A World Bank Group Report

APRIL 2024

Commodity Markets Outlook

WORLD BANK GROUP

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1818 H Street NW, Washington, DC 20433

Telephone: 202-473-1000; Internet: www.worldbank.org

The cutoff date for the data used in this report was April 17, 2024.

Table of Contents

Acknowledgments

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Many people contributed to the report. Carlos Arteta and Phil Kenworthy provided overall content and editorial review. Section authors included Paolo Agnolucci (oil, natural gas, and coal), John Baffes (fertilizers, beverages, and agricultural raw materials), Phil Kenworthy (executive summary), Jeetendra Khadan (metals and critical minerals), and Dawit Mekonnen (food). Nikita Perevalov contributed with inflation scenarios. The Special Focus on "Forecasting Industrial Commodity Prices: An Assessment" was prepared by Francisco Arroyo-Marioli, Jeetendra Khadan, Valerie Mercer-Blackman, Franziska Ohnsorge, and Takefumi Yamazaki.

Kaltrina Temaj coordinated data analysis and provided research support. Lule Bahtiri and Matias Urzua provided research assistance. Maria Hazel Macadangdang managed the database and forecast table. Adriana Maximiliano handled design and production. Graeme Littler produced the accompanying website, with assistance from the Open Knowledge Repository.

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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 for 46 commodities are presented. Commodity price data updates are published separately at the beginning of each month. The data cutoff date of this report is April 17, 2024.

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

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

Executive Summary

Heightened tensions in the Middle East have been exerting upward pressure on prices for key commodities, notably oil and gold. Copper prices have also reached a two-year peak, reflecting supply concerns and signs of firmer global industrial production. In 2024 and 2025, overall commodity prices are forecast to decline slightly but remain about 38 percent above pre-pandemic levels. Unlike prices for most other commodities, oil prices are set to increase in 2024, by 2 percent. Gold and copper prices are also set to rise this year, by 8 percent and 5 percent, respectively. In all, disinflationary tailwinds from moderating commodity prices appear essentially over. The persistence of high commodity prices, relative to pre-pandemic levels, despite subdued global GDP growth indicates several forces at play: geopolitical tensions are pushing up prices, investments related to the clean-energy transition are bolstering demand for metals, and China's rising industrial and infrastructure investment is partly offsetting weakness in its property sector. Risks to the price forecasts are tilted to the upside, with the primary risk arising from a broadening of the conflict in the Middle East. A conflict-driven rise in commodity prices could stoke stubbornly elevated global inflation, further delaying global monetary easing. Food insecurity, which worsened markedly last year reflecting armed conflicts and elevated food prices, could also rise further.

The state of commodity markets

Heightened geopolitical tensions in recent weeks have been exerting substantial upward pressure on the prices of key commodities. In early April, the price of Brent oil reached $91 per barrel (bbl), $34/bbl above its 2015-19 average. Gold prices extended a three-year surge, reaching all-time highs amid safe-haven flows. Meanwhile, signs of resilience in global economic activity have also supported prices of other commodities—including copper, which recently climbed to a two-year peak. These price increases followed notable fluctuations in oil prices and, more generally, a plateauing of many commodity prices in the first quarter of the year (figure 1.A). Questions abound as to whether commodity prices—particularly oil prices—will continue to climb given heightened concerns of a regional escalation of the Middle East conflict, with potentially consequential implications for global inflation.

The World Bank commodity price index is expected to decline marginally this year and next, while remaining considerably above its pre-pandemic levels. That said, there are several upside risks to these projections, particularly concerning the effects of further conflict escalation on energy supplies.

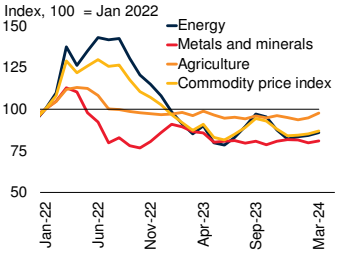
Over the next couple of years, the outlook is for sustained higher commodity prices relative to the half-decade before the COVID-19 pandemic, despite weaker global GDP growth (figure 1.B). The persistence of high commodity prices in a context of subdued global growth likely reflects several forces at play:

- *Geopolitical tensions.* Heightened geopolitical tensions are keeping upward pressure on prices of critical commodities and stoking risks of large price spikes (figure 1.C).
- *Supply conditions.* Given tight supply conditions for many industrial commodities, moderate upside surprises to economic activity may lead to notable price shifts. Signs of modest near-term firming in industrial demand have accompanied recent price increases (figure 1.D).
- *China.* The decline in property investment in China has not hurt commodity demand to the extent that many expected, especially for metals. In part, this reflects a concomitant rise in China's investment in infrastructure and manufacturing capacity (figure 1.E).
- *Climate change.* The fight against climate change provides an increasingly important backdrop. Metals-intensive investment in clean energy technologies is growing at

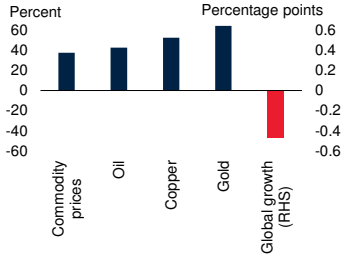
FIGURE 1 The state of commodity markets

Recent increases in the prices of some commodities followed notable fluctuations in oil prices and, more generally, a plateauing of many commodity prices in 2024Q1. Commodity prices are projected to remain well above pre-pandemic levels, despite notably slower global GDP growth. Heightened geopolitical tensions have been exerting upward price pressures, as have recent signs of firming manufacturing activity. In China, expanding industrial capacity and infrastructure investment is partially offsetting weaker commodity demand due to the property sector slowdown. Rising metals-intensive investment in the clean energy transition is providing a tailwind for base metals prices.

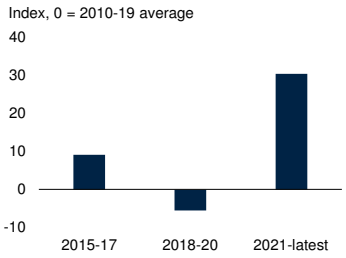
A. Commodity price indexes



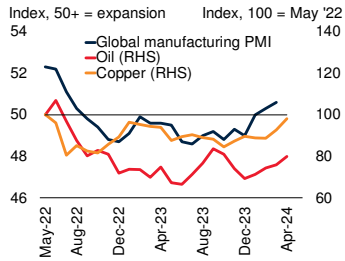
B. Global growth and commodity prices in 2024-25, deviation from 2015-19 averages



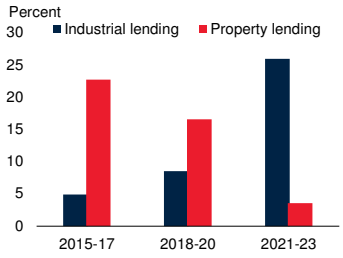
C. Geopolitical risk index, period averages



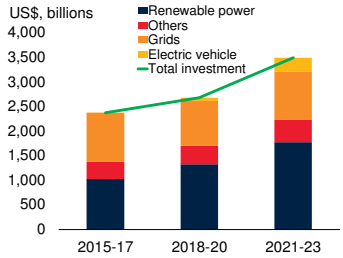
D. Global manufacturing PMI and commodity prices



E. Growth of industrial and property loans, China



F. Global clean energy investment



Sources: Bloomberg; Caldara, Dario, and Matteo Iacoviello (2021); Haver Analytics; International Energy Agency (IEA); World Bank.

A. Monthly data in U.S. dollar terms, last observation is March 2024.

B. Deviation of the 2024-25 average global growth, nominal commodity index, oil, copper and gold prices from 2015-2019 averages. GDP growth forecast from the *Global Economic Prospects*, *January 2024*.

C. Simple averages of daily values. "Latest" includes the data until April 15th, 2024.

D. Monthly average copper and oil prices indexed to May 2022 = 100, except for last observation which is the month-to-date average until April 15th, 2024. Last PMI observation is March 2024.

E. Average annual growth of property loans and medium- to long-term industrial loans by financial institutions in China.

F. Total global investment in each three-year period. 2023 values are estimated. Others = end-use renewable energy, electrification in building, transport, and industrial sectors, and battery storage.

double-digit rates, creating a sustained tailwind for base metals prices (figure 1.F).

Outlook for commodity prices

The World Bank commodity price index is projected to decline by 3 percent in 2024 and 4 percent (y/y) in 2025 (figure 2.A).[1] Although commodity prices are set to soften somewhat, they are expected to remain about 38 percent above 2015-19 average levels.

A relatively stable baseline forecast for many prices suggests tightly balanced markets. Commodity supply is generally set to improve, but commodity demand is also expected to pick up—even against a backdrop of still subdued global GDP growth—because industrial activity and trade growth are set to firm after stagnating in 2023. In part, this reflects expectations for broad, albeit measured, global monetary easing. In China, demand for energy and base metals is supported by expanding investment in infrastructure and preferred industries—including renewable energy, electronics, and electric vehicles—even as the property sector continues to soften. More broadly, continued efforts to reduce global carbon emissions portend accelerating demand for various metals and minerals that are crucial to the energy transition.

Energy prices

The energy price index is expected to edge down 3 percent (y/y) in 2024 and ease a further 4 percent in 2025. This trajectory is predicated on significant declines in coal and natural gas prices this year. In contrast, oil prices are projected to increase this year, with the Brent crude price averaging $84/bbl in 2024, up from $83/bbl last year, reflecting the recent ratcheting up of geopolitical tensions and a tight supply-demand balance. This forecast assumes no further conflict escalation and thus anticipates that the average oil

[1] Throughout this document "(y/y)" refers to the change in quantity or average price in one year, compared to the previous year; "(q/q)" refers to the change in quantity or average price in one quarter, compared to the previous quarter.

price for the remainder of 2024 will edge down from early April levels, as the recent risk premium increase abates. Next year, oil prices are expected to trend somewhat lower, averaging $79/bbl as supply conditions improve.

Oil production is expected to expand 0.8 mb/d this year, due mainly to increasing supply from the United States, while OPEC+ production is set to decrease. Consumption is foreseen increasing about 1.2 mb/d this year—a notable deceleration from 2023—with all the net demand growth in emerging market and developing economies (EMDEs). Next year, oil demand growth is anticipated to slow further, with a contemporaneous reversal of OPEC+ supply reductions pushing production higher, resulting in building inventories.

Benchmark European natural gas prices are forecast to tumble 28 percent in 2024, due primarily to elevated inventories, before rebounding somewhat in 2025. U.S. natural gas prices are set to decline in 2024 before climbing sharply in 2025 as new LNG terminals facilitate increased exports. Coal prices are forecast to fall significantly in 2024-25.

Agricultural and metal prices

Non-energy commodity prices are forecast to dip 2 percent (y/y) in 2024 and an additional 3 percent in 2025. Agricultural prices are expected to soften this year and next, reflecting increased supplies and moderating El Niño conditions, primarily affecting food crops. Accordingly, food commodity prices are set to decline by 6 percent in 2024 and 4 percent in 2025, while a spike in beverage prices this year—reflecting supply constraints on Robusta coffee and, even more so, cocoa—is projected to partially retreat in 2025. Prices of agricultural raw materials, in contrast, are anticipated to remain stable. Fertilizer prices will likely continue a sharp descent, driven by lower costs for inputs such as natural gas.

The metals price index is expected to see little change in 2024-25. Base metal prices are forecast to edge up in both years and remain well above 2015-19 levels, reflecting a pick-up in global industrial activity and growing production of clean energy technologies. In contrast, a further decline is projected in the price of iron ore, which is important for property starts, but less relevant to the green transition.

Gold prices, which dominate the precious metals index, are assumed to plateau at their recent record highs for the rest of this year, resulting in an 8 percent rise in the annual average price in 2024. Gold holds a special status among financial assets, often rising in price during periods of elevated geopolitical and policy uncertainty, including conflicts (figure 2.B). Such safe-haven demand looks set to strengthen in 2024. Prices have also been supported by strong demand, partly reflecting the reserves management strategies of several EMDE central banks. Gold prices are set to dip slightly next year but remain historically high, averaging 62 percent above 2015-19 levels.

Key risks to commodity prices

Risks to commodity prices remain tilted to the upside. The key upside risk relates to further escalation of the conflict in the Middle East, particularly if this leads to substantial disruptions to energy supply. Such disruptions could drive aggregate commodity prices materially higher, given the importance of energy in the production and transport of other commodities. Lower-than-expected U.S. energy production and weather-related disruptions globally could also exert upward commodity price pressures. Key downside risks include a faster unwind of OPEC+ supply reductions as well as weaker-than-expected global growth.

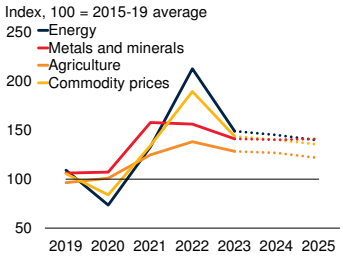
Upside risks

Further conflict escalation. Energy markets, especially for oil, are susceptible to the evolving circumstances of the conflict in the Middle East. Given elevated uncertainty following the recent increase in regional tensions, a range of adverse outcomes remains possible. Further conflict escalation involving one or more key oil producers could result in extraction and exports in the region

FIGURE 2 Commodity price outlook and risks

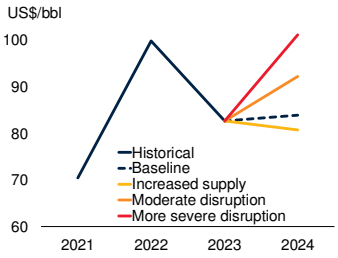
Commodity prices are forecast to decline slightly, on average, in 2024 and 2025, though oil prices are set to increase this year. Gold prices have surged to record highs on the back of safe-haven flows and central bank buying. Conflict-driven supply disruptions could push average Brent oil prices up sharply, though an earlier-than-expected unwind of OPEC+ supply cuts could see average prices dip below forecasts. Higher-than-expected oil prices could stoke stubbornly elevated global inflation.

A. Commodity price projections

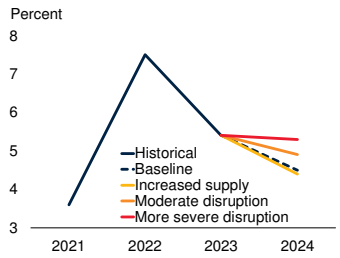


B. Gold prices and geopolitical events

C. Brent oil prices in 2024 under risk scenarios



D. Global inflation in 2024 under risk scenarios



Sources: Bloomberg; Oxford Economics; World Bank.

A. Commodity prices refers to the World Bank commodity price index, excluding precious metals. Dashed lines indicate forecasts.

B. Daily data, last observation is April 17, 2024. Red vertical lines indicate adverse geopolitical events.

C.D. The blue dashed lines indicate baseline forecasts for the price of Brent oil (panel C), and global consumer price inflation weighted by GDP (panel D). Oil prices and inflation are depicted as annual average values. The red, orange, and yellow lines indicate the possible ranges for the Brent oil price and global consumer price inflation in 2024 under different scenarios. The yellow line reflects a scenario in which OPEC+ production cuts are reduced sooner than in the baseline. The orange and red lines depict outcomes under moderate and more severe conflict-related disruptions to oil supply, respectively.

D. Model-based GDP-weighted projections of annual average country-level CPI inflation using Oxford Economics' Global Economic Model, with oil prices as described in risk scenarios.

being curtailed, rapidly lessening global oil supply. The extent and duration of the impact on oil prices would depend on the scale of the initial shock, as well as the speed and size of the response of other producers to higher prices. Indicatively, however:

- *A moderate conflict-driven disruption* could initially reduce supply by about 1 mb/d. In a context of already tight markets, average prices in 2024 could rise by $8/bbl, to $92/bbl, nearly 10 percent above the baseline forecast (figure 2.C).
- *A more severe disruption,* involving substantial reductions in the production or export capacity of one or more oil producers, could initially lower supply by about 3 mb/d. With other oil exporters likely to expand output in response, the envisaged supply reduction declines to 1 mb/d by late 2024. In such circumstances, average oil prices could hit $102/bbl in 2024, more than 20 percent above the baseline forecast.

Escalation of the conflict in the Middle East could also drive up prices for natural gas, food, and fertilizers. The region is a crucial gas supplier—20 percent of global LNG trade transits the Strait of Hormuz. Should gas supply be interrupted, fertilizer prices could in turn rise substantially, likely also leading to higher food prices. More broadly, the confluence of geopolitical tensions and ongoing conflicts, including Russia's invasion of Ukraine, could adversely affect staple food supplies. Intensified attacks on Ukraine's export facilities could reduce grain supplies, while further aggression toward ships in the Red Sea could force more Black Sea origin vessels to reroute, elongating dry bulk supply routes.

Lower U.S. energy supply. In addition to the potential for a conflict-driven supply shock, prices for oil and natural gas could turn out higher if U.S. energy production falls short of the expansion assumed in the baseline. U.S. oil production has stagnated recently in a context of elevated input costs. Moreover, rapid expansion of U.S. LNG terminals in 2024-25 might not proceed as planned, reducing LNG supplies.

Weather- and climate-related disruptions. Unexpected weather patterns could result in weather-related disruptions to commodity markets, leading to higher prices. Growing seasons could be compromised, leading to price spikes for agricultural commodities. Cold temperatures in major gas-consuming regions would raise natural gas prices. In addition, spells of unusually dry weather—increasingly common, given climate change—could adversely affect hydropower

production, resulting in higher coal and natural gas prices.

Downside risks

Higher OPEC+ oil supply. Oil prices could be driven lower by upside surprises to production. The baseline forecast is predicated on OPEC+ production cuts being maintained until next year. It is possible, however, that OPEC+ could reverse supply reductions in the second half of 2024. In that case, 1 mb/d could be returned to the market, augmenting the increase in non-OPEC+ output already assumed in the forecast. Prices could accordingly turn out lower, averaging about $81/bbl in 2024, 4 percent below the baseline.

Weaker global growth. Demand for commodities could prove weaker than expected—resulting in price declines—if global growth is slower than assumed. This could be the case if elevated core inflation proves persistent, leading major central banks to delay interest rate cuts, or if latent financial vulnerabilities emerge, resulting in tighter global financial conditions. Intensifying economic challenges in China, in particular, could pose sizable downside risks to energy and metals prices.

Key broader implications

Prospective and potential developments in commodity markets have critical implications for key challenges in the global economy, including inflation and food security.

Inflation and monetary policy. Declining commodity prices were critical to broad-based disinflation in 2023. Commodity prices plunged nearly 40 percent between June 2022 and June 2023, driving a more than 2-percentage-point reduction in global inflation between 2022 and 2023.[2] Those disinflationary tailwinds appear essentially over—the World Bank commodity index is close to unchanged from twelve months ago. The marginal softening of average commodity prices forecast for this year will do little to subdue inflation that remains above targets in many economies.

Moreover, risks of higher commodity prices could materialize, posing a renewed source of inflationary pressure. If conflict-related disruptions push this year's average Brent oil price to $102/bbl, as discussed by the more severe scenario above, global consumer price inflation could be 0.8 percentage point higher than the baseline projection in 2024 (figure 2.D). Central banks may be less inclined to look through a rise in non-core prices than in the past, reflecting concerns that, in the presence of heightened geopolitical tensions, elevated energy inflation could feed through to wider prices and inflation expectations. Monetary policy easing could therefore be delayed.

