A World Bank Report

OCTOBER 2018

Commodity Markets Outlook

The Changing of the Guard:
Shifts in Commodity Demand

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The cutoff date for the data used in this report was October 25, 2018.

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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

For inquiries and correspondence, email at:
commodities@worldbank.org

Executive Summary

Commodity prices in the third quarter of 2018 were buffeted by geopolitical and macroeconomic events. Energy prices gained 3 percent in 2018 Q3 (q/q), partly in response to the impending re-imposition of sanctions on Iran by the United States along with continuing declines in production in Venezuela. As a result, crude oil prices are expected to average $72 per barrel (bbl) in 2018 (up from $53/bbl in 2017) and $74/bbl in 2019. This represents a sizable upward revision from the April 2018 forecast. Moreover, risks to the oil price forecast are to the upside in the short-term, given the recent decline in spare capacity. In contrast, metal and agricultural prices declined 10 and 7 percent, respectively, in the third quarter of 2018 amid robust supplies and trade disputes. Metal prices are expected to stabilize in 2019 whereas agricultural prices are expected to gain almost 2 percent. This edition also examines how energy and metal commodity markets have evolved over the past 20 years. It shows that China has been the main driver of commodity demand growth, particularly for coal and metals, but that its demand is likely to slow while other emerging market economies are unlikely to emulate China.

Recent trends

Commodity prices have been driven by a number of factors this year, including commodity-specific supply disruptions, rising U.S. interest rates, an appreciation of the U.S. dollar, growing trade tensions between major economies, and financial market pressures in some emerging market and developing economies (EMDEs).

Energy prices rose 3 percent in the third quarter of 2018 (q/q) and are more than 40 percent higher than the same period in 2017, with strong gains in oil, coal, and natural gas. Oil prices were volatile in the third quarter of 2018, with the price of Brent reaching a low of $70/bbl in August, before peaking at $86/bbl in early October. The increase in prices partly reflected continued production losses in Venezuela, and concerns that the re-introduction of sanctions on the Islamic Republic of Iran by the United States may have a greater-than-expected impact on Iranian oil production and exports. Production increases by other members of the Organization of Petroleum Exporting Countries (OPEC), as well as the Russian Federation, are expected to partly offset this decline. Coal and natural gas prices have been supported by strong demand for electricity in Europe and Asia resulting from unusually hot temperatures.

Non-energy commodity prices declined 7 percent (q/q) in the third quarter of 2018. *Metals* prices dropped nearly 10 percent on weaker global demand, as well as concerns about the effects of the U.S.-China trade dispute on growth in China,

which accounts for 50 percent of global metals demand. In contrast, supply constraints, including the closure of the world's largest supplier of alumina and environmentally driven reductions in production in China, helped support prices of some metals. *Agricultural* prices fell nearly 7 percent, the largest quarterly decline since 2011 Q4. A range of factors have contributed to the weakness, such as ample supplies for most oilseeds and grains (except wheat), trade tensions, which affected a range of agricultural prices (notably soybeans), and EMDE currency depreciations (especially the Brazilian real).

Outlook and risks

Energy prices are expected to average 33 percent higher in 2018 compared to 2017—a 13-percentage point upward revision from April 2018—and stabilize in 2019 (Table 1). *Non-energy* prices are projected to be roughly stable, gaining just under 2 percent in 2018 and an additional 1 percent in 2019, a modest downward revision from the April 2018 forecast. The outlook for commodity prices is vulnerable to policy-related risks, especially in the short term. However, it is likely that the effect of any additional tariffs or sanctions would moderate over the medium-term, as producers and consumers find new distribution channels and export markets.

Oil prices are expected to average $72/bbl in 2018 and increase to $74/bbl in 2019. These forecasts are significantly higher ($7/bbl and $9/bbl,

FIGURE 1 Commodity market developments

Energy prices have risen this year, supported by supply concerns, while growing U.S.-China trade tensions weighed on global growth prospects and depressed metals prices. Agricultural prices softened on strong supply with the exception of wheat. Over the past two decades, China has become the most important source of demand in commodity markets.

A. Change in commodity price indexes
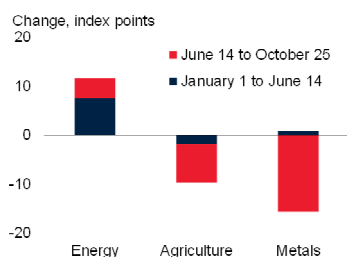
B. Oil production of Iran and Venezuela
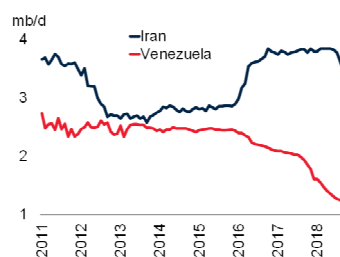
C. Price changes of key agricultural commodities
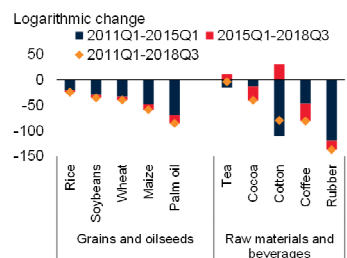
D. Share of global commodity demand
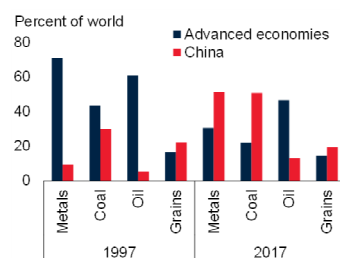
Sources: Bloomberg, BP Statistical Review, IEA, USDA, World Bank, World Bureau of Metal Statistics.
A. Bars denote change in index levels, where January 1, 2018 = 100.
B. Last observation is September 2018.
C. Price changes are expressed in logarithmic terms to ensure symmetry between positive and negative changes.
Download data and charts.

respectively) than the April 2018 projections, due to larger threats of supply disruptions and robust demand.

Risks to the outlook are particularly heightened at present, and include the impact of U.S. sanctions on Iranian oil exports, a further deterioration of production in Venezuela, and an inability or unwillingness of other OPEC members to significantly expand production. Prices are likely to peak in the first half of 2019 and decline thereafter as U.S. production bottlenecks ease. After sizeable gains in 2018, natural gas and coal prices are expected to decline modestly in 2019.

Metals prices are forecast to gain 5 percent in 2018 and stabilize in 2019, reaching slightly lower levels

than previously expected. Downside risks include a worsening of trade tensions between the United States and China, and weaker global growth. Upside risks include stronger demand from China due to policy stimulus, and tighter environmental constraints and policy actions that limit production, notably in China.

Agricultural prices, whose 2018 average will be similar to that of 2017, are projected to gain nearly 2 percent in 2019 as input costs rise, including energy and fertilizers. Downside risks to the price forecast emanate from escalating trade tensions. On the upside, risks include persistently high energy prices, which would raise fuel costs, fertilizer prices, as well as encouraging biofuels production, thereby lifting prices of energy-intensive crops, notably grains and oilseeds.

The implications of tariffs for commodity markets

The imposition of tariffs by the United States on imports from a number of countries and reciprocal actions by the affected countries have had a material impact on commodity markets. The commodity-specific tariffs have resulted in widening price differentials and diverted trade among countries. The more broadly-based tariffs have affected commodity markets through their impact on global trade, growth, and sentiment, especially regarding China, which is a major source of global metals and energy demand.

Special focus on shifts in commodity demand

Over the past 20 years demand for commodities has surged, driven by rapid growth in China, fundamentally altering the structure of global commodity markets. This edition's special focus suggests that as China's economy matures and shifts to less commodity-intensive activities, its demand for commodities is likely to plateau. Since other EMDEs are unlikely to fill this gap, commodity demand growth may slow. This reinforces the need for further economic diversification and strengthening of policy frameworks in EMDEs that are dependent on raw materials.

TABLE 1 Nominal price indexes and forecast revisions

| | Price Indices (2010=100) | | | | | | Change (%) | | Revision[2] | |
	2014	2015	2016	2017	2018f[1]	2019f[1]	2017-18	2018-19	2018f	2019f
Energy	118	65	55	68	91	92	33.3	1.3	9.3	10.8
Non-Energy[3]	97	81	79	84	85	86	1.6	1.0	-2.4	-1.8
Agriculture	103	88	87	87	86	88	-0.4	1.6	-2.9	-2.7
Beverages	102	94	91	83	78	80	-5.8	1.6	-4.4	-4.0
Food	107	88	89	90	90	91	0.3	1.5	-3.1	-2.9
Oils and meals	109	84	88	87	85	87	-2.0	2.2	-7.9	-7.4
Grains	104	87	81	81	88	90	9.7	1.4	1.8	1.7
Other food	107	95	99	102	98	99	-3.8	0.7	-1.3	-1.2
Raw materials	92	83	80	81	82	83	0.7	1.8	-1.5	-1.4
Fertilizers	101	98	78	74	81	83	9.3	2.0	5.6	5.4
Metals and minerals	85	67	63	78	82	82	5.4	-0.2	-2.5	-0.9
Precious metals[3]	101	91	97	98	96	96	-1.5	-0.7	-4.1	-3.7
Memorandum items										
Crude oil ($/bbl)	96	51	43	53	72	74	36.4	2.8	7.0	9.0
Gold ($/toz)	1,266	1,161	1,249	1,258	1,259	1,245	0.1	-1.1	-41.0	-37.1

Source: World Bank.
Notes: (1) "f" denotes forecasts. (2) Denotes revision to the forecasts from the April 2018 report (expressed as change in index value except for $/bbl for crude oil, and $/toz for gold).
(3) The non-energy price index excludes precious metals. See Appendix C for definitions of prices and indices.

BOX The implications of tariffs for commodity markets

Growing trade tensions since the start of 2018, notably the imposition of tariffs by the United States on imports from a number of countries and reciprocal actions by the affected countries, have had a material impact on commodity markets. The impact of tariffs has depended on whether they were commodity-specific or imposed on a broad range of products from one or several countries. Commodity-specific tariffs have resulted in widening price differentials and diverted trade among countries. Broad-based tariffs have affected commodity markets through their impact on global trade and growth, especially for China, which is a major source of global metals and energy demand.

Introduction

Commodity markets have been affected by several macroeconomic developments this year, including deteriorating growth prospects in EMDEs and an appreciation of the U.S. dollar. Moreover, renegotiations of trade agreements, increased sanctions, and growing trade tensions between some countries have also had an impact on commodity markets. A key development was the imposition of import tariffs by the United States and retaliatory actions by affected countries on a wide range of products, including commodities. For example, the United States has imposed tariffs on steel and aluminum imports, while China has imposed tariffs on imports of U.S. soybeans and other food products.

The impact of tariffs on commodity markets has been mainly two-fold. First, the direct impact of commodity-specific tariffs has led to widening price differentials of the affected commodities and trade diversion. Second, the general impact of broad-based tariffs has indirectly affected global supply chains, trade, and economic growth, and therefore the demand outlook for several commodities. There have also been terms-of-trade effects given the size of the countries affected by tariffs.

Against this backdrop, this box addresses two questions.

- What has been the impact of commodity-specific tariffs on commodity markets?

- What has been the impact of broad-based tariffs on commodity markets?

The impact of commodity-specific tariffs

Channels of transmission. There are a variety of ways in which commodity-specific tariffs affect commodity

markets. Commodity-specific tariffs increase domestic prices of the affected commodity relative to global prices. This can depress trade of the commodity and shift trade patterns toward countries and commodities that are not subject to the tariff (Haveman and Thursby 2000).[1] They can also result in changes in the production of the affected commodity, as well as of substitute commodities. These effects can vary depending on whether tariffs are applied to imports from one country (e.g., Chinese imports of soybeans from the United States) or to many countries (e.g., U.S. imports of steel and aluminum). They also depend on the relative importance of the affected countries in the global supply and demand of the commodity, and on the relative price and income elasticities of demand of the affected commodity.

Impact of Chinese tariffs on imports of U.S. soybeans. China's imposition of tariffs of 25 percent on imports of U.S. soybeans has contributed to substantial changes in prices and trade flows. China is the largest single consumer of soybeans in the world, the majority of which are imported (Figure B.1). Historically, these have been imported mainly from Brazil and the United States (each providing just over 40 percent). Since the announcement of tariffs, U.S. soybean prices have fallen substantially, as Chinese buyers have sought other suppliers.[2] As a result, prices of soybeans in Brazil have risen, reflecting increased demand from China. In turn, countries that typically purchase soybeans from Brazil, such as the European Union, have increased their imports from the United

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[1] This is also referred to as trade diversion.

[2] In response to lower domestic agricultural prices, the United States government has announced its intention to purchase $1.2 billion of domestically produced food as part of its food purchase program. This is in addition to the $12 billion of farm aid announced in July 2018 to assist farmers affected by the tariffs.

BOX The implications of tariffs for commodity markets (*continued*)

FIGURE B.1 Commodity market developments and trade tensions

Growing trade tensions and the imposition of import tariffs have affected commodity markets since the start of the year. Commodity-specific tariffs, including on metals and agricultural products, have led to widening price differentials and trade diversion. The broad-based rise in tariffs between the U.S. and China has affected prices of most commodities amid fears of a slowdown in trade volumes and economic growth, particularly in China.

A. Global soybean supply and demand
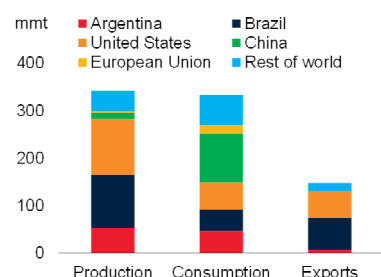
B. U.S. agricultural prices
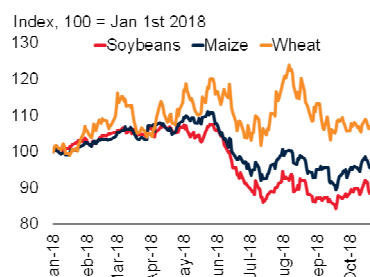
C. U.S.-LME aluminum price differential
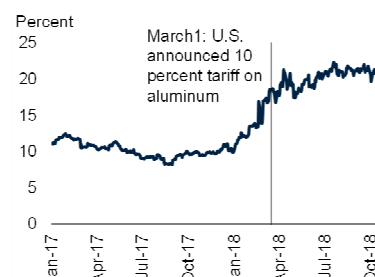
D. Change in commodity prices year to date
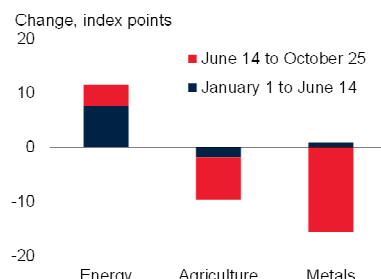
E. Metals prices
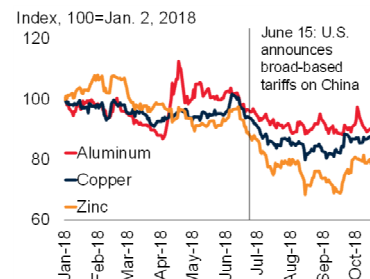
F. China's share of global commodity demand
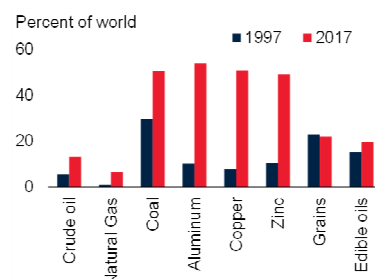
Sources: Bloomberg, BP Statistical Review, USDA, World Bank, World Bureau of Metal Statistics.
A. Production, consumption, and exports of soybean oilseed. October 11, 2018 update. Data show averages of 2015-18.
C. U.S.-LME price differential shows the difference between the price for aluminum quoted on the London Metal Exchange (and used in the World Bank's Pink Sheets) relative to the price quoted on the New York Mercantile Exchange. Last observation is October 25, 2018.
E. Last observation is October 25, 2018.
Download data and charts.

States, with EU imports of U.S. soybeans increasing by more than 280 percent in July 2018 relative to the previous year, although monthly data are volatile. In aggregate, some estimates suggest U.S. total soybean exports may fall by around a quarter over the next three to five years, with half of the loss of U.S exports to China expected to be offset by increased exports to other countries (Taheripour and Tyner 2018). In contrast, Brazilian exports of soybeans are expected to rise by 15 percent, as a result of greater demand from China.

Impact of U.S. tariffs on imports of aluminum and steel. In contrast to the impact of a tariff on a single commodity from a single country, tariffs applied to

imports of a commodity from all countries can have global and long-lasting effects, with little scope for trade diversion. After the United States announced tariffs on imports of steel and aluminum in March, the prices of these metals in the United States relative to other countries increased sharply, reflecting the higher cost of foreign supply to U.S. buyers. U.S. steel prices have increased by around 25 percent more than steel prices in the United Kingdom since the start of 2018, and the price differential of U.S. aluminum relative to the London Metal Exchange benchmark is up 11 percentage points. While this may help encourage domestic production, the additional cost to consumers could lead to an overall welfare loss for the United States.

BOX The implications of tariffs for commodity markets (*continued*)

The impact of broad-based tariffs

Channels of transmission. Growing trade tensions between major economies can raise concerns about global growth, trade, and investment prospects, and hence worsen the outlook for demand for a range of commodities. Tariffs may depress bilateral trade, disrupt global supply chains, and increase demand for substitutes from other countries (IMF 2018; World Bank 2018b; Ossa 2014; Nicita, Olarreaga, and Silva 2018). An escalation of tariffs up to legally-allowed bound rates could translate into a decline in global trade flows of up to 9 percent, similar to the drop during the global financial crisis in 2008-09 (Kutlina-Dimitrova and Lakatos 2017). The impact of increased protectionism would be more severe in EMDEs than in advanced economies. Highly protected sectors such as agriculture and food processing would likely be among the most negatively affected. Even the threat of substantial shifts in trade policies in major economies, and associated uncertainty, could have negative consequences for financial and commodity markets.

Impact of broad-based tariffs. These channels of transmission were visible following the announce-ment of wide-ranging tariffs on $34 billion of China's exports to the United States in June 2018, which coincided with the beginning of a broad-based decline in many industrial commodity prices. Metals prices have fallen 14 percent since June and agricultural prices by 7 percent. Industrial metals are particularly responsive to concerns about trade tensions given their many uses in the manufacture of tradeable goods, with several metals, such as nickel, experiencing a fall in prices of more than 20 percent. While trade tensions have weighed on energy prices, particularly for crude oil, these have been offset by concerns about oil supply relating to the impact of U.S. sanctions on Iran, ongoing production disruptions in Venezuela, and robust demand for coal and natural gas.

The role of China. The response of commodity prices to the imposition of tariffs on China, amid broader emerging growth concerns, is due in part to the increased importance of China in commodity markets. China accounted for 80 percent of the increase in metals consumption and 50 percent of the increase in energy consumption over the past 20 years, and now accounts for roughly half of global demand for metals and coal. (Special Focus; Baffes et al. 2018; World Bank 2018a). It also has significant and increasing links with other countries through trade, confidence, and financial channels (World Bank 2016). A sharper-than-expected slowdown in China could have severe repercussions for commodity markets and commodity exporters. A 1 percentage point drop in China's growth could result in a decline in average commodity prices of about 6 percentage points after two years, although the impact is likely to be much larger for commodity markets where China is particularly prominent, such as metals, than for those where it accounts for a smaller share of global consumption, such as oil and natural gas (World Bank 2016).

Conclusion

The imposition of both commodity-specific and broad-based tariffs has had a material impact on commodity markets. Commodity-specific tariffs have reduced and diverted trade flows and amplified price differentials for a range of commodities, including soybeans, steel, and aluminum. The increase in broad-based tariffs has led to fears of weaker global trade and potentially slower economic growth, which in turn has caused the prices of commodities to fall, particularly for metals.

If a further escalation of trade-restrictive measures between major economies were to materialize, it could lead to substantial economic losses and cascading trade costs through global value chains (Bown 2017; Erbahar and Zi 2017; Escaith 2017; Irwin 2017). A pullback in demand from major economies would result in significant negative spillovers for the rest of the world through trade, confidence, financial, and commodity-market channels (Huidrom, Kose, and Ohnsorge 2017; Kose et al. 2017). Regions with large resource wealth, such as Latin America and Sub-Saharan Africa, may be particularly affected, given their dependence on both commodity markets and China.

BOX The implications of tariffs for commodity markets (*continued*)

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SPECIAL FOCUS

The Changing of the Guard:
Shifts in Industrial Commodity Demand

The Changing of the Guard:
Shifts in Industrial Commodity Demand

Over the past 20 years, demand for commodities has surged driven primarily by rapid growth from China, resulting in a fundamental shift in the structure of global commodity markets. As China's economy matures and shifts towards less commodity-intensive activities, its demand for commodities is likely to plateau, and other EMDEs are unlikely to fill this gap, suggesting growth in commodity demand may slow. For the two-thirds of emerging market and developing economies that depend on raw materials for government and export revenues, these prospects reinforce the need for economic diversification and the strengthening of policy frameworks.

Introduction

Global commodity prices underwent an exceptionally strong and sustained increase in the late 1990s. Between 1998 and 2008, real energy prices rose five-fold, metals prices increased 140 percent, and food prices rose 40 percent (Figure SF.1). Although commodity prices fell sharply in 2014, driven by the collapse in the price of crude oil, they have since partly recovered in tandem with the cyclical global economic recovery. Unlike a typical price cycle, this episode has been characterized as a "super cycle", i.e., a demand-driven surge in commodity prices lasting possibly decades rather than years (Jacks 2013; Radetzki at al., 2006; Cuddington and Jerrett 2008; Erten and Ocampo 2013).

The price boom has been supported by rapid demand growth and lags in supply. The industrialization of large emerging market economies, particularly China, led to a substantial, sustained increase in demand for all commodities (World Bank 2015b; 2018a). This was particularly pronounced for metals demand, which grew faster than both GDP and population between 1997 and 2017. Over the same period, energy consumption also rose, albeit less rapidly, while the demand for grains (a subset of agricultural commodities) grew roughly in line with population.[1]

Against this backdrop, this Special Focus answers the following questions:[2]

i.   How has the structure of global demand for commodities changed over the past 20 years?

ii. What role has per capita income growth played in driving commodity demand?

iii. What are the implications of these factors for commodity exporters in the future?

Changes in the composition of commodity demand

Over the past 20 years, the structure of global commodity demand has fundamentally changed. In 1997, advanced economies accounted for the majority of commodity demand, consuming just over 50 percent of global energy and around 70 percent of global metals. However, by 2017 their share of energy consumption had fallen to 40 percent, and their share of metals had more than halved to 30 percent, with the reduction consistent across most metals.

Meanwhile, China's share of energy consumption more than doubled, from 11 percent to 23 percent, while its share of metals consumption rose five-fold, from 10 percent to 50 percent. China accounted for four-fifths of the increase in global metals demand and half of the increase in

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[1] An exception was demand for corn, which rose much faster than other grains, primarily because of its increasing use in the production of biofuels and animal feed.

[2] This Special Focus considers three energy products (crude oil, coal, and natural gas) and three metals (aluminum, copper, and zinc). These commodities account for 85 percent of energy and base metals consumption, respectively. Agricultural commodities were examined in the Special Focus of the July 2015 edition of *Commodity Markets Outlook.*

FIGURE SF.1 Developments in commodity markets

Global commodity prices underwent a super-cycle starting in the late 1990s, with particularly rapid price increases for metals and energy. Consumption of commodities surged, driven by China, whose share of oil consumption doubled, and whose share of metals consumption rose five-fold to 50 percent. Advanced economies' share of metals consumption fell by half. Most other emerging markets saw little change in their shares of commodity demand.

A. Real Commodity Prices
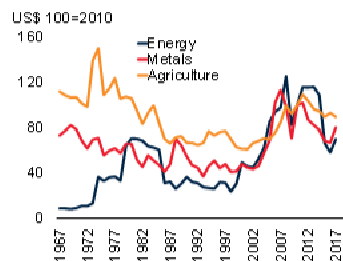
B. Commodity demand growth, 1997-2017
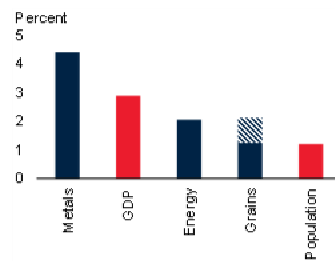
C. China
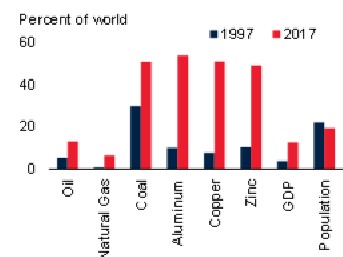
D. Advanced economies
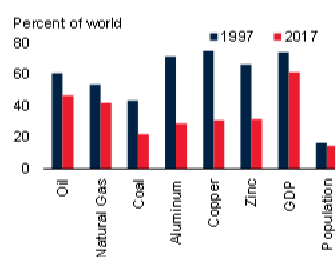
E. India
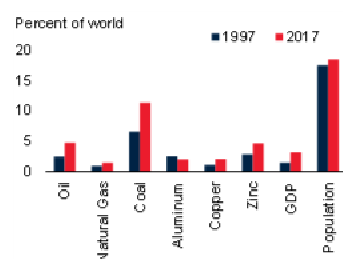
F. EMDEs (excluding China and India)
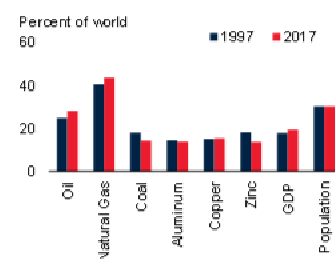
Sources: BP Statistical Review, World Bank, World Bureau of Metals Statistics, U.S. Department of Agriculture.
A. Deflated using the World Bank's manufacturing unit value index.
B. Average annual growth rates over the period 1996-2017. Metals includes aluminum, copper, and zinc. Energy includes oil, coal, and natural gas. Grains includes barley, millet, oats, rice, rye, sorghum, and wheat. Shaded area for grains indicates contribution from corn, which is heavily used in the production of biofuels.
C.F. Share of country or country group in world total. Sample of countries included in this figure collectively accounted for 97 percent of global GDP and 83 percent of global population in 2017.
D. Advanced economies include 29 countries for energy and 27 countries for metals.
Download data and charts.

growth, since China's share of global population declined over this period, from 22 percent to 19 percent.

Notably, the pace of China's commodity demand growth was much stronger than that of other fast-growing, large emerging markets. Although India's share of consumption of oil and coal doubled, this was in line with the increase in its share of global GDP, while its share of consumption of copper and zinc rose only modestly, and its share of aluminum fell slightly. Other EMDEs collectively saw little change in their share of global commodity demand, except for a modest increase in consumption shares of oil and natural gas.

Intensity of commodity demand

Population growth and economic development, as reflected by rising GDP per capita, have historically been key drivers of global demand for commodities. While population growth tends to be stable, economic growth can undergo more rapid developments, and the impact of economic development on demand for commodities can change substantially at different stages of development. These trends can be observed in commodity consumption patterns at the country and global level. Over the past 50 years, global per capita consumption of energy and metals (excluding China) has been strikingly constant (Figure SF.2; Figure SF.3). However, the global aggregate hides significant changes at the country level, with per capita energy and metals consumption in emerging market and developing economies (EMDEs) rising, and that of advanced economies, such as Japan and the United States, peaking and then declining.[3] Moreover, the "intensity" of use of energy and metals—defined as the consumption per unit of GDP—has steadily declined over the past 50 years. These trends reflect efficiency improvements (especially for energy), the increasing importance of the service sector in the global economy (which is much less

global energy demand over this period (Baffes et al. 2018; World Bank 2018b). The steep increase in China's consumption of energy and metals appears to reflect factors beyond population

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[3] Global per capita consumption (excluding China) of natural gas has risen while that of oil and coal has fallen, reflecting preference for natural gas as a less polluting fuel. For metals, use of aluminum per capita has risen at the expense of other metals reflecting its use as a superior replacement of some metals such as tin and lead.

commodity intensive than manufacturing), and the reduced need for major infrastructure investment in mature economies (Tilton 1990; Radetzki et al. 2008). Consumption of all energy and metal commodities relative to GDP has been on a declining trend (although only marginally for natural gas), as the pace of growth in their consumption has been slower than that of GDP.

Developments in China have been substantially different from the rest of the world. Between 1965 and 2000, China's energy and metals use per capita grew steadily, while intensity fell, helped by efficiency improvements. From 2000 to 2017 however, growth in energy and metals use per capita accelerated sharply. Energy use per capita tripled, driven by coal (use of natural gas rose more quickly but from a lower base), while metals consumption per capita rose seven-fold, driven by rising consumption of aluminum. The increase in China's use of coal may have been amplified by the increase in aluminum consumption. China produces almost all of the aluminum it consumes, and the process of smelting aluminum is extremely energy intensive, and 90 percent of the electricity used in Chinese aluminum production is generated from coal (Arezki and Matsumoto 2017; International Aluminum Institute 2018).

Over this period China's energy intensity—consumption relative to GDP—continued its longer-term decline, similar to the rest of the world. However, China's metals intensity almost doubled. In part, this may have been a result of China's growing role in the global economy, and its manufacturing and export-driven growth model. Total demand for metals in China will be greater than total domestic consumption, as many of the commodities that China uses are intermediate inputs for exported goods. This also likely explains why the share of advanced economies' metals demand fell over this period, as manufacturing shifted overseas. While these shifts may affect country-level intensities, they should net out at the global level. But this has not occurred. The overall global metals intensity of demand, considering both China and the rest of the world, had been steadily declining from 1965-2000, but from 2000-17, the trend reversed and it

FIGURE SF.2 Energy consumption

Over the past 50 years, global consumption (excluding China) of energy per capita has been fairly constant, while the intensity of energy use—defined as energy used per unit of GDP—has steadily declined. The downward trend in intensity is a result of economic activity shifting to less commodity intensive-activities, as well as efficiency improvements. While energy intensity in China has also fallen, energy use per capita has tripled since 2000, driven by coal. Developments have varied by individual commodity reflecting changing preference for fuels.

A. Global (ex. China) energy consumption, total
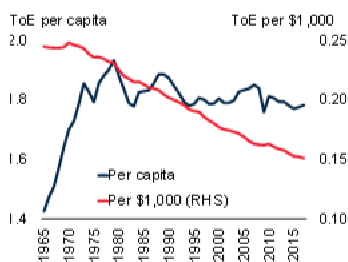
B. China's energy consumption, total
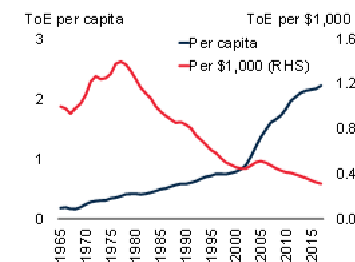
C. Global (ex. China) energy consumption, per capita
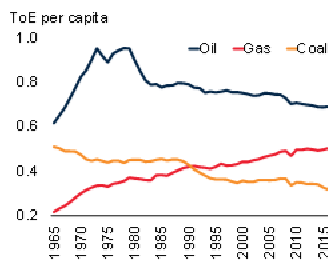
D. China's energy consumption, per capita
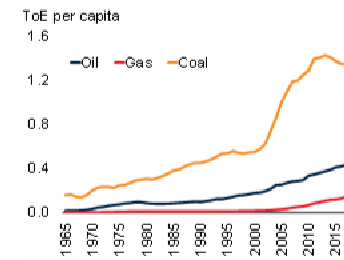
E. Global (ex. China) energy consumption, per $1,000 of GDP
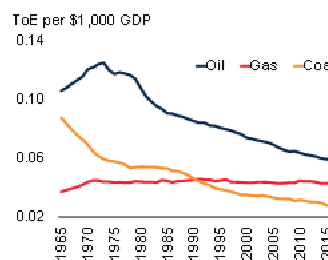
F. China's energy consumption, per $1,000 of GDP
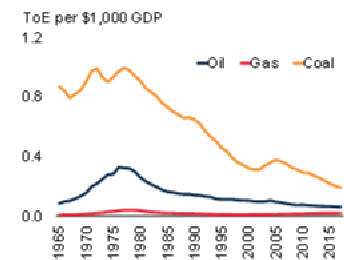
Sources: BP Statistical Review, World Bank.
A. B. Energy includes coal, natural gas and oil.
A.-F. ToE stands for tonnes of oil equivalent.
A. B. E. F. GDP in constant 2010 U.S. dollars.
Download data and charts.

began to increase. This suggests China-specific developments were a key driver, such as the very high share of investment, particularly in infrastructure and housing. Investment is much more metals-intensive than other sectors of the economy, such as consumption.

FIGURE SF.3 Intensity of metals consumption

The metals intensity of the world excluding China has steadily fallen, while per capita consumption has been relatively flat. In contrast, China's metals use per capita grew steadily between 1965 and 2000, while the intensity of consumption fell as GDP outpaced commodity demand. From 2000 onward metals use accelerated, with metals consumption per capita rising seven-fold, driven by aluminum. Although Chinese per capita consumption of commodities is now broadly in line with that of advanced economies, the intensity of metals use relative to GDP is unprecedented.

A. Global (ex. China) metals consumption, total
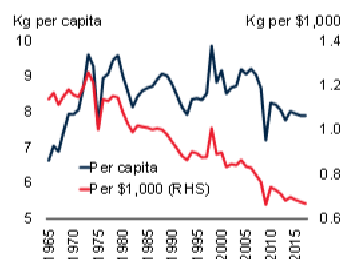
B. China's metals consumption, total
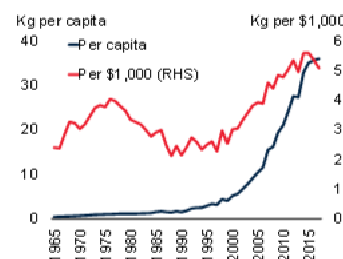
B. Global (ex. China) metals consumption, per capita

D. China's metals consumption, per capita
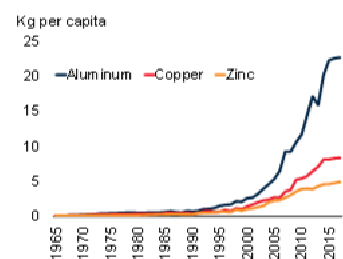
E. Global (ex. China) metals consumption, per $1,000 of GDP
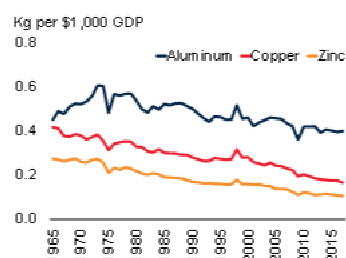
F. China's metals consumption, per $1,000 of GDP
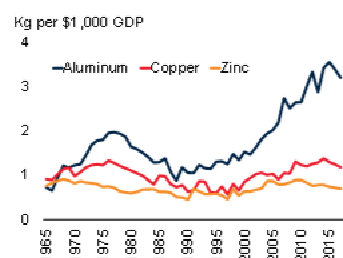
Sources: World Bank, World Bureau of Metals Statistics.
A. B. Metals includes aluminum, copper, and zinc.
A. B. E. F. GDP in constant 2010 U.S. dollars.
Download data and charts.

