

# Market Overview



as of: 20<sup>th</sup> November 2023

- **Copper:** Southeast Asia and India together will likely account for 20% of global refined copper demand growth during the 2023-2028 period, and could account for 60% of longer-term copper demand growth, Craig Lang, an analyst at CRU (*page 2*).
- **Precious metals:** Oxford Economics analysts said the three key pillars of global silver demand: industrial, jewelry and silverware, will see overall demand increase by 42% by 2033, effectively doubling the growth from 2014-2023 (*page 4*).
- **USA:** The so-called core consumer price index, which excludes food and energy costs, increased 0.2% from September, according to government figures. That's led several Fed policymakers to signal that they may be done raising interest rates, but Powell has repeatedly stressed the central bank could hike again if needed (*page 6*).

## Key market prices

	Close price	2w chng.
<b>LME (USD/t)</b>		
▲ Copper	8 141.00	0.9%
▼ Nickel	16 780.00	-5.8%
<b>LBMA (USD/troz)</b>		
▲ Silver	24.00	6.0%
▼ Gold (PM)	1 981.05	-0.7%
<b>FX</b>		
▲ EURUSD	1.0872	1.6%
▼ EURPLN	4.3767	-1.8%
▼ USDPLN	4.0327	-3.7%
▲ USDCAD	1.3722	0.3%
▼ USDCLP	881.17	-1.0%
<b>Stocks</b>		
▲ KGHM	115.75	1.7%

Source: Bloomberg, KGHM Polska Miedź S.A.; (*more on page 9*)

## Important macroeconomic data

Release	For		
 Industrial prod. (yoy)	Oct	4.6%	▲
 Industrial prod. (mom)	Oct	-0.6%	▼
 Core CPI (yoy)	Oct	8.0%	▼
 Industr. prod. (wda, yoy)	Sep	-6.9%	▼
 Copper exports (\$)	Oct	3 602	▼

Source: Bloomberg, KGHM Polska Miedź S.A.; (*more on page 7*)

**The gold to silver ratio shows that the current economic and political situation serves gold better**



Source: Bloomberg, KGHM Polska Miedź S.A.

## Market Risk Unit

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## Base and precious metals | Other commodities

### Copper

#### Copper Demand Growth Seen Driven By India, Southeast Asia, New Energy

**Southeast Asia and India together will likely account for 20% of global refined copper demand growth during the 2023-2028 period, and could account for 60% of longer-term copper demand growth, Craig Lang, an analyst at CRU.**

As Reuters underline, India and Southeast Asian countries like Thailand and Vietnam, are expected to drive the growth in copper consumption towards 2030, as China's super-cycle growth slows, industry experts said. Southeast Asia and India together will likely account for 20% of global refined copper demand growth during the 2023-2028 period, and could account for 60% of longer-term copper demand growth, Craig Lang, an analyst at CRU, said at the World Copper Conference Asia. Urbanisation, green energy transition investments and consumption growth amid rising populations in India and Southeast Asia - at around 2 billion people combined - are the main factors driving copper demand in these countries, Lang said. Copper cathode demand in Southeast Asia is expected to more than double to 2.8 million metric tons in 2030, from 1.3 million tons last year, Motoki Makita, general manager at Mitsui & Co, said at the conference. In 2024, Thailand could consume 380,000 tons, Vietnam is seen needing 305,000 tons and Malaysia's demand is expected at 290,000 tons, Makita said. India's import need is expected to rise to 350,000 tons in 2030, from 100,000 tons in 2025, as demand is likely to surpass the additional output from the Adani smelter that is being built, he said. Although India and Southeast Asia account for a small fraction of copper consumption compared to China, their growth made up for the slowing demand expansion in the world's biggest consumer of copper. China's massive growth in the past two decades, dubbed the super-cycle, helped drive copper consumption nearly five times higher, from 3 million tons in 2004 to nearly 15 million tons in 2022, data from the World Bureau of Metal Statistics showed. But as its economy became more mature, China's construction and manufacturing sectors no longer experienced the frenzied expansion of previous years. However, China's copper demand is unlikely to fall, thanks to a surge in consumption from renewable energy and electric vehicles. Copper consumption from the new energy sector could grow to 7.7 million tons in 2030, nearly three times the 2.6 million tons expected this year, Yang Chengxiao, president assistant at Minmetals Securities, told the conference. CRU's Lang expects the LME three-month copper price to rise to \$9,088 a ton next year, from \$8,514 in 2023, and could hit \$12,350 in 2028, due to a long-term shortage. The global refined copper market could see a small deficit of 54,000 tons in 2024, before rebounding to a surplus in 2025-2026 and returning to a deficit in 2027 and 2028, when the shortage could balloon to around half

a million tons. The deficit next year hinges on an expectation of an economic rebound in Western countries, Lang said. Mitsui's Makita, however, expects a surplus in the global copper market in 2024 and 2025 on rising refined output, and predicted the balance will flip to a deficit from 2027 to 2030 after supply peaks in 2026.

