhba pipeline. However, the issues were broadly resolved by August and production recovered.

There are several reasons for the decline in OPEC production. In July 2019, the organization, together with their non-OPEC partners under the Vienna agreement, agreed to an extension of existing production cuts (of 1.2 mb/d) through March 2020. Production cuts among the participating OPEC members since the start of 2019 have actually been around 50 percent larger than agreed, mainly as a result of deeper contractions in Saudi Arabia (Figure 3). Production in Saudi Arabia in the third quarter of

2019 fell as a result of attacks on its oil infrastructure, with output in September dropping to its lowest level since 2011 (Box 1).

Crude oil production continued to fall in Venezuela and Iran. Their combined output was down by two-fifths (2 mb/d) in 2019Q3 compared to 2018 levels. Production in Venezuela declined to 0.7 mb/d in September, 50 percent lower than a year ago, as a result of the ongoing economic and humanitarian crisis. In Iran, U.S. sanctions have led to oil exports dropping to just 0.2 mb/d in 2019Q3, with production almost entirely absorbed by domestic consumption. In September, the United States imposed new sanctions on several Chinese shipping companies for allegedly breaching U.S. sanctions on Iran by continuing to transport Iranian oil. The sanctions led to a sharp spike in shipping costs, as they included some of the largest oil transporters. While shipping costs have dropped back from their recent peaks, the increase may make long distance oil exports more expensive.

Crude oil production growth in the United States has slowed this year and was flat (q/q) in the third quarter. The rig count has fallen each month this year and was 19 percent lower in October relative to a year ago. Against a backdrop of lower oil prices, shale oil companies have been under pressure from investors to improve returns on capital. As such, companies have focused on prioritizing the largest and most productive fields, leading to an increase in productivity per well, but more moderate growth in aggregate compared to 2018.

Weather-related disruptions (e.g., Hurricane Barry) have also impacted U.S. production, particularly activity in the Gulf of Mexico. As these effects wane, production in the fourth quarter of 2019 is expected to rebound sharply by mb/d relative to the third quarter, with output in October already showing signs of a recovery. An increase in pipeline capacity will help ease transport constraints, and may facilitate a rise in onshore production. This has also been a factor in narrowing the price differential between WTI Cushing and Brent, from an average of $8.60/bbl in 2019Q2 to $5.40/bbl in 2019Q3.

Price forecasts and risks

Outlook. Oil prices are expected to average $58/bbl in 2020, a slight decline from a projected $60/bbl in 2019 and a sharp drop from their 2018 level of $68/bbl. The forecast has been revised down substantially by $7/bbl, primarily reflecting the weaker global economic outlook.

On the demand side, oil consumption growth is expected to recover somewhat in 2020, according to the latest estimates by the EIA, IEA, and OPEC, although all have been revised down from earlier assessments. The increase in growth in 2020 is driven by a rise in OECD consumption, while non-OECD growth is expected to remain unchanged at just under 2 percent. For supply, IEA forecasts indicate non-OPEC production growth will accelerate next year to 2.2 mb/d (Figure 4). Growth in the United States is expected to moderate but remain robust, while new fields coming onstream in Brazil and Norway will boost production. As such, IEA expectations for non-OPEC production growth in 2020 are currently almost double their expectation for consumption growth.

Risks. The greatest risk to the forecast is a further deterioration in economic growth. Current expectations are for oil consumption growth to pick up to just over 1 percent in 2020. Historically, global growth has been around 1 percent in past episodes of global growth downturns, and has fallen by about 1 percent in global recessions (1975, 1982, 1991, 2009). In addition, the sectors of the economy which have seen the sharpest slowdown to date, notably trade and industry, play an outsize role in consumption of oil products. The transport industry accounts for two-third of total final consumption of oil, while industrial activity accounts for 8 percent.

On the supply side, U.S. production has scope to surprise to the upside, given the additional pipeline capacity coming onstream in coming months. Conversely, if producers continue to prioritize improved profitability, they may prove to be more cautious than currently expected. OPEC and its partners have indicated they may discuss further production cuts at their December

FIGURE 4 **Oil market outlook**

Production is expected to grow robustly in 2020, while the outlook for consumption is weak given the deterioration in the global economic outlook. Risks to the forecast have increased and remain tilted to the downside based on the prospects of a recession. Oil inventories have risen in 2019, and are near their 5-year average.

A. Expected non-OPEC oil production growth

B. Oil consumption growth during downturns and recessions

C. Global oil consumption, by sector

D. OECD oil inventories
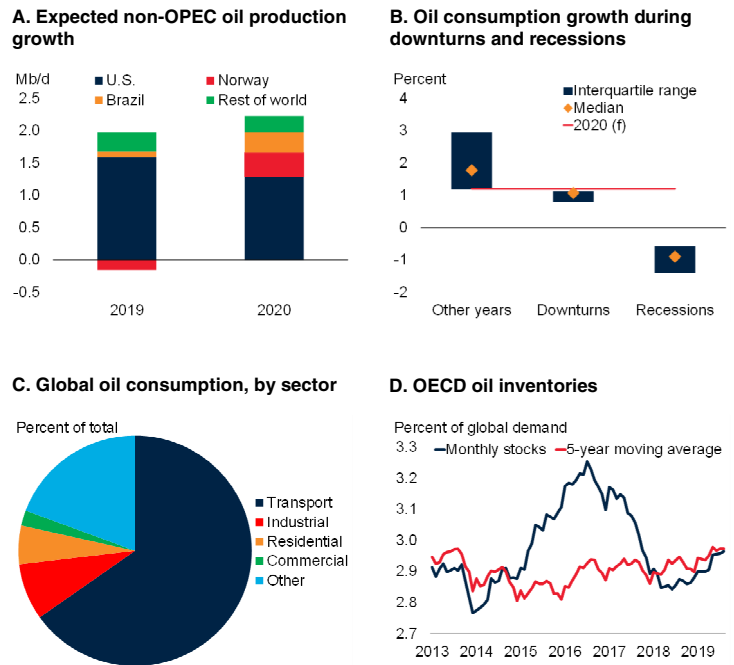
Source: EIA, IEA, OPEC, World Bank.
A. IEA forecasts from the October 2019 Oil Market Outlook Report.
B. Figure shows oil consumption by component of global business cycle from 1971 to 2018. Over this period, there have been four global recessions, defined as a contraction in growth, in 1975, 1982, 1991, and 2009, and three global downturns, defined by very low output growth, in 1998, 2001, and 2012. 2020 forecast is an average of the EIA, IEA, and OPEC October 2019 forecasts.
C. 2017 data.
Download data and charts.

meeting, which would help support prices. However, a push for larger production cuts, particularly if prices remain low, could put the agreement under increasing strain. Ecuador recently announced it will leave OPEC in January 2020, as it wants to increase production to boost fiscal revenue. The longer the cuts are maintained, the greater the likelihood additional countries may choose to exit the coalition. An end to the agreement and a return to original production levels would likely result in markedly lower prices.

Finally, the attacks on Saudi Arabia were a reminder that the oil market is still vulnerable to geopolitical events. While oil inventories have increased this year, spare capacity outside of Saudi

BOX 1 Oil market implications of the strike on Saudi Aramco facilities

On September 14, 2019, two of Saudi Arabia's oil facilities were attacked. Oil prices jumped on the first day of trading following the attack, but the response was more muted and shorter-lived than in previous episodes. Prices returned to their pre-attack levels by the end of September amid a rapid resumption of Saudi oil production, a coordinated policy response in other oil producers, more diversified global oil production and refining capacity, and weak global demand.

Introduction

On September 14, 2019, two of Saudi Arabia's oil facilities were attacked—Abqaiq, the largest crude oil processing plant in the world, and Khurais, Saudi Arabia's second largest oil field. The attacks led to the shutdown of 5.7 mb/d of output—around half of Saudi Arabia's production capacity and 6 percent of global oil production—and was the largest conflict-driven reduction in production (Figure B.1). Of the conflict-related reductions in output since the 1970s, only those during the Iranian revolution in 1978-79 and the Iraqi invasion of Kuwait in 1990 come close, with unanticipated, rapid and steep production disruptions. However, in contrast to these earlier disruptions, the recent one was rapidly reversed.

In response, the price of Brent crude oil jumped 15 percent, from $60 to $69/bbl. However, amid weak global oil demand and coordinated responses among oil producers, prices returned to their pre-attack levels by the end of September. This box discusses the policy response and market reaction to the attacks, and compares them to previous such episodes.

Policy response

Immediately after the attacks, Saudi Arabia drew on its oil reserves to help meet existing orders, although the exact quantities are unknown, and rapidly began restoring its facilities. By end-September, it had returned to its pre-attack level of production. As such, the total loss of production for September as a whole was 0.8mb/d—a sizeable reduction (8 percent of monthly average output in 2019), but much smaller than the initial disruption. Saudi officials expect spare capacity to be fully restored by end-November, but it could take longer given the complexity of the repairs according to the IEA's October 2019 report.

Spare capacity outside of Saudi Arabia is small, and a delayed return to full capacity could leave the global oil market vulnerable to another supply disruption. That said, other oil producers promptly signaled their readiness to stabilize prices if needed. The United States announced that, if necessary, it would release stocks from its Strategic Petroleum Reserve (0.65 billion barrels). The International Energy Agency noted that it would coordinate efforts to use the strategic reserves of its members, if needed. OECD inventories are estimated at 4.5 billion barrels according to the IEA, or about 45 days of global demand. Of these, one-third is controlled by governments and two-thirds is held by industry. Global inventories, which include less-reliable estimates from non-OECD countries, are approximately 6 billion barrels, equivalent to 60 days of global demand.

Market response

Following the attack, Brent prices rose by 15 percent—the largest daily price spike since 1988 (when Brent oil prices began trading on futures exchanges). Within two weeks, however, prices had returned below pre-attack levels. The oil futures curve also suggests that the longer-term price impact of the attacks has been negligible. For example, the December 2024 futures contract was essentially unchanged at end-September relative to the contract prior to the attack.

Despite the record disruption to production, the initial market response was more muted than during most previous conflict-driven production disruptions and prices returned faster to pre-attack levels. For example, within two months, spot oil prices tripled in response to the Arab oil embargo of 1973 and doubled in response to Iranian revolution of 1978 and the Iraqi invasion of Kuwait in 1990. The price increases in 1973 and 1979 were particularly long-lasting, while those in 1990 were reversed as the conflict subsided after several months. Indeed, the Kuwait attack is the most similar to the recent attack, as they were both of similar magnitude, and were resolved by globally coordinated action. In contrast, other production disruptions did not cause price spikes, most likely because events unfolded gradually.

In addition to the quick resumption of Saudi production and the coordinated policy response of

BOX 1 Oil market implications of the strike on Saudi Aramco facilities *(continued)*

FIGURE BOX 1.1 Conflict-driven oil supply disruptions and oil prices

The September 14 attack on Saudi Arabia's oil infrastructure was the largest conflict-driven disruption in history, although the outage was short-lived. As such, the spike in prices following the attack also unwound by the end of September, and the futures curve is the same as its level prior to the attack. The attack was most similar to Iraq's invasion of Kuwait in 1990. Once policy measures were announced, the price declined in a similar fashion, although the recent fall in prices was smaller.

A. Conflict-driven oil supply disruptions **B. Evolution of Brent futures prices** **C. Change in daily oil prices**
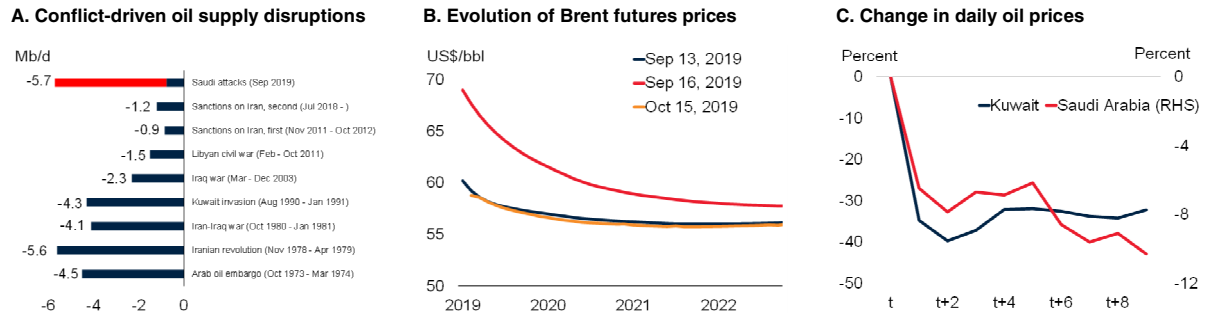
Source: Bloomberg, EIA, IEA, OPEC, World Bank.
A. Initial impact of Saudi attack shown in red, impact for the month of September shown in blue.
C. Figure shows the percent change in Brent crude oil prices in the aftermath of a geopolitical event. The blue line shows the change from January 16, 1991, the date of the U.S.-led response to Iraq's invasion of Kuwait, while the red line shows the change from September 16, 2019, following the attack on Saudi Arabia's infrastructure.
Download data and charts.

other oil producers, several factors have contributed to the muted market response to the attacks both for short- and long-term price expectations.

Short-term factors

- The attacks occurred against a backdrop of slowing global growth and repeated downward revisions to oil demand growth forecasts. Oil consumption is expected to grow by around 1 mb/d in 2019 and 1.2mb/d in 2020, levels usually seen during a global downturn.

- In 2020, oil production is expected to outpace consumption, with large production increases expected in Brazil (+0.3 mb/d), Norway (+0.4 mb/d), and the United States (+1.3 mb/d).

Long-term factors

- From a longer-term perspective, the geopolitical risk premium may have been suppressed by growing diversification of the oil industry. First, global oil production has become less concentrated,

especially as a result of the rapid growth of shale oil production.

- On the demand side, growing diversification of refining capacity has reduced dependence on a single type of oil. A growing number of new, "complex" refineries, particularly in East Asia, are more flexible than traditional refineries and, in the event of shortages of particular types of oil, can more easily accommodate different grades of oil (e.g., light or heavy oil) from different sources.

Conclusion

The market response to the attack on Saudi oil facilities in September 2019 was short-lived by historical comparison. In part, this reflected a quick rebound of production in Saudi Arabia, a coordinated response by other oil producers and inventory-holders, increasing diversification of production and refining, and weak demand. However, the attacks were a reminder that the global oil market is still dependent on several critical infrastructure and transport bottlenecks.

FIGURE 5 Natural gas and coal developments

Natural gas and coal prices declined in the third quarter of 2019. Continuing growth in exports of LNG have helped reduce price differentials. The slowdown in global trade and manufacturing is a downside risk for natural gas and coal, given the importance of the industrial sector in their consumption.

A. Natural gas prices
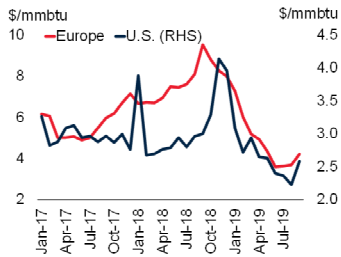
B. Coal prices
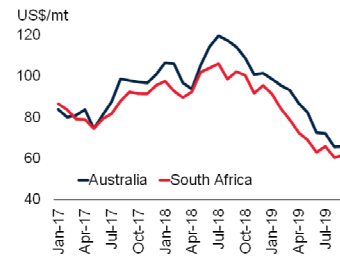
C. Global LNG export growth
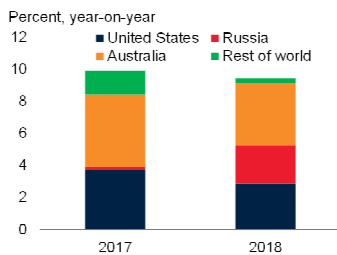
D. Natural gas and coal use, by sector
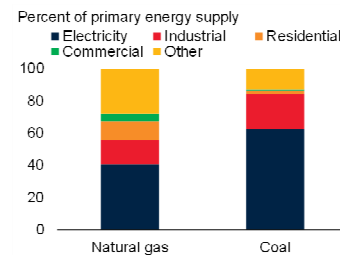
Source: Bloomberg, BP Statistical Review, EIA, IEA, World Bank.
D. 2017 data.
Download data and charts.

Arabia is limited to a small number of countries, chiefly Kuwait and United Arab Emirates. Further disruptions could lead to a reassessment of geopolitical risk premiums and trigger a rise in prices.

Natural gas and coal

*Natural gas and coal prices f*ell in 2019 Q3 by 7 and 12 percent (q/q), respectively (Figure 5). Natural gas prices are now one-third lower, and coal prices two-fifths lower, relative to 2018 Q3.

Natural gas. The shale oil boom has rapidly increased natural gas production in the United States, with output projected to rise by 10 percent in 2019 following a 12 percent gain in 2018. Despite robust demand for the cleaner-burning fuel (including record levels in the United States in 2019Q3), rapid growth in supply continues to put downward pressure on prices. Inventories have

risen sharply this year, and currently stand at their five-year average. As a result of the rapid increase in production, U.S. exports of liquefied natural gas (LNG) continue to rise, with a 55 percent expansion expected this year, according to the EIA's October report. LNG shipments are also rising elsewhere, with the increase in LNG exports in 2018 chiefly accounted for by just three countries—Australia, Russia, and the United States. The global increase in LNG exports has helped narrow differentials between regional prices, particularly between the United States and Europe. In contrast, Japanese contract prices have been slower to fall, given greater indexing to oil prices (although a growing spot market has seen an increasing divergence between Asian spot and Japanese contract prices).

Coal. Coal consumption has fallen rapidly in advanced economies, as part of an ongoing shift to reduce emissions (*Special Focus*). High carbon prices also added to coal consumption costs in Europe. In the United States, coal consumption fell 17 percent in the second quarter of 2019 (y/y), following a 6 percent decline the previous year. Low natural gas prices have encouraged an acceleration of the transition from coal to natural gas in electricity generation, and have therefore weighed on coal prices. The strongest growth in demand for coal remains in Asia, facilitated by new thermal power capacity (e.g., Malaysia and Vietnam), but a slowing manufacturing sector and growth in other fuels has limited growth in China.

Outlook. Price forecasts for both commodities have been revised down for 2020. Natural gas prices are expected to stabilize, while coal prices will decline. The slowdown in global economic growth will likely lead to weaker consumption for both commodities particularly given the slowdown in the industrial sector (industrial uses account for about 20 percent of their total demand). However, the outlook is slightly stronger for natural gas than coal, as the ongoing shift to natural gas in electricity generation is expected to continue, particularly in advanced economies. In addition, natural gas production growth, particularly in the United States, is expected to be weaker in 2020 as a result of a slowdown in new drilling.

Agriculture

Although most agricultural commodity prices appear to have stabilized recently, the factors that exerted downward pressure on them are still in place. They include multi-year-high stock levels for some grains, notably rice and wheat, favorable weather conditions in key producing regions, ongoing trade tensions, low energy costs, and weakening demand for some commodities. The World Bank's Agricultural Price Index declined nearly 2 percent in 2019Q3 and stands 3.3 percent lower than a year ago. Most sub-indexes declined in the quarter. Prices are projected to fall nearly 5 percent in 2019 and to stabilize in 2020—a sharp downward revision of the April forecast of about 2 percent in each year. Most of the risks are on the downside and emanate primarily from protracted trade tensions and lower input costs.

Grains, oils, and meals

Recent developments

The *World Bank's Grain Price Index* changed little in the third quarter of 2019 but remains 2.6 percent lower than a year ago (Figure 6). According to the U.S. Department of Agriculture's (USDA) latest assessment, global production of the three main grains—wheat, maize, and rice—is projected to increase 0.6 percent this season (September 2019 to August 2020). Although consumption is set to grow at nearly 1 percent, the stocks-to-use ratios for most grains and oilseeds (an approximate measure of supply relative to demand) remain at historically high levels, thus, reducing the risk of a price spike in the event of adverse weather conditions.

Wheat prices, which spiked temporarily in June in response to dry conditions in Australia, have moderated recently as supply prospects in the European Union, the United States, and much of Central Asia have been positive. Global production of wheat is expected to reach a record 765 mmt this season, nearly 5 percent higher than last season's crop. Global consumption is projected to grow 2.5 percent from last season, pushing the stocks-to-use ratio to 0.38, the highest level in over two decades.

FIGURE 6 Agricultural price developments

Although prices of some agricultural commodities appear to have stabilized recently, the factors exerting downward pressure are still in place. They include multi-year-high stock levels for some grains, favorable weather conditions in key producing regions, ongoing trade tensions, low energy costs, and weakening demand for some commodities.

A. Agriculture price indexes
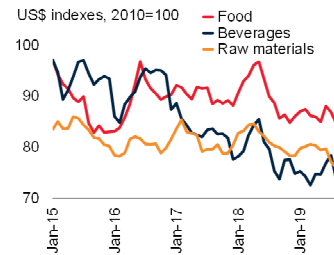
B. Food price indexes
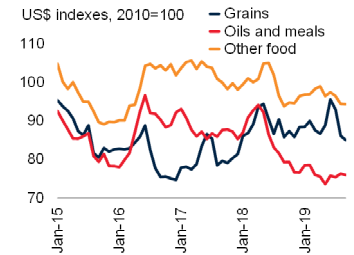
C. Wheat and maize prices
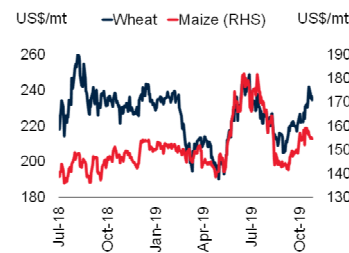
D. Soybean and soybean oil prices
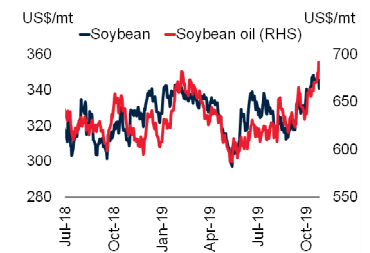
Source: Bloomberg, World Bank.
A.B. Last observation is September 2019.
C.D. Last observation is October 25, 2019.
Download data and charts.

Maize prices, which declined more that 3 percent in 2019Q3, are still 8 percent higher than a year ago. The projection for the 2019-20 global maize crop was revised sharply downward earlier in the season due to weather-related lower plantings in the United States (the world's largest producer). However, other key producers, including the European Union, Russia, South Africa, and Ukraine, are projected to experience larger-than-expected crops, partly balancing the shortfall in the United States.

Rice prices, which were remarkably stable earlier in the year, gained almost 3 percent in 2019Q3; they stand 4 percent higher than a year ago. Global rice production is heading for a minor contraction in 2019-20 due to heavy rains in some Southeast Asian countries, including Thailand and the Philippines. However, conditions in China, India,

FIGURE 7 Supply conditions for grains and edible oils

Production of most grains is set to increase in 2019-20; maize output, however, will contract by an estimated 2 percent due to weather-related lower plantings in the United States. Production of most edible oils is expected to rise.

A. Grain supply growth

mmt, annual change

■ Maize ■ Rice ■ Wheat
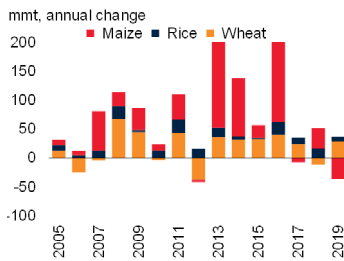
B. Edible oil supply growth

mmt, annual change

■ Palm oil ■ Soybean oil
■ Rapeseed oil ■ Others
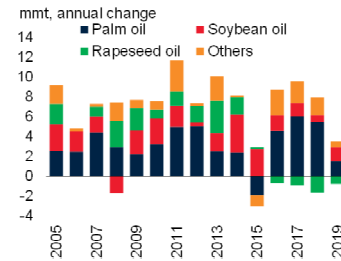
C. Global supply of wheat and rice

mmt

■ 2019-20, forecast
— 2018-19 estimate
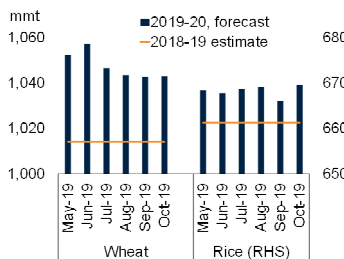
D. Global supply of maize and soybeans

mmt

■ 2019-20, forecast
— 2018-19, estimate
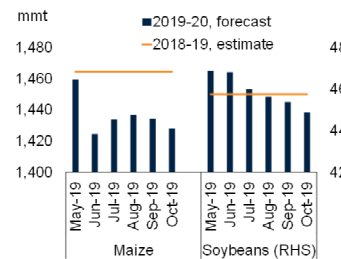
Source: USDA, World Bank.
A.B. Years represent crop season (for example, 2018 refers to 2018-19). Supply is the sum of beginning stocks and production. Data updated on October 10, 2019.
C. D. Blue bars denote revisions to the 2019-20 supply assessment (based on monthly USDA updates); orange lines denote the latest (October 10, 2019) estimate for the 2018-19 season.
Download data and charts.

Indonesia, Vietnam, and elsewhere are favorable. Given a projected moderate decline in global consumption, the grain's stocks-to-use ratio is expected to reach a 20-year high.

The World Bank's *Oil and Meal Price Index*, which increased marginally in 2019Q3 (q/q) following a 13-year low in the second quarter of 2019, stands almost 7 percent lower than a year ago. Although there is price weakness across the board, it is more pronounced in palm oil, palm kernel oil, and soybean meal, whose prices plunged 8, 32, and 13 percent, respectively, from 2018Q3 to 2019Q3. Low prices reflect several factors, including:

- Expectations of favorable harvests across most regions, notably for soybeans (in the United

States and South America), and palm oil (Indonesia and Malaysia);

- Trade frictions between the United States and China (which reduced the latter's imports of soybeans from the former);

- Reduced animal feed use due to the African Swine Fever, especially in China.

The edible oil production outlook for the current season (ending September 2020) continues to look promising (Figure 7). Global output of the 17 major edible oils (including palm, soybean, and rapeseed, which together account for two-thirds of global output) is forecast to increase more than 1 percent in 2019-20. Most of the output gains are expected to come from palm oil, primarily from Indonesia, which is enjoying favorable weather conditions. The country accounts for more than half of global palm oil production. Global soybean oil production is expected to increase by about 1 percent.

Global oilseed output for 2019-20 is expected to decline nearly 3 percent in response to a 5 percent drop in soybean production; output of most other oilseeds is projected to increase. The area allocated to the production of soybeans in the United States has contracted 15 percent during in the past two seasons. This is mostly in response to the tariff-related reduction in imports by China but also due to the near-collapse of animal feed demand from East Asia, notably China, related to the spread of African Swine Fever.

Price forecasts and risks

The *Grain Price Index* is expected to remain fairly stable in 2020, following a projected 2 percent decline in 2019. *Oils and Meals* prices are expected to decline 2 percent in 2020, following a projected plunge of more than 10 percent in the current year. Overall, grain and oilseed markets have been (and continue to be) well-supplied compared to recent history. For example, during 2015-19, the five-year average aggregate stocks-to-use ratio (which includes 12 major grains and edible oils) exceeded 0.30 for the first time since 1998-2002. Furthermore, the two price indexes have been

remarkably stable in the past five years as evidenced by declining volatility (Figure 8).

Several risks underpin these forecasts: the direction of energy and fertilizer prices, both of which are important inputs to grains and oilseeds; ongoing trade frictions and changes to domestic support policies; and currency movements of major exporters of particular commodities. El Niño, an important risk earlier in the year, has largely dissipated as the conditions that cause it are most likely to remain neutral through May 2020.

Energy costs. Energy is a key input to grains and oilseeds, affecting production directly through fuel costs and indirectly through fertilizers and other chemical inputs. Energy prices are expected to decline more than 1 percent in 2020, following a projected plunge of nearly 15 percent in 2019, both of which are large downward revisions from April forecasts. Fertilizer prices are expected to increase 2 percent in 2020, following a marginal decline in 2019. Earlier research has shown that a 10 percent change in energy costs is associated with a 2 percent change in grain and oilseed prices—in the same direction (see Special Focus of the July 2016 *Commodity Markets Outlook*). Thus, lower-than-expected energy and fertilizer prices present a downside risk to grain and oilseed prices.

Trade policies. Trade policies have played an important role in commodity price movements since the beginning of 2018, despite being limited to two countries (United States and China). Bilateral trade frictions typically lead to trade diversion, changing crop patterns, and substitution on the demand side, thus, dampening the impact on prices. Indeed, this has been the case with soybean markets: U.S. farmers diverted land from soybeans to other crops, Brazilian farmers increased soybean production, and China's soybean importers substituted soybean oil with palm oil and soybean meal with other animal feed, including maize (see Agriculture section of the April 2019 *Commodity Markets Outlook*). However, the escalation of trade frictions among other countries and other commodities could distort agricultural markets.

Macroeconomic conditions. Commodity prices may come under additional pressure if the U.S.

FIGURE 8 Supply conditions and price volatility

Grain and oilseed markets have been (and continue to be) well-supplied compared to recent history. The five-year average (2015-19) aggregate stocks-to-use ratio exceeded 0.30 for the first time since 1998-2002. During the same period, the grains and oils & meals price indexes have been remarkably stable as evidenced by declining volatility.

