

# Market Overview



as of: 23<sup>th</sup> November 2020



- **Copper:** Global copper demand is expected to drop by 3.3% in 2020 and rise by 4.6% in 2021. Construction was expected to be the primary driver of copper demand in 2021 -- with China in particular, while the automotive sector would see its first year of growth since 2017 (*page 2*).
- **Precious metals:** The most significant development in the silver investment market this year has been the strength of silver-backed exchange-traded product (ETP) demand. Year-to-date gains (through November 13) have reached 326 Moz. In the same period the silver price has risen strongly of 38 percent. This allowed for a significant improvement in the gold to silver ratio, which fell from 127 in March to 76 in November (*page 5*).
- **USA:** Richard Clarida said that even if the conditions set in September are met and the Fed raises interest rates, they will remain low to support the economy (*page 7*).

## Key market prices

	Close price	2w chng.
<b>LME (USD/t)</b>		
▲ Copper	7 178.50	3.5%
▲ Nickel	15 870.00	2.2%
<b>LBMA (USD/troz)</b>		
▼ Silver	24.17	-6.3%
▼ Gold (PM)	1 875.70	-3.4%
<b>FX</b>		
▼ EURUSD	1.1863	-0.1%
▼ EURPLN	4.4679	-1.3%
▼ USDPLN	3.7677	-1.4%
▲ USDCAD	1.3071	0.2%
▲ USDCLP	758.62	0.9%
<b>Stocks</b>		
▲ KGHM	142.50	3.4%

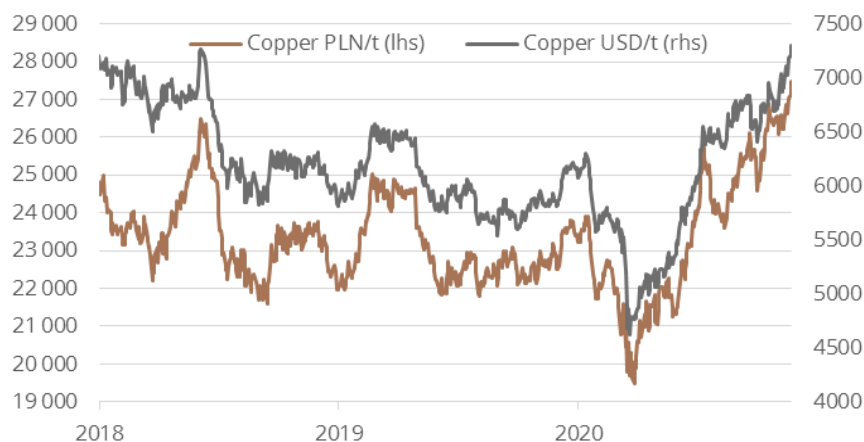
Source: Bloomberg, KGHM Polska Miedź S.A.; (*more on page 11*)

## Important macroeconomic data

Release	For	
 GDP (yoy)	3Q	-1.6% ▲
 Industrial prod. (yoy)	Oct	6.9% -
 GDP (sa, yoy)	3Q	-4.4% -
 Industrial prod. (mom)	Oct	1.1% ▲
 Copper exports (\$)	Oct	3 211 ▲

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

Copper prices in USD and PLN are in a strong trend growth, reaching long unseen levels



Source: Bloomberg, KGHM Polska Miedź S.A.

## Market Risk Unit

marketrisk@kgm.com

## Base and precious metals | Other commodities

### Copper

#### 2021 Copper Market In Balance

**Global copper demand is expected to drop by 3.3% in 2020 and rise by 4.6% in 2021. Construction was expected to be the primary driver of copper demand in 2021 -- with China in particular, while the automotive sector would see its first year of growth since 2017.**