The impact of income on commodity demand

The tendency for industrial commodity demand to plateau as economies develop was first suggested by Malenbaum (1978) who theorized the existence of an inverted U-shape relationship

between income and commodity use, defined as the "intensity of use" hypothesis. The hypothesis has been broadly confirmed in the literature (Fernandez 2018; Crowson 2017). Looking at the data, per capita consumption of most commodities appears to plateau as per capita income rises, reflecting the tendency for consumer demand to shift toward less resource-intensive goods and services (Figure SF.4).

Among advanced economies, demand of some commodities has begun to decline, particularly for coal as countries shift toward cleaner and more efficient forms of energy such as natural gas (Burke and Csereklyei 2016). Per capita demand for metals has also started to decline, driven to some extent by the outsourcing of manufacturing to EMDE countries including China.

Focusing on China, per capita consumption of coal and most metals is now comparable to that of advanced economies such as those in the group of seven countries (G7), or recently industrialized countries such as the Republic of Korea. By contrast, China's per capita consumption of oil and natural gas is much lower than that of Korea and the G7 economies, while that of coal and aluminum is at, or slightly above, current levels in these countries. Whereas per capita consumption levels are not particularly unusual by comparison with other countries, what has been remarkable is the speed at which China's consumption of commodities increased, and the level of per capita income at which it did so, especially for coal and aluminum.

For example, China's intensity of demand for aluminum peaked in 2015 at 3.5 kg per $1,000 of GDP, much higher than the second highest country, the United Arab Emirates (2.5 kg/$1,000) and more than three times that of the United States (1.0 kg/$1,000). Based on current levels of consumption and expected growth rates, there do not appear to be any countries or groups of countries that are likely to experience an increase in commodity demand as fast as, or at the same magnitude of, China. For example, in India, a country with a similar population and growth rate as China but at an earlier stage of development, intensity of aluminum demand

peaked in 2009 at 1kg/$1,000 and has since fallen to 0.5kg/$1,000.

These trends in demand intensity can be empirically examined by calculating the income elasticity of demand for different commodities: the percent increase in commodity consumption associated with a 1 percent increase in income. Estimates of income elasticities for three energy and three metal commodities were obtained using a dataset of 33 countries over the period 1965-2016 (see Annex). A number of results were obtained from this analysis.

- Long-run elasticities decline with rising per capita income for most commodities, which supports the intensity of use hypothesis and plateauing commodity demand. For example, the income elasticity of copper at the bottom income quartile in 2017 was 1.0, whereas it dropped to 0.4 at the upper income quartile.

- Long-run income elasticities for metals tend to be higher than those of energy, consistent with the observed increase in metals demand over the past 20 years being much faster than that of energy. For example, at the median income in 2017, the income elasticity of aluminum was estimated to be 0.8, while that of crude oil was 0.5.

- While income elasticities of metals are relatively homogenous, they vary substantially between energy commodities. For instance, while the elasticity of coal is high at low income levels, it falls rapidly and turns negative at higher income levels, whereas that of natural gas was found not to plateau. This likely reflects an increasing preference for natural gas over coal as incomes rise due to its properties as a cleaner-burning fuel.

Conclusion and policy implications

Many EMDEs, especially smaller ones, are heavily exposed to commodity markets. Two-thirds of EMDEs depend significantly on natural resources for government and export revenues, and more than half of the world's poor live in commodity-

FIGURE SF.4 Consumption of industrial commodities per capita, and income per capita

The consumption of industrial commodities shows signs of plateauing for most commodities as income rises. A notable exception is natural gas, which likely reflects preferences for cleaner fuels over more polluting fuels such as coal. The increase in China's consumption of coal and aluminum has been much faster, and occurred at much lower levels of income, than other countries.
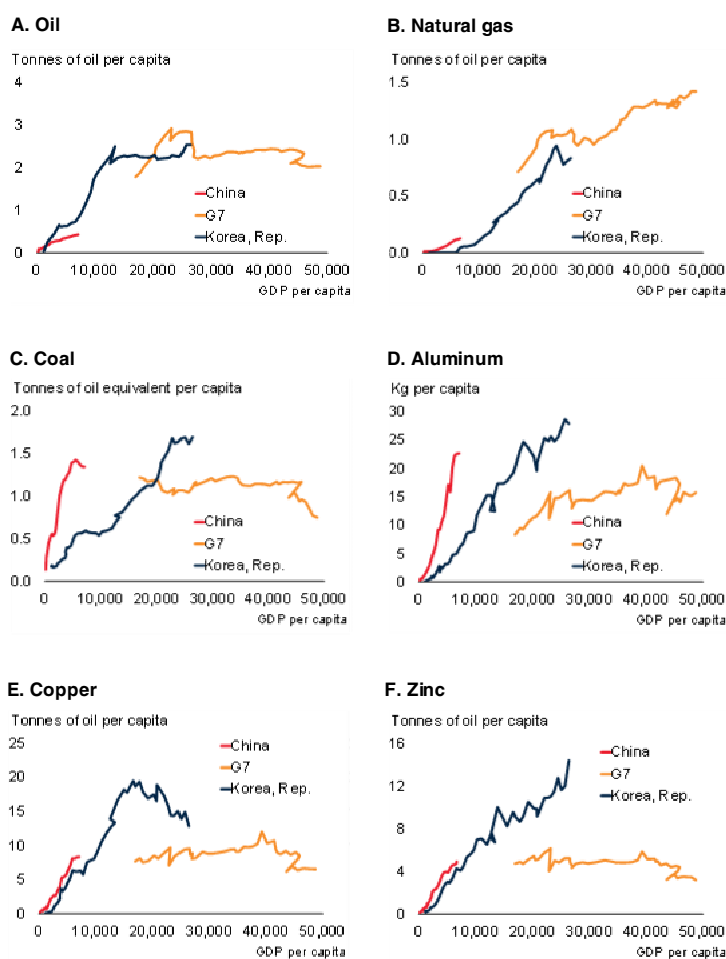
Sources: BP Statistical Review, World Bank, World Bureau of Metal Statistics.
A.-F. GDP per capita in constant 2010 U.S. dollars. Lines show the evolution of income and commodity consumption per capita over the period 1965-2016. Each data point represents one country or group for one year. Korea was chosen as an example of a country which underwent industrialization over the period shown: in 1965 its GDP per capita was equal to 7 percent of the level of GDP per capita in the G7 economies; by 2017 it had increased to 55 percent.
Download data and charts.

exporting EMDEs (World Bank 2016a). Such dependency exposes these economies to commodity price shocks (Didier et al. 2016; Baffes et al. 2015).

The growing role of China in commodity markets has critical implications for commodity exporters. In recent decades, the growth of demand from

China has provided an important boost to the price of industrial materials. These prices are now much more sensitive to shocks to China's growth. For example, a 1 percentage point drop in China's growth has been estimated to lead to a decline in average commodity prices of about 6 percentage points after two years, with a larger price impact for commodities where China's demand is particularly important, such as metals (World Bank 2016b).

The intensity-of-use hypothesis implies commodity demand growth slows as economies mature, infrastructure needs are met, and GDP and population growth slows. These developments are expected to increasingly occur in China over the next decade, with a moderation in growth and a shift toward less commodity-intensive activities. Such a shift will result in more modest commodity demand, which in turn will provide less support to commodity prices. Based on current levels of consumption of commodities and expected growth rates elsewhere, there is no country or group of countries that is expected to come close to replicating China's growth in metals demand.

In addition, technological advances, shifts in consumer preferences, environmental concerns, and policies to encourage cleaner fuels could result in a more rapid slowing of global commodity demand. For example, efforts to meet the goals of the 2015 Paris Agreement could encourage greater use of carbon pricing and other tools to encourage a shift toward cleaner and/or renewable energy sources (World Bank 2018a).[4] Indeed, during the past five years, global consumption of natural gas has increased nearly 10 percent while coal consumption has declined 2 percent.

The prospect of persistently slower commodity demand growth only reinforces the need for commodity exporters to diversify their economic bases. Extensive cross-country analysis has already demonstrated that greater diversification of exports and government revenue sources bolsters long-term growth and resilience to external shocks (Lederman and Maloney 2007; Hesse 2008). The successful diversification experience of some energy producers (e.g., Malaysia, Mexico) highlights the benefits of both vertical diversification (e.g., in crude oil, natural gas, and petrochemical sectors) as well as horizontal diversification. But achieving this diversification will require reforms, including those to improve the business environment, educational attainment, and skills acquisition (Callen et al. 2014).

In a majority of commodity-exporting EMDEs, fiscal reforms are necessary to establish a firmer foundation for long-term fiscal sustainability (Mendes and Pennings 2017). The establishment of well-managed strategic investment funds with resource revenues can help in this regard (e.g., Chile, Norway; World Bank 2015a). These funds can create opportunities for attracting private investment, deepening domestic capital markets, and building the capacity of governments to act as professional long-term investors (Halland et al. 2016). Reforms to fiscal and monetary policy frameworks could also help reduce procyclicality and foster resilience to commodity price shocks (Frankel 2017). However, such policies are insufficient to mitigate the challenge of weaker commodity consumption, since they deal with cyclical, rather than structural, developments.

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[4] In contrast, more energy efficient and climate-friendly technologies may lead to increasing demand for some metals and minerals, as low-carbon energy systems are likely to be more metal intensive than high-carbon systems (World Bank 2017).

ANNEX Commodity Demand Model

Model specification

The empirical approach is based on the pooled mean group (PMG) auto-regressive distributed lag (ARDL) (p,q,r) model developed by Pesaran, Shin, and Smith (1999), where p, q, and r are respectively the lag length of the dependent variable and the two explanatory variables. The model is as follows:

$$c_t = \Sigma_{k=1}^p \lambda_k c_{t-k} + \Sigma_{l=0}^q \delta_l y_{t-l}$$
$$+ \Sigma_{l=0}^q \varphi_l y_{t-l}^2 + \Sigma_{m=0}^r \gamma_m p_{t-m} + \alpha + \varepsilon_t \quad (1)$$

where c_t is the logarithm of real per capita consumption of each commodity for each country at year t; y_t is real per capita income for each country at year t; p_t denotes the local currency-denominated world price of each commodity relative to the local currency-denominated GDP deflator, α represents country fixed effects, and ε_t is the stochastic error term which has zero mean and constant variance. The quadratic term, y_t^2, accounts for nonlinearities inherent in most demand function which, in this case, represents the level at which income plateaus.

The error correction form corresponding to (1) is:

$$\Delta c_t = \rho\, (c_{t-1} - \theta_1 y_t - \theta_2 y_t^2 - \theta_3 p_t)$$
$$+ \Sigma_{k=1}^{p-1} \lambda_k^* \Delta c_{t-k} + \Sigma_{l=0}^{q-1} \delta_l^* \Delta y_{t-l} \quad\quad (2)$$
$$+ \Sigma_{l=0}^{q-1} \varphi_l^* \Delta y_{t-l}^2 + \Sigma_{m=0}^{r-1} \gamma_m^* \Delta p_{t-m}$$
$$+ \alpha + \varepsilon_t$$

where θ_1, θ_2, and θ_3 represent the long-run dynamics, such that:

$$\theta_1 = \Sigma_{l=0}^q \delta_l \,/\, (1 - \Sigma_{k=1}^p \lambda_k),$$

$$\theta_2 = \Sigma_{l=0}^q \varphi_l \,/\, (1 - \Sigma_{k=1}^p \lambda_k)\text{ , and}$$

$$\theta_3 = \Sigma_{m=0}^r \gamma_m \,/\, (1 - \Sigma_{k=1}^p \lambda_k)$$

and λ^*, δ^*, φ^*, and γ^* capture the short-run relationship, where:

$$\lambda^* = -\Sigma_{n=k+1}^p \lambda_n,$$

$$\delta^* = -\Sigma_{n=l+1}^q \delta_n,$$

$$\varphi^* = -\Sigma_{n=l+1}^q \varphi_n, \text{, and}$$

$$\gamma^* = -\Sigma_{n=m+1}^r \gamma_n$$

Specifically, θ_1 and θ_2 are the long-term elasticities of demand with respect to a rise in per capita income, whereas θ_3 is the long-run elasticity of demand with respect to real price. $\rho = -(1 - \Sigma_{k=1}^p \lambda_k)$ denotes the speed of adjustment towards the long-term equilibrium relationship.

Differentiating (2) with respect to income gives the time-varying income elasticities for each commodity and country:

$$\eta_t = \frac{\partial c_t}{\partial y_t} = \theta_1 + 2\theta_2 y_t \quad\quad (3)$$

Data and estimation procedure

The model is applied to three energy commodities and three base metals. The three energy commodities account for the majority of global energy demand: crude oil (31 percent), coal (29 per-cent), and natural gas (21 percent). Of these energy sources, oil is primarily used for transport, accounting for 90 percent of the energy used in this sector. Coal and natural gas are heavily used in electricity generation, although coal's share of energy supply has fallen below 50 percent as coal-fired electricity generation is replaced with natural gas and renewable fuels. Coal and natural gas are also used extensively in industry.

The three base metals, aluminum, copper and zinc account for more than 80 percent of total base metal use by volume. Aluminum is widely used because of its light weight, strength, and anti-rust properties, which encourages substitution from other metals and materials. Aluminum's largest uses are in transport, followed by construction, packaging (foil, cans), elec-trical grids, among others. Copper's main application is in the electri-cal sector, including power cables, generators and motors, as well as in construction and electronics. Zinc is mostly used as an anti-corrosion agent to

galvanize iron and steel. Zinc is also alloyed with other metals, e.g. to produce brass (with copper).

Annual data from 1965-2016 for 33 countries were used. Data on per capita income (in real 2005 terms) were obtained from the World Bank's World Development Indicators; commodity consumption was taken from the BP Statistical Review (energy) and World Bureau of Metal Statistics (metals); world commodity prices were taken from the World Bank's Commodity Price Data and converted into real terms by using country-specific GDP deflators. Exchange rates were taken from the St. Louis Federal Reserve Bank's database.

The models were estimated using the PMG ARDL (1,1,1,1), the lag length indicated as optimal by the Bayesian information criterion (BIC). The Hausman test suggests that the PMG estimator is appropriate in nearly all instances. The ARDL approach is appropriate when both the cross-sectional and the time dimension are moderate to large, with the time dimension being larger the cross-sectional dimension—as it is here. Alternatively, the fixed- or random-effects, or even the generalized methods of moments (GMM) of Arellano and Bond (1991), could be used. The results are broadly robust to the use of a GMM estimation which includes lagged (by 1 year) independent variables as instruments. Similarly, the results are robust to including a time trend.

Brief literature review

Estimates of income elasticities of demand vary by commodity, between countries, and over time (Table SF.1). For energy, most studies find an income elasticity of less than unity (Burke and Csereklyei 2016; Csereklyei and Stern 2015). That implies per capita energy consumption grows more slowly than per capita real GDP, consistent with a declining energy intensity of demand. Several studies have found that income elasticities decline as income rises (Dahl 2012; Fouquet 2014; Jakob, Haller, and Marschinski 2012).

For metals, the income elasticity depends on the availability of substitutes and the range of uses. Demand for aluminum has been found to grow faster than manufacturing output, i.e., with an income elasticity greater than one, while tin and

lead have a below-unitary elasticity (Stuermer 2017). Fernandez (2018) also finds a higher income elasticity of demand for aluminum (and nickel and zinc), than for lead and tin.

Demand for commodities tends to be price inelastic. Within energy, price elasticities for crude oil range from zero to -0.4 (Huntington, Barrios, and Arora 2017; Dahl and Roman 2004). For metals, Stuermer (2017) finds the largest price elasticity for aluminum (-0.7), but smaller elasticities for copper (-0.4), tin, and zinc (less than or equal to -0.2).

Main results

Long-run income elasticities of commodity consumption calculated from the coefficients are reported in Table SF.2. The income elasticities differ widely across commodities and income levels (Figure SF.5). For most commodities, long-run elasticities decline with rising per capita income, consistent with the intensity of use hypothesis. In general, long-run income elasticities for metals are higher than for energy. The income elasticities for EMDEs were also estimated to be much higher than for advanced economies.

Income elasticities of metals decline with rising incomes but remain elevated even at the top quartile of per capita incomes. Aluminum and copper have the highest income elasticities (0.8 and 0.7, respectively), while zinc is considerably lower at 0.3. Long-run income elasticities for crude oil and coal consumption also decline as per capita incomes rise. At the median per capita income in 2017, the income elasticity of crude oil is 0.5, while that of coal is 0.6, in line with Huntington, Barrios, and Arora (2017). The elasticity for coal, however, drops rapidly, as users switch toward cleaner energy sources at high incomes, and was negative at the highest quartile of per capita incomes in 2017. For natural gas, in contrast, a significant non-linear relationship between income and consumption was not found. This may be because natural gas' popularity as a fuel for electricity generation has increased rapidly, so few countries will have reached the "plateau stage" within the sample period. The model also generates modest price elasticities, which are broadly in line with the existing literature.

TABLE SF.1 Long-run income elasticities of demand for commodities in the literature

Study	Data	Methodology	Results
Jakob, Haller and Marschinski (2011)	30 EMDEs and 21 advanced economies, annual data, 1971-2005, energy	Difference-in-differences estimator on panel data	Income elasticity of primary energy demand of 0.63 for EMDEs and 0.18 for advanced economies (although statistically insignificant).
Joyeux and Ripple (2011)	30 OECD and 26 non-OECD countries, annual data, 1973-2007, energy	ECM with pooled mean group estimators	For OECD countries, income elasticity estimated to be 1.1, for non-OECD countries, income elasticity of energy demand estimated to be 0.9.
Fouquet (2014)	UK, annual data, 1700-2000, energy	VECM	Long run income elasticity for energy demand for transport peaks at 3 before declining to around 0.3 as income rises.
Valin et al. (2014)	Review of 10 papers global economic models for agricultural commodities	Literature review	Median income elasticities for rice and wheat are close to 0.1. First and third quartile range of estimates range from 0 to 0.2.
Csereklyei and Stern (2015)	93 countries, annual data, 1971-2010, energy	OLS in growth rates	Average income elasticity of energy demand is estimated to be between 0.6 to 0.8. As income rises, the rate of growth of energy use per capita declines.
Burke and Csereklyei (2016)	132 countries, annual data, 1960-2010, energy	OLS with panel data, in levels and growth rates	Aggregate income elasticity of energy demand is estimated to be 0.7. Income elasticity is found to rise with higher incomes, in contrast to other studies, and results from the inclusion of low income countries which tend to have low income elasticities.
Huntington, Barrios, and Arora (2017)	Review of 38 papers providing 258 estimates of price and income elasticities of energy demand	Literature review	Income elasticity of oil demand is found to be 0.5 on average, and 0.9 for natural gas.
Stuermer (2017)	12 advanced economies and 3 EMDEs, annual data, 1840-2010, base metals	ARDL	Income elasticity of demand is estimated to be 1.5 for aluminum, 0.9 for copper, 0.7 for zinc, 0.6 for tin, and 0.4 for lead.

TABLE SF.2 Estimation results and income elasticities

Commodity	Log per capita income	Squared log per capita income	Income elasticity at 2017 median income
Aluminum	3.50	-0.15	0.8
Zinc	2.60	-0.12	0.3
Copper	2.95	-0.12	0.7
Crude oil	2.31	-0.10	0.5
Coal	6.04	-0.31	0.3
Natural gas*	0.38	...	0.4

Notes: Results shown are a sub-set of the estimations obtained using the pooled mean group model. Values for log and log squared per capita income are the coefficients for these variables as estimated by the model. Income elasticities are calculated using these coefficients, together with median global per capita income in 2017. * indicates linear regression results for commodities which do not appear to have a non-linear relationship with income.

FIGURE SF.5 Income elasticities of demand

Income elasticities of consumption decline with rising per capita incomes, but they differ widely across commodities and across income levels.
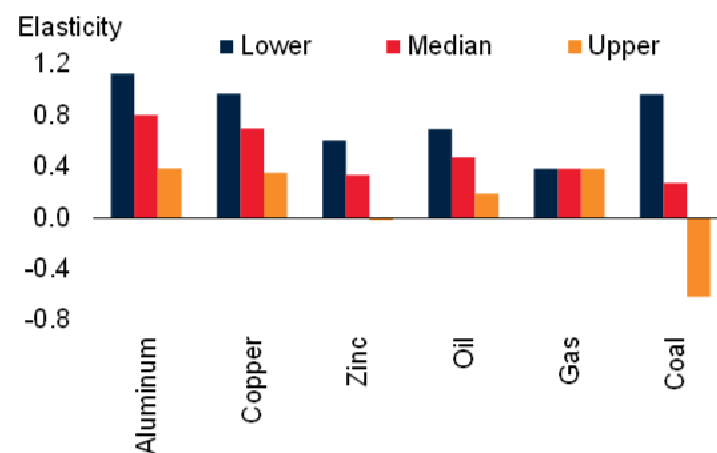
Source: World Bank.
A. Elasticities at lower, median and upper income quartiles in 2017.
Download data and chart.

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Commodity Market Developments and Outlook

Energy

The World Bank Energy Price Index rose by 3 percent in the third quarter of 2018 (q/q) and is more than 40 percent higher than the same period in 2017, with strong gains across oil, coal and natural gas. For crude oil, prices have been supported by a combination of robust demand and supply concerns. Production continues to decline in Venezuela, while the impact of U.S. sanctions on Iranian oil exports is expected to be larger than in 2012. Limited spare capacity among OPEC members and the decline in stocks this year suggests the oil market is relatively tight at present and prices are susceptible to supply shocks. Oil prices are expected to increase to $74/bbl in 2019 from a projected $72/bbl in 2018, before easing to $69/bbl in 2020. Coal and natural gas prices have been supported by strong demand resulting from unusually hot temperatures in Asia and Europe, which boosted demand for electricity, but prices are expected to moderate in 2019.

Crude Oil

Crude oil prices averaged $75/bbl in the third quarter of 2018, an increase of just over 2 percent on the previous quarter and 46 percent on the previous year, although prices were volatile over the quarter (Figure 2). Trade tensions and rising production in the United States weighed on crude oil prices in July and August, with the price of Brent crude oil falling to $70/bbl in August. Prices have since fluctuated as markets weigh the impact of U.S. sanctions on Iranian oil exports, with prices peaking at $86/bbl in early October, their highest level since October 2014. The price of West Texas Intermediate (WTI), rose from $65/bbl to $75/bbl over the same period. Oil prices have also been supported by ongoing production losses in Venezuela and concerns about the level of spare capacity in OPEC countries. However, recent downgrades to global growth and increased supply from other OPEC members, notably Saudi Arabia, have since weighed on prices.

Demand

Global consumption of crude oil has been robust in 2018, with an increase of 1.5 million barrels per day (mb/d) in the third quarter of the year relative

FIGURE 2 Oil market developments

Oil prices have been volatile throughout 2018, with the price of Brent crude oil fluctuating between $62/bbl and $86/bbl on supply concerns, particularly regarding Iran and Venezuela. For 2018 as a whole demand is expected to increase by 1.3 mb/d, a similar gain to 2017.

A. Oil prices

B. Oil demand
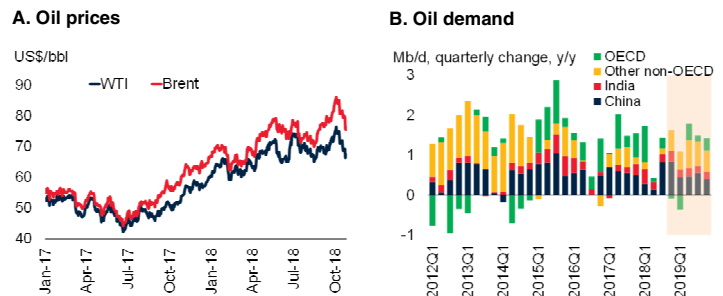
Sources: Bloomberg, IEA, World Bank.
A. Last observation is October 25, 2018
B. Shaded area indicates IEA forecasts.
Download data and charts.

to 2017. Demand has been supported by the continued global recovery, with strength in both advanced and emerging economies. The International Energy Agency (IEA)'s October report estimates that global oil demand will exceed 100 million barrels per day (mb/d) in the fourth quarter of 2018, a record high, with demand expected to be driven by non-OECD countries, primarily China.

Production

Global oil production has surged in 2018, with output up 2.3 mb/d in the third quarter relative to 2017, driven by the United States (Figure 3). Production has risen much faster than demand this year, such that the oil market has moved from deficit to surplus. The increase also occurred despite ongoing declines in production in Venezuela, where output has fallen to 1.2 million barrels per day (mb/d), roughly half the level of production in 2016, as well as a more recent decline in Iranian production. Other OPEC members and Russia have significantly increased production in recent months to offset these declines.

The U.S. announcement of its intention to withdraw from the Joint Comprehensive Plan of Action (JCPOA) and reimpose sanctions on Iran has resulted in supply concerns. When the sanctions were previously implemented in 2012,

FIGURE 3 Oil supply developments

Oil production rose sharply in the first half of 2018, driven by non-OECD countries. Ongoing supply disruptions in Iran and Venezuela spurred other producers, mainly Russia and Saudi Arabia, to increase production, resulting in a positive oil balance. U.S. production continues to increase rapidly, although capacity constraints are increasingly binding.

A. Growth in global oil supply

Mb/d, quarterly change, y/y

Other   OPEC   OECD
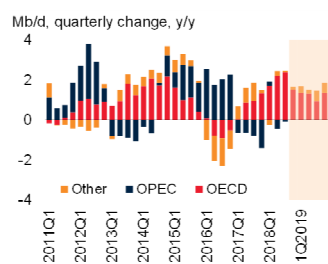
B. Global oil balance

mb/d, quarterly
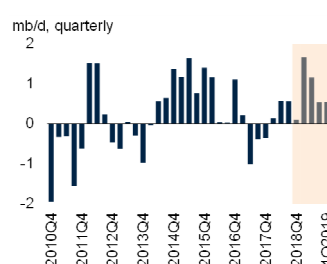
C. Oil production in Iran and Venezuela

Mb/d

Iran   Venezuela
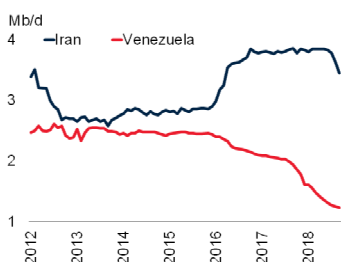
D. Oil production in Russia and Saudi Arabia

Mb/d

Russia   Saudi Arabia
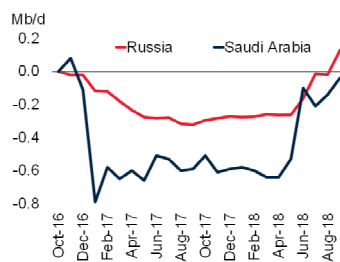
E. Annual change in U.S. oil production and rig count

Kb/d, year-on-year

U.S. production   Rig count (RHS)
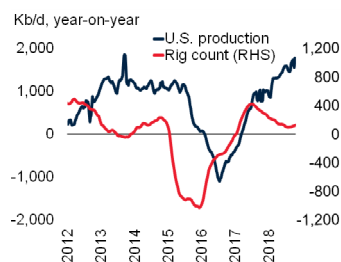
F. U.S. oil price differentials

US$/bbl

WTI (Midland)   WTI (Cushing)
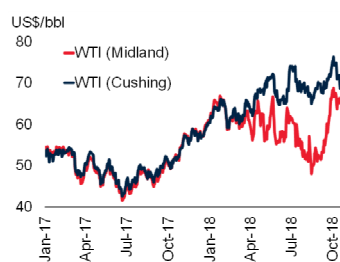
Sources: Bloomberg, EIA, IEA, World Bank.
A.B. Shaded area indicates IEA projections. OPEC production is held constant at its Q3 level over the forecast.
D. Change in production relative to October 2016 level. Last observation is September 2018.
E. Change in oil production (in kb/d) and rig count (in units) relative to previous year.
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they resulted in a reduction in Iranian exports of around 1mb/d (see the Box on the Iran Nuclear Agreement in the October 2015 *Commodity Markets Outlook*). The IEA estimates that Iranian production in September was 400 thousand barrels per day (kb/d) lower than its peak earlier this year, even though the sanctions are only effective from November. Exports are estimated to have seen a larger fall, of around 800 kb/d, with

the difference being stored both onshore and offshore, although estimates vary.

In response to the lower production in Iran and Venezuela, the "Vienna Group" of OPEC and non-OPEC oil producers agreed in June to increase production. The group agreed to raise output to bring the group's overall compliance with the production cuts agreed in 2016 back to 100 percent, thus offsetting the unexpected output losses in Iran and Venezuela (as well as Angola). The Group has already raised output by over 600 kb/d relative to May, although the actual increase in production among the members excluding Iran and Venezuela is almost twice as large. The largest increases by volume have been from Russia and Saudi Arabia, taking them back to or above their level of production prior to the cuts, and with Russian production reaching a record high of 11.4mb/d in September. Saudi Arabia has also announced its intention to raise oil production further, to around 11 mb/d.

U.S. production has continued to rise and is estimated to have reached 11 mb/d in September, according to the Energy Information Administration (EIA). Production has risen much faster than the rig count, due to efficiency and productivity improvements, which have also lowered break-even prices. However, the pace of growth has slowed as a result of more severe-than-expected capacity constraints in the Permian region, including a lack of pipeline capacity and labor shortages. This has contributed to a substantial price discount for Permian (Midland) WTI to benchmark (Cushing) WTI crude oil. The average oil price faced by producers in the Permian region is now very close to their average break-even prices, according to the Dallas Fed Energy Survey, limiting incentives to producers to increase production. These bottlenecks are likely to endure through 2019 until new pipeline capacity comes on line towards the end of next year, although progress on some new pipelines has been faster than expected.

Price forecasts and risks

Global oil consumption in 2019 is expected to increase at a similar pace to 2018, driven by

countries in Asia, primarily China and India (Figure 4). However, weaker global growth and higher oil prices may weigh on demand in 2019, particularly in emerging markets. While oil prices have risen 21 percent this year, the depreciation of many emerging market currencies over this period means that domestic prices in some countries, notably Turkey and Argentina, have risen much faster. Indeed, the IEA and OPEC both revised down their expectations for oil consumption in 2019 in their October reports, by 110 kb/d and 50kb/d respectively, citing weaker global growth and higher prices.

On production, forecasters including the EIA and IEA expect further rapid growth in 2019. While higher oil prices will support increased global oil production, the forecasts rely heavily on continued robust growth in production in the United States. However, pipeline limitations and other capacity constraints in the United States may limit output by more than expected, especially in the first half of 2019.

There is considerable uncertainty about the total loss of Iranian production when sanctions come into effect in November, with a potential reduction of between 1mb/d to 1.5 mb/d. The impact is expected to be greater than in 2012 as the United States has been more stringent in its use of sanctions and has not yet granted any waivers to countries who import oil from Iran, although the U.S. administration has suggested this may change. While other countries who previously supported the sanctions, including the European Union, do not support the reintroduction of sanctions, their ability to circumvent them is limited. China, the European Union, and Russia have investigated the use of an alternative non-dollar payments system. However, it is not clear how effective this could be as the United States can still sanction companies dealing with Iran—it may only benefit companies who do not access the U.S. financial system.

If global production is significantly weaker than forecast by the IEA and others, or if output in either Iran or Venezuela falls faster than expected, the market could become under-supplied in 2019, resulting in a draw on stocks, or requiring

FIGURE 4 Oil market prospects

Oil demand is forecast to remain robust next year. Production is also expected to increase in 2019, but capacity constraints in U.S. shale are likely to persist until the second half of next year. Oil stocks have fallen close to their 5-year average, which combined with OPEC's limited spare capacity, may render the oil market vulnerable to shocks.

A. Global oil demand growth forecast, 2019
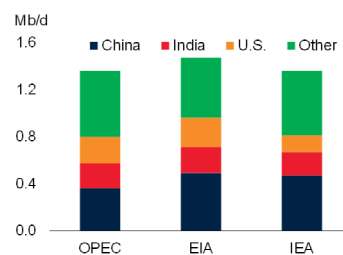
B. Oil prices in local currencies
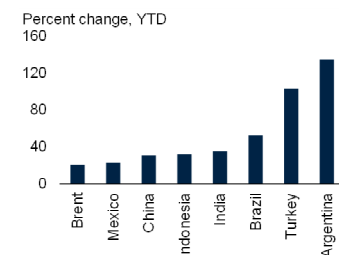
C. Non-OPEC oil production growth forecast, 2019
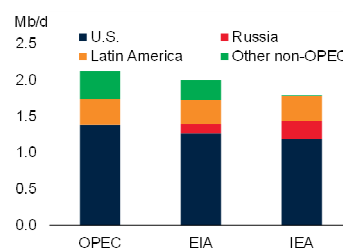
D. OECD oil stocks
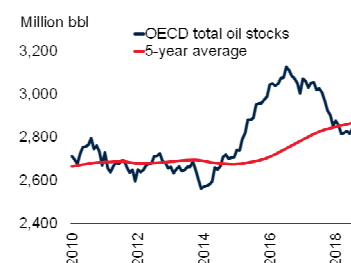
E. OPEC spare capacity
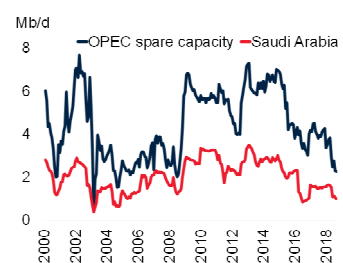
F. OPEC reliance on oil revenue
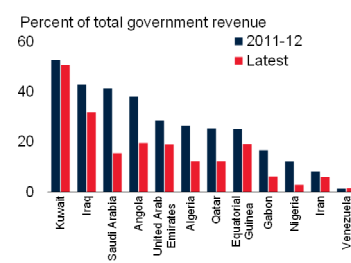
Sources: Bloomberg, EIA, IEA, OPEC, United Nations University World Institute for Development Economics Research, World Bank.
B. Daily data, Jan 2nd to October 25.
C. Chart shows oil production forecasts for non-OPEC countries in 2019, with forecasts by OPEC, IEA, and EIA.
E. OPEC spare capacity includes Saudi Arabia.
F. "Latest" indicates average of most recent two years of data available.
Download data and charts.

additional production from OPEC. Saudi Arabia has indicated it is prepared to meet any demand that materializes, although its level of spare capacity (as well as that of other OPEC members) is estimated to be very low at present, due to the recent increases in production. OPEC countries also tend to be heavily reliant on the resource sector for export and fiscal revenue, and so might

FIGURE 5 Coal and natural gas developments

Demand for coal and natural gas was stronger than expected in the second and third quarter of 2018 due to unusually hot weather in Europe and Asia. U.S. production of natural gas continues to rise, leading to a jump in exports. Over the past two decades, consumption of coal and natural gas has risen faster than oil. China and India now account for almost two-thirds of global coal consumption, but are smaller consumers of natural gas.

