

Market Overview



as of: 19th December 2022





- **Copper:** Just when the world faces a looming shortage of copper — a metal essential for the green revolution — Panama on Thursday said it will halt commercial operations at the Cobre Panama. The mine, which can produce about 300,000 tons a year of copper (*page 2*).
- **Precious metals:** In Q3'21 5% of gold production was operating with an AISC above the gold price, in Q3'22 this figure had increased to 9%. As a result, some higher cost mines, such as PureGold in Canada and Beatons Creek in Australia, have been placed into care and maintenance this year (*page 4*).
- **Euro zone:** “We still have some ways to go,” Jerome Powell said after the Federal Open Market Committee raised its benchmark rate by 50 basis points to a 4.25% to 4.5% target range. Policymakers projected rates would end next year at 5.1%, according to their median forecast, before being cut to 4.1% in 2024 (*page 5*).

Key market prices

	Close price	2w chng.
LME (USD/t)		
▼ Copper	8 231.50	-1.3%
▲ Nickel	28 850.00	6.3%
LBMA (USD/troz)		
▲ Silver	22.83	1.0%
▲ Gold (PM)	1 792.55	0.4%
FX		
▲ EURUSD	1.0619	0.8%
▲ EURPLN	4.6934	0.2%
▼ USDPLN	4.4227	-0.6%
▲ USDCAD	1.3687	1.6%
▼ USDCLP	875.56	-1.2%
Stocks		
▲ KGHM	124.35	5.2%

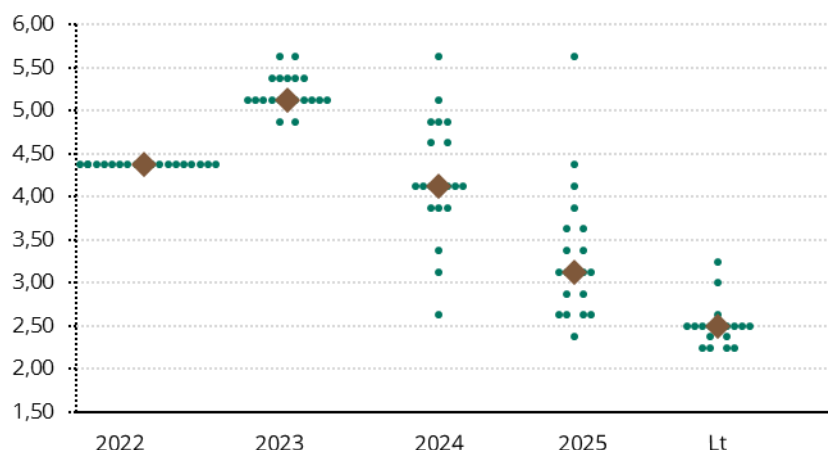
Source: Bloomberg, KGHM Polska Miedź S.A.; (*more on page 9*)

Important macroeconomic data

Release	For		
 Fed upper rate	Dec	4.50%	▲
 ECB main refinancing rate	Dec	2.50%	▲
 Trade balance	Oct	-2 277	▼
 New yuan loans	Nov	1 210	▲
 Copper exports (\$)	Nov	3 618	▲

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

FOMC members median in December 2022



Source: Bloomberg, KGHM Polska Miedź S.A.

Market Risk Unit

marketrisk@kgm.com

Base and precious metals | Other commodities

Copper

Shutting huge copper project shows why miners worry about starting them

Just when the world faces a looming shortage of copper — a metal essential for the green revolution — Panama on Thursday said it will halt commercial operations at the Cobre Panama. The mine, which can produce about 300,000 tons a year of copper.

Panama's decision to close a giant copper mine couldn't come at a worse time for the market, and highlights the risk of investing big in some projects. Just when the world faces a looming shortage of copper — a metal essential for the green revolution — Panama on Thursday said it will halt commercial operations at the Cobre Panama operated by Canada's First Quantum Minerals Ltd. It followed the breakdown of tax talks and is a rare move among Latin American countries. The mine, which is one of the world's newest and can produce about 300,000 tons a year of copper, cost at least \$10 billion to build. The industry has long feared resource nationalism, where assets can be stripped from them in extreme cases. Investing can be a huge risk when billions of dollars must often be spent up to a decade before a mine turns a profit. The fear of losing assets or having to renegotiate terms with governments has led the sector to shy away from what are often perceived as the riskiest jurisdictions. For example, mining heavyweight BHP Group for years only invested in what it saw as safe countries, while rich deposits remained undeveloped in the riskiest places. In the short term, halting output at Cobre Panama will add to already tight supplies. In recent weeks both Glencore Plc and Anglo American Plc have lowered copper production goals for the coming years. But the impact on companies' willingness to build more mines could be more significant, according to BMO Capital Markets. "Perhaps more important however is the precedent this might set for government action, which would naturally make companies more cautious to invest, BMO analyst Colin Hamilton said. Warnings that the world needs more copper keep coming. Glencore Chief Executive Officer Gary Nagle earlier this month said there's a cumulative gap between projected demand and supply of 50 million tons between 2022 and 2030. That compares with current world copper demand of about 25 million tons a year. Copper miners and analysts have forecast growing deficits starting in the mid-2020s, driven by rising demand for the metal in wind and solar farms, high voltage cables and electric vehicles.