### Split Views In Copper Concentrate Balance Forecast Drag On TC/RCS Negotiations

**A Reuters poll of 12 industry sources showed a wide range of forecast for TC, from the \$70s to \$90 a metric ton.**

Copper miners and smelters are unlikely to settle the annual treatment and refining charges (TC/RCS) for 2024 any soon, amid uncertainty about the market balance next year, sources said. "There are mixed views regarding the supply and demand outlook for next year, which leads to a divergence between buyers and sellers." said a source at a major Chinese smelter. Every year, global miners and Chinese smelters usually meet in Shanghai in November for the Asia Copper Week gathering to negotiate their copper concentrate contracts and settle TC/RCS level for the following year. A Reuters poll of 12 industry sources showed a wide range of forecast for TC, from the \$70s to \$90 a metric ton. However, most participants saw TC/RCS at around or slightly lower than \$88 agreed last year for 2023. Chilean miner Antofagasta this week offered to pay Chinese smelters TCs of less than \$75 a metric ton in 2024, some 15% below the agreement made around the same time last year, sources told Reuters. The drop signalled the miner's expectation of a supply deficit for 2024. China's biggest smelter Jiangxi Copper also expected a "tight balance" in the global concentrate market next year, followed by a deficit in the following two years, due to a surge in smelting capacity expansion. Meanwhile, consultancy CRU expected a 260,000-ton surplus next year. Adding to the complexity during the negotiations is a recent ore processing reduction at First Quantum Minerals's Cobre Panama mine as protests against the project block port access. The output loss at Cobre Panama so far is equivalent to 1,500 tons in copper metal content, said a source familiar with the matter. Uncertainty around how much supply from Freeport-McMoRan's Grasberg mine in Indonesia will be available from June next year after their export permits expire had also created some difficulty in forecasting the market balance.

### Other important information on copper market:

- Trafigura has agreed to help Chinese smelters clear imports of copper concentrate from Australia. China has gradually been easing a raft of unofficial curbs and tariffs on Australian imports, including copper concentrate and coal, that were imposed in 2020 at the height of a diplomatic spat. The passage of a large cargo of Australian concentrate through customs in China will ease smelters' concerns about a political backlash. Trafigura's Chinese affiliate will be responsible for clearing customs on behalf of domestic consumers once the cargo arrives at Shandong's Qingdao port. Australia produced 818,800 tonnes of copper in ore and concentrates last year and is, according International Copper

Study Group, the world's eighth-largest producer of the metal. The shipments from Australia come at a critical time, when Chinese smelters are starting annual negotiations on TC/RC.

- Copper production in Peru rose 2.5% year-on-year in September, to 235,178 metric tons. The increase was driven by higher output from the Quellaveco mine, controlled by Anglo American, which came online last year, and the Las Bambas mine controlled by Chinese firm MMG. Between January and September, Peru's output of the coveted red metal rose 16% compared to the previous year, reaching a total of two million tons. The head of Peru's mining guild said 2023 output is expected to reach from 2.6-2.7 million tons, and some 2.7-2.8 million tons next year.

## Precious Metals

### Key segments of the silver market to see 42% growth through 2033

**Oxford Economics analysts said the three key pillars of global silver demand: industrial, jewelry and silverware, will see overall demand increase by 42% by 2033, effectively doubling the growth from 2014-2023.**