A. Natural gas and coal prices
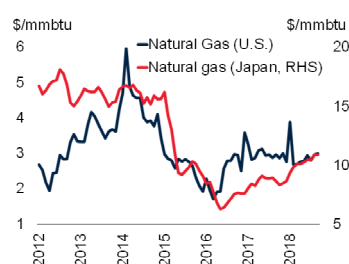
B. U.S. production of shale gas
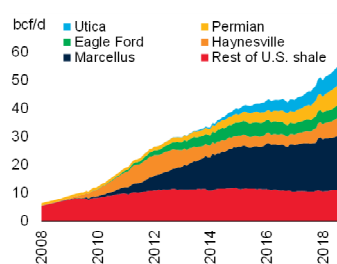
C. Exports of liquid natural gas
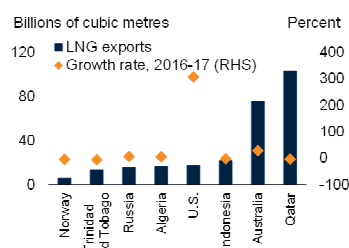
D. Energy use, by fossil fuel type
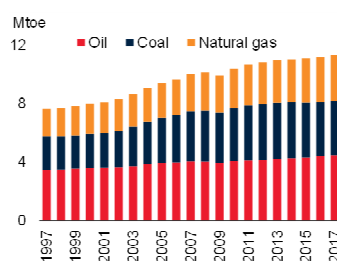
E. Consumption of coal, by geography
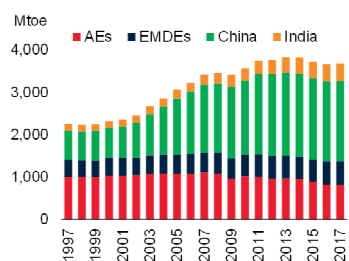
F. Consumption of natural gas, by geography
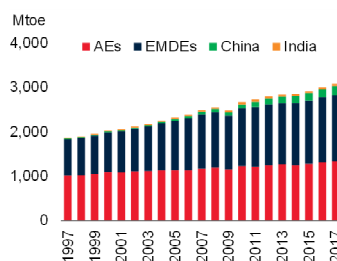
Sources: Bloomberg, BP Statistical Review, International Energy Agency, World Bank.
D. Use of fossil fuels in total energy. Excludes use of renewables, nuclear power, and other (e.g. biomass). Last observation is September 2018.
E.-F. AEs stands for advanced economies and contains 34 countries. EMDE stands for emerging market and developing economies and contains 44 countries. Mtoe stands for millions of tonnes of oil equivalent.
Download data and charts.

prefer to keep production unchanged and receive higher prices and therefore higher revenues.

Oil prices are expected to average $74/bbl in 2019, up from a projected $72/bbl in 2018, but with prices declining over the course of 2019 and averaging $69/bbl in 2020 as constraints on U.S. production ease. While Saudi Arabia has indicated

it has the potential and willingness to increase production further, any increases will reduce spare capacity, leaving the market particularly susceptible to supply shocks, for example from geopolitical events, worsening trade tensions, sanctions, or natural disasters. As such, risks are skewed to the upside in the near term.

Coal and natural gas

Demand for coal and natural gas was stronger than expected in the second and third quarters of 2018 as unusually hot weather in Asia and Europe led to increased demand for electricity for air conditioning. Prices of natural gas in Japan have increased 7 percent so far in 2018 relative to the same period in 2017 as a result of strong demand, while U.S. prices were little changed over the same period as supply continued to increase rapidly, driven by shale gas (Figure 5). The relative containment of U.S. prices occurred despite stocks of natural gas being at their lowest levels since 2005, as a result of a particularly cold winter and record use of natural gas in electricity generation. Coal prices rose 11 percent over the same period, with environmentally-driven restrictions to supply providing additional support to prices. Prices are expected to moderate in 2019 as demand slows relative to 2018 and supply rises. Increasing exports of liquified natural gas, particularly from the U.S. but also Qatar, will contribute to the gradual narrowing of price differentials between Europe, Japan, and the United States.

Over the last two decades, consumption of both coal and natural gas has risen more rapidly than oil, reflecting their use in electricity generation, which has grown rapidly. Increasing consumption of coal reflects rapid growth in demand from China and to a lesser extent India, whose combined share of global coal consumption rose from 37 percent in 1997 to 66 percent in 2017 (see Special Focus). Increased use of natural gas has been more broad-based across countries. Going forward, use of natural gas is expected to continue to rise given its properties as a cleaner burning fuel, while demand for coal is expected to moderate as China's growth slows and becomes less commodity-intensive, and as concerns about pollution increase.

Agriculture

After gaining momentum earlier in the year, most agricultural commodity prices weakened significantly in the third quarter of 2018. This was mostly in response to upward revisions to production estimates for key crops and, to a lesser extent, currency depreciations among some commodity exporters. Oils and meals suffered the largest losses following China's 25 percent tariff on U.S. soybeans. On average, the Agricultural Price Index is expected to be roughly unchanged in 2018 compared to 2017, and to rise by just under 2 percent in 2019, mainly owing to higher costs of energy and fertilizers. Downside risks to the price forecast emanate from escalating trade tensions. On the upside, high energy prices could lift prices of energy-intensive crops, notably grains and oilseeds. Higher energy prices raise operating costs, increase fertilizer prices, and encourage biofuels production.

Grains, oils, and meals

Recent developments

The World Bank's *Grain Price Index* declined nearly 6 percent in the third quarter of 2018 (q/q), but remains 8 percent higher than a year ago (Figure 6). Estimates of production of most crops have been revised upwards during the past few months, reversing the negative sentiment earlier in the year. According to the U.S. Department of Agriculture's (USDA) latest assessment (October 2018), global supplies of wheat, maize, and rice are projected to reach a combined 2,906 million metric tons (mmt) this season (September 2018 to August 2019), nearly identical to last season.

Global production of wheat is projected to be 4 percent lower than last season's record of 759 mmt, according to the USDA. Yields have been adversely affected by heat waves in key producing countries of Eastern Europe and Central Asia. Global consumption of wheat is expected to grow by less than 1 percent from last season, pushing the stocks-to-use ratio (an approximate measure of supply relative to demand) down by 2 percentage points, still the second highest level of the past two decades.

FIGURE 6 Agricultural price developments

Grains and edible oil prices weakened in 2018 Q3 in response to upward production revisions for most crops, trade tensions, and a strong U.S. dollar. Wheat prices were the exception due to yields being adversely affected by dry weather in key producing regions.

A. Agriculture price indexes
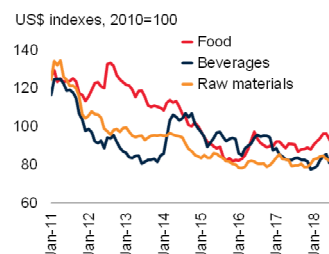
B. Food price indexes
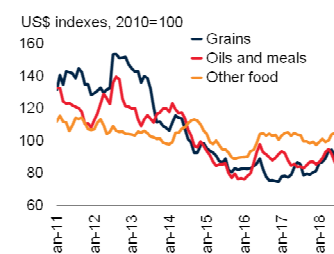
C. Soybean and maize prices
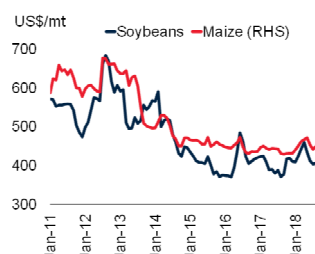
D. Rice and wheat prices
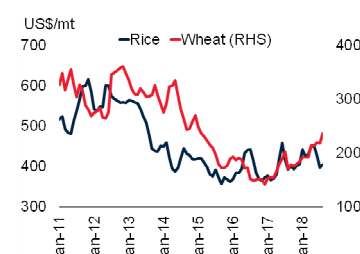
E. Palm and soybean oil prices
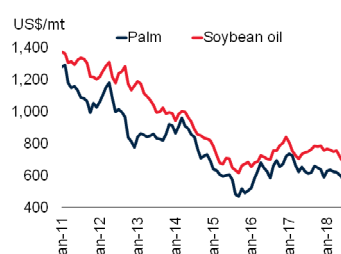
F. Price changes of key commodities
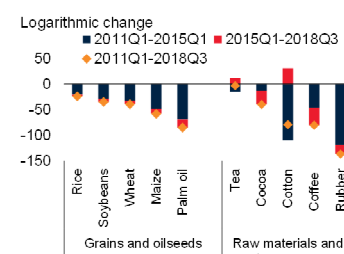
Source: World Bank.
A.-E. Last observation is September 2018.
F. Price changes are expressed in logarithmic terms to ensure symmetry between positive and negative changes.
Download data and charts.

The global maize crop, which has been revised upward for 2018/19 in response to favorable weather conditions in the United States, is projected to be 3 percent higher than last season, according to the USDA (Figure 7). The United States, the world's top producer, is expecting a bumper crop, and larger-than-expected crops are projected in other key producers, including Argentina, the European Union, India, and Ukraine. Consumption of maize is projected to

FIGURE 7 Supply conditions for grains and edible oils

Maize, rice, and soybean supplies for the current crop year have been revised consistently upward since May, bringing this season's supplies to last season's levels. Edible oil supplies are expected to grow 3 percent in 2018-19, in line with the 2-decade average.

A. Grain supply growth

B. Edible oil supply growth

C. Global supply of wheat and rice

D. Global supply of maize and soybeans
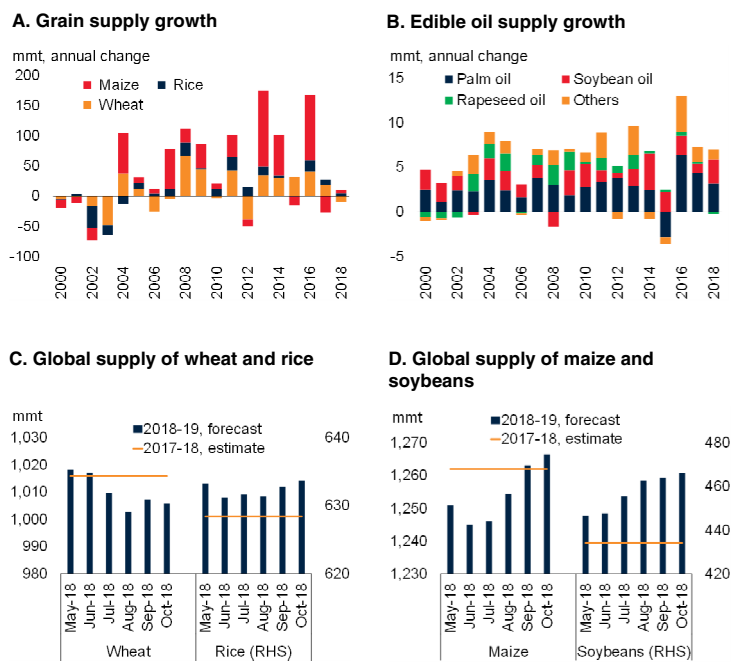
Sources: U.S. Department of Agriculture, World Bank.
A. B. October 11, 2018 update. Supply is the sum of beginning stocks and production. Years represent crop seasons (e.g., 2018 refers to 2018-19 crop season).
C. D. Blue bars denote revisions to the 2018-19 supply assessment and orange lines denote the latest estimate for the 2017-18 season.
Download data and charts.

grow nearly 3 percent, pushing the stocks-to-use ratio 4 percentage points lower than last season, an 8-year low (Figure 8). Normally, such low stock levels relative to consumption would be a cause of alarm. However, ample supplies of other grain (and oilseed) markets provide a buffer.

Rice production is projected to decline marginally in 2018-19 to 488 mmt in line with earlier assessments. Growing conditions have been mixed: delays in Vietnam's harvest due to late plantings and reduced yields in Thailand due to heavy rains have been offset by favorable conditions in China, India, and Indonesia. Global consumption of rice is expected to increase marginally, leaving the stocks-to-use ratio largely unchanged at 30 percent.

The World Bank's *Oils and Meals Price Index* fell almost 11 percent in the third quarter of 2018 (q/

q), and stands 3 percent lower than the same quarter of last year. The weakness reflects favorable crop conditions across-the-board and, in the case of soybeans, trade policies. Prices for soybean meal and coconut oil each plunged 13 percent in the quarter, followed by palm oil (down 11 percent) and soybean oil (down 8 percent).

The production outlook for the current season (October 2018-September 2019) looks promising in view of continuing favorable growing conditions. Global output of the 17 major edible oils (including palm, soybean, and rapeseed) is forecast to increase 3 percent in the 2018-19 season, and a cumulative 14 percent above the 2015-16 season, an El Niño year. About half of the anticipated production gains are expected to come from palm oil—the fastest growing edible oil—which is produced primarily in Indonesia and Malaysia, both of which are experiencing favorable weather conditions. Most of the remaining growth is projected to come from soybean oil, produced primarily in Argentina, Brazil, and the United States.

Production of oilseeds in 2018-19 is also expected to be healthy, with global supplies of the ten major oilseeds projected to reach 590 mmt, up from last season's 564 mmt. Almost all of this growth is expected from soybeans, mostly from Argentina, and less so in Brazil and the United States.

In addition to ample supplies, trade frictions have also affected the soybean market. In retaliation to U.S. tariffs on imports from China, a 25 percent tariff on soybean imports from the United States was imposed by China in July 2018. To avoid tariffs, importers from China have turned to Brazilian suppliers, in turn exerting upward pressure on Brazilian soybean prices. However, only limited soybean supplies were available from Brazil when trade tensions escalated—the harvest season in the Southern Hemisphere runs from March to June while in the Northern Hemisphere it runs from September to November. Because trade tensions escalated at a time of upward revisions to the global grain and oilseed outlook, futures prices for soybeans prices in the U.S. declined 20 percent from early June to mid-July.

Price forecasts and risks

The *Grain Price Index* is projected to edge up 1 percent in 2019 after an estimated 10 percent rise in 2018 resulting from a drought in Europe and Central Asia that affected wheat prices. *Oils and Meals* prices are expected to increase more than 2 percent in 2019, reversing a 2 percent decline in 2018. Several risks underpin these forecasts. Key among them are volatility of energy and fertilizer prices (both of which are key inputs to grains and oilseeds), an escalation of trade frictions, domestic support policies, continued strengthening of the U.S. dollar, and further currency depreciations of commodity exporters. Other risks include adverse weather patterns and diversion of food commodities to biofuels.

Energy is a key input to most agricultural commodities and affects production costs directly (through fuel use) and indirectly (through fertilizer and other chemical use). Energy and fertilizer prices are expected to rise marginally in 2019 (1 and 2 percent, respectively) and, as noted in the energy section, upside risks to the forecast are elevated, especially for crude oil. Higher-than-expected energy prices could exert upward pressure on grain and oilseed prices. Research in the July 2016 edition of the *Commodity Markets Outlook* suggests that a 10 percent increase in energy prices is associated with an almost 6 percent increase in fertilizer prices and a nearly 2 percent increase in grain and edible oil prices.

Trade frictions are an important factor weighing on the outlook for agricultural commodities. The recent imposition of tariffs by China on U.S. soybean imports has already led to a decline in soybean prices, but the longer-term impact will depend on the degree of trade diversion as well as changing production and consumption patterns (e.g., the substitution by farmers of soybean meal with maize for animal feed, or the substitution of soybean oil with palm and rapeseed oils for human consumption). More importantly, an escalation of existing trade frictions among other countries and/or commodities, could further depress agricultural prices (see Box on tariffs).

Other policies by major producers and exporters could also affect agricultural commodity prices.

FIGURE 8 Demand conditions for grains and oilseeds

Grains and edible oils consumption are projected to increase moderately in 2018-19. Stocks-to-use ratios for wheat and rice remain at near record levels. Growth in biofuel production, a key source of demand for some food commodities, has moderated since 2014 and is expected to be nearly flat in the longer term.

A. Grain consumption
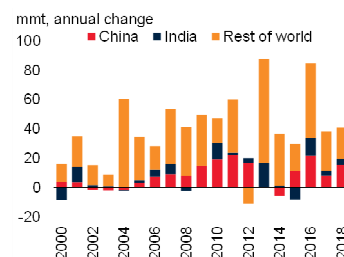
B. Edible oil consumption
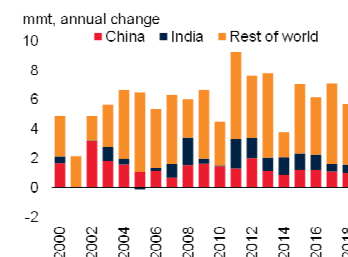
C. Stocks-to-use ratios for key grains
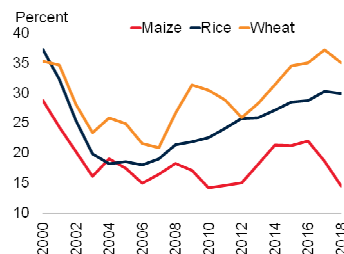
D. Biofuel production
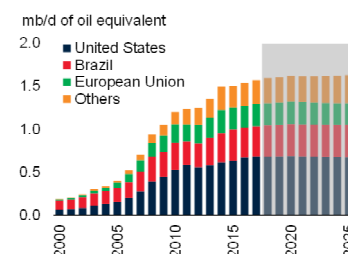
Sources: IEA, OECD, U.S. Department of Agriculture, World Bank.
A.-C. October 11, 2018 update. Years represent crop seasons (e.g., 2018 refers to the 2018-19 crop season).
D. Shaded area (2018-25) represents IEA and OECD projections.
Download data and charts.

These include trade measures such as the recent introduction of export taxes on selected agricultural products by Argentina (effective until the end of 2019) or domestic support policies, such as the $1.2 billion agricultural commodity purchases and the $12 billion emergency aid by the U.S. government.

On the macroeconomic side further strength in the U.S. dollar could put downwards pressure on commodity prices. For example, research has shown that a 10 percent appreciation of the U.S. dollar against major currencies leads to a 5 percent decline in the prices of internationally traded commodities (see the Special Focus of the July 2016 *Commodity Market Outlook*).

Furthermore currency depreciations in countries that account for a large share of global trade in a commodity market could also affect the price outlook (see next section on beverages).

FIGURE 9 Beverage commodity markets

Although coffee prices increased in early October, they have generally fallen since the beginning of 2018 on expectations of larger crops from Brazil and Vietnam and the depreciation of Brazil's currency against the U.S. dollar. Cocoa prices continued to weaken due to Côte d'Ivoire's projected bumper crop. Tea prices declined as well in response to ample supplies from East Africa.

A. Arabica coffee price vis-a-vis BRL/USD
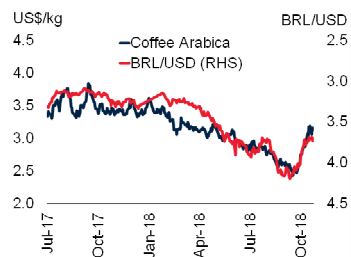
B. Cocoa and Robusta coffee prices
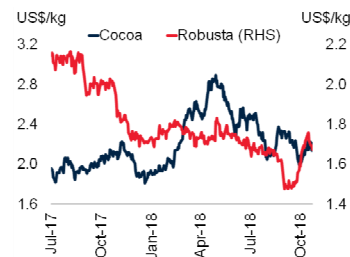
C. Coffee production
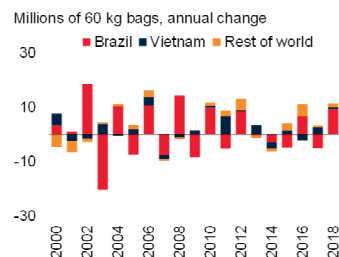
D. Cocoa production
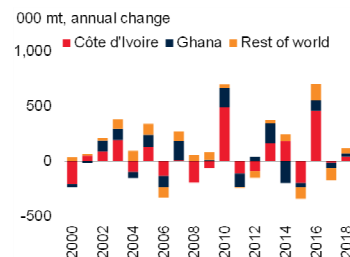
E. Tea prices
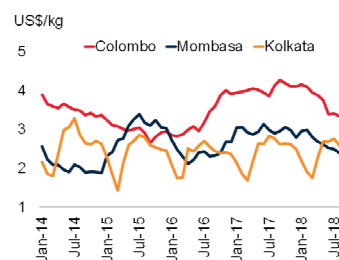
F. Tea production
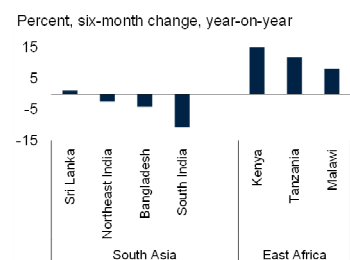
Sources: Bloomberg, Colombo Tea Auction, Mombasa Tea Auction, Calcutta Tea Auction, ICO, ITC, U.S. Department of Agriculture, World Bank,.
A. BRL/USD denotes the Brazilian real/U.S. dollar exchange rate.
A.B. Last observation is October 25, 2018.
C. October 11, 2018 update. Years represent crop seasons (e.g., 2018 refers to 2018-19 crop season).
E. Last observation is September, 2018.
F. Denotes change in tea production from January-June 2017 to the same period of 2018.
Download data and charts.

El Niño conditions are currently neutral—El Niño is a weather pattern which causes the winds of the equatorial Pacific to slow or reverse direction, in turn raising the temperature of waters over a vast area of the Central and Eastern Pacific Ocean. The latest outlook assigns a 70-75 percent

probability of El Niño development for December-February. Should this weak El Niño materialize, heavier than expected rains could occur in Central Asia, South America, and East Africa, while drier than normal conditions could occur in Central America, the Caribbean, and Southern Africa. Bananas, coffee, palm oil, and natural rubber tend to be the most affected commodities (see the El Niño *Focus Section* of the October 2015 edition of the *Commodity Markets Outlook*).

Finally, the agricultural outlook assumes that biofuels will be a stable source of demand for some food commodities. Biofuels currently account for 1.6 percent of global liquid energy consumption. Following a decade of double-digit growth rates of biofuel production, interest has waned since 2014 due to both lower energy prices and acknowledgement by policy makers of the limited environmental benefits of biofuels. Indeed, projections by the IEA and OECD point to marginal biofuels production growth in the medium term. However, risks to these projections tilt to the upside since higher energy prices could reignite energy security concerns, while lower grain and oilseed prices could trigger policies in favor of increasing biofuel mandates.

Beverages

The World Bank's *Beverage Price Index* declined almost 9 percent in the third quarter (q/q), with roughly similar losses across all of its components, following upward revisions to global supplies in all three markets. The Index is projected to decline more than 5 percent in 2018, before stabilizing in 2019.

Both Arabica and Robusta prices declined (down 7 and 8 percent, respectively), with the former reaching a 10-year low (Figure 9). The bearish sentiment reflects upward revisions to production estimates for Brazil and Vietnam, the world's largest coffee suppliers, and, to a lesser extent, downward revisions to consumption estimates. Global coffee production is projected to increase 7 percent in 2018-19. The weakness of the Brazilian currency boosted coffee prices received by producers (in domestic currency terms), in turn increasing exports from Brazil and further

depressing world prices—the recent appreciation of the *Real*, however, reversed that trend. Arabica coffee prices are expected to average $2.85/kg in 2018, down 14 percent from last year and Robusta prices are set to decline 18 percent in 2018. A modest recovery is expected in 2019.

Following strong gains earlier in the year, cocoa prices plunged nearly 13 percent in the third quarter (q/q) in response to upwardly revised estimates of global output. Most of the cocoa production growth is expected to come from West Africa, notably Côte d'Ivoire, the world's dominant cocoa producer. Despite the recent price weakness, cocoa prices are expected to gain 2 percent in 2019, following a projected increase of 13 percent in 2018, as consumption is expected to outpace production in both years.

Global tea prices declined more than 5 percent in the third quarter of 2018 (q/q), in response to large drops at Colombo and Mombasa auctions (down 9 and 7 percent respectively). The Mombasa auction price weakness reflects favorable weather conditions in East Africa (notably in Kenya), which boosted this year's East Africa tea crop by 17 percent compared with the 2017 output. Prices at the Kolkata auction, however, held steady due to a weather-related poor crop in Kerala, one of India's key tea producing regions. Tea prices (3-auction average) are expected to gain 1 percent in 2019, following a projected decline of 9 percent in 2018.

Agricultural raw material

The World Bank's *Raw Materials Price Index* declined nearly 4 percent in the third quarter of 2018 (q/q), in response to a plunge in natural rubber prices, but it stands at a similar level as in 2017 Q3. In 2019 the index is expected to stabilize, following a projected marginal gain in 2018.

Cotton prices declined marginally in the third quarter of 2018, but are still 15 percent higher than a year ago (Figure 10). Although global cotton production outpaced consumption by a small margin in 2017-18, production next season is projected to decline by 4 percent, creating room

FIGURE 10 **Agricultural raw materials markets**

China's unwinding of cotton stocks depressed cotton prices. Bumper crops in Thailand and Vietnam, along with persistently high rubber stocks in China, pushed rubber prices to historical lows.

A. Agricultural raw material prices

B. Cotton stocks

C. Natural rubber consumption

D. Natural rubber stocks
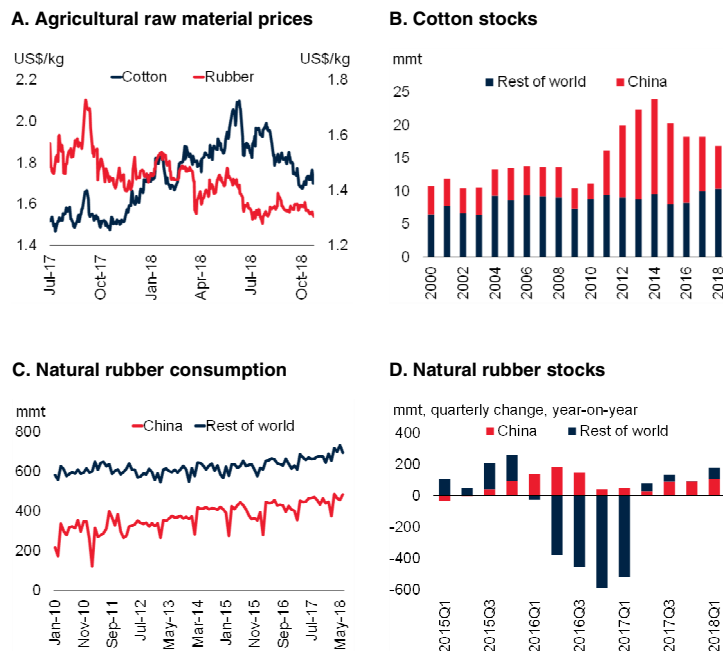
Sources: Bloomberg, ICAC, IRSG, World Bank.
A. Last observation is October 25, 2018.
B. October 11, 2018 update. Years represent crop seasons (e.g., 2018 refers to 2018-19 crop season).
C. Last observation is June 2018.
D. Last observation is 2018Q1.
Download data and charts.

for the unwinding of China's stocks. Cotton prices are expected to remain nearly flat in 2019, following a projected gain of 11 percent in 2018.

Natural rubber prices plunged 12 percent in the third quarter to a 30-month low. The recent weakness follows last year's sharp decline when prices dropped more than 35 percent within 4 months. Depressed prices reflect rising output due to very favorable weather conditions in Thailand and Vietnam, the world's top suppliers, and weak demand by China, leading to unusually high stocks accumulation. A 10 percent import duty by the United States on Chinese tires along with the slowing pace of tire imports by the European Union (about two-thirds of natural rubber goes to tire manufacturing) are exerting further downward pressure on demand. As a result, natural rubber prices are expected to remain low in 2019 after a projected 20 percent decline (y/y) in 2018.

FIGURE 11 Fertilizer market developments

Fertilizer prices gained moderately on high energy costs and tight supplies, particularly in China due to pollution-related production restrictions. However, next year's production is expected to outpace consumption.

A. Fertilizer prices
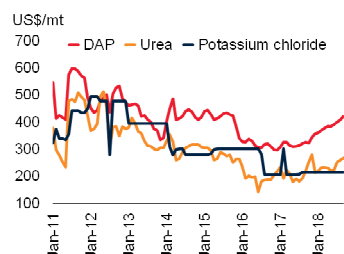
B. Global fertilizer demand
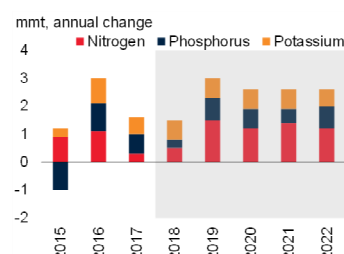
C. Nitrogen production
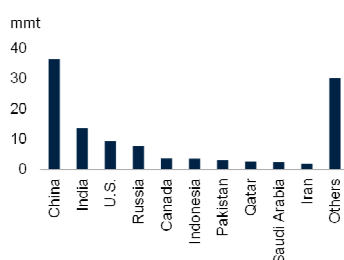
D. Phosphate rock reserves
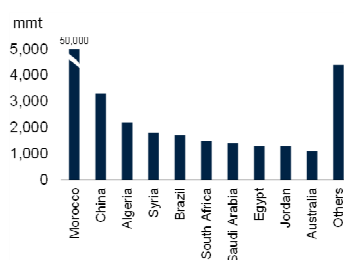
Sources: International Fertilizer Association, U.S. Geological Survey, World Bank.
A. Last observation is September 2018.
B. Shaded area (2018-22) represents International Fertilizer Association projections.
Download data and charts.

Fertilizers

The World Bank's Fertilizer Price Index rose 8 percent in the third quarter (q/q) on high energy costs and tight supplies. It stands more than 18 percent higher than the at same period in 2017. Fertilizer consumption remains constrained by relatively weak crop prices as a result of ample grain and oilseeds supplies. Fertilizer prices are projected to rise 2 percent in 2019 due to modest global demand growth. Markets, however, remain well supplied with adequate stocks and new capacity coming on stream. Downside risks to the forecast include the possibility of weaker demand (e.g., escalating trade tensions that could exert downward pressure on agriculture prices) and a restarting of idle capacity. Upside risks include higher input costs (especially natural gas and coal) and stricter pollution measures by China.

Nitrogen (urea) prices surged 15 percent in the third quarter (q/q) and are more than 30 percent

higher than the same period in 2017 on strong import demand, notably from Brazil and India (Figure 11). Rising energy production costs, supply outages, and sharp cuts in exports from China—the world's largest nitrogen fertilizer producer—helped push prices higher. Chinese exports halved in 2017, following a one-third decline in 2016, due to higher coal prices and increasing government regulations regarding pollution (natural gas is a key input to nitrogen fertilizer production, except in China where coal is used extensively). U.S. urea imports continue to decline as new domestic capacity displaces imports, fueled by plentiful low-cost natural gas production. Following an expected 13 percent increase in 2018, nitrogen prices are projected to remain relatively stable from 2019 onwards as new capacity in India, Nigeria, and Russia come online. Price risks include the possibility that U.S. sanctions on Iran spill over to Iranian urea exports, higher energy input costs, and winter restrictions on coal production in China, which could further elevate costs—the smog curbs have been somewhat relaxed due to the ongoing trade dispute with the United States.

Phosphate DAP and TSP prices rose 6 percent and 9 percent, respectively, on strong demand, particularly from India. Low inventories in India also supported stronger import prices there. While higher energy costs and increased environmental restrictions may impact Chinese production and exports, large new capacity is coming online, particularly in Morocco and Saudi Arabia (Morocco accounts for more than 70 percent of the world's phosphate reserves; Saudi Arabia recently discovered reserves). Prices are therefore anticipated to be somewhat capped in 2019.

Potash (potassium chloride) prices were unchanged despite strong demand from Brazil, China, and India. The International Fertilizer Association expects potash imports will reach record highs in China and Latin America in 2018, while supply cuts from idling of production and closures will keep the market relatively tight. While production is expected to outpace consumption in 2019, with capacity additions in Belarus, Canada, China, and Russia, robust agricultural demand is projected to boost prices by 3 percent.

Metals and Minerals

The World Bank's Metals and Minerals Price Index dropped 10 percent in the third quarter (q/q), despite falling LME inventories, with declines in all metals except iron ore. Softening global demand, a strengthening U.S. dollar, and growing trade tensions between the United States and China contributed to the fall. However, metals prices are still expected to be 5 percent higher in 2018 (on average) than in 2017, given the strength earlier this year. Although prices are expected to remain broadly unchanged in 2019, upside risks to the forecast include higher-than-expected demand from China resulting from fiscal and monetary stimulus measures and supply reductions due to stricter environmental policies. Downside risks include a worsening in the trade dispute between the United States and China.

Zinc saw the sharpest fall in prices of all metals in the third quarter of 2018, declining by 19 percent (q/q), and are down 14 percent compared to the same period in 2017 (Figure 12). While supply constraints and strong demand to galvanize steel led to rising zinc prices in 2017 and 10-year highs in January 2018, demand has weakened, particularly in China where it fell 12 percent in 2018 Q2 (y/y). This trend was exacerbated by U.S. import tariffs on China (Box). Supply has also increased and is expected to continue to do so from both new and existing mines, with global zinc production expected to increase by 5 percent this year. As a result, zinc prices are expected to fall by 2 percent in 2019 on top of a 1 percent loss in 2018.

Lead prices experienced the second sharpest fall among base metals, down 12 percent in the third quarter (q/q) and 10 percent lower compared to the same period in 2017. As with zinc, prices were supported earlier in the year by robust global demand growth and supply constraints from stricter pollution-reduction policies in China. However, prices tumbled after the imposition of tariffs and associated fears about future demand. Lead prices are expected to remain broadly unchanged in 2019 after a 3 percent loss in 2018.

Copper prices dropped 11 percent in the third quarter (q/q) and are 4 percent lower compared to

FIGURE 12 Industrial metals market developments

Industrial metals prices dropped in response to trade tensions, the appreciation of the U.S. dollar, and weakening global demand. While copper production remains robust, prices have risen recently after the announcement of stimulus in China.

A. Metals prices

B. World refined metals consumption

C. Refined copper price

D. Steel prices

E. Global copper reserves

F. Global bauxite reserves
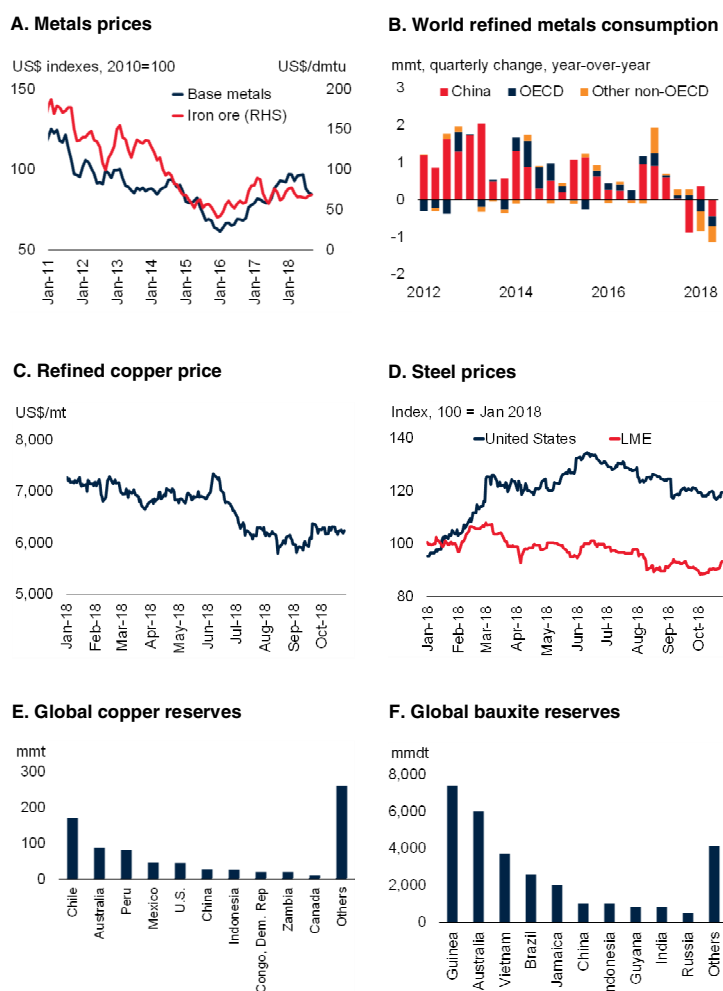
Sources: Bloomberg, World Bank, World Bureau of Metal Statistics.
A. Last observation is September 2018.
C. D. Last observation is October 25, 2018.
D. Prices shown are the benchmark U.K. London Metals Exchange price, and the U.S. domestic price.
Download data and charts.

the same period in 2017, again reflecting the effects of trade tensions on market sentiment, given that China accounts for over 50 percent of global consumption (Special Focus). Copper production remained robust as fears of supply disruption due to labor strikes in Chile did not materialize—Chile is the world's largest copper supplier and has the largest copper reserves in the world. Furthermore, supply growth is expected to remain strong as mines continue to be expanded

elsewhere, including in the Democratic Republic of Congo and Zambia. Despite these factors, strong demand helped boost prices earlier in the year, such that prices are expected to rise 5 percent in 2018, on average. Prices are expected to rise by a further 1 percent in 2019 supported by fiscal and monetary stimulus in China, particularly directed toward infrastructure investment.