**It will be 2022 before USA get to pre-COVID levels of copper demand on an annual basis**

The copper market is expected to be in a supply/demand balance in 2021 amid a demand recovery and growing supply, with the average COMEX copper price at just under 310 cents/lb next year, CRU analyst Robert Edwards said Nov. 11. He forecasts 145,000-175,000-mt supply surpluses in the next few years thereafter amid the launch of new mining projects. However, he added, with copper prices potentially averaging just under 330 cents by the "mid-2020s, that is still below the level required to incentivize new mine capacity." Still, Edwards noted that the ongoing COVID-19 pandemic is "still a major risk to the forecast. The relative effects of supply and demand are uncertain, while the reality and timing of a possible vaccine only adds to the complexity." On the expected demand rebound in the US next year, Edwards said that given the positive growth expectations in the construction, manufacturing, and automotive sectors, "We are forecasting 6% recovery in refined copper consumption in 2021," but added: "It will be 2022 before we get to pre-COVID levels of copper demand on an annual basis." He also said CRU wasn't factoring in any major infrastructure spending package as a short-term boost in copper demand. Edwards said construction was expected to be the primary driver of copper demand in 2021 -- with China in particular spending more on infrastructure than previously assumed -- while the automotive sector would see its first year of growth since 2017. He estimated that US copper demand had dropped 7-8% this year, as a fallout of the pandemic, the lowest level since 2009. Globally excluding China, Edwards said: CRU saw 2021 demand growth at just over 7%, which he noted would be considered a typically high, but that the growth rate was following on the 2020 COVID downturn as well as a negative growth rate in 2019. Global copper demand is expected to drop by 3.3% in 2020 and rise by 4.6% in 2021, Edwards said.

#### Codelco Strikes Deal To Restart Rajo Inca Copper Project

**The preliminary agreement is extraordinarily important as it extends operations at Salvador by at least four decades and gives peace of mind and security to more than 5,000 workers and their families.**

Codelco announced it has reached a preliminary agreement in a dispute over water extraction. The deal could unlock a \$1.2 billion project to ensure the future of its Salvador division, the mining company said. If approved by the

environmental court for northern Chile, the ` would allow Codelco to resume construction of the Rajo Inca project which aims to increase production at Salvador. Construction at the project was halted last July after the company has been accused of causing irreparable environmental damage to Salar de Pedernales, a high-altitude salt-flat. The project, approved by environmental authorities last February, is reliant on water extracted from wells around the salt-flat where decades of pumping by the company has dried surrounding wetlands, harming flora, fauna and local communities, the lawyers said in their suit before the court. Worried by the impact on investment and jobs as the country recovers from the coronavirus pandemic, the Chilean government has intervened to encourage the two sides to reach a deal. "The preliminary agreement is extraordinarily important as it gives significant backing to Rajo Inca....and peace of mind and security to more than 5,000 workers and their families," tweeted Mines Minister Baldo Prokurica. Details of the agreement would be known once analyzed and evaluated by the three-judge court, Codelco said. Rajo Inca aims to produce 93,000 mt/year of copper from next year by processing waste material from the existing Indio Muerto pit, extending operations at Salvador by at least four decades. Last year the mining and smelting complex produced just over 50,000 mt of copper.

### Other important information on copper market:

- Chile's Codelco will continue open-pit mining at its Chuquicamata operation by another year, potentially boosting copper output next year, the state-owned mining giant said. Mining in the pit was scheduled to end next month as the company switches production to a giant underground mine beneath the century-old pit, which is now more than a kilometer deep. Operations in the pit were to be restricted to the extraction of stockpiled ore during 2021 and 2022. However, following an economic analysis and adjustments made to operations, Codelco said that it now plans to mine from the pit during 2021 while output from the underground mine continues to ramp up. "Despite the complications caused by the pandemic. Codelco CEO Octavio Araneda said that the company has sought and found new ways of operating which means that the pit team at Chuquicamata adapted and implemented continuous improvement. The decision reflects strong performance of the pit, which is expected to produce more than 30,000 mt of copper this year. Codelco's mines produced 1.6 million mt of copper last year, including 385,309 mt at Chuquicamata. The underground operation at Chuquicamata, which was inaugurated last year, is expected to produce 320,000 mt/year of copper and 16,000 mt/year of molybdenum once it reaches design capacity, replacing production from the pit, which is becoming too deep to mine profitably.
- A strike that has halted production at Lundin Mining's Candelaria copper mine in Chile is set turn a month old later this week after workers voted by a 2-1 margin Nov. 17 to reject the latest pay offer from management. The 550-strong union downed tools on Oct. 20 after government-mediated negotiations on a new pay contract ended without agreement, forcing Lundin to suspend operations all but essential operations. In walking off site, they