A. Stock-to-use ratios
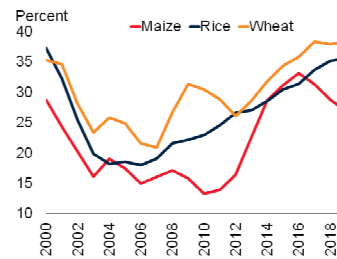
B. Aggregate stock-to-use ratio for food
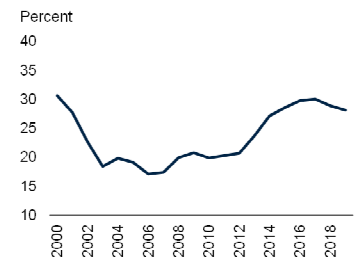
C. Grains and oils & meals price indexes
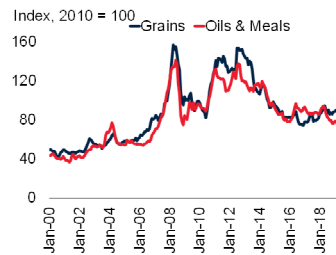
D. Grains and oils & meals price volatility
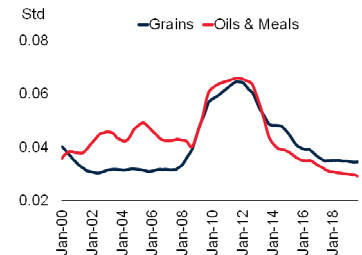
Source: Bloomberg, USDA, World Bank.
A. Years represent crop seasons (for example, 2018 refers to 2018-19). Data updated on October 10, 2019.
B. The aggregate stocks-to-use ratio comprises of 12 grains and edible oils and has been aggregated according to calorific content. Data updated on October 10, 2019.
C. Last observation is September 2019.
D. Price volatility has been calculated as the standard deviation of first differences, reported as a five-year trailing average and depicted as a 12-month moving average. That is, the last observation (September 2019) corresponds to volatility from October 2014 to September 2019.
Download data and charts.

dollar continues to strengthen. The currency's strength—up nearly 15 percent during the past 18 months (measured against a broad basket of currencies)—has already had a dampening effect on prices. Furthermore, currency movements of countries that account for a large share of global trade in a commodity market could also affect the price outlook, as has been the case with Brazil's currency and the coffee market (see Beverages section).

Biofuels. The agricultural outlook assumes that biofuels will continue to be a source of demand for some food commodities, especially in Brazil,

FIGURE 9 Beverage commodity market developments

Although the World Bank's Beverage Price Index has been relatively stable since the beginning of 2019—up 0.4 percent in the quarter, down nearly 1 percent from a year ago—some of its components have experienced significant price movements: Arabica prices have fluctuated in response to exchange rate swings in Brazil, and Robusta prices have fallen due to a large crop. In contrast, cocoa prices have been stable, reflecting little change in global production and consumption during the past two seasons.

A. Arabica coffee price vis-a-vis Brazilian real/U.S. dollar
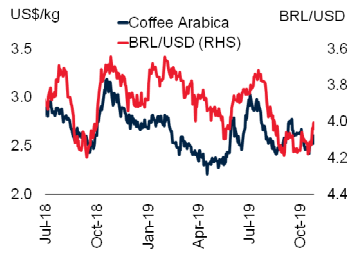
B. Cocoa and Robusta prices
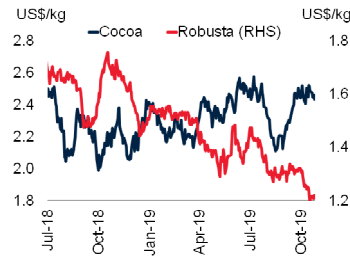
C. Coffee production
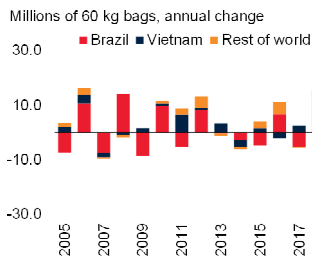
D. Cocoa production
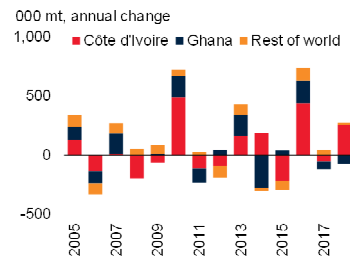
Source: Bloomberg, ICAC, IRSG, World Bank.
A. Last observation is October 25, 2019.
B. Years represent crop season (for example, 2018 refers to 2018-19 crop season).
C. Last observation is 2019.
D. Last observation is 2018.
Download data and charts.

the European Union, and United States. Although production of biofuels has plateaued, there are indications that growth may pick up again. For example, world production of biodiesel (mainly from edible oils) is set to grow by 4.3 mmt to a record 45.5 mmt in 2019. Palm oil used as biofuel feedstock is projected to grow by 3.3 mmt this year, with most of the growth coming from Indonesia. The country has increased its diversion of palm oil to biodiesel from 15 to 35 percent in the past four years. China also announced its intention to increase the production of maize-based ethanol. Indeed, in periods of low prices, many governments undertake policies favoring diversion of food commodities to biofuels in order to boost prices received by producers.

Beverages

The *World Bank's Beverage Price Index* has been relatively stable since the beginning of 2019—up 0.4 percent in the quarter, and almost 1 percent lower than a year ago. However, the index's stability masks significant divergence across its components, including strengthening in Arabica and declines in Robusta and tea prices (Figure 9). The index is expected to increase 2 percent in 2020, following a projected 5 percent decline in 2019.

Arabica and *Robusta* prices have followed diverse paths during the past several months. Arabica prices gained nearly 4 percent in the quarter and stand more than 5 percent higher than a year ago. Three key fundamentals are responsible for the increase. First, supply is expected to be 8 percent lower for the 12 months ending September 2019 compared to the same period of last year. Second, excessive rains in Brazil, the world's largest coffee producer, may hamper next season's crop. Third, Brazil's currency weakness against the U.S. dollar, which increased coffee prices in domestic currency terms, has directly impacted Arabica price movements. Brazil is the world's dominant Arabica producer and exporter. In contrast, Robusta prices, which declined marginally in 2019Q3 and are down 11 percent since 2018Q3, are mostly driven by increasing supply—up more than 4 percent this season. Arabica and Robusta prices are expected to increase 2 and 3 percent, respectively, in 2020 (in response to reduced supplies), following projected declines of 4 and 13 percent in 2019.

Cocoa prices, which declined 2 percent in the third quarter, have been relatively stable during the past 16 months as last year's large crop in Côte d'Ivoire was partly offset by a smaller crop in Ghana. These countries account for two-thirds of global cocoa supplies. The global crop is expected to grow by 2 percent this current season. Cocoa prices are projected to remain at current levels in 2019 and make a modest gain of 2 percent in 2020.

Tea prices, which declined 1 percent in 2019Q3, are nearly 6 percent lower than a year ago, mostly

in response to a plunge in prices at the Colombo and Mombasa auctions, which are down 11 percent each from a year ago. Prices in both auctions reached multi-year lows. The weakness in tea prices reflects a surge in global tea production due to favorable weather in key producing countries, including India and some East African producers, and weakening demand by several countries in the Middle East. Tea prices (the average of three auction markets) are expected to gain 2 percent in 2020 following an estimated decline of 11 percent in 2019.

Agricultural raw materials

The World Bank's *Raw Materials Price Index* declined nearly 5 percent in 2019Q3 (q/q) in response to a plunge in cotton prices and stands more than 4 percent lower than 2018Q3. The index is expected to make modest gains in 2020, following a projected decline of 4 percent this year.

Cotton prices plunged 11 percent to a four-year low in 2019Q3 (q/q) and are currently 23 percent lower than a year ago (Figure 10). The weakness reflects expectations that production will rise 4 percent to 26.8 mmt during the 2019-20 season, with increases expected in major producing countries, including India, the United States, and several West African countries. Given projected consumption of 26.5 mmt, global stocks will increase, thus exerting further downward pressure on prices, which are projected to average 16 percent lower in 2019 (y/y) before increasing modestly in 2020.

Natural rubber prices plunged nearly 14 percent in the third quarter of 2019 (q/q), following seven consecutive months of gains. The plunge reflects weak demand, especially decline in vehicle production in the European Union. Both production and exports of natural rubber have declined. For example, during January-August 2019, global natural rubber output was 4 percent lower than a year ago. Similarly, cumulative

FIGURE 10 **Agricultural raw materials market developments**

Cotton prices plunged 11 percent in 2019Q3 (q/q) to their lowest quarterly average since 2015; they stand 23 percent lower than a year ago. Price weakness reflects expectations of higher global output due to good crops in India, the United States, and West Africa. Natural rubber prices erased earlier gains and fell nearly 14 percent in 2019Q3 (q/q) due to large supplies earlier in the year.

A. Agricultural raw material prices
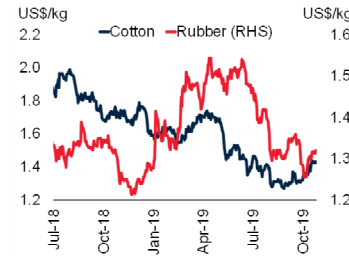
B. Cotton stocks
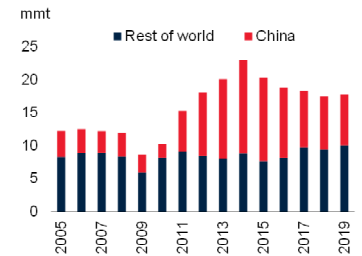
C. Natural rubber production
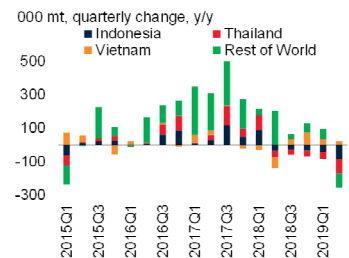
D. Natural rubber consumption
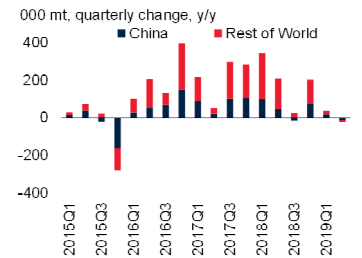
Source: Bloomberg, ICAC, IRSG, World Bank.
A. Last observation is October 25, 2019.
B. Years represent crop season (for example, 2018 refers to 2018-19 crop season).
C.D. Last observation is 2019Q2.
Download data and charts.

exports from Thailand and Indonesia for the first half of the year have been 20 and 13 percent lower, respectively, than a year ago. Together these two countries account for nearly two-thirds of global supplies.   As consumption for natural rubber for vehicle tires (two-thirds of its market) is expected to pick up modestly, mostly in the United States and, to a lesser extent, in the European Union, natural rubber prices are expected to recover by almost 4 percent in 2020 following a projected increase of 5 percent in 2019.

FIGURE 11 Fertilizer market developments

Phosphate prices declined in the third quarter of 2019 due to weak demand, increased supply, and lower input costs. On the other hand, urea prices increased on strong demand in Brazil, India, and the United States, while robust shipments to China continued to support potash prices.

A. Fertilizer prices
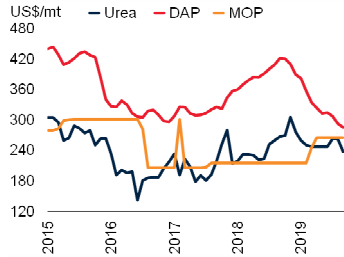
B. Phosphate fertilizer input costs
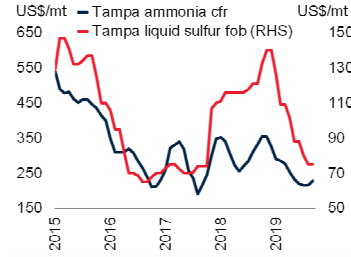
C. China's imports of potash
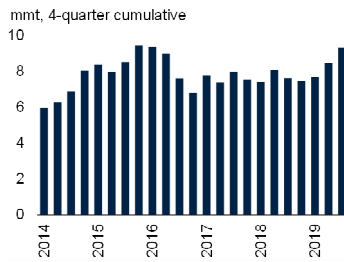
D. Top fertilizer producers in 2017
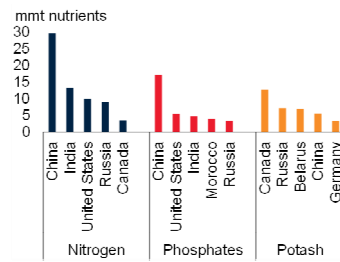
Source: Bloomberg, General Administration of Customs of the People's Republic of China, International Fertilizer Association, World Bank.
A. DAP = diammonium phosphate. MOP = muriate of potash.
A.-C. Last observation is September 2019.
C.D. mmt = million metric tons.
Download data and charts.

Fertilizers

The World Bank's Fertilizer Price Index fell 4.2 percent in the third quarter of 2019 (q/q) following two consecutive quarterly declines. A marked decline in phosphate prices drove the index lower. Urea prices rose, however, and potash prices remained unchanged. Fertilizer prices are projected to rise 2.2 percent in 2020, after an expected 0.6 percent loss in 2019, on continued acreage expansions. Risks to this outlook are broadly balanced. Upside risks include higher input costs, while downside risks include a restarting of idle capacity.

Nitrogen (urea) prices increased 2.9 percent in the third quarter, after large declines in the first half of 2019, due to strong demand in Brazil, India, and the United States. Brazilian demand has been robust on corn and soybean acreage expansions and increased animal protein exports to China due to the latter's African swine fever outbreak. A more favorable monsoon supported demand in India, while demand in the United States has picked up after delayed crop plantings due to heavy rains and floods. On the supply side, the re-imposition of sanctions on Iran by the United States has resulted in uncertainty over Iranian urea supply, which accounts for 6 percent of global urea exports. Prices are expected to average 0.6 percent lower in 2019 given the weakness earlier this year. In 2020, prices are projected to increase 1.7 percent on expectations of robust demand and limited new capacity.

Phosphate DAP prices fell 6.9 percent in the third quarter, following three consecutive quarterly declines. Prices in September were at 10-year lows. Consumption in China, the world's largest consumer of phosphate fertilizers, continues to fall as the country moves toward its zero growth policy on fertilizer use. On the production side, increased phosphate supply in Morocco and Saudi Arabia pushed prices lower. Prices were further compressed by lower input costs, particularly ammonia and sulfur. After an expected plunge of 20.2 percent in 2019, phosphate DAP prices are projected to increase by 3.3 percent in 2020 on expectations of a moderate recovery in demand and a cutback in supply, driven by environmental compliance in China.

Potash MOP prices were unchanged in the third quarter, following large increases in the first half of 2019. Prices in September remained 23.2 percent higher than at the start of the year, supported by strong demand from Brazil and China. Cutbacks of high-cost capacity and production delays at new projects in Canada, Russia, and Turkmenistan contributed to the price strength as well. Potash prices are projected to grow modestly by 2.1 percent in 2020, following an expected increase of 18.3 percent in 2019. Robust demand in Brazil (for corn and soybeans), China (fruits and vegetables), and Southeast Asia (palm oil) is expected to support prices in 2020 but price increases may be capped by considerable brownfield and greenfield supply additions coming on stream.

Metals and Minerals

The World Bank's Metals and Minerals Price Index fell 1.8 percent in the third quarter of 2019 (q/q) after two consecutive quarterly increases. The decline reflected a slowdown in global manufacturing activity, a prolonged stall in trade negotiations between China and the United States, and receding supply concerns for some metals. Metal prices are projected to fall by 1.4 percent in 2020 on expectations of subdued global industrial demand, following an expected decline of 5.2 percent in 2019. Risks to this outlook are tilted to the downside, including the possibility of a sharper-than-expected global downturn and less effective policy stimulus in China.

Aluminum prices dropped 1.7 percent in the third quarter, the fifth consecutive quarterly decline. Concerns about raw material (alumina) supplies have eased as the world's largest alumina refinery, Alunorte in Brazil, resumed operations in May after a 14-month court-ordered stoppage. The impact from China's red mud spill in May in the key production base of Shanxi Province has also receded. In addition, weak global car demand has weighed on aluminum prices. Yet, aluminum production and smelter capacity have expanded in China as environmental curbs have been less stringent than expected. Aluminum prices are forecast to fall by 1.7 percent in 2020, following an expected decline of 15.1 percent in 2019, reflecting lower alumina prices and large overcapacity in China.

Copper prices fell 5.1 percent in the third quarter, following a decline in the second quarter. Global industrial demand has been dampened by increased concerns of a global economic slowdown. Prices turned lower in May when the United States further hiked tariffs on Chinese exports, which elicited retaliation by China. Manufacturing activity in China, which accounts for half of global copper consumption, experienced a slowdown as metal-intensive sectors remained weak (e.g., construction, electricity, and transport). Weak demand has more than offset recent production disruptions at Chile's Chuquicamata mine (labor strife) and Indonesia's

FIGURE 12 Metals and minerals market developments

Most metal prices declined in the third quarter of 2019, reflecting weak global industrial demand, a collapse in trade negotiations between China and the United States, and easing supply concerns. However, nickel prices surged due to an unanticipated early imposition of a ban on nickel ore exports from Indonesia.

A. Copper prices and global manufacturing PMI
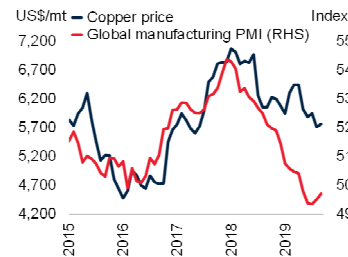
B. Base metal prices and Indonesia's nickel ore export policy
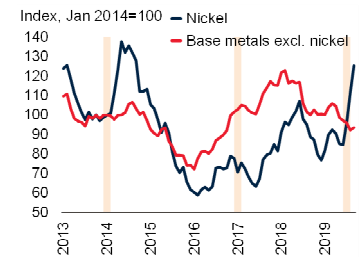
C. Top metal ore producers in 2018
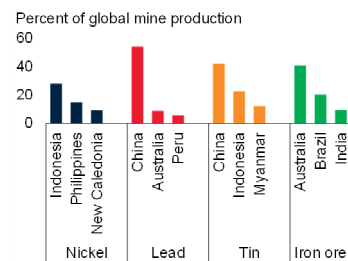
D. Metal demand and prices during global slowdowns or recessions
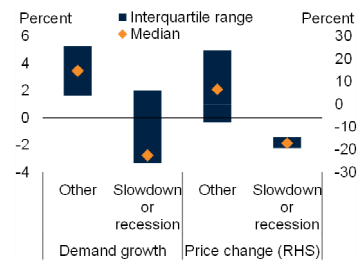
Source: British Geological Survey, China National Bureau of Statistics, Haver Analytics, London Metal Exchange, U.S. Geological Survey, World Bank, World Bureau of Metal Statistics, World Steel Association.
A. B. Last observation is September 2019.
A. PMI (purchasing managers' index) reading above (below) 50 indicates an expansion (a contraction).
B. The shaded bars represent important changes in Indonesia's policy on nickel ore exports. In January 2014, a full ban on nickel ore exports was enforced. The policy was relaxed in January 2017, allowing exports of low grade nickel ore until 2022, subject to quotas. In August 2019, the authorities announced a full ban to be re-imposed effective January 2020.
D. Figure shows annual metal demand and prices grouped by component of the global business cycle from 1971 to 2018. Over the time period, there have been four global recessions, defined as a contraction in growth, in 1975, 1982, 1991, and 2009, and three global slowdowns, defined by very low output growth, in 1998, 2001, and 2012.
Download data and charts.

Grasberg mine (operational transition from open pit to underground mining). Copper prices in 2019 are expected to average 8.0 percent lower than in 2018. However, prices are projected to increase moderately by 2.3 percent in 2020 as the recent fiscal stimulus in China and new rules on local government capital financing take effect, thereby boosting infrastructure investment.

Iron ore prices gained 1.2 percent in the third quarter, following four consecutive quarterly

increases. The price increase reflected supply disruptions in Australia (bad weather and operational issues) and Brazil (Vale's dam accident and suspensions), which amounted to a loss of about 6 percent of the global iron ore seaborne market. Robust steel production in China and the United States, despite weak industrial demand, also supported prices. Iron ore prices are anticipated to fall by 11.8 percent in 2020, after an expected gain of 32.2 percent in 2019. Next year's weakness reflects a recovery of supply from Brazil, overcapacity in the steel industry, and soft global steel demand as industrial activity slows.

Lead prices rose 7.7 percent in the third quarter, erasing the losses that occurred in the second quarter. The recent price increase reflected repeated unplanned outages at lead smelters in Australia and China and more stringent pollution controls in China that regulate recycling of scrap lead acid batteries. However, lead prices are expected to average 12.1 percent lower in 2019 due to weakness earlier in the year. In 2020, prices are forecast to be 1.0 lower as global auto sales are anticipated to remain weak. Four-fifths of lead demand comes from automotive batteries.

Nickel prices jumped 27.8 percent in the third quarter largely due to a sudden policy shift in Indonesia. In August, Indonesian authorities announced that a full ban on nickel ore exports would take effect in January 2020, two years ahead of schedule. A series of natural disasters in Sulawesi and Halmahera—key regions for nickel operations in Indonesia—added to supply concerns. China, the world's largest producer of stainless steel, relies heavily on Indonesian ore exports to produce nickel pig iron (NPI; nickel is required to make stainless steel shiny and corrosion-resistant). The early imposition of the ban has intensified supply concerns as mine production from other producers, such as the Philippines and New Caledonia, will increasingly be unable to meet the required feedstock levels. Stockpiling efforts by NPI producers ahead of the ban are also raising concerns. Nickel prices are projected to increase by 4.5 percent in 2020, following an expected gain of 7.8 percent in 2019.

Tin prices plunged 13.3 percent in the third quarter, following a decline in the second quarter. The price fall, accompanied by a sharp rise in inventories, reflected weak demand from the solder sector for electronics (which accounts for about half of all tin shipments), especially from semiconductor wafers. Weak demand has more than offset supply concerns over the depletion of Myanmar's mines—a key raw material supplier to China's refined tin producers. Tin prices are expected to average 6.8 lower in 2019 and remain broadly unchanged in 2020.

Among base metals, *zinc* prices experienced the sharpest decline in the third quarter, falling 14.8 percent. Demand for zinc, used primarily for galvanizing steel, has been weak in China due to relatively low demand from end-use sectors such as property and autos. New ore production from mines in Australia, Canada, and South Africa and a gradual retreat of bottlenecks at Chinese smelters have eased supply concerns. Zinc prices are projected to be 4.7 percent lower in 2020, following an expected decline of 12.1 percent in 2019.

The above forecasts are subject to several risks, mostly tilted to the downside. First, a sharper-than-expected global downturn may further dampen industrial demand and depress metal prices, especially for copper and aluminum. These metals have relatively higher income elasticities of consumption. Second, the recent fiscal stimulus measures in China may turn out to be less effective in lifting demand for metals (especially copper, aluminum, nickel, and zinc) since they prioritize tax cuts over government spending. On the other hand, tighter-than-expected environmental policies in China may constrain smelter capacity and support metal prices. Third, a relaxation of Indonesia's nickel ore export ban is a downside risk for nickel prices while a further tightening of regulations in Indonesia on exports of tin ingots and ores present an upside risk for tin prices.

Precious Metals

The World Bank's Precious Metals Index rose 12.9 percent in the third quarter of 2019 (q/q), reflecting an easing of monetary policy by the U.S. Federal Reserve, heightened global uncertainty, and robust physical demand. Precious metals prices are anticipated to continue their upward trend and increase by 5.6 percent in 2020, following an expected gain of 8.3 percent in 2019. Upside risks to this outlook arise from a sharper-than-expected global slowdown and heightened uncertainty; on the downside, a stronger-than-expected U.S. dollar could push prices lower.

Gold prices rose 12.6 percent in 2019Q3, following three consecutive quarterly gains. Prices have been supported by strong physical demand, interest rate cuts by the U.S. Federal Reserve, and increased global policy uncertainty. Increased demand for gold has been led by central bank purchases, investor holdings in gold-backed exchange traded funds, and jewelry sales, especially in India. Gold prices are forecast to average 5.8 percent higher in 2020, following an expected gain of 9.5 percent in 2019, on expectations of more expansionary monetary policies and robust demand.

Mirroring the trajectory in gold prices, *silver* prices increased 14.3 percent in 2019Q3. Prices were supported, in part, by increased purchases in India, in anticipation of new tariffs that were enacted in August. Furthermore, gold's premium to silver boosted investment and jewelry demand of the latter. Silver prices are forecast to average 4.9 percent higher in 2020, following an expected increase of 3.1 percent in 2019.

Platinum prices rose 4.7 percent in the third quarter, much less increase than gold and silver. Prices have been supported by supply disruptions due to labor strikes at South African mines. And, similar to silver, platinum's steep discount to gold led to increased investment demand. Platinum prices are expected to average 2.2 percent lower in 2019 due to weakness earlier in the year. In 2020, prices are projected to increase by 3.5 percent. Platinum's less optimistic outlook (compared to gold) reflects weak auto demand in China and Europe. Platinum is used extensively in catalytic

FIGURE 13 Precious metals market developments

Precious metals prices rose in the third quarter of 2019 due to interest rate cuts by the U.S. Federal Reserve, increased global policy uncertainty, and robust physical demand. The gold-to-copper ratio reached a three-year high, signaling weaker economic prospects.

A. Precious metals prices

B. Gold prices and interest rates

C. Central bank gold demand

D. Gold-to-copper price and global uncertainty
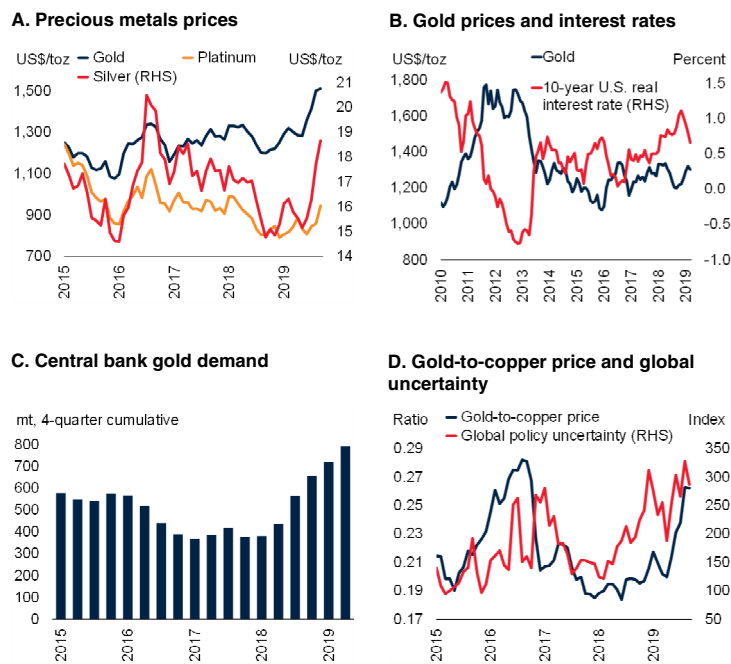
Source: Bloomberg, S. J. Davis ("An Index of Global Economic Policy Uncertainty," NBER Working Paper 22740, 2016), Federal Reserve Bank of St. Louis, Refinitiv GFMS, World Bank, World Gold Council.
A. B. D. Last observation is September 2019.
B. 10-year U.S. Treasury inflation-indexed security with constant maturity (not seasonally adjusted).
C. Last observation is 2019Q2.
D. The global policy uncertainty index is a GDP-weighted average of national indices for 20 countries.
Download data and charts.

converters for diesel engines which are increasingly falling out of favor due to stringent environmental regulations.

The risks to the precious metals price outlook are on the upside and reflect heightened uncertainty and weak growth prospects of the global economy. Indeed, the gold-to-copper price ratio—a barometer of the health of the global economy, since gold is a safe haven asset whereas copper is an industrial commodity—reached a three-year high. Similarly, the gold-to-silver and gold-to-platinum ratios reached near-historic highs—the former reached a 25-year high in June 2019, while the gold-to-platinum ratio reached a level not seen since the early 1900s. Industrial demand accounts for more than half of silver and platinum demand.