Food inflation and insecurity. Global food price inflation decreased to 4.9 percent in 2024Q1 from 5.7 percent in 2023Q4, partly attributed to declining international prices of agricultural commodities. However, about one in five emerging market and developing economies experienced higher food inflation in 2024Q1 than in 2022—the peak year of the recent global inflation surge. Food inflation exceeded 5 percent in half of countries in each of the Middle East and North Africa, Latin America and the Caribbean, South Asia, and Sub-Saharan Africa regions.

After doubling between 2018 and 2022, acute food insecurity worsened further last year, despite moderating food inflation. The latest data for 48 highly food-insecure countries indicate a 10-percent increase in acute food insecurity in 2023. While elevated commodity prices are a crucial factor, armed conflict is often the primary driver of food crises. The global rise in conflict and instability—including conflicts in the Middle East and Sub-Saharan Africa, as well as Russia's invasion of Ukraine—has substantially exacerbated food insecurity. If conflicts escalate further, global hunger could rise substantially.

[2] Recent studies document the dominant role of energy and food prices in explaining global inflation movements over the past four years: J. Ha, M. A. Kose, F. Ohnsorge, and H. Yilmazkuday, 2023, "What Explains Global Inflation," Policy Research Working Paper 10648, World Bank, Washington, DC. P. Amatyakul, D. Igan, and M. Jacopo Lombardi, "Sectoral Price Dynamics in the Last Mile of Post-Covid-19 Disinflation," (BIS Quarterly Review, Bank for International Settlements, March 2024).

Special Focus

Forecasting Industrial Commodity Prices: An Assessment

The Special Focus of this edition evaluates the performance of five well-known approaches to forecasting the prices of three key industrial commodities—aluminum, copper, and crude oil—over the period 2015Q1 to 2022Q1. High short-term volatility and significant longer-term movements in commodity prices—both features of commodity markets in recent years—present major challenges for policymakers in commodity-exporting EMDEs. Such challenges are easier to meet the more accurately price changes can be forecast. The evaluation reveals four main results. First, there is no "one-approach-beats-all" for commodity price forecasting, as the forecast accuracy of approaches varies significantly across commodities and time horizons. Second, macroeconometric models tend to be more accurate at longer horizons, partly because they can incorporate the effects of structural changes on prices. Third, it is critical to complement forecasts by incorporating judgment (information that cannot be accounted for by statistical approaches), especially when confronted by unusual or unprecedented events. Finally, these results underscore the value of employing a range of approaches in forecasting commodity prices.

TABLE 1 World Bank Commodity Price Forecasts

							Percent change from previous year			Differences in levels from October 2023 projections	
Commodity	**Unit**	**2021**	**2022**	**2023**	**2024f**	**2025f**	**2023**	**2024f**	**2025f**	**2024f**	**2025f**
INDEXES (in nominal U.S. dollars, 2010 = 100)											
Total [1]		100.9	142.5	108.0	105.3	101.6	-24.2	-2.5	-3.5	0.2	-3.0
Energy [2]		95.4	152.6	106.9	104.0	100.0	-29.9	-2.8	-3.8	0.3	-3.0
Non-Energy		112.1	122.1	110.2	107.9	104.9	-9.7	-2.1	-2.8	-0.1	-2.9
Agriculture		107.7	119.3	110.9	109.4	104.8	-7.1	-1.4	-4.2	-2.8	-4.9
Beverages		93.5	106.3	107.8	131.9	115.8	1.4	22.4	-12.2	31.0	15.4
Food		120.9	138.1	125.4	118.5	113.9	-9.2	-5.5	-3.9	-10.6	-10.8
Oils and Meals		127.1	145.2	118.9	110.2	104.9	-18.1	-7.3	-4.9	-7.1	-9.2
Grains		123.8	150.4	133.0	118.0	113.6	-11.5	-11.3	-3.8	-11.6	-9.3
Other food		110.2	117.7	127.2	129.8	126.2	8.1	2.1	-2.8	-14.3	-14.1
Raw Materials		82.9	80.3	77.1	75.8	77.1	-3.9	-1.7	1.7	-1.1	-1.0
Timber		90.4	80.1	79.1	78.3	80.1	-1.2	-1.0	2.2	-2.9	-2.4
Other raw materials		74.8	80.5	74.9	73.1	74.0	-7.0	-2.4	1.2	0.9	0.8
Fertilizers		152.3	235.7	153.5	120.2	112.9	-34.9	-21.7	-6.1	-12.2	-6.6
Metals and Minerals [3]		116.4	115.0	104.0	103.4	104.1	-9.6	-0.6	0.7	6.8	1.5
Base Metals [4]		117.7	122.4	109.0	109.9	111.5	-11.0	0.9	1.5	7.6	1.0
Precious Metals [5]		140.2	136.8	147.3	158.9	156.8	7.7	7.9	-1.3	13.8	25.3
PRICES (in nominal U.S. dollars)											
Energy											
Coal, Australia	$/mt	138.1	344.9	172.8	125.0	110.0	-49.9	-27.7	-12.0	-5.0	0.0
Crude oil, Brent	$/bbl	70.4	99.8	82.6	84.0	79.0	-17.2	1.7	-6.0	3.0	-1.0
Natural gas, Europe	$/mmbtu	16.1	40.3	13.1	9.5	10.5	-67.5	-27.6	10.5	-3.0	-2.5
Natural gas, U.S.	$/mmbtu	3.9	6.4	2.5	2.4	3.5	-60.1	-5.4	45.8	-0.9	-0.5
Liquefied natural gas, Japan	$/mmbtu	10.8	18.4	14.4	12.5	13.5	-21.9	-13.1	8.0	-0.5	-0.5
Non-Energy											
Agriculture											
Beverages											
Cocoa	$/kg	2.43	2.39	3.28	5.00	4.00	37.1	52.4	-20.0	2.10	1.10
Coffee, Arabica	$/kg	4.51	5.63	4.54	4.40	4.35	-19.4	-3.1	-1.1	0.00	0.00
Coffee, Robusta	$/kg	1.98	2.29	2.63	3.50	2.80	15.0	33.2	-20.0	1.10	0.40
Tea, average	$/kg	2.69	3.05	2.74	2.75	2.77	-10.2	0.4	0.8	0.00	0.00
Food											
Oils and Meals											
Coconut oil	$/mt	1,636	1,635	1,075	1,185	1,100	-34.2	10.2	-7.2	85	50
Groundnut oil	$/mt	2,075	2,203	2,035	1,900	1,850	-7.6	-6.6	-2.6	-250	-295
Palm oil	$/mt	1,131	1,276	886	905	825	-30.5	2.1	-8.8	5	-25
Soybean meal	$/mt	481	548	541	480	460	-1.2	-11.3	-4.2	-40	-61
Soybean oil	$/mt	1,385	1,667	1,119	1,130	1,150	-32.9	1.0	1.8	25	55
Soybeans	$/mt	583	675	598	500	475	-11.5	-16.4	-5.0	-85	-85
Grains											
Barley	$/mt	…	…	…	195	185	…	…	-5.1	5	-4
Maize	$/mt	260	319	253	200	196	-20.7	-20.8	-2.0	-30	-24
Rice, Thailand, 5%	$/mt	458	437	554	595	550	26.8	7.5	-7.6	0	0
Wheat, U.S., HRW	$/mt	315	430	340	290	285	-20.8	-14.8	-1.7	-45	-35

TABLE 1 World Bank Commodity Price Forecasts (*continued*)

							Percent change from previous year			Differences in levels from October 2023 projections	
Commodity	**Unit**	**2021**	**2022**	**2023**	**2024f**	**2025f**	**2023**	**2024f**	**2025f**	**2024f**	**2025f**
PRICES (in nominal U.S. dollars)											
Non-Energy											
Other Food											
Bananas, U.S.	$/kg	1.21	1.49	1.60	1.65	1.61	7.2	3.3	-2.1	0.00	0.00
Beef	$/kg	5.34	5.62	4.90	5.20	5.30	-12.8	6.1	1.9	-0.10	-0.10
Chicken	$/kg	1.99	1.68	1.53	1.50	1.53	-8.9	-2.2	2.0	-1.70	-1.60
Oranges	$/kg	0.65	0.92	1.57	1.65	1.50	71.2	4.8	-9.1	0.30	0.10
Shrimp	$/kg	13.70	13.51	10.19	9.50	10.00	-24.6	-6.7	5.3	-1.20	-1.10
Sugar, World	$/kg	0.39	0.41	0.52	0.50	0.46	26.6	-3.2	-8.0	0.00	0.00
Raw Materials											
Timber											
Logs, Africa	$/cum	414	369	379	390	395	2.6	3.0	1.3	0	1
Logs, S.E. Asia	$/cum	271	228	212	200	210	-6.8	-5.8	5.0	-25	-21
Sawnwood, S.E. Asia	$/cum	750	675	678	680	690	0.5	0.3	1.5	-9	-9
Other Raw Materials											
Cotton	$/kg	2.23	2.86	2.09	2.15	2.20	-26.9	2.6	2.3	0.00	0.00
Rubber, TSR20	$/kg	1.68	1.54	1.38	1.55	1.60	-10.4	12.1	3.2	0.10	0.10
Tobacco	$/mt	4,155	4,270	5,016	4,300	4,250	17.5	-14.3	-1.2	0	-41
Fertilizers											
DAP	$/mt	601	772	550	600	550	-28.8	9.1	-8.3	150	150
Phosphate rock	$/mt	123	266	322	165	170	20.9	-48.7	3.0	-125	-80
Potassium chloride	$/mt	543	863	383	300	290	-55.6	-21.7	-3.3	0	15
TSP	$/mt	538	716	480	450	380	-32.9	-6.3	-15.6	50	30
Urea, E. Europe	$/mt	483	700	358	350	325	-48.9	-2.2	-7.1	35	25
Metals and Minerals											
Aluminum	$/mt	2,473	2,705	2,256	2,300	2,400	-16.6	2.0	4.3	100	0
Copper	$/mt	9,317	8,822	8,490	8,900	8,800	-3.8	4.8	-1.1	1100	300
Iron ore	$/dmt	161.7	121.3	120.6	110.0	105.0	-0.6	-8.8	-4.5	5	5
Lead	$/mt	2,200	2,151	2,136	2,100	2,050	-0.7	-1.7	-2.4	50	-50
Nickel	$/mt	18,465	25,834	21,521	17,000	18,000	-16.7	-21.0	5.9	-3000	-2500
Tin	$/mt	32,384	31,335	25,938	27,000	28,000	-17.2	4.1	3.7	2000	1000
Zinc	$/mt	3,003	3,481	2,653	2,500	2,600	-23.8	-5.8	4.0	100	100
Precious Metals											
Gold	$/toz	1,800	1,801	1,943	2,100	2,050	7.9	8.1	-2.4	200	350
Silver	$/toz	25.2	21.8	23.4	25.0	26.0	7.4	6.8	4.0	1.3	3.5
Platinum	$/toz	1,091	962	966	1,000	1,050	0.5	3.5	5.0	-50	-100

Source: World Bank.
1. The World Bank's *commodity total price index* is composed of energy and non-energy prices (excluding precious metals), weighted by their share in 2002-04 exports. The energy index's share in the overall index is 67 percent.
2. Energy price index includes coal (Australia), crude oil (Brent), and natural gas (Europe, Japan, U.S.).
3. Base metals plus iron ore.
4. Includes aluminum, copper, lead, nickel, tin, and zinc.
5. Precious metals are not part of the non-energy index.
f = forecast.

Commodity Market Developments and Outlook

Energy

Oil prices have climbed markedly in recent weeks, moving above $90 per barrel in early April for the first time in six months against a backdrop of intensifying concerns about the conflict in the Middle East, tight supply conditions reflecting OPEC+ production cuts, and some recent signs that global industrial demand may be firming. Prior to the latest upswing in oil prices, the World Bank's energy price index fell by 4 percent in 2024Q1 (q/q), reflecting declines across all three index constituents—oil, natural gas, and coal. Assuming no escalation of ongoing conflicts in oil-producing regions, the energy index is projected to dip by 3 percent in 2024 (y/y), as notably lower natural gas and coal prices offset higher oil prices, and then soften another 4 percent in 2025. The Brent price is forecast to average $84 per barrel in 2024, up from $83 in 2023, before receding to $79 in 2025. European natural gas prices are expected to tumble by 28 percent in 2024, before rising in 2025, while U.S. gas prices are set to decline modestly this year before climbing sharply next year. Meanwhile, coal prices are projected to fall in both years. Geopolitical tensions, which have escalated following mid-April developments in the Middle East, remain the key source of upside risk in the oil market. Other upside risks include the possibility that shale oil producers fail to meet production targets. Downside risks center on a faster-than-anticipated unwind of OPEC+ supply reductions and disappointing global GDP growth.

Crude Oil

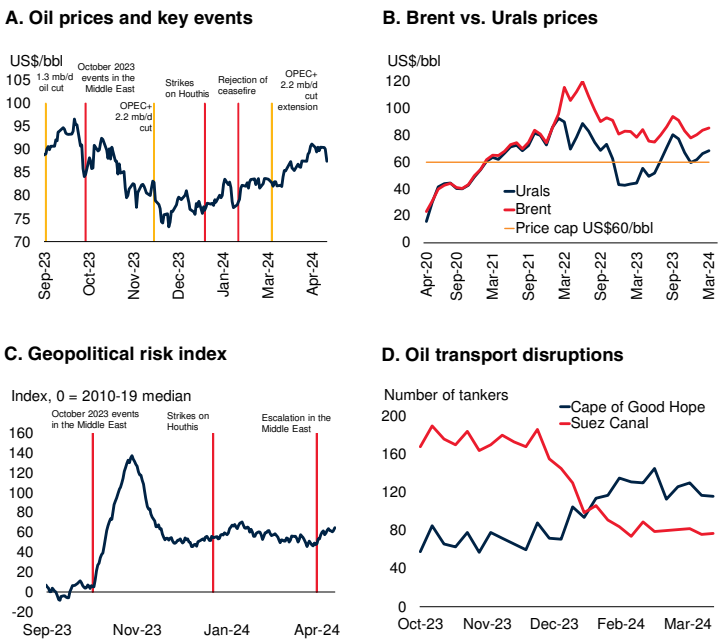
Recent developments

Escalating geopolitical tensions and supply management measures have in recent weeks led to substantial increases in oil prices, pushing the Brent oil benchmark above $90 per barrel for the first time in six months (figure 3.A). In terms of market fundamentals, recent declines in U.S. inventories, combined with the International Energy Agency's switch in mid-March from projecting a sizable oil surplus this year to a slight deficit, have supported bullish trading sentiment. In addition, key economic data releases in subsequent weeks suggested some firming of global industrial activity ahead. Regarding geopolitical tensions, developments in the Middle East and in Russia's refinery sector since mid-March have heightened concerns that the ongoing conflicts could materially affect oil supply. However, a sharp increase of tensions in the Middle East in mid-April was not followed by significant price changes, and risk premia subsequently declined as the perceived likelihood of further near-term escalation diminished.

Prior to the latest developments, the Brent oil price decreased 1 percent in 2024Q1 (q/q),

FIGURE 3 Oil market: price developments

Brent crude oil prices increased markedly in recent weeks against a backdrop of heightened geopolitical tensions, signs of firmer industrial demand, and tight supplies—including due to the extension of OPEC+ production cuts announced in March. These moves followed a marginal price decline in 2024Q1 (q/q) amid slowing demand growth and record supply from the United States. Markets remain volatile amid concerns regarding conflict escalation, uncertainty over the economic outlook, and attacks on ships in the Red Sea.



Sources: Bloomberg; Caldara and Iacoviello (2022); International Energy Agency (IEA); PortWatch, International Monetary Fund; UN Global Platform; World Bank.

A. Daily Brent prices, last observation is April 17, 2024. Yellow lines show the 1.3 and 2.2 million barrels per day (mb/d) cuts. Red lines indicate geopolitical events including the October 2023 events in the Middle East, the strikes on Houthis by the United States and United Kingdom, and the rejection of the ceasefire in Gaza.

B. Monthly data. Data for Russian Urals prices from IEA's Oil Market Reports. Last observation is March 2024.

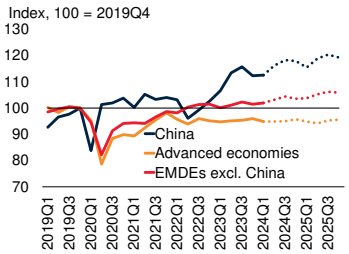
C. 30-day rolling average of the deviations of the Geopolitical risk index (GPR) from its 2010-19 median. The GPR reflects automated text-search of electronic archives from 10 newspapers, related to adverse geopolitical events. Last observation is April 15, 2024.

D. Weekly number of tankers through the Suez Canal and Cape of Good Hope. Last observation is April 6, 2024.

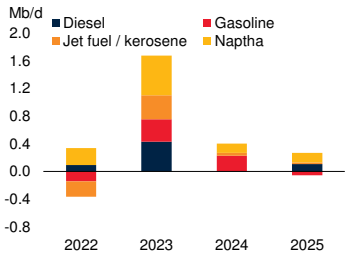
FIGURE 4 Oil market: demand and supply developments

Oil demand growth has been losing momentum, reflecting subdued global economic growth. In 2023, demand from China accounted for around four-fifths of the global increase in consumption. Future oil demand growth is anticipated to be driven by emerging market and developing economies, with oil demand set to outpace supply in 2024. Global oil supply growth was boosted last year by record U.S. production but stagnated in 2024Q1 due to weather-related disruptions in North America and OPEC+ supply cuts. The extension of these cuts in March tightened the demand-supply balance but also increased spare capacity, more than half of which is in Saudi Arabia.

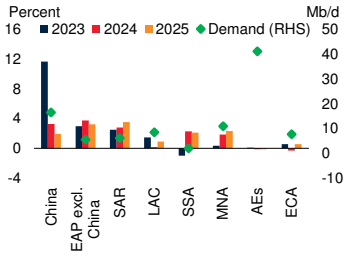
A. Oil demand



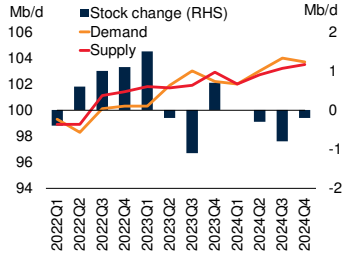
B. Change in China's oil demand by product



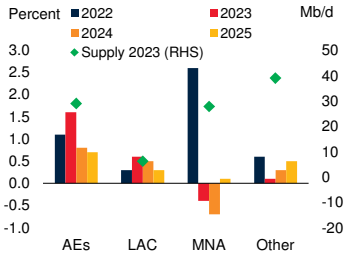
C. Changes in oil demand by region



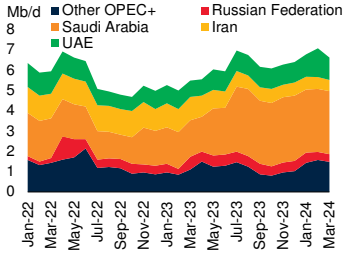
D. Changes in oil stock



E. Change in oil supply by region



F. OPEC+ spare capacity



Sources: International Energy Agency (IEA); World Bank.

Note: AEs = advanced economies; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub Saharan Africa.