joined workers from the smaller Mina union who have been on strike since Oct 8. Their strike is the longest at a major copper mine in Chile since last year's protest at Teck's Carmen de Andacollo mine which lasted for more than 50 days. Combining underground and open pit operations, the Candelaria mine produced 111,400 mt of copper last year. Canada-based Lundin owns 80% of the mine and Japan's Sumitomo owns 20%. The conflict comes amid heightened tensions in Chile's mining industry where companies have slashed staffing levels amid the pandemic while the rally in copper prices have boosted in profits. However, pay talks at other mines have passed off peacefully. On Nov. 17, state-owned Codelco announced that it had reached a deal with workers from the Rajo Sur operation at its El Teniente division.

- Copper cathode output at China's biggest copper smelters fell by 5.4% year-on-year in October due to maintenance at two major plants, research house Antaika said in a recent report. The 22 firms surveyed in Antaika's monthly production report churned out 741,900 tonnes of copper cathode last month, roughly flat on a revised figure of 740,200 tonnes for September, which had one less day. Maintenance at Tongling Nonferrous Metals Group's Jinguan smelter in Anhui province and at Shandong Fangyuan Nonferrous Metals Group was behind the year-on-year drop in production, Antaika said in a note. Amid continued maintenance in November, Antaika, the research arm of the China Nonferrous Metals Industry Association, sees this month's copper cathode output dipping to around 740,000 tonnes.
- Zambia produced 646,111 tonnes of copper between January and September 2020, up from 590,321 tonnes in the same period last year, Mines Minister Richard Musukwa said recently, attributing the 9.45% rise to increased mine output. Africa's no.2 copper producer, Zambia defaulted last Friday after failing to pay the \$42.5 million coupon on its Eurobond debt.
- According to Freeport Indonesia spokesman PT Freeport Indonesia and Mitsubishi Material Corporation signed recently an memorandum of understanding to expand their copper and refining plant in Gresik. The copper smelter, located east of Indonesia's Java island, is operated by the two companies under a joint venture called PT Smelting, which aims to increase its capacity from 1 million dry metric tonnes (DMT) per year to 1.3 million DMT per year. PT Smelting's expansion work is scheduled to be completed in 2023. Financing for the expansion will be made by Freeport Indonesia.

## Precious Metals

### Key Components of Silver Market Affected by Pandemic in 2020 according to The Silver Institute

**The most significant development in the silver investment market this year has been the strength of silver-backed exchange-traded product (ETP) demand. Year-to-date gains (through November 13) have reached 326 Moz. In the same period the silver price has risen strongly of 38 percent. This allowed for a significant improvement in the gold to silver ratio, which fell from 127 in March to 76 in November.**

Physical investment is expected to surge by 27 percent to 236.8 Moz in 2020, which would be a 5-year high. The largest retail market for bars and coins, the US, will lead the way with a projected 62 percent gain. The second largest market, India, however, has experienced a markedly weaker second half, resulting in an estimated 20 percent decline for the full year total.

The most significant development in the silver investment market this year has been the strength of silver-backed exchange-traded product (ETP) demand. Year-to-date gains (through November 13) have reached 326 Moz. As a result, global holdings have for the first time comfortably surpassed 1 billion ounces, achieving a new record high of 1.062 billion ounces. For the full year, Metals Focus forecasts an increase of 350 Moz on end-2019 levels, which compares extremely favorably with a rise last year of 81.7 Moz.

This year, the silver price has risen strongly, achieving an intra-year gain (through November 13) of 38 percent, as the COVID-19 pandemic has led to a surge in safe haven demand. This price upside has been accompanied by a marked improvement in the gold:silver ratio. Having touched a record high of 127:1 in March, the ratio has fallen to 76 this month. In terms of the full year average, Metals Focus expects the silver price to rise by 27 percent y/y to average US\$20.60. This would represent the highest annual average since 2013.