Vale to Separate Base Metals Business and Sell Stake by Mid-2023

Copper and nickel mines will be placed into a new legal structure, with independent governance and a board that includes deep underground mining and electric-vehicle specialists.

After several years of deliberations, iron ore giant Vale SA is finally laying out a path for unlocking value from its nickel and copper business as demand for the so-called battery metals picks up. The Rio de Janeiro-based firm will separate the base metal assets from its iron ore operations and unveil a strategic partner in the first half of next year, Chief Executive Officer Eduardo Bartolomeo and Chief Financial Officer Gustavo Pimenta said in an interview. Copper and nickel mines will be placed into a new legal structure, with independent governance and a board that includes deep underground mining and electric-vehicle specialists. Separating the two sides of the business is key to accessing “competitive” capital needed for an estimated \$20 billion of base metal investments, Bartolomeo said. This, combined with the sale of as much as 10% of the new entity to a partner, will unlock value from a business that Vale sees worth as much as \$40 billion. A potential IPO is something to be weighed down the road, depending on market conditions and how well Vale executes current plans, Bartolomeo said. For years Vale has considered separating its Brazilian iron ore business from the nickel and copper assets, many of which were acquired via the \$17 billion purchase of Canada’s Inco Ltd. announced in 2006. Those deliberations have picked up steam as demand for metals used in wiring and electric-vehicle batteries has accelerated. “There is no business at this scale combining copper plus nickel in the world today,” said Pimenta, Vale’s CFO. Nickel and copper assets in Canada, Brazil and Indonesia accounted for almost 15% of Vale’s revenue last year. After enduring a series of operational setbacks in recent years that led to guidance cuts, Vale has been working to stabilize its base metal production. The Brazilian mining giant aims to be a major supplier for the electric-vehicle market. It signed a nickel contract for Tesla Inc. batteries, and has Ford Motor Co. as a partner in developing nickel in Indonesia.

Other important information on copper market:

- Chilean annual copper production will fall to its lowest level in 16 years in 2022, according to the latest estimate from the Cochilco. In its latest quarterly report the agency said production would fall to 5.3 million mt, down 5.7% from 2021. The figure will be Chile's lowest annual output since 2006. Production during the first ten months of the year reached 3.9 million mt, down 6.7% from a year earlier, reflecting lower production at some of the world's largest copper mines, including Codelco, Collahuasi, Los Bronces and Los Pelambres. Chile's on-year production slump means the country now accounts for less than a quarter of global mine production, down from almost 36% fifteen years ago. However, looking forward, Chilean copper production is expected to rise 7.5% to 5.7 million mt in 2023 as Teck launches operations at its new QB2 mine. The QB2 mine will contribute to a 5.4% surge in global production in 2023 that will push the global copper market into an estimated surplus of 318,000 mt. This will weigh on prices,

which Cochilco projected will average \$3.70/lb in 2023, down from a previous forecast of \$3.95/lb released in July.

- Peru's production of copper, lead, gold, tin, and molybdenum rose in October, while zinc and silver fell because of mine closures and lower ore grades. Copper output reached 232,464 mt, up 8.3% from 214,623 mt a year earlier on the startup of Anglo American's Quellaveco mine and gains at mines operated by Freeport-McMoRan, China Minmetals, and Southern Copper, the Energy & Mines Ministry said in a statement. Lead production climbed 3% to 22,280 mt. Tin output jumped 24% to 2,454 mt. Zinc production fell 5.4% on the year to 114,887 mt and molybdenum fell 4% to 2,805 mt due to declines at Southern Copper.

Precious Metals

Gold miners' costs rise again in Q3'22 but the rate of increase has slowed

In Q3'21 5% of gold production was operating with an AISC above the gold price, in Q3'22 this figure had increased to 9%. As a result, some higher cost mines, such as PureGold in Canada and Beatons Creek in Australia, have been placed into care and maintenance this year.