A. Dashed lines indicate IEA forecasts for 2024Q1 to 2025Q4.

B.C.D.E. Data for 2024 and 2025 indicates IEA forecasts.

C. Bars show the percent year-on-year change in oil demand. Green diamonds show demand for oil per region, in million barrels per day (mb/d).

D. Stock change is the difference between supply and demand for each quarter. Data based on IEA Monthly report, April 2024 edition.

E. Bars show the percent year-on-year change in oil supply. Green diamonds show supply of oil per region in million barrels per day (mb/d).

F. Spare capacity for OPEC+ members as reported in IEA's Oil Market Monthly reports. Other OPEC+ includes Algeria, Azerbaijan, Bahrain, Brunei, Congo, Equatorial Guinea, Gabon, Iraq, Kazakhstan, Kuwait, Libya, Malaysia, Mexico, Nigeria, Oman, South Sudan, Sudan, and Venezuela.

extending a 3-percent decline in 2023Q4 (figure 3.B). In both quarters, oil markets were buffeted by counteracting forces, leading the Brent price to fall from $97/barrel (bbl) in September 2023 to as low as $73/bbl in December, before rebounding once again in mid-March. In 2023Q4, prices declined despite a perceived escalation in geopolitical risks in the Middle East, reflecting softening demand and record U.S. oil output. The OPEC+ announcement on November 30 of a 2.2 million barrels per day (mb/d) production cut failed to arrest this fall but oil prices eventually started to rise as increasing attacks on ships in the Red Sea amplified geopolitical risks (figure 3.C).

Despite the commencement of military operations by the United States and United Kingdom in January that were intended to safeguard shipping, about half of the tankers that would usually pass through the Suez Canal were diverted around southern Africa, leading to increased journey times and shipping costs (figure 3.D). Fluctuating expectations regarding the likelihood of a ceasefire in Gaza added further volatility to oil markets in February. On March 3, OPEC+ extended its previously implemented 2.2 mb/d production cuts to 2024Q2; however, the Brent price was initially stable in response.

Growth in global oil demand softened in 2023Q4 and 2024Q1, with a 2 and a 1.6 percent increase (y/y), respectively, compared to the 3-percent rise in 2023Q3, as the post-pandemic rebound in consumption lost momentum. Despite a 0.5 mb/d fall in 2023Q4 (q/q), demand in China increased by about 12 percent in 2023 (y/y), accounting for about four-fifths of the rise in global consumption, amid stagnating oil demand in advanced economies (figure 4.A). China's oil consumption growth was driven by a variety of factors, including a marked increase in naphtha usage, due to the country's investments in petrochemical production (figure 4.B). Oil demand also firmed last year in other countries in East Asia and the Pacific, South Asia (especially India), and Latin America (especially Brazil), while it fell in the Middle East and remained stable in other regions (figure 4.C).

Global oil supply rose by about 1 mb/d in 2023Q4 (q/q); however, this increase more than reversed in 2024Q1, due to OPEC+ production cuts, reductions in global biofuel supply (counted within oil supply), and weather-related disruptions in North America, where an Arctic freeze in January 2024 significantly hampered production. The total reduction in 2024Q1 was the largest quarterly decline since the pandemic, but demand growth was also weak, resulting in no change in implied stocks (figure 4.D). In 2023Q4 and 2024Q1, changes in production among OPEC+ members were all relatively small (figure 4.E). Oil production in Russia was little changed in 2023Q4 and 2024Q1, as diversion of exports to India and China continued. Ongoing supply restraint in OPEC+ has resulted in increasing spare capacity, more than half of which is in Saudi Arabia (figure 4.F).

Global oil inventories declined in January; however, they increased by about 40 mb in February. The rerouting of tankers from the Suez Canal to around southern Africa left an exceptionally large volume of oil (about 1900 mb) in transit on water, which contributes to total global inventories. OECD countries' industry stocks declined in 2023Q4, edging toward the bottom of their five-year range, but this reflected a fall in stocks of oil products, with crude oil stocks increasing. At the end of 2023, OECD countries' total stocks (both industry and government-controlled) could cover only about 90 days of their consumption, down from about 110 in 2020Q4. Refilling the United States Strategic Petroleum Reserve has progressed slowly, at a rate of about 3 million barrels per month—just one-seventh of the pace at which stocks were depleted following the Russian invasion of Ukraine.

Outlook

The Brent oil price is projected to average $84/bbl in 2024, up $1 from 2023, before moving down to $79/bbl in 2025 as a gradual unwind of OPEC+ production cuts more than counteracts increasing demand (figure 5.A). This projection is predicated on no escalation in ongoing armed conflicts or worsening of transportation bottlenecks, including with respect to the Suez Canal. Oil production is expected to increase 0.8 mb/d in 2024, less than half the increment in 2023, and reach a record high of about 103 mb/d. All this growth is expected to come from non-OPEC+ producers.

The United States is expected to increase production by 0.6 mb/d this year, with Brazil, Canada, and Guyana continuing to add about 0.2 mb/d each. Supply from OPEC+ is expected to shrink by 0.8 mb/d, although this is notably uncertain given that production cuts announced in November 2023 were formally extended in early March only until 2024Q2. The price forecast assumes that current cuts will continue until 2024Q4, with a gradual reversal starting next year. Consequently, OPEC+ production is expected to increase from 2025Q1 onwards, outpacing demand and therefore resulting in a buildup in inventories.

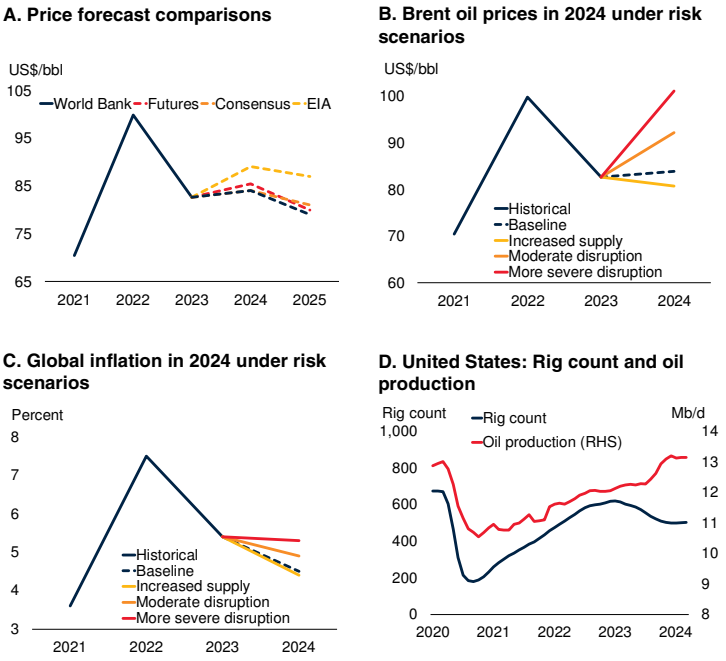
Oil consumption is envisaged to rise by 1.2 mb/d in 2024, about half of the previous year's increase, reflecting a challenging global macroeconomic environment, including slowing growth in China. About three-fourths of global demand growth is expected to be accounted for by five countries (Brazil, China, India, Indonesia, and Saudi Arabia), while consumption in advanced economies is expected to be marginally lower. Regarding product composition, China's demand for LPG, ethane and naphtha is expected to be buoyant over the forecast horizon, due to the expanding petrochemical industry. Consumption of LPG and ethane is also expected to be elevated in India due to government policies promoting clean cooking. In 2025, oil demand growth is expected to edge down in the context of still subdued global GDP growth, remaining concentrated in major EMDEs. As the adoption of electric vehicles grows, with recent estimates indicating they account for 16 percent of new light vehicle sales worldwide, global oil consumption is likely nearing its peak.

Risks

Risks to the oil price forecast remain tilted to the upside, with intensifying geopolitical challenges being a key factor. Other upside risks include the

FIGURE 5 Outlook for oil markets

Brent oil prices are forecast to increase to $84/bbl in 2024 before receding in 2025, assuming no escalation of ongoing armed conflicts. In case of a moderate conflict-driven supply disruption, the average Brent price for 2024 could reach $92/bbl, rising up to $102/bbl in a more severe conflict-driven disruption. On the other hand, if OPEC+ cuts are reversed in 2024Q3—sooner than expected—the average price could sink to $81/bbl. A more severe conflict-driven disruption in the oil market could almost entirely stall progress on global disinflation. Other upside risks to the forecast include lower-than-expected North American oil output.



Sources: Baker Hughes; Bloomberg; Consensus Forecasts; Energy Information Administration (EIA); International Energy Agency (IEA); Oxford Economics; World Bank.

A. Forecasts for 2024, and 2025 for Brent crude oil. Futures data as of April 17, 2024. Consensus data as of April 2024 report. EIA data from Short-term Energy Outlook report April 2024.

B.C. The blue dashed lines indicate baseline forecasts for the price of Brent oil (panel B), and global consumer price inflation weighted by GDP (panel C). Oil prices and inflation are depicted as annual average values. The solid lines indicate the possible values for the Brent oil price and global consumer price inflation in 2024 under different scenarios. The yellow line reflects a scenario in which OPEC+ production cuts are reduced sooner than in the baseline. The orange and red lines depict outcomes under moderate and more severe conflict-related disruptions to oil supply, respectively.

C. Model-based GDP-weighted projections of annual average country-level CPI inflation using Oxford Economics' Global Economic Model, with oil prices as described in risk scenarios.

D. 3-month rolling average of U.S. oil rig count and oil production. Last observation is March 2024.

possibility that U.S. shale oil firms fail to meet production targets. On the downside, OPEC+ production cuts could reverse sooner than forecast, while weaker-than-expected global growth could result in lower prices.

Upside risks

Geopolitical developments. The possibility of a broader conflict in the Middle East continues to represent a crucial risk to oil prices—particularly in light of the sharp increase of tensions in mid-April—and is likely to set the tone for near-term movements in oil prices. In addition, aggression toward ships in the Red Sea, which caused substantial rerouting of oil cargoes in early 2024, has added a new dimension to geopolitical challenges. Recent attacks on refining facilities in Russia also underscore that unexpected events stemming from the Russian invasion of Ukraine could further stoke oil market volatility.

- The baseline forecast assumes that the conflict in the Middle East does not significantly escalate, even as the region remains in a state of elevated tension. This assumption is highly uncertain, however, with a range of more adverse outcomes remaining possible. In particular, conflict-related events that curtail oil extraction and exports in the region could push prices higher. The extent and duration of the effect on oil prices would depend on the scale and type of initial shock, as well as the response of other producers to higher prices.

- A moderate conflict-driven disruption could initially reduce supply by about 1 mb/d. Such a scenario would be consistent with substantial curbs on the exports of one or more oil producers, roughly equating with the additional supply that Iran has brought to the market since 2022. In a context of already tight markets, average prices in 2024 could rise by $8/bbl, to $92/bbl, 10 percent above the baseline forecast (figure 5.B).[3]

- A more severe conflict-driven disruption, in which exports from the region are more broadly encumbered by a larger scale conflict, could initially lower supply by about 3 mb/d. With other oil exporters likely to expand output in response, the envisaged supply

[3] The impact of the moderate and more severe conflict-driven disruptions is obtained by using the methodology in World Bank, *Commodity Markets Outlook: Under the Shadow of Geopolitical Risks,* October 2023 (Washington, DC: World Bank), which incorporates impulse response functions from D. Caldara, M. Cavallo, and M. Iacoviello, "Oil Price Elasticities and Oil Price Fluctuations," *Journal of Monetary Economics* 103 (May 2019): 1-20.

reduction declines to 1 mb/d by late 2024. In such circumstances, average oil prices could average $102/bbl in 2024, more than 20 percent above the baseline. An oil price shock of this size could almost entirely stall progress on global disinflation (figure 5.C).[4]

North American oil output. The forecast entails that U.S. oil production will grow by 0.6 mb/d in 2024. This may be challenging to achieve against a backdrop of rising industry input costs, record-high but stagnating production, and a declining number of active wells and those drilled but uncompleted (DUC) (figure 5.D). Such headwinds to increasing production could be reinforced by the shale industry's recent practice of returning an increased proportion of profits to shareholders rather than reinvesting into extraction. A smaller production increase would create a significant shortfall in the market, especially assuming OPEC+ cuts remain in force, although part of the gap could be filled by greater-than-expected production in Brazil, Canada, and Guyana.[5]

Downside risks

Earlier unwind of OPEC+ supply cuts. The forecast assumes voluntary OPEC+ production cuts remain in place until the end of 2024, but they could instead be reversed in the second half of this year. This risk is supported by two factors: the likelihood that reduced oil exports would deepen Saudi Arabia's fiscal deficit; and OPEC+ members' concerns over losing market share, given that OPEC+ cuts have so far been met with production increases elsewhere. On the other hand, Saudi Arabia's debt-to-GDP ratio, at 26 percent in 2023, remains benign, and OPEC+ still commands a 48 percent share of global oil supply. Were OPEC+ cuts to be reversed in 2024Q3, instead of 2025Q1, the Brent price could decrease to $81/bbl in 2024, somewhat below the baseline.

Weaker global economic growth. Several downside risks could derail the prospect of slow but steady global economic growth assumed in the forecast. These include financial stress, persistently above-target inflation, and a further weakening of the outlook for China's economy. Even though headline inflation declined globally last year, disinflation has slowed, with core inflation still elevated in many advanced economies and EMDEs. Tighter-than-anticipated monetary policies in response to unexpectedly persistent inflation could dampen global growth, leading to lower oil demand. Similarly, a further deterioration of house prices in China could damage consumer confidence and curtail construction activity, reducing oil demand. If the risk of weaker growth materializes, oil prices may be lower in 2024 and 2025 than in the baseline.

Natural gas

Recent developments

The World Bank natural gas price index declined by 28 percent in 2024Q1 (q/q) to a level 38 percent lower than a year earlier. The dynamics of the three benchmarks within the index differed in 2024Q1 (figure 6.A). The U.S. price fell by 22 percent (q/q) reflecting strong domestic production and soft demand due to mild winter temperatures. The European benchmark tumbled by about 35 percent in 2024Q1 amid steep demand reductions and high inventories, reversing a rise in the previous quarter. More recently, however, escalating geopolitical tensions have prompted a concerted increase in European prices, offsetting the previous downdraft since the beginning of the year. In contrast, Japan's LNG prices increased by 4 percent owing to the lagged effect of oil prices on oil-indexed LNG contracts and higher import demand in the region—especially from China, which became again in 2023 the world's largest LNG importer.

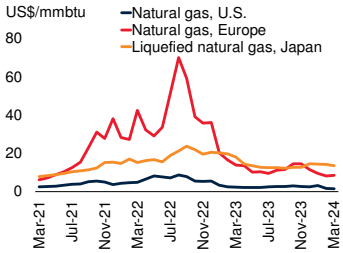
[4] A number of recent studies documents that declines in oil and food prices played a significant role in the disinflation observed over the past year. For the importance of these prices in driving global inflation, see J. Ha, M. A. Kose, F. Ohnsorge, and H. Yilmazkuday, "What Explains Global Inflation" (Policy Research Working Paper 10648, World Bank, Washington, DC, 2023) and P. Amatyakul, D. Igan, and M. Jacopo Lombardi, "Sectoral Price Dynamics in the Last Mile of Post-Covid-19 Disinflation" (BIS Quarterly Review, Bank for International Settlements, March 2024). For the dominant role of these prices in explaining the U.S. inflation, see S. Leduc, D. J. Wilson, and C. Zhao, "Will a Cooler Labor Market Slow Supercore Inflation?" (Economic Letter, Federal Reserve Bank of San Francisco, July 2023) and "PCE Inflation Contributions from Goods and Services" (Data Indicators, Federal Reserve Bank of San Francisco, 2024).

[5] U.S. Energy Information Administration, *Short-Term Energy Outlook* (Washington, DC: U.S. Energy Information Administration, February 2024).

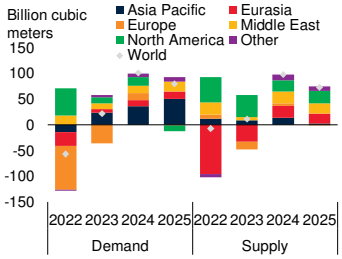
FIGURE 6 Natural gas markets

Natural gas prices declined sharply in 2024Q1, led by the European benchmark. In 2023, natural gas consumption increased in Asia Pacific, but European consumption fell compared to its 2015-19 average, supported by efficiency gains, renewable electricity penetration, and mild temperatures. Roughly 70 percent of U.S. LNG exports were directed to the European Union, continuing to offset reduced pipeline gas exports from Russia. Inventories remained high, especially in Europe. Major risks to the price outlook include delays in delivering new U.S. LNG export terminals.

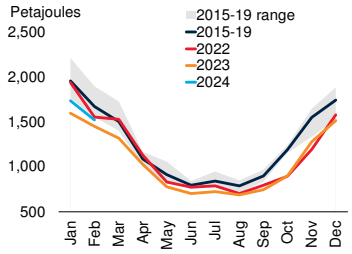
A. Natural gas prices



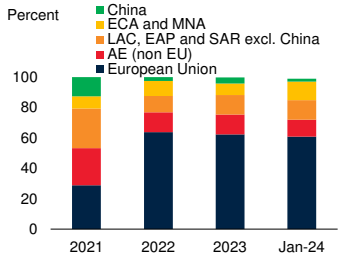
B. Changes in supply and demand by region



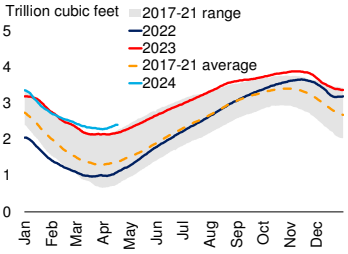
C. European natural gas consumption



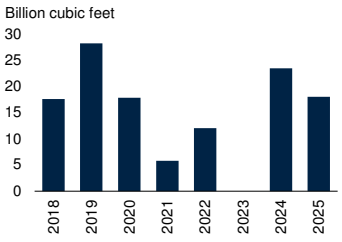
D. Destinations of U.S. LNG exports



E. European inventories of natural gas



F. Additional U.S. liquefaction capacity



Sources: Gas Infrastructure Europe (AGSI+); Bloomberg; U.S. Energy Information Administration (EIA), Eurostat; International Energy Agency (IEA); World Bank.
Note: AE = advanced economies; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia.
A. Monthly data, last observation is March 2024.
B. 2024 and 2025 indicate IEA forecasts.
C. Shaded area indicates the 2015-19 range. Last observation is February 2024.
D. Annual average using monthly data of U.S. LNG shipments. Last observation is January 2024.
E. Gray area indicates 2017-21 range. Sample includes 20 EU countries and the United Kingdom. Last observation is April 17, 2024.
F. 2024 and 2025 are EIA estimates based on up-to-date project information. Last update is 2024Q1.

Global gas demand stagnated in 2023 overall, increasing by only 0.5% or 22 billion cubic meters (bcm, y/y), less than half the previous year's fall (figure 6.B). Gas demand in the Asia Pacific region increased by about 24 bcm, driven by China and India's power and industrial sectors. Consumption in North America increased marginally, but consumption in Europe declined by 36 bcm, to its lowest level since 1996, and about 22 percent below its 2005 peak. The pullback in Europe reflected lower electricity consumption, increased penetration of renewable electricity, efficiency gains, policy directives, and a mild winter (figure 6.C).