Silver mine production is expected to fall by 6.3 percent in 2020 to 780.1 Moz. This reflects COVID-19 lockdowns implemented by several major silver producers during the first half of the year, which required mines to temporarily halt production. This led to lower output from Mexico, Peru and China. The last countrywide restrictions on mining were lifted at the end of May and most mines have now returned to full production rates. However, there is a continued risk of localized outbreaks of the virus, which may impact output from individual operations in the future.

The pandemic has also had a pronounced impact on silver demand, especially in March/April. Although demand has recovered since that trough, most areas are still on track for heavy full year losses. Industrial fabrication, for example, is forecast to drop by 9 percent this year to 466.5 Moz, a five-year low. This reflects

the impact of lockdown restrictions, with supply chains heavily disrupted, end-users adopting an increasingly cautious approach to inventory replenishment and factories facing labor supply problems.

In terms of some of the key end-use industrial segments, Metals Focus estimates that photovoltaic demand will fall by 11 percent to around 88 Moz. Even so, this remains a historically high total. The use of silver in the automotive sector is seeing a slightly steeper decline, as the estimated 17 percent drop in global light vehicle production outweighs ongoing gains in the use of silver in each vehicle. One bright note is that sectors connected to home renovation have often performed better because of the trend towards increased teleworking.

Global silver jewelry and silverware demand are expected to fall by 23 percent and 34 percent respectively in 2020, to 153.6 Moz and 40.8 Moz. Heavy losses in India underpin the weakness in each segment. This in turn reflects the impact of widespread lockdowns (to combat the pandemic) which hit disposable incomes, elevated rupee silver prices, and a weak Indian economy. The world's second largest jewelry consumer, the US, also weakened, although the extent of the decline was more modest than for gold.

## Global economies | Foreign exchange markets

### Central Bank Is Committed to Using All Available Tools to Boost Economy

**Richard Clarida said that even if the conditions set in September are met and the Fed raises interest rates, they will remain low to support the economy.**

Federal Reserve officials will use all available tools to ensure the economy recovers from the pandemic-induced shock, including purchases of government assets and explicit guidance about how long they expect to keep interest rates at low levels, Richard Clarida, the central bank's vice chairman said. At their rate-setting meeting earlier this month, Fed officials discussed the critical role that the central bank's purchases of \$120 billion a month in Treasury and mortgage-backed securities have played in supporting the economy this year. He didn't indicate in his remarks whether he believed any changes in those purchases were warranted, saying only that officials would "continue to monitor developments and assess how our ongoing asset purchases can best support" the Fed's economic objectives. At their policy meeting in September, Fed officials laid out a three-part test before they would consider lifting rates from near zero. First, they need to be satisfied that labor-market conditions are consistent with their maximum employment goals, which weren't spelled out. Second, inflation must reach 2%. Third, they will need some evidence -- from forecasts or market-based measures -- that inflation will continue to run moderately above 2%. Mr. Clarida said that even after the Fed raises interest rates, it will keep rates low to provide more support to the economy. The average rate of inflation since the Fed adopted its new framework in August could also dictate the desired pace at which the Fed raises rates, he said. For example, if average inflation has been notably below 2% even after the Fed meets its new conditions to raise rates, Mr. Clarida said he would favor a slower pace of rate increases than he would if average inflation since August had been closer to or equal to 2%. At the same time, Mr. Clarida said the Fed wasn't likely to follow any hard-and-fast rule or calculation about the average rate of inflation over any period; instead, he said officials were focused on making sure expectations of future inflation stay around 2%.