Average all-in sustaining costs (AISC) in the gold mining industry increased by 1% q-o-q in Q3'22, reaching a new record high of US\$1,289/oz. This was the third consecutive quarter of rising costs, with the average AISC also reaching new record highs in both Q1'22 and Q2'22 before being surpassed in the latest quarter. The average gold AISC is now 14% higher than it was in the same quarter last year and 32% higher than in Q3'20. This significant rise in costs has largely been driven by inflation of almost all input costs for miners. In particular, a tight labour market in many major gold producing countries has led to increasing wage rates and therefore rising staff costs. Meanwhile, rising oil and gas prices, especially following Russia's invasion of Ukraine, have pushed up the price of diesel and electricity. Higher prices for these commodities, alongside increased ammonium nitrate prices, has also had the knock-on effect of increasing the price of key consumables for miners, such as cyanide and explosives. These rising costs have increasingly been putting higher cost gold production under pressure. In Q3'21 5% of gold production was operating with an AISC above the gold price, in Q3'22 this figure had increased to 9%. As a result, some higher cost mines, such as PureGold in Canada and Beatons Creek in Australia, have been placed into care and maintenance this year. Despite another rise in industry average AISC in the last quarter, there now appears to be some respite from the relentless cost inflation gold miners have faced this year as the rate of increase has slowed. The 1% q-o-q rise in Q3'22, compares to a 4% rise in the previous quarter and 9% in Q1'22. This is largely the result of stabilising, although still high, oil and gas prices. Looking ahead to Q4'22, we expect the industry average AISC to remain high, however falling oil and gas prices in the second half of 2022 could result in a flattening of costs or even a modest contraction.

Global economies | Foreign exchange markets




Powell Says Fed Still Has a 'Ways to Go' After Half-Point Hike
"We still have some ways to go," Jerome Powell said after the Federal Open Market Committee raised its benchmark rate by 50 basis points to a 4.25% to 4.5% target range. Policymakers projected rates would end next year at 5.1%, according to their median forecast, before being cut to 4.1% in 2024.

Chair Jerome Powell said the Federal Reserve is not close to ending its anti-inflation campaign of interest-rate increases as officials signaled borrowing costs will head higher than investors expect next year. "We still have some ways to go," he told after the Federal Open Market Committee raised its benchmark rate by 50 basis points to a 4.25% to 4.5% target range. Policymakers projected rates would end next year at 5.1%, according to their median forecast, before being cut to 4.1% in 2024. Powell said that the size of the rate increase delivered on Feb. 1 at the Fed's next meeting would depend on incoming data — leaving the door open to another half-percentage point move or a step down to a quarter point — and he pushed back against bets that the Fed would reverse course next year. "I wouldn't see us considering rate cuts until the committee is confident that inflation is moving down to 2% in a sustained way," he said. Investors had been speculated that the Fed would soon pause its hikes after financial conditions eased. Last decision follows four consecutive 75 basis-point hikes that have boosted rates at the fastest pace since Paul Volcker led the central bank in the 1980s. "It's going to take a while to for the Fed to achieve what they want to achieve," former New York Fed President William Dudley said. "They have to slow the economy down sufficiently to generate enough slack in the labor market so wage trends come down to be consistent with 2% inflation." A growing cadre of economists expect the Fed's aggressive action to tip the US into recession next year. Such concerns have drawn lawmaker criticism, with Democratic senators Elizabeth Warren, Bernie Sanders and Sheldon Whitehouse warning that rate hikes risk "slowing the economy to a crawl." Officials gave a clearer sign that they expect higher rates to impact the economy. They cut their 2023 growth forecasts, seeing expansion of 0.5%. They raised their estimate for 2022 GDP slightly to 0.5%. The central bankers increased their projection for the unemployment rate next year to 4.6% from its 3.7% level in November. The distribution of rate forecasts also skewed higher, with seven of 19 officials seeing rates above 5.25% next year. Federal Reserve Chairman Jerome Powell says policy to remain tight for "some time." Officials gave a clearer sign that they expect higher rates to impact the economy by revising their median projections. They cut their 2023 growth forecasts, seeing an expansion of just 0.5% and 1.6% in 2024. Still, they raised their estimate for inflation next year to 3.1%, falling to 2.5% in 2024. Since lifting rates from near zero in March, the Fed has moved aggressively to catch up, while preserving hope it can deliver a soft landing that avoids a dramatic surge in unemployment. Officials are seeking to slow growth to below its long-term trend to cool the labor market and reduce pressure on prices that are running

well above their 2% target. Policymakers got some good news when government data showed consumer prices rose 7.1% in the year ending November, the lowest rate this year. Even so, Powell has repeatedly said he's willing for the economy to suffer some pain to lower inflation and avoid the mistakes of the 1970s when the Fed prematurely loosened monetary policy.