Global gas supply was little changed in 2023, with increased LNG production continuing to outweigh the decline in Russian piped gas exports. Production of natural gas in the United States increased by 40 bcm in 2023, from already record levels in 2022 (figure 6.B). Supply of natural gas from Europe declined by 15 bcm reflecting high storage levels and decreasing demand. Russia's output decreased by 32 bcm as increased LNG exports, which are not affected by sanctions, only partly offset lower pipeline exports to Europe. The reconfiguration of natural gas trade patterns following the Russian invasion of Ukraine has continued, with the European Union absorbing about 70 percent of U.S. LNG exports in 2023 (figure 6.D). Meanwhile, imports of LNG increased by 12 bcm in China, more than offsetting a sharp 8 bcm decline in Japan. The United States became the world's biggest LNG exporter in 2023, overtaking Australia and Qatar.

Large inventories contributed to downward pressure on prices. In the European Union, storage levels have been at the upper end of the pre-pandemic range since November 2022, due to weak demand and ample LNG imports (figure 6.E). Storage levels have also been elevated in the United States, Japan, and Korea.

Outlook

Natural gas prices are forecast to be significantly lower in 2024 than in the previous two years, but to recover in 2025. The decline in 2024 reflects

high levels of storage worldwide and increasing supply, with the reconfiguration of trade flows initiated by the Russian invasion of Ukraine largely complete. The European gas price is expected to decline 28 percent in 2024 (y/y), as increased quantities of natural gas in storage lessen import needs, but to rise by 11 percent in 2025. The U.S. benchmark price is envisaged to be 5 percent lower in 2024 than last year before increasing by 46 percent in 2025, as exports of LNG step up due to new terminals becoming available. Movements in Japan's LNG price are expected to broadly track those of the European benchmark, with the difference between the two influenced by traffic conditions through the Suez and Panama canals.

The price forecast entails that global demand for natural gas will increase by about 100 bcm in 2024 and 80 bcm in 2025, after two years of stagnation (figure 6.B). The expected expansion in 2024 is primarily driven by China, although demand is poised to strengthen in all regions as consumption in industrial and power sectors responds to materially lower prices. In 2025, stagnating gas demand in advanced economies will temper an expected rise in consumption in EMDEs. The gas market is set to remain tight, with production increases no more than matching demand in 2024 and 2025. Supply is poised to expand somewhat in all the main producing regions, including Russia, where production has declined for the last two years. U.S. supply will be boosted by the completion of new pipelines and increased wet gas extraction, driven partly by relatively high oil prices. LNG trade growth in the next two years will be supported by demand growth mainly in East Asia and the Pacific (particularly China), met by rising exports from Africa and the United States.

Risks

Risks to the natural gas price forecast are tilted to the upside. Prices could be higher than projected due to conflict- and geopolitics-related developments, lower U.S. exports, and weather events. On the downside, a weakening growth outlook globally, and particularly in East Asia and the Pacific, could result in lower prices.

Upside risks

Conflict escalation and wider geopolitical developments. Rising geopolitical tensions could push prices higher, especially in the European and LNG markets. The potential for further escalation of the conflict in the Middle East represents a major risk factor, given the region is a key supplier of natural gas – about 20 percent of global LNG supply transits the Strait of Hormuz. Rising tension could also affect renegotiation of pipeline Russian exports to Europe, as existing commercial arrangements are due to expire at the end of 2024. On the other hand, the impact of disruptions to shipping through the Suez and Panama canals has so far been limited to increased transport times and higher insurance costs, and is not expected to escalate further, even if rerouting continues.[6]

Lower U.S. exports. The forecast assumes a planned 50 percent increase in U.S. LNG export capacity by 2025 (figure 6.F). Any delay in this rise would put upward pressure on global LNG and European gas prices, with notable consequences for European economic activity and energy prices.[7] However, lower US exports would also imply downward pressure on domestic U.S. prices.

Weather events. Weather-related risks include cold winters in major consuming countries, dry weather affecting hydropower production, and freezing conditions that prevent extraction. Dry weather conditions have become a more frequent occurrence in recent years in China, likely indicating a growing impact of climate change on the country's power system.

Downside Risks

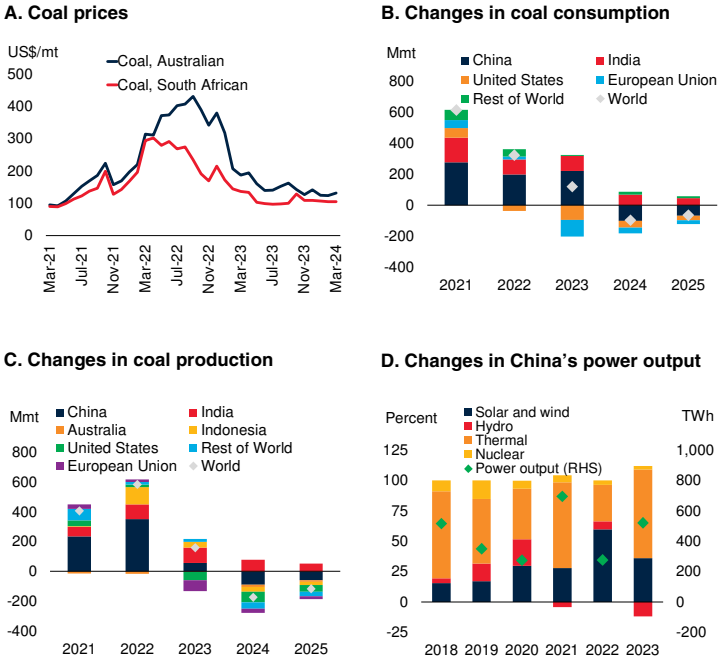
Weaker growth in East Asia. As most growth in gas demand is expected to occur in East Asia and the Pacific, weaker-than-expected GDP growth in

[6] J. Sharples, *LNG Shipping Chokepoints: The Impact of Red Sea and Panama Canal Disruption* (Oxford: Oxford Institute for Energy Studies, 2024).

[7] P. Alessandri and A. Gazzani, "Natural Gas and the Macroeconomy: Not All Energy Shocks Are Alike," Temi di Discussione (Working Paper) No. 1428 (Roma: Banca d'Italia, 2023).

FIGURE 7 Coal markets

Coal prices declined in 2024Q1, driven by record-high output and substitution from coal in the power sector. Consumption has continued to shift away from advanced economies, with China and India accounting for about 70 percent of global demand. Coal production is envisaged to diminish in line with demand in 2024 and 2025, due mostly to reductions in the United States and China. Coal prices are expected to decline sharply in 2024 and fall further in 2025 as renewable power generation meets additional electricity demand. Major risks to the price outlook include stronger-than-expected growth in power output in China, and shortfalls in output from hydropower.



Sources: International Energy Agency (IEA); National Bureau of Statistics of China (NBS); World Bank.

Note: Mmt = million metric tons.

A. Monthly data. Last observation is March 2024.

B.C. Data for 2024 and 2025 are computed based on the IEA's forecast for the 2024-26 period. Data based on IEA annual coal report, 2023 edition.

D. Composition of China's power output growth by generating source. Thermal includes oil, natural gas and coal.

that region, especially a worsening of recent headwinds in China, would pose a substantial downward risk to prices.

Coal

Recent developments

Prices for Australian and South African coal fell by about 8 percent in 2024Q1 (q/q), due to substitution away from coal in the power sector, and robust supply (figure 7.A). The price of Australian coal stood 47 percent lower than a year earlier, while the price of South African coal was 30 percent lower.

Global coal consumption is estimated to have reached an all-time high in 2023, increasing by 120 million tons (Mmt) (1.4 percent) from 2022. Demand growth nonetheless slowed due to soft economic activity, the increased penetration of renewable electricity, and lower gas prices. Estimated demand decreased by about 100 Mmt in both the United States and European Union, while increasing in China and India, by about 220 and 100 Mmt, respectively (figure 7.B). Global demand continued to shift toward Asia in 2023, with China and India accounting for 70 percent of total consumption.

Global coal production is estimated to have risen by about 150 Mmt in 2023. Output rose by about 100 Mmt in India, but by only about 50 Mmt in China, partly owing to increased safety measures in domestic mines. Production declined in the United States and the European Union by about 50 and 70 Mmt, respectively, while stagnating in Australia owing to labor shortages and soft exports to China, which have not fully recovered following the lifting by China of a ban on Australian imports that was imposed in 2021 (figure 7.C).

Global coal trade is estimated to have reached an all-time high in 2023, increasing by 100 Mmt, largely due to a rise of 150 Mmt in Chinese imports, as domestic production fell short of increasing consumption. Reflecting consumption patterns, the Asia Pacific region received about 80 percent of global coal exports.

Outlook

The Australian coal price is forecast to fall by 28 percent in 2024 (y/y), and 12 percent in 2025, while remaining well above the 2015-19 average. The forecast assumes that global coal consumption reached its high point in 2023, with widespread declines in 2024 and 2025 (figure 7.B). Coal consumption is expected to decrease markedly in the European Union and United States, continuing recent trends, and to have peaked last year in China, with the prospective rise in renewable generation projected to exceed growth in electrici-

ty demand.[8] In India, increased power demand is set to continue driving coal consumption higher, though more slowly than in recent years.

Global coal production is expected to diminish alongside consumption (figure 7.C). Declines are envisaged to be particularly sizable in the United States and China. Production is also poised to fall in Indonesia, the largest coal exporter, but increase in India to meet domestic demand.

Coal trade is estimated to have peaked in 2023 and is projected to decrease faster than consumption and production. Declining demand in the European Union is likely to particularly affect coal producers that raised exports following the Russian invasion of Ukraine, including Indonesia, Colombia, and South Africa.

Risks

Risks to the coal price forecast are tilted somewhat to the upside, mainly due to the possibility of a continued rise in China's consumption in 2024. Upside risks also include various factors that could slow renewable electricity penetration, or otherwise affect coal demand and production. Downside risks include ample supply and weaker-than-expected global growth.

Upside risks

Chinese consumption. The baseline assumption that China's coal demand peaked in 2023 may be countered by stronger-than-expected growth in power generation, as in 2021, or shortfalls in output from hydropower, as in 2023 (figure 7.D). China's government is developing new coal mines and approved about 110 GW of coal plants in 2023, which could signal that domestic coal consumption will grow further (Global Energy Monitor et al. 2024).[9]

Electricity demand. Coal power plants are likely to be called upon in the event of excess power demand, such as was recently caused by heat waves in the United States and China. In addition, coal power stations have frequently made up for generation shortfalls arising from unplanned maintenance, or a lack of alternative resources (such as LNG, or sufficient water levels to support hydroelectric generation). The price effects of unexpected increases in coal demand for such reasons may be mitigated, however, by coal stocks held by utilities.

Downside Risks

Ample supply. Despite disruptions to production resulting from transport constraints (in South Africa and the United States) and flooding of coalmines (in Australia), global coal supply has exceeded demand in the last two years. Prices might be lower than projected if this pattern continues.

Economic activity. Lower prices than projected could result from weaker-than-anticipated economic growth, especially in China and India.

[8] International Energy Agency, *Coal 2023* (Paris: International Energy Agency, 2023).

[9] Global Energy Monitor et al., "Boom and Bust Coal 2024," available online at https://globalenergymonitor.org/report/boom-and-bust-coal-2024.

Agriculture

The World Bank's agriculture price index edged up in early April, driven by pronounced spikes in cocoa and coffee prices. The index was unchanged in 2024Q1 (q/q), as a 4 percent decline in food prices offset a 22 percent increase in beverage prices. Favorable global supply conditions, including robust exports from the Black Sea region, weighed on food prices. In contrast, poor weather conditions, in part linked to El Niño, had pushed cocoa and Robusta coffee prices to record highs by the end of Q1, a trend that extended further in early April. The agriculture price index is expected to decline modestly in 2024 and 2025 (1 and 4 percent y/y, respectively) as supplies increase and El Niño conditions abate. The food price index is expected to steadily soften, by 6 percent in 2024 and 4 percent in 2025. In contrast, beverage prices are projected to increase by 22 percent in 2024 before declining by 12 percent in 2025. Raw material prices are forecast to decrease by 2 percent in 2024 before rising by 2 percent in 2025. Risks to the price forecast, which are tilted to the upside, relate to the path of input costs, trade disruption in the Red Sea, the potential emergence of La Niña, and, in the longer term, biofuel policies.

Food commodities

Recent developments

The World Bank's food price index eased in early April after falling by about 4 percent in 2024Q1 (q/q), to a level 9 percent lower than a year earlier. Subcomponent indexes for grains, oils and meals, and other foods fell by between 2 and 5 percent (figures 8.A and 8.B). Maize prices tumbled by about 11 percent and wheat prices declined by 4 percent in 2024Q1, together driving the 4 percent reduction in the overall grains index (figure 8.C). Both wheat and maize prices hit three-year lows during the quarter, with the downtrend continuing in early April. The decline in maize prices was attributed to competitively priced offers from the Black Sea region, larger production in major exporters, and favorable prospects for the next harvest, with global maize production in the 2023-24 season expected to increase by 6 percent to an all-time high. Downward pressure on wheat prices derived from robust exports from Russia and Ukraine and the second-highest global production on record in 2023-24. The collapse of the Black Sea Grain Initiative had minimal fallout, as Ukraine has so far been able to continue exporting via seaborne corridors and new overland routes.

Rice prices increased by about 4 percent in 2024Q1 (q/q), standing 28 percent higher than a year earlier, reflecting supply concerns in major exporting countries related to El Niño and continued export restrictions from India. However, prices retreated in February, March, and early April, reflecting the depreciation of Thailand's baht and Viet Nam's dong against the U.S. dollar, sluggish global rice demand amid increased prices, a seasonal supply increase from the harvest in Viet Nam, and ongoing offseason harvests of irrigated fields in India and Thailand (figure 8.D).

The oils and meals price index declined by 5 percent in 2024Q1 (q/q), reaching a level 17 percent lower than a year earlier. This decline was driven by a 14 percent fall in soybean oil prices, a 13 percent drop in soybean meal prices, and a 5 percent decrease in soybean prices, partly offset by an 8 percent increase in palm oil prices. Downward pressures on soybean prices stemmed from near-record production in Brazil, a near-doubling of production in Argentina, and subdued Chinese demand. Global soybean production in 2023-24 is projected to increase by 5 percent, to a new record. The rise in palm oil prices reflected weakening production in Southeast Asia and declining global stocks.

The other foods price index, encompassing sugar, meat, and fruits, fell by 2 percent in 2024Q1 (q/q) but remains 10 percent higher than a year earlier. The quarterly decline was due to a 10 percent fall in sugar prices, an 8 percent drop in orange prices, and a 6 percent decrease in chicken prices, partly offset by a 6 percent rise in beef prices. Sugar prices plummeted by 17 percent in December 2023 (m/m) and remained at that level in 2024Q1, reflecting increased production in Brazil and dry weather that allowed cane processing to continue and sugar exports to leave ports faster than expected.

Outlook

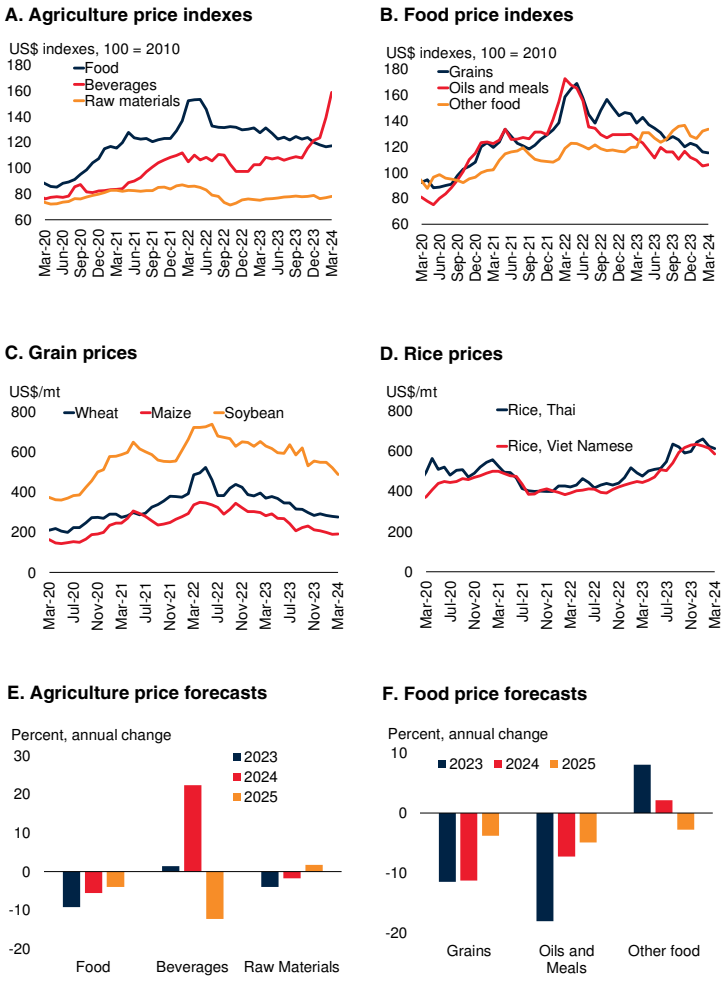
The World Bank's food price index is projected to decrease by 6 percent in 2024 and 4 percent in 2025, with lower prices for grains as well as oils and meals accompanied by price gains for other foods in 2024, followed by broad-based declines in 2025 (figures 8.E and 8.F). The grains price index is expected to fall by 11 percent in 2024 (y/y) and 4 percent in 2025, driven by higher global grain supplies (figure 9.A). In 2024, wheat prices are forecast to decline by 15 percent, reflecting elevated production. In 2025, wheat prices are forecast to edge down by a modest 2 percent as the effects of strong export competition and marginally higher production are tempered by somewhat greater consumption and the lowest end-of-season stocks-to-use ratio in eight years (figures 9.B and 9.C).

Global maize production is set to reach an all-time high in the 2023-24 season, primarily reflecting increases in the United States and Argentina of 12 percent and 47 percent (y/y), respectively. Maize prices are expected to decline by 21 percent (y/y) this year, amid the surge in supply. However, given that recent relative price movements and crop rotation preferences have favored soybean production, maize production is envisaged to grow only marginally in 2025, leading to a modest 2 percent price decline in 2025 (figures 9.C and 9.D). Recent policy shifts in the European Union to curb agricultural imports from Ukraine (including maize), while also proposing a €95-per-metric-ton duty on grains from Russia and Belarus, may put upward pressure on EU grain prices and downward pressure on prices in non-EU markets for Black Sea grains.

Global rice production in 2023-24 remains flat, with the stock-to-use ratio falling to the lowest level in three years. Due to tight global markets and India's export restrictions, rice prices are forecast to rise by 8 percent (y/y) in 2024. With El Niño conditions expected to diminish by May 2024, production is set to increase thereafter. This, alongside the assumption that weather-induced trade restrictions will ease next year, underpins a projected 8 percent decline in prices in 2025.