APPENDIX A

Historical commodity prices
Price forecasts

TABLE A.1 Commodity prices

Commodity	Unit		2017	2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Jul 2019	Aug 2019	Sep 2019
Energy												
Coal, Australia	$/mt	*	88.5	107.0	117.0	103.6	95.7	80.5	67.8	72.1	65.6	65.8
Coal, South Africa	$/mt		85.1	97.6	102.2	95.8	84.8	68.1	62.5	65.8	60.4	61.4
Crude oil, average	$/bbl		52.8	68.3	73.0	64.3	60.5	65.1	59.7	61.5	57.7	60.0
Crude oil, Brent	$/bbl	*	54.4	71.1	75.5	67.4	63.3	68.3	61.9	64.0	59.3	62.3
Crude oil, Dubai	$/bbl	*	53.1	69.2	74.0	66.8	63.4	67.0	60.9	62.9	58.9	60.8
Crude oil, WTI	$/bbl	*	50.9	64.8	69.7	58.8	54.9	59.8	56.4	57.5	54.8	57.0
Natural gas, Index	2010=100		68.9	82.1	82.7	93.7	72.5	58.3	54.4	52.7	51.8	58.7
Natural gas, Europe	$/mmbtu	*	5.72	7.68	8.40	8.34	6.15	4.28	3.83	3.62	3.68	4.21
Natural gas, U.S.	$/mmbtu	*	2.96	3.16	2.92	3.79	2.91	2.56	2.39	2.36	2.22	2.58
Liquefied natural gas, Japan	$/mmbtu	*	8.61	10.67	10.87	11.79	11.70	10.15	10.62	10.13	10.86	10.86
Non-Energy												
Agriculture												
Beverages												
Cocoa	$/kg	**	2.03	2.29	2.24	2.18	2.24	2.35	2.30	2.42	2.19	2.30
Coffee, Arabica	$/kg	**	3.32	2.93	2.77	2.95	2.80	2.73	2.87	2.99	2.78	2.84
Coffee, Robusta	$/kg	**	2.23	1.87	1.78	1.81	1.72	1.61	1.58	1.63	1.56	1.56
Tea, average	$/kg		3.15	2.85	2.78	2.69	2.43	2.65	2.62	2.64	2.63	2.59
Tea, Colombo	$/kg	**	4.05	3.61	3.33	3.34	3.29	3.07	2.98	2.84	3.06	3.04
Tea, Kolkata	$/kg	**	2.42	2.36	2.57	2.37	1.82	2.60	2.71	2.90	2.71	2.53
Tea, Mombasa	$/kg	**	2.97	2.58	2.43	2.36	2.19	2.28	2.17	2.17	2.13	2.21
Food												
Oils and Meals												
Coconut oil	$/mt	**	1,651	997	910	795	721	655	700	657	719	724
Fishmeal	$/mt		1,367	1,525	1,488	1,482	1,478	1,513	1,439	1,496	1,437	1,385
Groundnuts	$/mt		1,487	1,320	1,412	1,234	1,329	1,315	1,278	1,260	1,252	1,321
Groundnut oil	$/mt	**	1,461	1,446	1,465	1,435	1,373	1,387	1,451	1,438	1,458	1,458
Palm oil	$/mt	**	751	639	612	555	587	568	570	544	586	580
Palmkernel oil	$/mt		1,288	926	881	747	705	584	596	555	619	613
Soybean meal	$/mt	**	350	405	391	369	353	348	340	349	337	333
Soybean oil	$/mt	**	850	789	765	736	757	740	774	748	793	779
Soybeans	$/mt	**	393	394	370	374	377	353	366	370	361	366
Grains												
Barley	$/mt	**	98	126	126	119	119	145	133	149	135	115
Maize	$/mt	**	155	164	158	163	167	176	170	189	164	157
Rice, Thailand 5%	$/mt	**	399	421	403	405	408	414	424	416	430	427
Rice, Thailand 25%	$/mt		385	408	392	394	401	405	417	409	421	421
Rice, Thailand A1	$/mt		380	401	391	383	385	391	400	392	408	402
Rice, Vietnam 5%	$/mt		363	406	409	395	369	350	358	360	362	351
Sorghum	$/mt		163	169	159	160	168	163	152	160	148	150
Wheat, US HRW	$/mt	**	174	210	222	209	212	202	189	196	181	190
Wheat, US SRW	$/mt		178	204	209	213	213	207	201	204	198	202
Other Food												
Bananas, EU	$/kg		0.90	…	…	…	…	…	…	…	…	…
Bananas, U.S.	$/kg	**	1.08	…	…	…	…	…	…	…	…	…
Meat, beef	$/kg	**	4.39	4.20	4.10	4.00	4.33	4.64	4.63	4.63	4.60	4.65
Meat, chicken	$/kg	**	2.12	2.24	2.26	2.05	2.10	2.08	1.91	1.99	1.90	1.85
Meat, sheep	$/kg		5.42	5.87	…	…	…	…	…	…	…	…
Oranges	$/kg	**	0.81	0.79	0.84	0.73	0.64	0.55	0.53	0.54	0.53	0.53
Shrimp	$/kg		13.32	12.24	11.93	11.64	11.79	11.85	13.08	12.95	13.06	13.23
Sugar, EU	$/kg	**	0.37	0.39	0.38	0.37	0.37	0.37	0.36	0.37	0.36	0.36
Sugar, U.S.	$/kg	**	0.62	0.56	0.56	0.55	0.57	0.59	0.57	0.57	0.57	0.57
Sugar, World	$/kg	**	0.35	0.28	0.25	0.29	0.28	0.28	0.27	0.28	0.27	0.26

TABLE A.1 Commodity prices (*continued*)

Commodity	Unit		2017	2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Jul 2019	Aug 2019	Sep 2019
Raw Materials												
Timber												
Logs, Africa	$/cum		395	414	407	399	398	393	389	393	389	385
Logs, S.E. Asia	$/cum	**	265	270	267	264	270	271	277	275	280	277
Plywood	¢/sheets		487	495	490	484	496	497	509	505	514	508
Sawnwood, Africa	$/cum		617	640	625	616	624	616	590	598	582	592
Sawnwood, S.E. Asia	$/cum	**	702	728	710	701	710	701	672	680	662	673
Woodpulp	$/mt		875	875	875	875	875	875	875	875	875	875
Other Raw Materials												
Cotton	$/kg	**	1.84	2.01	2.07	1.91	1.82	1.80	1.60	1.67	1.56	1.57
Rubber, RSS3	$/kg	**	2.00	1.57	1.46	1.40	1.66	1.80	1.56	1.67	1.50	1.50
Rubber, TSR20	$/kg		1.67	1.37	1.33	1.27	1.41	1.50	1.35	1.41	1.31	1.34
Fertilizers												
DAP	$/mt	**	323	393	410	407	358	317	295	308	293	286
Phosphate rock	$/mt	**	90	88	87	94	101	98	79	80	78	78
Potassium chloride	$/mt	**	218	216	216	216	226	266	266	266	266	266
TSP	$/mt	**	283	347	359	377	340	303	276	284	275	270
Urea, E. Europe	$/mt	**	214	249	260	284	253	248	255	264	263	238
Metals and Minerals												
Aluminum	$/mt	**	1,968	2,108	2,053	1,963	1,863	1,794	1,764	1,797	1,741	1,754
Copper	$/mt	**	6,170	6,530	6,118	6,164	6,226	6,113	5,803	5,941	5,709	5,759
Iron ore	$/dmt	**	71.8	69.8	66.7	71.9	83.6	100.9	102.1	120.2	93.1	93.1
Lead	$/mt	**	2,315	2,240	2,094	1,966	2,035	1,885	2,031	1,976	2,045	2,072
Nickel	$/mt	**	10,410	13,114	13,239	11,463	12,412	12,244	15,651	13,546	15,749	17,657
Tin	$/mt	**	20,061	20,145	19,309	19,149	21,038	19,774	17,139	17,978	16,609	16,831
Zinc	$/mt	**	2,891	2,922	2,534	2,629	2,709	2,759	2,350	2,447	2,273	2,332
Precious Metals												
Gold	$/toz	***	1,258	1,269	1,213	1,229	1,304	1,310	1,475	1,413	1,500	1,511
Platinum	$/toz	***	948	880	814	822	823	843	883	844	859	945
Silver	$/toz	***	17.1	15.7	15.0	14.6	15.6	14.9	17.1	15.8	17.2	18.2
Commodity Price Indexes (2010=100)												
Energy			68.1	87.0	92.6	83.8	77.0	79.7	73.0	74.9	70.4	73.7
Non-energy			83.8	85.2	82.7	81.4	82.1	82.1	80.6	82.6	79.5	79.8
Agriculture			87.0	86.7	84.6	82.7	83.4	83.3	81.8	83.3	81.1	81.1
Beverages			83.1	79.1	76.2	76.6	74.0	75.4	75.7	78.4	73.7	75.1
Food			90.2	90.4	88.1	85.8	86.9	86.3	85.3	86.9	84.7	84.2
Oils and Meals			87.6	85.0	81.3	77.5	77.6	74.9	75.9	75.4	76.3	76.0
Grains			80.5	88.8	87.6	87.2	88.7	90.4	88.0	93.0	86.1	85.0
Other Food			102.4	99.1	97.4	95.3	97.4	97.6	95.1	96.4	94.4	94.3
Raw Materials			81.2	81.4	80.4	78.6	79.8	79.8	76.5	77.1	76.0	76.4
Timber			85.6	88.3	86.4	85.3	86.6	85.9	83.7	84.3	83.0	83.8
Other Raw Materials			76.3	73.9	73.8	71.2	72.4	73.2	68.6	69.3	68.2	68.3
Fertilizers			74.3	82.5	84.6	90.2	85.3	84.3	80.8	82.7	81.7	77.8
Metals and minerals			78.2	82.5	78.4	77.6	79.0	79.6	78.1	81.0	76.0	77.3
Base Metals		****	84.9	90.6	86.0	84.2	84.0	82.0	80.0	80.7	78.9	80.5
Precious Metals			97.8	97.2	92.8	93.4	99.2	98.9	111.5	106.3	113.2	114.9

Source: See Appendix C.
Note: (*) Included in the energy index; (**) Included in the non-energy index; (***) Included in the precious metals index; (****) Metals and Minerals excluding iron ore.
Monthly updates posted at www.worldbank.org/commodities.
Download data.

TABLE A.2 Commodity prices forecasts in nominal U.S. dollars

Commodity	Unit	2016	2017	2018	2019	2020	2021	2022	2025	2030
					Forecasts					
Energy										
Coal, Australia	$/mt	66.1	88.5	107.0	79.0	71.0	69.8	68.6	65.3	60.0
Crude oil, avg	$/bbl	42.8	52.8	68.3	60.0	58.0	59.1	60.2	63.7	70.0
Natural gas, Europe	$/mmbtu	4.6	5.7	7.7	4.5	4.5	4.7	4.9	5.6	7.0
Natural gas, U.S.	$/mmbtu	2.5	3.0	3.2	2.5	2.7	2.8	2.9	3.3	4.0
Liquefied natural gas, Japan	$/mmbtu	7.4	8.6	10.7	10.7	10.0	9.8	9.7	9.2	8.5
Non-Energy										
Agriculture										
Beverages										
Cocoa	$/kg	2.89	2.03	2.29	2.30	2.36	2.41	2.47	2.66	3.00
Coffee, Arabica	$/kg	3.61	3.32	2.93	2.80	2.85	2.90	2.95	3.11	3.40
Coffee, Robusta	$/kg	1.95	2.23	1.87	1.62	1.67	1.71	1.76	1.91	2.20
Tea, auctions (3), average	$/kg	2.68	3.15	2.85	2.55	2.60	2.66	2.71	2.89	3.20
Food										
Oils and Meals										
Coconut oil	$/mt	1,482	1,651	997	700	735	772	811	939	1,200
Groundnut oil	$/mt	1,381	1,461	1,446	1,410	1,434	1,459	1,484	1,561	1,700
Palm oil	$/mt	736	751	639	575	575	599	624	705	900
Soybean meal	$/mt	375	350	405	345	332	340	349	375	450
Soybean oil	$/mt	815	850	789	760	732	751	770	830	1,000
Soybeans	$/mt	405	393	394	365	355	367	380	421	530
Grains										
Barley	$/mt	104	98	126	130	134	138	142	155	180
Maize	$/mt	159	155	164	170	173	177	181	192	210
Rice, Thailand, 5%	$/mt	396	399	421	418	420	422	424	430	440
Wheat, U.S., HRW	$/mt	167	174	210	200	203	207	210	221	240
Other Food										
Bananas, U.S.	$/kg	1.00	1.08	1.15	1.14	1.14	1.13	1.13	1.12	1.10
Meat, beef	$/kg	4.06	4.39	4.20	4.55	4.52	4.48	4.45	4.36	4.20
Meat, chicken	$/kg	1.85	2.12	2.24	2.00	2.03	2.05	2.08	2.16	2.30
Oranges	$/kg	0.89	0.81	0.79	0.57	0.59	0.62	0.65	0.73	0.90
Shrimp	$/kg	11.22	13.32	12.24	12.40	12.54	12.68	12.82	13.25	14.00
Sugar, World	$/kg	0.40	0.35	0.28	0.28	0.29	0.30	0.30	0.33	0.38
Raw Materials										
Timber										
Logs, Africa	$/cum	387	395	414	390	395	400	406	422	450
Logs, S.E. Asia	$/cum	274	265	270	275	279	283	287	299	320
Sawnwood, S.E. Asia	$/cum	739	702	728	690	703	717	730	773	850
Other Raw Materials										
Cotton A	$/kg	1.64	1.84	2.01	1.70	1.74	1.78	1.82	1.96	2.20
Rubber, RSS3	$/kg	1.61	2.00	1.57	1.65	1.71	1.77	1.83	2.02	2.40
Tobacco	$/mt	4,806	4,679	4,863	4,750	4,727	4,704	4,680	4,612	4,500
Fertilizers										
DAP	$/mt	316	323	393	314	324	335	346	382	450
Phosphate rock	$/mt	110	90	88	89	92	95	98	107	125
Potassium chloride	$/mt	260	218	216	255	260	266	271	289	320
TSP	$/mt	291	283	347	297	304	311	318	340	380
Urea, E. Europe	$/mt	194	214	249	248	252	257	261	275	300
Metals and Minerals										
Aluminum	$/mt	1,604	1,968	2,108	1,790	1,760	1,800	1,840	1,968	2,200
Copper	$/mt	4,868	6,170	6,530	6,010	6,150	6,230	6,311	6,561	7,000
Iron ore	$/dmt	58.4	71.8	69.8	92.2	81.3	80.1	78.9	75.4	70.0
Lead	$/mt	1,867	2,315	2,240	1,970	1,950	1,965	1,979	2,024	2,100
Nickel	$/mt	9,595	10,410	13,114	14,140	14,780	15,074	15,374	16,311	18,000
Tin	$/mt	17,934	20,061	20,145	18,780	18,850	19,229	19,615	20,822	23,000
Zinc	$/mt	2,090	2,891	2,922	2,570	2,450	2,455	2,460	2,475	2,500
Precious Metals										
Gold	$/toz	1,249	1,258	1,269	1,390	1,470	1,452	1,434	1,382	1,300
Silver	$/toz	17.1	17.1	15.7	16.2	17.0	17.0	17.0	17.0	17.0
Platinum	$/toz	987	948	880	860	890	924	960	1,076	1,300

Source and Note: See Appendix C.
Download data.

TABLE A.3 Commodity prices forecasts in constant U.S. dollars (2010=100)

Commodity	Unit	2016	2017	2018	2019	2020	2021	2022	2025	2030
Energy										
Coal, Australia	$/mt	70.3	91.0	105.1	76.0	67.2	65.0	62.8	56.7	47.7
Crude oil, avg	$/bbl	45.5	54.3	67.1	57.8	54.9	55.0	55.1	55.3	55.6
Natural gas, Europe	$/mmbtu	4.9	5.9	7.5	4.3	4.3	4.4	4.5	4.9	5.6
Natural gas, U.S.	$/mmbtu	2.7	3.0	3.1	2.4	2.6	2.6	2.7	2.9	3.2
Liquefied natural gas, Japan	$/mmbtu	7.8	8.8	10.5	10.3	9.5	9.2	8.9	8.0	6.8
Non-Energy										
Agriculture										
Beverages										
Cocoa	$/kg	3.07	2.09	2.25	2.21	2.23	2.25	2.26	2.31	2.38
Coffee, Arabica	$/kg	3.84	3.42	2.87	2.70	2.70	2.70	2.70	2.70	2.70
Coffee, Robusta	$/kg	2.08	2.29	1.84	1.56	1.58	1.59	1.61	1.66	1.75
Tea, average	$/kg	2.86	3.24	2.80	2.45	2.46	2.47	2.48	2.51	2.54
Food										
Oils and Meals										
Coconut oil	$/mt	1,576	1,697	979	674	696	719	742	816	954
Groundnut oil	$/mt	1,468	1,502	1,420	1,357	1,358	1,358	1,357	1,356	1,351
Palm oil	$/mt	782	772	627	554	544	558	571	612	715
Soybean meal	$/mt	398	360	398	332	314	317	319	326	358
Soybean oil	$/mt	867	874	775	732	693	699	704	721	795
Soybeans	$/mt	431	404	387	351	336	342	348	365	421
Grains										
Barley	$/mt	111	100	124	125	127	128	130	135	143
Maize	$/mt	169	159	161	164	164	165	165	167	167
Rice, Thailand, 5%	$/mt	421	410	413	402	398	393	388	373	350
Wheat, U.S., HRW	$/mt	177	179	206	193	192	192	192	192	191
Other Food										
Bananas, U.S.	$/kg	1.06	1.11	1.13	1.10	1.08	1.05	1.03	0.97	0.87
Meat, beef	$/kg	4.32	4.51	4.12	4.38	4.28	4.17	4.07	3.78	3.34
Meat, chicken	$/kg	1.97	2.18	2.20	1.93	1.92	1.91	1.90	1.87	1.83
Oranges	$/kg	0.95	0.83	0.78	0.55	0.56	0.58	0.59	0.64	0.72
Shrimp	$/kg	11.93	13.69	12.01	11.94	11.87	11.80	11.73	11.51	11.13
Sugar, World	$/kg	0.42	0.36	0.27	0.27	0.27	0.28	0.28	0.29	0.30
Raw Materials										
Timber										
Logs, Africa	$/cum	412	406	406	375	374	373	371	366	358
Logs, S.E. Asia	$/cum	292	273	265	265	264	263	262	259	254
Sawnwood, S.E. Asia	$/cum	786	722	715	664	666	667	668	671	676
Other Raw Materials										
Cotton A	$/kg	1.74	1.89	1.98	1.64	1.65	1.66	1.67	1.70	1.75
Rubber, RSS3	$/kg	1.71	2.05	1.54	1.59	1.62	1.64	1.67	1.76	1.91
Tobacco	$/mt	5,111	4,810	4,774	4,573	4,474	4,379	4,282	4,005	3,577
Fertilizers										
DAP	$/mt	336	332	386	302	307	312	317	332	358
Phosphate rock	$/mt	117	92	86	86	87	88	89	93	99
Potassium chloride	$/mt	277	224	212	245	246	247	248	251	254
TSP	$/mt	310	291	340	286	287	289	291	295	302
Urea, E. Europe	$/mt	206	220	245	239	239	239	239	239	238
Metals and Minerals										
Aluminum	$/mt	1,706	2,023	2,070	1,723	1,666	1,675	1,684	1,709	1,749
Copper	$/mt	5,177	6,342	6,411	5,786	5,821	5,800	5,774	5,698	5,565
Iron ore	$/dmt	62.1	73.8	68.5	88.8	77.0	74.6	72.2	65.5	55.6
Lead	$/mt	1,985	2,379	2,200	1,896	1,846	1,829	1,811	1,757	1,669
Nickel	$/mt	10,204	10,700	12,875	13,612	13,990	14,033	14,066	14,165	14,309
Tin	$/mt	19,072	20,621	19,778	18,079	17,843	17,901	17,946	18,083	18,283
Zinc	$/mt	2,223	2,972	2,869	2,474	2,319	2,285	2,251	2,149	1,987
Precious Metals										
Gold	$/toz	1,328	1,293	1,246	1,338	1,391	1,352	1,312	1,201	1,033
Silver	$/toz	18.2	17.5	15.4	15.6	16.1	15.8	15.6	14.8	13.5
Platinum	$/toz	1,050	975	863	828	842	861	878	934	1,033

Source and Note: See Appendix C.
Download data.

TABLE A.4 Commodity price index forecasts (2010=100)

Commodity Unit	2016	2017	2018	Forecasts 2019	2020	2021	2022	2025	2030
Nominal US dollars (2010=100)									
Energy	55.1	68.1	87.0	74.3	72.0	73.3	74.7	79.1	87.2
Non-energy	79.4	83.8	85.2	81.2	81.3	82.6	84.0	88.4	97.4
Agriculture	87.5	87.0	86.7	82.6	83.1	84.7	86.3	91.3	102.0
Beverages	91.3	83.1	79.1	74.9	76.6	78.3	80.0	85.4	95.3
Food	89.6	90.2	90.4	86.0	85.9	87.6	89.2	94.5	106.6
Oils and Meals	88.3	87.6	85.0	76.1	74.5	76.9	79.3	87.2	107.7
Grains	80.7	80.5	88.8	88.8	90.1	91.5	92.9	97.3	104.6
Other food	99.5	102.4	99.1	96.5	97.3	98.1	98.9	101.7	106.9
Raw materials	80.2	81.2	81.4	78.4	79.6	80.9	82.3	86.5	94.3
Timber	89.6	85.6	88.3	85.2	86.7	88.3	89.8	94.7	103.5
Other Raw Materials	70.0	76.3	73.9	70.9	71.9	72.9	74.0	77.5	84.2
Fertilizers	77.8	74.3	82.5	82.0	83.8	85.6	87.5	93.3	103.9
Metals and minerals *	63.0	78.2	82.5	78.2	77.1	78.0	79.0	81.9	87.3
Base Metals **	68.3	84.9	90.6	81.7	82.1	83.4	84.8	88.9	96.4
Precious Metals	97.5	97.8	97.2	105.3	111.2	110.1	109.0	106.0	101.2
Constant 2010 U.S. dollars (2010=100), deflated by the MUV Index									
Energy	58.5	70.0	85.4	71.5	68.1	68.3	68.4	68.7	69.3
Non-energy	84.4	86.1	83.7	78.2	76.9	76.9	76.9	76.8	77.4
Agriculture	93.0	89.4	85.1	79.5	78.7	78.8	78.9	79.3	81.1
Beverages	97.1	85.4	77.6	72.1	72.5	72.8	73.2	74.2	75.8
Food	95.3	92.7	88.8	82.8	81.4	81.5	81.6	82.1	84.7
Oils and Meals	93.9	90.0	83.5	73.3	70.5	71.5	72.6	75.7	85.6
Grains	85.8	82.8	87.1	85.5	85.3	85.2	85.0	84.5	83.2
Other food	105.8	105.3	97.3	92.9	92.1	91.3	90.5	88.3	85.0
Raw materials	85.3	83.4	79.9	75.4	75.4	75.3	75.3	75.1	74.9
Timber	95.3	87.9	86.7	82.0	82.1	82.2	82.2	82.3	82.3
Other Raw Materials	74.4	78.5	72.6	68.2	68.0	67.9	67.7	67.3	66.9
Fertilizers	82.7	76.3	81.0	79.0	79.3	79.7	80.0	81.0	82.6
Metals and minerals *	67.0	80.4	81.0	75.3	73.0	72.7	72.3	71.1	69.4
Base Metals **	72.6	87.3	88.9	78.6	77.7	77.7	77.5	77.2	76.6
Precious Metals	103.6	100.6	95.4	101.3	105.2	102.5	99.8	92.0	80.4
Inflation indexes, 2010=100									
MUV index ***	94.0	97.3	101.9	103.9	105.6	107.4	109.3	115.1	125.8
% change per annum	-3.9	3.5	4.7	2.0	1.7	1.7	1.8	1.8	1.8
U.S. GDP deflator	110.1	111.8	114.2	116.0	118.1	120.5	122.9	130.4	144.0
% change per annum	1.3	1.6	2.1	1.5	1.8	2.0	2.0	2.0	2.0

Source: See Appendix C.
Note: (*) Base metals plus iron ore; (**) Includes aluminum, copper, lead, nickel, tin and zinc; (***) MUV is the unit value index of manufacture exports. For other notes see Appendix C.
Download data.

APPENDIX B

Supply-Demand balances

Aluminum

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand metric tons)				
Bauxite Production									
Australia	9,256	27,179	41,391	53,802	68,584	80,910	83,517	89,421	96,548
China	500	1,700	3,655	7,900	36,837	60,788	66,158	65,000	79,000
Guinea	2,600	13,911	16,150	17,992	17,500	20,692	26,917	45,000	55,178
Brazil	510	4,632	9,749	13,974	32,028	37,064	37,700	38,123	32,007
India	1,370	1,785	4,853	7,993	12,723	28,124	24,745	22,313	23,229
Indonesia	1,223	1,249	1,164	1,151	27,410	472	700	1,294	10,500
Jamaica	12,010	11,978	10,965	11,127	8,540	9,629	8,540	8,245	9,963
Kazakhstan	989	n/a	n/a	3,730	5,310	4,683	4,801	4,843	6,104
Russia	n/a	n/a	n/a	5,089	5,035	5,398	5,432	5,523	5,650
Saudi Arabia	5	n/a	n/a	n/a	236	2,174	3,843	3,708	4,323
Vietnam	n/a	n/a	n/a	16	80	1,100	1,500	2,700	3,600
Sierra Leone	449	674	1,445	n/a	1,089	1,334	1,369	1,788	2,034
Guyana	3,211	3,052	1,424	2,689	1,083	1,526	1,479	1,459	1,926
Others	*n/a*	*n/a*	*n/a*	*13,751*	*10,240*	*39,023*	*14,639*	*14,346*	*8,616*
World	**57,280**	**93,268**	**115,099**	**139,213**	**226,695**	**292,915**	**281,340**	**303,761**	**338,677**
Refined Production									
China	127	350	854	2,989	16,244	31,518	32,698	32,273	35,802
Russia	n/a	n/a	n/a	3,247	3,947	3,529	3,561	3,584	3,653
India	161	185	433	624	1,621	2,355	2,897	3,401	2,934
Canada	963	1,068	1,567	2,373	2,963	2,880	3,209	3,212	2,923
United Arab Emirates	n/a	35	174	536	1,400	2,397	2,471	2,500	2,389
Australia	206	303	1,234	1,769	1,928	1,646	1,635	1,487	1,574
Norway	530	653	867	1,031	1,090	1,224	1,247	1,253	1,275
Bahrain	n/a	126	213	509	851	961	971	981	1,011
Saudi Arabia	5	n/a	n/a	n/a	0	839	871	916	932
United States	3,607	4,654	4,048	3,668	1,726	1,587	818	741	897
Malaysia	1	n/a	n/a	n/a	60	440	620	760	760
Iceland	39	73	87	226	826	800	855	870	733
South Africa	n/a	86	158	673	807	695	701	716	714
Others	*n/a*	*n/a*	*n/a*	*5,237*	*6,649*	*6,470*	*6,759*	*6,900*	*6,893*
World	**9645**	**16,099**	**19,275**	**24,632**	**41,454**	**57,865**	**59,625**	**59,405**	**62,491**
Refined Consumption									
China	225	550	861	3,352	15,854	31,068	32,563	31,908	35,521
United States	3,488	4,454	4,330	6,161	4,242	5,325	5,121	5,615	4,630
Germany	825	1,272	1,379	1,632	1,912	2,163	2,197	2,160	2,139
Japan	911	1,639	2,414	2,223	2,025	1,779	1,742	1,950	1,979
India	162	234	433	601	1,475	1,521	2,202	2,253	1,750
Korea, Rep.	15	68	369	823	1,255	1,366	1,453	1,420	1,151
Turkey	14	45	152	211	703	952	949	961	954
Italy	279	23	0	780	857	801	909	924	951
Brazil	84	296	341	514	985	801	764	868	873
Others	*4,024*	*6,731*	*8,947*	*8,708*	*11,255*	*11,437*	*11,704*	*11,980*	*12,771*
World	**10,027**	**15,312**	**19,227**	**25,004**	**40,563**	**57,213**	**59,604**	**60,038**	**62,719**

Source: British Geological Survey, Metallgesellschaft, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available.

Bananas

Monthly Prices (US$/kg)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/kg)
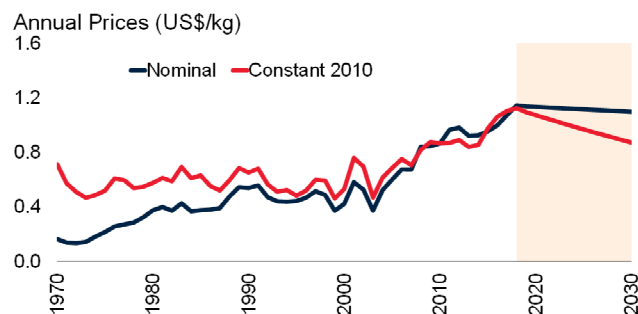
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2014	2015	2016	2017
				(thousand metric tonnes)					
Exports									
Ecuador	1,246	1,291	2,157	3,994	5,156	5,746	6,070	5,974	6,415
Philippines	107	923	840	1,600	1,590	3,115	1,223	1,397	2,668
Costa Rica	856	973	1,434	2,079	1,909	2,170	1,974	2,365	2,525
Guatemala	200	371	360	802	1,388	2,064	2,152	2,238	2,343
Colombia	262	692	1,148	1,564	1,692	1,678	1,589	1,842	1,885
Belgium	n/a	n/a	n/a	967	1,219	1,284	1,129	1,130	1,284
Netherlands	1	7	43	49	136	306	440	506	684
Honduras	799	973	781	375	471	636	692	659	605
United States	191	205	337	400	503	561	568	573	594
Mexico	1	16	154	81	176	386	417	448	561
Côte d'Ivoire	140	122	94	243	266	326	305	364	387
Germany	5	3	29	105	384	368	370	357	343
Panama	600	504	745	489	271	245	259	248	284
Cameroon	50	65	78	238	238	265	283	295	276
France	0	3	26	242	322	307	287	253	250
Peru	0	0	0	0	1	160	191	202	203
Dominican Republic	4	10	11	79	340	500	138	383	125
Nicaragua	6	121	92	44	20	65	77	104	113
Bolivia	0	0	0	9	79	111	124	124	104
Others	*1,050*	*495*	*699*	*975*	*1,327*	*1,354*	*1,372*	*1,362*	*1,532*
World	**5,519**	**6,772**	**9,030**	**14,336**	**17,491**	**21,647**	**19,659**	**20,826**	**23,181**
Imports									
United States	1,846	2,423	3,099	4,031	4,115	4,581	4,633	4,597	4,814
Russia	n/a	n/a	n/a	503	1,068	1,275	1,227	1,356	1,544
Germany	548	614	1,232	1,115	1,234	1,388	1,389	1,391	1,417
Belgium	n/a	n/a	n/a	1,027	1,351	1,321	1,219	1,282	1,406
United Kingdom	335	322	470	743	979	1,116	1,121	1,148	1,133
China	n/a	n/a	14	593	665	1,127	1,074	887	1,039
Japan	844	726	758	1,079	1,109	946	959	956	986
Netherlands	81	114	142	160	222	448	677	771	909
Italy	288	279	429	605	658	691	679	712	758
France	435	446	497	341	550	596	580	560	669
Canada	199	246	341	399	496	555	562	570	579
Iran	2	0	50	200	661	600	590	450	500
Argentina	164	195	73	340	351	411	427	433	488
Poland	3	47	8	285	245	305	319	305	446
Korea, Rep.	3	15	22	184	338	359	363	365	437
Spain	n/a	n/a	0	143	158	259	233	274	308
Iraq	3	16	1	0	1	124	88	107	279
Ukraine	n/a	n/a	n/a	60	152	215	146	192	238
Saudi Arabia	22	135	129	188	307	206	232	199	212
Sweden	66	70	143	187	183	198	206	201	211
Turkey	n/a	n/a	62	124	201	207	219	209	208
Others	*745*	*1,032*	*1,414*	*2,132*	*2,887*	*3,138*	*3,437*	*3,342*	*3,582*
World	**5,584**	**6,680**	**8,881**	**14,436**	**17,934**	**20,067**	**20,379**	**20,306**	**22,164**

Source: FAO.
Note: Data include re-exports. Data for 1970, 1980, and 1990 are from the Intergovernmental Group on Bananas and Tropical Fruits (March 8, 2018 update) while data for 2000 onwards are from Banana Market Review (2017). Due to different methodologies, pre- and post-2000 data may not be directly comparable.

