

Market Overview

- Copper:** The year 2020, even for someone who is rather a passive financial markets observer, had to attract attention. The world has faced the worst pandemic in more than a century, and its consequences will be felt for a very long time, not only financially and economically, but also in social contacts that have been largely eroded. For the copper market, 2020 was a real rollercoaster. It is rare for the price of copper to reach both a minimum and a maximum of several years in one year. However, given the scale of the problems and the way in which they were "solved", one can try to explain why the value of the red metal was far from stability (*page 2*).
- USA:** The prospects for boosting stimulus payments for most Americans to \$2,000 are fading fast. The partisan clash over the payments also is entangling a vote to override Trump's veto of a crucial \$740.5 billion defense policy bill (*page 7*).








as of: 4th January 2021

Key market prices

	Close price	2w chng.
LME (USD/t)		
▼ Copper	7 741.50	-2.8%
▼ Nickel	16 540.00	-5.8%
LBMA (USD/troz)		
▲ Silver	26.49	2.6%
▲ Gold (PM)	1 891.10	0.6%
FX		
▲ EURUSD	1.2271	0.1%
▲ EURPLN	4.6148	3.7%
▲ USDPLN	3.7584	3.5%
▼ USDCAD	1.2732	-0.3%
▼ USDCPL	711.24	-1.7%
Stocks		
▼ KGHM	183.00	-1.6%

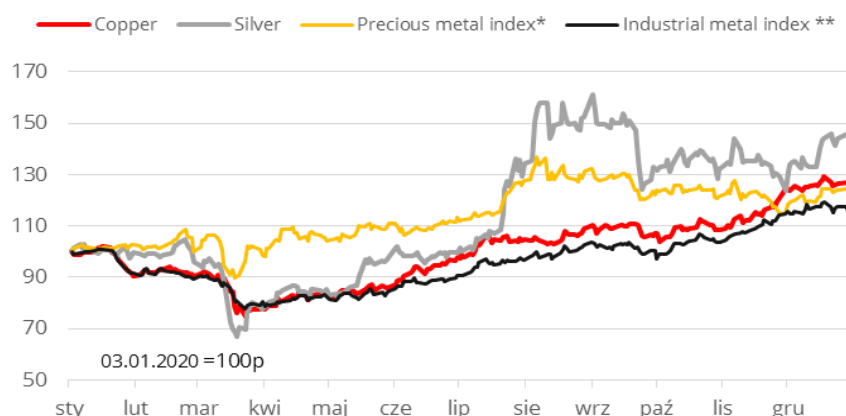
Source: Bloomberg, KGHM Polska Miedź S.A.; (*more on page 10*)

Important macroeconomic data

Release	For		
 GDP (annlzd., qoq)	3Q	33.4%	▲
 Industrial profits (yoy)	Nov	15.5%	▼
 Retail sales (yoy)	Nov	-5.3%	▼
 Consumer confidence	Dec	-13.9	▲
 Copper production (mt)	Nov	493 538	▲

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

Changes in the prices of copper and silver against changes in industrial and precious metals indexes in 2020



*BBG BCOMPTR Index: **BBG BCOMIN Index:

Source: KGHM Polska Miedź S.A.

Market Risk Unit

marketrisk@kgm.com

Base and precious metals | Other commodities

Copper

2020 copper market summary

The year 2020, even for someone who is rather a passive financial markets observer, had to attract attention. The world has faced the worst pandemic in more than a century, and its consequences will be felt for a very long time, not only financially and economically, but also in social contacts that have been largely eroded. For the copper market, 2020 was a real rollercoaster. It is rare for the price of copper to reach both a minimum and a maximum of several years in one year. However, given the scale of the problems and the way in which they were "solved", one can try to explain why the value of the red metal was far from stability.