## China Takes Advantage of Europe's Generosity








**For the Middle Kingdom, financing in euro is so surprisingly cheap that it would seem unwise not to use it. Additionally, the Chinese corporate bond market denominated in US dollar is still 20 times larger than the one denominated in euro, so there is still room for expansion.**





What's not to like when borrowing in a foreign currency is much cheaper than at home? That's the happy situation for China as it launches another batch of debt deals in euros, repeating its successful foray of last year. Beijing is bringing five-, 10- and 15-year tranches to further build a yield curve in euros. But this isn't some covert snub to the U.S. or a judgment on the dollar's primacy. It's just so amazingly cheap to fund in euros that it would seem foolish not to. The backdrop is a European Central Bank that's hoovering up bonds in its quantitative easing program and which has a -0.5% deposit rate. China will only have to offer a negative yield for the new five-year tranche; even the 15-year note will be below 0.75%. This compares very favorably to the 3.15%-3.55% yields on comparable domestic notes in yuan, which have been rising steadily since the summer. China's euro-denominated bonds aren't eligible for purchase by the ECB, which does have an impact in the secondary market. Credit spreads — the premium charged above benchmark European government debt — widened on last year's notes. But this new raft of issuance has enlivened investor interest, allowing to tighten the indicated spreads to below those on the 2019 debt. The yuan is at its strongest level in two years and China has foreign exchange reserves in excess of \$3 trillion, so these foreign borrowing exercises are really about diversifying its international investor base. Italy made similar moves to maintain its international following, with a dollar issue, but it paid a price. The \$3 billion five-year deal had a 1.3% yield, which is more expensive than where Italy funds in euros (very close to zero for five-year debt). Nonetheless, Rome will be pleased its order book was more than three times covered, showing it still has U.S.-based demand. This is what these foreign currency sovereign deals are about: national marketing. China's sale opens the door for its companies to access the euro bond market, as it's useful to have a sovereign benchmark for price comparisons. The dollar bond market for Chinese corporates, usually priced out of Hong Kong, is still 20 times larger than the one for euros, so there's room to go further. Especially when China is rewarded for building its brand courtesy of the euro area's incredibly low rates.