FIGURE 8 Agricultural prices

Agricultural prices were unchanged in 2024Q1, as a 4 percent (q/q) decline in food prices offset a 22 percent increase in beverage prices. Grains and oils and meals prices decreased 4 and 5 percent, respectively, due to improved supplies and competitively priced offers from the Black Sea region. However, rice prices increased by 4 percent, reflecting supply concerns and trade restrictions in major exporting countries. Food prices are forecast to decrease by 6 percent in 2024 and 4 percent in 2025, with lower prices for grains as well as oils and meals in 2024, followed by broad-based declines in 2025.



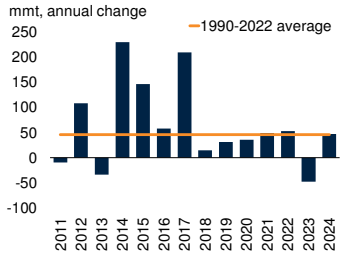
Sources: Bloomberg; S&P Global; World Bank.
Note: mt = metric tons.
A-D. Monthly data, last observation is March 2024.
C. Wheat refers to US HRW benchmark.
D. Thai and Vietnamese rice refers to the 5 percent broken ratio.
E.F. 2024 and 2025 numbers refer to forecasts.

The oils and meals price index is projected to fall by 7 percent (y/y) in 2024 and 5 percent in 2025, due to favorable global supplies (figure 9.E). Soybean prices are forecast to decrease by 16 percent in 2024 and 5 percent in 2025, reflecting record-high global production and the highest

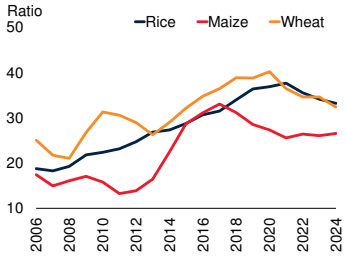
FIGURE 9 Supply conditions for grains and edible oils

In the 2023-24 crop year, global output of grains and oilseeds increased by 2 and 4 percent, respectively, supporting price declines, with maize and soybean production forecast to reach record highs. Stock-to-use ratios are trending lower for rice and wheat, and higher for maize and soybean. Despite a slight dip, wheat production will remain at near-record levels in 2023-24. Global supplies in the 2024-25 crop year are projected to be lower for wheat and higher for maize, soybeans, and rice compared to 2023-24. Surveys in the United States for 2024-25 suggest that planted acreage for soybeans will increase by 3 percent (y/y) and decrease by 4 and 5 percent for wheat and maize, respectively. Ample edible oil supply has created downward price pressures.

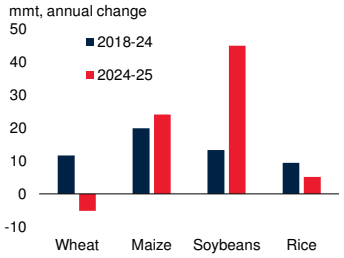
A. Grain supply growth



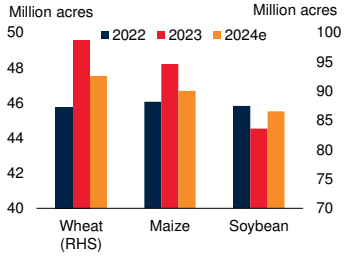
B. Stock-to-use ratio for selected grains



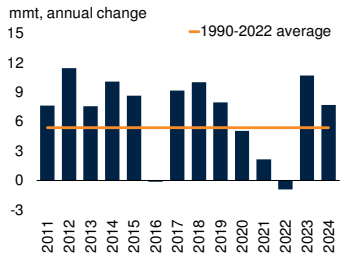
C. Production estimates for selected grains



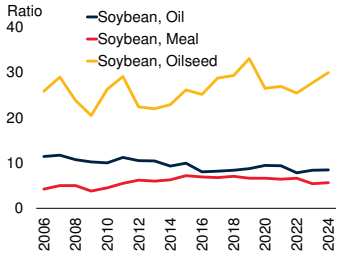
D. Planting intentions in the United States



E. Edible oil supply growth



F. Stock-to-use ratio for soybeans



Sources: International Grains Council (IGC); U.S. Department of Agriculture; World Bank.

Note: Years represent crop season (for example, 2024 refers to 2023-24). The 2023-24 crop year will end on June 30th, 2024, for wheat, August 31st, 2024, for maize and soybean, and July 31st for rice. mmt = million metric tons.

A.E. Supply is the sum of beginning stocks and production. Data updated in April 2024.

B.F. Stocks-to-use ratios is the ratio between domestic consumption and ending stocks. Data updated as of April 11, 2024.

C. Blue bar consists of the difference between 2024-25 crop season's projected supply and 2023-24 supply estimates of selected grains. The 2024-25 projections are World Bank's calculations based on data from IGC and USDA. The red bar shows the average year-on-year production change between 2018 and 2024.

D. Data taken from the Prospective Plantings Report of the U.S. Department of Agriculture, released March 2024.

stock-to-use ratio since 2018 (figure 9.F). An anticipated increase in harvested area in 2025, driven by the relative attractiveness of soybean over maize production, will further contribute to declining soybean prices. Projected declines in soybean meal prices, by 11 percent in 2024 and 4 percent in 2025, also reflect these positive supply fundamentals. In contrast, soybean oil prices are expected to edge higher by 1 percent in 2024 and 2 percent in 2025, due to higher demand for biodiesel production in Brazil, India, Indonesia, Malaysia, and the United States. Palm oil prices are set to rise by 2 percent in 2024, given weakening production in Southeast Asia and tightening stocks, but to decline by 9 percent in 2025 as supplies improve following the weakening of El Niño.

The price index for other foods is projected to increase by 2 percent (y/y) in 2024 and then fall by 3 percent in 2025. The expected weakening of El Niño in the first half of 2024 should alleviate sugar supply constraints in India and Thailand, the second and third largest sugar exporters globally, resulting in price declines of 3 percent and 8 percent (y/y) in 2024 and 2025, respectively. Orange prices are forecast to rise about 5 percent in 2024, following a 71 percent spike in 2023. The forecast of sustained high prices reflects storm damage and citrus disease in orange-producing states in the United States, coupled with continued drought conditions in Spain, Europe's largest orange producer. Orange prices are projected to decline by 9 percent in 2025 as these factors begin to subside.

Risks

Risks to the agricultural commodity price forecasts are tilted to the upside. Notable upside risks relate to weather, geopolitics, input cost dynamics, and potential maritime chokepoints. However, biofuel policies that are less supportive of prices than currently envisaged pose a downside risk.

Upside risks

- *Disruptions to grain shipments.* In 2023, more than 14 percent of global seaborne grains and oilseeds trade passed through the Suez Canal,

a considerably higher share than for crude oil and metals. Recent attacks on commercial vessels in the Red Sea prompted significant rerouting from the Suez Canal to around the Cape of Good Hope (figure 10.A). During December and January, an estimated 4.3 million tons of grains and oilseeds were diverted in this manner, mostly affecting U.S. soybean exports and EU wheat exports to Asia. Thus far, however, grain and oilseed prices have not been significantly affected, perhaps partly because container ships originating from the Black Sea region—a major source of grain and oilseeds—have continued to take the Red Sea route. If attacks intensify, prompting vessels from the Black Sea to also divert, substantial delays, increased shipment costs, and higher prices could materialize (figure 10.B).

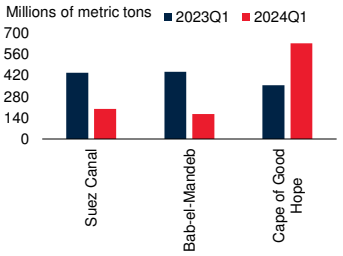
- *Input costs.* Energy and fertilizer costs are forecast to decrease by 3 and 22 percent, respectively, in 2024, with further declines in 2025 (figure 10.C). If these price declines do not materialize—for instance, because of escalating geopolitical tensions that push up energy prices and adversely affect fertilizer production—food prices will likely be higher than forecast. Moreover, fertilizer producers in the Black Sea region, the Middle East, and North Africa heavily rely on the Suez Canal for exports, and this route could become unviable if Red Sea shipping disruptions intensify, raising the cost of transporting fertilizers to end-users.

- *La Niña.* The U.S. National Oceanic and Atmospheric Administration forecasts a weakening of El Niño weather conditions, with an 85 percent chance of transitioning to neutral conditions by April-June 2024. The probability of a subsequent La Niña onset between June and August 2024 has increased to 60 percent. La Niña conditions typically result in wetter than normal conditions in Australia, northern Brazil, India, Indonesia, Malaysia, the Philippines, and Southeastern Africa, while bringing unusually dry weather in the United States Gulf Coast, Southern Brazil, and Argentina. The weakening of El Niño and the likely emergence of La Niña is anticipated to alleviate price pressures on commodities like cocoa, food oils, natural rubber, rice, and sugar in 2025. If these weather forecasts fail to materialize, prices may surpass expectations.

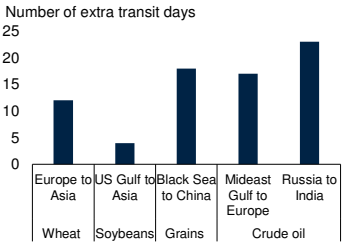
FIGURE 10 Risks to agriculture markets

Recent attacks on commercial vessels in the Red Sea have prompted significant rerouting from the Suez Canal to around the Cape of Good Hope, causing delays. Vessels originating from the Black Sea have continued using the Red Sea route; if intensified attacks pushed them also to reroute, significant upward pressure on food prices could result. Unexpected increases in energy and fertilizer prices and growing biofuel demand could raise agricultural prices.

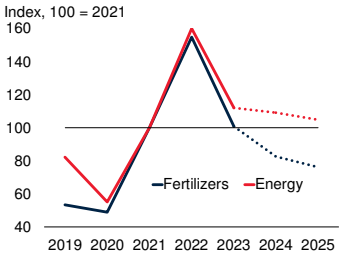
A. Trade transit volumes around maritime disruptions in the Red Sea



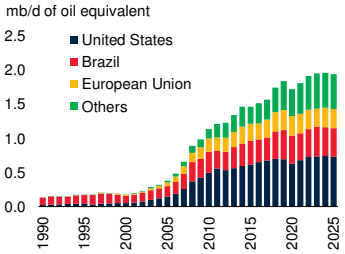
B. Trade diversion from Suez Canal to Cape of Good Hope: transit delays



C. Energy and fertilizer indexes



D. Biofuels production



Sources: International Grains Council; Statistical Review of the World Energy, Energy Institute; Kpler; Port Watch, International Monetary Fund; Organization for Economic Cooperation and Development (OECD); World Bank.

A. Bars show total trade transit volumes in million metric tons that pass through the Suez Canal, the Bab-el-Mandeb, and Cape of Good Hope in the first quarters of 2024 (after the Red Sea maritime disruptions) and 2023 (same quarter before the disruption). Data updated as of April 2024.

B. Bars show the additional transit days vessels need to reach their destination when they re-route from the Suez Canal and take the longer route via the Cape of Good Hope.

C. Dashed lines indicate forecasts.

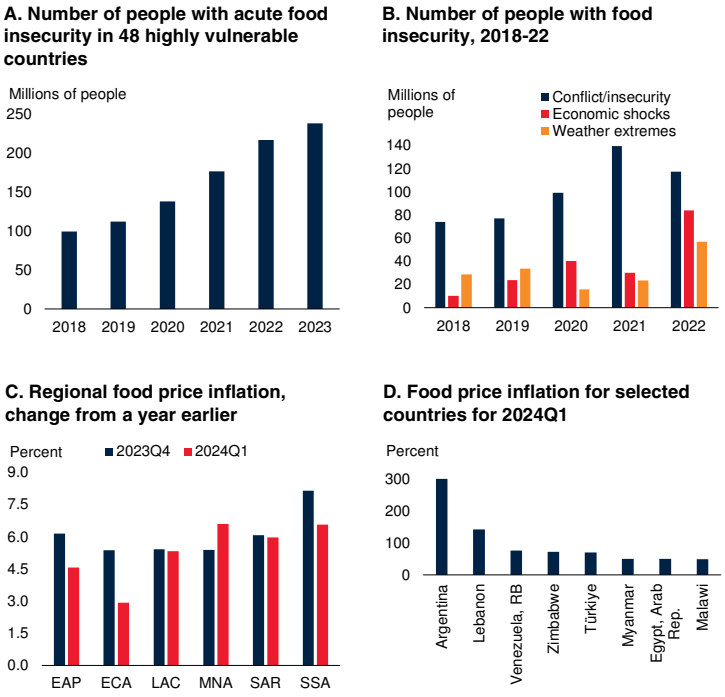
D. Years 2023-25 include projections from *OECD-FAO Agricultural Outlook 2023-2032*.

Downside risks

- *Biofuels.* The International Energy Agency predicts a 30 percent increase in biofuel demand from 2023-28 relative to the previous five years. Emerging and developing economies such as Brazil, India, Indonesia,

FIGURE 11 Food insecurity and inflation

In 48 highly food insecure countries, for which recent estimates are available, 238 million people faced acute food insecurity in 2023—a 10 percent increase from 2022, and up from 99 million in 2018. Armed conflict continues to be the primary driver of food insecurity. Global domestic food price inflation decreased to 5 percent in 2024Q1, from 6 percent in 2023Q4. However, numerous countries still grappled with very high food price inflation.



Sources: FSIN and GNAFC (2023); World Bank.

Note: EAP = East Africa and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub Saharan Africa.

A. Bars represent the sum of IPC Acute Food Insecurity phases 3 (crisis), 4 (emergency), and 5 (catastrophe/famine), as well as severely and modestly food insecure categories. The chart includes 48 countries for which comparable data was available.

B. Data are as reported in Figure 1.8 of *Global Report on Food Crises 2023* by the Global Network Against Food Crises.

C. Sample consists median value of food price inflation for 140 EMDEs, including 17 EAP, 22 ECA, 35 LAC, 17 MNA, 8 SAR, and 41 SSA. 2024Q1 includes only January and February.

D. Average food price inflation for the first quarter of 2024 including 8 countries with the highest rates.

and Malaysia are expected to drive over 60 percent of demand growth through supportive policies promoting biofuel adoption, rising demand for transport fuel, and ample availability of feedstock, even though the majority of current production occurs in advanced economies (figure 10.D). The share of biodiesel demand in total palm oil production in Malaysia and Indonesia is projected to rise from 19 percent in 2022 to 30 percent by 2028. Additionally, in the United States, eight midwestern states will be permitted to sell gasoline blended with 15 percent ethanol year-round from April 2025. The forecasts assume that this policy-derived support for biofuel demand will continue. However, there may be downward pressure on prices for grains, vegetable oils, and sugar if such policies do not unfold as planned.

Implications for food security and inflation

The number of people experiencing acute food insecurity has risen sharply in recent years—from just over 100 million in 2018 to about a quarter of a billion in 2022—and is estimated to have increased further last year, despite easing food inflation. Indeed, the latest available data for 48 out of 73 economies where food crises exist indicate that 238 million people faced acute food insecurity in 2023—a 10 percent increase from 2022, and up from 99 million in 2018 (figure 11.A).[10] Armed conflict is the primary driver of global food insecurity, followed by economic shocks and extreme weather (figure 11.B). As such, the conflict in the Middle East and a wider uptick in instability and violence in fragile and conflict-affected economies has substantially exacerbated food insecurity—without an urgent remedy, millions in Gaza, South Sudan, and Sudan could face famine. More broadly, the seven countries with the highest numbers of people experiencing acute food insecurity in 2024—accounting for more than two-thirds of the total—are all afflicted by conflict. Nonetheless, the anticipated decline in food prices over the next two years should attenuate food insecurity to some degree.

In 2024Q1, global domestic food price inflation was 4.9 percent, down from 5.7 percent in 2023Q4. Decreasing international prices of various agricultural commodities contributed to the decline. Nonetheless, domestic food price inflation in 2024Q1 was higher than the 2022

[10] FSIN (Food Security Information Network), and GNAFC (Global Network Against Food Crises). 2023. "Global Report on Food Crises: Joint Analysis for Better Decisions." Mid-year update, Food Security Information Network, Rome.

average—the peak year of the recent surge in global inflation—for about one in five emerging and developing economies, and stands above 5 percent in half of countries in each of the Middle East and North Africa, Latin America and the Caribbean, South Asia, and Sub-Saharan Africa (figure 11.C). Several countries continue to experience very high food inflation in contexts of generally rapid price growth. For example, food price inflation in 2024Q1 was close to 300 percent in Argentina, 142 percent in Lebanon, and more than 50 percent in Myanmar, Türkiye, Venezuela, and Zimbabwe (figure 11.D).

Beverages

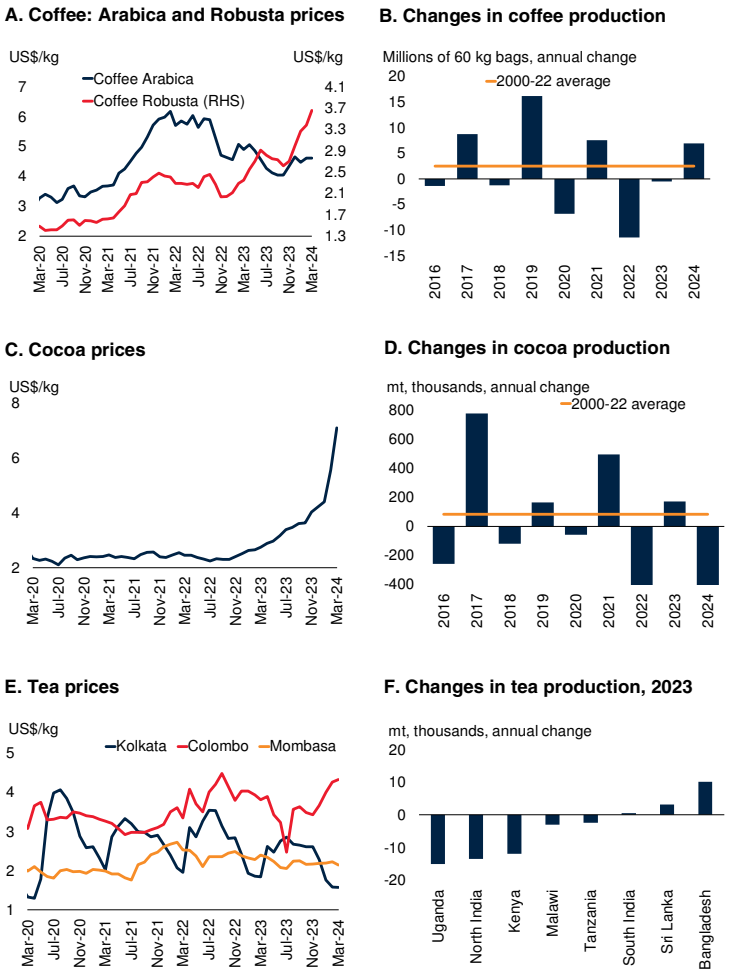
The World Bank's beverage price index reached a nearly five-decade nominal high in 2024Q1, driven by surging prices of cocoa and Robusta coffee, mostly in response to supply shortfalls partly linked to El Niño. The index is expected to gain more than 20 percent, on average, in 2024, but to decline by 12 percent in 2025 as additional supplies of coffee and cocoa reach the market. Risks to the outlook include potential supply disruptions should La Niña generate more volatile weather patterns than expected.