Last year began with a big event when the US and China, after many months of political friction and, consequently, a trade war, decided after many rounds of negotiations to publicly sign the first phase of a trade agreement. It certainly ceased fire which had for many months been part of the Trump- Xi relationship. January's success was soon overshadowed by the first official cases of coronavirus infection in China. The authorities of the Middle Kingdom, having seen what was happening, decided to react in a very decisive manner, completely closing their economy for several weeks. For the commodity market and the dynamics of consumption of commodities, the Chinese lockdown was tantamount to applying the handbrake and the specter of a huge oversupply in virtually every market. Along with the announcement of further restrictions, asset prices in the financial markets, regardless of their role in the global economy, began to decline. Despite the fact that the price of copper has been systematically falling for the following quarters since reaching the local peak in 2018, the SARS-CoV-2 pandemic significantly accelerated the dynamics of declines. Stock exchanges, emerging market currencies and assets with higher investment risk reacted similarly. Credit spreads and the VIX fear index increased (in the latter case to record highs). The liquidity in the market started to decline, which clearly indicated a massive increase in risk aversion.

The lowest level (4,371 USD/t) in the year for the 3-month copper price was recorded on March 19th. After a few days, the value of the red metal began to systematically increase. Investors saw the highest price on December 18th, when the price briefly broke the level of 8,000 USD/t (the highest price reached 8,028 USD/t). 2020 ended with LME copper price at 7,766 USD/t. Taking into account the cash settlement prices, last year copper prices increased by 26% (first day close versus the last one in the year), including both a several-year minimum (the lowest price since 2016) and the highest level since 2013.

The increase in the price of red metals since April was mainly driven by the realization of the V-shape rebound in China, which was largely helped by the

stimulus packages and allowed the Chinese economy to return to recovery in the configuration most desired by investors. This was at a time when the rest of the world was massively introducing lockdowns, because the virus turned out to be very contagious, and the freedom of movement of people around the world was very conducive to the spread of the pandemic worldwide. Globalization not only contributed to the transmission of the virus, but also helped with efforts to mitigate the negative effects of the pandemic - China undertook the accumulation of surplus goods on the market, which, with the production disruptions related to COVID-19, allowed the continuation of price increases and the world began research over the vaccine. Crude oil was the only commodity which declines had not been "sealed". On that memorable April evening, an unprecedented situation occurred, when the value of black gold fell below zero, and American producers, in order to get rid of the extracted raw material from warehouses, had to pay for selling their product. Crude oil prices returned to the upside in the following months, but price ACTION was rather inconclusive, despite the intervention of OPEC+ countries and the decision to cut production.

The Chinese, fearing disruptions to copper production, mainly in Peruvian mines and, to a lesser extent, in Chile, began to buy global surpluses of copper cathodes from the market, which resulted in an almost twofold increase in imports of refined copper products in individual months of Q2 and Q3 2020. Between the lines, there are rumours that the Chinese State Reserve Bureau (SRB) has bought up the surplus. Nevertheless, it is estimated that the so-called apparent demand, i.e. the one calculated of demand on the basis of production, commercial and warehouse data, increased in two digits last year, while the estimation of purchases made by the SRB was 0.5-1 million tonnes. Referring to the volume of demand for refined copper, these purchases (assuming an average purchase level of 0.75 million tonnes) account for approx. 3% of the annual demand. According to ICSG estimates, mining production decreased by 1.5% to 20.45 million tonnes, refined production increased by 1.6% (24.52 million tonnes), while the demand for red metal remained at the level (24.49 million tonnes) from 2019. Such forecast implies a small deficit on the market of 50,000 tonnes.

It should be mentioned that the increase in the price of copper was caused not only by the forces of supply and physical demand, but each dollar of growth has been driven by speculative demand, the size of which in December was near its long-term highs. Cheap money flows mainly from central banks which after the pandemic shock decided to cut interest rates and resume quantitative easing programs with many times greater force than in the previous crisis. With cheap and systematically declining US dollar, the information about the imminent production of vaccines additionally supported the direction of the copper price movement and increased the risk appetite even more.