Aluminum prices also declined in the third quarter, dropping 9 percent (q/q), but are still 2 percent higher relative to the same period in 2017. Prices have been volatile and supported by persistent supply concerns, particularly regarding alumina supplies, a key input in the production of aluminum. The world's largest alumina refinery, Alunorte, has operated at half its installed capacity since March 2018 amid alleged breaches of regulations. Sanctions on the Russian aluminum producer Rusal in April 2018 also led to price spikes, while a labor strike at Alcoa in Western Australia disrupted supply and raised alumina prices in the third quarter of 2018. In the United States, aluminum prices have risen 11 percent more than the London Metal Exchange benchmark since the beginning of 2018, owing to U.S. import tariffs. Aluminum prices are expected to stabilize in 2019 following a gain of 8 percent in 2018 on the back of rising alumina prices and decline in inventories.

Tin prices declined by 8 percent in the third quarter (q/q) and are 6 percent lower compared to the same period in 2017. Global demand for refined tin has eased slightly in 2018, but has fallen by almost 7 percent in China. Global mine production is up sharply, with higher output in China coming from inner Mongolia, and rising production in Indonesia emanating from changes to export rules. Production in Myanmar is thought to be declining, although data is limited, and ore grades are also reported to be deteriorating. After remaining flat in 2018, tin prices are expected to gain 1 percent in 2019 as demand is expected to outpace supply on maturing production growth.

While *nickel* prices also fell in the third quarter of 2018 by 9 percent, they are up 26 percent compared to the same period in 2017. Nickel prices have been supported by growing demand from China for stainless-steel production, as well as strong demand for electric vehicle batteries. There has also been a lack of supply growth outside of nickel pig iron (NPI) in China, while NPI also faces challenges of stricter environmental regulations, and enforced winter production cuts. Nickel prices are expected rise by 2 percent in 2019, adding to the 28 percent gain in 2018. Demand for nickel for batteries, including for electric vehicles, is expected to grow strongly in the coming years.

Iron ore prices increased by 2 percent in the third quarter (q/q) but are still 7 percent lower relative to the same period in 2017. Chinese steel production continues to be constrained by the effect of more stringent environmental policies, and China's iron ore imports have weakened. Iron ore prices are expected to decline by 6 percent in 2019 in response to additional supply from key projects in Australia and Brazil, and a rising share of scrap-based production in overall steel production. A key uncertainty around the price forecast for iron ore (as well as other metals) is the extent to which China's environmental policies will reduce ore imports.

Precious Metals

The World Bank's Precious Metals Price Index declined 8 percent in the third quarter (q/q), reaching its lowest level since 2016 Q1. The decline was sharpest in platinum (down 10 percent) followed by silver and gold. Contraction of physical demand of gold from China and India, weaker investment demand, an appreciation of the U.S. dollar, and tighter monetary policy in several advanced economies, have all contributed to the weakness. Precious metals prices are projected to decline by almost 1 percent in 2019 in addition to the 2 percent loss in 2018 owing to continued tightening of monetary policy and a further weakening of demand. Upside risks to the forecast include the possibility of a weaker-than-expected dollar or a slower pace of monetary policy tightening in the U.S. Conversely, downside risks stem mainly from further strengthening of the U.S. dollar and weakening of physical demand.

Gold prices, which have been declining since April, fell 7 percent in 2018 Q3 (q/q) and are 5 percent lower compared to the same period in 2017 (Figure 13). Gold demand, which experienced the largest decline since 2009 over the first half of 2018, has been weak both for use as a production input and for investment purposes (including gold-backed exchange-traded funds). The appreciation of the U.S. dollar and tightening monetary policy in some advanced economies has reduced the attractiveness of gold as an investment asset. The appreciation of the U.S. dollar made gold more expensive in domestic currency terms, especially in China, India, Iran, and Turkey (the world's most important consumers). Supply, on the other hand, increased 4 percent in the first six months of 2018, supported by stronger-than-expected mine production in several countries, including Canada and Indonesia, as well as recycling in India, Iran, and Turkey. Strengthening supply and weak demand are expected to push gold prices marginally lower in 2019. The possibility of tighter-than-expected U.S. monetary policy, along with a further strengthening of the U.S. dollar, represent key downside risks to the forecast, while increased demand by China and India could boost gold prices.

Silver prices have moved in line with gold prices and were down nearly 10 percent in the third quarter (q/q) and are 11 percent lower compared to the same period in 2017. Although silver production declined during the first half of the year, silver prices have remained depressed amid investor concerns about the negative impact of trade tensions between the United States and China on industrial activity and global trade. More than half of silver consumption goes to industrial use, and China accounts for half of global silver demand. However, silver's prominence as an input in the photovoltaic and electronic sectors has diminished as a result of substitution and efficiency gains. As silver demand

FIGURE 13 Precious metals price developments

Precious metals prices weakened in 2018 Q3 in response to contraction of physical demand of gold from China and India, weak investment demand, appreciation of the U.S. dollar, and tightening monetary policies in some advanced economies.

A. Precious metals prices

B. Gold prices and U.S. dollar index
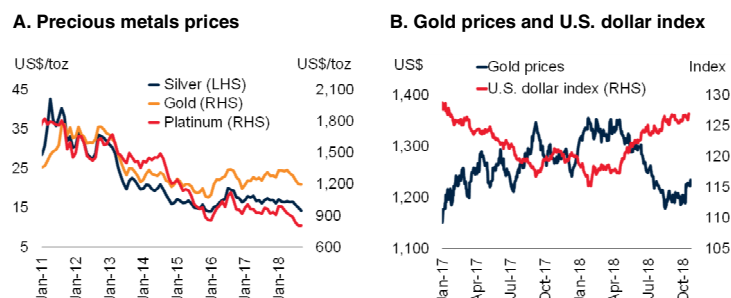
Sources: Bloomberg, FRED, World Bank.
A. Last observation is September 2018.
B. Last observation is October 25, 2018. The U.S. dollar index (January 2007 =100) is measured against a broad basket of currencies.
Download data and charts.

in China recovers, prices are expected to stabilize in 2019, following a projected 9 percent decline in 2018. As in the case of gold, the path of U.S. monetary policy and the U.S. dollar exchange rate represent the main risks to the price forecast.

Platinum prices plunged 10 percent in the third quarter (q/q), reaching a 15-year low in September, and are about 15 percent lower compared to the same period in 2017. In addition to the strength of the U.S. dollar and monetary tightening, platinum production has outpaced consumption by a wide margin. Production increased marginally in the first half of 2018 due to a rebound in South Africa, where production had been affected by a mining shaft closure in 2017. Consumption (both physical and investment), fell by 8 percent in the third quarter of 2018 (y/y), led by large outflows from ETFs. Platinum prices are expected to rebound nearly 5 percent in 2019 as physical demand expands, especially for automotive use (catalytic converters). The latter, together with future U.S. monetary policy, constitute key risks to the price forecast.

APPENDIX A

Historical commodity prices
Price forecasts

TABLE A.1 **Commodity prices**

Commodity	Unit		2016	2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Jul 2018	Aug 2018	Sep 2018
Energy												
Coal, Australia	$/mt	*	66.1	88.5	94.6	98.2	102.8	104.7	117.0	119.6	117.3	114.2
Coal, Colombia	$/mt		…	…	…	…	…	…	…	…	…	…
Coal, South Africa	$/mt		63.9	85.1	87.3	92.8	93.2	99.4	102.2	106.0	98.5	102.1
Crude oil, average	$/bbl		42.8	52.8	50.2	58.7	64.6	71.4	73.0	72.7	71.1	75.4
Crude oil, Brent	$/bbl	*	44.0	54.4	51.7	61.5	67.0	74.5	75.5	74.4	73.1	78.9
Crude oil, Dubai	$/bbl	*	41.2	53.1	50.6	59.2	64.0	71.8	74.0	72.7	72.1	77.0
Crude oil, WTI	$/bbl	*	43.2	50.9	48.2	55.4	62.9	67.9	69.7	70.8	68.0	70.2
Natural gas, Index	2010=100		56.9	68.6	66.9	70.2	78.0	77.0	80.3	78.0	80.9	82.0
Natural gas, Europe	$/mmbtu	*	…	…	…	…	…	…	…	…	…	…
Natural gas, U.S.	$/mmbtu	*	2.49	2.96	2.93	2.87	3.08	2.83	2.92	2.80	2.96	2.99
Natural gas, Japan	$/mmbtu	*	7.37	8.61	8.81	8.47	9.76	10.26	10.73	10.44	10.88	10.88
Non-Energy												
Agriculture												
Beverages												
Cocoa	$/kg	**	2.89	2.03	1.99	2.05	2.19	2.57	2.24	2.36	2.17	2.19
Coffee, Arabica	$/kg	**	3.61	3.32	3.28	3.08	3.01	2.97	2.77	2.88	2.76	2.67
Coffee, Robusta	$/kg	**	1.95	2.23	2.27	2.04	1.96	1.93	1.78	1.86	1.78	1.69
Tea, average	$/kg		2.68	3.15	3.26	3.22	2.98	2.95	2.79	2.89	2.77	2.70
Tea, Colombo	$/kg	**	3.30	4.05	4.09	4.14	4.07	3.68	3.36	3.41	3.34	3.34
Tea, Kolkata	$/kg	**	2.33	2.42	2.74	2.58	1.95	2.55	2.57	2.76	2.59	2.35
Tea, Mombasa	$/kg	**	2.42	2.97	2.95	2.94	2.92	2.61	2.43	2.49	2.40	2.41
Food												
Oils and Meals												
Coconut oil	$/mt	**	1,468	1,651	1,597	1,477	1,263	1,036	904	903	903	907
Fishmeal	$/mt		1,512	1,365	1,311	1,488	1,747	1,462	1,458	1,430	1,442	1,503
Groundnuts	$/mt		…	…	…	…	…	…	…	…	…	…
Groundnut oil	$/mt	**	1,879	1,832	1,848	1,751	1,719	1,657	1,652	1,668	1,643	1,647
Palm oil	$/mt	**	639	649	630	625	629	601	534	545	534	524
Palmkernel oil	$/mt		1,288	1,280	1,174	1,372	1,149	947	886	881	904	873
Soybean meal	$/mt	**	381	359	348	362	409	455	394	411	392	378
Soybean oil	$/mt	**	734	758	766	775	759	720	657	665	654	651
Soybeans	$/mt	**	415	400	379	416	426	436	398	404	407	383
Grains												
Barley	$/mt	**	104	98	96	108	127	131	126	131	128	119
Maize	$/mt	**	159	155	151	149	164	173	158	156	162	155
Rice, Thailand 5%	$/mt	**	396	399	404	401	432	443	402	398	405	402
Rice, Thailand 25%	$/mt		385	385	389	385	417	429	391	390	393	390
Rice, Thailand A1	$/mt		380	380	386	381	407	424	391	383	394	395
Rice, Vietnam 5%	$/mt		356	363	386	379	395	425	409	441	402	385
Sorghum	$/mt		156	163	168	171	182	173	159	147	166	164
Wheat, US HRW	$/mt	**	167	174	184	180	192	216	222	218	237	212
Wheat, US SRW	$/mt		176	178	184	175	189	205	209	207	217	202
Other Food												
Bananas, EU	$/kg		0.91	0.89	0.93	0.92	…	…	…	…	…	…
Bananas, U.S.	$/kg	**	1.00	1.07	1.10	1.08	…	…	…	…	…	…
Meat, beef	$/kg	**	3.93	4.22	4.29	4.15	4.23	4.15	3.98	4.03	3.97	3.92
Meat, chicken	$/kg	**	1.85	2.12	2.22	1.97	2.07	2.57	2.28	2.55	2.25	2.03
Meat, sheep	$/kg		4.69	5.42	5.57	5.71	5.87	…	…	…	…	…
Oranges	$/kg	*	0.89	0.81	0.73	0.82	0.76	0.83	0.84	0.89	0.84	0.80
Shrimp	$/kg		11.22	13.32	13.23	12.12	12.63	12.76	11.93	12.24	12.02	11.53
Sugar, EU	$/kg	*	0.36	0.37	0.38	0.38	0.40	0.39	0.38	0.38	0.38	0.38
Sugar, U.S.	$/kg	*	0.61	0.62	0.58	0.60	0.57	0.55	0.56	0.56	0.56	0.56
Sugar, World	$/kg	*	0.40	0.35	0.32	0.32	0.29	0.27	0.25	0.26	0.24	0.25

TABLE A.1 Commodity prices (*continued*)

Commodity	Unit		2016	2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Jul 2018	Aug 2018	Sep 2018
Raw Materials												
Timber												
Logs, Africa	$/cum		387	395	411	412	430	417	407	409	404	408
Logs, S.E. Asia	$/cum	**	274	265	268	264	275	273	267	267	268	266
Plywood	¢/sheets		503	487	492	484	504	501	490	490	492	488
Sawnwood, Africa	$/cum		650	617	627	636	667	652	625	631	617	625
Sawnwood, S.E. Asia	$/cum	**	739	702	713	723	758	742	710	718	702	711
Woodpulp	$/mt		875	875	875	875	875	875	875	875	875	875
Other Raw Materials												
Cotton	$/kg	**	1.64	1.84	1.79	1.80	1.99	2.09	2.07	2.12	2.08	1.99
Rubber, RSS3	$/kg	**	1.61	2.00	1.81	1.62	1.73	1.66	1.46	1.47	1.47	1.44
Rubber, TSR20	$/kg	**	1.38	1.67	1.56	1.45	1.47	1.40	1.33	1.31	1.34	1.33
Fertilizers												
DAP	$/mt	**	316	323	320	341	369	387	410	401	409	422
Phosphate rock	$/mt	**	110	90	89	80	82	88	87	87	88	88
Potassium chloride	$/mt	**	260	218	213	216	216	216	216	216	216	216
TSP	$/mt	**	291	283	280	296	321	329	359	344	358	376
Urea, E. Europe	$/mt	**	194	214	198	249	228	226	260	253	260	268
Metals and Minerals												
Aluminum	$/mt	**	1,604	1,968	2,010	2,103	2,154	2,264	2,053	2,082	2,052	2,026
Copper	$/mt	**	4,868	6,170	6,349	6,823	6,957	6,881	6,118	6,251	6,051	6,051
Iron ore	$/dmt	**	58.4	71.8	71.8	66.1	74.7	65.6	66.7	64.6	67.2	68.4
Lead	$/mt	**	1,867	2,315	2,331	2,490	2,518	2,383	2,094	2,207	2,054	2,023
Nickel	$/mt	**	9,595	10,410	10,532	11,601	13,284	14,470	13,239	13,794	13,411	12,510
Tin	$/mt	**	17,934	20,061	20,514	19,803	21,187	20,937	19,309	19,730	19,229	18,967
Zinc	$/mt	**	2,090	2,891	2,962	3,230	3,415	3,112	2,534	2,656	2,512	2,435
Precious Metals												
Gold	$/toz	***	1,249	1,258	1,278	1,275	1,329	1,307	1,213	1,238	1,202	1,198
Platinum	$/toz	***	987	948	952	921	977	905	814	832	805	805
Silver	$/toz	***	17.15	17.07	16.85	16.69	16.73	16.56	14.99	15.72	14.99	14.27
Commodity Price Indexes (2010=100)												
Energy			55.1	68.1	65.4	75.0	82.4	89.6	92.3	91.8	90.3	94.8
Non-energy			79.3	83.5	83.3	84.4	87.6	89.0	82.6	84.1	82.7	81.1
Agriculture			87.3	86.6	85.6	85.1	88.3	90.7	84.5	86.3	84.8	82.5
Beverages			91.3	83.1	83.2	80.7	79.9	83.6	76.3	79.6	75.3	73.9
Food			89.3	89.6	88.5	88.4	92.1	95.3	88.0	90.0	88.7	85.4
Oils and Meals			87.8	86.6	84.0	86.4	89.6	91.1	81.3	83.3	81.6	78.9
Grains			80.7	80.5	81.2	80.3	87.4	92.8	87.6	86.7	90.4	85.6
Other Food			99.2	101.9	100.9	98.4	99.8	103.0	97.3	101.7	96.4	93.8
Raw Materials			80.2	81.2	79.9	79.3	83.4	83.3	80.3	80.9	80.1	79.8
Timber			89.6	85.6	86.8	87.4	91.5	89.8	86.4	87.1	85.7	86.5
Other Raw Materials			70.0	76.3	72.3	70.5	74.6	76.2	73.5	74.2	73.9	72.5
Fertilizers			77.8	74.3	71.3	78.3	77.1	78.0	84.6	82.6	84.6	86.7
Metals and minerals			63.0	78.2	79.9	83.7	87.2	86.7	78.4	79.8	78.1	77.4
Base Metals			68.3	84.9	87.0	92.6	95.6	96.4	86.0	88.0	85.6	84.5
Precious Metals			97.5	97.8	98.9	98.6	102.1	100.4	92.8	95.1	92.0	91.2

Source: See Appendix C.
Notes: **) 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.

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

Commodity	Unit	2015	2016	2017	Forecasts 2018	2019	2020	2021	2025	2030
Energy										
Coal, Australia	$/mt	58.9	66.1	88.5	108.0	100.0	90.0	86.4	73.5	60.0
Crude oil, avg	$/bbl	50.8	42.8	52.8	72.0	74.0	69.0	69.1	69.5	70.0
Natural gas, Europe	$/mmbtu	7.3	4.6	5.6	8.0	7.5	7.0	7.1	7.5	8.0
Natural gas, U.S.	$/mmbtu	2.6	2.5	3.0	2.9	2.7	2.7	2.8	3.3	4.0
Natural gas, Japan	$/mmbtu	10.9	7.4	8.6	10.0	9.7	8.5	9.7	9.8	10.0
Non-Energy										
Agriculture										
Beverages										
Cocoa	$/kg	3.14	2.89	2.03	2.30	2.35	2.40	2.46	2.69	3.00
Coffee, Arabica	$/kg	3.53	3.61	3.32	2.85	2.89	2.94	2.98	3.16	3.40
Coffee, Robusta	$/kg	1.94	1.95	2.23	1.82	1.85	1.88	1.91	2.03	2.20
Tea, average	$/kg	2.78	2.68	3.15	2.85	2.88	2.91	2.93	3.05	3.20
Food										
Oils and Meals										
Coconut oil	$/mt	1,113	1,468	1,651	1,030	1,057	1,084	1,112	1,232	1,400
Groundnut oil	$/mt	1,592	1,879	1,832	1,675	1,677	1,679	1,681	1,690	1,700
Palm oil	$/mt	559	639	649	570	592	615	639	744	900
Soybean meal	$/mt	399	381	359	405	409	412	416	431	450
Soybean oil	$/mt	683	734	758	695	716	738	761	859	1,000
Soybeans	$/mt	402	415	400	410	419	428	437	476	530
Grains										
Barley	$/mt	121	104	98	125	130	135	141	164	200
Maize	$/mt	170	159	155	163	166	170	174	189	210
Rice, Thailand, 5%	$/mt	386	396	399	420	422	423	425	432	440
Wheat, U.S., HRW	$/mt	204	167	174	210	212	215	217	227	240
Other Food										
Bananas, U.S.		0.96	1.00	1.08	1.14	1.14	1.13	1.13	1.12	1.10
Meat, beef	$/kg	4.42	3.93	4.22	4.05	4.05	4.06	4.06	4.08	4.10
Meat, chicken	$/kg	1.99	1.85	2.12	2.20	2.21	2.22	2.22	2.26	2.30
Oranges	$/kg	0.68	0.89	0.81	0.80	0.82	0.83	0.85	0.91	1.00
Shrimp	$/kg	13.22	11.22	13.32	12.40	12.53	12.65	12.78	13.31	14.00
Sugar, World	$/kg	0.30	0.40	0.35	0.27	0.28	0.29	0.29	0.33	0.38
Raw Materials										
Timber										
Logs, Africa	$/cum	389	387	395	415	418	421	423	435	450
Logs, S.E. Asia	$/cum	246	274	265	270	275	281	286	309	340
Sawnwood, S.E. Asia	$/cum	833	739	702	730	749	769	790	877	1,000
Other Raw Materials										
Cotton A	$/kg	1.55	1.64	1.84	2.04	2.05	2.07	2.08	2.13	2.20
Rubber, RSS3	$/kg	1.57	1.61	2.00	1.58	1.64	1.69	1.75	2.02	2.40
Tobacco	$/mt	4,908	4,806	4,679	4,850	4,820	4,790	4,760	4,643	4,500
Fertilizers										
DAP	$/mt	417	316	323	400	404	408	412	428	450
Phosphate rock	$/mt	120	110	90	86	89	92	94	107	125
Potassium chloride	$/mt	296	260	218	215	222	230	237	271	320
TSP	$/mt	378	291	283	340	343	346	350	363	380
Urea, E. Europe	$/mt	278	194	214	245	249	253	258	276	300
Metals and Minerals										
Aluminum	$/mt	1,665	1,604	1,968	2,122	2,129	2,135	2,142	2,167	2,200
Copper	$/mt	5,510	4,868	6,170	6,500	6,540	6,581	6,622	6,787	7,000
Iron ore	$/dmt	55.9	58.4	71.8	69.0	65.0	64.5	64.0	62.2	60.0
Lead	$/mt	1,788	1,867	2,315	2,242	2,238	2,235	2,231	2,217	2,200
Nickel	$/mt	11,863	9,595	10,410	13,344	13,681	14,027	14,381	15,890	18,000
Tin	$/mt	16,067	17,934	20,061	20,058	20,288	20,521	20,756	21,725	23,000
Zinc	$/mt	1,932	2,090	2,891	2,862	2,811	2,714	2,681	2,552	2,400
Precious Metals										
Gold	$/toz	1,161	1,249	1,258	1,259	1,245	1,231	1,217	1,164	1,100
Silver	$/toz	15.7	17.1	17.1	15.6	15.7	15.8	15.9	16.4	17.0
Platinum	$/toz	1,053	987	948	873	913	955	1,000	1,197	1,500

Sources and Notes: See Appendix C.

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

Commodity	Unit	2015	2016	2017	Forecasts 2018	2019	2020	2021	2025	2030
Energy										
Coal, Australia	$/mt	60.2	70.3	91.0	111.9	101.6	89.9	84.9	67.3	50.3
Crude oil, avg	$/bbl	51.9	45.5	54.3	74.6	75.2	68.9	67.9	63.7	58.7
Natural gas, Europe	$/mmbtu	7.4	4.8	5.8	8.3	7.6	7.0	7.0	6.9	6.7
Natural gas, U.S.	$/mmbtu	2.7	2.7	3.0	3.0	2.7	2.7	2.8	3.0	3.4
Natural gas, Japan	$/mmbtu	11.2	7.8	8.8	10.4	9.9	8.5	9.5	9.0	8.4
Non-Energy										
Agriculture										
Beverages										
Cocoa	$/kg	3.20	3.07	2.09	2.38	2.39	2.40	2.41	2.46	2.52
Coffee, Arabica	$/kg	3.60	3.84	3.42	2.95	2.94	2.93	2.93	2.89	2.85
Coffee, Robusta	$/kg	1.98	2.08	2.29	1.89	1.88	1.88	1.87	1.86	1.85
Tea, average	$/kg	2.84	2.86	3.24	2.95	2.92	2.90	2.88	2.79	2.68
Food										
Oils and Meals										
Coconut oil	$/mt	1,138	1,561	1,697	1,067	1,073	1,083	1,092	1,129	1,174
Groundnut oil	$/mt	1,626	1,998	1,883	1,735	1,703	1,677	1,651	1,548	1,426
Palm oil	$/mt	572	680	667	590	601	614	628	682	755
Soybean meal	$/mt	407	405	369	419	415	412	408	395	377
Soybean oil	$/mt	697	781	779	720	728	737	748	787	839
Soybeans	$/mt	411	441	411	425	425	427	429	436	444
Grains										
Barley	$/mt	124	111	100	129	132	135	138	151	168
Maize	$/mt	173	169	159	169	169	170	171	173	176
Rice, Thailand, 5%	$/mt	394	421	410	435	428	423	417	395	369
Wheat, U.S., HRW	$/mt	209	177	179	218	216	214	213	208	201
Other Food										
Bananas, U.S.		0.98	1.06	1.11	1.18	1.15	1.13	1.11	1.02	0.92
Meat, beef	$/kg	4.52	4.18	4.34	4.19	4.12	4.05	3.99	3.74	3.44
Meat, chicken	$/kg	2.03	1.97	2.18	2.28	2.24	2.21	2.18	2.07	1.93
Oranges	$/kg	0.69	0.95	0.83	0.83	0.83	0.83	0.83	0.83	0.84
Shrimp	$/kg	13.50	11.93	13.69	12.84	12.72	12.64	12.55	12.19	11.74
Sugar, World	$/kg	0.30	0.42	0.36	0.28	0.28	0.29	0.29	0.30	0.32
Raw Materials										
Timber										
Logs, Africa	$/cum	397	412	406	430	424	420	416	399	377
Logs, S.E. Asia	$/cum	251	292	273	280	280	280	281	283	285
Sawnwood, S.E. Asia	$/cum	851	786	722	756	761	768	776	804	839
Other Raw Materials										
Cotton A	$/kg	1.59	1.74	1.89	2.11	2.08	2.06	2.04	1.95	1.85
Rubber, RSS3	$/kg	1.61	1.71	2.05	1.64	1.66	1.69	1.72	1.85	2.01
Tobacco	$/mt	5,015	5,111	4,810	5,023	4,895	4,783	4,675	4,254	3,774
Fertilizers										
DAP	$/mt	426	336	332	414	410	407	405	393	377
Phosphate rock	$/mt	123	117	92	89	90	91	93	98	105
Potassium chloride	$/mt	303	277	224	223	226	229	233	248	268
TSP	$/mt	386	310	291	352	349	346	343	332	319
Urea, E. Europe	$/mt	284	206	220	254	253	253	253	253	252
Metals and Minerals										
Aluminum	$/mt	1,701	1,706	2,023	2,198	2,162	2,132	2,104	1,986	1,845
Copper	$/mt	5,631	5,177	6,342	6,732	6,642	6,572	6,503	6,219	5,871
Iron ore	$/dmt	57.1	62.1	73.8	71.5	66.0	64.4	62.9	57.0	50.3
Lead	$/mt	1,827	1,985	2,379	2,322	2,273	2,232	2,192	2,032	1,845
Nickel	$/mt	12,121	10,204	10,700	13,821	13,895	14,007	14,124	14,559	15,096
Tin	$/mt	16,417	19,072	20,621	20,775	20,605	20,493	20,386	19,906	19,289
Zinc	$/mt	1,974	2,223	2,972	2,964	2,855	2,710	2,633	2,338	2,013
Precious Metals										
Gold	$/toz	1,186	1,328	1,293	1,304	1,264	1,229	1,196	1,066	923
Silver	$/toz	16.1	18.2	17.5	16.2	15.9	15.8	15.6	15.0	14.3
Platinum	$/toz	1,076	1,050	975	904	928	954	982	1,097	1,258

Sources and Notes: See Appendix C.

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

Commodity	Unit	2015	2016	2017	Forecast 2018	2019	2020	2021	2025	2030
Nominal US dollars (2010=100)										
Energy		65.0	55.1	68.1	90.7	92.0	85.8	86.0	86.7	87.8
Non-energy		81.5	79.3	83.5	84.9	85.8	86.8	87.9	92.5	99.0
Agriculture		87.6	87.3	86.6	86.3	87.7	89.1	90.5	96.6	105.1
Beverages		94.0	91.3	83.1	78.3	79.5	80.9	82.2	87.8	95.3
Food		88.0	89.3	89.6	89.9	91.2	92.6	94.0	99.9	108.2
Oils and Meals		83.5	87.8	86.6	84.8	86.7	88.6	90.5	98.8	110.6
Grains		87.1	80.7	80.5	88.4	89.6	90.9	92.2	97.7	105.1
Other food		94.8	99.2	101.9	98.0	98.7	99.5	100.2	103.5	108.0
Raw materials		83.3	80.2	81.2	81.7	83.2	84.7	86.2	92.9	102.3
Timber		96.1	89.6	85.6	88.5	90.7	92.9	95.2	105.1	118.8
Other Raw Materials		69.3	70.0	76.3	74.3	75.0	75.6	76.4	79.5	84.2
Fertilizers		98.4	77.8	74.3	81.1	82.8	84.5	86.2	93.6	103.9
Metals and minerals *		66.9	63.0	78.2	82.4	82.2	82.4	82.7	84.0	85.9
Base Metals **		73.6	68.3	84.9	90.5	91.0	91.3	91.7	93.7	96.2
Precious Metals		90.6	97.5	97.8	96.4	95.7	95.0	94.3	91.7	88.9
Constant 2010 U.S. dollars (2010=100), deflated by the MUV Index										
Energy		66.4	58.5	70.0	94.0	93.4	85.7	84.5	79.4	73.6
Non-energy		83.2	84.3	85.9	87.9	87.1	86.7	86.3	84.8	83.0
Agriculture		89.5	92.8	89.1	89.4	89.1	89.0	88.9	88.5	88.1
Beverages		96.0	97.1	85.4	81.1	80.8	80.7	80.7	80.4	80.0
Food		89.9	95.0	92.1	93.1	92.7	92.5	92.3	91.6	90.8
Oils and Meals		85.3	93.4	89.0	87.9	88.0	88.4	88.9	90.5	92.8
Grains		89.0	85.8	82.8	91.6	91.0	90.8	90.6	89.5	88.1
Other food		96.9	105.4	104.7	101.5	100.3	99.3	98.4	94.8	90.5
Raw materials		85.1	85.3	83.4	84.6	84.5	84.6	84.7	85.1	85.8
Timber		98.2	95.3	87.9	91.6	92.1	92.8	93.5	96.3	99.7
Other Raw Materials		70.8	74.4	78.5	77.0	76.1	75.5	75.0	72.8	70.6
Fertilizers		100.5	82.7	76.3	84.1	84.1	84.4	84.7	85.8	87.1
Metals and minerals *		68.4	67.0	80.4	85.3	83.5	82.3	81.2	77.0	72.0
Base Metals **		75.2	72.6	87.3	93.8	92.4	91.1	90.1	85.8	80.7
Precious Metals		92.6	103.6	100.6	99.9	97.2	94.9	92.6	84.1	74.6
Inflation indexes, 2010=100										
MUV index ***		97.9	94.0	97.3	96.5	98.5	100.1	101.8	109.1	119.2
% change per annum		-9.6	-3.9	3.5	-0.8	2.0	1.7	1.7	1.8	1.8
U.S. GDP deflator		108.7	110.1	111.8	113.9	116.0	118.1	120.5	130.4	144.0
% change per annum		1.1	1.3	1.6	1.8	1.9	1.8	2.0	2.0	2.0

Source: See Appendix C.

Notes: (*) 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.

APPENDIX B

Supply-Demand balances

Aluminum

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

Source: World Bank.
Note: n/a implies data not available.

	1980	1990	2000	2005	2010	2014	2015	2016	2017
					(thousand metric tons)				
Bauxite Production									
Australia	27,179	40,697	53,801	59,959	68,535	78,632	80,909	83,517	89,420
China	1,700	3,655	7,900	17,408	36,837	59,212	60,788	66,158	69,017
Guinea	13,911	16,150	17,992	19,237	17,633	21,204	20,692	26,917	42,716
Brazil	4,152	9,876	14,379	22,365	32,028	36,313	37,057	39,244	38,122
India	1,785	5,277	7,562	12,385	12,662	20,688	26,383	24,219	22,776
Jamaica	12,064	10,937	11,127	14,118	8,540	9,677	9,629	8,540	8,245
Russian Federation	n/a	n/a	5,000	6,409	5,475	5,589	5,389	5,432	5,524
Kazakhstan	n/a	n/a	3,729	4,815	5,310	4,516	4,683	4,802	4,843
Saudi Arabia	0	0	0	0	0	1,965	2,174	3,843	3,708
Greece	3,286	2,496	1,991	2,495	1,902	1,876	1,832	1,880	1,927
Sierra Leone	0	0	0	42	1,053	1,161	1,334	1,430	1,788
Solomon Islands	0	0	0	0	0	0	292	238	1,577
Ghana	197	381	425	727	512	940	1,015	1,144	1,470
Others	*n/a*	*n/a*	*14,984*	*16,846*	*38,314*	*17,755*	*35,513*	*15,141*	*8,693*
World	**93,326**	**114,835**	**138,889**	**176,807**	**228,802**	**259,528**	**287,689**	**282,505**	**299,826**
Refined Production									
China	358	854	2,647	7,759	16,244	28,317	31,518	32,818	32,273
Russian Federation	n/a	n/a	3,258	3,647	3,947	3,488	3,529	3,561	3,741
Canada	1,075	1,567	2,373	2,894	2,963	2,858	2,880	3,209	3,212
United Arab Emirates	35	174	536	722	1,400	2,296	2,464	2,471	2,677
India	185	433	647	942	1,610	1,899	1,930	1,909	2,028
Australia	304	1,233	1,761	1,903	1,928	1,704	1,646	1,635	1,487
Norway	662	867	1,026	1,376	1,090	1,182	1,224	1,247	1,253
Bahrain	126	212	509	708	851	931	961	971	981
Saudi Arabia	0	0	0	0	0	662	839	869	914
Iceland	75	88	226	272	826	749	878	854	863
Brazil	261	931	1,271	1,498	1,536	962	772	790	802
Malaysia	0	0	0	0	60	440	440	620	760
United States	4,654	4,048	3,668	2,480	1,728	1,710	1,587	818	741
Others	*n/a*	*n/a*	*6,381*	*7,639*	*7,367*	*6,710*	*6,945*	*6,138*	*7,010*
World	**16,036**	**19,362**	**24,304**	**31,841**	**41,549**	**53,908**	**57,612**	**57,910**	**58,742**
Refined Consumption									
China	550	861	3,352	7,072	15,854	28,003	31,068	32,563	31,908
United States	4,454	4,330	6,161	6,114	4,242	5,250	5,325	5,121	5,615
Germany	1,272	1,379	1,632	1,758	1,912	2,289	2,163	2,197	2,160
Japan	1,639	2,414	2,223	2,276	2,025	2,034	1,779	1,742	1,950
Korea, Rep.	68	369	823	1,201	1,255	1,282	1,366	1,453	1,420
India	234	433	601	958	1,475	1,655	1,521	1,378	1,220
Turkey	45	152	211	390	703	915	952	949	961
Italy	23	0	780	977	857	810	801	909	924
Brazil	296	341	514	759	985	1,027	801	764	868
Others	*6,731*	*8,947*	*8,708*	*10,135*	*11,255*	*10,994*	*11,689*	*11,909*	*12,210*
World	**15,312**	**19,227**	**25,004**	**31,640**	**40,563**	**54,261**	**57,465**	**58,984**	**59,235**

Source: World Bureau of Metal Statistics (October 2018 update).
Note: n/a implies data not available.