Macroeconomic calendar

Important macroeconomic data releases

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²
China 						
🔴🔴	07-Dec	Trade balance (USD bn)‡	Nov	69.8 ▼	85.3	78.1 📉
🔴🔴	07-Dec	Exports (yoy)‡	Nov	-8.7% ▼	-0.2%	-3.9% 📉
🔴	07-Dec	Foreign reserves (USD bn)	Nov	3 117 ▲	3 052	3 111 📈
🔴🔴🔴🔴	09-Dec	Consumer inflation CPI (yoy)	Nov	1.6% ▼	2.1%	1.6% 🟡
🔴🔴	09-Dec	Producer inflation PPI (yoy)	Nov	-1.3% -	-1.3%	-1.5% 📈
🔴	12-Dec	New yuan loans (CNY bn)	Nov	1 210 ▲	615	1 400 📉
🔴🔴🔴🔴	15-Dec	Industrial production (yoy)	Nov	2.2% ▼	5.0%	3.5% 📉
🔴🔴	15-Dec	Fixed assets investments (ytd, yoy)	Nov	5.3% ▼	5.8%	5.6% 📉
🔴	15-Dec	Retail sales (yoy)	Nov	-5.9% ▼	-0.5%	-4.0% 📉
Poland 						
🔴🔴🔴🔴🔴	07-Dec	NBP base rate decision	Dec	6.75% -	6.75%	6.75% 🟡
🔴🔴	14-Dec	Trade balance (EUR mn)	Oct	-2 277 ▼	-2 054	-2 365 📈
🔴🔴	14-Dec	Exports (EUR mn)	Oct	28 677 ▲	28 498	28 072 📈
🔴🔴	14-Dec	Current account balance (EUR mn)	Oct	- 549 ▲	-1 561	- 796 📈
🔴🔴🔴🔴	15-Dec	Consumer inflation CPI (yoy) - final data	Nov	17.5% ▲	17.4%	--
🔴🔴🔴🔴	16-Dec	Core CPI (excluding food and energy, yoy)	Nov	11.4% ▲	11.0%	11.3% 📈
US 						
🔴🔴🔴	05-Dec	Composite PMI - final data‡	Nov	46.4 -	46.4	46.3 📈
🔴🔴🔴	05-Dec	PMI services - final data‡	Nov	46.2 -	46.2	46.1 📈
🔴🔴	05-Dec	Durable goods orders - final data	Oct	1.1% ▲	1.0%	1.0% 📈
🔴🔴	09-Dec	University of Michigan confidence index - preliminary data	Dec	59.1 ▲	56.8	57.0 📈
🔴🔴🔴🔴	13-Dec	Consumer inflation CPI (mom)	Nov	0.1% ▼	0.4%	0.3% 📉
🔴🔴🔴🔴	13-Dec	Consumer inflation CPI (yoy)	Nov	7.1% ▼	7.7%	7.3% 📉
🔴🔴🔴🔴🔴	14-Dec	FOMC base rate decision - upper bound (Fed)	Dec	4.50% ▲	4.00%	4.50% 🟡
🔴🔴🔴🔴🔴	14-Dec	FOMC base rate decision - lower bound (Fed)	Dec	4.25% ▲	3.75%	4.25% 🟡
🔴🔴🔴🔴	15-Dec	Industrial production (mom)	Nov	-0.2% ▼	-0.1%	0.0% 📉
🔴🔴	15-Dec	Philadelphia Fed business outlook	Dec	- 13.8 ▲	- 19.4	- 10.0 📉
🔴🔴	15-Dec	Retail sales (excluding autos, mom)‡	Nov	-0.2% ▼	1.2%	0.2% 📉
🔴	15-Dec	Capacity utilization	Nov	79.7% ▼	79.9%	79.8% 📉
🔴🔴🔴	16-Dec	Composite PMI - preliminary data	Dec	44.6 ▼	46.4	46.9 📉
🔴🔴🔴	16-Dec	Manufacturing PMI - preliminary data	Dec	46.2 ▼	47.7	47.8 📉
🔴🔴🔴	16-Dec	PMI services - preliminary data	Dec	44.4 ▼	46.2	46.5 📉