Coal

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

—Nominal —Constant 2010
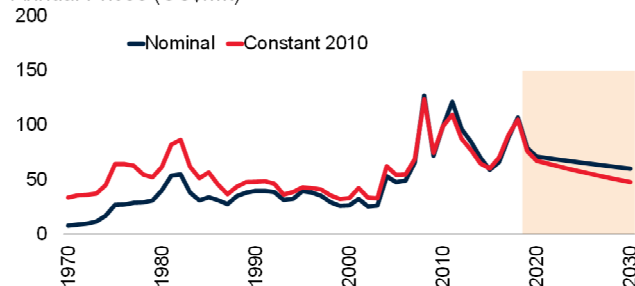
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1981	1990	2000	2005	2010	2015	2016	2017	2018
					(million metric tonnes oil equivalent)				
Production									
China	311	540	707	1,242	1,665	1,826	1,691	1,747	1,829
United States	440	538	542	551	524	427	348	371	364
Indonesia	0	6	45	90	162	272	269	272	323
India	64	106	152	190	252	281	284	287	308
Australia	68	115	172	215	251	306	307	299	301
Russia	n/a	186	122	136	151	186	194	206	220
South Africa	75	100	127	138	144	143	142	143	143
Colombia	3	14	26	41	51	59	62	62	58
Kazakhstan	n/a	57	32	37	48	46	44	48	51
Poland	103	100	72	69	55	53	52	50	48
Germany	143	125	61	57	46	43	40	39	38
Mongolia	2	3	2	4	15	14	22	30	34
Canada	23	40	39	35	35	32	33	32	29
Vietnam	3	3	7	19	25	23	22	21	23
Turkey	7	12	13	11	18	13	15	15	17
Czech Republic	43	36	25	24	21	17	16	15	15
Ukraine	n/a	76	36	35	32	16	17	14	15
Mexico	2	3	5	6	7	7	6	7	8
Serbia	n/a	n/a	n/a	n/a	7	7	7	7	7
Bulgaria	5	5	4	4	5	6	5	6	5
Greece	4	7	8	9	7	6	4	5	4
Romania	9	8	6	6	6	5	4	4	4
Thailand	1	4	5	6	5	4	4	4	4
Others	n/a	n/a	n/a	n/a	69	69	71	69	69
World	**1,843**	**2,251**	**2,301**	**3,011**	**3,602**	**3,861**	**3,661**	**3,755**	**3,917**
Consumption									
China	303	528	706	1325	1749	1914	1889	1890	1907
India	64	110	164	211	290	395	400	416	452
United States	381	459	541	546	499	372	341	331	317
Japan	65	78	96	114	116	119	119	120	117
Korea, Rep.	15	24	43	55	76	85	81	86	88
Russia	n/a	182	106	95	91	92	89	84	88
South Africa	51	67	75	80	93	85	87	84	86
Germany	144	132	85	81	77	79	77	72	66
Indonesia	0	3	13	24	40	51	53	57	62
Poland	91	78	56	55	55	49	49	50	51
Australia	29	38	48	52	49	47	47	45	44
Turkey	7	16	23	22	31	35	38	39	42
Kazakhstan	n/a	39	18	27	33	34	34	36	41
Taiwan, China	4	11	28	35	38	38	39	39	39
Vietnam	3	2	5	9	15	26	28	28	34
Others	n/a	455	351	375	355	348	339	340	337
World	**1,819**	**2,222**	**2,356**	**3,106**	**3,606**	**3,769**	**3,710**	**3,718**	**3,772**

Source: BP Statistical Review (June 2019 update).
Note: n/a implies data not available. Commercial solid fuels only, i.e. bituminous coal and anthracite (hard coal), and lignite and brown (sub-bituminous) coal, and other commercial solid fuels.

Cocoa

Monthly Prices (US$/kg)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/kg)
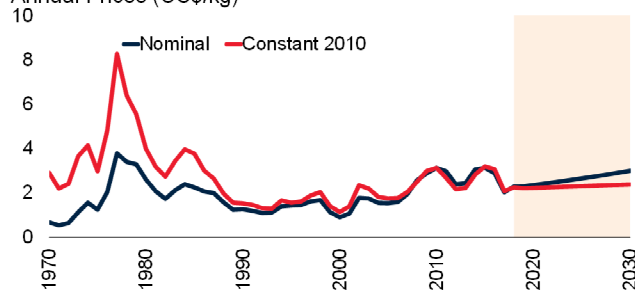
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(thousand metric tons)				
Production									
Côte d'Ivoire	180	417	804	1,212	1,511	1,581	2,020	1,964	2,220
Ghana	406	258	293	395	1,025	778	970	905	830
Ecuador	72	87	111	89	161	232	290	287	310
Cameroon	112	117	115	133	229	211	248	250	270
Nigeria	305	156	160	180	240	200	245	250	250
Indonesia	2	12	150	385	440	320	270	240	220
Brazil	182	353	368	163	200	141	174	204	200
Peru	2	7	11	17	54	105	116	134	120
Dominican Republic	35	35	42	45	54	80	57	70	70
Others	233	252	452	233	396	350	350	347	359
World	**1,528**	**1,694**	**2,507**	**2,852**	**4,309**	**3,997**	**4,739**	**4,651**	**4,849**
Grindings									
Netherlands	116	140	268	452	540	534	565	585	600
Côte d'Ivoire	35	60	118	285	361	492	577	559	590
Indonesia	1	10	32	83	190	382	455	483	490
Germany	151	180	294	227	439	430	410	448	450
United States	279	186	268	445	401	398	390	385	400
Ghana	48	27	30	70	212	202	250	310	300
Brazil	67	191	260	195	239	225	227	230	230
Others	735	773	1,055	1,285	1,557	1,465	1,522	1,595	1,723
World	**1,431**	**1,566**	**2,325**	**3,041**	**3,938**	**4,127**	**4,397**	**4,596**	**4,783**
Exports									
Côte d'Ivoire	138	406	688	903	1,079	1,089	1,419	1,958	1,209
Ghana	348	182	245	307	694	582	577	485	547
Ecuador	46	19	56	57	136	207	283	267	333
Nigeria	216	76	142	149	219	180	305	236	298
Cameroon	75	96	96	102	204	176	188	184	218
Malaysia	3	40	148	17	21	87	136	153	149
Dominican Republic	29	27	36	34	52	77	57	74	70
Others	265	255	326	417	590	323	301	252	260
World	**1,119**	**1,100**	**1,737**	**1,987**	**2,996**	**2,720**	**3,265**	**3,609**	**3,084**
Imports									
Netherlands	116	167	267	549	806	795	906	722	933
Germany	155	187	300	228	434	407	447	411	371
Malaysia	1	n/a	1	110	320	229	289	344	356
United States	269	246	320	355	472	387	537	406	369
Belgium	18	28	50	101	194	297	302	256	239
France	42	59	74	157	149	139	147	153	154
Italy	41	32	56	72	86	94	100	100	94
Turkey	1	2	6	39	71	86	103	101	113
Spain	34	37	45	49	88	113	127	99	97
Others	462	440	643	749	737	648	893	1,053	902
World	**1,139**	**1,198**	**1,761**	**2,409**	**3,357**	**3,196**	**3,851**	**3,644**	**3,629**

Source: Quarterly Bulletin of Cocoa Statistics (Cocoa year 2018/19 Volume XLV No. 3 update).
Note: n/a implies data not available. 1970/71 data are average of 1968-1972.

Coconut oil and Palm kernel oil

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19	2019/20
					(thousand metric tons)				
Coconut oil production									
Philippines	1,159	1,448	1,207	1,240	1,099	953	1,029	1,035	1,191
Indonesia	677	833	825	847	937	691	845	824	811
India	228	292	442	398	377	270	304	345	342
Mexico	99	126	126	131	127	129	130	132	132
Sri Lanka	n/a	n/a	n/a	32	49	58	55	57	53
Malaysia	64	32	38	49	51	45	41	40	42
Vietnam	n/a	n/a	n/a	34	34	33	34	35	35
Others	n/a	n/a	n/a	363	310	297	312	469	118
World	**2,823**	**3,359**	**3,244**	**3,094**	**2,984**	**2,476**	**2,750**	**2,937**	**2,724**
Coconut oil consumption									
European Union	498	632	734	739	536	475	567	656	600
United States	373	400	585	474	531	439	429	435	430
India	233	301	448	411	389	262	298	341	345
Indonesia	639	600	200	153	160	181	195	234	233
China	27	32	43	216	137	133	139	163	156
Mexico	115	139	139	153	130	138	134	135	136
Philippines	195	318	297	336	238	119	142	138	118
Malaysia	4	4	32	90	90	74	80	95	89
Japan	78	67	45	42	54	42	41	40	39
Others	*497*	*692*	*670*	*629*	*639*	*591*	*636*	*680*	*661*
World	**2,659**	**3,185**	**3,193**	**3,243**	**2,904**	**2,454**	**2,661**	**2,917**	**2,807**
Palmkernel oil production									
Indonesia	36	229	709	2,534	3,538	3,817	4,156	4,487	4,740
Malaysia	250	827	1,289	2,072	2,280	2,149	2,312	2,423	2,369
Thailand	n/a	n/a	n/a	140	184	207	271	270	279
Colombia	n/a	n/a	n/a	80	107	127	133	138	142
Nigeria	82	146	190	108	114	118	124	130	134
Papua New Guinea	n/a	n/a	n/a	43	58	70	66	66	67
Ecuador	n/a	n/a	n/a	35	40	49	47	37	30
Others	n/a	n/a	n/a	*379*	*466*	*475*	*495*	*533*	*556*
World	**563**	**1,463**	**2,537**	**5,391**	**6,787**	**7,012**	**7,604**	**8,084**	**8,317**
Palmkernel oil consumption									
Indonesia	29	66	113	851	1,670	1,920	2,202	2,430	2,600
Malaysia	4	117	686	1,420	1,504	1,467	1,498	1,516	1,575
China	1	12	31	421	578	595	702	881	951
European Union	238	417	500	537	675	777	743	739	812
United States	69	149	224	279	274	346	371	335	362
Brazil	2	10	55	201	241	227	254	261	273
India	1	7	13	198	245	124	150	157	169
Nigeria	24	146	175	107	113	111	114	118	121
Japan	15	39	64	69	87	77	76	75	79
Others	*132*	*426*	*644*	*1,145*	*1,341*	*1,249*	*1,264*	*1,323*	*1,415*
World	**515**	**1,389**	**2,505**	**5,228**	**6,728**	**6,893**	**7,374**	**7,835**	**8,357**

Source: Oil World (September 13, 2019 update).
Note: All quantities are for the crop year (beginning October 1). For example, 2001/02 refers to October 2001 to September 2002. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2017.

Coffee

Monthly Prices (US$/kg)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Constant Prices (US$/kg)
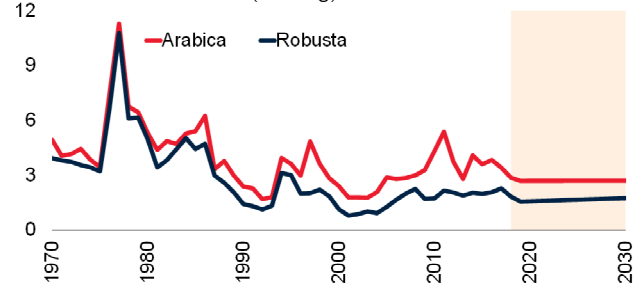
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2016/17	2017/18	2018/19	2019/20
					(thousand 60kg bags)				
Production									
Brazil	11000	21,500	31,000	34,100	54,500	56,100	50,900	64,800	59,300
Vietnam	56	77	1,200	15,333	19,415	26,700	29,300	30,400	30,500
Colombia	8000	13,500	14,500	10,500	8,525	14,600	13,825	14,300	14,300
Indonesia	2330	5,365	7,480	6,495	9,325	10,600	10,400	10,600	10,700
Ethiopia	2589	3,264	3,500	2,768	6,125	6,943	7,055	7,250	7,350
Honduras	545	1,265	1,685	2,821	3,975	7,510	7,600	7,000	6,500
India	1914	1,977	2,970	5,020	5,035	5,200	5,266	5,170	5,485
Mexico	3200	3,862	4,550	4,800	4,000	3,300	4,000	4,050	4,550
Peru	1114	1,170	1,170	2,824	4,100	4,225	4,375	4,380	4,500
Uganda	2667	2,133	2,700	3,097	3,212	5,200	4,350	4,800	4,250
Guatemala	1965	2,702	3,282	4,564	3,960	3,570	3,780	3,600	3,600
Nicaragua	641	971	460	1,610	1,740	2,625	2,730	2,540	2,340
China	n/a	n/a	n/a	n/a	827	1,800	1,925	2,200	2,300
Malaysia	66	88	75	700	1,100	2,100	2,100	2,100	2,000
Côte d'Ivoire	3996	6,090	3,300	5,100	1,600	1,090	1,250	1,700	1,800
Costa Rica	1295	2,140	2,565	2,502	1,575	1,300	1,525	1,300	1,375
Tanzania	909	1,060	763	809	1,050	1,050	1,150	1,300	1,250
Papua New Guinea	401	880	964	1,041	865	1,115	810	875	900
Thailand	19	201	785	1,692	1,000	800	700	650	700
Others	*16,495*	*17,929*	*17,232*	*11,441*	*9,480*	*5,876*	*5,610*	*5,485*	*5,430*
World	**59,202**	**86,174**	**100,181**	**117,217**	**141,409**	**161,704**	**158,651**	**174,500**	**169,130**
Consumption									
European Union	n/a	n/a	n/a	n/a	41,350	42,345	45,700	46,300	47,000
United States	305	297	229	183	22,383	25,522	25,572	26,372	26,785
Brazil	8890	7,975	9,000	13,100	19,420	21,625	22,420	23,200	23,530
Japan	n/a	n/a	n/a	n/a	7,015	8,210	8,231	8,294	8,300
Philippines	496	432	810	900	2,825	6,995	6,550	6,225	6,600
Canada	n/a	n/a	n/a	n/a	4,245	4,550	4,750	4,720	4,900
Indonesia	888	1,228	1,295	1,335	1,650	3,203	3,560	4,300	4,900
Russia	n/a	n/a	n/a	n/a	4,355	4,740	4,465	4,450	4,575
Vietnam	31	35	100	417	1,337	2,770	2,880	2,990	3,400
Ethiopia	1170	1,600	1,900	1,667	2,860	3,100	3,150	3,270	3,350
China	n/a	n/a	n/a	n/a	1,106	3,205	3,045	3,155	3,250
Korea, Rep.	n/a	n/a	n/a	n/a	1,910	2,725	2,645	2,700	2,800
Mexico	1512	1,500	1,400	978	2,620	2,057	2,295	2,655	2,705
Algeria	n/a	n/a	n/a	n/a	1,815	2,205	2,300	2,340	2,440
Colombia	1349	1,825	1,615	1,530	1,120	1,450	1,650	1,986	2,050
Australia	n/a	n/a	n/a	n/a	1,445	1,730	1,875	1,875	1,965
Switzerland	n/a	n/a	n/a	n/a	1,570	1,450	1,525	1,400	1,500
Ukraine	n/a	n/a	n/a	n/a	1,685	960	1,095	1,280	1,300
India	665	887	1,224	959	1,231	1,200	1,215	1,250	1,270
Others	*n/a*	*n/a*	*n/a*	*n/a*	*12,553*	*13,797*	*14,537*	*15,125*	*15,299*
World	**19408**	**20438**	**22265**	**26303**	**134495**	**153839**	**159460**	**163887**	**167919**

Source: U.S. Department of Agriculture (October 10, 2019 update).
Note: n/a implies data not available. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2018.
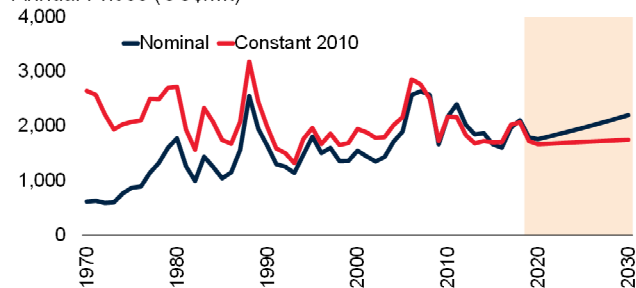
Copper

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
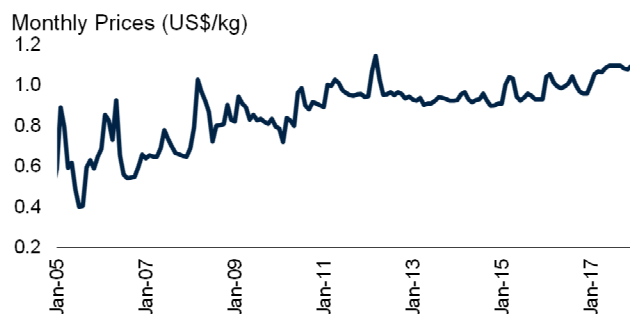Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand metric tons)				
Mine Production									
Chile	686	1068	1588	4,602	5,419	5,772	5,553	5,504	5,832
Peru	220	367	323	554	1,247	1,701	2,354	2,446	2,437
China	n/a	165	300	593	1,156	1,712	1,900	1,706	1,507
Congo, Dem. Rep.	386	n/a	n/a	33	378	1,039	1,024	1,095	1,225
United States	1560	1181	1588	1,444	1,110	1,416	1,462	1,290	1,216
Australia	158	244	330	832	872	996	948	860	920
Zambia	684	610	546	249	767	711	763	900	857
Russia	n/a	n/a	n/a	530	703	711	702	705	773
Mexico	61	175	299	365	270	594	766	742	751
Indonesia	0	59	162	1,012	864	579	728	622	651
Kazakhstan	n/a	n/a	n/a	430	381	550	600	750	621
Canada	610	716	794	634	522	715	693	595	543
Poland	83	343	370	454	426	426	424	420	402
Others	*1,755*	*2,811*	*3,027*	*1,475*	*1,988*	*2,435*	*2,742*	*2,567*	*2,640*
World	**6,202**	**7,739**	**9,327**	**13,206**	**16,102**	**19,357**	**20,658**	**20,201**	**20,375**
Refined Production									
China	120	295	558	1,371	4,540	7,969	8,436	8,889	8,949
Chile	647	811	1,192	2,668	3,244	2,688	2,613	2,430	2,461
Japan	603	1,014	1,008	1,437	1,549	1,483	1,553	1,488	1,595
United States	1,489	1,730	2,017	1,802	1,095	1,140	1,220	1,080	1,111
Russia	n/a	n/a	n/a	842	900	876	867	949	1,020
Congo, Dem. Rep.	683	n/a	n/a	29	259	793	737	718	821
Germany	134	425	532	709	704	678	671	694	670
South Korea	5	88	192	471	565	645	645	663	665
India	9	23	46	260	664	790	788	831	555
Poland	69	357	346	486	547	574	536	522	502
Zambia	683	608	426	226	767	496	426	466	458
Kazakhstan	n/a	n/a	n/a	395	323	395	408	426	443
Spain	55	154	171	316	348	420	429	415	429
Others	*2,231*	*3,970*	*4,186*	*3,761*	*3,593*	*4,022*	*4,063*	*4,024*	*4,111*
World	**6,729**	**9,475**	**10,675**	**14,774**	**19,096**	**22,969**	**23,393**	**23,594**	**23,790**
Refined Consumption									
China	180	286	512	1,869	7,385	11,353	11,642	11,790	12,482
United States	1,860	1,868	2,150	2,979	1,760	1,796	1,811	1,771	1,814
Germany	788	870	1,028	1,309	1,312	1,219	1,243	1,180	1,200
Japan	821	1,158	1,577	1,351	1,060	997	973	998	1,039
Korea, Rep.	10	85	324	862	856	705	759	656	717
Italy	274	388	475	674	619	613	596	635	552
India	55	77	135	246	514	491	499	486	512
Turkey	14	33	103	248	369	468	464	445	482
Mexico	54	117	127	464	274	393	423	372	407
Others	*3,236*	*4,502*	*4,349*	*5,094*	*5,197*	*4,857*	*4,789*	*4,947*	*4,728*
World	**7,291**	**9,385**	**10,780**	**15,096**	**19,347**	**22,893**	**23,200**	**23,280**	**23,934**

Source: British Geological Survey, Metallgesellschaft, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available. Refined production and consumption include significant recycled material.

Cotton

Monthly Prices (US$/kg)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/kg)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2016/17	2017/18	2018/19	2019/20
				(thousand metric tons)					
Production									
India	909	1,322	1,989	2,380	5,865	5,865	6,350	5,450	5,750
China	1,995	2,707	4,508	4,505	6,400	4,900	5,890	6,040	5,800
United States	2,219	2,422	3,376	3,742	3,942	3,738	4,555	3,999	4,760
Brazil	594	623	717	939	1,960	1,530	2,006	2,691	2,691
Pakistan	543	714	1,638	1,816	1,948	1,663	1,795	1,670	1,600
Turkey	400	500	655	880	594	703	840	852	1,018
Uzbekistan	1,671	1,593	975	910	789	800	641	641	485
Australia	99	433	804	898	960	1,044	636	485	641
Mexico	312	353	175	72	157	207	335	320	406
Benin	n/a	n/a	253	140	85	151	257	305	315
Mali	n/a	n/a	505	130	109	261	196	275	309
Others	*n/a*	*n/a*	*3,110*	*3,142*	*2,541*	*2,327*	*2,610*	*2,873*	*3,040*
World	**11,740**	**13,831**	**18,951**	**19,524**	**25,408**	**23,094**	**26,678**	**25,752**	**26,815**
Stocks									
China	412	476	1,589	3,755	2,087	10,632	9,033	8,885	8,497
Brazil	321	391	231	755	1,400	1,045	1,478	1,666	2,549
United States	915	581	510	1,306	566	697	936	1,010	1,567
India	376	491	539	922	1,850	1,701	2,183	2,183	1,244
Turkey	24	112	150	283	412	705	939	857	930
Pakistan	55	131	313	608	316	734	808	917	644
Bangladesh	n/a	8	35	27	216	379	422	450	469
Others	*2,502*	*2,961*	*3,393*	*2,957*	*2,616*	*2,922*	*2,915*	*2,329*	*2,745*
World	**4,605**	**5,151**	**6,761**	**10,614**	**9,463**	**18,815**	**18,714**	**18,297**	**18,646**
Exports									
United States	848	1,290	1,697	1,467	3,130	3,248	3,450	3,214	3,470
Brazil	220	21	167	68	435	607	909	1,446	1,529
India	34	140	255	24	1,085	991	1,132	800	900
Australia	4	53	329	849	545	812	900	800	395
Greece	n/a	n/a	390	71	24	198	234	265	303
Mali	19	35	114	134	92	240	261	321	297
Benin	n/a	n/a	96	42	24	137	299	297	294
Others	*n/a*	*n/a*	*2,021*	*3,150*	*2,382*	*1,957*	*1,910*	*2,100*	*2,081*
World	**3,875**	**4,414**	**5,069**	**5,805**	**7,717**	**8,190**	**9,095**	**9,243**	**9,270**
Imports									
China	108	773	480	52	2,609	1,096	1,320	2,100	2,100
Bangladesh	0	45	80	248	843	1,412	1,671	1,544	1,614
Vietnam	33	40	31	84	350	1,198	1,566	1,525	1,606
Indonesia	36	106.248	324	570	471	746	762	685	767
Pakistan	1	0	43	410	283	538	671	917	689
Turkey	1	0	46	381	760	801	876	762	536
India	155	9	49	350	87	228	330	330	347
Others	*3,753*	*3,582*	*4,167*	*3,670*	*2,354*	*2,109*	*1,832*	*1,379*	*1,610*
World	**4,086**	**4,555**	**5,220**	**5,764**	**7,756**	**8,128**	**9,028**	**9,243**	**9,270**

Source: ICAC (October 2019 update).
Note: n/a implies data not available.

Crude oil

Monthly Prices (US$/bbl)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/bbl)
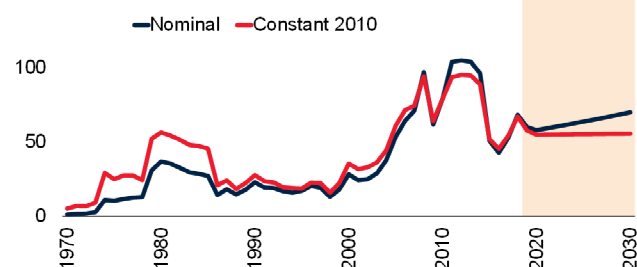
Source: World Bank.
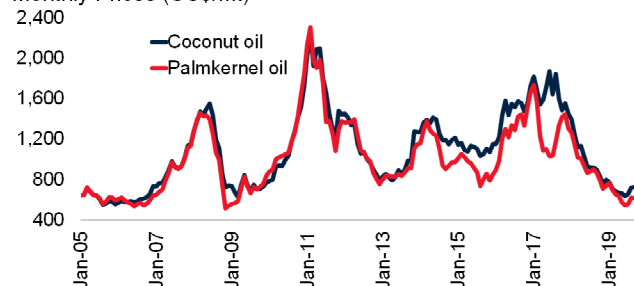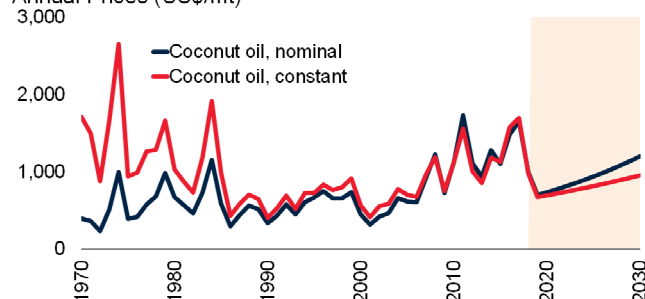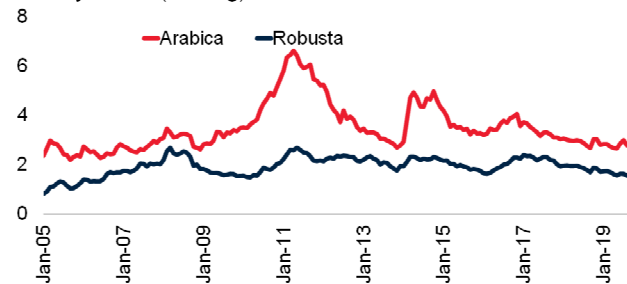Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand barrels per day)				
Production									
United States	11,297	10,170	8,914	7,732	7,549	12,750	12,366	13,057	15,311
Saudi Arabia	3,851	10,270	7,105	9,470	10,075	11,994	12,402	11,951	12,287
Russia	n/a	n/a	10,342	6,584	10,383	11,009	11,269	11,257	11,438
Canada	1,473	1,764	1,968	2,703	3,332	4,389	4,470	4,831	5,208
Iran	3,848	1,479	3,270	3,852	4,430	3,862	4,602	4,982	4,715
Iraq	1,549	2,658	2,149	2,613	2,469	3,986	4,423	4,520	4,614
United Arab Emirates	780	1,735	1,985	2,599	2,915	3,873	4,020	3,935	3,942
China	616	2,122	2,778	3,257	4,077	4,309	3,999	3,846	3,798
Kuwait	3,036	1,757	964	2,244	2,560	3,065	3,145	3,025	3,049
Brazil	167	188	651	1,276	2,137	2,525	2,608	2,734	2,683
Mexico	487	2,129	2,941	3,456	2,959	2,587	2,456	2,224	2,068
Nigeria	1,083	2,058	1,787	2,175	2,534	2,204	1,903	1,988	2,051
Kazakhstan	n/a	n/a	571	740	1,676	1,695	1,655	1,835	1,927
Qatar	363	476	434	853	1,638	1,958	1,970	1,916	1,879
Norway	n/a	528	1,716	3,346	2,137	1,946	1,995	1,969	1,844
Angola	103	150	475	746	1,812	1,772	1,755	1,674	1,534
Venezuela, RB	3,754	2,228	2,244	3,112	2,842	2,631	2,387	2,110	1,514
Algeria	1,052	1,139	1,347	1,549	1,689	1,558	1,577	1,540	1,510
United Kingdom	4	1,676	1,933	2,696	1,356	963	1,013	999	1,085
Libya	3,357	1,862	1,424	1,475	1,659	432	426	865	1,010
Oman	332	285	695	955	865	981	1,004	971	978
India	140	193	715	726	882	876	856	865	869
Colombia	226	131	446	687	786	1,006	886	854	866
Others	*n/a*	*n/a*	*8,147*	*10,061*	*10,563*	*9,176*	*8,635*	*8,554*	*8,539*
World	**48,072**	**62,947**	**65,001**	**74,907**	**83,325**	**91,547**	**91,822**	**92,502**	**94,718**
Consumption									
United States	14,710	17,062	16,988	19,701	19,180	19,531	19,687	19,958	20,456
China	554	1,707	2,297	4,697	9,446	11,986	12,304	12,840	13,525
India	390	643	1,210	2,260	3,381	4,245	4,654	4,870	5,156
Japan	3,876	4,905	5,240	5,542	4,442	4,151	4,019	3,975	3,854
Saudi Arabia	435	592	1,136	1,627	3,206	3,886	3,875	3,838	3,724
Russia	n/a	n/a	5,042	2,540	2,878	3,146	3,217	3,207	3,228
Brazil	516	1,125	1,417	2,029	2,714	3,140	2,960	3,052	3,081
South Korea	162	476	1,041	2,260	2,378	2,587	2,781	2,811	2,793
Canada	1,472	1,898	1,747	2,043	2,358	2,401	2,448	2,448	2,447
Germany	2,765	3,014	2,685	2,746	2,441	2,336	2,374	2,443	2,321
Iran	224	570	1,004	1,404	1,788	1,804	1,749	1,843	1,879
Mexico	441	1,072	1,611	1,952	2,040	1,939	1,950	1,883	1,812
Indonesia	138	386	652	1,148	1,415	1,571	1,628	1,696	1,785
United Kingdom	2,031	1,649	1,751	1,713	1,652	1,578	1,623	1,637	1,618
France	1,860	2,220	1,895	1,994	1,763	1,612	1,597	1,608	1,607
Others	*n/a*	*n/a*	*20,961*	*23,219*	*27,649*	*29,136*	*29,871*	*30,297*	*30,558*
World	**45,260**	**61,467**	**66,676**	**76,875**	**88,730**	**95,048**	**96,737**	**98,406**	**99,843**

Source: BP Statistical Review (June 2019 update).
Note: n/a implies data not available. Production includes crude oil and natural gas liquids but excludes liquid fuels from other sources such as biomass and derivatives of coal and natural gas include in consumption.