Bananas

Monthly Prices (US$/kg)

Source: World Bank.
Note: Last observation is December 2017.

Annual Prices (US$/kg)
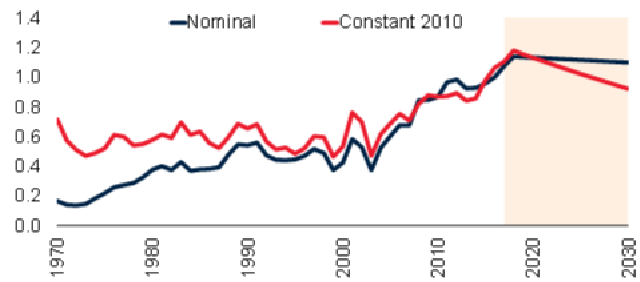
Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2014	2015	2016	2017
				(thousand metric tonnes)					
Exports									
Ecuador	1,246	1,291	2,157	3,940	5,010	5,716	6,040	5,974	6,415
Costa Rica	856	973	1,434	1,883	1,828	2,169	1,964	2,365	2,649
Guatemala	200	371	360	801	1,371	2,064	2,153	2,146	2,366
Colombia	262	692	1,148	1,680	1,803	1,786	1,674	1,842	1,885
Philippines	107	923	840	1,599	1,589	3,680	1,852	1,397	1,663
Honduras	799	973	781	375	512	636	690	659	649
Mexico	1	16	154	46	174	386	417	448	561
Côte d'Ivoire	140	122	94	217	336	335	305	364	366
Cameroon	50	65	78	238	233	265	283	250	234
Panama	600	504	745	489	295	256	268	267	209
Peru	0	0	0	1	89	160	191	202	203
Nicaragua	n/a	n/a	n/a	46	52	65	77	109	137
Dominican Republic	4	10	11	80	408	377	138	383	125
Bolivia	0	0	0	9	88	124	133	128	115
India	7	0	0	9	61	55	80	112	94
Belize	0	15	24	66	82	103	99	71	75
Suriname	25	34	28	35	79	75	85	67	70
Pakistan	1	12	0	2	58	43	54	50	48
Brazil	204	67	53	72	140	84	80	64	41
Others	*1,016*	*705*	*1,121*	*333*	*1,354*	*178*	*110*	*169*	*163*
World	**5,519**	**6,772**	**9,030**	**11,922**	**15,560**	**18,557**	**16,691**	**17,067**	**18,068**
Imports									
United States	1,846	2,423	3,099	3,630	3,858	4,036	4,082	4,041	4,238
Russian Federation	n/a	n/a	n/a	500	1,054	1,275	1,227	1,356	1,544
China	29	21	48	642	724	1,188	1,139	955	1,113
Japan	844	726	758	1,079	1,110	97	960	956	986
Canada	199	246	341	398	496	555	562	540	579
Argentina	164	195	73	340	351	411	427	433	488
Korea, Rep.	3	15	22	184	338	359	364	365	437
Ukraine	n/a	n/a	n/a	60	215	215	146	192	238
Chile	n/a	n/a	n/a	193	176	175	199	206	224
Saudi Arabia	22	135	129	187	278	204	230	191	211
Turkey	0	0	62	124	161	207	219	209	208
United Arab Emirates	0	23	30	69	120	121	144	161	160
South Africa	13	0	7	26	37	8	24	98	115
Algeria	11	n/a	n/a	0	188	263	246	197	96
Switzerland	59	64	76	72	80	84	87	90	92
New Zealand	24	37	49	68	81	66	77	96	88
Norway	33	31	49	60	79	85	85	84	86
Belarus	n/a	n/a	n/a	31	45	66	72	64	74
Kuwait	10	25	15	23	91	64	132	120	72
El Salvador	11	50	44	59	49	57	61	65	66
Tunisia	3	9	0	16	19	36	60	65	55
Others	*2,313*	*2,680*	*4,080*	*4,391*	*5,922*	*6,924*	*5,870*	*5,877*	*6,266*
World	**5,584**	**6,680**	**8,881**	**12,151**	**15,470**	**16,496**	**16,411**	**16,361**	**17,436**

Source: Food and Agriculture Organization.
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: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/bbl)
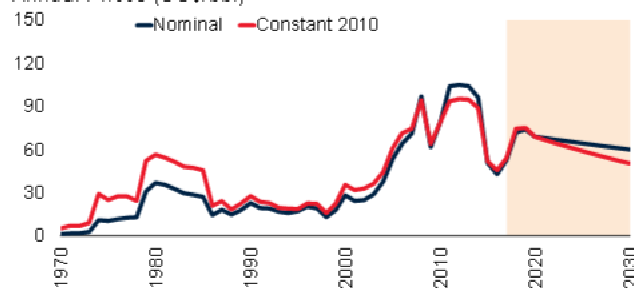
Source: World Bank.
Note: 2018-30 are forecasts.

	1981	1990	2000	2005	2010	2014	2015	2016	2017
				(million metric tonnes oil equivalent)					
Production									
China	311	540	707	1,242	1,665	1,864	1,826	1,691	1,747
United States	440	538	542	551	524	482	427	348	371
Australia	68	115	172	215	251	306	306	308	297
India	64	106	152	190	252	270	281	285	294
Indonesia	0	6	45	90	162	270	272	269	272
Russian Federation	n/a	186	122	136	151	177	186	194	206
South Africa	75	100	127	138	144	148	143	142	143
Colombia	3	14	26	41	51	61	59	62	61
Poland	103	100	72	69	55	54	53	52	50
Kazakhstan	n/a	57	32	37	48	49	46	44	48
Germany	149	125	61	57	46	44	43	40	40
Canada	23	40	39	35	35	36	32	32	31
Mongolia	2	3	2	4	15	15	14	22	30
Vietnam	3	3	7	19	25	23	23	22	21
Turkey	7	12	13	11	18	16	13	16	21
Czech Republic	43	36	25	24	21	17	17	16	15
Ukraine	n/a	76	36	35	32	26	16	17	14
Serbia	n/a	n/a	n/a	n/a	7	6	7	7	8
Bulgaria	5	5	4	4	5	5	6	5	6
Mexico	2	3	5	6	7	7	7	6	6
Romania	9	8	6	6	6	4	5	4	5
Greece	4	7	8	9	7	6	6	4	5
Thailand	1	4	5	6	5	5	4	4	4
Others	*n/a*	*168*	*93*	*86*	*69*	*75*	*70*	*73*	*74*
World	**1,843**	**2,251**	**2,301**	**3,011**	**3,602**	**3,966**	**3,862**	**3,664**	**3,769**
Consumption									
China	303	528	706	1,325	1,749	1,955	1,914	1,889	1,893
India	64	110	164	211	290	388	395	406	424
United States	381	459	541	546	499	431	372	341	332
Japan	65	78	96	114	116	119	119	119	121
Russian Federation	n/a	182	106	95	91	88	92	89	92
Korea, Rep.	15	24	43	55	76	85	86	82	86
South Africa	51	67	75	80	93	90	83	85	82
Germany	144	132	85	81	77	80	79	76	71
Indonesia	0	3	13	24	40	45	51	53	57
Poland	91	78	56	55	55	49	49	50	49
Turkey	7	16	23	22	31	36	35	39	45
Australia	29	38	48	52	49	43	44	44	42
Taiwan	4	11	28	35	38	39	38	39	39
Kazakhstan	n/a	39	18	27	33	37	34	34	36
Vietnam	3	2	5	9	15	21	26	28	28
Others	*n/a*	*455*	*351*	*375*	*355*	*359*	*349*	*335*	*334*
World	**1,819**	**2,222**	**2,356**	**3,106**	**3,606**	**3,862**	**3,765**	**3,706**	**3,732**

Source: BP Statistical Review (June 2017 update).
Notes: 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: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/kg)

Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2014/15	2015/16	2016/17	2017/18
				(thousand metric tons)					
Production									
Côte d'Ivoire	180	417	804	1,212	1,511	1,796	1,581	2,020	2,000
Ghana	406	258	293	395	1,025	740	778	970	900
Ecuador	72	87	111	89	161	261	232	290	280
Nigeria	305	156	160	180	240	195	200	245	260
Indonesia	2	12	150	385	440	325	320	270	240
Cameroon	112	117	115	133	229	232	211	248	240
Brazil	182	353	368	163	200	230	141	174	190
Peru	2	7	11	17	54	92	105	115	120
Dominican Republic	35	35	42	45	54	82	80	57	70
Others	*233*	*252*	*452*	*233*	*396*	*299*	*350*	*351*	*345*
World	**1,528**	**1,694**	**2,507**	**2,852**	**4,309**	**4,252**	**3,997**	**4,739**	**4,645**
Grindings									
Netherlands	116	140	268	452	540	501	534	565	595
Côte d'Ivoire	35	60	118	285	361	558	492	577	580
Indonesia	1	10	32	83	190	335	382	455	490
Germany	151	180	294	227	439	415	430	410	430
United States	279	186	268	445	401	400	398	390	385
Ghana	48	27	30	70	212	234	202	250	280
Brazil	67	191	260	195	239	224	225	227	230
Others	*735*	*773*	*1,055*	*1,285*	*1,557*	*1,485*	*1,465*	*1,521*	*1,578*
World	**1,431**	**1,566**	**2,325**	**3,041**	**3,938**	**4,152**	**4,127**	**4,396**	**4,568**
Exports									
Côte d'Ivoire	138	406	688	903	1,079	1,234	1,089	1,419	n/a
Ghana	348	182	245	307	694	586	582	577	n/a
Nigeria	216	76	142	149	219	113	180	305	n/a
Ecuador	46	19	56	57	136	235	207	283	n/a
Cameroon	75	96	96	102	204	205	176	196	n/a
Malaysia	3	40	148	17	21	71	87	136	n/a
Dominican Republic	29	27	36	34	52	81	77	57	n/a
Others	*265*	*255*	*326*	*417*	*590*	*284*	*323*	*298*	*n/a*
World	**1,119**	**1,100**	**1,737**	**1,987**	**2,996**	**2,807**	**2,720**	**3,271**	**n/a**
Imports									
Netherlands	116	167	267	549	806	507	795	969	n/a
United States	269	246	320	355	472	445	387	537	n/a
Germany	155	187	300	228	434	343	407	447	n/a
Belgium	18	28	50	101	194	252	297	302	n/a
Malaysia	1	n/a	1	110	320	228	229	289	n/a
France	42	59	74	157	149	137	139	147	n/a
Spain	34	37	45	49	88	104	113	127	n/a
Turkey	1	2	6	39	71	88	86	103	n/a
Italy	41	32	56	72	86	97	94	100	n/a
Others	*462*	*440*	*643*	*749*	*737*	*703*	*648*	*893*	*n/a*
World	**1,139**	**1,198**	**1,761**	**2,409**	**3,357**	**2,904**	**3,196**	**3,914**	**n/a**

Source: Quarterly Bulletin of Cocoa Statistics (Cocoa year 2017/18 Volume XLIV No. 3 update).
Note: n/a implies data not available. 1970/71 data are average of 1968-1972.

Coconut oil and Palm kernel oil
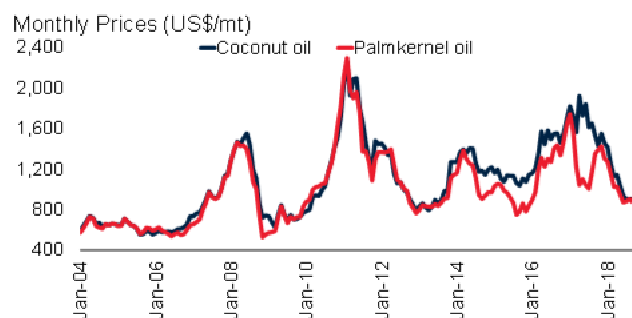
Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)
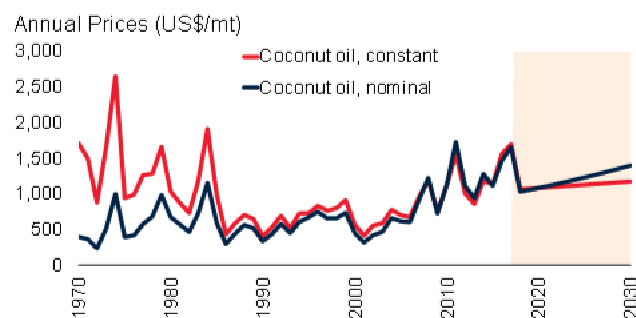
Source: World Bank.
Note: 2018-30 are forecasts.

	1980/81	1990/91	2000/01	2010/11	2013/14	2015/16	2016/17	2017/18	2018/19
					(thousand metric tons)				
Coconut oil production									
Philippines	1,159	1,448	1,207	1,240	1,153	888	953	1,060	1,118
Indonesia	677	833	825	847	933	805	691	845	835
India	228	292	442	398	390	346	270	300	341
Mexico	99	126	126	131	127	129	129	130	132
Sri Lanka	n/a	n/a	n/a	32	45	53	58	57	59
Malaysia	64	32	38	49	51	45	45	45	47
Vietnam	n/a	n/a	n/a	34	34	33	33	34	35
Others	*596*	*628*	*606*	*363*	*323*	*295*	*297*	*307*	*316*
World	**2,823**	**3,359**	**3,244**	**3,094**	**3,056**	**2,594**	**2,476**	**2,778**	**2,883**
Coconut oil production									
European Union	498	632	734	739	646	536	475	550	580
United States	373	400	585	474	518	469	439	445	500
India	233	301	448	411	392	340	262	294	338
Indonesia	639	600	200	153	377	167	181	199	219
China	27	32	43	216	142	138	133	144	160
Philippines	195	318	297	336	364	198	119	189	191
Mexico	115	139	139	153	129	136	138	135	140
Malaysia	4	4	32	90	49	70	74	72	73
Japan	78	67	45	42	53	43	42	43	44
Others	*497*	*692*	*670*	*629*	*454*	*588*	*590*	*629*	*650*
World	**2,659**	**3,185**	**3,193**	**3,243**	**3,124**	**2,685**	**2,453**	**2,700**	**2,895**
Palmkernel oil production									
Indonesia	36	229	709	2,534	3,264	3,382	3,817	4,032	4,245
Malaysia	250	827	1,289	2,072	2,332	2,019	2,149	2,321	2,377
Thailand	n/a	n/a	n/a	140	176	171	206	266	247
Colombia	n/a	n/a	n/a	80	95	101	127	133	141
Nigeria	82	146	190	108	109	114	118	124	130
Papua New Guinea	n/a	n/a	n/a	43	57	63	70	75	78
Ecuador	n/a	n/a	n/a	35	37	48	51	52	54
Others	*195*	*261*	*349*	*379*	*453*	*501*	*476*	*498*	*516*
World	**563**	**1,463**	**2,537**	**5,391**	**6,523**	**6,399**	**7,014**	**7,501**	**7,788**
Palmkernel oil consumption									
Indonesia	29	66	113	851	1,518	1,790	1,910	2,060	2,200
Malaysia	4	117	686	1,420	1,414	1,401	1,467	1,522	1,550
European Union	238	417	500	537	674	724	777	784	815
China	1	12	31	421	495	560	595	691	731
United States	69	149	224	279	266	341	346	365	370
Brazil	2	10	55	201	249	234	227	258	296
India	1	7	13	198	265	138	124	130	152
Nigeria	24	146	175	107	105	111	111	116	121
Japan	15	39	64	69	78	75	77	80	83
Others	*132*	*426*	*644*	*1,145*	*1,328*	*1,293*	*1,256*	*1,308*	*1,417*
World	**515**	**1,389**	**2,505**	**5,228**	**6,392**	**6,667**	**6,890**	**7,314**	**7,735**

Source: Oil World (September 21, 2018 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)
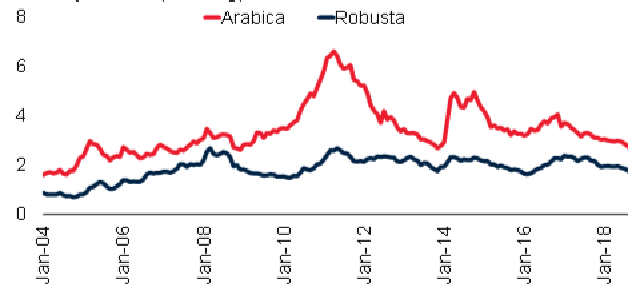
Source: World Bank.
Note: Last observation is September 2018.

Annual Constant Prices (US$/kg)

Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(thousand 60kg bags)				
Production									
Brazil	11,000	21,500	31,000	34,100	54,500	49,400	56,100	50,900	60,200
Vietnam	56	77	1,200	15,333	19,415	28,930	26,700	29,300	29,900
Colombia	8,000	13,500	14,500	10,500	8,525	14,000	14,600	14,400	14,500
Indonesia	2,330	5,365	7,480	6,495	9,325	12,100	10,600	10,600	11,100
Honduras	545	1,265	1,685	2,821	3,975	5,300	7,510	7,500	7,350
Ethiopia	2,589	3,264	3,500	2,768	6,125	6,510	6,943	7,055	7,100
India	1,914	1,977	2,970	5,020	5,035	5,800	5,200	5,420	5,500
Uganda	2,667	2,133	2,700	3,097	3,212	3,650	5,200	4,350	4,800
Mexico	3,200	3,862	4,550	4,800	4,000	2,300	3,300	4,000	4,500
Peru	1,114	1,170	1,170	2,824	4,100	3,500	4,225	4,375	4,400
Guatemala	1,965	2,702	3,282	4,564	3,960	3,295	3,570	3,780	3,890
Nicaragua	641	971	460	1,610	1,740	2,125	2,625	2,825	2,525
Malaysia	66	88	75	700	1,100	2,200	2,100	2,100	2,100
China	n/a	n/a	n/a	n/a	827	1,900	1,900	2,000	2,000
Cote d'Ivoire	3,996	6,090	3,300	5,100	1,600	1,600	1,090	1,400	1,400
Costa Rica	1,295	2,140	2,565	2,502	1,575	1,625	1,300	1,500	1,350
Tanzania	909	1,060	763	809	1,050	1,100	1,050	1,150	1,300
Papua New Guinea	401	880	964	1,041	865	750	1,115	825	800
Kenya	999	1,568	1,455	864	710	750	815	700	750
Others	*15,515*	*16,562*	*16,562*	*12,269*	*9,770*	*6,110*	*5,881*	*5,588*	*5,701*
World	**59,202**	**86,174**	**100,181**	**117,217**	**141,409**	**152,945**	**161,824**	**159,768**	**171,166**
Consumption									
European Union	n/a	n/a	n/a	n/a	41,350	44,464	44,955	44,960	45,300
United States	305	297	229	183	22,383	25,089	25,544	25,915	27,050
Brazil	8,890	7,975	9,000	13,100	19,420	20,855	21,625	22,295	23,000
Japan	n/a	n/a	n/a	n/a	7,015	8,060	8,220	8,585	8,580
Philippines	496	432	810	900	2,825	6,210	6,995	5,750	5,425
Russian Federation	n/a	n/a	n/a	n/a	4,355	4,395	4,740	4,650	4,950
Canada	n/a	n/a	n/a	n/a	4,245	4,545	4,550	4,585	4,685
China	n/a	n/a	n/a	n/a	1,106	2,833	3,655	3,825	4,200
Indonesia	888	1,228	1,295	1,335	1,650	3,175	3,203	3,560	3,900
Ethiopia	1,170	1,600	1,900	1,667	2,860	3,110	3,100	3,110	3,120
Vietnam	31	35	100	417	1,337	2,630	2,770	2,880	2,990
Korea, Rep.	n/a	n/a	n/a	n/a	1,910	2,465	2,725	2,725	2,950
Mexico	1,512	1,500	1,400	978	2,620	2,325	2,057	2,335	2,700
Algeria	n/a	n/a	n/a	n/a	1,815	2,320	2,205	2,240	2,340
Australia	n/a	n/a	n/a	n/a	1,445	1,785	1,730	1,815	1,900
Switzerland	n/a	n/a	n/a	n/a	1,570	1,420	1,500	1,600	1,700
Colombia	1,349	1,825	1,615	1,530	1,120	1,415	1,450	1,600	1,630
India	665	887	1,224	959	1,231	1,250	1,200	1,215	1,250
Venezuela, RB	638	1,090	850	735	1,305	1,151	1,133	1,217	1,164
Others	*n/a*	*n/a*	*n/a*	*n/a*	*12,933*	*13,205*	*13,692*	*13,795*	*14,384*
World	**19,408**	**20,438**	**22,265**	**26,303**	**134,495**	**152,702**	**157,049**	**158,657**	**163,218**

Source: U.S. Department of Agriculture (October 11, 2018 update).
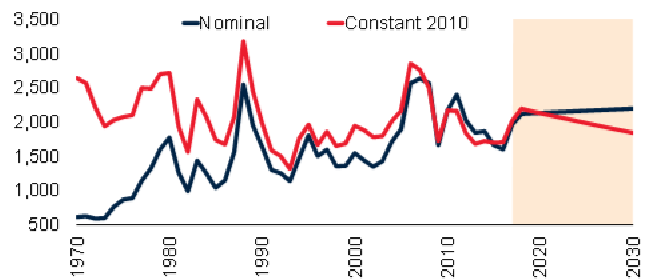Note: n/a implies data not available.

Copper

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2018-30 are forecasts.

	1980	1990	2000	2005	2010	2014	2015	2016	2017
					(thousand metric tons)				
Mine Production									
Chile	1,068	1,588	4,602	5,321	5,419	5,761	5,772	5,553	5,504
Peru	367	318	553	1,010	1,247	1,378	1,701	2,354	2,445
China	177	296	549	639	1,180	1,741	1,667	1,851	1,656
United States	1,181	1,587	1,440	1,157	1,129	1,383	1,410	1,431	1,258
Congo, Dem. Rep.	460	356	33	98	378	996	1,039	1,024	1,095
Zambia	596	496	249	441	732	756	725	738	942
Australia	244	327	832	930	870	979	996	948	860
Kazakhstan	n/a	n/a	433	436	404	501	566	596	745
Mexico	175	291	365	391	270	527	608	766	742
Russian Federation	n/a	n/a	580	805	703	740	740	740	740
Indonesia	59	169	1,006	1,064	871	366	580	696	666
Canada	716	794	634	595	522	673	715	696	595
Poland	343	370	454	523	425	421	426	425	420
Others	n/a	n/a	1,486	1,625	1,988	2,404	2,523	2,629	2,621
World	**7,864**	**8,997**	**13,217**	**15,035**	**16,139**	**18,625**	**19,468**	**20,445**	**20,287**
Refined Production									
China	314	562	1,312	2,566	4,540	7,649	7,964	8,436	8,889
Chile	811	1,192	2,669	2,824	3,244	2,729	2,688	2,613	2,430
Japan	1,014	1,008	1,437	1,395	1,549	1,554	1,483	1,553	1,488
United States	1,686	2,017	1,802	1,257	1,093	1,095	1,141	1,221	1,079
Russian Federation	n/a	n/a	824	968	900	894	876	867	949
India	23	39	265	518	647	764	792	768	845
Germany	425	533	709	639	704	673	678	672	695
Congo, Dem. Rep.	144	173	29	3	254	742	793	707	673
Korea, Rep.	79	187	471	527	556	604	604	607	552
Poland	357	346	486	560	547	577	574	536	522
Zambia	607	479	226	465	767	499	482	405	432
Kazakhstan	n/a	n/a	395	419	323	297	397	413	429
Mexico	102	152	399	387	247	398	446	474	424
Others	n/a	n/a	3,737	4,108	3,841	3,987	4,109	3,802	3,967
World	**9,390**	**10,809**	**14,761**	**16,635**	**19,214**	**22,463**	**23,026**	**23,074**	**23,374**
Refined Consumption									
China	286	512	1,869	3,621	7,385	11,303	11,353	11,642	11,790
United States	1,868	2,150	2,979	2,264	1,760	1,767	1,796	1,811	1,771
Germany	870	1,028	1,309	1,115	1,312	1,162	1,219	1,243	1,180
Japan	1,158	1,577	1,351	1,229	1,060	1,072	997	973	998
Korea, Rep.	85	324	862	868	856	759	705	759	656
Italy	388	475	674	680	619	625	613	596	635
Taiwan, China	85	265	628	638	532	465	471	507	498
India	77	135	246	397	514	434	491	499	486
Turkey	33	103	248	319	369	433	468	464	445
Others	4,535	4,212	4,929	5,516	4,939	4,729	4,780	4,705	4,820
World	**9,385**	**10,780**	**15,096**	**16,649**	**19,347**	**22,750**	**22,893**	**23,200**	**23,280**

Source: World Bureau of Metal Statistics (October 2018 update).
Note: n/a implies data not available. Refined production and consumption include significant recycled material.

Cotton

Monthly Prices (US$/kg)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/kg)

Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(thousand metric tons)				
Production									
India	909	1,322	1,989	2,380	5,865	5,746	5,865	6,350	6,408
China	1,995	2,707	4,508	4,505	6,400	5,200	4,900	5,890	5,720
United States	2,219	2,422	3,376	3,742	3,942	2,806	3,738	4,555	4,028
Brazil	594	623	717	939	1,960	1,289	1,530	1,965	2,024
Pakistan	543	714	1,638	1,816	1,948	1,537	1,663	1,795	2,005
Turkey	400	500	655	880	594	640	703	840	852
Uzbekistan	n/a	1,671	1,593	975	910	832	789	800	800
Australia	19	99	433	804	898	629	960	1,044	636
Mexico	312	353	175	72	157	188	207	335	320
Turkmenistan	n/a	n/a	437	187	380	295	296	304	300
Burkina Faso	8	23	77	116	141	244	285	273	289
Others	n/a	n/a	3,354	3,109	2,214	2,079	2,158	2,715	2,507
World	**11,740**	**13,831**	**18,951**	**19,524**	**25,408**	**21,485**	**23,094**	**26,866**	**25,889**
Stocks									
China	412	476	1,589	3,755	2,087	12,650	10,632	9,217	7,519
India	376	491	539	922	1,850	1,507	1,701	2,183	2,183
Brazil	321	391	231	755	1,400	843	1,045	1,478	1,666
United States	915	581	510	1,306	566	827	697	899	922
Pakistan	55	131	313	608	316	704	734	808	917
Turkey	24	112	150	283	412	826	705	939	857
Bangladesh	n/a	8	35	27	216	330	379	422	450
Others	2,502	2,961	3,393	2,957	2,616	2,621	2,922	3,341	3,199
World	**4,605**	**5,151**	**6,761**	**10,614**	**9,463**	**20,308**	**18,815**	**19,287**	**17,713**
Exports									
United States	848	1,290	1,697	1,467	3,130	1,993	3,248	3,527	3,266
India	34	140	255	24	1,085	1,258	991	1,126	1,126
Brazil	220	21	167	68	435	939	607	930	1,118
Australia	4	53	329	849	545	616	812	905	789
Uzbekistan	n/a	n/a	n/a	750	600	500	403	300	393
Mali	19	35	114	134	92	221	240	261	321
Burkina Faso	9	22	73	112	136	275	261	146	285
Others	n/a	n/a	n/a	2,401	1,694	1,746	1,628	1,880	2,168
World	**3,875**	**4,414**	**5,069**	**5,805**	**7,717**	**7,548**	**8,190**	**9,075**	**9,466**
Imports									
Bangladesh	0	45	80	248	843	1,378	1,412	1,671	1,805
Vietnam	33	40	31	84	350	1,001	1,198	1,574	1,717
China	108	773	480	52	2,609	959	1,096	1,358	1,548
Pakistan	1	0	43	410	283	585	538	671	917
Turkey	1	0	46	381	760	918	801	833	833
Indonesia	36	106	324	570	471	640	746	797	825
India	155	9	49	350	87	240	228	330	330
Others	3,753	3,582	4,167	3,670	2,354	1,851	2,109	1,841	1,491
World	**4,086**	**4,555**	**5,220**	**5,764**	**7,756**	**7,572**	**8,128**	**9,075**	**9,466**

Source: International Cotton Advisory Committee (July-August 2018 update).
Note: n/a implies data not available.

Crude oil

Monthly Prices (US$/bbl)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/bbl)
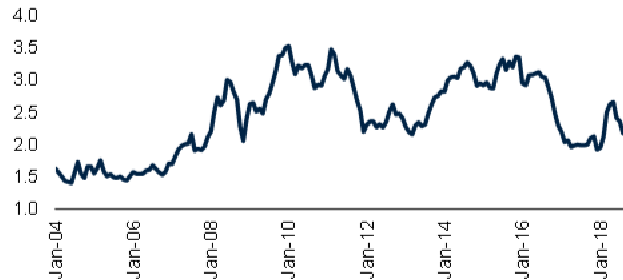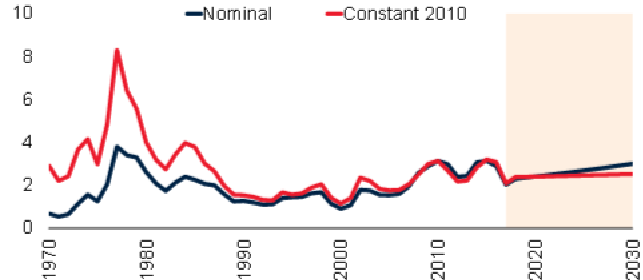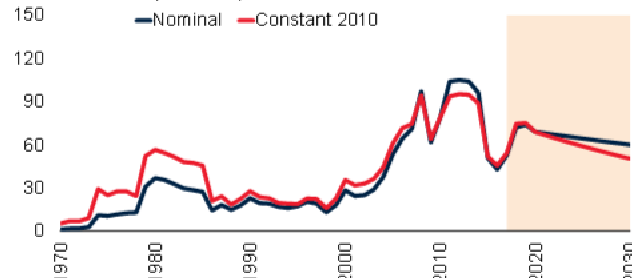

Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2014	2015	2016	2017
					(thousand barrels per day)				
Production									
United States	11,297	10,170	8,914	7,732	7,549	11,768	12,750	12,366	13,057
Saudi Arabia	3,851	10,270	7,105	9,470	10,075	11,505	11,994	12,402	11,951
Russian Federation	n/a	n/a	10,342	6,584	10,383	10,860	11,009	11,269	11,257
Iran, Islamic Rep.	3,848	1,479	3,270	3,852	4,430	3,724	3,862	4,602	4,982
Canada	1,473	1,764	1,968	2,703	3,332	4,271	4,389	4,470	4,831
Iraq	1,549	2,658	2,149	2,613	2,469	3,239	3,986	4,423	4,520
United Arab Emirates	780	1,735	1,985	2,599	2,915	3,599	3,873	4,020	3,935
China	616	2,122	2,778	3,257	4,077	4,246	4,309	3,999	3,846
Kuwait	3,036	1,757	964	2,244	2,560	3,101	3,065	3,145	3,025
Brazil	167	188	651	1,276	2,137	2,341	2,525	2,608	2,734
Mexico	487	2,129	2,941	3,456	2,959	2,784	2,587	2,456	2,224
Venezuela, RB	3,754	2,228	2,244	3,112	2,842	2,692	2,631	2,387	2,110
Nigeria	1,083	2,058	1,787	2,175	2,534	2,278	2,204	1,903	1,988
Norway	n/a	528	1,716	3,346	2,137	1,889	1,946	1,995	1,969
Qatar	363	476	434	853	1,638	1,985	1,958	1,970	1,916
Kazakhstan	n/a	n/a	571	740	1,676	1,710	1,695	1,655	1,835
Angola	103	150	475	746	1,812	1,668	1,772	1,755	1,674
Algeria	1,052	1,139	1,347	1,549	1,689	1,589	1,558	1,577	1,540
United Kingdom	4	1,676	1,933	2,696	1,356	852	963	1,013	999
Oman	332	285	695	955	865	943	981	1,004	971
Indonesia	854	1,577	1,539	1,456	1,003	852	841	882	949
India	140	193	715	726	882	887	876	856	865
Libya	3,357	1,862	1,424	1,475	1,659	498	432	426	865
Others	n/a	n/a	7,054	9,292	10,346	9,440	9,341	8,840	8,606
World	**48,072**	**62,947**	**65,001**	**74,907**	**83,325**	**88,721**	**91,547**	**92,023**	**92,649**
Consumption									
United States	14,710	17,062	16,988	19,701	19,180	19,106	19,531	19,687	19,880
China	554	1,707	2,297	4,697	9,436	11,209	11,986	12,302	12,799
India	390	643	1,211	2,259	3,319	3,849	4,164	4,560	4,690
Japan	3,876	4,905	5,240	5,542	4,442	4,303	4,151	4,031	3,988
Saudi Arabia	435	592	1,136	1,627	3,206	3,753	3,875	3,939	3,918
Russian Federation	n/a	n/a	5,042	2,540	2,878	3,301	3,162	3,193	3,224
Brazil	516	1,125	1,417	2,029	2,716	3,242	3,181	3,013	3,017
Korea, Rep.	162	476	1,041	2,260	2,370	2,454	2,577	2,771	2,796
Germany	2,765	3,014	2,685	2,746	2,445	2,348	2,340	2,378	2,447
Canada	1,472	1,898	1,747	2,043	2,306	2,399	2,348	2,401	2,428
Mexico	441	1,072	1,611	1,952	2,040	1,960	1,939	1,977	1,910
Iran	224	570	1,004	1,404	1,791	1,953	1,766	1,722	1,816
Indonesia	138	386	652	1,148	1,411	1,681	1,564	1,580	1,652
France	1,860	2,220	1,895	1,994	1,763	1,616	1,615	1,600	1,615
United Kingdom	2,031	1,649	1,751	1,713	1,623	1,518	1,561	1,592	1,598
Others	n/a	n/a	20,810	23,146	27,609	28,294	29,083	29,742	30,408
World	**45,227**	**61,300**	**66,527**	**76,801**	**88,535**	**92,986**	**94,843**	**96,488**	**98,186**

Source: BP Statistical Review (June 2017 update).
Notes: n/a implies data not available. Production includes crude oil and natural gas liquids but excludes liquid fiels from other sources such as biomass and derivatives of coal and natural gas include in consumption.