Robusta coffee prices jumped by 24 percent in 2024Q1 (q/q) to the highest level since 1994, and were more than 50 percent higher than a year earlier (figure 12.A). Although demand is growing, the price surge mainly reflects continuing concerns about supplies from key Robusta producers (including Indonesia and to a lesser extent Brazil), partly linked to the ongoing El Niño. Meanwhile, Arabica prices gained 5 percent in 2024Q1 (q/q), also reflecting recent tightness in global supplies. The global coffee market anticipates significant supply growth of nearly 7 million bags in the current season, mainly from Brazil, Colombia, and Ethiopia, which dominate the Arabica market (figure 12.B). However, continuing production challenges loom in the Robusta market, as key suppliers, especially Indonesia and Viet Nam, grapple with poor yields. On the demand side, consumption is projected to reach record highs in 2023-24 (up about 1 percent from last season). Due to these factors, Arabica prices are expected to soften this year and then stabilize in 2025, while Robusta prices are anticipated to increase by 33 percent in 2024 (y/y), before weakening considerably next year.

Cocoa prices continued to climb in 2024Q1, gaining nearly 45 percent (q/q), to stand 112 percent higher than a year earlier (figure 12.C). Prices exceeded $7/kg in March 2024 for the first time since high-frequency price records began,

FIGURE 12 Beverage markets

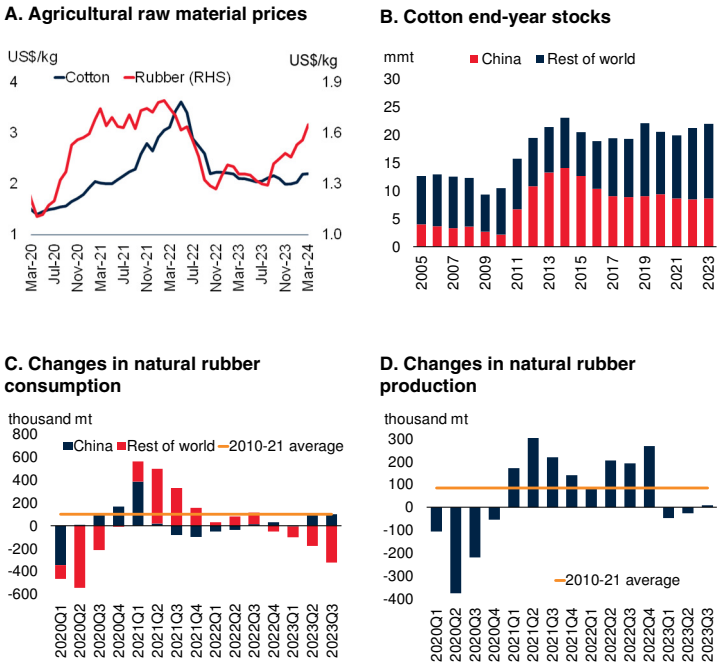
Sharply rising prices for cocoa and Robusta coffee drove the beverage price index to a nearly five-decade high in 2024Q1, a trend that continued in early April. The surge reflects supply shortfalls, mainly due to El Niño weather patterns, as well as strong demand. Tea prices have diverged across auctions reflecting production changes among suppliers. Beverage prices are expected to strengthen further in 2024 before weakening in 2025 as additional supplies reach the market.



Sources: Africa Tea Brokers Limited; International Cocoa Organization; International Tea Committee; Tea Board India; Tea Exporters Association Sri Lanka; U.S. Department of Agriculture; World Bank.
Note: mt = metric tons.
A.C.E. Monthly data, last observation is March 2024.
B. Years represent crop seasons (for example, 2023, refers to 2022-23). Data updated through 2024.
D. Data for 2024 (2023-24) is ICCO forecast.
E. 12 month change in production from January 2023 to December 2023.

FIGURE 13 Agricultural raw materials markets

Cotton prices have been relatively stable since 2022 amid subdued global consumption and rising stocks, while natural rubber prices have risen since 2023Q4 reflecting robust demand. The raw material price index is expected to be marginally lower, on average, in 2024 than last year, before edging up in 2025 amid increased demand.



Sources: Bloomberg; International Cotton Advisory Committee; International Rubber Study Group; World Bank.
Note: mt = metric tons.
A. Monthly data, last observation is March 2024.
B. Ending stocks, 2023-24 is ICAC projection. Years represent crop season (for example, 2023 refers to 2022-23 crop season).
C.D. Changes from the same quarter in the previous year. Last observation is 2023Q3.

rising as high as $10/kg by early April. The surge has been fueled by this season's poor supply prospects—global cocoa production is anticipated to decline by 11 percent in 2023-24 (from 4.87 to 4.32 mmt), reflecting reductions in Côte d'Ivoire and Ghana, which combined account for 55 percent of global cocoa supplies. These decreases are attributable largely to erratic rain patterns during the second half of 2023 in Côte d'Ivoire (linked to El Niño), as well as disease-related issues in both Côte d'Ivoire and Ghana (figure 12.D). Growing global demand, as signaled by robust grindings earlier in the year, has also underpinned sharply higher prices.

Global cocoa availability is expected to improve next season, especially in Côte d'Ivoire, which is taking steps to address supply bottlenecks, including by halting forward sales and restricting cocoa processors from keeping stocks beyond set limits. Average prices are expected to rise 52 percent in 2024 (y/y), before weakening in 2025 due to increased supplies. Weather patterns in Côte d'Ivoire during the remainder of 2024Q2 are a key risk to the outlook, especially for April-to-September (mid-crop) developments.

Tea prices (3-auction average) declined by 2 percent in 2024Q1 (q/q), to about 1 percent lower than a year earlier, as a 34 percent drop at the Kolkata auction offset a 19 percent increase at the Colombo auction (figure 12.E). Weaker prices reflect ample production and exports from major exporters in South Asia, including Bangladesh and Sri Lanka, as well as subdued demand from leading importers, notably Iran (figure 12.F). Prices are expected to remain flat on average in 2024 (y/y) despite a recovery in supplies in South Asia (especially India) and East Africa (notably Kenya) and subdued demand, and then stabilize in 2025.

Agricultural raw materials

The World Bank's agriculture raw material price index was little changed in 2024Q1 (q/q), as gains in cotton and natural rubber prices were offset by declines in other components, including tobacco and timber. The index is expected to edge down in 2024 and rise somewhat in 2025 as demand strengthens. Weaker-than-expected global growth remains a key downside risk.

Cotton prices gained more than 5 percent in 2024Q1 (q/q) but remain 1 percent lower than a year earlier (figure 13.A). The recent upward pressure on prices reflects a modest recovery in demand during the current season (August 2023-July 2024). Global production is projected to decrease by around 3 percent this season, with output projected to decline in all major producing countries, including China, India, and the United States. Nevertheless, the global stock-to-use ratio is expected to remain relatively stable at about 74 percent (figure 13.B). Prices are forecast to rise by 3 percent in 2024 (y/y) and edge further up in 2025. Slower-than-anticipated global economic growth is a key downside risk to the price outlook.

Natural rubber prices gained 8 percent in 2024Q1 (q/q) to a level 14 percent up from a year earlier. Prices have been supported by resilient demand, especially from the auto sector, which accounts for nearly two-thirds of global consumption, and by weather-related production problems, including limited rainfall linked to El Niño (figure 13.C). Lower production in Thailand (down 7 percent in the 12-month period ending March from a year earlier), the world's largest natural rubber supplier, and Indonesia (down more than 15 percent), has been only partially offset by increases in Côte d'Ivoire (up 24 percent) and the rest of the world (up 5 percent; figure 13.D). Following a 10 percent decline in 2023 (y/y), prices are forecast to gain 12 percent in 2024 and an additional 3 percent in 2025. Unanticipated weakness in auto production, potentially linked to a supply glut in China, is a key downside risk to this forecast.

Fertilizers

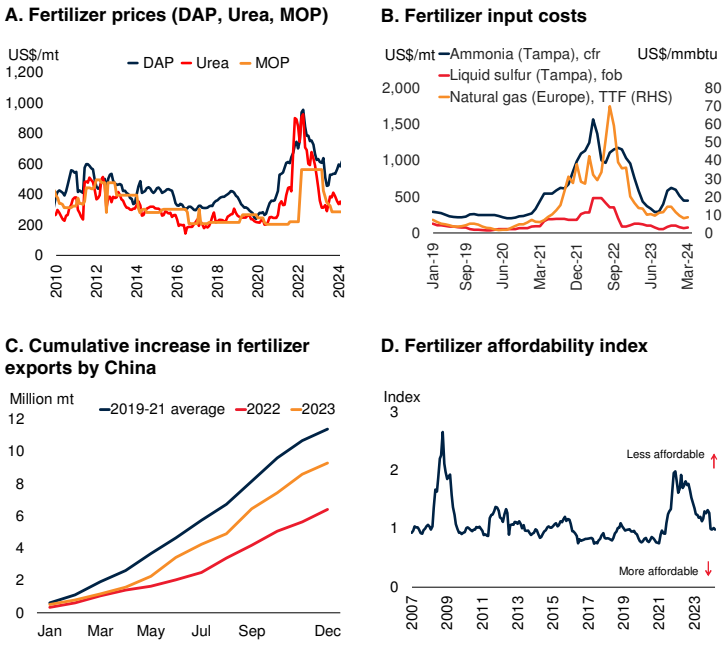
The World Bank's fertilizer price index edged lower in early April, having dropped 20 percent in 2024Q1 (q/q), to a level almost 30 percent lower than a year earlier. The decline reflects improved production, aided by lower feedstock prices. In March 2024, the fertilizer affordability index (the ratio of fertilizer prices to food prices) reached its 2015-19 average level. Prices are expected to weaken further in 2024 and 2025 but remain above 2015-19 levels due to robust demand and export restrictions, notably from China to reduce domestic prices, providing support. Upside risks to the forecast include shocks to the costs of inputs, especially natural gas, while resumption of China's exports could contribute to lower prices.

Nitrogen (urea) prices declined by 12 percent in 2024Q1 (q/q) and were nearly 10 percent lower than a year earlier (figure 14.A). The decline reflects a sharp drop in prices for the main feedstocks, including natural gas and coal, which were at about half their year-earlier levels in the first quarter (figure 14.B). Nitrogen-based fertilizer consumption grew moderately in 2023, following a nearly 5 percent contraction the previous year. After halving in 2023, urea prices are set to decline a further 2 percent (y/y) in 2024 and 7 percent in 2025 as production recovers (especially in Europe following output reductions after the 2022 surge in natural gas prices), and as new capacity comes online, and input costs weaken further. Key upside risks to the price outlook include less new capacity coming online than anticipated, continuing trade restrictions among key producers, including China, and spikes in natural gas prices. Longer-term headwinds for urea consumption—and subsequently prices—stem from its high carbon content.

DAP (diammonium phosphate) prices gained 10 percent in 2024Q1 (q/q) but were still 3 percent lower than a year earlier. Overall, DAP prices have

FIGURE 14 Fertilizer markets

Fertilizer prices continued falling in 2024Q1, aided by robust production and lower prices for natural gas and coal inputs, and despite continued export restrictions from China. The fertilizer affordability index is approaching its 2015-19 average. Prices are expected to decline further in 2024 and 2025 as more production comes online. Risks to the forecast include trade restrictions and supply disruptions related to escalating geopolitical tensions in the Middle East, a key region of seaborne liquefied natural gas exports.



Sources: Bloomberg L.P. – Green Markets; General Administration of Customs of the Republic of China; World Bank.
Note: DAP = diammonium phosphate; MOP = muriate of potassium; mt = metric tons. Monthly series.
A.B.D. Last observation is March 2024.
C. Lines show the sum of DAP and Urea exports by China.
D. Ratio of fertilizer prices over food price index. Last observation is March 2024.

been heavily influenced by prices for natural gas (which is used to produce ammonia, an input to DAP). The recent strength of prices for DAP compared to other fertilizers reflects, in part, policy measures. Export restrictions on phosphate from China and ammonia from Russia have negatively impacted global trade flows, raising prices (figure 14.C). This is evident in Europe, which has replaced imports from China and Russia with imports from other exporters, including Egypt (ammonia), Morocco (phosphate), Saudi Arabia, and the United States. After plunging nearly 30 percent (y/y) last year, DAP prices are expected to increase 9 percent in 2024 before declining in 2025 as supplies recover and new capacity comes online. The forecast assumes that Russia will continue to redirect exports that used to serve European markets toward other major agricultural producers, including Brazil and India. Further trade restrictions and disruptions, as well as higher ammonia and natural gas prices, could push DAP prices upward.

MOP (muriate of potash, or potassium chloride) prices decreased by 10 percent in 2024Q1 (q/q) and were 40 percent lower than a year earlier. The large price drop for MOP, along with declines in prices of DAP and urea, have brought the fertilizer affordability index close to 2015-19 levels (figure 14.D). Despite sanctions imposed on Belarus and Russia—which together account for nearly half of global MOP output—exports from both countries have been stronger than expected via trade diversion. Belarus, for example, has increased exports to China, with Russia expanding rail capacity to facilitate Belarus' shipments. Meanwhile, exports from Canada have been diverted to Europe. Although MOP demand fell considerably in 2022, it has been gradually recovering and is expected to reach pre-2022 levels this year. After plunging 56 percent in 2023 (y/y), MOP prices are expected to drop a further 22 percent in 2024, before stabilizing in 2025 as demand strengthens. The possibility that Belarus might expand exports further through alternative routes is a downside price risk. In contrast, self-sanctioning by companies that trade fertilizers with Belarus and Russia could lessen availability, posing an upside price risk. In the longer term, significant new capacity coming online, notably from Canada, could push prices down.

Metals and Minerals

Recent weeks have seen significant movements in the prices of some metals. Copper prices extended gains since late last year to post an almost two-year high in April. These moves followed a plateau in the aggregate World Bank metals and minerals price index in 2024Q1, which in turn followed a 10 percent (y/y) decline in 2023, reflecting ample supply and weak demand growth in major economies. Metal prices are projected to remain steady in 2024, before rising slightly in 2025. Upside risks to this outlook include further stimulus measures in China and supply disruptions, notably from trade restrictions. Conversely, a significant downside risk to the price outlook is slower-than-expected growth in major economies, such as China, which could further dampen industrial activity and demand for base metals.

Base metals and iron ore

Aluminum prices inched up by 0.3 percent in 2024Q1 (q/q) and continued to strengthen in early April (figure 15.A). This reflected concerns regarding the supply effects of a ban on Russian-origin metals at major commodity exchanges in the United States and the United Kingdom. Aluminum demand growth, driven primarily by the automotive and construction sectors, is likely to remain soft this year on the back of limited expansion of industrial activity in major economies, notably China, which accounts for 60 percent of global aluminum consumption. Global aluminum supply is envisaged to remain stable in 2024, with China, the world's largest producer, nearing its annual output cap of 45 million tons which is intended to curb pollution. Prices are forecast to edge up by just 2 percent (y/y) in 2024. Looking ahead to 2025, supply is anticipated to strengthen as Europe is expected to restart more smelters, following closures due to the energy price shock that accompanied Russia's invasion of Ukraine. Nevertheless, prices are forecast to firm by 4 percent in 2025, supported by stronger global activity, and growing aluminum demand for electric vehicle (EV) production and renewable power infrastructure.

Copper prices rose by 3 percent in 2024Q1 (q/q) and continued to climb to an almost two-year high in early April owing to signs of somewhat stronger demand in China amid ongoing production cuts and disruptions in South America. Global demand for copper—a key input for construction and equipment manufacturing—is likely to increase only modestly this year, reflecting subdued global GDP growth and the protracted challenges in China's real estate sector (figures 15.B and 15.C). Nonetheless the steady increase in the demand for copper, driven by energy transition technologies—particularly electricity grid infrastructure, EVs, and solar panels—is set to continue. Copper supply growth is expected to be modest this year, limited by production stoppages and declining ore grades in major producers in South America, before picking up in 2025. Copper prices are projected to increase by 5 percent in 2024 (y/y) and hold relatively steady in 2025 as new production comes online.

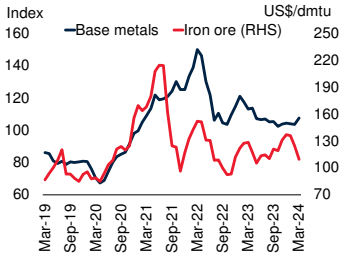
Lead prices edged down by 2 percent in 2024Q1 (q/q) amid a buildup of inventories. Lead demand growth is set to pick up slightly in the remainder of 2024, primarily driven by a gradual recovery in automotive sector activity—particularly the production of hybrid and internal combustion vehicles. Approximately 85 percent of lead demand stems from battery production, with two-thirds of this demand coming from the automobile industry; and over three-fourths of automotive demand reflects the predictable need for replacement batteries. Global lead output is projected to grow steadily this year, increasing in Australia, Brazil, Russia, and the United States. Average lead prices are expected to ease somewhat in both 2024 and 2025, as a steady increase in supply outweighs demand growth at the margin.

Nickel prices fell by 4 percent in 2024Q1 (q/q), amid continued, albeit diminishing, oversupply. Global nickel production is projected to increase in 2024, despite some mine suspensions and closures in response to the persistent slide in prices, which are down by almost 40 percent since 2022. The continued ramp-up in production

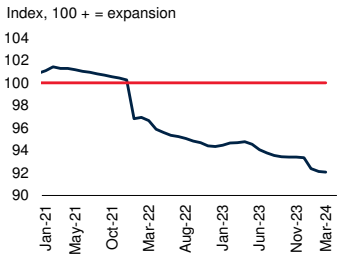
FIGURE 15 Base metals and iron ore markets

Base metal prices were relatively stable in 2024Q1, after a sharp decline in 2023 that reflected subdued demand in major economies, including China, amid ample supply. Metal prices are projected to remain steady in 2024, before rising slightly in 2025. Greater policy support for economic activity in China and supply disruptions are the main upside risks to the outlook for metal prices. Conversely, slower-than-expected growth in major economies, including China, could further dampen demand for base metals.

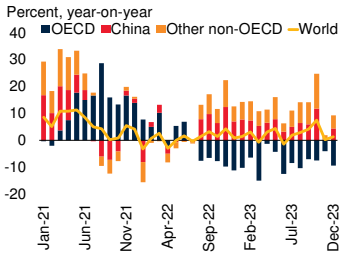
A. Base metals and iron ore prices



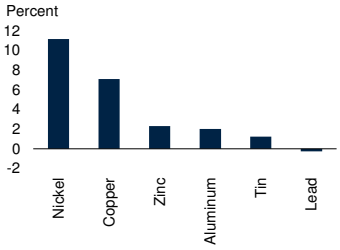
B. China's real estate sector activity



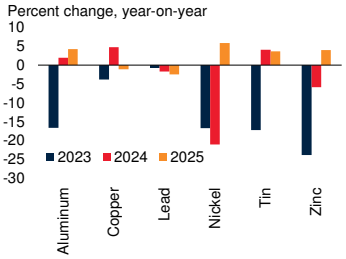
C. Base metals demand growth from 12 months earlier



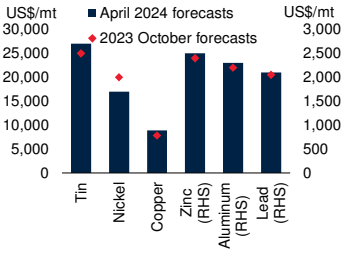
D. Base metal production growth, 2023



E. Changes in base metals prices



F. Base metal price forecasts for 2024



Sources: Bloomberg; Haver Analytics; Refinitiv (database); World Bank.
A.B. Last observation is March 2024.
B. A reading above 100 indicates expansion and a reading below 100 indicates a slowdown in China's real estate market.
C. Chart shows year-on-year percent change in metal consumption since January 2021. OECD = Organization for Economic Co-operation and Development. Last observation is December 2023.
D. Year-on-year change in global metals supply in 2023, compared to 2022.
E. Year-on-year change in metals prices based on forecast table 1.1.
F. The blue bars indicate current forecasts. Red markers indicate 2024 forecasts made in the latest *Commodity Markets Outlook, October 2023* edition.

derives mostly from Indonesia and reflects a surge in smelter investment, much of it from China, bolstered by government incentives and the imposition of an export ban on nickel ores in 2020 (figure 15.D). Indonesia now accounts for more than half of the global nickel supply. Global nickel demand is set to rise substantially this year, driven by stainless steel production and growing demand for battery materials—even with the recent deceleration of EV sales. Nickel prices are forecast to drop by 21 percent in 2024 (y/y), followed by a partial rebound of 6 percent in 2025, reflecting persistent robust demand growth.