2021, like every other year, will be a year full of puzzles. On the one hand, the end of Donald Trump's presidency pleased supporters of pro-ecological activities and deescalated the rhetoric of international trade. In recent days, we have been recording records of American stock exchanges every day. The largest economy in the world has disposable income supported by Fed-printed dollars, keeping Americans a stream of consumption. On the other hand, we are dealing with

a third wave of infections and subsequent lockdowns, record debt, mass printing of money and, consequently, an increasingly promoted reflation scenario. The value of the American company Tesla, which market capitalization exceeds the aggregate value of most automotive companies and which revenues are incomparably higher than the flagship company of Elon Musk, can be viewed with slight disbelief. Finally, one can look with fear at the Mecca of speculators - the value of the Bitcoin cryptocurrency, which shot out like a slingshot at the end of the year. For the copper market, the key will be to maintain the current dynamics of demand and the continuity of output. ICSG forecasts that mining production will increase by 4.5% to 21.79 million tons, refined by 1.6% to 25.66 million tons, while the apparent demand will increase by 1.1% to 24.75 million tons. The market balance is therefore estimated at 70,000 tons of surplus.

Other important information on copper market:

- China's refined copper imports hit a six-month low of 333,611 mt in November, latest General Administration of Customs data showed, amid a closed arbitrage window. The total was down 6% year on year and down 20.9% from October, according to S&P Global Platts calculations. China's refined copper imports in December were expected to edge down further from November due to the closed arbitrage window, market sources said. However, imports over January-November were up 21.3% year on year at 4.2 million mt, the GAC data showed. China's refined copper imports had surged in June when the import arbitrage window opened and tight copper scrap supply boosted demand for refined copper. Chile remained the largest refined copper supplier to China in November at 94,369 mt, comprising 28.3% of China's total imports. Meanwhile, China's copper ore and concentrate imports edged down 0.9% on year to 19.88 million mt over January-November, while imports in November were down 15% on year but up 8.3% from October, Platts calculations showed.
- Escondida in northern Chile, the world's largest copper mine, lifted production during January-September by 2.4% over the same period a year ago, to almost 842,000 mt. The rise comes amid strict measures imposed by mining companies in Chile to keep continue producing through a major coronavirus outbreak. Production of copper in concentrates rose 2.8% from the first nine months of 2019 to 708,639 mt while production of copper cathode rose 0.7% to 183,110 mt, Escondida said. Over the same period revenue rose 2% to \$5.2 billion. Costs fell 14% to \$3.0 billion, allowing profits to rise 41% to \$1.5 billion. Chile, the world's largest copper-producing nation, produced almost 4.8 million mt of the metal during the first ten months of this year, little changed from 2019. The government expects production to hit 5.8 million mt before rising to an all-time record of almost 6.0 million mt in 2021.
- China's imports of copper concentrate from Australia plunged for a second month in November to the lowest since at least 2016, customs data showed. Arrivals of copper concentrate, or partially processed copper ore, from Australia into China, the world's biggest copper consumer, were 26,717 tonnes last month, according to data released by the General Administration of Customs. That was down 34% from October and down 77.8% from a year earlier, marking the lowest

monthly total in records going back to January 2017. Australian media reports in early November said the Chinese government had instructed companies not to purchase copper ore and concentrate - as well as at least six other commodities, ranging from coal to lobster - from Australia from Nov. 6 because of souring relations between the two countries. Copper concentrate is one of several Australian commodities facing import restrictions in China. Ties soured in 2018 when Australia became the first country to publicly ban China's Huawei Technologies Co from its 5G network, and worsened this year when Australia called for an inquiry into the origins of COVID-19. Shipments of Australian copper concentrate had fallen more than 50% in October from the previous month, although this was before the reported restrictions were to take effect. In November, China's copper concentrate imports from all countries were 1.83 million tonnes, up 8.3% from October but down 15% on year. Australia accounted for 4.8% of China's total copper concentrate imports in 2019, making it the fifth-biggest supplier, following Chile, Peru, Mongolia and Mexico.