Fertilizers—Nitrogen

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)
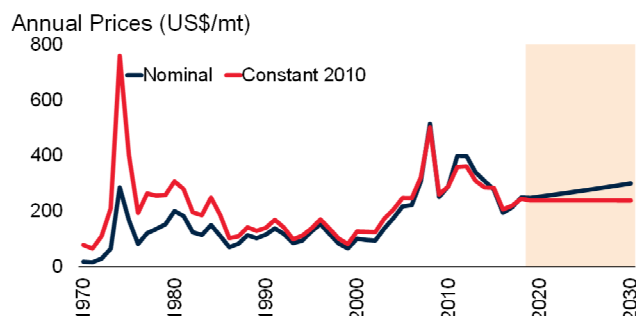
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2014	2015	2016	2017
				(thousand tonnes nutrients)					
Production									
China	1,200	9,993	14,637	22,175	35,678	36,783	38,487	33,117	29,650
India	838	2,164	6,993	10,943	12,178	12,434	13,476	13,377	13,405
United States	8,161	12,053	10,816	8,352	9,587	8,291	8,415	9,407	9,940
Russia	n/a	n/a	n/a	5,452	6,544	7,470	7,866	8,536	9,013
Canada	726	1,755	2,683	3,797	3,364	3,323	3,610	3,494	3,529
Egypt	118	401	678	1,441	2,761	1,939	1,723	2,765	3,496
Indonesia	45	958	2,462	2,853	3,207	3,406	3,456	3,404	3,416
Pakistan	140	572	1,120	2,054	2,629	2,647	2,918	3,233	2,978
Qatar	n/a	n/a	350	748	1,556	2,404	2,518	2,506	2,562
Saudi Arabia	n/a	n/a	568	1,278	1,680	2,109	2,320	2,578	2,526
Iran	31	72	376	726	1,524	1,733	1,802	2,187	2,408
Netherlands	957	1,624	1,928	1,300	1,175	1,328	1,226	1,303	1,995
Poland	1,030	1,290	1,233	1,497	1,509	2,045	2,033	1,888	1,974
Morocco	13	33	344	302	553	557	549	918	1,223
Ukraine	n/a	n/a	3,004	2,130	2,312	1,845	1,609	1,774	1,199
Vietnam	n/a	15	18	227	479	1,134	1,188	1,004	1,148
Germany	1,900	2,380	1,165	1,558	1,289	1,316	1,303	1,033	1,057
Lithuania	n/a	n/a	n/a	530	882	909	856	994	982
Belarus	n/a	n/a	747	574	740	1,036	1,074	1,061	963
Others	*17,530*	*29,642*	*22,841*	*18,689*	*18,454*	*18,238*	*19,271*	*19,619*	*20,652*
World	**32,690**	**62,951**	**71,964**	**86,624**	**108,101**	**110,945**	**115,702**	**114,195**	**114,114**
Consumption									
China	2,987	11,787	19,233	22,720	27,703	27,831	29,306	26,523	24,581
India	1,310	3,522	7,566	10,911	16,558	16,950	17,372	16,735	16,958
United States	7,363	10,818	10,239	10,467	11,737	11,862	12,162	12,813	12,898
Brazil	276	886	797	1,998	2,855	3,872	3,533	4,366	4,377
Indonesia	184	851	1,610	1,964	3,045	3,099	2,860	3,232	3,473
Pakistan	264	843	1,472	2,265	3,143	3,313	2,672	3,730	3,439
Canada	323	946	1,158	1,592	1,990	2,569	2,537	2,390	2,614
France	1,425	2,146	2,493	2,317	2,337	2,195	2,212	2,241	2,242
Ukraine	n/a	n/a	1,836	350	650	1,179	1,287	1,670	2,050
Russia	n/a	n/a	4,344	960	1,483	1,472	1,807	2,116	2,003
Turkey	243	782	1,200	1,276	1,344	1,493	1,487	1,896	1,788
Vietnam	166	129	425	1,332	1,250	1,578	1,808	1,611	1,597
Mexico	406	878	1,346	1,342	1,166	1,532	1,307	1,560	1,572
Germany	1,642	2,303	1,787	1,848	1,786	1,823	1,711	1,658	1,497
Australia	123	248	439	951	982	1,407	1,347	1,514	1,394
Egypt	331	554	745	1,084	1,159	1,123	1,221	1,280	1,313
Bangladesh	99	266	609	996	1,237	1,321	1,258	1,209	1,246
Poland	785	1,344	671	896	1,090	1,004	1,043	1,152	1,178
Thailand	50	136	577	922	1,311	1,409	1,240	1,225	1,178
Others	*13,446*	*22,054*	*18,231*	*15,880*	*16,714*	*18,348*	*18,164*	*19,455*	*20,236*
World	**31,423**	**60,493**	**76,777**	**82,070**	**99,540**	**105,380**	**106,330**	**108,376**	**107,634**

Source: IFA (http://ifadata.fertilizer.org/ucSearch.aspx, September 2018 update).

Note: n/a implies data not available. The statistics are based on the nutrient content. All production statistics are expressed on a calendar-year basis, while consumption statistics are expressed either on a calendar- or on a fertilizer-year basis (see www.fertilizers.org for details).

Fertilizers—Phosphate and Potash

Monthly Prices (US$/mt)
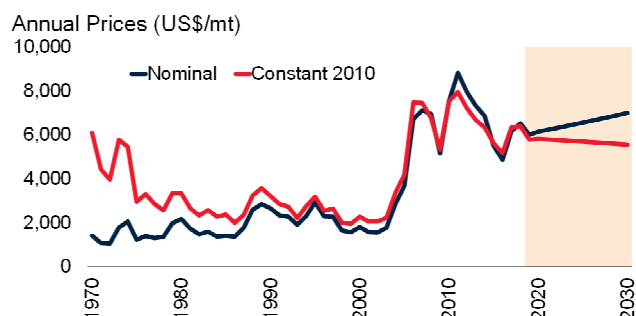

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Constant Prices (US$/mt)
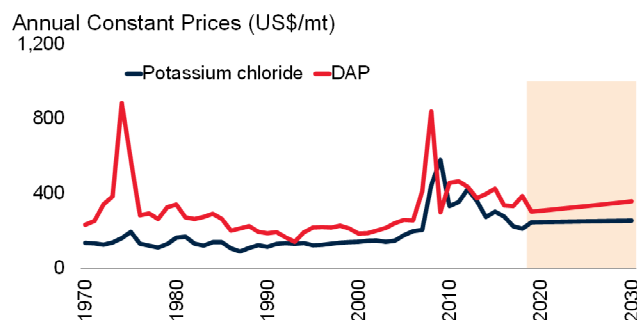
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2014	2015	2016	2017
				(thousand tonnes nutrients)					
Phosphate: Production									
China	907	2,607	4,114	6,759	15,998	17,119	18,789	17,455	17,171
United States	4,903	7,437	8,105	7,337	6,297	5,578	5,526	5,673	5,551
India	228	854	2,077	3,751	4,378	4,125	4,429	4,560	4,736
Morocco	99	174	1,180	1,122	1,875	2,408	2,100	3,115	4,023
Russia	n/a	n/a	4,943	2,320	2,926	2,698	3,018	3,032	3,370
Brazil	169	1,623	1,091	1,496	2,004	1,990	2,021	1,983	1,961
Saudi Arabia	n/a	n/a	n/a	159	119	1,220	1,328	1,343	1,572
Others	*14,279*	*20,982*	*14,908*	*9,800*	*8,935*	*9,090*	*9,153*	*9,184*	*9,058*
World	**20,585**	**33,677**	**36,417**	**32,744**	**42,532**	**44,227**	**46,363**	**46,345**	**47,442**
Phosphate: Consumption									
China	907	2,952	5,770	8,664	12,988	14,163	13,973	12,682	12,100
India	305	1,091	3,125	4,248	8,050	6,099	6,979	6,705	6,854
Brazil	416	1,965	1,202	2,544	3,384	4,752	4,401	4,974	5,126
United States	4,345	4,926	3,811	3,862	3,890	4,080	4,302	4,488	5,051
Indonesia	45	274	581	263	500	1,188	1,241	1,191	1,399
Pakistan	31	227	389	675	767	975	1,007	1,269	1,279
Canada	326	634	578	634	723	945	1,025	947	1,080
Australia	757	853	579	1,107	817	919	963	890	818
Vietnam	77	23	106	501	650	685	806	774	801
Others	*13,666*	*18,967*	*19,782*	*10,314*	*9,807*	*11,356*	*11,257*	*12,063*	*12,711*
World	**20,875**	**31,912**	**35,920**	**32,812**	**41,576**	**45,161**	**45,955**	**45,983**	**47,218**
Potash: Production									
Canada	3,179	7,337	7,005	9,174	10,289	10,636	11,500	10,938	12,696
Russia	n/a	n/a	n/a	3,716	6,128	7,340	6,881	6,513	7,228
Belarus	n/a	n/a	4,992	3,372	5,223	6,286	6,402	6,110	7,026
China	n/a	20	46	275	3,101	5,600	5,930	5,890	5,604
Germany	4,824	6,123	4,967	3,409	2,962	3,548	3,558	3,020	3,336
Israel	576	797	1,296	1,748	1,944	2,126	1,585	2,350	2,303
Jordan	n/a	n/a	842	1,162	1,166	1,255	1,413	1,202	1,393
Chile	21	23	41	408	850	1,239	1,291	1,236	1,127
Spain	525	691	642	522	313	703	723	670	700
Others	*8,346*	*12,616*	*3,007*	*2,356*	*1,730*	*1,941*	*2,039*	*2,247*	*1,887*
World	**17,471**	**27,608**	**22,838**	**26,141**	**33,706**	**40,673**	**41,320**	**40,173**	**43,300**
Potash: Consumption									
China	25	527	1,761	3,364	5,853	8,169	10,018	9,572	9,804
Brazil	307	1,267	1,210	2,760	3,894	5,395	5,162	5,728	5,853
United States	3,827	5,733	4,537	4,469	4,165	4,450	4,788	5,240	5,229
India	199	618	1,309	1,565	3,514	2,533	2,402	2,508	2,780
Indonesia	18	91	310	266	1,250	1,772	1,635	1,600	2,015
Malaysia	61	250	494	650	1,150	1,237	1,120	1,259	1,391
Vietnam	38	39	29	450	400	600	539	581	641
Others	*11,289*	*15,302*	*14,671*	*8,571*	*7,980*	*9,511*	*9,580*	*9,982*	*10,122*
World	**15,764**	**23,826**	**24,320**	**22,095**	**28,206**	**33,667**	**35,244**	**36,470**	**37,834**

Source: IFA (http://ifadata.fertilizer.org/ucSearch.aspx, September 2018 update).
Note: n/a implies data not available. The statistics are based on the nutrient content. All production statistics are expressed on a calendar-year basis, while consumption statistics are expressed either on a calendar- or on a fertilizer-year basis (see www.fertilizers.org for details).

Gold

Monthly Prices (US$/toz)
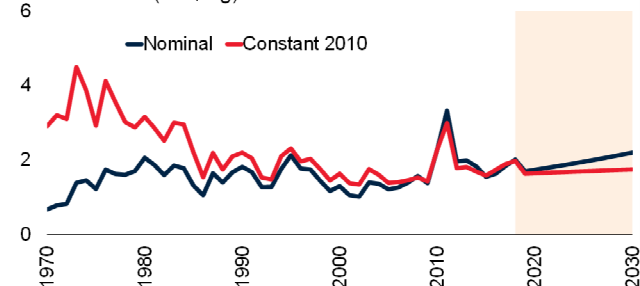

Source: See World Bank Commodities Price Data.
Note: Last observation is Sptember 2019.
Download data and charts.

Annual Prices (US$/toz)

Source: World Bank.
Note: 2019-30 are forecasts.
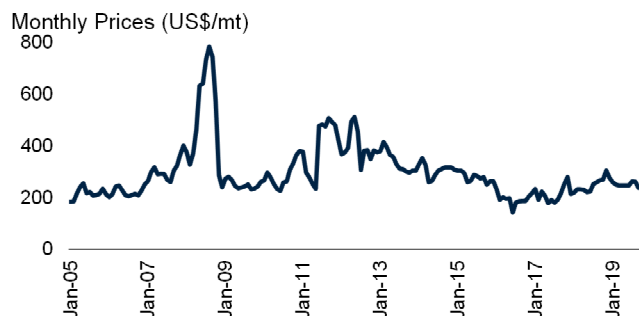Download data and charts.

	1990	2000	2005	2010	2014	2015	2016	2017	2018
					(metric tons)				
Production									
China	100	177	255	341	452	450	453	426	389
Russia	n/a	143	163	201	249	257	253	270	311
Australia	242	296	262	257	274	279	291	294	311
United States	294	353	256	231	210	214	222	237	213
Canada	169	156	121	103	152	163	164	176	189
Ghana	17	78	67	92	138	130	129	137	159
Peru	9	133	208	164	140	147	153	151	143
Indonesia	11	127	143	106	69	92	81	99	128
Sudan	0	6	5	2	73	82	93	107	127
Mexico	9	26	27	79	118	135	132	127	118
South Africa	605	431	295	189	152	145	142	137	117
Uzbekistan	n/a	88	84	90	100	100	100	100	102
Kazakhstan	n/a	28	18	30	50	64	75	85	97
Brazil	102	60	38	62	81	83	80	85	92
Argentina	1	26	28	64	60	63	56	63	63
Mali	2	29	49	42	45	47	47	51	49
Burkina Faso	3	1	1	24	36	37	39	46	47
Guinea	6	16	25	25	23	21	30	47	47
Chile	n/a	54	40	39	46	43	46	38	37
Others	*562*	*329*	*420*	*516*	*593*	*590*	*627*	*649*	*602*
World	**2,133**	**2,555**	**2,504**	**2,657**	**3,063**	**3,139**	**3,215**	**3,325**	**3,341**
Fabrication									
India	n/a	704	695	783	771	812	506	783	n/a
China	46	213	277	523	1,013	920	788	771	n/a
United States	n/a	277	219	179	150	164	168	145	n/a
Turkey	n/a	228	303	109	156	112	101	122	n/a
Japan	205	161	165	158	119	102	99	100	n/a
Italy	n/a	522	290	126	96	94	88	89	n/a
Korea, Rep.	n/a	107	83	93	82	79	78	80	n/a
United Arab Emirates	n/a	50	55	33	42	45	45	56	n/a
South Africa	18	14	10	25	25	31	38	52	n/a
Russia	n/a	34	61	61	70	52	47	46	n/a
Indonesia	84	99	87	45	53	50	45	45	n/a
Iran Rep.	n/a	46	41	72	62	56	35	42	n/a
Switzerland	n/a	54	56	41	44	41	34	33	n/a
Germany	n/a	64	52	41	36	32	32	32	n/a
Malaysia	45	86	74	45	45	39	34	30	n/a
Canada	n/a	25	27	44	32	40	41	29	n/a
Singapore	31	26	30	28	29	29	27	28	n/a
Saudi Arabia	n/a	153	125	47	37	41	32	27	n/a
Thailand	86	79	69	27	27	27	24	24	n/a
Others	*n/a*	*819*	*608*	*400*	*356*	*356*	*315*	*310*	*n/a*
World	**3,294**	**3,761**	**3,325**	**2,878**	**3,244**	**3,122**	**2,575**	**2,841**	**n/a**

Source: GFMS, Thomson Reuters, British Geological Survey, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available. Fabrication includes the use of scrap. Fabrication of "Saudi Arabia" includes Saudi Arabia and Yemen in 2000.

Iron Ore

Monthly Prices (US$/dmt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/dmt)
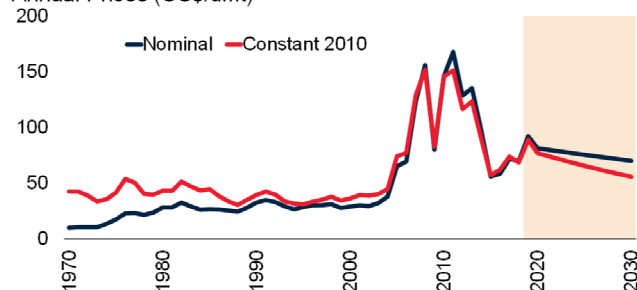
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1971	1980	1990	2000	2010	2014	2015	2016	2017
				(million metric tons)					
Iron Ore Production									
Australia	62	99	109	176	433	746	811	858	883
Brazil	38	113	152	209	372	399	423	434	436
India	34	41	54	75	209	140	143	185	202
China	55	113	148	105	357	195	124	114	115
Russia	n/a	n/a	n/a	87	99	101	102	104	107
South Africa	10	n/a	30	34	55	67	61	66	62
Ukraine	n/a	n/a	n/a	56	79	82	82	75	60
Iran	n/a	n/a	2	12	33	48	39	43	55
Canada	43	49	37	36	38	44	46	47	49
United States	82	71	55	63	50	54	43	42	48
Sweden	34	27	20	21	25	28	25	27	27
Mexico	5	8	9	11	14	17	20	19	17
Chile	11	9	8	8	10	13	15	16	16
Mauritania	8	9	11	11	11	13	12	13	12
Kazakhstan	n/a	n/a	n/a	15	18	16	11	10	11
Peru	9	6	3	4	9	7	7	8	9
Mongolia	n/a	n/a	n/a	n/a	3	7	6	6	8
Turkey	2	3	6	4	6	11	10	8	6
Venezuela, RB	20	14	20	17	14	6	8	7	5
Liberia	23	18	4	n/a	n/a	5	4	2	2
Norway	4	4	2	0	3	4	3	2	2
Others	n/a	n/a	n/a	14	36	73	34	31	32
World	**781**	**931**	**984**	**959**	**1,874**	**2,077**	**2,030**	**2,116**	**2,163**
Crude steel production									
China	21	37	66	129	639	822	804	808	832
Japan	89	111	110	106	110	101	105	105	105
India	6	10	15	27	69	87	89	95	101
United States	109	101	90	102	80	88	79	78	82
Russia	n/a	n/a	n/a	59	67	71	71	71	71
Korea, Rep.	0	9	23	43	59	72	70	69	71
Germany	40	44	38	46	44	43	43	42	43
Turkey	1	3	9	14	29	34	32	33	38
Brazil	6	15	21	28	33	34	33	31	34
Italy	17	27	25	27	26	24	22	23	24
Taiwan, China	0	3	10	17	20	23	21	22	22
Iran	n/a	1	1	7	12	16	16	18	22
Ukraine	n/a	n/a	n/a	32	33	27	23	24	21
Mexico	4	7	9	16	17	19	18	19	20
France	23	23	19	21	15	16	15	14	16
Spain	8	13	13	16	16	14	15	14	14
Canada	11	16	12	17	13	13	12	13	14
Others	n/a	n/a	n/a	143	151	165	152	147	160
World	**583**	**716**	**770**	**849**	**1,433**	**1,669**	**1,620**	**1,627**	**1,690**

Source: Steel Statistical Yearbook 2018.
Note: n/a implies data not available. Crude steel production includes all qualities: carbon, stainless, and other alloy.

Lead

Monthly Prices (US$/mt)


Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

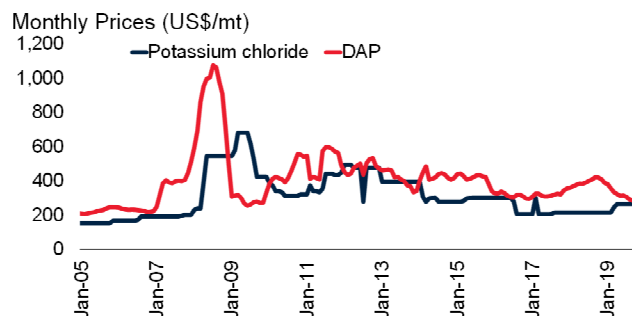Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand metric tons)				
Mine Production									
China	100	160	350	660	1,981	2,335	2,337	2,300	2,916
Australia	457	397	565	651	711	653	441	459	469
Peru	157	189	188	271	262	316	314	307	289
United States	519	550	497	465	369	367	336	302	260
Mexico	177	146	177	138	192	264	242	243	235
Russia	n/a	n/a	n/a	14	97	180	195	202	215
India	2	14	26	35	84	136	151	173	185
Bolivia	n/a	17	20	10	73	75	90	112	112
Kazakhstan	n/a	n/a	n/a	39	35	41	71	112	86
Turkey	6	8	18	16	39	74	76	70	76
Sweden	78	72	98	107	68	79	76	71	65
Morocco	76	115	72	82	33	32	30	38	59
Tajikistan	n/a	n/a	n/a	2	4	31	47	51	51
Others	*n/a*	*n/a*	*n/a*	*564*	*412*	*386*	*374*	*434*	*435*
World	**3,350**	**3,548**	**3,143**	**3,052**	**4,360**	**4,969**	**4,780**	**4,874**	**5,452**
Refined Production									
China	100	175	300	1,100	4,158	4,422	4,604	4,716	5,113
United States	605	1,150	1,290	1,457	1,255	1,050	1,000	1,010	1,136
Korea, Rep.	n/a	15	63	219	328	641	831	800	801
India	2	26	39	57	367	501	520	565	595
Mexico	180	184	235	233	257	344	341	343	343
Germany	138	392	394	387	405	378	339	354	313
United Kingdom	44	325	329	328	301	357	375	354	313
Canada	186	235	184	284	273	269	274	276	262
Japan	175	305	327	312	267	232	240	239	240
Australia	351	234	224	251	213	223	224	211	203
Brazil	19	85	57	50	115	176	176	180	192
Spain	69	121	124	120	165	165	166	170	175
Italy	54	134	171	234	150	210	187	174	168
Others	*n/a*	*2,066*	*1,782*	*1,601*	*1,594*	*1,727*	*1,780*	*1,891*	*1,823*
World	**3,419**	**5,446**	**5,518**	**6,633**	**9,848**	**10,694**	**11,057**	**11,282**	**11,677**
Refined Consumption									
China	n/a	210	244	660	4,171	4,380	4,593	4,795	5,235
United States	n/a	1,094	1,275	1,660	1,430	1,560	1,610	1,640	1,613
Korea, Rep.	n/a	54	80	309	382	602	622	622	615
India	n/a	33	147	56	420	539	571	551	569
Germany	n/a	433	448	390	343	357	374	413	389
Japan	n/a	393	416	343	224	269	264	287	274
Spain	n/a	111	115	219	262	238	262	261	257
Brazil	n/a	83	75	155	201	240	234	251	238
United Kingdom	n/a	296	302	301	211	217	285	295	236
Others	*n/a*	*2,643*	*2,246*	*2,398*	*2,146*	*2,377*	*2,498*	*2,501*	*2,515*
World	**n/a**	**5,348**	**5,348**	**6,491**	**9,790**	**10,779**	**11,313**	**11,616**	**11,942**

Source: British Geological Survey, Metallgesellschaft, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available. Refined production and consumption include significant recycled material.

Maize

Monthly Prices (US$/mt)


Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2016/17	2017/18	2018/19	2019/20
					(million metric tons)				
Production									
United States	105.5	168.6	201.5	251.9	315.6	384.8	371.1	366.3	350.0
China	33.0	62.6	96.8	106.0	190.8	263.6	259.1	257.3	254.0
Brazil	14.1	22.6	24.3	41.5	57.4	98.5	82.0	101.0	101.0
European Union	29.8	42.5	36.5	51.8	58.6	61.9	62.0	64.2	64.8
Argentina	9.9	12.9	7.7	15.4	25.2	41.0	32.0	51.0	50.0
Ukraine	n/a	n/a	4.7	3.8	11.9	28.0	24.1	35.8	36.0
India	7.5	7.0	9.0	12.0	21.7	25.9	28.8	27.2	29.0
Mexico	8.9	10.4	14.1	17.9	21.1	27.6	27.6	27.6	27.0
Canada	2.6	5.8	7.1	7.0	12.0	13.9	14.1	13.9	14.0
South Africa	8.6	14.9	8.6	8.0	10.9	17.6	13.1	11.5	14.0
Russia	n/a	n/a	2.5	1.5	3.1	15.3	13.2	11.4	13.5
Indonesia	2.8	4.0	5.0	5.9	6.8	10.9	11.9	12.0	12.7
Nigeria	1.3	1.7	5.8	4.0	7.7	10.4	11.0	11.0	11.0
Others	*44.0*	*55.8*	*58.2*	*64.7*	*106.6*	*125.9*	*128.2*	*133.0*	*127.0*
World	**268.1**	**408.7**	**481.8**	**591.5**	**849.5**	**1125.2**	**1078.1**	**1123.2**	**1104.0**
Stocks									
China	8.9	42.8	82.8	102.4	43.2	223.0	222.5	211.8	195.8
United States	16.8	35.4	38.6	48.2	28.6	58.3	54.4	53.7	49.0
European Union	2.3	4.8	3.7	3.2	5.2	7.6	9.8	7.6	8.9
Brazil	2.0	1.3	0.8	2.7	6.3	14.0	9.3	7.3	8.3
Argentina	0.6	0.2	0.6	0.9	4.0	5.3	2.9	4.1	5.6
Others	*5.6*	*18.0*	*14.9*	*17.7*	*27.9*	*43.2*	*42.5*	*39.6*	*35.0*
World	**36.1**	**102.5**	**141.4**	**175.1**	**115.4**	**351.4**	**341.3**	**324.0**	**302.5**
Exports									
United States	12.9	60.7	43.9	49.3	46.5	58.3	61.9	52.5	48.3
Brazil	0.9	0.0	0.0	6.3	8.4	31.6	24.2	39.0	34.0
Argentina	6.4	9.1	4.0	9.7	16.3	26.0	22.0	36.0	33.5
Ukraine	n/a	n/a	0.4	0.4	5.0	21.3	18.0	30.3	30.0
Russia	n/a	n/a	0.4	0.0	0.0	5.6	5.5	3.0	5.2
Serbia	0.0	0.0	0.0	0.0	2.0	2.4	0.8	2.6	2.2
European Union	0.0	0.0	0.0	0.5	1.1	2.2	1.7	3.3	2.0
Others	*11.9*	*10.5*	*9.8*	*10.6*	*12.2*	*13.1*	*13.6*	*11.2*	*11.4*
World	**32.2**	**80.3**	**58.4**	**76.7**	**91.6**	**160.5**	**147.8**	**177.9**	**166.6**
Imports									
European Union	18.9	26.6	5.7	3.7	7.4	15.0	18.5	24.8	21.0
Mexico	0.1	3.8	1.9	6.0	8.3	14.6	16.1	16.7	17.5
Japan	5.2	14.0	16.3	16.3	15.6	15.2	15.7	15.8	15.6
Iran	0.0	0.4	0.8	1.3	3.5	7.8	8.9	10.0	10.5
Korea, Rep.	0.3	2.4	5.6	8.7	8.1	9.2	10.0	10.5	10.5
Vietnam	0.1	0.1	0.0	0.1	1.3	8.1	8.6	10.2	10.5
Egypt	0.1	1.0	1.9	5.3	5.8	8.8	9.5	9.7	10.2
Others	*3.7*	*25.9*	*26.2*	*33.6*	*43.4*	*56.9*	*62.7*	*66.2*	*70.3*
World	**28.4**	**74.3**	**58.5**	**75.0**	**93.4**	**135.6**	**150.0**	**163.9**	**166.1**

Source: U.S. Department of Agriculture (October 10, 2019 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2018.
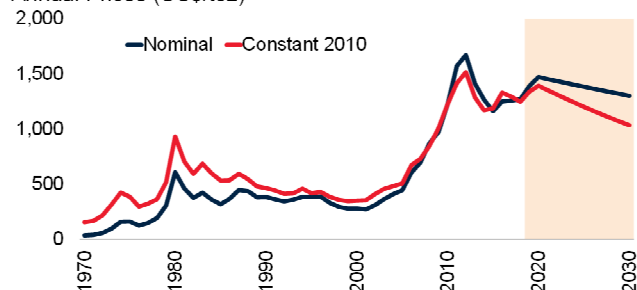
Natural gas

Monthly Prices (US$/mmbtu)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Constant Prices (US$/mmbtu)
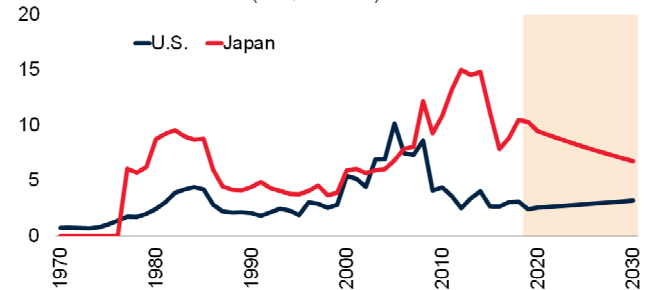
Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
				(billion cubic meters)					
Production									
United States	571	525	483	519	575	740	727	746	832
Russia	n/a	n/a	600	537	598	584	589	636	669
Iran.	3	5	25	56	144	184	199	220	239
Canada	54	71	103	176	150	161	172	178	185
Qatar	1	5	7	26	123	175	174	172	175
China	3	14	15	27	97	136	138	149	162
Australia	2	11	21	31	54	76	96	113	130
Norway	0	25	25	49	106	116	116	123	121
Saudi Arabia	2	9	32	47	83	99	105	109	112
Algeria	2	15	52	92	77	81	91	93	92
Indonesia	1	19	45	71	87	76	75	73	73
Malaysia	0	3	18	50	66	74	72	74	72
United Arab Emirates	1	7	20	37	50	59	60	62	65
Turkmenistan	n/a	n/a	79	42	40	66	63	59	62
Egypt	0	2	8	20	59	43	40	49	59
Uzbekistan	n/a	n/a	37	51	57	54	53	53	57
Nigeria	0	2	4	11	31	48	46	48	49
United Kingdom	11	36	48	113	58	41	42	42	41
Argentina	6	8	17	36	39	35	37	37	39
Thailand	0	0	7	21	38	41	40	39	38
Mexico	11	25	26	33	51	48	44	38	37
Oman	0	1	2	10	26	31	31	32	36
Pakistan	3	6	10	18	35	35	35	35	34
Others	*n/a*	*n/a*	*290*	*326*	*506*	*499*	*493*	*498*	*489*
World	**974**	**1,428**	**1,973**	**2,402**	**3,151**	**3,502**	**3,542**	**3,678**	**3,868**
Consumption									
United States	575	534	517	628	648	744	749	739	817
Russia	n/a	n/a	414	366	424	409	421	431	454
China	3	14	15	25	109	195	209	240	283
Iran Rep.	3	5	23	59	144	184	196	210	226
Canada	35	50	64	89	88	110	106	110	116
Japan	4	25	50	76	100	119	116	117	116
Saudi Arabia	2	9	32	47	83	99	105	109	112
Mexico	10	22	27	36	66	81	83	86	89
Germany	16	61	64	83	88	77	85	90	88
United Kingdom	12	47	55	101	98	72	81	79	79
United Arab Emirates	1	5	16	31	59	72	73	74	77
Italy	12	26	45	68	79	64	68	72	69
Egypt	0	2	8	19	43	46	49	56	60
India	1	1	12	25	59	48	51	54	58
South Korea	0	0	3	20	45	46	48	50	56
Others	*n/a*	*n/a*	*603*	*725*	*1,021*	*1,103*	*1,110*	*1,137*	*1,149*
World	**961**	**1,424**	**1,948**	**2,399**	**3,157**	**3,466**	**3,550**	**3,654**	**3,849**

Source: BP Statistical Review (June 2019 update).
Note: n/a implies data not available.