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²
Eurozone						
🔴🔴🔴	05-Dec	Composite PMI - final data‡	Nov	47.8 -	47.8	47.8 ○
🔴🔴🔴	05-Dec	Services PMI - final data‡	Nov	48.5 -	48.5	48.6 ◡
🔴🔴	05-Dec	Retail sales (yoy)‡	Oct	-2.7% ▼	0.0%	-2.6% ◡
🔴🔴🔴🔴	07-Dec	GDP (sa, yoy) - final data	3Q	2.3% ▲	2.1%	2.1% ◡
🔴🔴🔴🔴	07-Dec	GDP (sa, qoq) - final data	3Q	0.3% ▲	0.2%	0.2% ◡
🔴🔴🔴	07-Dec	Gross fixed capital (qoq)‡	3Q	3.6% ▲	0.9%	0.5% ◡
🔴🔴🔴	07-Dec	Households consumption (qoq)‡	3Q	0.9% ▼	1.0%	0.9% ○
🔴	13-Dec	ZEW survey expectations	Dec	-23.6 ▲	-38.7	--
🔴🔴🔴🔴	14-Dec	Industrial production (sa, mom)‡	Oct	-2.0% ▼	0.8%	-1.5% ◡
🔴🔴🔴🔴	14-Dec	Industrial production (wda, yoy)‡	Oct	3.4% ▼	5.1%	3.3% ◡
🔴🔴🔴🔴	15-Dec	ECB main refinancing rate	Dec	2.50% ▲	2.00%	2.50% ○
🔴🔴🔴🔴	15-Dec	ECB deposit facility rate	Dec	2.0% ▲	1.5%	2.0% ○
🔴🔴🔴	16-Dec	Consumer inflation CPI (yoy) - final data	Nov	10.1% ▲	10.0%	10.0% ◡
🔴🔴🔴	16-Dec	Core CPI (yoy) - final data	Nov	5.0% -	5.0%	5.0% ○
🔴🔴🔴	16-Dec	Composite PMI - preliminary data	Dec	48.8 ▲	47.8	47.9 ◡
🔴🔴🔴	16-Dec	Manufacturing PMI - preliminary data	Dec	47.8 ▲	47.1	47.1 ◡
🔴🔴🔴	16-Dec	Services PMI - preliminary data	Dec	49.1 ▲	48.5	48.5 ◡
🔴	16-Dec	Trade balance (EUR mn)	Oct	-26.5 ▲	-34.4	--
Germany						
🔴🔴🔴	05-Dec	Composite PMI - final data‡	Nov	46.3 -	46.3	46.4 ◡
🔴🔴🔴	06-Dec	Factory orders (wda, yoy)‡	Oct	-3.2% ▲	-9.8%	-4.8% ◡
🔴🔴🔴	07-Dec	Industrial production (wda, yoy)‡	Oct	0.0% ▼	3.1%	-0.7% ◡
🔴🔴🔴	13-Dec	Harmonized consumer inflation HICP (yoy) - final data	Nov	11.3% -	11.3%	11.3% ○
🔴🔴🔴	13-Dec	Consumer inflation CPI (yoy) - final data	Nov	10.0% -	10.0%	10.0% ○
🔴🔴🔴	16-Dec	Composite PMI - preliminary data	Dec	48.9 ▲	46.3	46.5 ◡
🔴🔴🔴	16-Dec	Manufacturing PMI - preliminary data	Dec	47.4 ▲	46.2	46.3 ◡
France						
🔴🔴🔴	05-Dec	Composite PMI - final data‡	Nov	48.7 -	48.7	48.7 ○
🔴🔴🔴	15-Dec	Harmonized consumer inflation HICP (yoy) - final data	Nov	7.1% -	7.1%	7.1% ○
🔴🔴🔴	15-Dec	Consumer inflation CPI (yoy) - final data	Nov	6.2% -	6.2%	6.2% ○
🔴🔴🔴	16-Dec	Composite PMI - preliminary data	Dec	48.0 ▼	48.7	48.7 ◡
🔴🔴🔴	16-Dec	Manufacturing PMI - preliminary data	Dec	48.9 ▲	48.3	48.0 ◡
Italy						
🔴🔴🔴	05-Dec	Composite PMI	Nov	48.9 ▲	45.8	46.5 ◡
🔴🔴🔴	13-Dec	Industrial production (wda, yoy)	Oct	-1.6% ▼	-0.5%	--
🔴🔴🔴	16-Dec	Harmonized consumer inflation HICP (yoy) - final data	Nov	12.6% ▲	12.5%	12.5% ◡
UK						
🔴🔴🔴	05-Dec	Composite PMI - final data	Nov	48.2 -	48.2	48.3 ◡
🔴🔴🔴	12-Dec	Industrial production (yoy)	Oct	-2.4% ▲	-3.1%	-2.5% ◡
🔴🔴	13-Dec	Unemployment rate (ILO, 3-months)	Oct	3.7% ▲	3.6%	3.7% ○
🔴🔴🔴	14-Dec	Consumer inflation CPI (yoy)	Nov	10.7% ▼	11.1%	10.9% ◡
🔴🔴🔴	15-Dec	BoE base rate decision	Dec	35.0 ▲	30.0	35.0 ○
🔴🔴🔴	16-Dec	Manufacturing PMI (sa) - preliminary data	Dec	44.7 ▼	46.5	46.5 ◡
🔴🔴🔴	16-Dec	Composite PMI - preliminary data	Dec	49.0 ▲	48.2	48.0 ◡
Japan						
🔴🔴🔴	05-Dec	Composite PMI - final data	Nov	48.9 -	48.9	--
🔴🔴🔴	08-Dec	GDP (annualized, qoq) - final data	3Q	-0.8% ▲	-1.2%	-1.0% ◡
🔴🔴🔴	08-Dec	GDP (qoq, sa) - final data	3Q	-0.2% ▲	-0.3%	-0.3% ◡
🔴🔴🔴	14-Dec	Industrial production (yoy) - final data	Oct	3.0% ▼	3.7%	--
🔴🔴🔴	16-Dec	Composite PMI - preliminary data	Dec	50.0 ▲	48.9	--
🔴🔴🔴	16-Dec	Manufacturing PMI - preliminary data	Dec	48.8 ▼	49.0	--
Chile						
🔴🔴🔴	06-Dec	BCCCh overnight rate target	Dec	11.25% -	11.25%	11.25% ○
🔴🔴	06-Dec	Nominal wages (yoy)	Oct	10.9% ▼	11.2%	--
🔴🔴	07-Dec	Copper exports (USD mn)	Nov	3 618 ▲	3 485	--
Canada						