- China's copper smelter group lowered its floor treatment and refining charges (TC/RCS) by 8.6% quarter-on-quarter for the first quarter of 2021. The members of the China Smelters Purchase Team (CSPT) set the first-quarter floor at \$53 per tonne and 5.3 cents per lb at a meeting in Shanghai, said the sources. That compares to \$58 per tonne and 5.8 cents per lb for the fourth quarter of 2020 and to \$67 per tonne and 6.7 cents per lb a year earlier. CSPT members are supposed to adhere to the floor in any spot processing deals. Feng Mingrui head of raw materials department at China Copper was appointed as the new CSPT leader at Thursday's meeting, after the four-year term of Tongling Nonferrous executive James Wang came to an end, according to the sources. For term supply, the annual TC/RC benchmark for 2021 - referenced in contracts worldwide - was last week set at \$59.50 a tonne and 5.95 cents per pound following talks between smelters in China, the world's top copper consumer, and miner Freeport-McMoRan Inc. The benchmark has fallen for six years in a row as tight mine supply and rising processing capacity in China leave smelters having to accept lower terms to ensure they have enough feedstock. Spot treatment charges, as assessed by Asian Metal, remain at an eight-year low of \$50.50 a tonne.
- Peru's shipments of copper, tin and silver rebounded in October as miners managed to restaff operations following a nationwide COVID-19 lockdown, while zinc, lead, molybdenum and gold fell. Copper deliveries climbed 6% to 242,400 mt from a year earlier. Silver shipments rose 18.4% to 400,000 oz. Tin shipments from Peru's lone producer Minsur's San Rafael jumped 52.8% to 1,800 mt. Zinc shipments headed by Antamina plunged 39.2% to 73,700 mt from a year earlier. Lead exports were down 26.3% to 58,900 mt. Gold exports led by Newmont and Barrick dropped 12.5% to 434,200 oz from a year ago. Molybdenum deliveries fell to 2,500 mt from 3,000 mt. Peru, the second-hardest hit country by the pandemic in the region after Brazil, has registered circa 38,000 deaths and almost 1 mln cases of COVID-19.
- A court in Chile has approved an agreement to allow Codelco to move ahead with a key investment at the Rajo Inca project at its Salvador mining and smelting complex. Chile's First Environmental Court gave its backing Dec.30 to the

agreement between Codelco and lawyers representing the Chilean state who had sued the mining company over damage caused to high altitude wetlands. Codelco suspended construction of the Rajo Inca project at the division last July after the suit was filed. The \$1.2 billion project will extend the life of operations at Salvador beyond the pending exhaustion of the current reserves into the second half of this century. It will also lift copper production to around 93,000 mt/year, up from 50,561 mt in 2019. Under the deal, Codelco will invest around \$56 million to restore wetlands damaged by decades of water pumping from the area. The company will also work to protect wetlands by ceding water rights in the area to the government..

Global economies | Foreign exchange markets

Drive for \$2,000 Checks Slows in Senate Despite Trump Push

The prospects for boosting stimulus payments for most Americans to \$2,000 are fading fast. The partisan clash over the payments also is entangling a vote to override Trump's veto of a crucial \$740.5 billion defense policy bill.

Increasing stimulus checks to \$2,000 from \$600 would lift GDP growth in 2021 by 1.1 percentage point, on a 4Q-over-4Q basis

The prospects for boosting stimulus payments for most Americans to \$2,000 are fading fast in the Republican-controlled U.S. Senate even with GOP leaders under pressure by both President Donald Trump and Democrats. The partisan clash over the payments also is entangling another piece of year-end business in the Senate -- a vote to override Trump's veto of a crucial \$740.5 billion defense policy bill. Senator Bernie Sanders is attempting to force a delay on the defense legislation unless Senate Majority Leader Mitch McConnell relents and allows a vote on a standalone bill on the bigger stimulus checks. McConnell on Tuesday blocked an attempt by Democratic leader Chuck Schumer to set up a vote on a House-passed bill that would increase the payments to \$2,000 from the \$600 - the amount in the pandemic relief measure. As the chances for quick action on bigger stimulus checks faded, U.S. stocks pulled back from record highs with the S&P 500 Index falling 0.2%. Increasing stimulus checks to \$2,000 from \$600 would lift GDP growth in 2021 by 1.1 percentage point, on a 4Q-over-4Q basis, according to Bloomberg economists. Instead of backing the House increase, McConnell is moving to present an alternative that would add to it a repeal of liability protections for social media companies and creation of a commission to study electoral fraud.