Natural rubber

Monthly Prices (US$/kg)
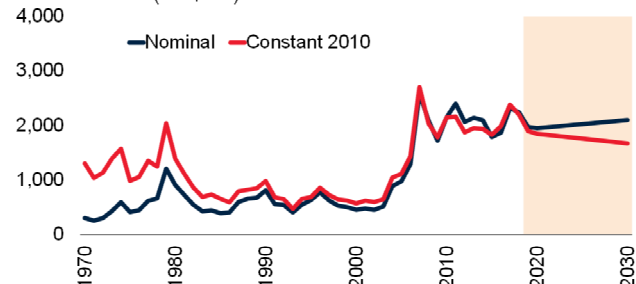

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/kg)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand metric tons)				
Production									
Thailand	287	501	1,275	2,346	3,252	4,473	4,519	4,775	5,145
Indonesia	815	822	1,261	1,501	2,736	3,145	3,298	3,499	3,486
Vietnam	28	46	94	291	752	1,013	1,035	1,094	1,142
China	46	113	264	445	687	794	774	798	811
India	90	155	324	629	851	575	624	713	649
Côte d'Ivoire	11	23	69	123	231	351	468	604	624
Malaysia	1,269	1,530	1,291	928	939	722	674	741	603
Myanmar	10	16	15	36	128	212	230	249	270
Brazil	42	53	78	96	136	193	190	184	185
Others	*542*	*591*	*314*	*417*	*691*	*787*	*791*	*891*	*961*
World	**3,140**	**3,850**	**4,985**	**6,811**	**10,403**	**12,264**	**12,603**	**13,547**	**13,876**
Consumption									
China	250	340	600	1,150	3,622	4,680	4,982	5,301	5,504
European Union	991	1,007	1,012	1,293	1,136	1,159	1,186	1,236	1,231
India	86	171	358	638	944	987	1,033	1,082	1,220
United States	568	585	808	1,195	926	936	932	958	989
Thailand	8	28	99	243	487	601	650	685	752
Japan	283	427	677	752	749	691	676	679	706
Indonesia	25	46	108	139	421	509	583	608	618
Malaysia	20	45	184	364	458	475	486	489	515
Brazil	37	81	124	227	378	398	412	395	398
Others	*822*	*1,050*	*1,099*	*1,307*	*1,638*	*1,698*	*1,745*	*1,784*	*1,832*
World	**3,090**	**3,780**	**5,068**	**7,306**	**10,759**	**12,134**	**12,685**	**13,216**	**13,766**
Exports									
Thailand	279	457	1,151	2,166	2,866	3,776	3,925	3,925	3,925
Indonesia	790	976	1,077	1,380	2,369	2,680	2,642	2,642	2,642
Vietnam	23	33	80	273	782	1,137	1,254	1,254	1,254
Malaysia	1,304	1,482	1,322	978	1,245	1,119	1,023	1,023	1,023
Côte d'Ivoire	11	23	69	121	226	348	459	459	459
Cambodia	7	15	24	33	43	128	145	145	145
Myanmar	n/a	n/a	n/a	27	67	86	109	109	109
Others	*406*	*284*	*239*	*299*	*448*	*925*	*895*	*2,608*	*2,532*
World	**2,820**	**3,270**	**3,962**	**5,277**	**8,047**	**10,200**	**10,454**	**12,167**	**12,091**
Imports									
China	178	242	340	820	2,888	3,851	4,131	5,277	5,211
European Union	1,071	1,068	1,072	1,474	1,427	1,536	1,543	1,571	1,597
United States	543	576	820	1,192	931	952	946	972	997
Malaysia	45	43	136	548	706	955	931	1,096	1,014
Japan	292	458	663	801	747	682	660	699	694
Vietnam	n/a	n/a	n/a	n/a	127	300	418	526	583
India	3	1	61	11	187	414	460	398	586
Others	*678*	*847*	*1,677*	*1,534*	*1,667*	*1,650*	*1,675*	*1,706*	*1,743*
World	**2,810**	**3,235**	**4,769**	**6,380**	**8,681**	**10,340**	**10,764**	**12,245**	**12,425**

Source: International Rubber Study Group (July-September 2019 update).
Note: n/a implies data not available. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2018.
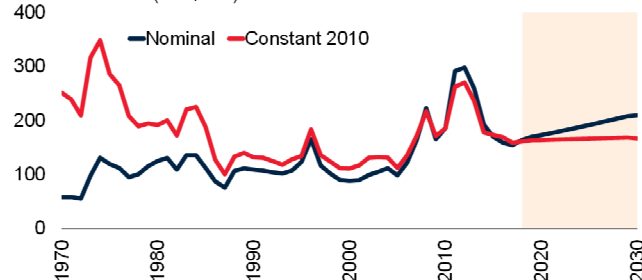
Nickel

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

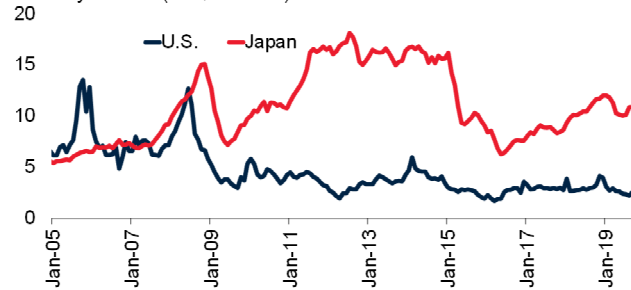|	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand metric tons)				
Mine Production									
Indonesia	11	41	69	98	220	130	180	339	648
Philippines	0	47	16	20	184	418	301	315	345
New Caledonia	139	87	85	126	131	193	204	215	216
Russia	n/a	n/a	n/a	266	270	261	223	221	207
Canada	277	185	196	191	160	235	235	214	180
Australia	30	74	70	166	168	229	203	179	166
China	n/a	11	27	50	80	101	100	98	99
Brazil	3	6	24	45	54	89	79	70	66
Cuba	37	38	39	68	65	54	52	53	51
Finland	5	7	11	4	12	9	21	35	42
South Africa	12	26	28	37	40	57	49	48	43
Colombia	n/a	0	23	59	49	37	37	41	43
Guatemala	n/a	7	0	n/a	0	46	55	45	38
Others	*n/a*	*n/a*	*n/a*	*96*	*170*	*219*	*179*	*224*	*185*
World	**663**	**758**	**906**	**1,227**	**1,605**	**2,078**	**1,917**	**2,098**	**2,329**
Refined Production									
China	n/a	11	28	51	332	600	450	425	748
Indonesia	n/a	4	5	10	19	38	117	205	276
Japan	n/a	109	100	161	166	193	196	187	187
Russia	n/a	n/a	n/a	221	262	231	189	160	149
Canada	n/a	142	135	134	105	150	158	154	146
Australia	n/a	35	45	112	102	153	121	104	110
New Caledonia	n/a	33	32	44	40	78	96	104	108
Norway	n/a	37	58	59	92	91	93	86	91
Brazil	n/a	3	13	23	28	78	77	69	65
Finland	n/a	13	17	54	50	61	85	86	61
Korea, Rep.	n/a	n/a	8	n/a	21	35	45	44	49
Colombia	n/a	0	18	28	49	37	37	41	43
United Kingdom	n/a	19	27	38	32	39	45	26	41
Others	*n/a*	*n/a*	*n/a*	*164*	*170*	*209*	*320*	*435*	*192*
World	**n/a**	**739**	**904**	**1,099**	**1,469**	**1,991**	**2,028**	**2,125**	**2,267**
Refined Consumption									
China	n/a	18	28	58	489	843	898	982	1,111
Japan	99	122	159	192	177	151	162	163	175
Indonesia	n/a	n/a	n/a	1	1	1	1	61	173
United States	149	0	18	153	119	152	136	199	136
Korea, Rep.	n/a	0	24	91	101	88	103	109	118
Taiwan, China	n/a	0	18	106	73	60	66	84	88
India	2	12	14	23	27	37	57	82	72
Germany	40	78	93	102	100	60	58	64	61
Italy	20	27	27	53	62	60	56	60	58
Others	*266*	*460*	*460*	*373*	*276*	*331*	*387*	*307*	*370*
World	**576**	**717**	**842**	**1,150**	**1,426**	**1,783**	**1,923**	**2,112**	**2,363**

Source: British Geological Survey, Metallgesellschaft, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available.

Palm oil and Soybean oil
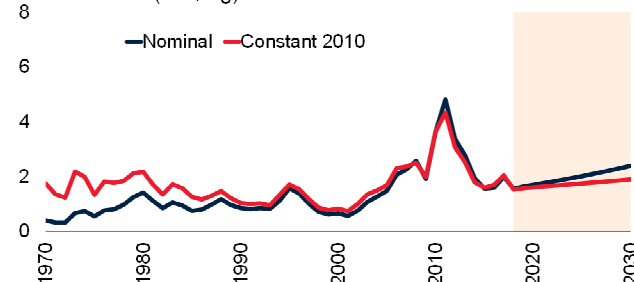
Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Constant Prices (US$/mt)
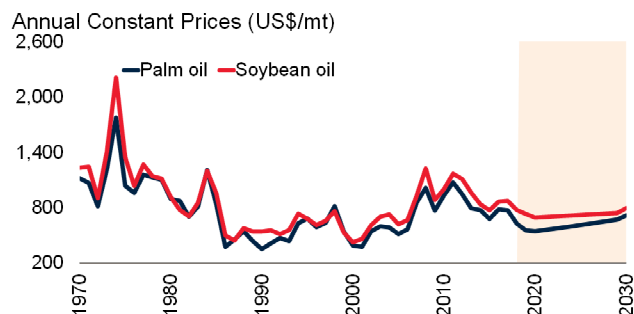
Source: World Bank.
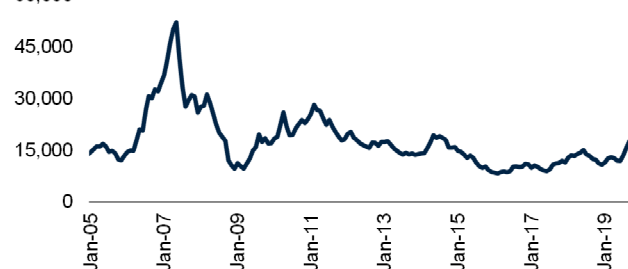Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2016/17	2017/18	2018/19	2019/20
					(thousand metric tons)				
Palm oil Production									
Indonesia	248	752	2,650	8,300	23,600	36,000	39,500	41,500	43,000
Malaysia	589	2,692	6,031	11,937	18,211	18,858	19,683	21,000	21,200
Thailand	0	19	200	580	1,832	2,500	2,780	2,900	3,000
Colombia	36	80	252	520	753	1,099	1,633	1,625	1,680
Nigeria	432	520	600	730	971	990	1,025	1,015	1,015
Guatemala	0	0	6	124	231	740	852	852	852
Ecuador	5	44	150	222	380	565	573	580	630
Papua New Guinea	0	45	145	336	488	650	630	630	630
Honduras	0	18	64	148	320	620	580	580	580
Others	*612*	*726*	*936*	*1,352*	*2,420*	*3,245*	*3,354*	*3,398*	*3,427*
World	**1,922**	**4,896**	**11,034**	**24,249**	**49,206**	**65,267**	**70,610**	**74,080**	**76,014**
Palm oil Consumption									
Indonesia	29	561	1,330	3,263	6,269	9,160	11,000	12,625	12,750
India	1	431	259	3,160	5,910	9,350	9,270	9,805	10,185
European Union	595	607	1,509	2,790	4,750	6,800	6,900	7,000	6,900
China	53	16	1,194	2,028	5,797	4,750	5,100	7,012	7,220
Malaysia	8	420	914	1,571	2,204	2,587	3,233	3,554	3,785
Pakistan	1	231	800	1,245	2,093	2,995	3,145	3,495	3,495
Thailand	0	43	208	508	1,304	2,106	2,343	2,495	2,590
Others	*1,112*	*2,454*	*4,941*	*7,946*	*17,244*	*23,811*	*25,504*	*26,561*	*27,639*
World	**1,799**	**4,763**	**11,155**	**22,511**	**45,571**	**61,559**	**66,495**	**72,547**	**74,564**
Soybean oil production									
China	181	183	599	3,240	9,856	15,770	16,128	15,232	15,232
United States	3,749	5,112	6,082	8,355	8,568	10,035	10,783	11,018	11,154
Argentina	0	158	1,179	3,190	7,181	8,395	7,236	8,060	8,650
Brazil	0	2,601	2,669	4,333	6,970	7,755	8,500	8,245	8,385
European Union	1,260	2,478	2,317	3,033	2,343	2,736	2,841	3,097	3,021
India	2	69	425	810	1,683	1,620	1,386	1,760	1,745
Mexico	52	255	330	795	648	820	937	982	1,065
Russia Federation	n/a	n/a	75	62	367	788	824	842	896
Paraguay	10	6	56	170	310	711	733	740	739
Others	*n/a*	*n/a*	*2,033*	*2,830*	*3,552*	*5,184*	*5,780*	*6,146*	*6,314*
World	**6,199**	**12,575**	**15,765**	**26,818**	**41,478**	**53,814**	**55,148**	**56,122**	**57,201**
Soybean oil consumption									
China	179	256	1,055	3,542	11,400	16,350	16,500	15,885	16,287
United States	2,854	4,134	5,506	7,401	7,506	9,009	9,698	10,409	10,660
Brazil	0	1,490	2,075	2,932	5,205	6,570	6,940	7,170	7,300
India	79	708	445	1,750	2,550	5,150	4,720	4,950	5,235
Argentina	0	56	101	247	2,520	2,985	3,081	2,684	2,690
European Union	1,170	1,926	1,879	2,186	2,400	2,205	2,225	2,405	2,405
Bangladesh	40	28	235	503	404	1,010	1,085	1,245	1,379
Others	*1,636*	*3,819*	*4,145*	*7,582*	*8,492*	*10,134*	*10,463*	*10,775*	*11,210*
World	**5,958**	**12,417**	**15,441**	**26,143**	**40,477**	**53,413**	**54,712**	**55,523**	**57,166**

Source: U.S. Department of Agriculture (October 10, 2019 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2018.
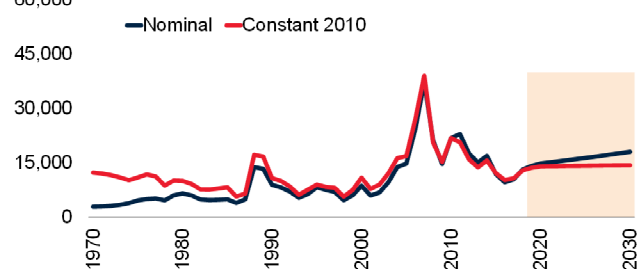
Platinum

Monthly Prices (US$/toz)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/toz)
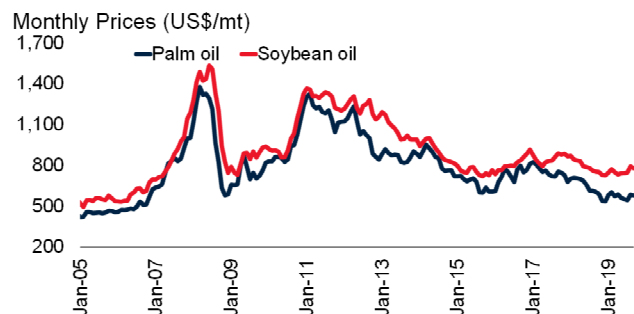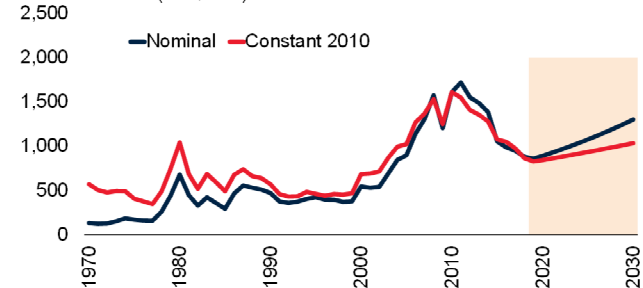

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	2003	2005	2008	2010	2016	2017	2018	2019
				(metric tons)				
Mine Production								
South Africa	146.1	157.2	145.4	147.7	132.5	133.0	133.9	130.2
Russia	25.9	29.9	25.8	24.4	21.0	21.9	21.5	21.2
Zimbabwe	4.3	5.0	5.6	8.9	15.0	14.8	14.9	14.3
Canada	4.6	7.2	7.1	4.0	8.3	7.2	6.5	6.9
United States	4.2	3.9	3.6	3.5	4.0	4.1	4.2	4.6
Others	*2.3*	*2.8*	*4.0*	*3.8*	*4.2*	*3.9*	*3.8*	*3.4*
World	**187.4**	**206.0**	**191.5**	**192.3**	**185.0**	**184.9**	**184.7**	**180.5**
Autocatalyst scrap								
North America	15.1	15.6	17.3	14.0	14.0	14.2	14.9	15.2
Europe	3.9	5.4	9.2	9.3	12.6	13.3	13.8	15.7
Japan	2.1	1.7	2.1	1.9	4.0	3.9	4.0	4.2
China	n/a	0.1	0.2	0.4	1.7	2.0	2.2	2.5
Others	*1.8*	*2.3*	*2.5*	*2.5*	*5.0*	*5.6*	*6.2*	*6.8*
World	**22.9**	**25.1**	**31.3**	**28.1**	**37.3**	**39.1**	**41.2**	**44.4**
Old jewelry scrap								
China	0.9	5.1	10.4	11.7	14.9	14.3	17.2	18.1
Japan	4.0	6.0	18.0	8.7	6.1	5.7	5.5	5.7
North America	0.1	0.2	1.3	0.4	0.2	0.2	0.2	0.2
Europe	0.1	0.1	0.4	0.3	0.2	0.2	0.2	0.2
Others	*0.1*	*0.1*	*0.0*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
World	**5.2**	**11.5**	**30.1**	**21.2**	**21.5**	**20.5**	**23.1**	**24.3**
TOTAL SUPPLY	**215.5**	**242.6**	**252.9**	**236.7**	**243.8**	**244.6**	**249.0**	**249.2**
Autocatalyst demand								
Europe	41.3	56.1	56.9	44.5	45.7	43.6	40.1	38.3
North America	26.8	23.3	17.5	12.0	13.1	13.7	14.3	15.5
Japan	16.6	18.1	17.0	13.5	9.9	10.0	10.0	9.7
China	4.7	5.5	5.7	6.7	8.0	9.1	9.1	9.5
Others	*8.0*	*12.5*	*14.1*	*17.1*	*21.5*	*22.3*	*24.5*	*26.4*
World	**97.4**	**115.5**	**111.2**	**93.8**	**98.1**	**98.8**	**97.9**	**99.4**
Jewelry demand								
China	46.1	35.0	34.5	44.8	43.3	40.1	35.7	33.7
Japan	21.3	20.5	7.7	8.1	9.8	9.8	10.0	9.9
North America	9.9	8.1	6.4	6.6	7.6	7.6	7.6	7.7
Europe	8.5	7.9	7.4	6.8	6.6	6.1	6.3	6.4
Others	*2.4*	*1.2*	*1.4*	*4.9*	*5.2*	*5.7*	*6.3*	*6.9*
World	**88.2**	**72.7**	**57.4**	**71.2**	**72.5**	**69.3**	**65.9**	**64.5**
Other demand								
North America	15.8	15.8	14.2	11.3	17.1	16.8	15.8	16.1
China	n/a	4.7	9.1	7.6	15.0	15.3	22.8	18.0
Japan	9.9	13.2	17.9	10.4	16.6	10.0	11.4	11.0
Europe	11.1	9.5	9.8	9.7	12.2	11.4	11.0	11.1
Others	*14.0*	*14.0*	*18.7*	*24.1*	*15.3*	*17.9*	*19.4*	*21.6*
World	**50.8**	**57.2**	**69.7**	**63.1**	**76.2**	**71.3**	**80.4**	**77.8**
TOTAL DEMAND	**236.4**	**245.4**	**238.3**	**228.1**	**246.9**	**239.4**	**244.2**	**241.8**

Source: Platinum & Palladium Survey, Thomson Reuters (May 2019 update).
Note: Other demand includes chemical, electronics, glass, petroleum, retail investment and other industrial demand.

Rice

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2016/17	2017/18	2018/19	2019/20
					(million metric tons)				
Production									
China	77.0	97.9	132.5	131.5	138.1	147.8	148.9	148.5	146.0
India	42.2	53.6	74.3	85.0	96.0	109.7	112.8	116.4	114.0
Indonesia	13.1	22.3	29.0	33.0	35.5	36.9	37.0	36.7	37.4
Bangladesh	11.1	13.9	17.9	25.1	31.7	34.6	32.7	35.0	35.5
Vietnam	6.4	7.7	12.4	20.5	26.4	27.4	27.7	27.9	28.3
Thailand	9.0	11.5	11.3	17.1	20.3	19.2	20.6	20.3	20.5
Myanmar	5.1	6.7	7.9	10.8	11.1	12.7	13.2	13.2	13.3
Philippines	3.4	5.0	6.4	8.1	10.5	11.7	12.2	11.7	12.2
Japan	11.5	8.9	9.6	8.6	7.9	7.9	7.8	7.7	7.8
Pakistan	2.2	3.1	3.3	4.8	4.8	6.8	7.5	7.4	7.5
Brazil	3.7	5.9	6.8	6.9	9.3	8.4	8.2	7.1	7.1
United States	2.8	4.8	5.1	5.9	7.6	7.1	5.7	7.1	6.0
Cambodia	2.5	1.1	1.6	2.5	4.4	5.3	5.6	5.6	5.7
Others	*22.9*	*27.6*	*33.3*	*39.3*	*48.1*	*55.7*	*55.2*	*54.2*	*56.5*
World	**213.0**	**269.9**	**351.4**	**399.2**	**451.6**	**491.1**	**494.9**	**499.0**	**497.8**
Stocks									
China	11.0	28.0	94.0	93.0	44.5	98.5	109.0	115.0	117.8
India	6.0	6.5	14.5	25.0	23.5	20.6	22.6	26.2	26.3
Thailand	1.2	2.0	0.9	2.2	5.6	4.2	3.0	3.7	4.2
Philippines	0.6	1.5	1.8	2.8	2.5	2.0	2.3	3.5	3.8
Indonesia	0.6	3.0	2.1	4.6	7.1	2.9	4.2	3.3	3.2
Others	*9.4*	*11.6*	*13.3*	*19.0*	*18.7*	*21.5*	*21.3*	*20.2*	*19.8*
World	**28.8**	**52.6**	**126.6**	**146.7**	**101.9**	**149.7**	**162.3**	**171.9**	**175.1**
Exports									
India	0.0	0.9	0.7	1.7	2.8	11.7	12.0	11.8	11.8
Thailand	1.6	3.0	4.0	7.5	10.6	11.6	11.1	8.7	9.0
Vietnam	0.0	0.0	1.0	3.5	7.0	6.5	6.6	6.5	6.6
Pakistan	0.2	1.2	1.3	2.4	3.4	3.5	4.0	4.1	4.0
China	1.3	0.5	0.7	1.8	0.5	0.8	1.4	2.8	3.3
United States	1.5	3.1	2.3	2.6	3.5	3.6	2.8	3.0	3.0
Myanmar	0.8	0.7	0.2	0.7	1.1	3.4	2.8	2.6	2.6
Others	*3.1*	*3.0*	*1.9*	*3.7*	*6.3*	*6.1*	*6.5*	*5.8*	*5.6*
World	**8.5**	**12.4**	**12.1**	**24.0**	**35.2**	**47.3**	**47.1**	**45.3**	**45.9**
Imports									
China	0.0	0.2	0.1	0.3	0.5	5.3	5.5	3.3	3.1
Philippines	0.0	0.0	0.4	1.4	1.3	1.1	1.3	3.6	2.7
Nigeria	0.0	0.4	0.2	1.3	2.4	2.5	2.0	2.1	2.2
European Union	0.9	0.5	0.7	1.2	1.4	1.8	2.0	2.1	2.1
Côte d'Ivoire	0.1	0.3	0.3	0.5	0.9	1.3	1.4	1.5	1.6
Saudi Arabia	0.2	0.4	0.5	1.0	1.1	1.2	1.3	1.4	1.4
Senegal	0.2	0.3	0.3	0.7	0.8	1.1	1.2	1.2	1.3
Others	*6.3*	*9.2*	*8.1*	*15.7*	*24.7*	*26.4*	*32.1*	*29.4*	*29.5*
World	**7.7**	**11.3**	**10.6**	**22.1**	**33.1**	**40.8**	**46.7**	**44.5**	**43.8**

Source: U.S. Department of Agriculture (October 10, 2019 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2018.

Silver

Monthly Prices (US$/toz)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/toz)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1990	2000	2005	2010	2014	2015	2016	2017	2018
					(metric tons)				
Production									
Mexico	2,352	2,620	2,894	4,411	5,766	5,955	5,409	5,815	5,624
Peru	1,762	2,438	3,193	3,640	3,768	4,102	4,375	4,304	4,161
China	150	1,569	2,500	3,085	3,673	3,421	3,496	2,500	3,574
Poland	832	1,164	1,262	1,183	1,384	1,407	1,482	1,490	1,409
Russia	n/a	400	1,350	1,145	1,434	1,580	1,449	1,600	1,350
Chile	655	1,242	1,400	1,287	1,572	1,504	1,501	1,319	1,243
Australia	1,173	2,059	2,417	1,879	1,847	1,430	1,418	1,120	1,220
Bolivia	311	434	420	1,259	1,345	1,306	1,353	1,196	1,191
Kazakhstan	n/a	895	883	552	989	1,309	1,187	1,059	969
United States	2,121	1,980	1,226	1,276	1,184	1,090	1,150	1,020	925
India	32	46	28	165	328	490	461	500	658
Argentina	83	78	264	694	905	925	933	650	545
Sweden	243	329	310	302	383	480	499	468	471
Canada	1,501	1,212	1,124	591	495	384	385	390	368
Turkey	27	193	219	364	184	191	175	175	170
Dominican Republic	23	n/a	0	23	135	96	122	147	170
Morocco	241	289	186	243	189	216	237	239	152
Indonesia	67	314	329	290	119	152	115	105	101
Papua New Guinea	115	79	51	84	81	45	90	69	90
Others	*3,143*	*861*	*698*	*915*	*1,660*	*1,713*	*1,877*	*2,394*	*747*
World	**14,828**	**18,202**	**20,753**	**23,388**	**27,440**	**27,795**	**27,715**	**26,559**	**25,139**
Fabrication									
India	47	115	3,116	2,486	6,247	7,374	5,081	5,327	6,864
China	18	36	4,307	6,792	7,784	6,866	5,873	6,241	6,262
United States	137	192	5,891	6,768	6,831	7,383	6,660	5,812	5,818
Japan	116	135	3,860	3,020	2,700	3,056	3,307	3,490	3,246
Germany	54	40	1,260	1,690	1,003	1,121	1,213	1,216	1,224
Canada	7	3	126	667	1,079	1,243	1,182	734	742
Italy	51	67	1,577	1,109	875	878	854	890	855
Thailand	24	31	1,150	991	979	1,063	1,015	914	875
Mexico	14	17	693	556	617	532	494	456	386
Russia	n/a	n/a	795	944	793	724	671	663	673
United Kingdom	25	42	1,330	677	629	677	665	650	646
Australia	5	7	210	450	430	566	583	499	404
Korea, Rep.	7	20	794	929	820	628	516	514	492
Taiwan, China	5	9	380	486	488	467	471	492	502
Belgium	20	35	846	577	447	425	426	345	322
France	27	29	381	697	415	446	439	440	438
Brazil	7	7	232	319	379	358	304	228	234
Indonesia	1	4	159	199	223	234	248	253	262
Turkey	5	7	309	201	240	233	228	228	243
Others	*n/a*	*n/a*	*2,025*	*3,095*	*1,808*	*1,892*	*1,813*	*1,662*	*1,658*
World	**n/a**	**n/a**	**29,441**	**32,653**	**34,787**	**36,166**	**32,043**	**31,054**	**32,146**

Source: GFMS, Thomson Reuters, British Geological Survey, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available. Fabrication: jewelry and silverware including the use of scrap.