# Macroeconomic calendar

## Important macroeconomic data releases

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>
<b>China</b> 						
⊕⊕⊕⊕	10-Nov	Consumer inflation CPI (yoy)	Oct	0.5% ▼	1.7%	0.8% ◡
⊕⊕	10-Nov	Producer inflation PPI (yoy)	Oct	-2.1% -	-2.1%	-1.9% ◡
⊕	11-Nov	New yuan loans (CNY bn)‡	Oct	690 ▼	1 896	775 ◡
⊕⊕⊕⊕	16-Nov	Industrial production (yoy)	Oct	6.9% -	6.9%	6.7% ▲
⊕⊕	16-Nov	Fixed assets investments (ytd, yoy)	Oct	1.8% ▲	0.8%	1.6% ▲
⊕	16-Nov	Retail sales (yoy)	Oct	4.3% ▲	3.3%	5.0% ◡
<b>Poland</b> 						
⊕⊕⊕⊕⊕	13-Nov	GDP (yoy) - preliminary data	3Q	-1.6% ▲	-8.2%	-1.8% ▲
⊕⊕⊕⊕⊕	13-Nov	GDP (qoq) - preliminary data	3Q	7.7% ▲	-8.9%	8.0% ◡
⊕⊕⊕⊕	13-Nov	Consumer inflation CPI (yoy) - final data	Oct	3.1% ▲	3.0%	--
⊕⊕	13-Nov	Trade balance (EUR mn)‡	Sep	1 238 ▲	989	1 400 ◡
⊕⊕	13-Nov	Exports (EUR mn)‡	Sep	21 109 ▲	18 031	20 915 ▲
⊕⊕	13-Nov	Current account balance (EUR mn)‡	Sep	1 072 ▼	1 275	1 618 ◡
⊕⊕⊕⊕	16-Nov	Core CPI (excluding food and energy, yoy)	Oct	4.2% ▼	4.3%	4.2% ○
⊕⊕	19-Nov	Average gross salary (yoy)	Oct	4.7% ▼	5.6%	4.8% ◡
⊕	19-Nov	Employment (yoy)	Oct	-1.0% ▲	-1.2%	-1.1% ▲
⊕⊕⊕⊕	20-Nov	Sold industrial production (yoy)	Oct	1.0% ▼	5.9%	0.6% ▲
⊕⊕	20-Nov	Producer inflation PPI (yoy)‡	Oct	-0.4% ▲	-1.4%	-0.9% ▲
<b>US</b> 						
⊕⊕⊕⊕	12-Nov	Consumer inflation CPI (mom)	Oct	0.0% ▼	0.2%	0.1% ◡
⊕⊕⊕⊕	12-Nov	Consumer inflation CPI (yoy)	Oct	1.2% ▼	1.4%	1.3% ◡
⊕⊕	13-Nov	University of Michigan confidence index - preliminary data	Nov	77.0 ▼	81.8	82.0 ◡
⊕⊕⊕⊕	17-Nov	Industrial production (mom)‡	Oct	1.1% ▲	-0.4%	1.0% ▲
⊕⊕	17-Nov	Retail sales (excluding autos, mom)‡	Oct	0.2% ▼	1.2%	0.6% ◡
⊕	17-Nov	Capacity utilization‡	Oct	72.8% ▲	72.0%	72.3% ▲
⊕⊕	19-Nov	Philadelphia Fed business outlook	Nov	26.3 ▼	32.3	22.5 ▲
<b>Eurozone</b> 						
⊕	10-Nov	ZEW survey expectations	Nov	32.8 ▼	52.3	--
⊕⊕⊕⊕	12-Nov	Industrial production (sa, mom)‡	Sep	-0.4% ▼	0.6%	0.6% ◡
⊕⊕⊕⊕	12-Nov	Industrial production (wda, yoy)‡	Sep	-6.8% ▼	-6.7%	-5.8% ◡
⊕⊕⊕⊕⊕	13-Nov	GDP (sa, yoy) - preliminary data‡	3Q	-4.4% -	-4.4%	-4.3% ◡
⊕⊕⊕⊕⊕	13-Nov	GDP (sa, qoq) - preliminary data‡	3Q	12.6% -	12.6%	12.7% ◡
⊕	13-Nov	Trade balance (EUR mn)‡	Sep	24.8 ▲	13.9	--
⊕⊕⊕⊕	18-Nov	Consumer inflation CPI (yoy) - final data	Oct	-0.3% -	-0.3%	-0.3% ○
⊕⊕⊕⊕	18-Nov	Core CPI (yoy) - final data	Oct	0.2% -	0.2%	0.2% ○
⊕	20-Nov	Consumer confidence - estimation	Nov	-17.6 ▼	-15.5	-18.0 ◡
<b>Germany</b> 						
⊕⊕⊕⊕	12-Nov	Harmonized consumer inflation HICP (yoy) - final data	Oct	-0.5% -	-0.5%	-0.5% ○
⊕⊕⊕⊕	12-Nov	Consumer inflation CPI (yoy) - final data	Oct	-0.2% -	-0.2%	-0.2% ○
<b>France</b> 						
⊕⊕⊕⊕	10-Nov	Industrial production (yoy)‡	Sep	-6.0% ▲	-6.4%	-5.5% ◡
⊕⊕⊕⊕	13-Nov	Harmonized consumer inflation HICP (yoy) - final data‡	Oct	0.1% -	0.1%	0.0% ▲
⊕⊕⊕⊕	13-Nov	Consumer inflation CPI (yoy) - final data	Oct	0.0% -	0.0%	0.0% ○
<b>Italy</b> 						