McConnell's proposal responds to three issues Trump has said he wants, but a bill combining them likely will alienate enough senators in both parties to collapse under its own weight. Even though many Democrats and some Republicans want to see changes to the way Facebook, Twitter, Instagram and other social media platforms police content on their sites, many are not likely to support full repeal of liability protections or back jamming it into an unrelated piece of legislation. Democrats are also loath to give credence to Trump's unfounded assertion that fraud cost him 2020 election by endorsing a commission to investigate voting security. McConnell's bill is still being drafted and Republicans are expected to discuss its contents when the Senate convenes. Already some senators are pushing for changes. John Cornyn, a Texas Republican, said he would like to attach his proposal to shield companies from Covid-19 lawsuits, which Democrats oppose. Democrats said McConnell's draft bill was doomed to fail. The Republican slow-walking of the stimulus proposal comes despite increasingly angry statements by Trump urging the Senate to pass the bill.

With just five days before the term of the current Congress expires, the Senate is focused on overriding Trump's veto of the annual defense bill. The Senate will begin the process of voting to override Trump's veto, but Sanders's bid to get

a vote on bigger stimulus payments could drag it out. If the Senate follows suit as expected in the waning days of Trump's presidency, it will be the first time one of his vetoes has been surmounted. The defense policy measure includes pay raises for troops and money for construction projects. It also continues authorizations for military bonuses, hazard pay, and special allowances and benefits for civilians serving in combat zones, all of which expire Dec. 31.

Macroeconomic calendar

Important macroeconomic data releases

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²
China 						
🔔🔔	27-Dec	Industrial profits (yoy)	Nov	15.5% ▼	28.2%	--
🔔🔔🔔	31-Dec	Official manufacturing PMI	Dec	51.9 ▼	52.1	52.0 📉
Poland 						
🔔🔔🔔	21-Dec	Retail sales (yoy)	Nov	-5.3% ▼	-2.1%	-8.7% 📈
🔔	22-Dec	M3 money supply (yoy)	Nov	16.1% ▼	17.0%	16.8% 📉
🔔🔔	23-Dec	Unemployment rate	Nov	6.1% =	6.1%	6.1% 🟡
US 						
🔔🔔🔔🔔	22-Dec	GDP (annualized, qoq) -	3Q	33.4% ▲	33.1%	33.1% 📈
🔔	22-Dec	Richmond Fed manufacturing index	Dec	19.0 ▲	15.0	11.0 📈
🔔🔔🔔	23-Dec	Consumer spending inflation PCE (mom)	Nov	0.0% =	0.0%	0.1% 📉
🔔🔔🔔	23-Dec	Consumer spending inflation PCE (yoy)	Nov	1.4% =	1.4%	1.4% 🟡
🔔🔔	23-Dec	Durable goods orders - preliminary data‡	Nov	0.9% ▼	1.8%	0.6% 📈
🔔🔔	23-Dec	Personal income (sa, mom)‡	Nov	-1.1% ▼	-0.6%	-0.3% 📉
🔔🔔	23-Dec	Personal spending (sa, mom)‡	Nov	-0.4% ▼	0.3%	-0.2% 📉
🔔🔔	23-Dec	University of Michigan confidence index - final data	Dec	80.7 ▼	81.4	81.1 📉
🔔	28-Dec	Dallas Fed manufacturing activity	Dec	9.7 ▼	12.0	11.6 📉
🔔	29-Dec	S&P/CaseShiller home price index‡	Oct	236 ▲	233	--
Eurozone 						
🔔	21-Dec	Consumer confidence - estimation	Dec	-13.9 ▲	-17.6	-17.3 📈
Germany 						
🔔🔔	22-Dec	GfK consumer confidence‡	Jan	-7.3 ▼	-6.8	-7.6 📈
France 						
<i>No major data in the period</i>						
Italy 						
<i>No major data in the period</i>						
UK 						
🔔🔔🔔🔔	22-Dec	GDP (yoy) - final data	3Q	-8.6% ▲	-9.6%	-9.6% 📈
🔔🔔🔔🔔	22-Dec	GDP (qoq) - final data	3Q	16.0% ▲	15.5%	15.5% 📈
Japan 						
🔔🔔🔔	28-Dec	Industrial production (yoy) - preliminary data	Nov	-3.4% ▼	-3.0%	-2.3% 📉
Chile 						
🔔🔔	31-Dec	Total copper production (metric tons)	Nov	493 538 ▲	492 761	--
🔔🔔	31-Dec	Manufacturing (yoy)	Nov	-1.7% ▼	6.2%	2.0% 📉
Canada 						
🔔🔔🔔	23-Dec	GDP (yoy)	Oct	-3.5% ▲	-3.9%	-3.6% 📈