Soybeans

Monthly Prices (US$/mt)
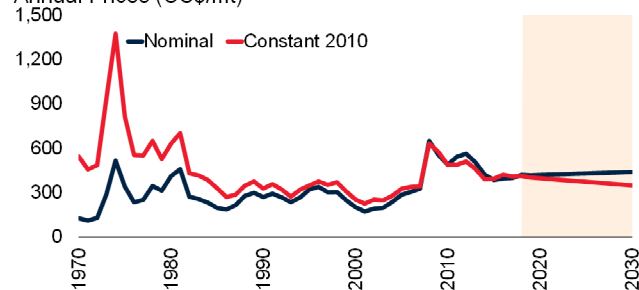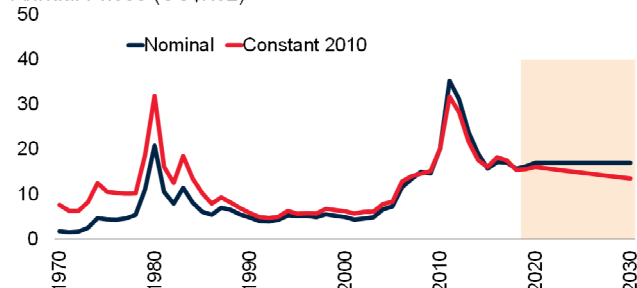

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2016/17	2017/18	2018/19	2019/20
					(million metric tons)				
Production									
Brazil	0.0	15.2	15.8	39.5	75.3	114.6	122.0	117.0	123.0
United States	30.7	48.9	52.4	75.1	90.7	116.9	120.1	120.5	96.6
Argentina	0.0	3.5	11.5	27.8	49.0	55.0	37.8	55.3	53.0
China	8.7	7.9	11.0	15.4	15.4	13.6	15.3	15.9	17.1
India	0.0	0.4	2.6	5.3	10.1	11.0	8.4	11.5	11.0
Paraguay	0.1	0.6	1.3	3.5	7.1	10.3	10.3	8.9	10.2
Canada	0.3	0.7	1.3	2.7	4.4	6.6	7.7	7.3	6.5
Russia	n/a	n/a	0.7	0.3	1.1	3.1	3.6	4.0	4.3
Ukraine	n/a	n/a	0.1	0.1	1.7	4.3	3.9	4.5	3.6
Bolivia	0.0	0.0	0.4	1.1	2.3	3.0	2.6	2.7	2.9
European Union	0.1	0.5	2.3	1.3	1.2	2.4	2.5	2.7	2.6
Others	*2.3*	*3.1*	*5.0*	*3.7*	*6.3*	*9.6*	*7.4*	*8.6*	*8.1*
World	**42.1**	**80.9**	**104.3**	**175.8**	**264.7**	**350.5**	**341.6**	**358.8**	**339.0**
Crushings									
China	1.5	1.5	3.9	18.9	55.0	88.0	90.0	85.0	85.0
United States	20.7	27.8	32.3	44.6	44.9	51.7	55.9	56.9	57.7
Argentina	0.0	0.9	7.0	17.3	37.6	43.3	36.9	41.3	44.0
Brazil	0.0	13.8	14.2	22.7	36.3	40.4	44.2	43.0	43.8
European Union	7.3	14.1	13.0	16.8	12.3	14.4	15.0	16.3	15.9
India	0.0	0.4	2.4	4.5	9.4	9.0	7.7	9.8	9.7
Mexico	0.3	1.5	1.9	4.5	3.6	4.6	5.3	5.5	6.0
Russia	n/a	n/a	0.4	0.4	2.1	4.4	4.6	4.7	5.0
Paraguay	0.1	0.0	0.3	0.9	1.7	3.8	3.9	3.9	3.9
Others	*5.4*	*9.7*	*11.4*	*15.8*	*19.4*	*28.2*	*31.5*	*33.1*	*34.3*
World	**35.3**	**69.8**	**86.8**	**146.5**	**222.2**	**287.8**	**294.9**	**299.5**	**305.2**
Exports									
Brazil	0.0	1.8	2.5	15.5	30.0	63.1	76.1	75.4	76.5
United States	11.8	19.7	15.2	27.1	41.0	59.0	58.1	47.6	48.3
Argentina	0.0	2.7	4.5	7.3	9.2	7.0	2.1	8.2	8.0
Paraguay	0.0	0.6	1.0	2.4	5.1	6.1	6.0	5.5	6.2
Canada	0.0	0.1	0.2	0.7	2.9	4.6	4.9	5.3	4.6
Others	*0.5*	*0.4*	*2.1*	*0.7*	*3.4*	*7.7*	*5.8*	*6.8*	*5.8*
World	**12.3**	**25.3**	**25.4**	**53.7**	**91.6**	**147.5**	**153.1**	**148.7**	**149.4**
Imports									
China	0.0	0.5	0.0	13.2	52.3	93.5	94.1	83.0	85.0
European Union	7.4	13.6	13.2	17.7	12.5	13.4	14.6	15.2	15.1
Mexico	0.1	1.4	1.4	4.4	3.5	4.1	4.9	5.2	5.8
Argentina	0.0	0.0	0.0	0.3	0.0	1.7	4.7	6.5	3.9
Egypt	0.0	0.0	0.0	0.3	1.6	2.1	3.3	3.4	3.5
Thailand	0.0	0.0	0.0	1.3	2.1	3.1	2.5	3.2	3.4
Japan	3.2	4.2	4.4	4.8	2.9	3.2	3.3	3.3	3.4
Others	*1.9*	*6.5*	*6.5*	*11.1*	*14.8*	*23.1*	*25.7*	*26.7*	*28.0*
World	**12.6**	**26.2**	**25.5**	**53.1**	**89.8**	**144.2**	**153.0**	**146.3**	**148.1**

Source: U.S. Department of Agriculture (October 10, 2019 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2018.
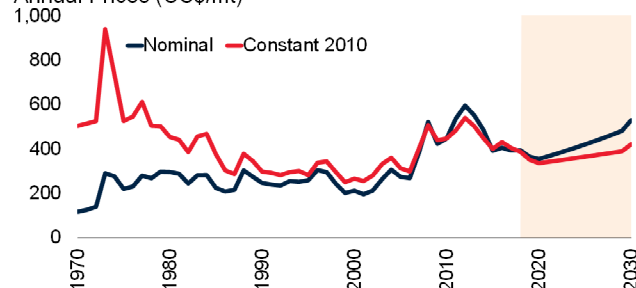
Sugar

Monthly Prices (US$/kg)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/kg)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2016/17	2017/18	2018/19	2019/20
					(million metric tons)				
Production									
Brazil	5.1	8.5	7.9	17.1	38.4	39.2	38.9	29.5	32.0
India	4.5	6.5	13.7	20.5	26.6	22.2	34.3	33.1	30.3
European Union	0.0	0.0	0.0	0.0	15.9	18.3	20.8	18.2	19.4
Thailand	0.5	1.7	4.0	5.1	9.7	10.0	14.7	14.2	13.9
China	2.1	3.2	6.8	6.8	11.2	9.3	10.3	10.6	10.7
United States	5.6	5.6	6.3	8.0	7.1	8.1	8.4	8.1	8.3
Mexico	2.5	2.5	3.9	5.2	5.5	6.3	6.4	6.6	6.5
Russia	0.0	0.0	2.6	1.6	3.0	6.2	6.6	5.9	6.2
Pakistan	0.0	0.9	2.1	2.6	3.9	6.8	7.2	5.5	5.2
Australia	2.7	3.3	3.6	4.2	3.7	5.1	4.8	4.9	4.9
Guatemala	0.2	0.5	1.0	1.6	2.0	2.7	2.9	3.0	3.1
Others	*47.1*	*55.7*	*62.6*	*58.1*	*35.2*	*39.7*	*39.2*	*39.3*	*40.2*
World	**70.3**	**88.6**	**114.4**	**130.8**	**162.2**	**174.0**	**194.5**	**178.9**	**180.7**
Stocks									
India	1.8	1.1	3.6	12.0	6.3	6.6	14.2	17.6	16.9
Thailand	0.0	0.2	0.2	0.6	3.0	5.6	6.8	7.0	6.4
China	0.3	0.7	1.4	1.0	1.6	7.8	6.6	5.5	4.5
Indonesia	0.4	0.3	0.4	1.4	0.6	1.7	1.8	2.2	2.0
United States	2.9	1.4	1.4	2.0	1.3	1.7	1.8	1.4	1.3
Pakistan	0.0	0.1	0.3	0.4	1.5	2.8	3.1	2.1	1.2
Philippines	0.0	0.2	0.2	0.3	0.9	1.1	1.3	1.3	1.2
Others	*14.7*	*13.7*	*14.9*	*22.2*	*14.3*	*14.9*	*16.5*	*13.9*	*14.2*
World	**20.2**	**17.6**	**22.4**	**39.9**	**29.5**	**42.2**	**52.2**	**50.9**	**47.8**
Exports									
Brazil	1.2	2.3	1.3	7.7	25.8	28.5	28.2	19.6	20.9
Thailand	0.2	1.0	2.7	3.4	6.6	7.0	10.9	11.5	11.9
Australia	1.8	2.6	2.8	3.1	2.8	4.0	3.8	3.8	3.8
India	0.3	0.1	0.2	1.4	3.9	2.1	2.2	3.4	3.5
European Union	0.0	0.0	0.0	0.0	1.1	1.5	3.9	2.0	2.4
Guatemala	0.1	0.2	0.7	1.2	1.5	2.0	1.9	2.0	2.0
Mexico	0.6	0.0	0.3	0.2	1.6	1.3	1.1	2.1	1.5
Others	*17.1*	*22.2*	*25.9*	*21.5*	*10.6*	*12.3*	*12.4*	*12.1*	*11.8*
World	**21.3**	**28.4**	**33.9**	**38.3**	**53.9**	**58.7**	**64.5**	**56.4**	**57.7**
Imports									
Indonesia	0.1	0.6	0.2	1.6	3.1	4.8	4.3	4.9	4.5
China	0.4	1.1	1.1	1.1	2.1	4.6	4.4	4.3	4.3
United States	4.8	4.4	2.6	1.4	3.4	2.9	3.0	2.6	2.9
Algeria	0.0	0.7	1.0	1.0	1.2	2.1	2.3	2.4	2.4
Bangladesh	0.0	0.0	0.0	0.8	1.5	2.1	2.7	2.3	2.4
United Arab Emirates	0.0	0.1	0.1	1.1	2.0	1.9	2.8	2.2	2.3
Malaysia	0.0	0.5	0.9	1.3	1.8	1.9	2.0	2.1	2.1
Others	*12.0*	*20.9*	*26.2*	*32.0*	*34.0*	*34.1*	*33.3*	*30.3*	*30.4*
World	**17.3**	**28.2**	**32.1**	**40.4**	**49.1**	**54.4**	**54.7**	**51.1**	**51.3**

Source: U.S. Department of Agriculture (October 10, 2019 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2017.
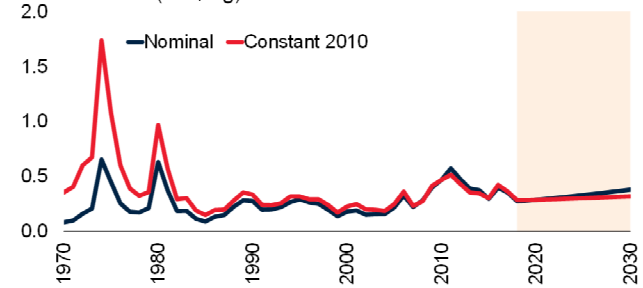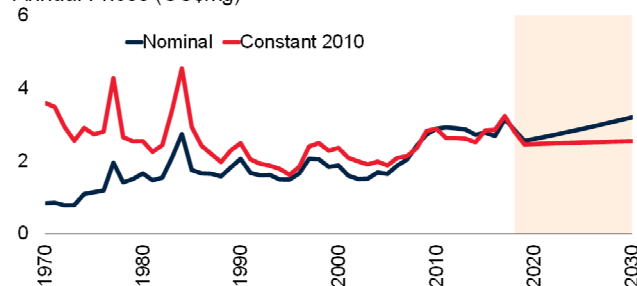
Tea

Monthly Prices (US$/kg)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/kg)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

|	1970	1980	1990	2000	2010	2014	2015	2016	2017
					(thousand metric tons)				
Production									
China	136	304	540	683	1,450	2,096	2,277	2,313	2,460
India	419	570	688	826	991	1,207	1,233	1,250	1,325
Kenya	41	90	197	236	399	445	399	473	440
Sri Lanka	212	191	233	306	331	338	342	350	350
Vietnam	15	21	32	70	198	228	236	240	260
Turkey	33	96	123	139	235	227	239	243	234
Indonesia	64	106	156	163	150	154	133	144	139
Myanmar	11	13	15	63	95	99	100	102	105
Iran	20	32	37	223	121	72	197	132	101
Bangladesh	31	40	39	46	60	64	66	65	82
Japan	91	102	90	85	85	84	80	80	81
Argentina	26	36	51	74	92	83	82	85	81
Uganda	18	2	7	29	49	61	61	63	64
Thailand	0	1	7	32	67	40	49	52	58
Burundi	0	1	4	34	38	54	54	53	54
Others	*169*	*289*	*307*	*222*	*259*	*258*	*263*	*269*	*268*
World	**1,287**	**1,894**	**2,525**	**3,231**	**4,622**	**5,510**	**5,810**	**5,914**	**6,101**
Consumption									
China	109	220	383	497	1,217	n/a	n/a	n/a	n/a
India	218	331	490	632	774	n/a	n/a	n/a	n/a
Brazil	90	81	133	514	406	n/a	n/a	n/a	n/a
Iran	24	39	79	48	200	n/a	n/a	n/a	n/a
Turkey	26	91	95	137	242	n/a	n/a	n/a	n/a
Argentina	122	132	149	271	219	n/a	n/a	n/a	n/a
United States	68	81	84	145	170	n/a	n/a	n/a	n/a
Russia	n/a	n/a	n/a	158	176	n/a	n/a	n/a	n/a
Japan	105	116	123	144	127	n/a	n/a	n/a	n/a
Pakistan	30	61	106	111	93	n/a	n/a	n/a	n/a
United Kingdom	234	186	142	133	121	n/a	n/a	n/a	n/a
Others	*476*	*748*	*1,055*	*935*	*1,308*	*n/a*	*n/a*	*n/a*	*n/a*
World	**1,502**	**2,086**	**2,839**	**3,725**	**5,053**	**n/a**	**n/a**	**n/a**	**n/a**
Exports									
Kenya	42	84	166	217	418	273	260	297	467
China	38	98	195	228	303	301	325	329	355
Sri Lanka	208	185	216	287	313	325	305	287	287
India	200	239	198	201	235	213	235	230	261
Viet Nam	2	9	16	56	137	84	72	75	146
Argentina	19	33	46	50	86	77	76	78	75
Uganda	15	1	5	26	55	60	53	56	59
Indonesia	41	74	111	106	87	66	62	51	53
Malawi	18	31	41	42	50	40	39	44	41
Others	*169*	*230*	*233*	*252*	*341*	*412*	*323*	*338*	*355*
World	**752**	**984**	**1,228**	**1,464**	**2,023**	**1,851**	**1,750**	**1,786**	**2,100**

Source: FAO, Intergovernmental Group on Tea (October 9, 2019 update).
Note: Consumption includes domestic use for food, feed, waste, and other uses.

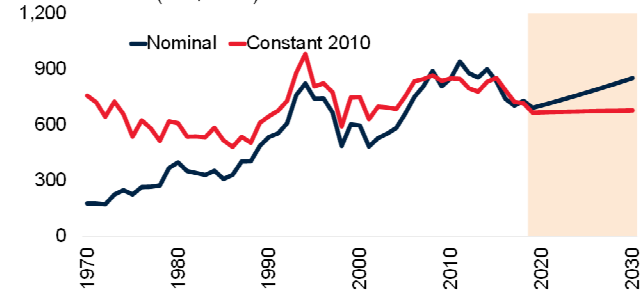# Timber—Roundwood and Sawnwood

Monthly Prices (US$/cum)
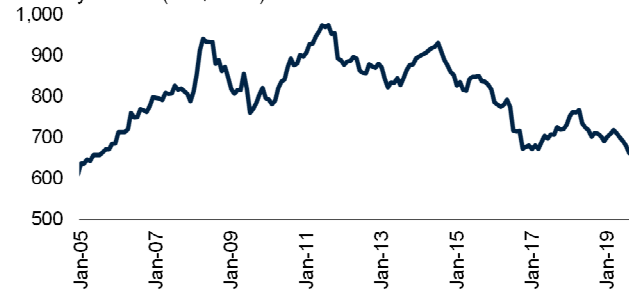
Source: See World Bank Commodities Price Data.
Note: Price refers to Sawnwood (S.E. Asia). Last observation is September 2019.
Download data and charts.

Annual Prices (US$/cum)

Source: World Bank.
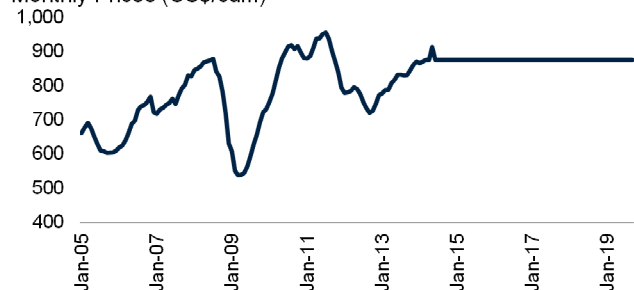Note: Price refers to Sawnwood (S.E. Asia). 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
				(million cubic meters)					
Industrial roundwood: Production									
United States	312.7	327.1	427.2	420.6	336.1	354.7	356.6	355.2	368.2
Russia	n/a	n/a	n/a	145.6	161.6	190.5	198.2	197.6	219.6
China	42.2	79.2	91.2	96.0	161.8	148.7	164.4	163.2	163.2
Canada	40.1	77.6	89.7	94.6	160.3	151.4	154.7	155.2	150.7
Brazil	117.5	150.8	156.0	198.9	138.8	136.2	145.1	145.1	145.1
Indonesia	23.9	61.7	74.3	103.0	128.4	74.0	74.0	74.0	74.0
Sweden	12.7	30.9	38.4	48.8	54.1	67.3	67.9	65.4	66.0
Finland	56.7	44.8	49.1	57.4	66.3	51.4	54.3	55.3	60.5
India	37.5	43.0	40.2	50.1	45.4	45.7	44.0	43.3	49.9
Others	*633.3*	*631.6*	*743.5*	*472.8*	*459.6*	*620.1*	*631.7*	*648.7*	*664.8*
World	**1,276.4**	**1,446.7**	**1,709.5**	**1,687.9**	**1,712.5**	**1,840.0**	**1,890.9**	**1,903.0**	**1,962.1**
Industrial roundwood: Imports									
China	2.0	8.3	7.2	15.7	35.4	50.0	52.3	55.7	60.2
Austria	2.0	3.7	4.4	8.5	8.0	7.8	9.2	8.8	10.0
Sweden	0.6	3.1	2.0	11.7	6.3	6.9	6.8	6.7	9.5
Germany	5.2	3.8	2.0	3.5	7.7	8.7	8.7	8.8	8.8
Finland	2.3	3.8	5.2	9.9	6.3	5.7	5.9	4.8	6.9
Canada	2.1	3.0	1.5	6.5	4.7	4.6	6.2	4.3	4.7
India	0.0	0.0	1.3	2.2	5.3	5.8	5.2	4.4	4.5
Others	*69.0*	*69.7*	*58.9*	*57.2*	*36.1*	*37.0*	*38.8*	*36.5*	*35.4*
World	**83.1**	**95.4**	**82.6**	**115.3**	**109.8**	**126.6**	**133.0**	**129.9**	**140.1**
Sawnwood: Production									
China	14.8	21.2	23.6	6.7	37.2	74.4	77.2	86.1	86.1
United States	63.7	65.3	86.1	91.1	60.0	76.4	78.2	80.4	82.1
Canada	19.8	32.8	39.7	50.5	38.7	47.1	49.7	47.9	46.9
Russia	n/a	n/a	n/a	20.0	28.9	34.5	36.8	40.6	42.7
Germany	11.6	13.0	14.7	16.3	22.1	21.5	22.2	23.2	23.7
Sweden	12.3	11.3	12.0	16.2	16.8	18.2	18.4	18.4	18.4
Brazil	8.0	14.9	13.7	21.3	17.5	14.8	14.6	14.6	14.6
Finland	7.4	10.3	7.5	13.4	9.5	10.6	11.4	11.8	11.8
Austria	5.4	6.7	7.5	10.4	9.6	8.7	9.4	9.8	10.4
Others	*246.3*	*245.4*	*258.1*	*139.4*	*135.5*	*146.0*	*148.8*	*152.8*	*155.1*
World	**389.1**	**420.9**	**463.0**	**385.2**	**375.6**	**452.1**	**466.7**	**485.5**	**491.8**
Sawnwood: Imports									
China	0.1	0.3	1.3	6.1	16.2	28.2	32.8	38.8	37.9
United States	10.6	17.0	22.5	34.4	16.6	24.4	28.3	27.4	26.4
United Kingdom	9.0	6.6	10.7	7.9	5.7	6.3	6.6	7.6	6.9
Japan	3.0	5.6	9.0	10.0	6.4	6.0	6.3	6.3	6.3
Germany	6.0	6.9	6.1	6.3	4.4	4.8	5.1	5.2	5.5
Italy	4.0	5.8	6.0	8.4	6.1	4.7	4.7	4.9	4.7
Egypt	0.4	1.6	1.6	2.0	4.8	5.8	5.0	4.6	4.6
Others	*19.6*	*27.8*	*27.3*	*40.7*	*48.2*	*51.0*	*51.7*	*53.9*	*55.4*
World	**52.7**	**71.5**	**84.5**	**115.8**	**108.4**	**131.2**	**140.6**	**148.8**	**147.8**

Source: FAO (August 7, 2019 update).
Note: Industrial roundwood, reported in cubic meters solid volume underbark (i.e. excluding bark), is an aggregate comprising sawlogs and veneer logs; pulpwood, round and split; and other industrial roundwood except wood fuel. Sawnwood, reported in cubic meters solid volume, includes wood that has been produced from both domestic and imported roundwood, either by sawing lengthways or by a profile-chipping process and that exceeds 6mm in thickness.

Timber—Wood panels and Woodpulp
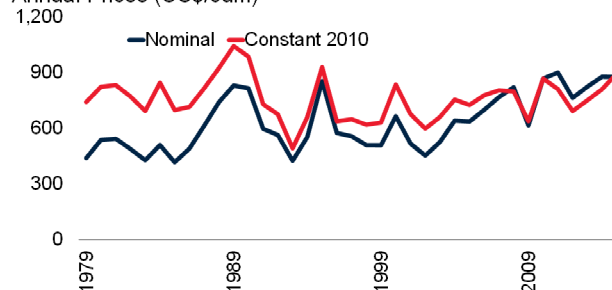
Monthly Prices (US$/cum)

Source: See World Bank Commodities Price Data.
Note: Price refers to Woodpulp. Last observation is September 2019.
Download data and charts.

Annual Prices (US$/cum)

Source: World Bank.
Note: Price refers to Woodpulp.
Download data and charts.

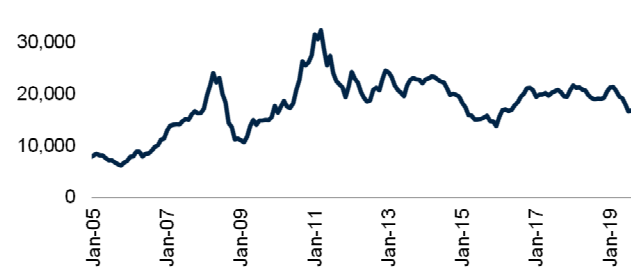|	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(million cubic meters)				
Wood-based panels: Production									
China	0.9	2.3	3.0	18.9	106.1	197.6	208.5	201.6	201.6
United States	23.0	26.4	37.0	45.4	32.2	35.3	36.0	36.2	35.4
Russia	n/a	n/a	n/a	4.7	9.8	13.5	14.2	15.6	17.3
Germany	5.4	8.0	9.1	13.7	12.4	12.1	12.5	13.1	12.7
Canada	3.1	4.3	5.9	14.4	9.0	11.8	12.0	12.4	12.7
Poland	1.0	2.0	1.4	4.6	8.1	9.7	10.4	11.0	11.4
Brazil	0.7	2.3	2.7	5.2	8.8	10.2	10.5	10.9	10.9
Turkey	0.2	0.4	0.8	2.4	6.5	9.3	9.5	9.3	9.5
Thailand	0.1	0.1	0.3	1.2	5.2	6.1	6.1	6.1	6.1
Others	*32.1*	*51.1*	*63.6*	*67.7*	*76.9*	*81.6*	*85.0*	*87.7*	*87.9*
World	**66.6**	**96.9**	**123.8**	**178.2**	**275.1**	**387.3**	**404.6**	**403.9**	**405.6**
Wood-based panels: Imports									
United States	2.1	1.8	3.6	12.7	7.9	11.2	12.6	14.9	16.4
Germany	1.0	2.1	3.0	3.9	4.4	5.4	5.6	5.7	5.9
Japan	0.5	0.2	3.2	6.1	4.0	4.0	3.9	4.0	4.0
United Kingdom	2.0	2.4	3.2	3.3	2.7	3.2	3.4	3.1	3.4
China	0.1	0.3	3.1	5.8	2.7	2.4	2.5	3.2	3.2
Poland	0.2	0.4	0.1	0.7	1.7	2.3	2.5	3.2	3.1
Korea, Rep.	n/a	n/a	1.2	1.8	2.4	2.2	2.4	2.3	3.0
Others	*3.2*	*6.8*	*10.4*	*21.1*	*38.7*	*45.4*	*46.2*	*49.0*	*49.5*
World	**9.0**	**13.9**	**27.9**	**55.2**	**64.5**	**76.1**	**79.1**	**85.4**	**88.5**
Woodpulp: Production									
United States	37.3	46.2	57.2	57.8	50.9	49.4	49.5	49.2	49.4
Brazil	0.8	3.4	4.3	7.3	14.5	17.8	19.4	20.2	21.7
Canada	16.6	19.9	23.0	26.7	18.9	17.2	17.0	16.8	16.8
China	1.2	1.3	2.1	3.7	9.6	11.4	12.2	12.6	13.7
Sweden	8.1	8.7	10.2	11.5	11.9	11.6	11.8	12.1	12.0
Finland	6.2	7.2	8.9	12.0	10.5	10.5	10.9	11.1	11.3
Russia	n/a	n/a	n/a	5.8	7.4	8.1	8.4	9.0	9.1
Japan	8.8	9.8	11.3	11.4	9.5	8.9	8.8	8.9	8.8
Indonesia	0.0	0.0	0.7	4.1	5.7	7.0	7.3	8.7	8.7
Others	*22.5*	*29.1*	*37.1*	*30.7*	*33.6*	*35.9*	*36.7*	*37.0*	*37.1*
World	**101.6**	**125.7**	**154.8**	**171.1**	**172.4**	**177.7**	**182.0**	**185.7**	**188.5**
Woodpulp: Imports									
China	0.1	0.4	0.9	4.0	12.1	20.6	21.9	24.6	24.6
United States	3.2	3.7	4.4	6.6	5.6	5.4	5.6	5.4	5.5
Germany	1.8	2.6	3.7	4.1	5.1	4.9	5.2	5.3	4.7
Italy	1.4	1.8	2.1	3.2	3.4	3.5	3.4	3.4	3.4
France	1.3	1.8	1.9	2.4	1.9	2.0	1.9	2.0	2.0
Korea, Rep.	0.2	0.5	1.1	2.1	2.5	2.3	2.2	1.9	1.9
Japan	0.9	2.2	2.9	3.1	1.8	1.7	1.6	1.8	1.8
Others	*7.6*	*7.6*	*8.3*	*12.3*	*16.5*	*18.6*	*20.3*	*20.2*	*20.4*
World	**16.6**	**20.6**	**25.2**	**37.8**	**49.0**	**59.0**	**62.1**	**64.6**	**64.4**

Source: FAO (August 7, 2019 update).
Note: Wood-based panels, reported in cubic meters solid volume, is an aggregate comprising veneer sheets, plywood, particle board and fiberboard. Woodpulp, reported in metric tons air-dry weight (i.e. with 10% moisture content), is an aggregate comprising mechanical woodpulp; semi-chemical woodpulp; chemical woodpulp; and dissolving woodpulp.
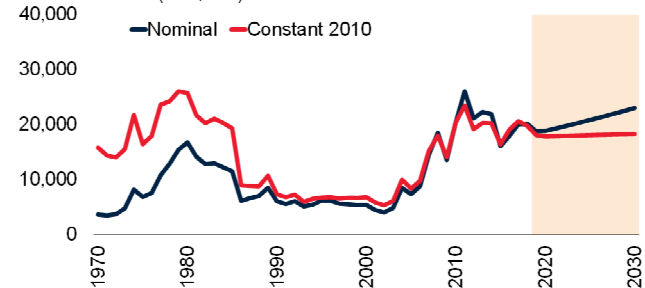
Tin