Demand for silver will continue to grow for the next decade, far outpacing its growth over the last 10 years, according to the latest research from Oxford Economics. In a research report conducted on behalf of the Silver Institute, the analysts said that three key pillars of global silver demand – industrial, jewelry and silverware – are expected to see total demand growth of 42% through 2033, "effectively double the growth rate over the previous decade, 2014-2023." The report said that industrial demand will continue to dominate the silver market over the next 10 years with demand from the sector expected to grow by 46%. At the same time, jewellery and silverware demand are forecasted to rise by 34% and 30% respectively. The report notes that these three segments of the silver market account for nearly three-quarters of global demand. Industrial applications alone represent more than 60% of total silver demand. "Over the next decade, we forecast the global output of the electronics and electrical applications industry will grow by 55%," the analysts said in the report. "This is an annual average growth rate of 4.5%. The pace of growth is expected to be faster in the first five years (2023-28) compared to the second (2028-33), at an average of 5.4% versus 3.5% a year." Oxford Economics sees China leading industrial and jewellery demand over the coming decade. "Of the forecast growth in the output of sectors that use silver for industrial purposes over the next decade, 51% is predicted to occur in China. The United States is forecast to have a 5% share in the additional output," the analysts said in the report. "Our forecasts suggest that most of the growth in the future demand for the metal by silverware fabricators between 2023 and 2033 is likely to come from Asian countries. We expect demand from India will contribute 43% of the growth in the demand for silver to be turned into silverware. This is less than their existing

share of consumption at 73%," the analysts said. Solid demand growth for silver comes as the market is expected to see significant supply deficits in the next several years. According to the Silver Institute, the precious metal is expected to have a supply deficit of 142.1 million ounces in 2023; this follows the 2022 deficit of 237.7 million ounces. So far, solid physical demand for silver has not done much to attract investor attention as investment demand remains fairly lackluster with prices unable to hold above \$23 an ounce. Silver also continues to underperform gold as the gold/silver ratio remains relatively elevated above 85 points. According to many analysts, silver has struggled to attract attention as it fights headwinds on two fronts. The Federal Reserve's aggressive monetary policy continues to support the U.S. dollar and higher yields, while recession fears are weighing on potential industrial demand. However, many analysts have said that the green energy transition driving solar demand reduces the potential impact a recession would have on silver.

## Global economies | Foreign exchange markets






### US Inflation Broadly Slows, Erasing Bets on More Fed Rate Hikes







**The so-called core consumer price index, which excludes food and energy costs, increased 0.2% from September, according to government figures. That's led several Fed policymakers to signal that they may be done raising interest rates, but Powell has repeatedly stressed the central bank could hike again if needed.**

US inflation broadly slowed in October, which markets cheered as a strong indication that the Federal Reserve is done hiking interest rates. The so-called core consumer price index, which excludes food and energy costs, increased 0.2% from September, according to government figures. Economists favor the core gauge as a better indicator of underlying inflation than the overall CPI. Despite some bumps in recent months, inflation has settled substantially from a 40-year high reached last year. That's led several Fed policymakers to signal that they may be done raising interest rates, but Chair Jerome Powell has repeatedly stressed the central bank could hike again if needed. The S&P 500 index opened higher and Treasury yields declined significantly as traders essentially wiped out the chance of another rate hike. JPMorgan Asset Management's David Kelly says the economy is headed to the Federal Reserve's target inflation level of 2%. He says there is "disinflation in the US economy." He speaks on "Bloomberg Surveillance." Excluding housing and energy, services prices climbed 0.2% from September and 3.7% from a year ago — the lowest in nearly two years — according to Bloomberg calculations. Unlike services, a sustained decline in the price of goods has been providing some relief to consumers in recent months. So-called core goods prices, which exclude food and energy commodities, fell for a fifth month. Even so, household budgets are still strained in many ways. Grocery prices rose by the most since July, reflecting higher costs for basics like meat, milk and bread. Motor-vehicle insurance also rose. Americans' wages, when adjusted for inflation, rose for the first time in three months in October. Taken with the easing in price pressures, that may offer some relief for President Joe Biden, whose approval rate stands at the lowest level in over a year. Looking ahead, the direction of the labor market will be key to how long Americans can sustain their spending, which has kept inflation elevated and powered broader growth. The unemployment rate rose in October to the highest level since early 2022, while measures of consumer sentiment deteriorated.