Tin prices increased by 7 percent in 2024Q1 (q/q), and strengthened further in April, partly reflecting continuing supply constraints in Myanmar and Indonesia, which together account for 40 percent of global production. In February, Myanmar introduced a 30 percent in-kind tax on all grades of tin concentrate exports, following the closure of several mines last year for conservation and pollution-reduction reasons. Meanwhile, exports and output have been constrained in Indonesia by continuing licensing delays. Electronics manufacturing activity, a key driver of tin demand, is expected to firm this year and next, following a weak 2023. Tin prices are projected to rise by 4 percent (y/y) in both 2024 and 2025, balancing tight supply conditions and increased demand, particularly related to the production of semiconductors, photovoltaic panels, and other energy transition technologies.

Zinc prices declined by 2 percent in 2024Q1 (q/q) on weak demand, notably for use in construction. Prices rebounded modestly in April due to concerns over production cuts. Major zinc producers are likely to reduce supplies this year, with some European smelters set to remain fully or partly idle following closures in 2022 caused by high energy costs. Subdued industrial activity in China and other major economies is envisaged to weigh on demand for zinc, which is mainly used to galvanize steel for construction, manufacturing, and infrastructure. As a result, zinc prices are projected to fall by 6 percent in 2024 (y/y). In 2025, improving global growth is expected to underpin a moderate 4 percent pickup in prices, even with ample supplies (figures 15.E and 15.F).

Iron ore prices dropped by 4 percent in 2024Q1 (q/q), after increasing 12 percent in 2023Q4. Recent weakness in iron ore prices—the main input for steel production—has largely reflected increased seaborne supply from Australia and Brazil, resulting in higher port stocks in China. Steel demand is envisaged to remain subdued in 2024, given the continuing weakness in residential construction activity in China following a 20 percent (y/y) decline in new home starts in 2023. In addition, given expectations of only gradual monetary easing in advanced economies, elevated real interest rates are set to continue curbing the growth of industrial activity this year. Although steel output is expected to recover in 2025, the anticipated increase in iron ore production in Australia and Brazil, along with new projects elsewhere, is likely to put further downward pressure on prices. As a result, prices are forecast to decline by 9 percent in 2024 (y/y), and a further 5 percent in 2025.

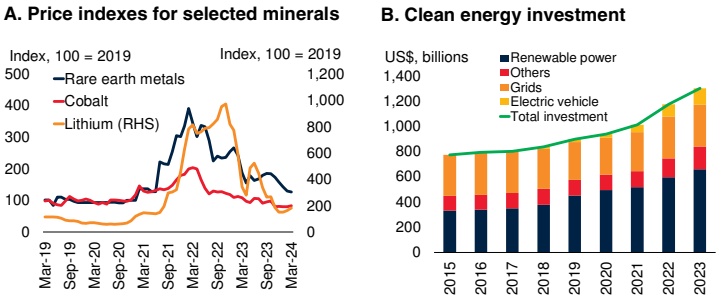
Critical minerals

Critical mineral prices fell in 2024Q1, with lithium and rare earth elements prices tumbling by 18 and 22 percent (q/q) and cobalt prices retreating by 6 percent (figure 16.A). Price declines were driven partly by weak demand, particularly for EVs, and subdued activity in China, but also by a continued ramp-up of supply anticipating prospective needs for the energy transition.

Critical mineral prices are expected to rise in coming years, as demand driven by the expanding use of energy transition technologies—including EVs, renewable power, and batteries—outpaces supply growth (figure 16.B). Substantial investments have nonetheless been directed toward the critical minerals supply pipeline in recent years, resulting in a notable increase in global production. Several countries have stepped up mining of rare earth elements, including Australia, Myanmar, and the United States, while Australia and Chile have expanded production capacities for lithium. Policy makers in major economies have also introduced initiatives to boost domestic production of critical minerals, including in the U.S. Inflation Reduction Act and the European Commission's Critical Raw Materials Act. However, the supply outlook remains uncertain due to several risks. These include environmental, social, and governance concerns around mineral production processes, extended lead times for operationalizing new mines, and the significant geographic concentration of current mining and processing capacities for critical minerals.

FIGURE 16 Critical minerals markets

Critical mineral prices fell in 2024Q1, reflecting subdued demand growth for EVs and other critical-mineral-intensive products. Yet given the longer-term context of steadily rising clean energy investment, critical minerals supply risks persist, including from long lead times for new mines, geographical concentration in processing capacities, and increasing environmental, social, and governance concerns.



Sources: Bloomberg; International Energy Agency (IEA); World Bank.
A. Last observation is March 2024.
B. Bars indicate global investment. 2023 values are based on estimated values. Others = end-use renewable energy, electrification in building, transport, and industrial sectors, and battery storage.

Precious Metals

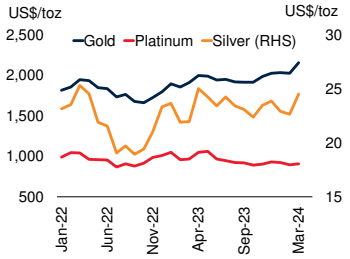
Gold prices—the main driver of the World Bank's precious metals index—reached new record highs in April amid elevated geopolitical tensions and safe haven demand. The further rise in prices extended a 4 percent increase in the precious metals index in 2024Q1 (q/q). The index is projected to increase by 8 percent (y/y) in 2024 and then stabilize in 2025, as the easing of global inflation pressures lowers the demand for gold. However, heightened geopolitical uncertainty from an escalation of ongoing conflicts and wider geopolitical tensions could push gold prices higher than in the baseline. Weaker-than-expected industrial activity in major economies could dampen demand for silver and platinum.

Gold prices surged by 5 percent (q/q) in 2024Q1 before reaching all-time nominal highs in April

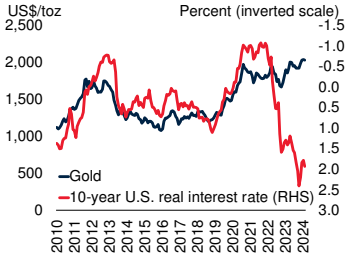
FIGURE 17 Precious metals markets

Precious metal prices diverged in 2024Q1. Gold prices continued to surge on heightened geopolitical tensions and purchases by some central banks. By contrast, prices for platinum and silver remained relatively stable. Gold prices are expected to increase in 2024, decoupling from the prior inverse relationship with real yields, even despite recent outflows from gold exchange-traded fund. Gold prices are set to stabilize in 2025, but an escalation of ongoing conflicts or further rise in geopolitical tensions could push prices higher. Silver and platinum prices are forecast to increase in both 2024 and 2025, with weaker-than-expected industrial activity in major economies a key downside in both cases.

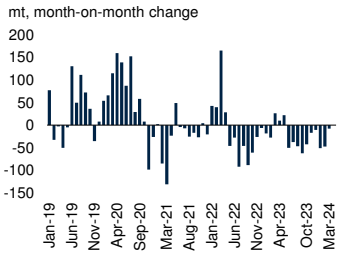
A. Gold, silver, and platinum prices



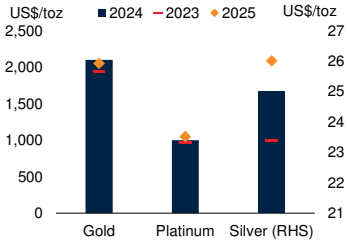
B. Gold price and real U.S. Treasury bond yield



C. Changes in gold exchange-traded funds



D. Gold, silver, and platinum price forecasts



Sources: Bloomberg; Federal Reserve Bank of St. Louis; Haver Analytics; World Bank.
A. Monthly prices, last observation is March 2024.
B. Interest rate is the 10-year U.S. Treasury inflation-indexed security with constant maturity (not seasonally adjusted), inverted scale. Last observation is March 2024.
C. Month-to-month changes in gold exchange-traded funds. Last observation is March 2024.
D. Forecast as of April 25, 2024.

(figure 17.A). Prices have been supported by strong demand, especially from several EMDE central banks, amid heightened geopolitical tensions. Buoyant prices have sustained despite outflows of gold holdings in exchange-traded funds in 2024Q1, which is likely related to the diminishing extent of anticipated U.S. monetary easing this year and rebounding government bond yields amid robust economic activity in the United States (figures 17.B and 17.C). Gold holds a unique status among assets, often rising in price during periods of geopolitical and policy uncertainty, including conflicts. Safe-haven demand for gold is set to strengthen further in 2024 amid heightened geopolitical and policy uncertainty, partly related to the high number of upcoming elections worldwide. Gold prices are projected to rise by 8 percent in 2024 (y/y) to an average of $2,100 per troy ounce, and then to moderate in 2025 as inflation continues to decline.

Silver prices edged 0.5 percent higher in 2024Q1 (q/q) and gained further in April, owing to recovering industrial activity. In 2024, demand for silver is expected to increase modestly, driven by its dual appeal as both a financial asset and an industrial commodity. Industrial demand, which accounts for almost half of global silver consumption, continues to be supported by expanding vehicle electrification and renewable energy infrastructure, and will likely be further boosted by a recovery in jewelry and silverware demand. Investor interest in silver is set to be bolstered by advanced-economy interest rate cuts later this year. Silver supply is projected to grow in 2024, with increased mine production in Chile, Mexico, and Russia offsetting declines in silver recycling and by-product output. Silver prices are forecast to increase by 7 percent in 2024 (y/y) and a further 4 percent in 2025.

Platinum prices moved just 0.2 percent lower in 2024Q1 (q/q). Platinum demand is expected to decelerate in 2024, after a 25-percent surge last year. Jewelry and auto sector demand—which accounts for about 60 percent of global platinum demand—is projected to grow modestly this year. Substitution toward platinum from higher-cost palladium for auto-catalyst manufacturing is set to continue. However, industrial demand is anticipated to fall mirroring the subdued activity in the fiberglass and petrochemical industries. Reduced production from Russia and South Africa—the world's two largest platinum producers—and diminished secondary (recycling) supply are set to support prices. Platinum prices are forecast to rise by 4 percent in 2024 (y/y) and by 5 percent in 2025 (figure 17.D).

SPECIAL FOCUS

Forecasting Industrial Commodity Prices: An Assessment

The Special Focus of this edition evaluates the performance of five well-known approaches to forecasting the prices of three key industrial commodities—aluminum, copper, and crude oil—over the period 2015Q1 to 2022Q1. High short-term volatility and significant longer-term movements in commodity prices—both features of commodity markets in recent years—present major challenges for policymakers in commodity-exporting EMDEs. Such challenges are easier to meet the more accurately price changes can be forecast. The evaluation reveals four main results. First, there is no "one-approach-beats-all" for commodity price forecasting, as the forecast accuracy of approaches varies significantly across commodities and time horizons. Second, macroeconometric models tend to be more accurate at longer horizons, partly because they can incorporate the effects of structural changes on prices. Third, it is critical to complement forecasts by incorporating judgment (information that cannot be accounted for by statistical approaches), especially when confronted by unusual or unprecedented events. Finally, these results underscore the value of employing a range of approaches in forecasting commodity prices.

Introduction

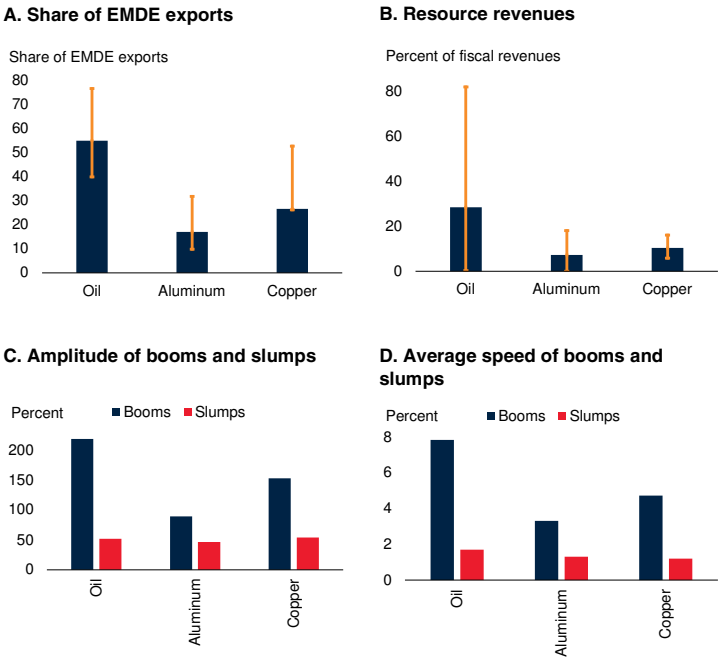
Almost two-thirds of emerging market and developing economies (EMDEs) heavily rely on commodities for export, fiscal revenue, and economic activity (figure 18.A-B). Among commodity-exporting EMDEs, resource sectors, on average, account for nearly 40 percent of exports of goods and non-factor services, 31 percent of goods exports, and 10 percent of value added. In some commodity-importing EMDEs, commodities account for a large share of imports and, in the presence of subsidies, fiscal spending. The substantial volatility of commodity prices exacerbates revenue management challenges in EMDEs (figure 18.C-D). Large and persistent price shocks caused by commodity price volatility weaken fiscal and external positions and lower economic growth in commodity-exporting EMDEs (IMF 2015, Richaud et al. 2019).

This Special Focus evaluates the performance of five well-known approaches to forecasting the prices of three key industrial commodities: aluminum, copper, and crude oil (figure 19.A). These three commodities account for about half of global commodity exports. The evaluation focuses on four model-based approaches (bivariate regression models; Bayesian vector autoregression models; a macroeconometric model; and a machine-learning model) and forecasts from Consensus Economics.

Note: This Special Focus was prepared by Francisco Arroyo-Marioli, Jeetendra Khadan, Valerie Mercer-Blackman, Franziska Ohnsorge, and Takefumi Yamazaki. The discussion is drawn from Arroyo-Marioli et al. (2023). Research assistance was provided by Muneeb Ahmad Naseem, Vasiliki Papagianni, Lorez Qehaja, and Kaltrina Temaj.

FIGURE 18 Commodity dependence and commodity price volatility

Many EMDEs depend heavily on commodity exports, with oil exporters typically more reliant than metals exporters. These export proceeds, in turn, provide a sizeable share of fiscal revenues. Price volatility is high, as is evident in the size and amplitude of cycles, with price booms more pronounced than price slumps, on average. The speed of commodity price rises in booms is also much faster than that for declines in slumps, especially for crude oil.



Sources: International Monetary Fund; UNComtrade (database); UNU-Wider (database); World Bank.
A. Figure shows the median share of exports accounted for by oil, copper, and aluminum for EMDEs that are commodity exporters. Oil includes 20 EMDEs, copper 6, and aluminum 4. Blue bars show medians and orange whiskers show interquartile ranges.
B. Unweighted average of resource revenues as a share of fiscal revenues for EMDE commodity exporters of oil (25 countries), copper (4 countries), and aluminum (3 countries). Countries relying on the export of multiple commodities are included in the averages for each commodity. Orange whiskers indicate the range between the minimum and maximum values.
C. Data from January 1970 to October 2021. Amplitude measures the average real price change (in percentage terms) from trough to peak for booms and from peak to trough for slumps.
D. Data from January 1970 to October 2021. Slump refers to the average monthly amplitude (in this case, amplitude divided by the duration).

The benefits of employing a menu of approaches to forecast commodity prices, rather than attempting to identify a single "best" approach, have been discussed by earlier studies (for example, Baumeister and Kilian 2015). Specifically, compared to a single approach, a variety of approaches can enhance the reliability of forecasts by taking into account a broader view of possible price outcomes. A previous edition of the *Commodity Markets Outlook* (World Bank 2023) featured a *Special Focus* that presented a brief literature review on various approaches for forecasting industrial commodity prices. It found that the five approaches examined here have performed relatively well for selected commodities. Building on that review, this *Special Focus* presents new empirical evidence by comprehensively evaluating these approaches.

Forecasting Approaches

Bivariate regression models

Bivariate regression models are useful for capturing the basic relationships between macroeconomic variables and commodity prices. They are used to forecast industrial commodity prices by simply regressing the change of a commodity price on a "past" value of an explanatory variable. Six explanatory variables are employed in regressions: the Commodities Research Bureau Raw Industrial Commodity Index; U.S. M1 growth; U.S. Treasury Bill 10-year interest rates; China's manufacturing purchasing managers' index (PMI); and global composite and manufacturing PMIs. The first three variables are often found to be useful predictors of crude oil prices (Alquist, Kilian, and Vigfusson 2013). The last three reflect the importance of the outsized share of China in global metal markets and the importance of global activity in driving industrial commodity prices. This approach yields six forecasted prices for the three commodities and for each forecast horizon, reflecting the number of independent variables. The final forecast is the average of all estimations with statistically significant coefficients produced by bivariate regression models.

Bayesian vector autoregressive models

The Bayesian vector autoregressive (BVAR) model, a multivariate VAR model, estimates the relationships among two or more variables. It differs from the standard multivariate VAR model in that the model parameters are treated as random variables—with prior probabilities—rather than fixed values. A BVAR model with sign restrictions is employed here to forecast commodity prices following techniques developed by Kilian and Murphy (2014). The dependent variables in the model include industrial commodity prices, log differences in metal production, and the global GDP growth rate. The Bayesian estimation approach allows for structural identifications such as elasticity and sign restrictions and prior beliefs about future economic events. The estimated impulse response functions that satisfy the sign restrictions are used to forecast industrial commodity prices.

Macroeconometric model

For this exercise, we utilized the Oxford Economics Global Economic Model (OEM). The OEM is a large-scale, cross-country, semi-structural projection model well suited to the analysis of alternative projections for the global economy (Oxford Economics 2019). It includes 81 countries, 6 regional blocs, and the Eurozone. Most have data available quarterly. Behavioral equations governing domestic economic activity, monetary and fiscal policy, global trade, and commodity prices are used. The model combines short-run momentum factors and long-term demand and supply fundamentals. In the short run, shocks to demand drive business cycles that can be influenced by fiscal and monetary policies. Over the long run, output is determined by supply-side factors such as investment, labor force participation, and productivity. The resulting dynamics of short-run fluctuations and long-run trends yield quarterly commodity price forecasts.