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

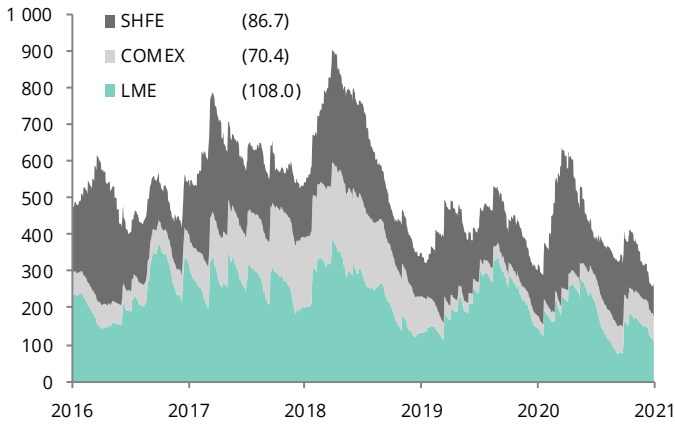
Key base & precious metal prices, exchange rates and other important market factors

<i>(as of: 01-Jan-21)</i>		Price change ¹					From year beginning ²		
	Price	2W	QTD	YTD	1Y	Average	Min	Max	
LME (USD/t; Mo in USD/lbs)									
Copper	7 741.50	▼ -2.8%	-	▲ 25.8%	▲ 25.6%	6 180.63	4 617.50	7 964.00	
Molybdenum	10.03	▲ 6.7%	-	▲ 9.0%	▲	8.68	7.00	10.90	
Nickel	16 540.00	▼ -5.8%	-	▲ 18.1%	▲ 17.5%	13 789.31	11 055.00	17 650.00	
Aluminum	1 978.00	▼ -3.5%	-	▲ 9.9%	▲ 11.6%	1 704.02	1 421.50	2 051.50	
Tin	20 540.00	▲ 1.4%	-	▲ 21.9%	▲ 19.8%	17 158.70	13 400.00	20 541.00	
Zinc	2 723.50	▼ -3.9%	-	▲ 18.8%	▲ 18.5%	2 267.00	1 773.50	2 841.50	
Lead	1 972.00	▼ -3.4%	-	▲ 2.5%	▲ 3.6%	1 825.58	1 576.50	2 117.50	
LBMA (USD/troz)									
Silver	26.49	▲ 2.6%	-	▲ 46.8%	▲ 47.8%	20.55	12.01	28.89	
Gold ²	1 891.10	▲ 0.6%	-	▲ 24.2%	▲ 23.8%	1 770.47	1 474.25	2 067.15	
LPPM (USD/troz)									
Platinum ²	1 075.00	▲ 3.6%	-	▲ 10.7%	▲ 8.9%	883.93	593.00	1 075.00	
Palladium ²	2 370.00	▲ 1.7%	-	▲ 23.4%	▲ 21.8%	2 193.77	1 557.00	2 781.00	
FX ³									
EURUSD	1.2271	▲ 0.1%	-	▲ 9.2%	▲ 9.6%	1.1422	1.0707	1.2281	
EURPLN	4.6148	▲ 3.7%	-	▲ 8.4%	▲ 8.4%	4.4449	4.2279	4.6330	
USDPLN	3.7584	▲ 3.5%	-	▼ -1.0%	▼ -1.1%	3.8978	3.6254	4.2654	
USDCAD	1.2732	▼ -0.3%	-	▼ -2.0%	▼ -2.0%	1.3415	1.2718	1.4496	
USDCNY	6.5272	▼ -0.2%	-	▼ -6.3%	▼ -6.3%	6.8979	6.5233	7.1671	