Fertilizers—Nitrogen

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Constant Prices (US$/mt)
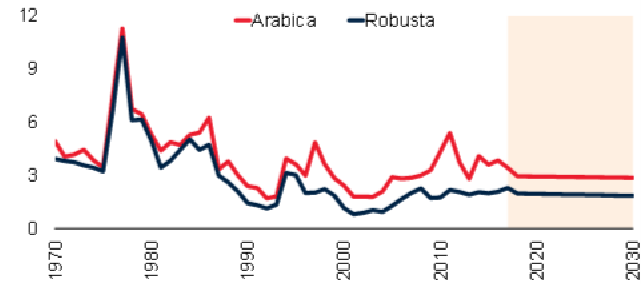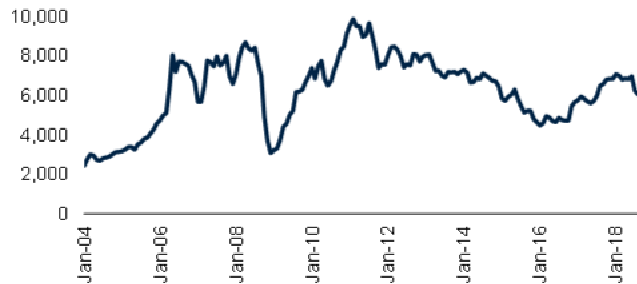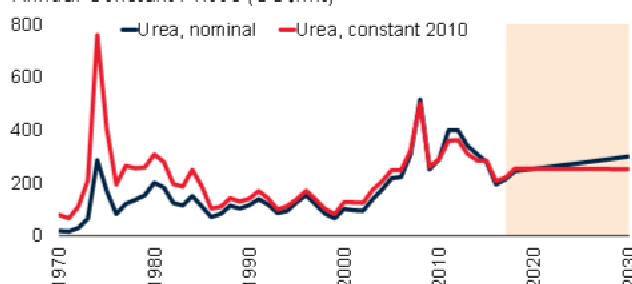

Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2012	2013	2014	2015
				(thousand tonnes nutrients)					
Production									
China	1,200	9,993	14,637	22,175	35,678	36,056	36,810	35,540	36,312
India	838	2,164	6,993	10,943	12,178	12,237	12,409	12,434	13,476
United States	8,161	12,053	10,816	8,352	9,587	10,150	8,494	8,793	9,291
Russian Federation	n/a	n/a	n/a	5,452	6,544	6,605	6,819	7,089	7,742
Canada	726	1,755	2,683	3,797	3,364	3,344	3,213	3,323	3,534
Indonesia	45	958	2,462	2,853	3,207	3,313	3,442	3,406	3,456
Pakistan	140	572	1,120	2,054	2,629	2,232	2,589	2,647	2,918
Qatar	n/a	295	350	748	1,556	2,095	2,535	2,499	2,618
Saudi Arabia	0	138	568	1,278	1,695	1,923	1,920	2,119	2,330
Iran, Islamic Rep.	31	72	376	726	1,524	2,058	1,920	1,733	1,918
Egypt, Arab Rep.	118	401	678	1,441	2,761	2,474	2,274	1,941	1,721
Ukraine	n/a	n/a	3,004	2,130	2,312	3,072	2,394	1,863	1,627
Poland	1,030	1,290	1,233	1,497	1,509	1,529	1,456	1,394	1,379
Germany	1,900	2,380	1,165	1,558	1,289	1,326	1,316	1,316	1,253
Netherlands	957	1,624	1,928	1,300	1,175	1,293	1,281	1,328	1,226
Vietnam	0	15	18	227	479	861	999	1,067	1,124
Belarus	n/a	n/a	747	574	740	832	922	1,060	1,101
Belgium	594	743	770	935	947	932	1,053	1,027	1,044
Uzbekistan	n/a	n/a	1,113	682	911	875	811	925	881
Others	*16,949*	*28,500*	*21,303*	*17,904*	*18,031*	*18,366*	*18,257*	*18,146*	*18,688*
World	**32,690**	**62,951**	**71,964**	**86,624**	**108,116**	**111,571**	**110,916**	**109,648**	**113,637**
Consumption									
China	2,987	11,787	19,233	22,720	25,058	26,692	27,960	25,154	27,340
India	1,310	3,522	7,566	10,911	16,558	16,821	16,750	16,950	17,372
United States	7,363	10,818	10,239	10,467	11,737	12,188	12,212	11,862	12,268
Brazil	276	886	797	1,998	2,855	3,435	3,699	3,872	3,533
Indonesia	184	851	1,610	1,964	3,045	3,063	2,820	2,981	2,833
Pakistan	264	843	1,472	2,265	3,143	2,853	3,179	3,315	2,682
Canada	323	946	1,158	1,592	1,990	2,479	2,457	2,575	2,538
France	1,425	2,146	2,493	2,317	2,337	2,140	2,178	2,195	2,212
Germany	1,642	2,303	1,787	1,848	1,786	1,648	1,675	1,823	1,711
Russian Federation	n/a	n/a	4,344	960	1,483	1,576	1,537	1,485	1,708
Vietnam	166	129	425	1,332	1,250	1,407	1,261	1,354	1,508
Turkey	243	782	1,200	1,276	1,344	1,432	1,584	1,493	1,487
Mexico	406	878	1,346	1,342	1,166	1,201	1,518	1,506	1,357
Australia	123	248	439	951	982	1,099	1,315	1,407	1,274
Bangladesh	99	266	609	996	1,237	1,112	1,133	1,321	1,258
Thailand	50	136	577	922	1,311	1,382	1,419	1,409	1,240
Egypt, Arab Rep.	331	554	745	1,084	1,159	1,087	1,104	1,122	1,219
Ukraine	n/a	n/a	1,836	350	650	1,254	1,219	1,181	1,216
Poland	785	1,344	671	896	1,090	1,204	1,098	1,004	1,050
Others	*13,446*	*22,054*	*18,231*	*15,880*	*16,797*	*17,122*	*17,965*	*18,488*	*18,015*
World	**31,423**	**60,493**	**76,777**	**82,070**	**96,978**	**101,194**	**104,083**	**102,496**	**103,820**

Source: International Fertilizer Industry Association (http://ifadata.fertilizer.org/ucSearch.aspx, September 2017 update).
Notes: 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
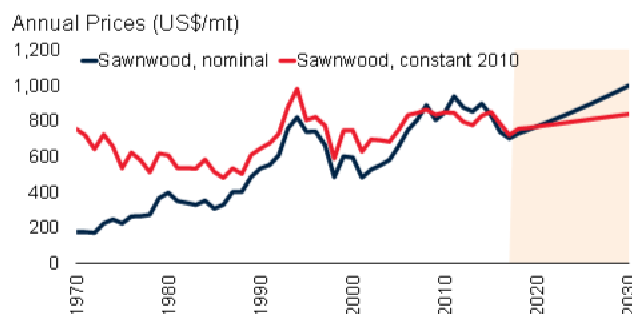
Monthly Prices (US$/mt)

Potassium chloride — DAP

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

Sawnwood, nominal — Sawnwood, constant 2010

Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2012	2013	2014	2015
				(thousand tonnes nutrients)					
Phosphate: Production									
China	907	2,607	4,114	6,759	15,998	16,387	16,545	16,576	17,289
United States	n/a	7,437	8,105	7,337	6,297	6,456	5,861	5,578	5,257
India	228	854	2,077	3,751	4,378	3,825	3,973	4,125	4,429
Russian Federation	n/a	0	4,943	2,320	2,926	2,940	2,929	2,858	3,217
Morocco	99	174	1,180	1,122	1,875	2,433	2,198	2,403	2,044
Brazil	169	1,623	1,091	1,496	2,004	2,183	2,100	1,990	2,021
Saudi Arabia	0	0	0	159	119	826	919	1,220	1,328
Others	*14,279*	*20,982*	*14,908*	*9,800*	*9,099*	*8,639*	*8,860*	*8,887*	*8,653*
World	**15,682**	**33,677**	**36,417**	**32,744**	**42,697**	**43,688**	**43,384**	**43,637**	**44,239**
Phosphate: Consumption									
China	907	2,952	5,770	8,664	13,893	14,065	14,877	15,254	15,046
India	305	1,091	3,125	4,248	8,050	6,653	5,634	6,099	6,979
Brazil	416	1,965	1,202	2,544	3,384	4,325	4,641	4,752	4,401
United States	4,671	4,926	3,811	3,862	3,890	4,289	4,339	4,080	4,264
Indonesia	45	274	581	263	500	1,175	1,260	1,331	1,442
Canada	326	634	578	634	723	831	887	949	1,025
Pakistan	31	227	389	675	767	747	881	975	1,007
Australia	757	853	579	1,107	817	803	816	919	964
Vietnam	77	23	106	501	650	696	670	700	711
Others	*13,666*	*18,967*	*19,782*	*10,314*	*9,746*	*10,106*	*10,993*	*10,875*	*10,615*
World	**21,202**	**31,912**	**35,920**	**32,812**	**42,420**	**43,690**	**44,998**	**45,933**	**46,454**
Potash: Production									
Canada	3,179	7,337	7,005	9,174	10,289	9,877	9,461	10,636	11,500
Russian Federation	n/a	n/a	n/a	3,716	6,128	5,403	6,086	7,340	6,907
Belarus	n/a	n/a	4,992	3,372	5,223	4,831	4,229	6,286	6,402
China	0	20	46	275	3,101	4,007	4,565	5,680	5,970
Germany	4,824	6,123	4,967	3,409	2,962	3,056	2,968	3,053	3,055
Israel	576	797	1,296	1,748	1,944	2,100	2,150	2,126	1,518
Jordan	0	0	842	1,162	1,166	1,094	1,047	1,255	1,413
Chile	21	23	41	408	850	1,241	1,187	1,239	1,229
Spain	525	691	642	522	313	637	692	703	723
Others	*8,346*	*12,616*	*3,007*	*2,356*	*1,730*	*1,787*	*2,111*	*1,930*	*2,087*
World	**17,471**	**27,608**	**22,838**	**26,141**	**33,706**	**34,033**	**34,497**	**40,247**	**40,803**
Potash: Consumption									
China	25	527	1,761	3,364	5,861	6,572	7,050	8,176	8,732
Brazil	307	1,267	1,210	2,760	3,894	4,844	5,094	5,395	5,163
United States	3,827	5,733	4,537	4,469	4,165	4,385	4,819	4,450	4,717
India	199	618	1,309	1,565	3,514	2,062	2,099	2,533	2,402
Indonesia	18	91	310	266	1,250	1,490	1,620	1,772	1,635
Malaysia	61	250	494	650	1,150	1,290	1,290	1,237	1,120
Vietnam	38	39	29	450	400	552	570	600	539
Others	*11,289*	*15,302*	*14,671*	*8,571*	*7,956*	*8,394*	*9,012*	*9,357*	*9,164*
World	**15,764**	**23,826**	**24,320**	**22,095**	**28,191**	**29,588**	**31,553**	**33,520**	**33,471**

Source: International Fertilizer Industry Association (http://ifadata.fertilizer.org/ucSearch.aspx, September 2017 update).
Notes: 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).
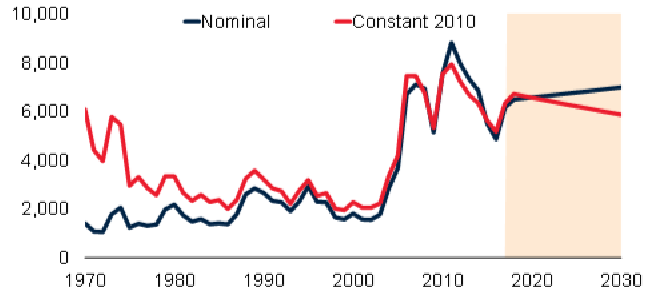
Gold

Monthly Prices (US$/toz)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/toz)
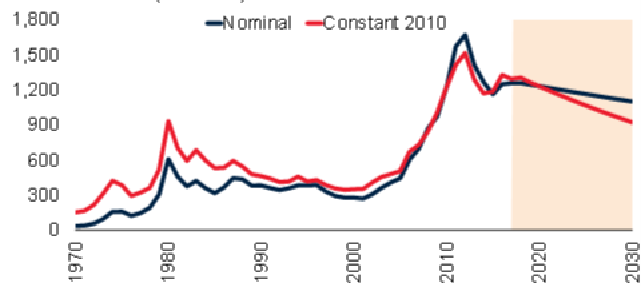
Source: World Bank.
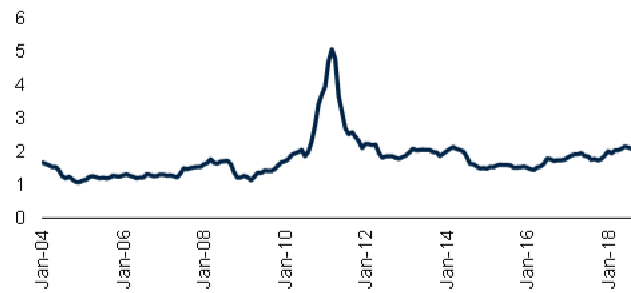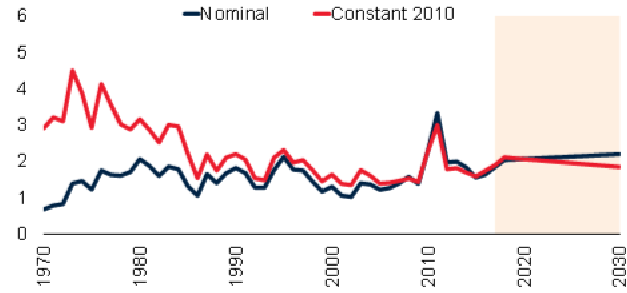Note: 2018-30 are forecasts.

	1995	2000	2005	2010	2013	2014	2015	2016	2017
					(metric tons)				
Production									
China	136	175	209	341	428	452	450	453	421
Australia	247	296	263	260	267	274	278	287	292
Russian Federation	128	144	163	201	230	249	256	253	270
U.S.	317	353	256	231	230	210	214	222	231
Canada	152	156	121	91	134	152	163	165	171
Peru	56	134	206	164	151	140	147	153	167
South Africa	522	428	297	191	169	152	145	142	137
Mexico	20	24	30	79	120	118	123	132	130
Ghana	53	72	67	93	95	137	130	129	130
Sudan	4	6	5	2	70	73	82	93	103
Uzbekistan	70	88	84	90	98	102	103	100	102
Indonesia	63	125	158	106	60	69	92	81	99
Brazil	64	61	38	62	80	81	83	80	94
Kazakhstan	11	27	18	30	43	50	64	75	85
Argentina	1	26	28	64	52	60	63	56	63
Papua New Guinea	52	73	67	67	63	56	55	62	58
Mali	8	29	44	39	41	45	51	47	48
Guinea	8	16	18	25	18	23	21	30	47
Burkina Faso	4	1	1	23	34	37	36	39	43
Others	*257*	*327*	*390*	*435*	*574*	*603*	*612*	*579*	*570*
World	**2,174**	**2,560**	**2,464**	**2,594**	**2,956**	**3,084**	**3,168**	**3,180**	**3,261**
Fabrication									
India	241	704	695	783	716	771	812	506	783
China	46	213	277	523	1,289	1,013	920	788	771
United States	215	277	219	179	160	150	164	168	145
Turkey	133	228	303	109	178	156	112	101	122
Japan	205	161	165	158	124	119	102	99	100
Italy	396	522	290	126	92	96	94	88	89
Korea, Rep.	67	107	83	93	84	82	79	78	80
United Arab Emirates	14	50	55	33	38	42	45	45	56
South Africa	18	14	10	25	31	25	31	38	52
Russian Federation	n/a	34	61	61	74	70	52	47	46
Indonesia	84	99	87	45	61	53	50	45	45
Iran, Islamic Rep.	43	46	41	72	93	62	56	35	42
Switzerland	54	54	56	41	46	44	41	34	33
Germany	78	64	52	41	37	36	32	32	32
Malaysia	45	86	74	45	49	45	39	34	30
Canada	46	25	27	44	45	32	40	41	29
Singapore	31	26	30	28	28	29	29	27	28
Saudi Arabia	70	153	125	47	41	37	41	32	27
Thailand	86	79	69	27	30	27	27	24	24
Others	*1,424*	*819*	*608*	*400*	*363*	*356*	*356*	*315*	*310*
World	**3,294**	**3,761**	**3,325**	**2,878**	**3,579**	**3,244**	**3,122**	**2,575**	**2,841**

Source: World Bureau of Metal Statistics and Thomson Reuters (May 2018 update).
Note: n/a implies data not available. Fabrication includes the use of scrap. Fabrication of "Saudi Arabia" includes Saudi Arabia and Yemen in 1995 and 2000.

Iron Ore

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)
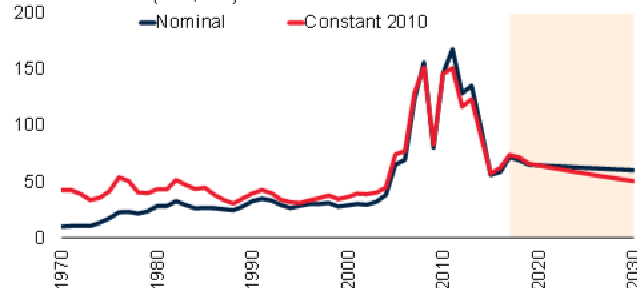
Source: World Bank.
Note: 2018-30 are forecasts.

	1971	1980	1990	2000	2010	2013	2014	2015	2016
					(million metric tons)				
Iron ode Production									
Australia	62	99	109	176	433	609	746	811	n/a
Brazil	38	113	152	209	372	391	399	423	n/a
India	34	41	54	75	209	136	140	143	n/a
China	55	113	148	105	357	315	195	124	n/a
Russian Federation	n/a	n/a	n/a	87	99	102	101	102	n/a
Ukraine	n/a	n/a	n/a	56	79	84	82	82	n/a
South Africa	10	n/a	30	34	55	61	67	61	n/a
Canada	43	49	37	36	38	42	44	46	n/a
United States	82	71	55	63	50	52	54	43	n/a
Iran, Islamic Rep.	n/a	n/a	2	12	33	49	48	39	n/a
Sweden	34	27	20	21	25	27	28	25	n/a
Chile	11	9	8	8	10	12	13	15	n/a
Mexico	5	8	9	11	14	19	17	14	n/a
Mauritania	8	9	11	11	11	13	13	12	n/a
Kazakhstan	n/a	n/a	n/a	15	18	19	16	11	n/a
Venezuela, RB	20	14	20	17	14	8	6	8	n/a
Peru	9	6	3	4	9	7	7	7	n/a
Turkey	2	3	6	4	6	8	7	6	n/a
Mongolia	n/a	n/a	n/a	n/a	3	6	7	6	n/a
Liberia	23	18	4	n/a	n/a	4	5	4	n/a
Norway	4	4	2	0	3	3	4	3	n/a
Others	n/a	n/a	n/a	14	36	72	54	20	n/a
World	**781**	**931**	**984**	**959**	**1,874**	**2,039**	**2,054**	**2,006**	**n/a**
Crude steel production (million metric tons)									
China	21	37	66	129	639	822	822	804	808
Japan	89	111	110	106	110	111	101	105	105
India	6	10	15	27	69	81	87	89	95
United States	109	101	90	102	80	87	88	79	78
Russian Federation	n/a	n/a	n/a	59	67	69	71	71	71
Korea, Rep.	0	9	23	43	59	66	72	70	69
Germany	40	44	38	46	44	43	43	43	42
Turkey	1	3	9	14	29	35	34	32	33
Brazil	6	15	21	28	33	34	34	33	31
Ukraine	n/a	n/a	n/a	32	33	33	27	23	24
Italy	17	27	25	27	26	24	24	22	23
Taiwan, China	0	3	10	17	20	22	23	21	22
Mexico	4	7	9	16	17	18	19	18	19
Iran, Islamic Rep.	n/a	1	1	7	12	15	16	16	18
France	23	23	19	21	15	16	16	15	14
Spain	8	13	13	16	16	14	14	15	14
Canada	11	16	12	17	13	12	13	12	13
Others	n/a	n/a	n/a	143	151	148	165	152	148
World	**583**	**716**	**770**	**849**	**1,433**	**1,650**	**1,669**	**1,620**	**1,628**

Source: Steel Statistical Yearbook 2017.
Note: n/a implies data not available. Crude steel production includes all qualities: carbon, stainless, and other alloy.

Lead

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.
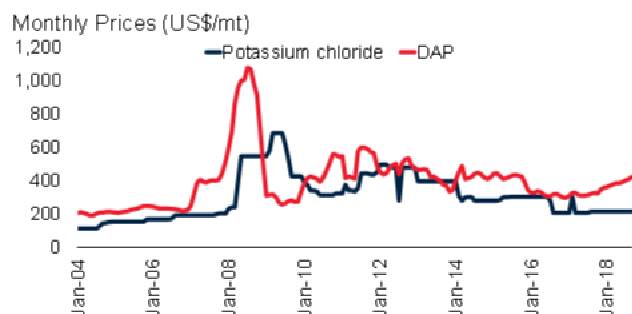
Annual Prices (US$/mt)

Source: World Bank.
Note: 2018-30 are forecasts.

	1980	1990	2000	2005	2010	2014	2015	2016	2017
					(thousand metric tons)				
Mine Production									
China	160	364	660	1,142	1,981	2,609	2,335	2,338	2,332
Australia	398	570	678	767	711	728	653	453	460
United States	562	493	447	437	356	381	373	342	313
Peru	189	188	271	319	262	278	316	314	307
Mexico	146	174	138	134	192	250	261	241	241
Russian Federation	n/a	n/a	13	36	97	196	180	195	202
India	15	26	38	60	89	105	120	139	176
Kazakhstan	n/a	n/a	39	31	35	38	41	71	112
Bolivia	16	20	10	11	73	76	75	90	111
Turkey	8	18	16	19	39	62	76	65	75
Sweden	72	84	107	61	68	71	79	76	71
Tajikistan	0	0	2	0	4	28	38	47	60
South Africa	8	18	75	42	51	29	35	39	48
Others	n/a	n/a	588	392	409	425	395	402	417
World	**3,595**	**3,150**	**3,080**	**3,453**	**4,367**	**5,276**	**4,977**	**4,811**	**4,925**
Refined Production									
China	175	297	1,100	2,359	4,157	4,704	4,422	4,604	4,716
United States	1,151	1,291	1,431	1,293	1,255	1,020	1,050	1,120	1,010
Korea, Rep.	15	80	222	254	321	670	682	831	805
India	26	39	57	56	366	477	496	512	563
Germany	392	394	387	342	405	380	378	343	356
United Kingdom	325	329	328	304	301	267	357	375	354
Mexico	149	238	332	272	270	363	354	341	342
Canada	231	184	284	230	273	281	269	274	286
Japan	305	327	312	275	267	240	232	240	239
Australia	234	229	223	267	210	226	228	224	214
Brazil	85	76	86	121	115	160	176	180	180
Italy	134	171	237	211	150	210	210	187	174
Spain	121	124	120	110	163	166	172	165	166
Others	2,083	1,683	1,588	1,578	1,566	1,776	1,720	1,781	1,817
World	**5,424**	**5,460**	**6,707**	**7,671**	**9,820**	**10,941**	**10,746**	**11,177**	**11,223**
Refined Consumption									
China	210	244	660	1,974	4,171	4,682	4,380	4,593	4,795
United States	1,094	1,275	1,660	1,490	1,430	1,510	1,560	1,610	1,640
Korea, Rep.	54	80	309	376	382	601	602	622	622
India	33	147	56	139	420	521	539	571	551
Germany	433	448	390	330	343	337	357	374	413
United Kingdom	296	302	301	288	211	208	217	285	295
Japan	393	416	343	291	224	254	269	264	287
Brazil	111	115	219	279	262	249	238	262	261
Spain	83	75	155	189	201	229	240	234	251
Others	2,643	2,246	2,398	2,421	2,146	2,304	2,377	2,498	2,501
World	**5,348**	**5,348**	**6,491**	**7,777**	**9,790**	**10,896**	**10,779**	**11,313**	**11,616**

Source: World Bureau of Metal Statistics (October 2018 update).
Note: n/a implies data not available. Refined production and consumption include significant recycled material.

Maize

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(million metric tons)				
Production									
United States	105.5	168.6	201.5	251.9	315.6	345.5	384.8	371.0	375.4
China	33.0	62.6	96.8	106.0	177.2	224.6	219.6	215.9	225.0
Brazil	14.1	22.6	24.3	41.5	57.4	67.0	98.5	82.0	94.5
European Union	29.8	42.5	36.5	51.8	58.6	58.7	61.9	62.3	61.0
Argentina	9.9	12.9	7.7	15.4	25.2	29.5	41.0	32.0	41.0
Ukraine	n/a	n/a	4.7	3.8	11.9	23.3	28.0	24.1	31.0
India	7.5	7.0	9.0	12.0	21.7	22.6	25.9	28.7	26.0
Mexico	8.9	10.4	14.1	17.9	21.1	26.0	27.6	27.5	26.0
Canada	2.6	5.8	7.1	7.0	12.0	13.7	13.9	14.1	14.5
South Africa	8.6	14.9	8.6	8.0	10.9	8.2	17.6	13.5	13.0
Indonesia	2.8	4.0	5.0	5.9	6.8	10.5	10.9	11.4	11.9
Nigeria	1.3	1.7	5.8	4.0	7.7	10.6	10.4	11.0	11.0
Russian Federation	n/a	n/a	2.5	1.5	3.1	13.2	15.3	13.2	11.0
Others	*44.0*	*55.8*	*58.2*	*64.8*	*106.6*	*119.5*	*123.1*	*127.6*	*127.0*
World	**268.1**	**408.7**	**481.8**	**591.6**	**835.9**	**972.9**	**1,078.3**	**1,034.2**	**1,068.3**
Stocks									
China	8.9	42.8	82.8	102.4	49.4	110.8	100.7	79.6	58.5
United States	16.8	35.4	38.6	48.2	28.6	44.1	58.3	54.4	46.1
Brazil	2.0	1.3	0.8	2.7	6.3	6.8	14.0	10.5	10.5
European Union	2.3	4.8	3.7	3.2	5.2	6.7	7.4	9.5	6.0
Argentina	0.6	0.2	0.6	0.9	4.0	1.4	5.3	2.4	4.0
Others	*5.6*	*18.0*	*14.9*	*17.7*	*27.9*	*40.2*	*42.1*	*41.9*	*34.3*
World	**36.1**	**102.5**	**141.4**	**175.1**	**121.6**	**210.0**	**227.8**	**198.2**	**159.3**
Exports									
United States	12.9	60.7	43.9	49.3	46.5	48.2	58.3	61.9	62.9
Brazil	0.9	0.0	0.0	6.3	8.4	14.0	31.6	22.0	29.0
Argentina	6.4	9.1	4.0	9.7	16.3	21.7	26.0	23.0	27.0
Ukraine	n/a	n/a	0.4	0.4	5.0	16.6	21.3	18.5	25.0
Russia	n/a	n/a	0.4	0.0	0.0	4.7	5.6	5.5	3.0
Serbia	0.0	0.0	0.0	0.0	2.0	1.6	2.4	0.8	2.7
Paraguay	0.0	0.0	0.0	0.6	1.8	1.9	1.9	2.1	2.2
Others	*11.9*	*10.5*	*9.8*	*10.5*	*11.4*	*11.2*	*12.9*	*13.3*	*11.2*
World	**32.2**	**80.3**	**58.4**	**76.7**	**91.6**	**119.8**	**160.0**	**147.1**	**163.0**
Imports									
European Union	18.9	26.6	5.7	3.7	7.4	13.8	15.0	18.0	19.5
Mexico	0.1	3.8	1.9	6.0	8.3	14.0	14.6	16.2	16.7
Japan	5.2	14.0	16.3	16.3	15.6	15.2	15.2	15.2	15.0
Korea, South	0.3	2.4	5.6	8.7	8.1	10.1	9.2	10.0	10.2
Egypt, Arab Rep.	0.1	1.0	1.9	5.3	5.8	8.7	8.8	9.4	9.7
Vietnam	0.1	0.1	0.0	0.1	1.3	8.0	8.1	8.8	9.5
Iran, Islamic Rep.	0.0	0.4	0.8	1.3	3.5	6.6	7.8	8.3	8.5
Others	*3.7*	*25.9*	*26.2*	*33.6*	*43.4*	*62.6*	*56.9*	*62.7*	*65.7*
World	**28.4**	**74.3**	**58.5**	**75.0**	**93.4**	**139.0**	**135.6**	**148.6**	**154.8**

Source: U.S. Department of Agriculture (October 11, 2018 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971.

Natural gas

Monthly Prices (US$/mmbtu)

Source: World Bank.
Note: Last observation is September 2018.

Annual Constant Prices (US$/mmbtu)
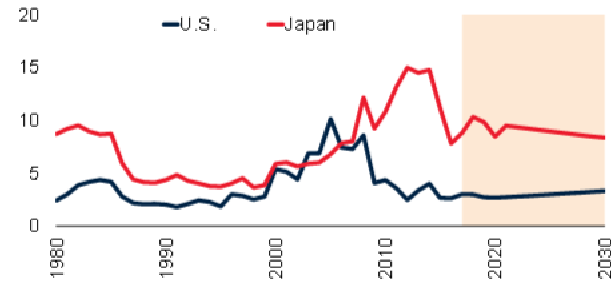
Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2014	2015	2016	2017
					(billion cubic meters)				
Production									
United States	572	525	483	519	575	705	740	729	735
Russian Federation	n/a	n/a	600	537	598	591	584	589	636
Iran, Islamic Rep.	4	5	26	59	150	183	191	203	224
Canada	54	71	103	176	150	159	161	172	176
Qatar	1	5	7	26	124	169	175	177	176
China	3	14	15	27	97	131	136	138	149
Norway	n/a	25	25	49	106	108	116	116	123
Australia	2	11	21	31	54	67	76	96	114
Saudi Arabia	2	9	32	47	83	97	99	105	111
Algeria	2	15	52	92	77	80	81	91	91
Malaysia	-	3	18	50	68	72	74	76	78
Indonesia	1	19	45	71	87	76	76	71	68
Turkmenistan	n/a	n/a	83	42	44	70	73	67	62
United Arab Emirates	1	7	20	37	50	53	59	60	60
Uzbekistan	n/a	n/a	39	53	57	54	55	53	53
Egypt, Arab Rep.	0	2	8	20	59	47	43	40	49
Nigeria	0	2	4	11	36	43	48	43	47
United Kingdom	11	36	48	114	58	37	41	42	42
Mexico	11	25	26	33	51	51	48	44	41
Thailand	n/a	n/a	7	21	38	44	41	40	39
Venezuela	9	16	24	31	31	32	36	38	37
Argentina	6	8	17	36	39	35	36	37	37
Netherlands	28	80	64	61	74	61	45	42	37
Others	*n/a*	*n/a*	*211*	*262*	*464*	*482*	*486*	*481*	*495*
World	**976**	**1,430**	**1,976**	**2,406**	**3,169**	**3,447**	**3,519**	**3,550**	**3,680**
Consumption									
United States	575	534	517	628	648	722	744	750	740
Russian Federation	n/a	n/a	414	366	423	424	410	420	425
China	3	14	15	25	109	188	195	209	240
Iran, Islamic Rep.	3	5	24	62	151	181	192	201	214
Japan	4	25	50	76	99	121	119	116	117
Canada	35	50	64	89	89	103	103	110	116
Saudi Arabia	2	9	32	47	83	97	99	105	111
Germany	16	61	64	83	88	74	77	85	90
Mexico	10	22	27	36	66	80	78	92	88
United Kingdom	12	47	55	101	99	70	72	81	79
United Arab Emirates	1	5	17	31	59	63	71	73	72
Italy	12	26	45	68	80	59	65	68	72
Egypt, Arab Rep.	0	2	8	19	43	46	46	49	56
India	1	1	12	25	60	50	46	51	54
Turkey	n/a	n/a	3	14	36	47	46	44	52
Others	*n/a*	*n/a*	*602*	*731*	*1,044*	*1,073*	*1,113*	*1,119*	*1,144*
World	**961**	**1,424**	**1,949**	**2,402**	**3,176**	**3,399**	**3,474**	**3,574**	**3,670**

Source: BP Statistical Review (June 2017 update).
Note: n/a implies data not available.

Natural rubber

Monthly Prices (US$/kg)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/kg)
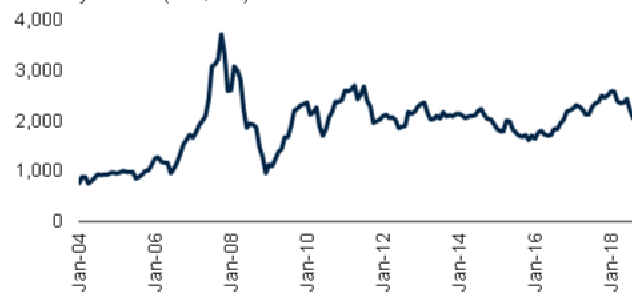

Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2014	2015	2016	2017
					(thousand metric tons)				
Production									
Thailand	287	501	1,275	2,346	3,252	4,324	4,473	4,519	4,775
Indonesia	815	822	1,261	1,501	2,736	3,153	3,145	3,298	3,499
Vietnam	28	46	94	291	752	954	1,013	1,035	1,087
China	46	113	264	445	687	840	794	774	798
Malaysia	1,269	1,530	1,291	928	939	669	722	674	741
India	90	155	324	629	851	705	575	624	713
Côte d'Ivoire	11	23	69	123	231	317	351	468	604
Myanmar	10	16	15	36	128	198	212	230	249
Brazil	42	53	78	96	136	193	193	190	202
Others	*542*	*591*	*314*	*417*	*691*	*790*	*787*	*793*	*892*
World	**3,140**	**3,850**	**4,985**	**6,811**	**10,403**	**12,142**	**12,264**	**12,604**	**13,559**
Consumption									
China	250	340	600	1,150	3,622	4,804	4,680	4,982	5,301
European Union	991	1,007	1,012	1,293	1,136	1,139	1,159	1,186	1,236
India	86	171	358	638	944	1,015	987	1,033	1,082
United States	568	585	808	1,195	926	932	936	932	962
Thailand	8	28	99	243	487	541	601	650	685
Japan	283	427	677	752	749	709	691	676	679
Indonesia	25	46	108	139	421	540	509	583	608
Malaysia	20	45	184	364	458	447	475	486	489
Brazil	37	81	124	227	378	422	398	412	413
Others	*822*	*1,050*	*1,099*	*1,307*	*1,638*	*1,633*	*1,698*	*1,730*	*1,768*
World	**3,090**	**3,780**	**5,068**	**7,306**	**10,759**	**12,181**	**12,134**	**12,670**	**13,222**
Exports									
Thailand	279	457	1,151	2,166	2,866	3,729	3,776	3,925	4,433
Indonesia	790	976	1,077	1,380	2,369	2,662	2,680	2,642	3,250
Vietnam	23	33	80	273	782	1,066	1,137	1,254	1,380
Malaysia	1,304	1,482	1,322	978	1,245	1,192	1,119	1,023	1,189
Côte d'Ivoire	11	23	69	121	226	323	348	459	591
Cambodia	7	15	24	33	43	100	128	145	189
Philippines	n/a	n/a	n/a	30	35	88	80	69	133
Others	*406*	*284*	*239*	*296*	*480*	*695*	*937*	*945*	*989*
World	**2,820**	**3,270**	**3,962**	**5,277**	**8,047**	**9,855**	**10,206**	**10,463**	**12,154**
Imports									
China	178	242	340	820	2,888	3,809	3,851	4,131	5,277
European Union	1,071	1,068	1,072	1,474	1,427	1,546	1,536	1,543	1,571
Malaysia	45	43	136	548	706	924	955	931	1,096
United States	543	576	820	1,192	931	946	952	946	972
Japan	292	458	663	801	747	689	682	660	699
Vietnam	n/a	n/a	n/a	n/a	127	254	300	418	526
Korea, Rep.	3	1	61	11	187	424	414	460	398
Others	*678*	*847*	*1,677*	*1,534*	*1,667*	*1,631*	*1,650*	*1,667*	*1,697*
World	**2,810**	**3,235**	**4,769**	**6,380**	**8,681**	**10,223**	**10,340**	**10,756**	**12,237**

Source: Rubber Statistical Bulletin, International Rubber Study Group (July-September 2018 update).
Note: n/a implies data not available.