# Macroeconomic calendar

## Important macroeconomic data releases

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>	
<b>China</b>							
🔴🔴🔴🔴	06-Nov	Consumer inflation CPI (yoy)	Oct	-0.2% ▼	0.0%	-0.1%	🔴
🔴🔴🔴🔴	06-Nov	Industrial production (yoy)	Oct	4.6% ▲	4.5%	4.5%	🟢
🔴🔴	06-Nov	Trade balance (USD bn)‡	Oct	56.5 ▼	77.6	82.0	🔴
🔴🔴	06-Nov	Exports (yoy)‡	Oct	-6.4% ▼	-6.1%	-3.5%	🔴
🔴🔴	06-Nov	Fixed assets investments (ytd, yoy)	Oct	2.9% ▼	3.1%	3.1%	🔴
🔴🔴	06-Nov	Producer inflation PPI (yoy)	Oct	-2.6% ▼	-2.5%	-2.7%	🟢
🔴	06-Nov	New yuan loans (CNY bn)‡	Oct	738 ▼	2 312	655	🟢
🔴	06-Nov	Retail sales (yoy)	Oct	7.6% ▲	5.5%	7.0%	🟢
🔴	06-Nov	Foreign reserves (USD bn)	Oct	3 101 ▼	3 115	3 103	🔴
<b>Poland</b>							
🟢🟢🟢🟢🟢	06-Nov	NBP base rate decision	Nov	5.75% -	5.75%	5.50%	🟢
🟢🟢🟢🟢🟢	06-Nov	GDP (yoy) - preliminary data	3Q	0.4% ▲	-0.6%	0.4%	🟡
🟢🟢🟢🟢🟢	06-Nov	GDP (qoq) - preliminary data‡	3Q	1.4% ▲	0.3%	1.9%	🔴
🟢🟢🟢🟢	06-Nov	Consumer inflation CPI (yoy) - final data	Oct	6.6% ▲	6.5%	--	
🟢🟢🟢🟢	06-Nov	Core CPI (excluding food and energy, yoy)	Oct	8.0% ▼	8.4%	8.0%	🟡
🔴🔴	06-Nov	Trade balance (EUR mn)‡	Sep	801 ▲	340	550	🟢
🔴🔴	06-Nov	Exports (EUR mn)‡	Sep	27 517 ▲	25 674	27 635	🔴
🔴🔴	06-Nov	Current account balance (EUR mn)‡	Sep	394 ▲	- 299	- 54.0	🟢
<b>US</b>							
🟢🟢🟢🟢	06-Nov	Consumer inflation CPI (mom)	Oct	0.0% ▼	0.4%	0.1%	🔴
🟢🟢🟢🟢	06-Nov	Consumer inflation CPI (yoy)	Oct	3.2% ▼	3.7%	3.3%	🔴
🟢🟢🟢🟢	06-Nov	Industrial production (mom)‡	Oct	-0.6% ▼	0.1%	-0.4%	🔴
🔴🔴	06-Nov	Philadelphia Fed business outlook	Nov	- 5.9 ▲	- 9.0	- 8.0	🟢
🔴🔴	06-Nov	Retail sales (excluding autos, mom)‡	Oct	0.1% ▼	0.8%	-0.2%	🟢
🔴🔴	06-Nov	University of Michigan confidence index - preliminary data	Nov	60.4 ▼	63.8	63.7	🔴
🔴	06-Nov	Capacity utilization‡	Oct	78.9% ▼	79.5%	79.4%	🔴
<b>Eurozone</b>							
🟢🟢🟢🟢🟢	06-Nov	GDP (sa, yoy) - preliminary data	3Q	0.1% -	0.1%	0.1%	🟡
🟢🟢🟢🟢🟢	06-Nov	GDP (sa, qoq) - preliminary data	3Q	-0.1% -	-0.1%	-0.1%	🟡
🟢🟢🟢🟢	06-Nov	Consumer inflation CPI (yoy) - final data‡	Oct	2.9% ▼	4.3%	2.9%	🟡
🟢🟢🟢🟢	06-Nov	Core CPI (yoy) - final data	Oct	4.2% -	4.2%	4.2%	🟡
🟢🟢🟢🟢	06-Nov	Industrial production (sa, mom)	Sep	-1.1% ▼	0.6%	-1.0%	🔴
🟢🟢🟢🟢	06-Nov	Industrial production (wda, yoy)	Sep	-6.9% ▼	-5.1%	-6.3%	🔴
🟢🟢🟢	06-Nov	Composite PMI - final data‡	Oct	46.5 -	46.5	46.5	🟡
🟢🟢🟢	06-Nov	Services PMI - final data‡	Oct	47.8 -	47.8	47.8	🟡
🔴🔴	06-Nov	Retail sales (yoy)‡	Sep	-2.9% ▼	-1.8%	-3.1%	🟢
🔴🔴	06-Nov	Producer inflation PPI (yoy)	Sep	-12.4% ▼	-11.5%	-12.5%	🟢
🔴	06-Nov	Trade balance (EUR mn)	Sep	10.0 ▲	6.7	--	
🔴	06-Nov	ZEW survey expectations	Nov	13.8 ▲	2.3	--	
<b>Germany</b>							
🟢🟢🟢🟢	06-Nov	Harmonized consumer inflation HICP (yoy) - final data	Oct	3.0% -	3.0%	3.0%	🟡
🟢🟢🟢🟢	06-Nov	Consumer inflation CPI (yoy) - final data	Oct	3.8% -	3.8%	3.8%	🟡
🟢🟢🟢🟢	06-Nov	Industrial production (wda, yoy)‡	Sep	-3.7% ▼	-1.9%	-2.7%	🔴
🟢🟢🟢	06-Nov	Composite PMI - final data‡	Oct	45.9 -	45.9	45.8	🟢
🟢🟢🟢	06-Nov	Factory orders (wda, yoy)‡	Sep	-4.3% ▲	-6.3%	-3.0%	🔴