USDCLP	711.24	▼ -1.7%	-	▼ -4.5%	▼ -5.0%	792.59	710.26	867.83	
Money market									
3m LIBOR USD	0.238	▲ 0.00	-	▼ -1.67	▼ -1.66	0.650	0.205	1.900	
3m EURIBOR	-0.545	▼ -0.01	-	▼ -0.16	▼ -0.17	-0.427	-0.546	-0.161	
3m WIBOR	0.210	-	-	▼ -1.50	▼ -1.50	0.658	0.210	1.710	
5y USD interest rate swap	0.429	▼ -0.02	▼ 0.00	▼ -1.30	▼ -1.26	0.587	0.243	1.693	
5y EUR interest rate swap	-0.459	▲ 0.00	-	▼ -0.35	▼ -0.31	-0.346	-0.500	-0.090	
5y PLN interest rate swap	0.613	▼ -0.15	-	▼ -1.17	▼ -1.17	0.844	0.443	2.050	
Fuel									
WTI Cushing	48.52	▼ -1.2%	-	▼ -20.5%	▼ -20.7%	39.24	-37.63	63.27	
Brent	51.22	▼ -1.5%	▲ 0.1%	▼ -22.9%	▼ -23.1%	42.29	17.32	69.02	
Diesel NY (ULSD)	147.76	▼ -2.5%	-	▼ -27.1%	▼ -26.8%	124.53	60.67	206.01	
Others									
VIX	22.75	▲ 1.18	-	▲ 8.97	▲ 10.28	29.25	12.10	82.69	
BBG Commodity Index	78.05	▲ 0.9%	-	▼ -3.5%	▼ -3.6%	69.93	59.48	81.64	
S&P500	3 756.07	▲ 1.3%	-	▲ 16.3%	▲ 15.3%	3 217.86	2 237.40	3 756.07	
DAX	13 718.78	▲ 0.6%	-	▲ 3.5%	▲ 2.5%	12 339.14	8 441.71	13 790.29	
Shanghai Composite	3 473.07	▲ 2.3%	-	▲ 13.9%	▲ 12.6%	3 128.42	2 660.17	3 473.07	
WIG 20	1 983.98	▲ 1.6%	-	▼ -7.7%	▼ -9.8%	1 790.56	1 305.73	2 200.10	
KGHM	183.00	▼ -1.6%	-	▲ 91.5%	▲ 86.9%	108.49	49.40	189.35	

° 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

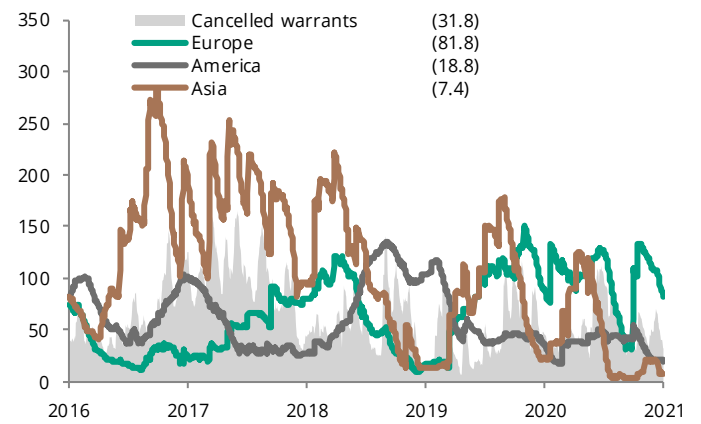
Source: Bloomberg, KGHM Polska Miedź

Copper: official exchange stocks (thousand tonnes)