Nickel

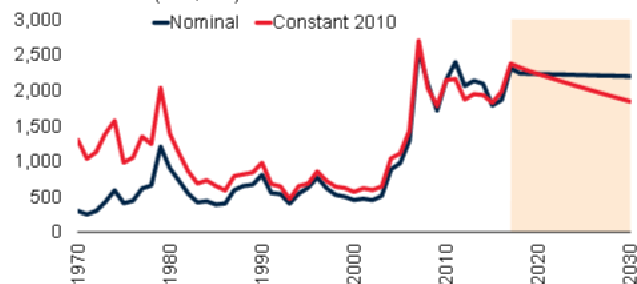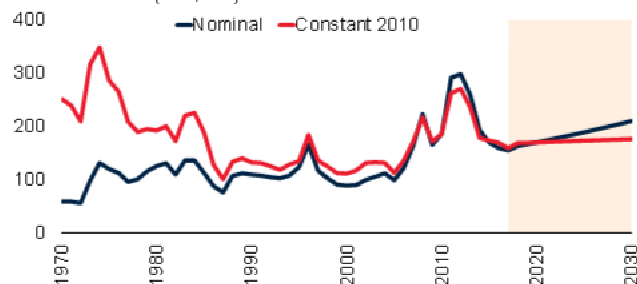Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2018-30 are forecasts.
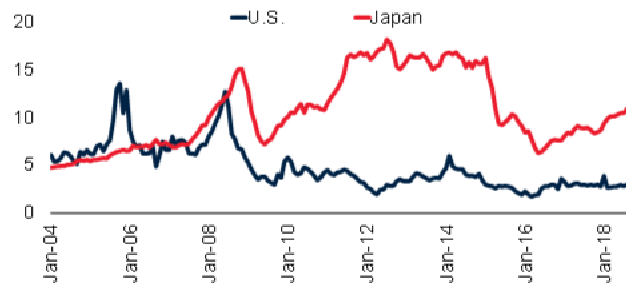
	1980	1990	2000	2005	2010	2014	2015	2016	2017
					(thousand metric tons)				
Mine Production									
Indonesia	41	69	117	156	216	146	129	173	358
Philippines	38	16	17	27	184	411	465	311	315
New Caledonia	87	85	129	112	130	175	193	204	215
Canada	189	196	191	200	160	229	235	235	211
Russian Federation	n/a	n/a	266	289	274	264	261	221	207
Australia	74	67	170	186	168	266	225	203	179
China	11	33	51	59	80	101	101	100	94
Brazil	3	13	32	38	54	86	89	79	69
Guatemala	7	0	0	0	0	47	57	45	56
Cuba	38	41	71	74	65	52	54	51	52
South Africa	26	30	37	42	40	55	57	49	48
Colombia	0	0	28	53	49	41	37	37	41
Madagascar	0	0	0	0	0	37	47	42	35
Others	*n/a*	*n/a*	*82*	*120*	*96*	*152*	*180*	*160*	*198*
World	**749**	**888**	**1,191**	**1,357**	**1,518**	**2,061**	**2,129**	**1,911**	**2,079**
Refined Production									
China	11	28	52	97	314	537	453	437	621
Indonesia	4	5	10	7	19	22	47	95	188
Japan	109	103	161	164	166	178	193	196	187
Canada	145	127	134	140	105	149	150	158	163
Russian Federation	n/a	n/a	242	264	263	239	232	192	160
New Caledonia	33	32	44	47	40	62	78	96	104
Australia	35	43	112	122	102	138	153	121	104
Norway	37	58	59	85	92	91	91	93	87
Finland	13	17	54	41	49	43	61	85	85
Brazil	3	13	23	30	28	79	68	74	69
Korea, Rep.	n/a	n/a	0	0	23	25	42	47	53
South Africa	18	28	37	42	34	35	42	43	42
Colombia	0	18	28	53	49	41	37	37	41
Others	*n/a*	*n/a*	*155*	*196*	*153*	*202*	*210*	*185*	*188*
World	**743**	**858**	**1,110**	**1,288**	**1,437**	**1,840**	**1,856**	**1,859**	**2,092**
Refined Consumption									
China	18	28	58	197	489	654	843	898	982
United States	142	127	153	128	119	152	152	136	199
Japan	122	159	192	180	177	157	151	162	163
Korea, Rep.	0	24	91	118	101	100	88	103	109
Taiwan, China	0	18	106	84	73	66	60	66	84
India	12	14	23	16	27	27	37	57	82
Germany	78	93	102	116	100	62	60	58	64
Italy	27	27	53	85	62	60	60	56	60
Finland	9	19	49	50	39	20	44	64	57
Others	*309*	*332*	*325*	*344*	*238*	*292*	*288*	*324*	*337*
World	**717**	**842**	**1,150**	**1,317**	**1,426**	**1,590**	**1,783**	**1,923**	**2,138**

Source: World Bureau of Metal Statistics (October 2018 update).
Note: n/a implies data not available.

Palm oil and Soybean oil

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Constant Prices (US$/mt)
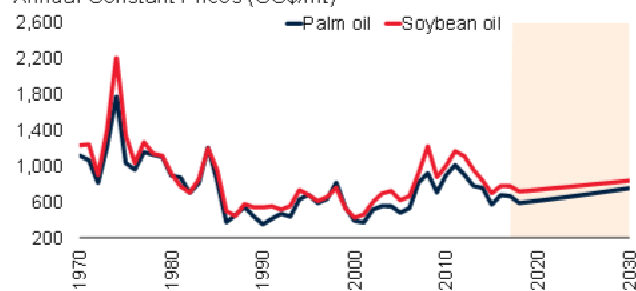
Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(thousand metric tons)				
Palm oil Production									
Indonesia	248	752	2,650	8,300	23,600	32,000	36,000	38,500	40,500
Malaysia	589	2,692	6,031	11,937	18,211	17,700	18,858	19,683	20,500
Thailand	0	19	200	580	1,832	1,804	2,500	2,700	2,900
Colombia	36	80	252	520	753	1,275	1,147	1,628	1,530
Nigeria	432	520	600	730	971	970	970	970	970
Guatemala	0	0	6	124	231	625	740	740	740
Papua New Guinea	0	45	145	336	488	570	650	630	630
Ecuador	5	44	150	222	380	520	565	593	610
Honduras	0	18	64	148	320	490	620	580	580
Others	*612*	*726*	*936*	*1,352*	*2,420*	*2,936*	*3,205*	*3,258*	*3,299*
World	**1,922**	**4,896**	**11,034**	**24,249**	**49,206**	**58,890**	**65,255**	**69,282**	**72,259**
Palm oil Production									
Indonesia	29	561	1,330	3,263	6,269	9,270	9,160	10,490	11,310
India	1	431	259	3,160	5,910	9,100	9,550	9,800	10,820
European Union	595	607	1,509	2,790	4,750	6,600	6,800	6,550	6,450
China	53	16	1,194	2,028	5,797	4,800	4,830	5,050	5,400
Malaysia	8	420	914	1,571	2,204	3,000	2,699	3,120	3,450
Pakistan	1	231	800	1,245	2,093	2,795	2,995	3,145	3,245
Thailand	0	43	208	508	1,304	1,835	2,106	2,440	2,440
Others	*1,112*	*2,454*	*4,941*	*7,946*	*16,940*	*21,909*	*23,439*	*24,768*	*25,686*
World	**1,799**	**4,763**	**11,155**	**22,511**	**45,267**	**59,309**	**61,579**	**65,363**	**68,801**
Soybean oil production									
China	181	183	599	3,240	9,840	14,605	15,770	16,128	16,755
United States	3,749	5,112	6,082	8,355	8,568	9,956	10,035	10,793	10,845
Argentina	0	158	1,179	3,190	7,181	8,433	8,395	7,310	8,390
Brazil	0	2,601	2,669	4,333	6,970	7,627	7,755	8,370	8,195
European Union	1,260	2,478	2,317	3,033	2,343	2,841	2,736	2,850	3,154
India	2	69	425	810	1,683	990	1,620	1,368	1,620
Mexico	52	255	330	795	648	785	820	892	930
Russia	n/a	n/a	75	62	367	717	788	824	914
Paraguay	10	6	56	170	310	720	711	701	749
Others	*945*	*1,713*	*2,033*	*2,830*	*3,552*	*4,852*	*5,054*	*5,713*	*5,990*
World	**6,199**	**12,575**	**15,765**	**26,818**	**41,462**	**51,526**	**53,684**	**54,949**	**57,542**
Soybean oil consumption									
China	179	256	1,055	3,542	11,409	15,350	16,350	16,550	17,300
United States	2,854	4,134	5,506	7,401	7,506	9,145	9,010	9,616	10,024
Brazil	0	1,490	2,075	2,932	5,205	6,290	6,570	6,935	7,035
India	79	708	445	1,750	2,550	5,250	5,200	4,600	4,800
Argentina	0	56	101	247	2,520	2,840	2,985	3,205	3,268
European Union	1,170	1,926	1,879	2,186	2,400	2,285	2,205	2,225	2,255
Mexico	52	305	404	863	840	1,020	1,050	1,080	1,160
Others	*1,624*	*3,542*	*3,976*	*7,222*	*8,056*	*9,900*	*9,971*	*10,318*	*10,869*
World	**5,958**	**12,417**	**15,441**	**26,143**	**40,486**	**52,080**	**53,341**	**54,529**	**56,711**

Source: U.S. Department of Agriculture (October 11, 2018 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971.
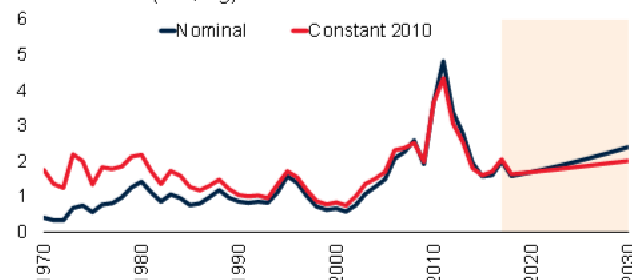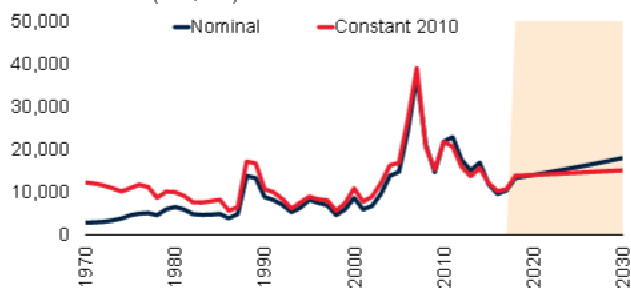
Platinum

Monthly Prices (US$/toz)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/toz)
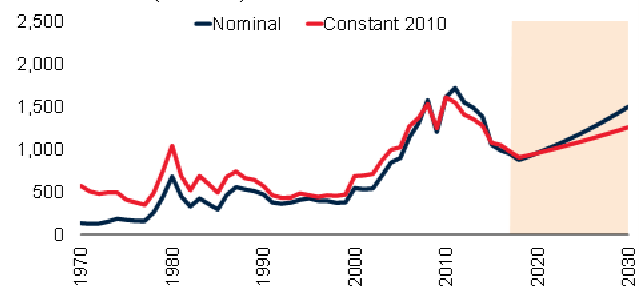
Source: World Bank.
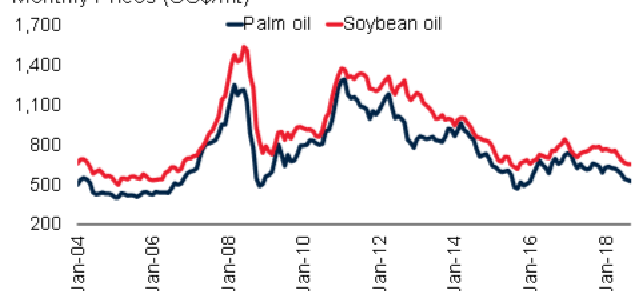Note: 2018-30 are forecasts.

	2003	2005	2008	2010	2013	2014	2015	2016	2017
					(metric tons)				
Mine Production									
South Africa	146.1	157.2	145.4	147.7	135.9	100.2	140.7	133.2	132.3
Russian Federation	25.9	29.9	25.8	24.4	23.0	21.4	22.4	21.1	22.0
Zimbabwe	4.3	5.0	5.6	8.9	12.7	12.4	12.4	15.0	14.6
Canada	4.6	7.2	7.1	4.0	6.8	8.7	7.5	8.3	7.2
United States	4.2	3.9	3.6	3.5	3.7	3.7	3.8	4.0	4.1
Others	*2.3*	*2.8*	*4.0*	*3.8*	*4.9*	*4.3*	*4.1*	*4.0*	*4.0*
World	**187.4**	**206.0**	**191.5**	**192.3**	**187.0**	**150.7**	**190.9**	**185.6**	**184.2**
Autocatalyst scrap									
North America	15.1	15.6	17.3	14.0	14.4	13.2	13.5	14.0	14.2
Europe	3.9	5.4	9.2	9.3	11.7	13.5	11.9	12.1	13.2
Japan	2.1	1.7	2.1	1.9	1.9	2.1	2.2	2.2	2.1
China	n/a	0.1	0.2	0.4	0.9	1.1	1.3	1.7	2.0
Others	*1.8*	*2.3*	*2.5*	*2.5*	*3.8*	*4.1*	*4.2*	*5.0*	*5.4*
World	**22.9**	**25.1**	**31.3**	**28.1**	**32.7**	**34.0**	**33.1**	**35.0**	**36.9**
Old jewelry scrap									
China	0.9	5.1	10.4	11.7	15.5	14.5	13.9	15.0	14.3
Japan	4.0	6.0	18.0	8.7	7.3	7.6	6.7	6.2	5.7
North America	0.1	0.2	1.3	0.4	0.3	0.3	0.2	0.2	0.2
Europe	0.1	0.1	0.4	0.3	0.2	0.2	0.2	0.2	0.2
Others	*0.1*	*0.1*	*0.0*	*0.1*	*0.1*	*0.2*	*0.1*	*0.0*	*0.1*
World	**5.2**	**11.5**	**30.1**	**21.2**	**23.4**	**22.8**	**21.1**	**21.6**	**20.5**
TOTAL SUPPLY	**215.5**	**242.6**	**252.9**	**236.7**	**234.9**	**207.4**	**245.1**	**242.2**	**241.6**
Autocatalyst demand									
Europe	41.3	56.1	56.9	44.5	37.6	40.7	43.9	46.2	45.1
North America	26.8	23.3	17.5	12.0	15.4	15.6	14.9	13.4	13.8
Japan	16.6	18.1	17.0	13.5	11.3	11.0	10.3	9.8	10.1
China	4.7	5.5	5.7	6.7	7.0	7.0	7.6	8.6	9.9
Others	*8.0*	*12.5*	*14.1*	*17.1*	*20.5*	*21.7*	*21.5*	*21.4*	*22.3*
World	**97.4**	**115.5**	**111.2**	**93.8**	**91.8**	**96.0**	**98.2**	**99.4**	**101.2**
Jewelry demand									
China	46.1	35.0	34.5	44.8	57.6	54.7	51.7	43.4	39.9
Japan	21.3	20.5	7.7	8.1	10.2	9.9	10.1	9.9	9.8
North America	9.9	8.1	6.4	6.6	7.3	7.6	7.7	7.7	7.6
Europe	8.5	7.9	7.4	6.8	6.9	6.7	6.7	6.6	6.3
Others	*2.4*	*1.2*	*1.4*	*4.9*	*3.4*	*3.9*	*4.6*	*4.5*	*5.0*
World	**88.2**	**72.7**	**57.4**	**71.2**	**85.4**	**82.8**	**80.8**	**72.1**	**68.6**
Other demand									
North America	15.8	15.8	14.2	11.3	13.5	13.6	13.6	15.6	17.3
China	n/a	4.7	9.1	7.6	10.8	8.0	10.1	17.1	15.4
Japan	9.9	13.2	17.9	10.4	1.7	2.6	17.9	17.2	10.9
Europe	11.1	9.5	9.8	9.7	9.7	11.0	11.4	11.8	11.7
Others	*14.0*	*14.0*	*18.7*	*24.1*	*12.5*	*16.9*	*14.5*	*15.0*	*18.2*
World	**50.8**	**57.2**	**69.7**	**63.1**	**48.2**	**52.1**	**67.5**	**76.7**	**73.5**
TOTAL DEMAND	**236.4**	**245.4**	**238.3**	**228.1**	**225.4**	**230.9**	**246.5**	**248.2**	**243.3**

Source: Platinum & Palladium Survey, Thomson Reuters (May 2017 update).
Note: Other demand includes chemical, electronics, glass, petroleum, retail investment and other industrial demand.

Rice

Monthly Prices (US$/mt)

Annual Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.
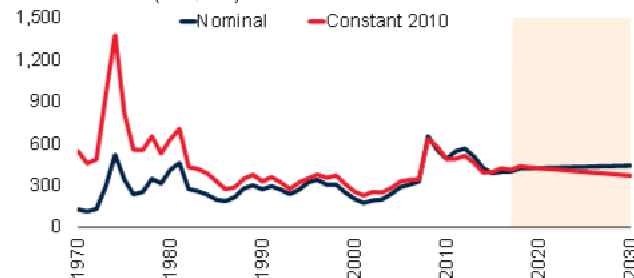
Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2014/15	2015/16	2016/17	2017/18
					(million metric tons)				
Production									
China	77.0	97.9	132.5	131.5	137.0	145.8	145.0	146.0	140.8
India	42.2	53.6	74.3	85.0	96.0	104.4	109.7	112.9	111.0
Indonesia	13.1	22.3	29.0	33.0	35.5	36.2	36.9	37.0	37.3
Bangladesh	11.1	13.9	17.9	25.1	31.7	34.5	34.6	32.7	34.4
Vietnam	6.4	7.7	12.4	20.5	26.4	27.6	27.4	28.5	29.1
Thailand	9.0	11.5	11.3	17.1	20.3	15.8	19.2	20.4	21.2
Myanmar	5.1	6.7	7.9	10.8	11.1	12.2	12.7	13.2	13.1
Philippines	3.4	5.0	6.4	8.1	10.5	11.0	11.7	12.2	12.2
Brazil	3.7	5.9	6.8	6.9	9.3	7.2	8.4	8.2	8.2
Japan	11.5	8.9	9.6	8.6	7.9	7.9	7.9	7.8	7.7
Pakistan	2.2	3.1	3.3	4.8	4.8	6.8	6.8	7.5	7.4
United States	2.8	4.8	5.1	5.9	7.6	6.1	7.1	5.7	6.9
Cambodia	2.5	1.1	1.6	2.5	4.4	4.9	5.3	5.4	5.5
Others	*22.9*	*27.6*	*33.3*	*39.4*	*48.1*	*53.1*	*54.8*	*54.1*	*53.0*
World	**213.0**	**269.9**	**351.4**	**399.2**	**450.5**	**473.5**	**487.4**	**491.5**	**487.8**
Stocks									
China	11.0	28.0	94.0	93.0	42.5	78.5	86.5	94.5	96.0
India	6.0	6.5	14.5	25.0	23.5	18.4	20.6	22.0	20.0
Indonesia	0.6	3.0	2.1	4.6	7.1	3.5	2.9	3.9	4.2
Thailand	1.2	2.0	0.9	2.2	5.6	8.4	4.2	3.2	3.4
Philippines	0.6	1.5	1.8	2.8	2.5	2.1	2.0	2.3	2.7
Others	*9.4*	*11.6*	*13.3*	*19.0*	*18.8*	*21.9*	*20.7*	*20.0*	*18.8*
World	**28.8**	**52.6**	**126.6**	**146.7**	**100.0**	**132.9**	**136.9**	**145.9**	**145.2**
Exports									
India	0.0	0.9	0.7	1.7	2.8	10.2	11.8	12.8	13.0
Thailand	1.6	3.0	4.0	7.5	10.6	9.9	11.6	10.5	11.0
Vietnam	0.0	0.0	1.0	3.5	7.0	5.1	6.5	7.0	7.0
Pakistan	0.2	1.2	1.3	2.4	3.4	4.2	3.5	4.3	4.3
United States	1.5	3.1	2.3	2.6	3.5	3.4	3.6	2.8	3.1
Myanmar	0.8	0.7	0.2	0.7	1.1	1.3	3.4	3.0	3.0
China	1.3	0.5	0.7	1.8	0.5	0.3	0.8	1.4	1.8
Others	*3.1*	*3.0*	*1.9*	*3.7*	*6.3*	*6.0*	*6.1*	*6.5*	*6.3*
World	**8.5**	**12.4**	**12.1**	**24.0**	**35.2**	**40.4**	**47.3**	**48.2**	**49.5**
Imports									
China	0.0	0.2	0.1	0.3	0.5	4.8	5.3	5.5	5.0
Nigeria	0.0	0.4	0.2	1.3	2.4	2.1	2.5	2.6	3.0
European Union	0.9	0.5	0.7	1.2	1.4	1.8	1.8	2.0	2.0
Philippines	0.0	0.0	0.4	1.4	1.3	1.6	1.1	1.3	1.8
Cote d'Ivoire	0.1	0.3	0.3	0.5	0.9	1.3	1.3	1.4	1.5
Iran	0.1	0.6	0.6	0.8	2.0	1.1	1.6	1.3	1.4
Saudi Arabia	0.2	0.4	0.5	1.0	1.1	1.3	1.2	1.3	1.3
Others	*6.5*	*8.9*	*7.9*	*15.7*	*23.6*	*24.4*	*26.5*	*32.6*	*30.8*
World	**7.7**	**11.3**	**10.6**	**22.1**	**33.1**	**38.3**	**41.3**	**48.0**	**46.7**

Source: U.S. Department of Agriculture (October 11, 2018 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971.

Silver

Monthly Prices (US$/toz)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/toz)
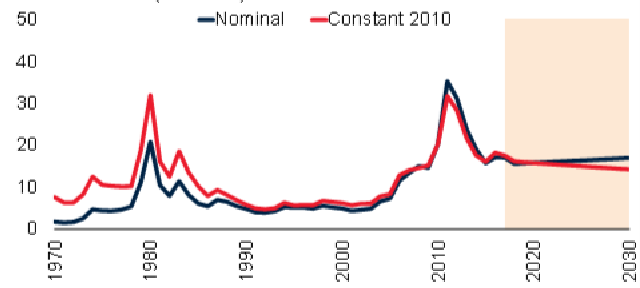
Source: World Bank.
Note: 2018-30 are forecasts.

	1995	2000	2005	2010	2013	2014	2015	2016	2017
					(metric tons)				
Production									
Mexico	2,334	2,483	2,894	4,411	5,821	5,767	5,975	5,409	5,394
Peru	1,881	2,418	3,193	3,640	3,674	3,777	4,102	4,273	4,304
China	1,000	1,600	2,500	3,085	3,673	3,568	3,421	3,496	2,615
Chile	1,036	1,245	1,400	1,276	1,174	1,572	1,504	1,497	1,260
Poland	1,001	1,164	1,262	1,183	1,393	1,384	1,407	1,482	1,438
Russian Federation	250	400	1,350	1,145	1,428	1,434	1,580	1,449	1,571
Australia	920	2,060	2,417	1,879	1,840	1,848	1,430	1,418	1,120
Bolivia	425	434	420	1,259	1,287	1,345	1,306	1,353	1,196
Kazakhstan	371	927	883	552	964	982	1,305	1,180	1,029
United States	1,565	2,017	1,230	1,280	1,050	1,180	1,090	1,150	1,026
Argentina	48	78	264	723	768	905	929	933	648
Guatemala	0	0	7	195	284	857	803	838	310
Sweden	268	329	310	302	341	383	480	515	488
India	38	40	32	165	367	338	490	445	491
Canada	1,285	1,204	1,124	591	640	495	384	385	390
Morocco	204	290	186	243	194	186	216	237	236
Turkey	70	110	80	364	190	184	191	174	176
Dominican Republic	21	0	0	23	80	135	100	122	148
Indonesia	251	310	327	289	123	119	152	113	102
Others	*1,214*	*1,085*	*819*	*845*	*954*	*851*	*793*	*848*	*847*
World	**14,183**	**18,194**	**20,697**	**23,450**	**26,246**	**27,310**	**27,658**	**27,318**	**24,789**
Fabrication									
United States	n/a	n/a	5,891	6,768	6,343	6,838	7,346	6,828	5,845
China	n/a	n/a	4,307	6,792	8,446	7,801	6,855	5,862	6,020
India	n/a	n/a	3,116	2,486	5,379	6,247	7,374	5,081	5,651
Japan	n/a	n/a	3,860	3,020	2,901	2,700	3,056	3,431	3,674
Germany	n/a	n/a	1,260	1,690	1,205	1,003	1,121	1,213	1,250
Canada	n/a	n/a	126	667	1,031	1,079	1,243	1,182	732
Italy	n/a	n/a	1,577	1,109	820	875	878	854	890
Thailand	n/a	n/a	1,150	991	843	779	863	815	733
Mexico	n/a	n/a	693	556	729	763	815	736	763
Russian Federation	n/a	n/a	795	944	832	793	724	671	663
United Kingdom	n/a	n/a	1,330	677	641	629	677	665	667
Australia	n/a	n/a	210	450	467	430	566	583	499
Korea, Rep.	n/a	n/a	794	929	895	820	628	516	514
Taiwan, China	n/a	n/a	380	486	471	488	467	471	492
Belgium	n/a	n/a	846	577	449	447	440	441	439
France	n/a	n/a	381	697	551	415	446	439	443
Brazil	n/a	n/a	232	319	416	379	358	304	228
Indonesia	n/a	n/a	159	199	254	243	254	268	274
Turkey	n/a	n/a	309	201	208	240	233	228	228
Others	*n/a*	*n/a*	*2,025*	*2,354*	*2,129*	*1,804*	*1,900*	*1,820*	*1,647*
World	**n/a**	**n/a**	**29,441**	**31,912**	**35,010**	**34,773**	**36,244**	**32,408**	**31,652**

Source: World Bureau of Metal Statistics and Thomson Reuters (April 2018 update).
Note: n/a implies data not available. Fabrication: jewelry and silverware including the use of scrap.

Soybeans

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(million metric tons)				
Production									
United States	30.7	48.9	52.4	75.1	90.7	106.9	116.9	120.0	127.6
Brazil	0.0	15.2	15.8	39.5	75.3	96.5	114.6	119.8	120.5
Argentina	0.0	3.5	11.5	27.8	49.0	58.8	55.0	37.8	57.0
China	8.7	7.9	11.0	15.4	15.1	11.8	12.9	14.2	15.0
India	0.0	0.4	2.6	5.3	10.1	6.9	11.0	8.4	10.4
Paraguay	0.1	0.6	1.3	3.5	7.1	9.2	10.3	9.8	9.8
Canada	0.3	0.7	1.3	2.7	4.4	6.5	6.6	7.7	7.5
Ukraine	n/a	n/a	0.1	0.1	1.7	3.9	4.3	3.9	4.2
Russia	n/a	n/a	0.7	0.3	1.1	2.7	3.1	3.6	3.9
Bolivia	0.0	0.0	0.4	1.1	2.3	3.2	2.1	2.6	2.7
European Union	0.1	0.5	2.3	1.3	1.2	2.3	2.4	2.7	2.7
Others	*2.3*	*3.1*	*5.0*	*3.7*	*6.3*	*6.9*	*8.8*	*7.0*	*8.2*
World	**42.1**	**80.9**	**104.3**	**175.8**	**264.4**	**315.6**	**348.1**	**337.5**	**369.5**
Crushings									
China	1.5	1.5	3.9	18.9	55.0	81.5	88.0	90.0	93.5
United States	20.7	27.8	32.3	44.6	44.9	51.3	51.7	55.9	56.3
Argentina	0.0	0.9	7.0	17.3	37.6	43.3	43.3	37.5	43.0
Brazil	0.0	13.8	14.2	22.7	36.3	39.7	40.4	43.6	42.7
European Union	7.3	14.1	13.0	16.8	12.3	15.0	14.4	15.0	16.6
India	0.0	0.4	2.4	4.5	9.4	5.5	9.0	7.6	9.0
Mexico	0.3	1.5	1.9	4.5	3.6	4.4	4.6	5.0	5.2
Russia	n/a	n/a	0.4	0.4	2.1	4.0	4.4	4.6	5.1
Paraguay	0.1	0.0	0.3	0.9	1.7	3.8	3.8	3.7	4.0
Others	*5.4*	*9.7*	*11.4*	*15.8*	*19.4*	*26.5*	*27.6*	*31.2*	*32.8*
World	**35.3**	**69.8**	**86.8**	**146.5**	**222.2**	**275.0**	**287.2**	**294.1**	**308.2**
Exports									
Brazil	0.0	1.8	2.5	15.5	30.0	54.4	63.1	76.2	75.0
United States	11.8	19.7	15.2	27.1	41.0	52.9	59.0	57.9	56.1
Argentina	0.0	2.7	4.5	7.3	9.2	9.9	7.0	2.1	8.0
Paraguay	0.0	0.6	1.0	2.4	5.1	5.4	6.1	6.3	5.9
Canada	0.0	0.1	0.2	0.7	2.9	4.2	4.6	4.9	5.5
Others	*0.5*	*0.4*	*2.1*	*0.7*	*3.4*	*5.7*	*7.5*	*5.7*	*6.9*
World	**12.3**	**25.3**	**25.4**	**53.7**	**91.6**	**132.5**	**147.4**	**153.1**	**157.4**
Imports									
China	0.0	0.5	0.0	13.2	52.3	83.2	93.5	94.0	94.0
European Union	7.4	13.6	13.2	17.7	12.5	15.1	13.4	15.0	15.8
Mexico	0.1	1.4	1.4	4.4	3.5	4.1	4.1	4.6	4.9
Egypt	0.0	0.0	0.0	0.3	1.6	1.3	2.1	3.3	3.3
Japan	3.2	4.2	4.4	4.8	2.9	3.2	3.2	3.3	3.3
Thailand	0.0	0.0	0.0	1.3	2.1	2.8	3.1	2.5	3.2
Indonesia	0.0	0.4	0.5	1.1	1.9	2.3	2.6	2.7	2.9
Others	*1.9*	*6.1*	*6.0*	*10.3*	*12.9*	*21.3*	*22.3*	*27.2*	*26.9*
World	**12.6**	**26.2**	**25.5**	**53.1**	**89.8**	**133.3**	**144.4**	**152.5**	**154.3**

Source: U.S. Department of Agriculture (October 11, 2018 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971.
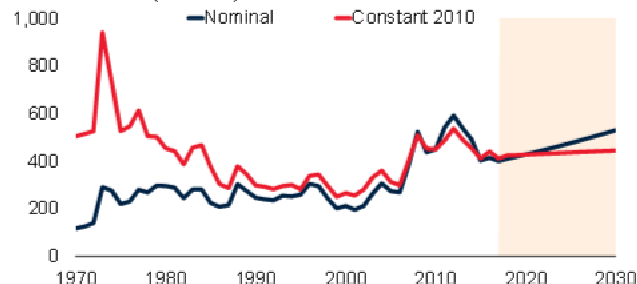
Sugar

Monthly Prices (US$/kg)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/kg)

Source: World Bank.
Note: 2018-30 are forecasts.