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

² 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

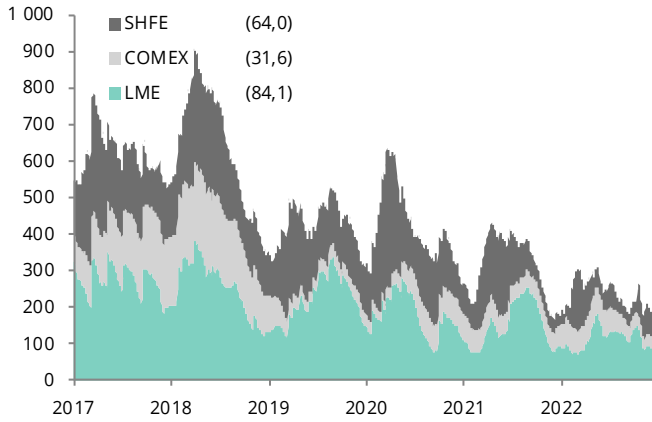
Key base & precious metal prices, exchange rates and other important market factors

(as of: 16-Dec-22)	Price	Price change ¹				From year beginning ²		
		2W	QTD	YTD	1Y	Average	Min	Max
LME (USD/t; Mo in USD/lbs)								
Copper	8 231.50	▼ -1.3%	▲ 7.6%	▼ -15.1%	▼ -13.4%	8 811.54	7 000.00	10 730.00
Molybdenum	24.76	▲ 18.5%	▲ 43.2%	▲ 33.0%	▲	18.27	13.92	25.96
Nickel	28 850.00	▲ 6.3%	▲ 29.4%	▲ 37.9%	▲ 47.3%	25 487.55	19 100.00	45 795.00
Aluminum	2 354.00	▼ -3.9%	▲ 8.0%	▼ -16.1%	▼ -10.5%	2 714.84	2 080.00	3 984.50
Tin	23 750.00	▲ 1.1%	▲ 14.5%	▼ -40.1%	▼ -39.2%	31 453.19	17 700.00	50 050.00
Zinc	3 127.00	▲ 2.0%	▲ 4.7%	▼ -13.9%	▼ -7.9%	3 492.86	2 682.00	4 530.00
Lead	2 156.00	▼ -0.7%	▲ 14.1%	▼ -7.4%	▼ -8.5%	2 146.56	1 754.00	2 513.00
LBMA (USD/troz)								
Silver	22.83	▲ 1.0%	▲ 20.0%	▼ -1.1%	▲ 3.0%	21.66	17.77	26.18
Gold ²	1 792.55	▲ 0.4%	▲ 7.2%	▼ -1.5%	▼ -0.2%	1 799.93	1 628.75	2 039.05
LPPM (USD/troz)								
Platinum ²	997.00	▼ -1.0%	▲ 15.4%	▲ 3.6%	▲ 7.2%	959.48	831.00	1 151.00
Palladium ²	1 730.00	▼ -7.7%	▼ -21.9%	▼ -10.3%	▲ 3.5%	2 121.60	1 730.00	3 015.00
FX³								
EURUSD	1.0619	▲ 0.8%	▲ 8.9%	▼ -6.2%	▼ -6.3%	1.0524	0.9565	1.1464
EURPLN	4.6934	▲ 0.2%	▼ -3.6%	▲ 2.0%	▲ 1.3%	4.6885	4.4879	4.9647
USDPLN	4.4227	▼ -0.6%	▼ -10.7%	▲ 8.9%	▲ 8.0%	4.4658	3.9218	5.0381
USDCAD	1.3687	▲ 1.6%	▼ -0.1%	▲ 8.0%	▲ 7.1%	1.2993	1.2451	1.3856