Machine-learning model

The machine-learning model combines algorithms and econometric methods to learn patterns and

estimate relationships in data. It then makes projections based on the patterns and estimated relations without imposing any theoretical prior. Following Zhang et al. (2015), a hybrid machine-learning model is employed here that comprises an empirical mode decomposition, and a generalized autoregressive conditional heteroskedasticity model. The hybrid model approach used in this exercise separates commodity price series into different nonlinear and time-varying components. Commodity price forecasts are constructed by adding forecasts of these components.

Forecasts from Consensus Economics

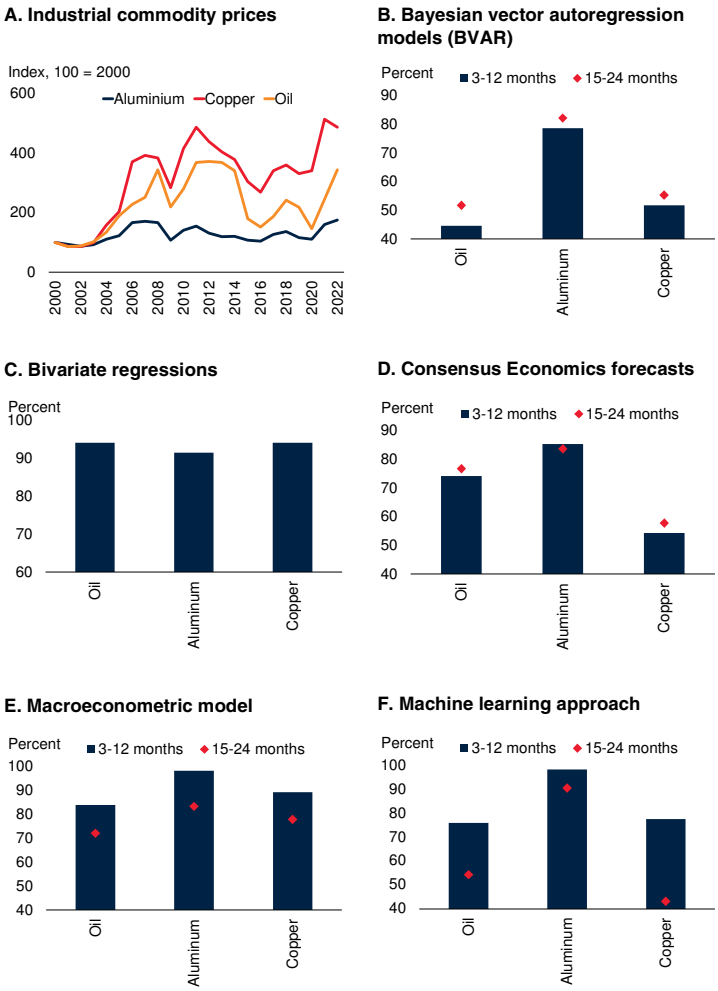
Consensus forecasts are published by Consensus Economics (CE), a service that surveys several forecasters for their projections of future output growth, commodity prices, current account balance, and other major macro variables. CE forecasts of commodity prices are drawn from "Energy & Metals Consensus Forecasts" reports, which are based on a monthly survey of up to 40 leading private-sector commodity forecasters covering 50 individual commodities. These forecasts are a simple compilation, which means they do not consider the systematic consistency of methodologies used by different forecasters.

Data

The data frequency and sample periods used for estimation vary across the approaches due to data availability. Bivariate models are based on monthly data for the period 2004Q1-2022Q1. For the BVAR models, quarterly averages of monthly data between 1995Q1-2022Q1 are used. The quarterly GDP growth rates are drawn from Haver Analytics, with forecasts based on the World Bank's June 2022 *Global Economic Prospects* report (World Bank 2022). Production data for aluminum and copper are drawn from the World Bureau of Metal Statistics, and for oil from the International Energy Agency. The machine learning approach is estimated using monthly data from 1995Q1 to 2022Q1.

FIGURE 19 Directional accuracy of commodity price forecasts

While industrial commodity prices exhibit volatility that makes forecasting challenging over the short and longer terms, most evaluated forecasting approaches accurately predicted the direction of price changes for the three industrial commodities. BVAR and Consensus Forecasts had lower accuracy in predicting the direction of price changes for copper over longer horizons. BVAR exhibited less directionally accuracy than other approaches for oil. Bivariate regressions consistently demonstrated high directional accuracy across the three commodities.



Source: World Bank.

Note: Charts show the percent of quarters for which each approach correctly predicts the direction of price changes. Bars and diamonds represent averages of correct directional predictions for 3-12 months and 15-24 months forecast horizon, respectively.

C. Bivariate regressions are not evaluated beyond the 12-month horizon.

TABLE 2 Forecast bias

Forecast bias does not differ significantly across approaches for most forecast horizons and commodities. Some approaches lead to relatively larger biases, but these are not statistically significant. Bivariate regressions tend to overpredict copper prices, and BVAR produce a larger bias for oil. CE forecasts produce smaller biases for all commodities.

Commodities	Aluminum (US$/mt)		Copper (US$/mt)		Oil (US$/bbl)	
Approaches/Horizons	**3-12 months**	**15-24 months**	**3-12 months**	**15-24 months**	**3-12 months**	**15-24 months**
CE forecasts	-3.3	16.2	-108.1	-12.9	-1.6	1.5
Bivariate regressions	91.3	-	660.0	-	4.9	-
BVAR	-20.2	-8.0	-98.5	-170.2	4.9	17.0
Macroeconometric model	-0.3	2.9	-89.2	21.0	2.2	1.0
Machine learning	18.0	-2.5	-34.3	57.0	3.2	2.4
Actual prices (average, 2015Q1-2022Q1)	1,948		6,493		56.6	

Source: World Bank.
Note: Macroeconometric model refers to the Oxford Economics Model. The table shows the average forecast bias, defined as the difference between the actual price and the predicted price, for the 3-12 month and 15-24 month forecast horizons. The forecast evaluation period is 2015Q1-2022Q1. Forecasts for the macroeconometric model are only available at semi-annual frequency; forecasts for all other approaches are available at a quarterly frequency. Bivariate regressions are not evaluated beyond the 12-month horizon.

Criteria for evaluating forecast performance

The five forecasting approaches are evaluated in terms of three well-known statistical criteria:

- *Directional accuracy*. The directional accuracy simply assesses the likelihood of forecasts and actual prices moving in the same direction.
- *Forecast bias*. The forecast bias, defined as the mean of the difference between the actual and forecasted prices (mean forecast error), evaluates whether forecasts systematically over- or under-predict their realized values.
- *Forecast accuracy*. The accuracy of model forecasting is evaluated by the Diebold and Mariano (DM) test (Diebold and Mariano 1995). The DM test checks whether a particular model is more accurate than another by assessing the statistical significance of the difference in forecast errors between model pairs. The DM test is implemented for each model against all other approaches.

The forecast evaluation covers price forecasts for each of the three industrial commodities, ranging from one to eight quarters ahead, for the period 2015Q1-2022Q1. As bivariate regressions are statistically significant only for horizons up to one year ahead, other horizons are excluded. Historical OEM forecasts are only available semi-annually; hence, the forecast accuracy tests are adjusted for the fewer degrees of freedom.

Results

Directional accuracy of forecasts

The directions of price changes are often accurately predicted by most models for most commodities (figure 19.B-F). However, there are few exceptions, notably lower directional accuracy of the BVAR compared to other approaches, particularly for oil. For copper, the BVAR and Consensus Forecasts correctly predict the direction of price changes less frequently. Bivariate regressions tend to produce directionally accurate forecasts at shorter horizons.

Forecast bias

Forecast bias does not differ significantly across models for most forecast horizons and commodities. While there are some exceptions, they are not statistically significant. Bivariate regressions lead to forecasts with a higher bias for aluminum and copper for horizons up to one year. BVARs produce forecasts with a greater bias for oil beyond the one-year horizon (table 2).

TABLE 3 Model accuracy

Forecast accuracy differs significantly across models at short horizons. Beyond one year, CE forecasts and the macroeconometric approach produce more accurate forecasts.

Horizon	3-12 months			15-24 months		
Approaches/Commodities	Aluminum	Copper*	Oil**	Aluminum	Copper	Oil
CE forecasts						
Bivariate regressions						
BVAR						
Macroeconometric model						
Machine learning						

Source: World Bank.
Note: Macroeconometric model refers to the Oxford Economics Model. The table identifies the approaches that have the highest incidence of success in forecasting commodity prices based on the Diebold-Mariano test for 3-12 months and 15-24 months forecast horizons. Green cells represent the best approach and blue cells highlight the second best approach. * indicates that Consensus Forecasts and the machine learning approach had similar forecast accuracy compared to other models for horizons up to one year. ** indicates that the accuracy of bivariate regressions, Consensus Forecasts, and the machine learning approaches had similar forecast accuracy compared to other models for horizons up to one year.

Forecast accuracy

The forecast accuracy of models differs significantly across commodities and forecast horizons. All models are compared against each other for all horizons using the DM test. Table 3 highlights the two forecasting approaches that perform better for each commodity for forecast horizons 3-12 months (short-term) and 15-24 months ahead (medium-term).

- For aluminum prices, bivariate regression models and the machine learning approach are the most accurate for forecast horizons up to one year. In contrast, the OEM and the machine learning approach performed better than other approaches over the medium-term horizons.
- For copper prices, the OEM approach is more accurate than other approaches for all forecast horizons. CE forecasts and machine learning approaches had similar forecast accuracy compared to other approaches for forecast horizons up to one year.
- For oil prices, three approaches—bivariate regressions, CE forecasts, and the machine learning approach—produce forecasts with similar accuracy compared to other approaches for forecast horizons up to one year. CE forecasts and the OEM are the two most accurate approaches at forecast horizons beyond one year.

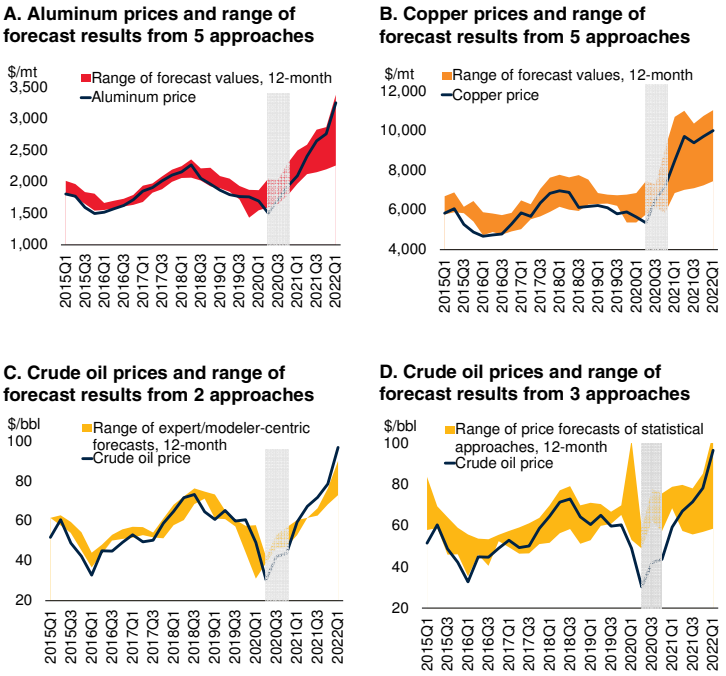
Additional considerations

Adding modeler priors. None of the forecasting approaches here have pre-designed scenarios or priors. However, in reality, it is often of interest to condition the forecasts using different scenarios (for example, different trajectories for the world economy, a shock to the supply of oil, or changes in policies). The OEM is particularly useful for scenario exercises that consider changes in policy variables, global growth, inflation, and structural variables. Another purpose of conditional forecasts is to incorporate information from higher frequency data or judgment into the model (Karlsson 2013). This underscores the main advantage of the BVAR model, which allows the forecaster to simulate scenarios or test priors while maintaining the statistical properties of the model. The forecaster can then make inferences about the posterior forecast, *conditional* on the prior. The version of the BVAR model used in this exercise leads to a larger oil price forecast bias than other models. However, in practice, the forecaster could subsequently adjust the parameters to reflect changes in priors to arrive at more informed forecasts.

Adjusting to shocks and incorporating judgment. Commodity markets are subject to a wide range of shocks affecting demand and supply dynamics, ultimately leading to sharp price movements. For example, the COVID-19 pandemic triggered a global recession in 2020, led

FIGURE 20 Forecasts and realizations: 2015Q1-2022Q1

The approaches often lead to better forecast accuracy during the pre-pandemic period. This is in part driven by the disruption caused by the pandemic to the standard relationships between global macroeconomic conditions and commodity prices. Among the five approaches, the expert- and modeler-centric approaches (CE forecasts and the macroeconometric model) produced more accurate forecasts in the post-pandemic period, in part because they were better able to incorporate this information.



Source: World Bank.

Notes: Grey shaded area denotes trough of the COVID-19 pandemic (2020Q2-Q3). Data shows 1-year-ahead rollover over a 12-month horizon forecast period. The range includes the forecast outcomes of the five approaches examined (Bivariate regressions, BVAR, Consensus Forecasts, the machine learning approach, and the Oxford Economic Model).

C.D. Measures average crude oil prices (unweighted average of Brent, West Texas Intermediate, and Dubai benchmarks) in U.S. dollars per barrel.

C. Expert- and modeler-centric forecast approaches refer to Consensus Forecasts and the Oxford Economic Model.

D. Statistical forecast approaches refer to the Bivariate regressions, BVAR, and the machine learning approach.

to gyrations in commodity prices, and, for a brief period, even upended the standard relationships among macroeconomic variables. Forecasting performance of all approaches naturally suffered during the pandemic. The purely statistical forecasting approaches (bivariate regressions, BVAR, and, to a lesser extent, machine learning) were unable to quickly adjust to extraneous factors outside of the model. Past relationships embedded into the models during the training period temporarily broke down (figure 20.A-C). In contrast, forecasts based on the OEM displayed a smaller difference in relative performance before and after the pandemic, as the model had been adapted to accommodate the pandemic shock (figure 20.D). CE forecasts also performed relatively better as they reflected the aggregate views of many forecasters who could adjust their projections to account for the pandemic shock. Though the pandemic period was highly unusual, the behavior of different approaches serves as a good illustration of the need to incorporate judgment and other factors outside the model specification when forecasting.

Utilizing multiple approaches. Each forecasting approach has unique strengths that should be considered in practice. For instance, the BVAR and OEM approaches excel in scenario analysis, while machine learning methods demonstrate proficiency in uncovering complex patterns in time series data that traditional statistical models may overlook. Bivariate regressions are particularly valued for their simplicity and ability to identify the most influential explanatory variables. Meanwhile, CE forecasts serve as a valuable sentiment indicator, offering a robust benchmarking alternative with the additional advantage of being timely and accessible.

Considering other industrial commodities. While the results are not reported here, lead, nickel, tin, and zinc prices are also evaluated using the same forecast evaluation exercise (Arroyo-Marioli et al. 2023). These four industrial metals have recently seen increasing demand in part due to their use in clean energy technologies, though they are less systemically important to the global economy compared to the three studied here. For these four industrial commodities, most approaches performed well, with the OEM forecast showing the lowest bias and forecast error for forecast horizons of 12 months or more.

Using futures prices. Prices of futures are often used for forecasting purposes by many organizations (Nixon and Smith 2012; World Bank 2023). They are simple to utilize as they reflect market expectations of future spot prices. Earlier studies report that futures prices are often unbiased but inefficient forecasts (with large forecast errors in either direction) compared to forecasts produced by other approaches, including

VARs, machine learning techniques, and univariate time series models. Despite their relative underperformance, some studies find that futures prices do contain important predictive information, and the financialization of commodity markets may have helped improve their predictive power over time (Arroyo-Marioli et al. 2023; Ellwanger and Snudden 2023).

Conclusions

This Special Focus evaluates the performance of five widely used approaches to forecasting the prices of industrial commodities. The evaluation focuses on the prices of aluminum, copper, and crude oil as these commodities account for almost half of global commodity exports. It examines four model-based approaches (bivariate regressions; Bayesian vector autoregression models; a macroeconometric model; and a machine learning technique) and CE forecasts. These approaches are evaluated in terms of their performance with respect to directional accuracy, forecast bias, and forecast accuracy over the period 2015Q1-2022Q1. The evaluation finds four major results.

No "one-approach-beats-all" for commodity price forecasting. Most approaches produce directionally accurate forecasts at horizons of less than one year. Forecast bias does not differ significantly across approaches for most forecast horizons and commodities. However, the forecast accuracy of approaches varies significantly across commodities and time horizons. Since market conditions often change, it is not possible for one approach to systematically outperform the others across different commodities, particularly over shorter horizons.

Macroeconometric models are better for longer-term forecasts. These models tend to be more accurate at horizons of one year or more, partly because they can incorporate the impact of structural changes on prices. These models are also useful for conducting scenario analyses and considering forecasts conditional on certain outcomes.

Need for incorporating judgment. It is critical to complement mechanistic forecasts with judgment and information that cannot be accounted for by these approaches. Commodity prices are driven by forces that may not be captured by backward-looking statistical techniques. These techniques can be improved with reference to events or information known to the modeler but not yet incorporated in the data.

Importance of multiple approaches. A single approach can sometimes produce large forecast errors. Moreover, forecast accuracy varies significantly across approaches. These results collectively emphasize the importance of employing a rich menu of approaches in forecasting commodity prices.

For policymakers, these results underscore the uncertainty around commodity price forecasts and the need to develop contingency plans for alternative outcomes, particularly for economies heavily dependent on commodities for revenues. The usefulness of forecasting is sometimes less about predicting the future with accuracy and more about looking at how changes in certain assumptions might lead to different outcomes, as well as the risk associated with those outcomes. In practice, it is crucial to use various models, each with its strengths, coupled with an informed assessment of potential changes in commodity markets.

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The conflict in the Middle East has been exerting upward pressures on prices of key commodities, notably oil and gold. High commodity prices, despite relatively subdued global GDP growth, suggest some countervailing forces offsetting tepid demand, such as heightened geopolitical strains and increasing metals-intensive investments in the energy transition. Commodity prices are forecast to soften marginally in 2024 and 2025 but remain substantially above pre-pandemic levels. Unlike most other prices, crude oil prices are expected to increase in 2024, mainly reflecting geopolitical tensions. The key risk to commodity price projections relates to the possibility of a broadening of the Middle East conflict, which could lead to significantly higher oil prices, thus reigniting global inflationary pressures. Meanwhile, food insecurity worsened markedly last year, reflecting elevated food prices and armed conflicts around the world. Should such conflicts worsen, global hunger could rise substantially.

Heightened uncertainty around the commodity price outlook underscores the importance of forecast accuracy. A Special Focus section evaluates the performance of five approaches used to forecast prices of three commodities—aluminum, copper, and oil. It concludes that there is no "one-approach-beats-all." Macroeconometric models tend to be more accurate at longer horizons, mainly due to their ability to account for the impact of structural changes. It is, however, critical to incorporate judgment and information that cannot be accounted for by statistical approaches. This highlights the importance of employing a wide range of approaches when forecasting commodity prices.

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 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:
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