	1970/71	1980/81	1990/91	2000/01	2010/11	2015/16	2016/17	2017/18	2018/19
					(million metric tons)				
Production									
Brazil	5.1	8.5	7.9	17.1	38.4	34.7	39.2	38.9	34.2
India	4.5	6.5	13.7	20.5	26.6	27.4	22.2	32.4	33.8
European Union	15.4	19.0	23.2	0.0	15.9	14.3	18.3	21.2	20.3
Thailand	0.5	1.7	4.0	5.1	9.7	9.7	10.0	13.7	14.1
China	2.1	3.2	6.8	6.8	11.2	9.1	9.3	10.3	10.8
United States	5.6	5.6	6.3	8.0	7.1	8.2	8.1	8.4	8.1
Pakistan	0.0	0.9	2.1	2.6	3.9	5.3	6.8	7.4	6.5
Russia	0.0	0.0	2.6	1.6	3.0	5.2	6.2	6.5	6.4
Mexico	2.5	2.5	3.9	5.2	5.5	6.5	6.3	6.3	6.4
Australia	2.7	3.3	3.6	4.2	3.7	4.9	5.1	4.7	4.8
Guatemala	0.2	0.5	1.0	1.6	2.0	2.8	2.7	2.8	2.7
Others	*31.7*	*36.7*	*39.4*	*58.1*	*35.2*	*37.0*	*39.7*	*39.2*	*40.1*
World	**70.3**	**88.6**	**114.4**	**130.8**	**162.2**	**164.9**	**174.0**	**191.8**	**188.3**
Stocks									
India	1.8	1.1	3.6	12.0	6.3	9.3	6.6	11.5	11.8
Thailand	0.0	0.2	0.2	0.6	3.0	5.3	5.6	7.2	7.7
China	0.3	0.7	1.4	1.0	1.6	9.6	7.8	6.5	5.5
Pakistan	0.0	0.1	0.3	0.4	1.5	1.5	2.8	3.8	4.7
European Union	0.0	0.0	0.0	0.0	2.0	1.2	1.9	2.0	1.9
Indonesia	0.4	0.3	0.4	1.4	0.6	1.1	1.7	1.8	1.5
United States	2.9	1.4	1.4	2.0	1.3	1.9	1.7	1.7	1.4
Others	*14.7*	*13.8*	*15.2*	*22.5*	*13.3*	*14.3*	*13.8*	*15.0*	*14.6*
World	**20.2**	**17.6**	**22.4**	**39.9**	**29.5**	**44.1**	**42.0**	**49.5**	**49.2**
Exports									
Brazil	1.2	2.3	1.3	7.7	25.8	24.4	28.5	28.2	23.6
Thailand	0.2	1.0	2.7	3.4	6.6	7.1	7.0	9.5	11.0
India	0.3	0.1	0.2	1.4	3.9	3.8	2.1	2.0	6.0
Australia	1.8	2.6	2.8	3.1	2.8	3.7	4.0	3.7	3.7
European Union	2.7	6.5	8.1	0.0	1.1	1.5	1.5	3.7	3.0
Guatemala	0.1	0.2	0.7	1.2	1.5	2.0	2.0	1.9	1.9
Mexico	0.6	0.0	0.3	0.2	1.6	1.3	1.3	1.3	1.5
Others	*14.4*	*15.7*	*17.8*	*21.5*	*10.6*	*10.2*	*12.3*	*12.8*	*12.1*
World	**21.3**	**28.4**	**33.9**	**38.3**	**53.9**	**54.0**	**58.7**	**63.1**	**62.8**
Imports									
Indonesia	0.1	0.6	0.2	1.6	3.1	3.7	4.9	4.5	4.3
China	0.4	1.1	1.1	1.1	2.1	6.1	4.6	4.2	4.0
United States	4.8	4.4	2.6	1.4	3.4	3.0	2.9	3.1	3.1
United Arab Emirates	0.0	0.1	0.1	1.1	2.0	1.8	1.9	2.9	3.0
Bangladesh	0.0	0.0	0.0	0.8	1.5	2.3	2.1	2.7	2.9
Algeria	0.0	0.7	1.0	1.0	1.2	1.8	2.1	2.3	2.4
Malaysia	0.0	0.5	0.9	1.3	1.8	2.0	1.9	2.0	2.1
Others	*12.0*	*20.9*	*26.2*	*32.0*	*34.0*	*33.9*	*33.8*	*32.1*	*30.9*
World	**17.3**	**28.2**	**32.1**	**40.4**	**49.1**	**54.7**	**54.2**	**53.7**	**52.5**

Source: U.S. Department of Agriculture (October 11, 2018 update).
Note: The trade year is January-December of the later year of the split. For example, 1970/71 refers to calendar year 1971.
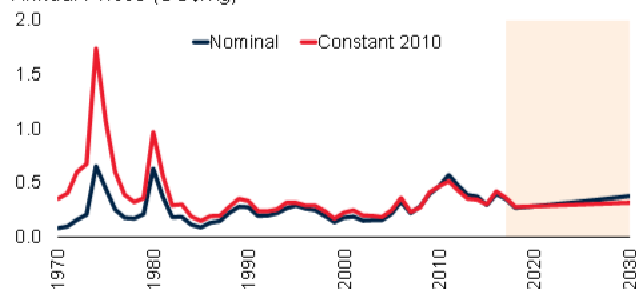
Tea

Monthly Prices (US$/kg)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/kg) —Nominal —Constant 2010

Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2013	2014	2015	2016
					(thousand metric tons)				
Production									
China	163	328	562	704	1,467	1,939	2,111	2,263	2,415
India	419	570	688	826	991	1,209	1,207	1,233	1,252
Kenya	41	90	197	236	399	432	445	399	473
Sri Lanka	212	191	233	306	331	340	338	342	349
Vietnam	15	21	32	70	198	218	228	236	240
Turkey	33	96	123	139	235	212	227	239	243
Indonesia	64	106	156	163	150	146	154	133	144
Myanmar	11	13	15	63	95	96	99	100	102
Argentina	26	36	51	74	92	80	84	90	90
Japan	91	102	90	85	85	85	84	80	80
Iran, Islamic Rep.	20	32	37	223	121	97	72	70	75
Bangladesh	31	40	39	46	60	66	64	66	65
Uganda	18	2	7	29	49	61	61	61	63
Burundi	0	1	4	34	38	42	54	54	53
Malawi	19	30	39	42	52	46	45	48	48
Others	123	236	252	191	258	258	238	249	262
World	**1,287**	**1,894**	**2,525**	**3,231**	**4,622**	**5,329**	**5,512**	**5,662**	**5,954**
Consumption									
China	109	220	383	497	1,217	1,671	n/a	n/a	n/a
India	218	331	490	632	774	973	n/a	n/a	n/a
Brazil	90	81	133	514	406	481	n/a	n/a	n/a
Iran, Islamic Rep.	24	39	79	48	200	228	n/a	n/a	n/a
Turkey	26	91	95	137	242	214	n/a	n/a	n/a
Argentina	122	132	149	271	219	210	n/a	n/a	n/a
United States	68	81	84	145	170	166	n/a	n/a	n/a
Russian Federation	n/a	n/a	n/a	158	176	162	n/a	n/a	n/a
Japan	105	116	123	144	127	121	n/a	n/a	n/a
Pakistan	30	61	106	111	93	118	n/a	n/a	n/a
United Kingdom	234	186	142	133	121	116	n/a	n/a	n/a
Others	476	748	1,055	935	1,308	1,595	n/a	n/a	n/a
World	**1,502**	**2,086**	**2,839**	**3,725**	**5,053**	**6,055**	**n/a**	**n/a**	**n/a**
Exports									
Kenya	42	84	166	217	418	449	n/a	n/a	n/a
China	61	120	211	238	308	332	n/a	n/a	n/a
Sri Lanka	208	185	216	287	313	318	n/a	n/a	n/a
India	200	239	198	201	235	255	n/a	n/a	n/a
Vietnam	2	9	16	56	137	90	n/a	n/a	n/a
Argentina	19	33	46	50	86	77	n/a	n/a	n/a
Indonesia	41	74	111	106	87	71	n/a	n/a	n/a
Uganda	15	1	5	26	55	62	n/a	n/a	n/a
United Arab Emirates	0	8	7	12	50	45	n/a	n/a	n/a
Others	164	231	251	271	336	352	n/a	n/a	n/a
World	**752**	**984**	**1,228**	**1,464**	**2,023**	**2,051**	**n/a**	**n/a**	**n/a**

Source: Food and Agriculture Organization, Intergovernmental Group on Tea (March 21, 2018 update).
Note: Consumption includes domestic use for food, feed, waste, and other uses.

Timber—Roundwood and Sawnwood

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

— Sawnwood, nominal   — Sawnwood, constant 2010

Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2013	2014	2015	2016
					(million cubic meters)				
Industrial roundwood: Production									
United States	312.7	327.1	427.2	420.6	336.1	354.9	356.8	354.7	356.6
Russian Federation	n/a	n/a	n/a	145.6	161.6	180.4	188.3	190.5	198.2
China	42.2	79.2	91.2	96.0	161.8	168.7	162.5	148.7	164.4
Canada	117.5	150.8	156.0	198.9	138.8	147.8	148.8	151.4	157.8
Brazil	23.9	61.7	74.3	103.0	128.4	142.6	137.7	136.2	145.1
Indonesia	12.7	30.9	38.4	48.8	54.1	74.0	74.0	74.0	74.0
Sweden	56.7	44.8	49.1	57.4	66.3	63.7	67.4	67.3	67.2
Finland	37.5	43.0	40.2	50.1	46.0	49.3	49.2	51.4	54.3
India	12.7	19.7	35.1	41.2	48.8	49.5	49.5	49.5	49.5
Others	*660.7*	*689.5*	*798.1*	*525.5*	*562.0*	*576.5*	*598.3*	*602.3*	*606.5*
World	**1,276.4**	**1,446.7**	**1,709.5**	**1,687.2**	**1,703.9**	**1,807.5**	**1,832.6**	**1,826.0**	**1,873.7**
Industrial roundwood: Imports									
China	2.0	8.3	7.2	15.7	35.4	45.8	52.3	44.9	49.1
Austria	2.0	3.7	4.4	8.5	8.0	8.2	7.2	7.8	9.1
Germany	5.2	3.8	2.0	3.5	7.7	8.4	8.4	8.7	8.7
Sweden	0.6	3.1	2.0	11.7	6.3	7.5	8.1	6.9	6.8
Finland	2.3	3.8	5.2	9.9	6.3	6.7	6.3	5.7	5.9
India	0.0	0.0	1.3	2.2	5.3	6.5	7.0	5.8	5.5
Canada	2.1	3.0	1.5	6.5	4.7	4.9	4.3	4.6	4.3
Others	*69.0*	*69.7*	*58.9*	*57.2*	*36.1*	*38.2*	*39.6*	*37.4*	*37.7*
World	**83.1**	**95.4**	**82.6**	**115.3**	**109.8**	**126.3**	**133.1**	**121.9**	**127.1**
Sawnwood: Production									
United States	63.7	65.3	86.1	91.1	60.0	71.1	75.8	76.4	78.2
China	14.8	21.2	23.6	6.7	37.2	63.0	68.4	74.4	77.2
Canada	19.8	32.8	39.7	50.5	38.7	42.8	43.4	47.1	49.7
Russian Federation	n/a	n/a	n/a	20.0	28.9	33.5	34.6	34.5	36.8
Germany	11.6	13.0	14.7	16.3	22.1	21.5	21.8	21.5	22.2
Sweden	12.3	11.3	12.0	16.2	16.8	16.2	17.5	18.2	18.0
Brazil	8.0	14.9	13.7	21.3	17.5	15.4	15.2	14.8	14.6
Finland	7.4	10.3	7.5	13.4	9.5	10.4	10.9	10.6	11.4
Japan	42.8	37.0	29.8	17.1	9.4	10.1	9.6	9.6	9.6
Others	*208.8*	*215.2*	*235.8*	*132.3*	*135.7*	*139.2*	*142.4*	*146.1*	*149.9*
World	**389.1**	**420.9**	**463.0**	**384.8**	**375.6**	**423.2**	**439.6**	**453.1**	**467.6**
Sawnwood: Imports									
China	0.1	0.3	1.3	6.1	16.2	25.5	28.6	28.2	32.8
United States	10.6	17.0	22.5	34.4	16.6	20.5	22.2	24.4	29.8
United Kingdom	9.0	6.6	10.7	7.9	5.7	5.5	6.4	6.3	6.6
Japan	3.0	5.6	9.0	10.0	6.4	7.5	6.2	6.0	6.3
Germany	6.0	6.9	6.1	6.3	4.4	4.5	4.6	4.8	5.3
Egypt, Arab Rep.	0.4	1.6	1.6	2.0	4.8	4.5	6.6	5.8	5.0
Italy	4.0	5.8	6.0	8.4	6.1	4.7	4.7	4.7	4.7
Others	*19.6*	*27.8*	*27.3*	*40.6*	*48.2*	*49.1*	*51.2*	*50.5*	*50.3*
World	**52.6**	**71.5**	**84.5**	**115.6**	**108.4**	**121.8**	**130.6**	**130.7**	**140.8**

Source: Food and Agriculture Organization of the United Nations (December 20, 2017 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
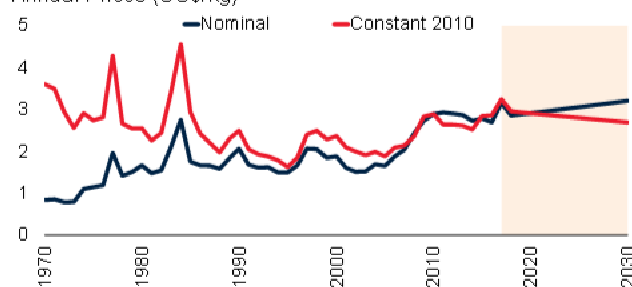
Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)
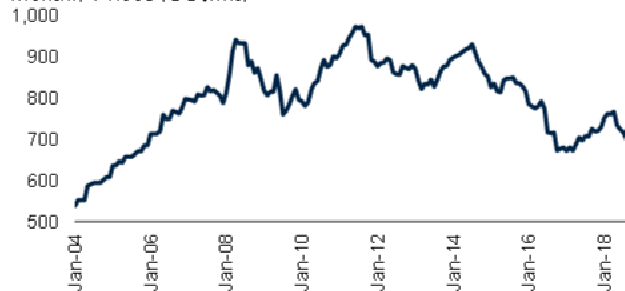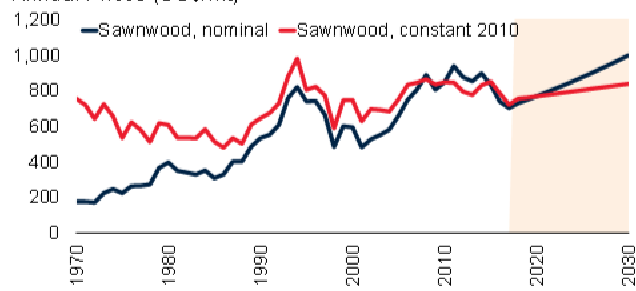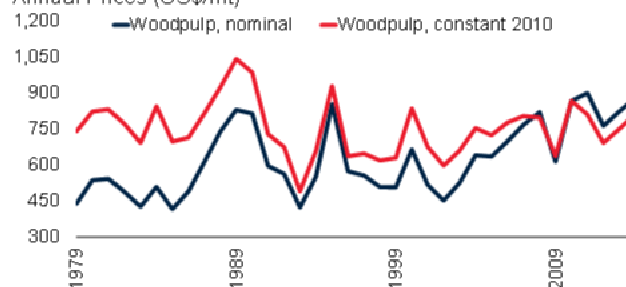

Source: World Bank.
Note: 2018-30 are forecasts.

	1970	1980	1990	2000	2010	2013	2014	2015	2016
					(million cubic meters)				
Wood-based panels: Production									
China	0.9	2.3	3.0	19.3	109.2	177.0	191.2	200.7	211.5
United States	23.0	26.4	37.0	45.7	32.6	33.5	33.8	33.9	34.5
Russian Federation	n/a	n/a	n/a	4.8	10.1	12.7	13.2	14.3	15.0
Canada	3.3	4.8	6.4	15.0	9.9	11.3	11.8	12.4	13.2
Germany	5.8	8.3	9.6	14.1	12.6	12.2	12.3	12.2	12.7
Brazil	0.8	2.5	2.9	5.8	10.2	11.7	11.6	11.5	11.6
Poland	1.0	2.0	1.4	4.7	8.2	9.0	9.2	9.7	10.1
Turkey	0.2	0.4	0.8	2.4	6.6	8.8	9.6	9.4	9.8
Romania	0.9	1.6	1.1	0.3	3.0	4.9	4.9	6.0	6.2
Others	*33.8*	*53.0*	*66.8*	*74.4*	*85.8*	*84.0*	*87.4*	*88.9*	*91.1*
World	**69.8**	**101.3**	**129.0**	**186.4**	**288.3**	**365.1**	**385.0**	**399.1**	**415.6**
Wood-based panels: Imports									
United States	2.5	2.1	4.2	13.9	8.1	8.8	9.6	11.5	12.9
Germany	1.0	2.3	3.3	4.1	4.6	5.1	5.3	5.5	5.6
Japan	0.6	0.3	3.8	6.2	4.2	5.0	4.8	4.2	4.1
United Kingdom	2.0	2.4	3.3	3.3	2.7	3.0	3.3	3.2	3.4
Canada	0.2	0.2	0.5	1.5	2.8	2.8	3.5	3.3	3.4
China	0.1	0.3	3.2	6.6	3.0	3.1	3.5	3.6	3.4
Italy	0.1	0.8	0.9	1.7	2.4	2.4	2.8	2.7	3.0
Others	*3.5*	*7.1*	*11.1*	*22.5*	*39.2*	*44.2*	*45.4*	*45.9*	*48.1*
World	**10.0**	**15.7**	**30.3**	**59.9**	**67.0**	**74.4**	**78.1**	**80.0**	**84.0**
Woodpulp: Production									
United States	37.3	46.2	57.2	57.8	50.9	49.1	50.1	49.4	49.5
Brazil	0.8	3.4	4.3	7.3	14.5	15.5	16.8	17.8	19.4
Canada	16.6	19.9	23.0	26.7	18.9	18.1	17.3	17.2	17.1
Sweden	8.1	8.7	10.2	11.5	11.9	11.7	11.5	11.6	11.6
Finland	6.2	7.2	8.9	12.0	10.5	10.5	10.5	10.5	10.9
China	1.2	1.3	2.1	3.7	7.5	9.6	10.4	10.2	10.6
Japan	8.8	9.8	11.3	11.4	9.5	8.8	9.1	8.9	8.8
Russian Federation	0.0	0.0	0.0	5.8	7.4	7.2	7.7	8.1	8.4
Indonesia	0.0	0.0	0.7	4.1	5.7	6.7	6.7	6.7	6.7
Others	*22.5*	*29.1*	*37.1*	*30.8*	*33.9*	*35.0*	*36.2*	*36.0*	*36.5*
World	**101.6**	**125.7**	**154.8**	**171.2**	**170.7**	**172.1**	**176.2**	**176.3**	**179.5**
Woodpulp: Imports									
China	0.1	0.4	0.9	4.0	12.1	17.6	18.7	20.6	21.9
United States	3.2	3.7	4.4	6.6	5.6	5.5	5.8	5.4	5.6
Germany	1.8	2.6	3.7	4.1	5.1	5.0	4.9	4.9	4.9
Italy	1.4	1.8	2.1	3.2	3.4	3.5	3.4	3.5	3.4
Netherlands	0.6	0.6	0.6	0.9	1.2	2.5	2.4	2.5	2.4
Korea, Rep.	0.2	0.5	1.1	2.1	2.5	2.4	2.3	2.3	2.2
France	1.3	1.8	1.9	2.4	1.9	2.1	2.0	2.0	1.9
Others	*7.9*	*9.2*	*10.5*	*14.5*	*15.9*	*18.3*	*19.0*	*19.1*	*20.4*
World	**16.6**	**20.6**	**25.2**	**37.8**	**47.9**	**56.9**	**58.4**	**60.3**	**62.8**

Source: Food and Agriculture Organization of the United Nations (December 20, 2017 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: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)
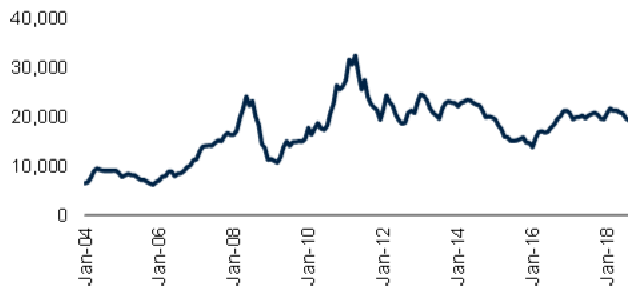

Source: World Bank.
Note: 2018-30 are forecasts.

	1980	1990	2000	2005	2010	2014	2015	2016	2017
					(thousand metric tons)				
Mine Production									
China	16.0	42.2	87.7	113.1	129.6	102.1	110.2	97.2	93.4
Indonesia	32.5	39.3	51.6	120.0	84.0	69.6	68.4	60.0	82.8
Myanmar	1.2	0.6	1.6	0.7	0.8	35.0	58.0	60.0	58.9
Bolivia	22.5	17.3	12.5	18.6	20.2	19.8	20.1	17.5	18.3
Peru	1.1	4.8	36.4	42.5	33.8	23.1	19.5	18.8	17.8
Brazil	6.9	39.1	14.2	11.7	10.4	25.5	18.8	16.9	13.9
Australia	11.6	7.4	9.1	2.7	18.6	6.9	7.2	6.6	7.4
Congo, Dem. Rep.	3.2	1.6	0.0	7.6	7.4	4.1	4.4	6.5	7.1
Nigeria	2.5	0.3	2.0	0.9	1.3	2.5	2.4	3.4	6.6
Vietnam	0.4	0.8	1.8	5.4	5.4	4.8	4.5	4.6	4.6
Malaysia	61.4	28.5	6.3	2.9	2.7	3.8	4.1	4.1	3.9
Rwanda	1.5	0.7	0.4	3.3	2.9	4.4	3.7	2.7	3.3
Russian Federation	n/a	n/a	6.5	2.5	0.1	0.3	0.6	0.6	1.2
Others	*70.3*	*41.9*	*4.4*	*1.1*	*0.7*	*1.1*	*0.8*	*1.2*	*1.6*
World	**231.1**	**224.5**	**234.5**	**333.1**	**318.0**	**303.0**	**322.7**	**300.1**	**320.9**
Refined Production									
China	15.0	35.8	109.9	112.2	149.0	187.1	167.2	182.7	182.2
Indonesia	30.5	38.0	46.4	78.0	64.2	64.8	67.4	52.3	72.0
Malaysia	71.3	49.0	26.2	39.2	38.7	36.7	30.3	26.5	27.2
Brazil	8.8	37.6	13.8	9.0	9.1	22.3	18.4	18.4	18.4
Peru	0.0	0.0	17.4	38.3	36.4	24.5	20.4	19.4	17.9
Bolivia	17.5	13.1	9.4	15.6	15.0	15.4	15.5	16.8	16.1
Thailand	34.8	15.5	17.2	29.4	23.5	16.3	10.5	11.1	10.6
Belgium	3.1	6.1	8.5	7.7	9.9	9.7	8.8	8.5	9.7
Vietnam	0.0	1.8	1.8	1.8	3.0	4.7	4.4	4.4	4.4
Poland	0.0	0.0	0.0	0.0	0.6	2.3	2.2	2.9	3.4
Japan	1.3	0.8	0.6	0.8	0.8	1.7	1.7	1.6	1.6
Nigeria	2.7	0.3	0.1	0.6	0.6	0.6	0.6	0.6	0.6
Argentina	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Others	*59.4*	*49.8*	*10.9*	*7.9*	*5.5*	*4.3*	*0.0*	*0.0*	*0.0*
World	**244.6**	**248.0**	**262.3**	**340.5**	**356.6**	**390.5**	**347.1**	**345.1**	**364.1**
Refined Consumption									
China	12.5	25.5	49.1	108.7	154.3	193.9	176.3	191.4	183.4
United States	46.5	36.8	51.0	42.3	32.0	28.8	31.4	29.5	31.5
Japan	30.9	34.8	25.2	33.2	35.7	27.1	26.8	26.1	29.1
Germany	19.0	21.7	20.7	19.1	17.4	18.8	17.9	18.2	20.0
Korea, Rep.	1.8	7.8	15.3	17.9	17.4	13.8	13.1	14.2	13.1
India	2.3	2.3	6.4	8.4	10.7	11.9	8.7	9.1	10.0
Brazil	4.7	6.1	7.2	5.7	8.7	14.9	11.0	11.3	10.0
Vietnam	0.0	0.0	0.8	1.2	2.0	5.5	6.0	6.0	6.0
Netherlands	5.0	6.9	3.6	3.5	5.4	7.2	6.0	6.0	6.0
Others	*100.2*	*95.7*	*97.6*	*98.7*	*85.0*	*69.6*	*68.2*	*70.3*	*71.9*
World	**222.9**	**237.6**	**276.9**	**338.6**	**368.8**	**391.5**	**365.2**	**382.1**	**381.1**

Source: World Bureau of Metal Statistics (October 2018 update).
Note: n/a implies data not available. Refined production and consumption include significant recycled material.
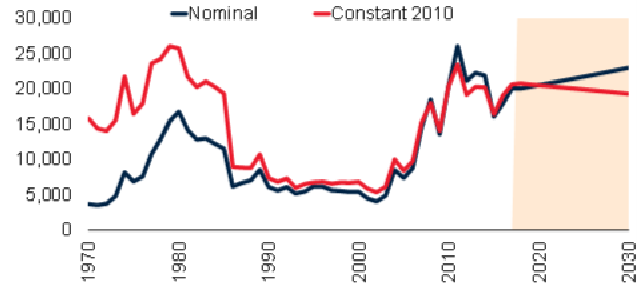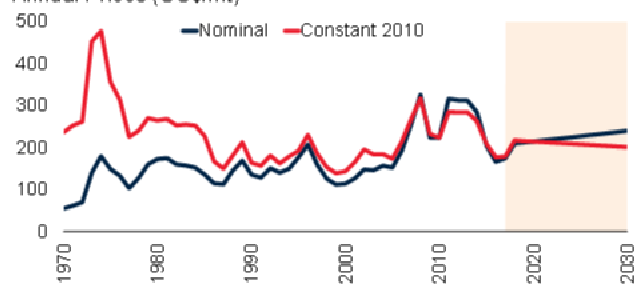
Wheat

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)
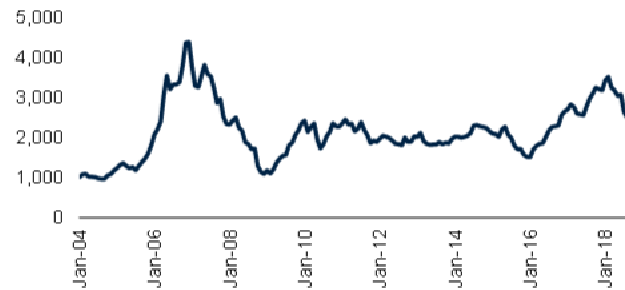

Source: World Bank.
Note: 2018-30 are forecasts.

	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	160.5	145.4	151.7	137.5
China	29.2	55.2	98.2	99.6	115.2	130.2	128.8	129.8	128.0
India	20.1	31.8	49.9	76.4	80.8	86.5	87.0	98.5	99.7
Russia	0.0	0.0	49.6	34.5	41.5	61.0	72.5	85.0	70.0
United States	36.8	64.8	74.3	60.6	58.9	56.1	62.8	47.3	51.3
Canada	9.0	19.3	32.1	26.5	23.3	27.6	32.1	30.0	31.5
Pakistan	7.3	10.9	14.4	21.1	23.3	25.1	25.6	26.7	26.3
Ukraine	0.0	0.0	30.4	10.2	16.8	27.3	26.8	27.0	25.5
Argentina	4.9	7.8	11.0	16.3	17.2	11.3	18.4	18.5	19.5
Turkey	8.0	13.0	16.0	18.0	17.0	19.5	17.3	21.0	19.0
Australia	7.9	10.9	15.1	22.1	27.4	22.3	31.8	21.3	18.5
Others	120.8	128.9	72.8	64.7	91.6	108.5	103.5	102.0	104.1
World	**306.5**	**435.9**	**588.8**	**582.8**	**649.7**	**736.0**	**752.1**	**758.7**	**730.9**
Stocks									
China	7.2	31.7	49.9	91.9	59.1	97.0	111.0	126.8	136.1
United States	22.4	26.9	23.6	23.8	23.5	26.6	32.1	29.9	26.0
India	5.0	4.0	5.8	21.5	15.4	14.5	9.8	13.2	14.6
European Union	8.6	13.0	22.5	17.9	11.9	15.5	10.7	14.5	10.0
Russian Federation	n/a	n/a	16.4	1.5	13.7	5.6	10.8	10.9	5.9
Morocco	0.1	0.5	0.6	1.4	2.8	6.9	4.5	4.9	5.4
Canada	20.0	8.5	10.3	9.7	7.4	5.2	6.9	6.2	5.1
Others	17.3	28.1	41.7	38.4	65.2	73.1	71.3	68.5	57.0
World	**80.5**	**112.6**	**170.9**	**206.1**	**198.9**	**244.4**	**257.3**	**274.9**	**260.2**
Exports									
Russia	n/a	n/a	1.2	0.7	4.0	25.5	27.8	41.4	35.0
United States	20.2	41.2	29.1	28.9	35.1	21.2	28.6	24.5	27.9
Canada	11.8	16.3	21.7	17.3	16.6	22.1	20.2	22.0	24.0
European Union	6.7	17.5	23.8	15.7	23.1	34.8	27.4	23.3	23.0
Ukraine	0.0	0.0	2.0	0.1	4.3	17.4	18.1	17.8	16.5
Argentina	1.0	3.8	5.6	11.3	9.5	9.6	13.8	12.0	14.2
Australia	9.1	9.6	11.8	15.9	18.6	16.1	22.6	14.5	13.0
Others	7.6	1.7	8.6	11.2	21.9	26.1	24.8	25.8	26.8
World	**56.5**	**90.1**	**103.8**	**101.2**	**133.0**	**172.8**	**183.3**	**181.3**	**180.4**
Imports									
Egypt, Arab Rep.	2.8	5.4	5.7	6.1	10.6	11.9	11.2	12.4	12.5
Indonesia	0.5	1.2	2.0	4.1	6.6	10.0	10.2	10.5	10.5
Brazil	1.7	3.9	4.4	7.2	6.7	6.7	7.3	7.0	7.5
Algeria	0.6	2.3	4.4	5.6	6.5	8.2	8.4	8.2	7.2
Bangladesh	0.0	1.0	1.4	1.3	4.0	4.7	5.6	6.2	6.5
European Union	n/a	n/a	n/a	3.5	4.6	6.9	5.3	5.8	6.0
Philippines	0.6	0.9	1.5	3.1	3.2	4.9	5.7	6.0	5.8
Others	49.6	74.8	79.6	68.6	89.9	116.7	125.4	123.3	121.8
World	**55.8**	**89.5**	**99.0**	**99.3**	**132.1**	**170.2**	**179.1**	**179.3**	**177.8**

Source: U.S. Department of Agriculture (October 11, 2018 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.
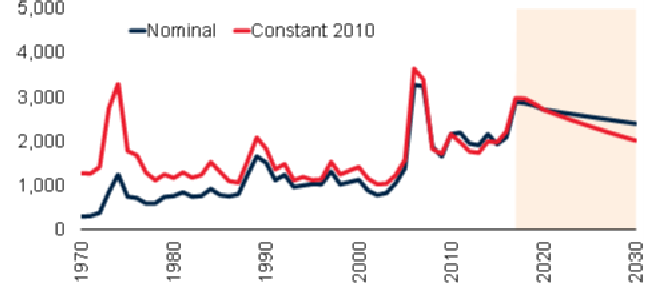
Zinc

Monthly Prices (US$/mt)

Source: World Bank.
Note: Last observation is September 2018.

Annual Prices (US$/mt)

Source: World Bank.
Note: 2018-30 are forecasts.

	1980	1990	2000	2005	2010	2014	2015	2016	2017
					(thousand metric tons)				
Mine Production									
China	150	763	1,780	2,061	3,842	5,118	4,749	4,711	4,997
Peru	488	584	910	1,202	1,470	1,319	1,422	1,334	1,473
Australia	495	940	1,420	1,367	1,475	1,506	1,610	884	841
India	32	70	208	447	741	712	819	646	835
United States	349	571	829	748	748	832	808	805	774
Mexico	243	307	401	476	570	660	695	661	674
Bolivia	50	108	149	160	411	449	442	487	504
Turkey	23	35	18	19	196	210	185	202	365
Kazakhstan	n/a	n/a	322	364	405	386	384	366	347
Canada	1,059	1,203	1,002	667	649	352	290	301	344
Russian Federation	n/a	n/a	132	186	214	192	201	216	279
Sweden	167	160	177	216	199	222	247	258	251
Algeria	0	0	0	0	0	0	25	165	250
Others	n/a	n/a	1,467	1,656	1,547	1,607	1,502	1,503	1,526
World	**6,172**	**7,176**	**8,815**	**9,569**	**12,469**	**13,564**	**13,376**	**12,538**	**13,460**
Refined Production									
China	155	552	1,957	2,725	5,209	5,807	6,116	6,196	6,219
Korea, Rep.	76	248	473	650	750	915	930	1,009	1,050
India	44	79	176	266	701	700	821	616	792
Canada	592	592	780	724	691	649	683	691	598
Japan	735	688	654	638	574	583	567	534	524
Spain	152	253	386	501	517	498	509	507	510
Australia	301	309	489	457	507	488	489	464	471
Kazakhstan	n/a	n/a	263	357	319	325	324	326	329
Mexico	145	199	337	334	322	321	327	321	327
Peru	64	118	200	166	223	336	335	342	312
Finland	147	175	223	282	307	302	306	291	285
Brazil	79	150	192	267	288	246	231	285	272
Belgium	248	290	264	220	281	262	260	236	249
Others	n/a	n/a	2,759	2,531	2,230	2,051	1,996	1,891	1,860
World	**6,159**	**6,698**	**9,153**	**10,119**	**12,919**	**13,484**	**13,894**	**13,707**	**13,798**
Refined Consumption									
China	200	369	1,402	3,040	5,350	6,401	6,448	6,484	6,965
United States	810	992	1,315	1,080	907	962	931	789	829
Korea, Rep.	68	230	419	448	540	644	585	627	716
India	95	135	224	389	538	638	616	676	661
Japan	752	814	674	602	516	503	479	474	482
Germany	474	530	532	514	494	477	479	483	452
Belgium	155	178	394	256	321	388	450	368	306
Turkey	12	53	92	139	182	237	230	231	267
Taiwan, China	38	79	294	306	232	220	229	188	225
Others	3,527	3,188	3,544	3,622	3,452	3,324	3,328	3,478	3,334
World	**6,131**	**6,568**	**8,889**	**10,396**	**12,532**	**13,794**	**13,774**	**13,799**	**14,237**

Source: World Bureau of Metal Statistics (October 2018 update).
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.

Coal (South Africa). Thermal, f.o.b. Richards Bay, 6,000 kcal/kg, NAR netback assessment effective February 13, 2017 and replaces NAR 90-day forward delivery.

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 (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 Organization 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). Bulk, c.i.f. Rotterdam.

Groundnut oil (any origin). Refined, f.c.a. Dunkirk, nearest forward.

Fishmeal (Peru). Min 67/10/10/5-2, f.o.b. spot.

Palm oil (Malaysia). F.o.b., spot.

Palmkernel Oil (Malaysia/Indonesia). C.i.f. Rotterdam, spot.

Soybean meal (Argentina). 46.5% protein, c.i.f. Amsterdam/Rotterdam/Antwerp.

Soybean oil (Brazil). Crude, degummed, f.o.b.

Soybeans (Brazil). C.i.f. Rotterdam, spot.

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, US import price, f.o.t. US 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. UK 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. US Gulf.

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

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

TSP (triple superphosphate), spot, import US 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

bcf/d = billion cubic feet per day

BRL/USD = Brazilian real/U.S. dollar exchange rate

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

kbd = thousand of barrels per day

kg = kilogram

mb/d = million barrels per day

mmbtu = million British thermal units

mmdt = million metric dry tons

mmt = million metric tons

mt = metric ton (1,000 kilograms)

mtoe = millions of tonnes of oil equivalent

ToE = tonnes of oil equivalent

toz = troy ounce

Acronyms

ARDL	auto-regressive distributed lag
BIC	Bayesian information criterion
DAP	diammonium phosphate
EIA	Energy Information Administration
EU	European Union
EMDEs	Emerging markets and developing economies
ETFs	Exchange Traded Funds
FAO	Food and Agriculture Organization
FRED	Federal Reserve Bank of St. Louis Economic Data
G7	group of seven countries
GDP	gross domestic product
GMM	generalized methods of moments
ICAC	International Cotton Advisory Committee
IEA	International Energy Agency
IMF	International Monetary Fund
IRSG	International Rubber Study Group
JCPOA	Joint Comprehensive Plan of Action
LME	London Metal Exchange

LNG	liquefied natural gas	
MUV	Manufacture Unit Value	
NPI	nickel pig iron	
OECD	Organization of Economic Co-operation and Development	
OLS	ordinary list squares	
OPEC	Organization of the Petroleum Exporting Countries	
PNG	pooled mean group	
TSP	triple superphosphate	
USDA	United States Department of Agriculture	
VAT	Value-added tax	
VECM	vector error correction model	
WTI	West Texas Intermediate	

Data sources

Africa Tea Brokers Limited

Baker Hughes

Bloomberg

BP Statistical Review

Cotton Outlook

Food and Agriculture Organization (FAO)

Intergovernmental Group on Bananas and Tropical Fruits

Intergovernmental Group on Tea

International Cocoa Organization (ICCO)

International Coffee Organization (ICO)

International Cotton Advisory Committee

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

Kennedy Information LLC

Meat Trade Journal

MLA Meat & Livestock Weekly

Platinum and Palladium Survey

Platts International Coal Report

Rystad Energy

Singapore Commodity Exchange

Sri Lanka Tea Board

Steel Statistical Yearbook

Tea Board India

Tea Exporters Association Sri Lanka

Thomson Reuters

Urner Barry

U.S. Department of Agriculture

U.S. Energy Information Administration (EIA)

World Bureau of Metal Statistics

World Gas Intelligence

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, 2011-18

Topics	Date
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
Oil price plunge 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

Energy prices strengthened in 2018Q3 in response to the impending re-imposition of sanctions on Iran and declines in production in Venezuela. In contrast, agricultural and metal prices declined in response robust supplies and trade tensions. Crude oil prices are expected to average $74/bbl in 2019 (up from a projected $72/bbl in 2018)—both upward revisions from the April 2017 forecast. Agricultural prices are expected to gain 2 percent in 2019 while metals prices are project to remain broadly stable.

A *Special Focus* analyzes the shifts in commodity demand over the past 20 years and documents that China has been the primary source of demand for coal and metals; it also concludes that, as China's economy matures, its commodity demand is likely to plateau.

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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