USDCNY	6.9740	▼ -1.1%	▼ -2.0%	▲ 9.7%	▲ 9.5%	6.7283	6.3093	7.3050
USDCLP	875.56	▼ -1.2%	▼ -9.4%	▲ 3.7%	▲ 3.2%	873.11	777.10	1 042.97
Money market								
3m LIBOR USD	4.746	▲ 0.01	▲ 0.99	▲ 4.54	▲ 4.53	2.328	0.216	4.779
3m EURIBOR	2.047	▲ 0.07	▲ 0.87	▲ 2.62	▲ 2.64	0.287	-0.576	2.081
3m WIBOR	7.060	▼ -0.18	▼ -0.15	▲ 4.52	▲ 4.71	6.012	2.590	7.610
5y USD interest rate swap	3.687	▲ 0.01	▼ -0.45	▲ 2.32	▲ 2.43	3.035	1.445	4.488
5y EUR interest rate swap	2.895	▲ 0.29	▼ -0.07	▲ 2.88	▲ 3.01	1.683	0.031	3.196
5y PLN interest rate swap	6.045	▲ 0.46	▼ -1.00	▲ 2.31	▲ 2.86	5.930	3.780	7.911
Fuel								
WTI Cushing	74.29	▼ -7.1%	▼ -6.5%	▼ -3.5%	▲ 2.6%	95.27	71.02	123.70
Brent	78.65	▼ -7.3%	▼ -8.7%	▲ 1.5%	▲ 6.1%	100.74	75.31	133.89
Diesel NY (ULSD)	310.74	▼ -2.5%	▼ -7.6%	▲ 29.7%	▲ 37.1%	374.05	241.70	534.54
Others								
VIX	22.62	▲ 3.56	▼ -9.00	▲ 5.40	▲ 2.05	25.82	16.91	36.45
BBG Commodity Index	112.71	▼ -1.5%	▲ 1.1%	▲ 13.7%	▲ 16.2%	119.15	100.58	136.61
S&P500	3 852.36	▼ -5.4%	▲ 7.4%	▼ -19.2%	▼ -17.5%	4 105.58	3 577.03	4 793.54
DAX	13 893.07	▼ -4.4%	▲ 14.7%	▼ -12.5%	▼ -11.1%	13 862.73	11 975.55	16 271.75
Shanghai Composite	3 167.86	▲ 0.4%	▲ 4.7%	▼ -13.0%	▼ -13.8%	3 232.00	2 886.43	3 632.33
WIG 20	1 741.30	▲ 0.5%	▲ 26.4%	▼ -23.2%	▼ -21.3%	1 807.15	1 358.50	2 411.11
KGHM	124.35	▲ 5.2%	▲ 41.9%	▼ -10.8%	▼ -13.1%	127.01	84.22	182.20

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

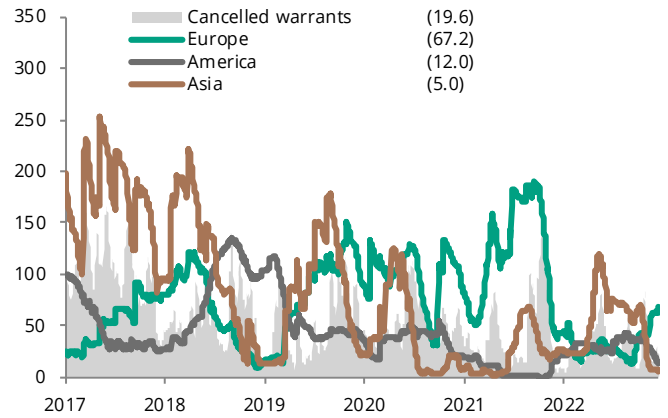
Source: Bloomberg, KGHM Polska Miedź

Copper: official exchange stocks (thousand tonnes)