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand metric tons)				
Mine Production									
China	n/a	16.0	40.0	85.0	129.6	110.2	97.2	93.4	127.0
Indonesia	19.1	32.5	40.0	51.6	92.3	71.3	66.4	83.2	84.0
Myanmar	0.3	1.3	0.5	0.5	0.8	54.0	57.0	68.0	45.9
Peru	0.1	1.1	5.1	37.4	33.8	19.5	18.8	17.8	18.6
Brazil	3.6	6.9	39.1	14.2	10.4	18.9	15.2	13.9	18.0
Bolivia	28.9	27.3	17.2	12.5	20.2	20.1	17.5	18.3	17.3
Congo, Dem. Rep.	6.5	n/a	n/a	1.8	6.7	4.6	6.5	7.0	9.0
Nigeria	8.0	2.7	0.3	2.8	1.3	2.3	3.4	6.6	8.8
Australia	8.8	11.6	7.4	9.1	18.3	7.2	6.6	7.0	6.9
Vietnam	n/a	n/a	0.8	1.8	5.4	4.5	4.6	4.5	5.5
Malaysia	73.8	61.4	28.5	6.3	2.7	4.1	4.2	4.8	4.0
Rwanda	1.4	2.9	0.7	0.4	2.9	2.9	2.7	3.6	3.0
Russia	n/a	n/a	n/a	6.6	0.1	0.6	0.6	1.0	1.2
Others	*n/a*	*n/a*	*n/a*	*19.1*	*3.6*	*-9.9*	*1.6*	*5.7*	*1.5*
World	**184.3**	**228.1**	**210.6**	**249.0**	**328.0**	**310.3**	**302.2**	**334.8**	**350.5**
Refined Production									
China	20.0	16.0	35.8	110.2	149.0	167.2	182.5	182.2	177.7
Indonesia	5.2	30.5	30.4	46.4	64.2	67.4	50.0	70.0	81.4
Malaysia	92.1	71.3	49.0	26.2	38.7	30.2	26.8	27.2	27.2
Brazil	3.1	8.8	37.6	13.8	9.1	16.5	18.0	18.0	18.4
Peru	n/a	n/a	n/a	17.4	36.5	20.4	19.4	17.9	18.3
Bolivia	n/a	17.5	13.4	9.4	15.0	15.5	16.8	16.1	15.6
Thailand	22.0	34.7	15.5	17.1	23.6	10.5	11.1	10.6	10.9
Belgium	4.3	2.8	6.1	8.5	9.9	8.8	8.5	9.7	9.3
Vietnam	0.0	0.0	1.8	1.8	3.0	4.4	4.4	4.5	4.9
Poland	0.0	0.0	0.0	0.0	0.6	2.2	2.9	3.4	3.8
Japan	1.4	1.3	0.8	5.5	0.8	1.7	1.6	1.6	1.6
Russia	n/a	n/a	n/a	5.5	0.8	0.0	0.0	0.8	1.0
Australia	n/a	n/a	n/a	0.8	0.0	0.0	0.0	0.0	0.1
Others	*n/a*	*n/a*	*n/a*	*0.5*	*0.6*	*2.7*	*14.2*	*7.8*	*0.0*
World	**204.2**	**232.2**	**227.5**	**263.0**	**351.8**	**347.5**	**356.3**	**369.8**	**370.2**
Refined Consumption									
China	13	12.5	25.5	49.1	154.3	176.3	191.4	183.4	174.2
United States	53.8	46.5	36.8	51.0	32.0	31.4	29.5	31.5	34.7
Japan	28.6	30.9	34.8	25.2	35.7	26.8	26.1	29.1	28.1
Germany	17.3	19.0	21.7	20.7	17.4	17.9	18.2	20.0	20.2
Korea, Rep.	0.4	1.8	7.8	15.3	17.4	13.1	14.2	13.1	13.9
India	4.8	2.3	2.3	6.4	10.7	8.7	9.1	10.0	11.4
Brazil	2.5	4.7	6.1	7.2	8.7	11.0	11.3	10.0	9.4
France	10.5	10.1	8.3	7.3	5.4	4.4	4.7	5.5	6.1
Spain	3	4.6	4.0	4.1	6.1	5.7	6.5	5.5	6.0
Others	*91.9*	*90.5*	*90.3*	*90.5*	*81.0*	*70.1*	*71.1*	*73.0*	*6.0*
World	**225.8**	**222.9**	**237.6**	**276.9**	**368.8**	**365.2**	**382.1**	**381.1**	**379.5**

Source: British Geological Survey, Metallgesellschaft, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available. Refined production and consumption include significant recycled material.
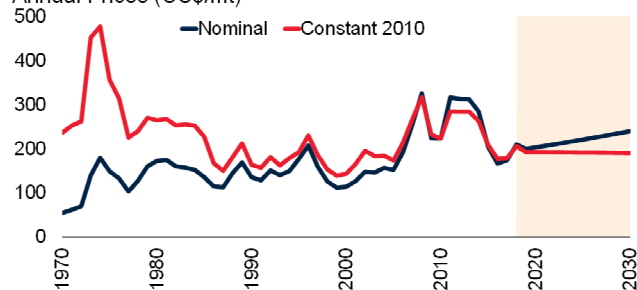
Wheat

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

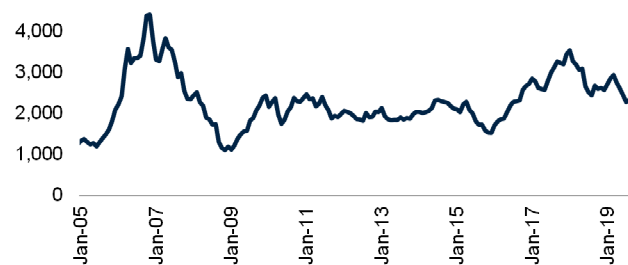|	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(million metric tons)				
Production									
European Union	62.5	93.3	125.0	132.7	136.7	145.4	151.1	136.9	152.0
China	29.2	55.2	98.2	99.6	116.1	133.3	134.3	131.4	132.0
India	20.1	31.8	49.9	76.4	80.8	87.0	98.5	99.9	102.2
Russia	n/a	n/a	49.6	34.5	41.5	72.5	85.2	71.7	72.5
United States	36.8	64.8	74.3	60.6	58.9	62.8	47.4	51.3	53.4
Canada	9.0	19.3	32.1	26.5	23.3	32.1	30.4	32.2	33.0
Ukraine	0.0	0.0	30.4	10.2	16.8	26.8	27.0	25.1	28.7
Pakistan	7.3	10.9	14.4	21.1	23.3	25.6	26.6	25.1	25.6
Argentina	4.9	7.8	11.0	16.3	17.2	18.4	18.5	19.5	20.5
Turkey	8.0	13.0	16.0	18.0	17.0	17.3	21.0	19.0	19.0
Australia	7.9	10.9	15.1	22.1	27.4	31.8	20.9	17.3	18.0
Others	*120.8*	*128.9*	*72.8*	*64.7*	*91.6*	*103.3*	*101.4*	*101.2*	*108.3*
World	**306.5**	**435.9**	**588.8**	**582.8**	**650.7**	**756.4**	**762.3**	**730.5**	**765.2**
Stocks									
China	7.2	31.7	49.9	91.9	59.5	114.9	131.2	139.8	145.7
United States	22.4	26.9	23.6	23.8	23.5	32.1	29.9	29.4	28.4
India	5.0	4.0	5.8	21.5	15.4	9.9	13.3	17.1	20.8
European Union	8.6	13.0	22.5	17.9	11.9	10.7	13.9	10.0	12.0
Russia	n/a	n/a	16.4	1.5	13.7	10.8	12.0	8.2	7.7
Iran	0.7	1.2	3.2	2.9	2.9	10.4	8.1	6.2	6.1
Morocco	1.1	5.2	6.5	2.2	2.9	1.3	4.1	5.1	5.5
Others	*35.6*	*30.7*	*43.0*	*44.4*	*69.4*	*72.8*	*71.0*	*61.9*	*61.6*
World	**80.5**	**112.6**	**170.9**	**206.1**	**199.2**	**263.1**	**283.6**	**277.7**	**287.8**
Exports									
Russia	n/a	n/a	1.2	0.7	4.0	27.8	41.4	35.4	34.0
European Union	6.7	17.5	23.8	15.7	23.1	27.4	23.4	23.3	28.0
United States	20.2	41.2	29.1	28.9	35.1	28.6	24.7	25.5	25.9
Canada	11.8	16.3	21.7	17.3	16.6	20.2	22.0	24.4	24.5
Ukraine	0.0	0.0	2.0	0.1	4.3	18.1	17.8	16.0	19.5
Argentina	1.0	3.8	5.6	11.3	9.5	13.8	12.7	12.3	14.5
Australia	9.1	9.6	11.8	15.9	18.6	22.6	13.8	9.0	9.5
Others	*7.6*	*1.7*	*8.6*	*11.2*	*21.9*	*24.6*	*26.1*	*27.2*	*23.8*
World	**56.5**	**90.1**	**103.8**	**101.2**	**133.0**	**183.3**	**181.9**	**173.2**	**179.7**
Imports									
Egypt	2.8	5.4	5.7	6.1	10.6	11.2	12.4	12.3	12.5
Indonesia	0.5	1.2	2.0	4.1	6.6	10.2	10.5	10.8	11.0
Brazil	1.7	3.9	4.4	7.2	6.7	7.3	7.0	7.0	7.7
Algeria	0.6	0.9	1.5	3.1	3.2	5.7	6.1	7.5	7.4
Philippines	0.6	2.3	4.4	5.6	6.5	8.4	8.2	7.5	7.0
European Union	0.0	1.0	1.4	1.3	4.0	5.6	6.2	4.7	6.0
Japan	0.9	0.0	0.3	0.4	3.7	4.5	6.0	6.4	6.0
Others	*48.7*	*74.8*	*79.3*	*71.7*	*90.6*	*126.7*	*123.6*	*113.0*	*118.1*
World	**55.8**	**89.5**	**99.0**	**99.3**	**131.9**	**179.6**	**180.0**	**169.3**	**175.7**

Source: U.S. Department of Agriculture (October 10, 2019 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971. 'n/a' implies not available. European Union includes EU-15 for 1980/81, 1990/91, 2000/01 and EU-28 for 2010-2018.
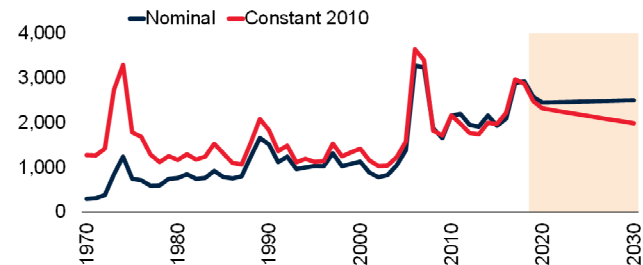
Zinc

Monthly Prices (US$/mt)

Source: See World Bank Commodities Price Data.
Note: Last observation is September 2019.
Download data and charts.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2019-30 are forecasts.
Download data and charts.

	1970	1980	1990	2000	2010	2015	2016	2017	2018
					(thousand metric tons)				
Mine Production									
China	100	150	750	1,780	3,842	4,749	4,711	5,000	4,193
Peru	299	488	584	910	1,470	1,421	1,337	1,473	1,475
Australia	487	495	933	1,419	1,475	1,610	884	841	1,112
United States	485	317	543	852	748	825	805	730	838
India	8	32	70	199	730	741	682	784	765
Mexico	263	238	322	393	570	680	662	671	637
Bolivia	46	50	104	149	411	442	487	504	520
Kazakhstan	n/a	n/a	n/a	322	454	384	366	375	345
Canada	1,253	1,059	1,203	1,002	649	290	301	344	287
Russia	n/a	n/a	n/a	136	214	206	220	279	279
Sweden	93	176	164	177	199	247	258	251	234
Turkey	24	23	39	48	196	185	81	147	194
Brazil	n/a	70	110	100	198	157	159	156	169
Others	*n/a*	*n/a*	*n/a*	*1,319*	*1,333*	*1,451*	*1,598*	*943*	*1,791*
World	**5359**	**6,189**	**7,117**	**8,807**	**12,489**	**13,387**	**12,550**	**12,499**	**12,837**
Refined Production									
China	100	155	550	1,957	5,209	6,116	6,196	6,220	5,681
Korea, Rep.	2	79	257	475	750	940	1,009	962	1,099
India	23	44	79	204	740	759	672	791	776
Canada	413	592	592	780	691	683	691	598	697
Japan	676	735	687	654	574	567	534	524	521
Spain	89	152	253	391	517	509	507	510	510
Australia	261	306	303	498	499	489	464	462	502
Mexico	85	145	199	235	328	327	321	327	336
Peru	71	64	118	200	223	335	342	312	334
Kazakhstan	n/a	n/a	n/a	263	319	324	326	329	329
Finland	57	147	163	223	307	306	291	285	295
Belgium	241	249	300	264	260	260	236	249	275
Netherlands	47	170	209	217	264	291	283	248	268
Others	*n/a*	*n/a*	*n/a*	*2,710*	*2,228*	*1,957*	*1,917*	*1,897*	*1,879*
World	**5,095**	**6,183**	**6,971**	**9,070**	**12,910**	**13,862**	**13,788**	**13,715**	**13,501**
Refined Consumption									
China	150	200	369	1,402	5,350	6,448	6,484	6,965	6,179
United States	1074	810	992	1,315	907	931	789	829	867
Korea, Rep.	11	68	230	419	540	585	627	716	716
India	97	95	135	224	538	616	676	653	714
Japan	623	752	814	674	516	479	474	482	529
Germany	448	474	530	532	494	479	483	452	444
Spain	77	91	119	195	206	219	270	217	287
Italy	178	236	270	348	339	259	261	220	280
Turkey	9	12	53	92	182	230	231	267	248
Others	*2,375*	*3,393*	*3,056*	*3,689*	*3,460*	*3,529*	*3,503*	*3,408*	*3,174*
World	**5,042**	**6,131**	**6,568**	**8,889**	**12,532**	**13,774**	**13,799**	**14,209**	**13,438**

Source: British Geological Survey, Metallgesellschaft, U.S. Geological Survey, World Bureau of Metals Statistics, World Bank.
Note: n/a implies data not available.

APPENDIX C

Description of price series
Technical notes

Description of price series

Energy

Coal (Australia). Thermal, f.o.b. Newcastle, 6,000 kcal/kg, spot price.

Coal (South Africa). f.o.b Richards Bay, NAR, 6000 kcal/kg, sulfur less than 1%, forward month one.

Crude oil. Average price of Brent (38° API), Dubai Fateh (32° API), and West Texas Intermediate (WTI, 40° API). Equally weighed.

Natural Gas Index (Laspeyres). Weights based on five-year consumption volumes for Europe, U.S. and Japan (LNG), updated every five years.

Natural gas (Europe), Netherlands Title Transfer Facility (TTF).

Natural gas (U.S.). Spot price at Henry Hub, Louisiana.

Natural gas (Japan). LNG, import price, cif; recent two months' averages are estimates.

Non-Energy

Beverages

Cocoa (ICCO). International Cocoa Organisation daily price, average of the first three positions on the terminal markets of New York and London, nearest three future trading months.

Coffee (ICO). International Coffee Organization indicator price, other mild Arabicas, average New York and Bremen/Hamburg markets, ex-dock.

Coffee (ICO). International Coffee Organization indicator price, Robustas, average New York and Le Havre/Marseilles markets, ex-dock.

Tea. Average three auctions, arithmetic average of quotations at Kolkata, Colombo, and Mombasa/Nairobi.

Tea (Colombo). Sri Lankan origin, all tea, arithmetic average of weekly quotes.

Tea (Kolkata). leaf, include excise duty, arithmetic average of weekly quotes.

Tea (Mombasa/Nairobi). African origin, all tea, arithmetic average of weekly quotes.

Oils and meals

Coconut oil (Philippines/Indonesia). crude, c.i.f. NW Europe.

Groundnuts (US), Runners 40/50, CFR N.W. Europe

Groundnut oil. US crude, FOB South-East.

Fishmeal. German, 64% protein, EXW Hamburg.

Palm oil (Malaysia). RBD, c.i.f Rotterdam.

Palmkernel Oil (Indonesia/Malaysia). Crude, c.i.f. NW Europe.

Soybean meal. Brazilian pellets 48% protein, c.i.f Rotterdam.

Soybean oil. Dutch crude, degummed, f.o.b. NW Europe.

Soybeans. US No. 2 yellow meal, c.i.f. Rotterdam.

Grains

Barley (U.S.). Feed, No. 2, spot, 20-days-to-arrive, delivered Minneapolis.

Maize (U.S.). No. 2, yellow, f.o.b. US Gulf ports.

Rice (Thailand). 5% broken, white rice (WR), milled, indicative price based on weekly surveys of export transactions, government standard, f.o.b. Bangkok.

Rice (Thailand). 25% broken, WR, milled indicative survey price, government standard, f.o.b. Bangkok.

Rice (Thailand). 100% broken, A.1 Super, indicative survey price, government standard, f.o.b. Bangkok.

Rice (Vietnam). 5% broken, WR, milled, weekly indicative survey price, minimum export price, f.o.b. Hanoi.

Sorghum (U.S.). No. 2 milo yellow, f.o.b. Gulf ports.

Wheat (U.S.). No. 1, hard red winter (HRW),

ordinary protein, export price delivered at the US Gulf port for prompt or 30 days shipment.

Wheat (U.S.). No. 2, soft red winter (SRW), export price delivered at the U.S. Gulf port for prompt or 30 days shipment.

Other food

Bananas (Central and South America). Major brands, free on truck (f.o.t.) Southern Europe, including duties.

Bananas (Central and South America). Major brands, U.S. import price, f.o.t. U.S. Gulf ports.

Meat, beef (Australia/New Zealand). Chucks and cow forequarters, frozen boneless, 85% chemical lean, c.i.f. U.S. port (east coast), ex-dock.

Meat, chicken (U.S.). Urner Barry North East weighted average for broiler/fryer, whole birds, 2 - 1/2 to 3.5 pounds, USDA grade "A".

Meat, sheep (New Zealand). Frozen whole carcasses Prime Medium (PM) wholesale, Smithfield, London.

Oranges (Mediterranean exporters). Navel, EEC indicative import price, c.i.f. Paris.

Shrimp (U.S.). brown, shell-on, headless, in frozen blocks, source Gulf of Mexico, 26 to 30 count per pound, wholesale US.

Sugar (EU). European Union negotiated import price for raw unpackaged sugar from African, Caribbean, and Pacific (ACP), c.i.f. European ports.

Sugar (U.S.). Nearby futures contract, c.i.f.

Sugar (world). International Sugar Agreement (ISA) daily price, raw, f.o.b. and stowed at greater Caribbean ports.

Timber

Logs (West Africa). Sapele, high quality (loyal and marchand), 80 centimeter or more, f.o.b. Douala, Cameroon.

Logs (Southeast Asia). Meranti, Sarawak, Malaysia, sale price charged by importers, Tokyo.

Plywood (Africa and Southeast Asia). Lauan, 3-ply, extra, 91 cm x 182 cm x 4 mm, wholesale price, spot Tokyo.

Sawnwood (West Africa). Sapele, width 6 inches or more, length 6 feet or more, f.a.s. Cameroonian ports.

Sawnwood (Southeast Asia). Malaysian dark red seraya/meranti, select and better quality, average 7 to 8 inches; length average 12 to 14 inches; thickness 1 to 2 inches; kiln dry, c. & f. U.K. ports, with 5% agents commission including premium for products of certified sustainable forest.

Woodpulp (Sweden). Softwood, sulphate, bleached, air-dry weight, c.i.f. North Sea ports.

Other raw materials

Cotton (Cotlook "A" index). Middling 1-3/32 inch, traded in Far East, C/F.

Rubber (Asia). RSS3 grade, Singapore Commodity Exchange Ltd (SICOM) nearby contract.

Rubber (Asia). TSR 20, Technically Specified Rubber, SICOM nearby contract.

Fertilizers

DAP (diammonium phosphate), spot, f.o.b. U.S. Gulf.

Phosphate rock , f.o.b. North Africa.

Potassium chloride (muriate of potash), spot, f.o.b. Vancouver.

TSP (triple superphosphate), spot, import U.S. Gulf.

Urea (Ukraine), f.o.b. Black Sea.

Metals and minerals

Aluminum (LME). London Metal Exchange, unalloyed primary ingots, standard high grade, physical settlement.

Copper (LME). Standard grade A, cathodes and wire bar shapes, physical settlement.

Iron ore (any origin). Fines, spot price, c.f.r. China, 62% Fe.

Lead (LME). Refined, standard high grade, physical settlement.

Nickel (LME). Cathodes, standard high grade, physical settlement.

Tin (LME). Refined, standard high grade, physical settlement.

Zinc (LME). Refined, standard special high grade, physical settlement.

Precious Metals

Gold (U.K.). 99.5% fine, London afternoon fixing, average of daily rates.

Platinum (U.K.). 99.9% refined, London afternoon fixing.

Silver (U.K.). 99.9% refined, London afternoon fixing.

Technical Notes

Definitions and explanations

Constant prices are prices which are deflated by the Manufacturers Unit Value Index (MUV).

MUV is the unit value index in U.S. dollar terms of manufactures exported from fifteen countries: Brazil, Canada, China, Germany, France, India, Italy, Japan, Mexico, Republic of Korea, South Africa, Spain, Thailand, the United Kingdom, and the United States.

Price indexes were computed by the Laspeyres formula. The Non-Energy Price Index is comprised of 34 commodities. U.S. dollar prices of each commodity is weighted by 2002-2004 average export values. Base year reference for all indexes is 2010. Countries included in indexes are all low- and middle-income, according to World Bank income classifications.

Price index weights. Trade data as of May 2008 comes from United Nations' Comtrade Database via the World Bank WITS system, Food and Agriculture Organization FAOSTAT Database, International Energy Agency Database, BP Statistical Review, World Metal Statistics, World Bureau of Metal Statistics, and World Bank staff estimates. The weights can be found in the table on the next page.

Reporting period. Calendar vs. crop or marketing year refers to the span of the year. It is common in many agricultural commodities to refer to production and other variables over a twelve-month period that begins with harvest. A crop or marketing year will often differ by commodity and, in some cases, by country or region.

Abbreviations

$ = U.S. dollar

bbl = barrel

c.i.f. = cost, insurance, freight

c.f.r. = cost and freight

cum = cubic meter

dmt = dry metric ton

f.o.b. = free on board

f.o.t. = free on truck

kg = kilogram

mb/d = million barrels per day

mmbtu = million British thermal units

mmt = million metric tons

mt = metric ton (1,000 kilograms)

toz = troy ounce

Acronyms

BIC	Bayesian information criterion
CO2	Carbon dioxide
DAP	diammonium phosphate
EIA	Energy Information Administration
EU	European Union
EMDEs	Emerging markets and developing economies
FAO	Food and Agriculture Organization
GDP	gross domestic product
ICAC	International Cotton Advisory Committee
IEA	International Energy Agency
IFA	International Fertilizer Industry Association
IMF	International Monetary Fund
IMO	International Maritime Organization
IRSG	International Rubber Study Group
LME	London Metal Exchange
LNG	liquefied natural gas
MOP	muriate of potash, or potassium chloride
MUV	Manufacture Unit Value
NPI	nickel pig iron
OECD	Organisation of Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
PMI	purchasing managers' index
TSP	triple superphosphate

UAE	United Arab Emirates
USDA	United States Department of Agriculture
WTI	West Texas Intermediate

Data sources

Africa Tea Brokers Limited

Agribusiness Intelligence from Informa

Banana Market Review

Baker Hughes

Bloomberg

BP Statistical Review

British Geological Survey

Cotton Outlook

Federal Reserve Bank of St. Louis Economic Data (FRED)

Food and Agriculture Organization (FAO)

Gold Fields Mineral Services (GFMS)

Green Markets

Intergovernmental Group on Bananas and Tropical Fruits

Intergovernmental Group on Tea

International Cocoa Organisation (ICCO)

International Coffee Organization (ICO)

International Cotton Advisory Committee (ICAC)

International Energy Agency (IEA)

International Fertilizer Industry Association (IFA)

International Rubber Study Group (IRSG)

International Tropical Timber Organization (ITTO)

International Sugar Organization (ISO)

ISTA Mielke GmbH Oil World

Japan Lumber Journal

Meat Trade Journal

Metallgesellschaft

Official Statistics of Japan

Platinum and Palladium Survey

Singapore Commodity Exchange Ltd

Steel Statistical Yearbook

Tea Board India

Tea Exporters Association Sri Lanka

Thomson Reuters

Urner Barry

U.S. Department of Agriculture (USDA)

U.S. Energy Information Administration (EIA)

U.S. Geological Survey

World Bureau of Metal Statistics

Weights for commodity price indexes

Commodity group	Share of energy and non-energy indexes	Share of sub-group indexes
ENERGY	**100.0**	**100.0**
Coal	4.7	4.7
Crude Oil	84.6	84.6
Natural Gas	10.8	10.8
NON-ENERGY	**100.0**	
Agriculture	**64.9**	
Beverages	**8.4**	**100.0**
Coffee	3.8	45.7
Cocoa	3.1	36.9
Tea	1.5	17.4
Food	**40.0**	
Grains	**11.3**	**100.0**
Rice	3.4	30.1
Wheat	2.8	25.2
Maize (includes sorghum)	4.6	40.7
Barley	0.5	4.1
Oils and meals	**16.3**	**100.0**
Soybeans	4.0	24.6
Soybean Oil	2.1	13.0
Soybean Meal	4.3	26.3
Palm Oil	4.9	30.2
Coconut Oil	0.5	3.1
Groundnut Oil (includes groundnuts)	0.5	2.8
Other food	**12.4**	**100.0**
Sugar	3.9	31.5
Bananas	1.9	15.7
Meat, beef	2.7	22.0
Meat, chicken	2.4	19.2
Oranges (includes orange junice)	1.4	11.6
Agricultural Raw Materials	**16.5**	
Timber	**8.6**	**100.0**
Logs	1.9	22.1
Sawnwood	6.7	77.9
Other Raw Materials	**7.9**	**100.0**
Cotton	1.9	24.7
Natural Rubber	3.7	46.7
Tobacco	2.3	28.7
Fertilizers	**3.6**	**100.0**
Natural Phosphate Rock	0.6	16.9
Phosphate	0.8	21.7
Potassium	0.7	20.1
Nitogenous	1.5	41.3
Metals and Minerals	**31.6**	**100.0**
Aluminum	8.4	26.7
Copper	12.1	38.4
Iron Ore	6.0	18.9
Lead	0.6	1.8
Nickel	2.5	8.1
Tin	0.7	2.1
Zinc	1.3	4.1
PRECIOUS METALS	**100.0**	
Gold	77.8	
Silver	18.9	
Platinum	3.3	

Note: Index weights are based on 2002-04 developing countries' export values. Precious metals are not included in the non-energy index.

Commodity Markets Outlook: Selected Topics, 2011-19

Topics	Date
The role of substitution in commodity demand	October 2019
Innovation, disruptive technologies, and substitution among commodities	October 2019
Oil market implications of the strike on Saudi Arambo facilities	October 2019
Food price shocks: Channels and implications	April 2019
The implications of tariffs for commodity markets	October 2018
The changing of the guard: Shifts in commodity demand	October 2018
Oil exporters: Policies and challenges	April 2018
Investment weakness in commodity exporters	January 2017
OPEC in historical context: Commodity agreements and market fundamentals	October 2016
From energy prices to food prices: Moving in tandem?	July 2016
Resource development in era of cheap commodities	April 2016
Weak growth in emerging market economies: What does it imply for commodity markets?	January 2016
Understanding El Niño: What does it mean for commodity markets?	October 2015
Iran nuclear agreement: A game changer for energy markets?	October 2015
How important are China and India in global commodity consumption?	July 2015
Anatomy of the last four oil price crashes	April 2015
Putting the recent plunge in oil prices in perspective	January 2015
The role of income growth in commodities	October 2014
Price volatility for most commodities has returned to historical norms	July 2014
The nature and causes of oil price volatility	January 2014
A global energy market?	July 2013
Global reserves, demand growth, and the "super cycle" hypothesis	July 2013
The "energy revolution," innovation, and the nature of substitution	January 2013
Commodity prices: levels, volatility, and comovement	January 2013
Which drivers matter most in food price movements?	January 2013
Induced innovation, price divergence, and substitution	June 2012
The role of emerging markets in commodity consumption	June 2012
WTI-Brent price dislocation	January 2012
Metals consumption in China and India	January 2012
China, global metal demand, and the super-cycle hypothesis	June 2011

Almost all major commodity price indexes fell in the third quarter of 2019, led by energy, which declined more than 8 percent (q/q). In line with subdued global growth prospects and ample supplies, most price forecasts have been revised down. Crude oil prices are projected to average $60/bbl in 2019 and $58/bbl in 2020—sharp downward revisions since April. Metal prices are projected to fall 5 percent in 2019 and are forecast to fall further in 2020. Agricultural prices are expected to stabilize in 2020 following a projected fall in 2019.

A *Special Focus* examines the role of innovation and substitution in commodity consumption. It shows that, historically, demand surges have been accompanied by investment and innovation, in turn causing substitution both within commodity groups (for example, from coal to natural gas in energy) and across commodity groups (such as between paper, metals, and plastics in packaging).

The World Bank's *Commodity Markets Outlook* is published twice a year, in April and October. The report provides detailed market analysis for major commodity groups, including energy, metals, agriculture, precious metals, and fertilizers. Price forecasts to 2030 for 46 commodities are also presented together with historical price data. Commodity price data updates are published separately at the beginning of each month.

The report and data can be accessed at:
www.worldbank.org/commodities

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