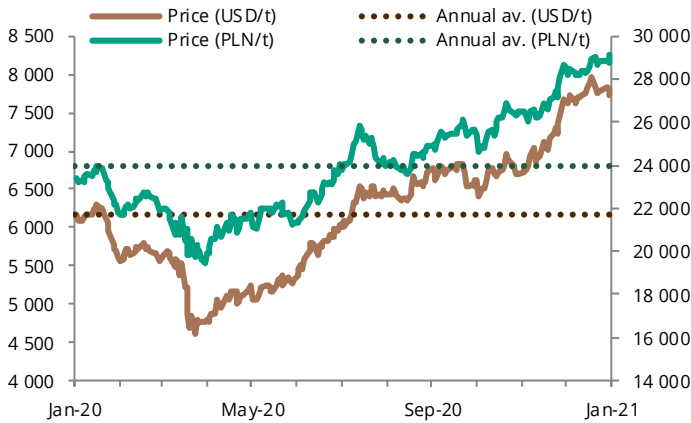
Note: Latest values in brackets. Source: Bloomberg, KGHM

Copper: official LME stocks (thousand tonnes)



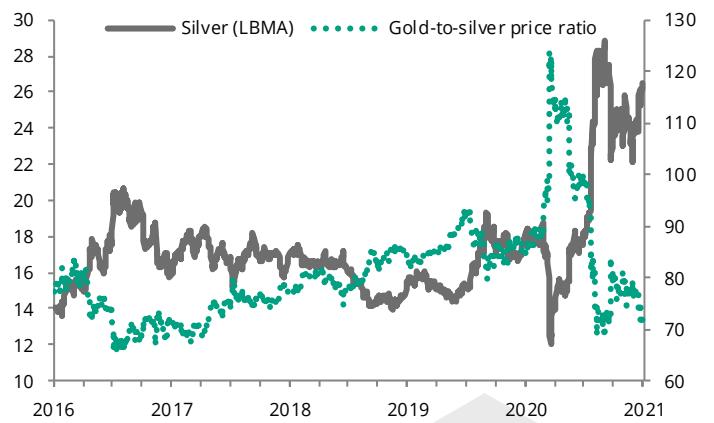
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



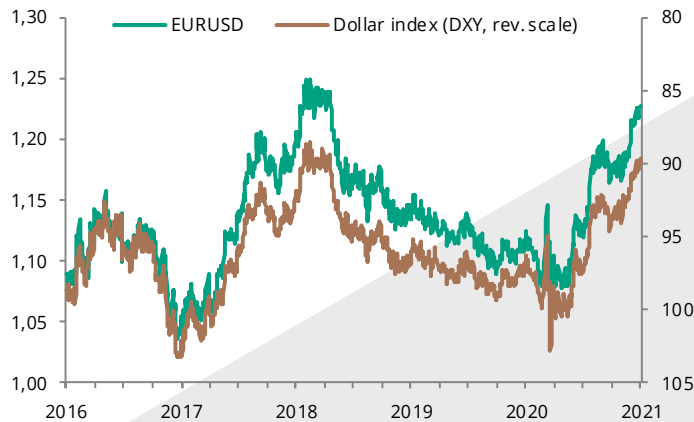
Source: Bloomberg, KGHM Polska Miedź

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



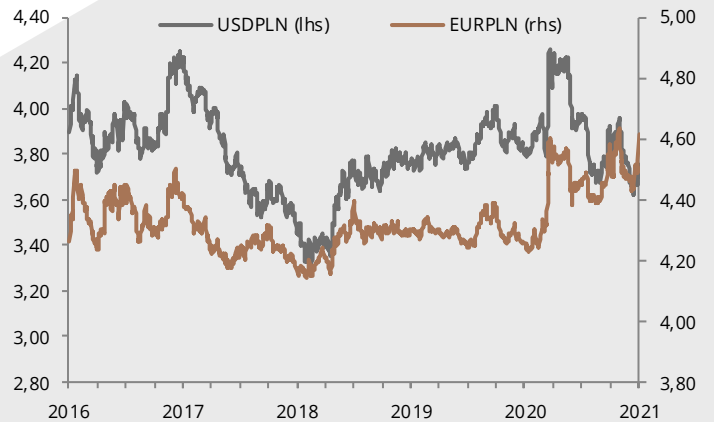
Source: Bloomberg, KGHM Polska Miedź

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:
21 December - 3 January 2021.

- 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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