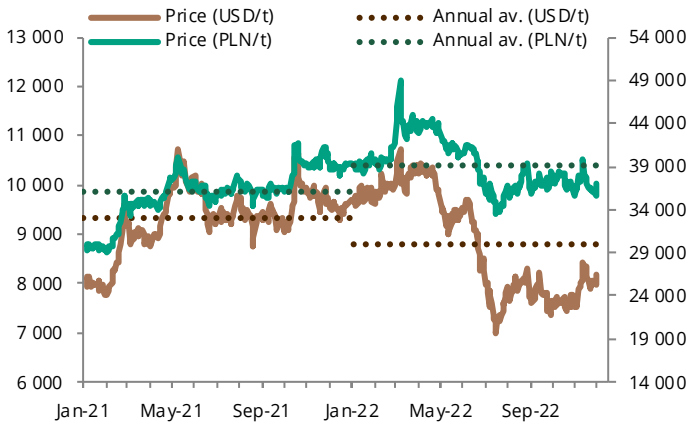
Note: Latest values in brackets. Source: Bloomberg, KGHM

Copper: official LME stocks (thousand tonnes)



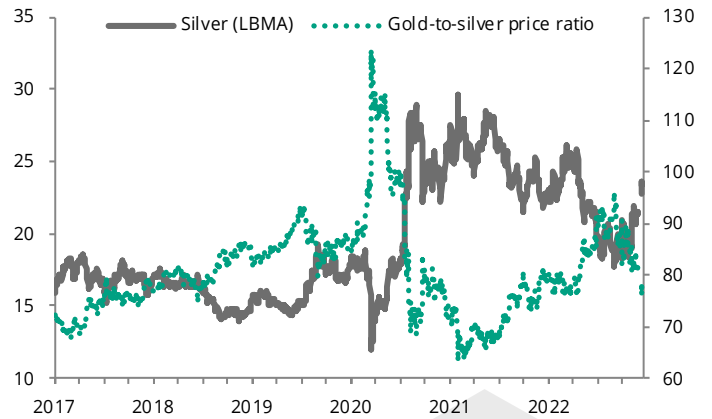
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



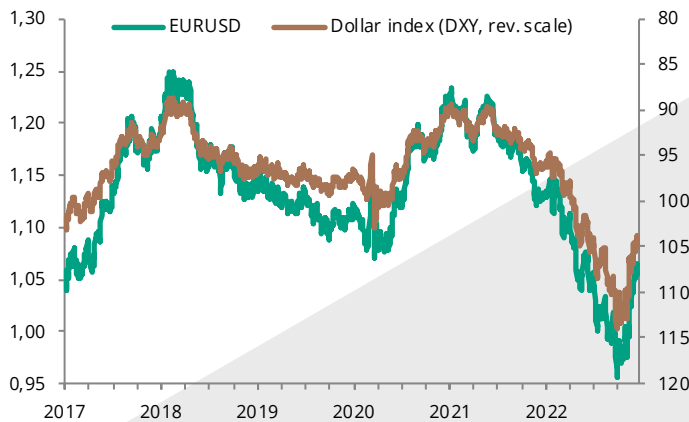
Source: Bloomberg, KGHM Polska Miedź

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



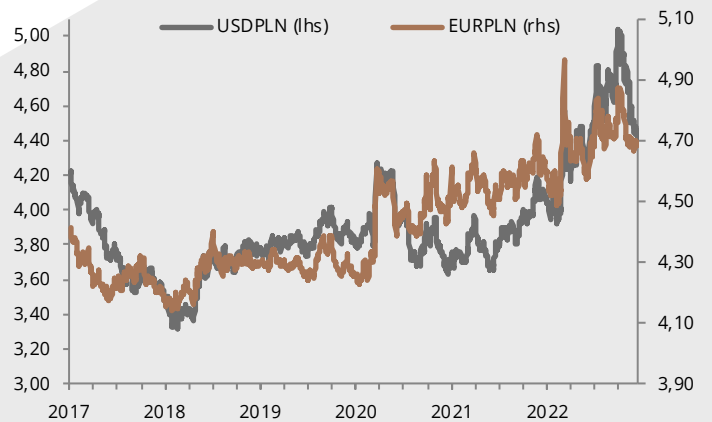
Source: Bloomberg, KGHM Polska Miedź

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:
5 - 18 December 2022.

- 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 (charge-free logging)
- silver and gold: www.lbma.org.uk/pricing-and-statistics
- platinum and palladium: www.lppm.com/statistics.aspx

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In case of questions or comments please contact us:

KGHM Polska Miedz (Polish Copper) S.A.
Departament Ryzyka Finansowego i Rynkowego (Financial and Market Risk Department)
Wydział Ryzyka Rynkowego (Market Risk Unit)
ul. M. Skłodowskiej-Curie 48
59-301 Lubin, Poland