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>
<b>France</b> 						
🔊🔊🔊🔊	06-Nov	Harmonized consumer inflation HICP (yoy) - final data	Oct	4.5% -	4.5%	4.5% ○
🔊🔊🔊🔊	06-Nov	Consumer inflation CPI (yoy) - final data	Oct	4.0% -	4.0%	4.0% ○
🔊🔊🔊	06-Nov	Composite PMI - final data‡	Oct	44.6 -	44.6	45.3 ◡
<b>Italy</b> 						
🔊🔊🔊🔊	06-Nov	Harmonized consumer inflation HICP (yoy) - final data	Oct	1.8% ▼	1.9%	1.9% ◡
🔊🔊🔊🔊	06-Nov	Industrial production (wda, yoy)	Sep	-2.0% ▲	-4.2%	--
🔊🔊🔊	06-Nov	Composite PMI	Oct	47.0 ▼	49.2	47.7 ◡
<b>UK</b> 						
🔊🔊🔊🔊🔊	06-Nov	GDP (yoy) - preliminary data	3Q	0.6% -	0.6%	0.5% ▲
🔊🔊🔊🔊🔊	06-Nov	GDP (qoq) - preliminary data	3Q	0.0% ▼	0.2%	-0.1% ▲
🔊🔊🔊🔊	06-Nov	Consumer inflation CPI (yoy)	Oct	4.6% ▼	6.7%	4.7% ◡
🔊🔊🔊🔊	06-Nov	Industrial production (yoy)‡	Sep	1.5% -	1.5%	1.1% ▲
<b>Japan</b> 						
🔊🔊🔊🔊🔊	06-Nov	GDP (annualized, qoq) - preliminary data‡	3Q	-2.1% ▼	4.5%	-0.4% ◡
🔊🔊🔊🔊🔊	06-Nov	GDP (qoq, sa) - preliminary data‡	3Q	-0.5% ▼	1.1%	-0.1% ◡
🔊🔊🔊🔊	06-Nov	Industrial production (yoy) - final data	Sep	-4.4% ▲	-4.6%	--
🔊🔊🔊	06-Nov	Composite PMI - final data	Oct	50.5 ▲	49.9	--
<b>Chile</b> 						
🔊🔊🔊	06-Nov	Copper exports (USD mn)‡	Oct	3 602 ▼	3 724	--
🔊🔊	06-Nov	Nominal wages (yoy)	Sep	8.9% ▲	8.0%	--
<b>Canada</b> 						

No major data in the period

<sup>1</sup> Reading difference to previous release: ▲ = higher than previous; ▼ = lower than previous; = = equal to previous.

<sup>2</sup> Reading difference to consensus: ▲ = higher than consensus; ◡ = lower than consensus; ○ = equal to consensus.

mom = month-on-month; yoy = year-on-year; qoq = quarter on quarter; ytd year-to-date; sa = seasonally adjusted; wda = working days adjusted; ‡ = previous data after revision.

Source: Bloomberg, KGHM Polska Miedź



## Key market data

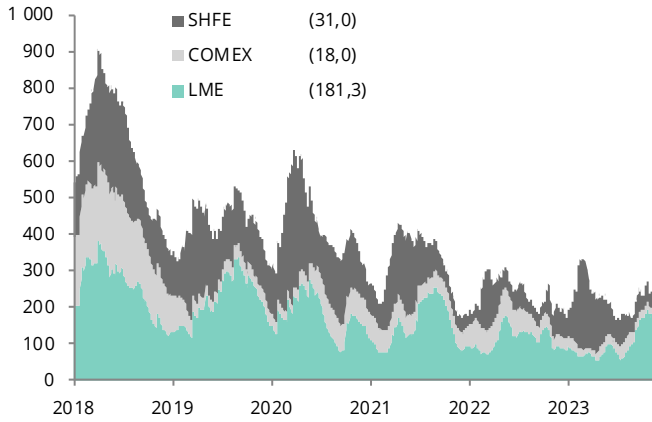
### Key base & precious metal prices, exchange rates and other important market factors

<i>(as of: 17-Nov-23)</i>		Price change <sup>1</sup>					From year beginning <sup>2</sup>		
	Price	2W	QTD	YTD	1Y	Average	Min	Max	
<b>LME (USD/t; Mo in USD/lbs)</b>									
Copper	8 141.00	▲ 0.9%	▼ -1.1%	▼ -2.9%	▼ -0.2%	8 491.85	7 812.50	9 436.00	
Molybdenum	17.23	▼ -1.2%	▼ -27.5%	▼ -34.1%	▼	25.23	17.18	38.28	
Nickel	16 780.00	▼ -5.8%	▼ -9.3%	▼ -44.8%	▼ -35.6%	22 113.83	16 780.00	31 200.00	
Aluminum	2 165.00	▼ -2.5%	▼ -6.2%	▼ -8.3%	▼ -7.6%	2 258.73	2 068.50	2 636.00	
Tin	25 000.00	▲ 3.5%	▲ 3.3%	▲ 0.8%	▲ 6.8%	26 158.61	22 225.00	32 050.00	
Zinc	2 569.00	▲ 3.0%	▼ -2.7%	▼ -15.1%	▼ -14.4%	2 663.79	2 224.00	3 509.00	
Lead	2 281.00	▲ 5.4%	▲ 3.3%	▼ -2.3%	▲ 6.2%	2 144.84	1 989.00	2 331.00	
<b>LBMA (USD/troz)</b>									
Silver	24.00	▲ 6.0%	▲ 4.0%	▲ 0.2%	▲ 13.9%	23.26	20.09	26.03	
Gold <sup>2</sup>	1 981.05	▼ -0.7%	▲ 5.9%	▲ 9.3%	▲ 12.6%	1 930.98	1 810.95	2 048.45	
<b>LPPM (USD/troz)</b>									
Platinum <sup>2</sup>	901.00	▼ -3.2%	▼ -2.4%	▼ -15.4%	▼ -8.8%	968.59	850.00	1 128.00	
Palladium <sup>2</sup>	1 040.00	▼ -6.3%	▼ -19.3%	▼ -41.8%	▼ -47.6%	1 369.79	963.00	1 802.00	
<b>FX<sup>3</sup></b>									
EURUSD	1.0872	▲ 1.6%	▲ 2.6%	▲ 1.9%	▲ 5.4%	1.0801	1.0469	1.1255	
EURPLN	4.3767	▼ -1.8%	▼ -5.6%	▼ -6.7%	▼ -7.0%	4.5686	4.3767	4.7895	
USDPLN	4.0327	▼ -3.7%	▼ -7.7%	▼ -8.4%	▼ -11.1%	4.2306	3.9451	4.4888	
USDCAD	1.3722	▲ 0.3%	▲ 1.5%	▲ 1.3%	▲ 2.8%	1.3496	1.3128	1.3875	
USDCNY	7.2143	▼ -0.8%	▼ -1.1%	▲ 4.6%	▲ 0.8%	7.0786	6.7010	7.3439	
USDCLP	881.17	▼ -1.0%	▼ -2.8%	▲ 2.5%	▼ -1.6%	834.55	781.49	945.61	
<b>Money market</b>									
3m LIBOR USD	5.629	▼ -0.01	▼ -0.03	▲ 0.86	▲ 0.95	5.367	4.782	5.687	
3m EURIBOR	3.984	▲ 0.03	▲ 0.03	▲ 1.85	▲ 2.18	3.376	2.170	4.002	
3m WIBOR	5.810	▲ 0.17	▲ 0.04	▼ -1.21	▼ -1.58	6.610	5.620	7.010	
5y USD interest rate swap	4.219	- 0.00	- 0.00	▲ 0.20	▲ 0.24	3.821	3.418	4.408	
5y EUR interest rate swap	3.067	▼ -0.04	▼ -0.34	▼ -0.17	▲ 0.33	3.169	2.672	3.500	
5y PLN interest rate swap	4.635	▲ 0.16	▲ 0.14	▼ -1.53	▼ -1.88	5.084	4.140	6.125	
<b>Fuel</b>									
WTI Cushing	75.89	▼ -5.7%	▼ -16.4%	▼ -5.4%	▼ -7.0%	78.18	66.74	93.68	
Brent	98.64	▲ 9.6%	▲ 4.9%	▼ -0.6%	▲ 10.0%	108.25	84.59	137.67	
Diesel NY (ULSD)	4.23	▲ 23.6%	▲ 16.6%	▲ 50.0%	▲ 52.1%	3.87	2.85	5.08	
<b>Others</b>									
VIX	13.80	▼ -1.11	▼ -3.72	▼ -7.87	▼ -10.13	17.37	12.82	26.52	
BBG Commodity Index	101.92	▼ -3.1%	▼ -2.8%	▼ -9.6%	▼ -11.5%	105.05	97.96	112.52	
S&P500	4 514.02	▲ 3.6%	▲ 5.3%	▲ 17.6%	▲ 14.4%	4 237.87	3 808.10	4 588.96	
DAX	15 919.16	▲ 4.8%	▲ 3.5%	▲ 14.3%	▲ 11.6%	15 579.29	14 181.67	16 469.75	
Shanghai Composite	3 054.37	▲ 0.8%	▼ -1.8%	▼ -1.1%	▼ -2.0%	3 203.15	2 939.29	3 395.00	
WIG 20	2 228.28	▲ 2.3%	▲ 16.3%	▲ 24.3%	▲ 30.4%	1 965.53	1 670.18	2 236.12	
KGHM	115.75	▲ 1.7%	▲ 3.4%	▼ -8.7%	▲ 0.6%	119.50	104.60	153.80	

<sup>1</sup> change over: 2W = two weeks; QTD = quarter-to-day; YTD = year-to-date; 1Y = one year. <sup>1</sup> based on daily closing prices. <sup>2</sup> latest quoted price. <sup>3</sup> central banks' fixing rates (Bank of China HK for USD/CNY). <sup>4</sup>

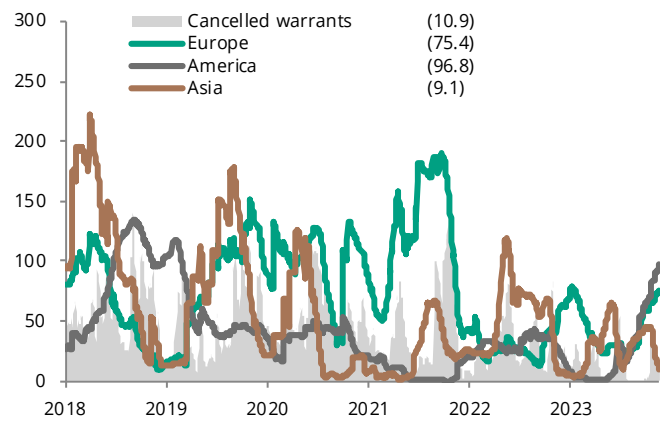
Source: Bloomberg, KGHM Polska Miedź

**Copper: official exchange stocks (thousand tonnes)**



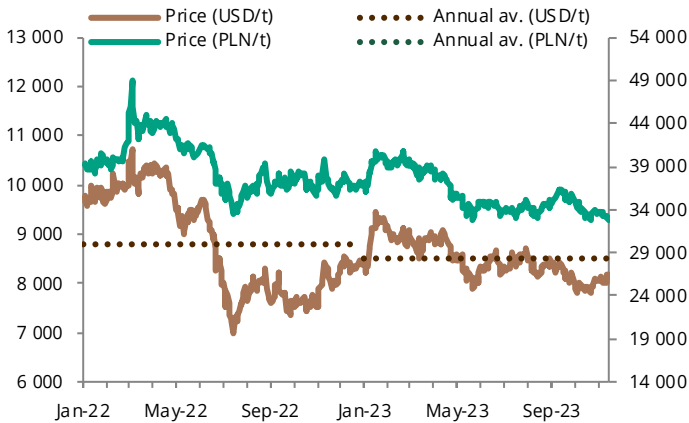
Note: Latest values in brackets. Source: Bloomberg, KGHM

**Copper: official LME stocks (thousand tonnes)**



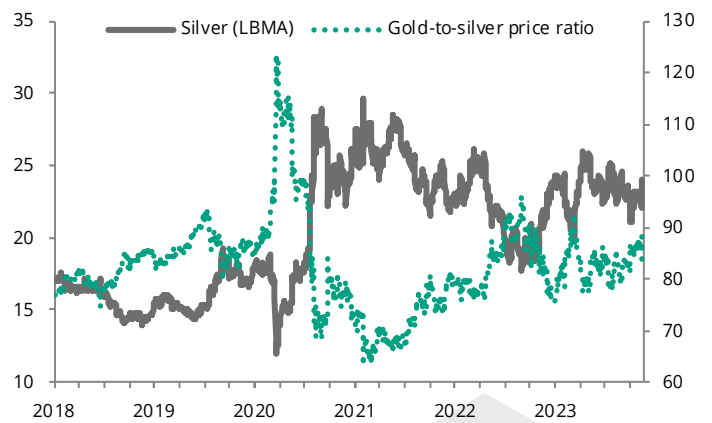
Note: Latest values in brackets. Source: Bloomberg, KGHM

**Copper: price in USD (lhs) and PLN (rhs) per tonne**



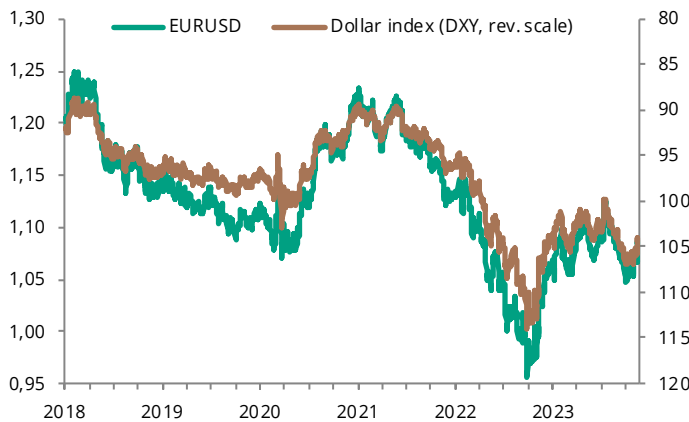
Source: Bloomberg, KGHM Polska Miedź

**Silver: price (lhs) and gold ratio (rhs)**



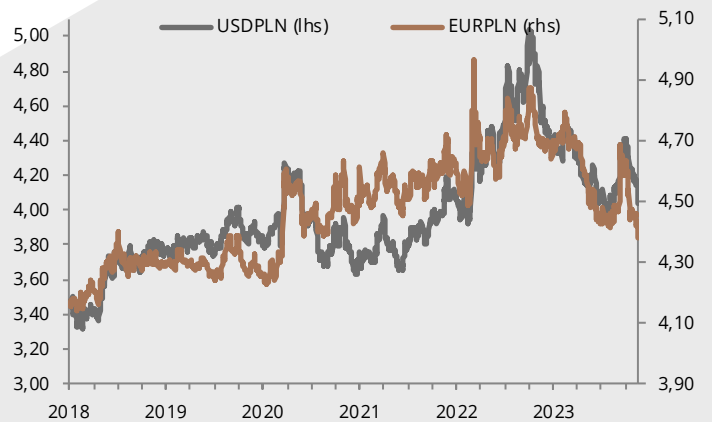
Source: Bloomberg, KGHM Polska Miedź

**USD: dollar index (lhs) and ECB-based EURUSD (rhs)**



Source: Bloomberg, KGHM Polska Miedź

**PLN: NBP-fixing based rate vs. USD (lhs) and EUR (rhs)**



Source: Bloomberg, KGHM Polska Miedź

## Legal note

This document has been prepared based on the below listed reports, among others, published in the following period:  
**6 – 19 November 2023.**

- Barclays Capital, ▪ BofA Merrill Lynch, ▪ Citi Research, ▪ CRU Group, ▪ Deutsche Bank Markets Research,
- GavekalDragonomics, ▪ Goldman Sachs, ▪ JPMorgan, ▪ Macquarie Capital Research, ▪ Mitsui Bussan Commodities,
- Morgan Stanley Research, ▪ SMM Information & Technology, ▪ Sharps Pixley.

Moreover, additional information published here was acquired in direct conversations with market dealers, from financial institution reports and from the following websites: ▪ thebulliondesk.com, ▪ lbma.org.uk, ▪ lme.co.uk, ▪ metalbulletin.com, ▪ nbp.pl, , also: Bloomberg and Thomson Reuters.

Official metals prices are available on following websites:

- base metals: [www.lme.com/dataprices\\_products.asp](http://www.lme.com/dataprices_products.asp) (charge-free logging)
- silver and gold: [www.lbma.org.uk/pricing-and-statistics](http://www.lbma.org.uk/pricing-and-statistics)
- platinum and palladium: [www.lppm.com/statistics.aspx](http://www.lppm.com/statistics.aspx)

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