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>
<b>UK</b> 						
🔊🔊	10-Nov	Unemployment rate (ILO, 3-months)	Sep	4.8% ▲	4.5%	4.8% ○
🔊🔊🔊🔊	12-Nov	GDP (yoy) - preliminary data	3Q	-9.6% ▲	-21.5%	-9.4% ◡
🔊🔊🔊🔊	12-Nov	GDP (qoq) - preliminary data	3Q	15.5% ▲	-19.8%	15.8% ◡
🔊🔊🔊	12-Nov	Industrial production (yoy)	Sep	-6.3% ▲	-6.4%	-6.0% ◡
🔊🔊🔊	18-Nov	Consumer inflation CPI (yoy)	Oct	0.7% ▲	0.5%	0.5% ▲
<b>Japan</b> 						
🔊🔊🔊🔊	16-Nov	GDP (annualized, qoq) - preliminary data‡	3Q	21.4% ▲	-28.8%	18.9% ▲
🔊🔊🔊🔊	16-Nov	GDP (qoq, sa) - preliminary data‡	3Q	5.0% ▲	-8.2%	4.4% ▲
🔊🔊🔊	16-Nov	Industrial production (yoy) - final data	Sep	-9.0% =	-9.0%	--
🔊🔊🔊	20-Nov	Consumer inflation CPI (yoy)	Oct	-0.4% ▼	0.0%	-0.4% ○
🔊🔊	20-Nov	Composite PMI - preliminary data	Nov	47.0 ▼	48.0	--
🔊🔊	20-Nov	Manufacturing PMI - preliminary data	Nov	48.3 ▼	48.7	--
<b>Chile</b> 						
🔊🔊	09-Nov	Copper exports (USD mn)‡	Oct	3 211 ▲	3 166	--
🔊🔊🔊🔊	18-Nov	GDP (yoy)‡	3Q	-9.1% ▲	-14.5%	-9.2% ▲
<b>Canada</b> 						
🔊🔊🔊	18-Nov	Consumer inflation CPI (yoy)	Oct	0.7% ▲	0.5%	0.4% ▲

<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

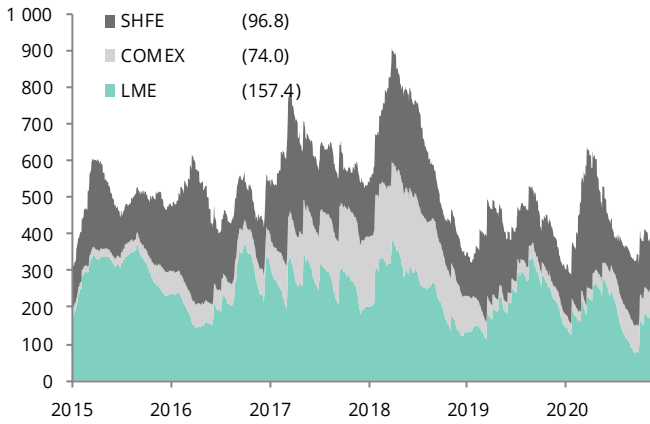
### Key base & precious metal prices, exchange rates and other important market factors

<i>(as of: 20-Nov-20)</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	7 178.50	▲ 3.5%	▲ 8.6%	▲ 16.6%	▲ 23.5%	6 003.39	4 617.50	7 178.50	
Molybdenum	9.13	▲ 2.9%	▲ 12.0%	▼ -0.8%	▼	8.60	7.00	10.90	
Nickel	15 870.00	▲ 2.2%	▲ 10.3%	▲ 13.4%	▲ 10.1%	13 448.31	11 055.00	16 064.00	
Aluminum	1 984.00	▲ 4.9%	▲ 14.2%	▲ 10.2%	▲ 13.2%	1 667.81	1 421.50	1 984.00	
Tin	18 890.00	▲ 2.7%	▲ 8.2%	▲ 12.1%	▲ 15.7%	16 875.86	13 400.00	19 075.00	
Zinc	2 787.00	▲ 6.6%	▲ 15.5%	▲ 21.5%	▲ 19.7%	2 206.33	1 773.50	2 787.00	
Lead	1 987.00	▲ 8.1%	▲ 10.3%	▲ 3.3%	▲ 0.7%	1 802.11	1 576.50	2 027.00	
<b>LBMA (USD/troz)</b>									
Silver	24.17	▼ -6.3%	▲ 1.9%	▲ 33.9%	▲ 41.4%	20.07	12.01	28.89	
Gold <sup>2</sup>	1 875.70	▼ -3.4%	▼ -0.6%	▲ 23.2%	▲ 27.9%	1 761.56	1 474.25	2 067.15	
<b>LPPM (USD/troz)</b>									
Platinum <sup>2</sup>	956.00	▲ 4.9%	▲ 8.1%	▼ -1.5%	▲ 4.0%	868.75	593.00	1 017.00	
Palladium <sup>2</sup>	2 337.00	▼ -4.6%	▲ 0.1%	▲ 21.7%	▲ 32.5%	2 175.50	1 557.00	2 781.00	
<b>FX <sup>3</sup></b>									
EURUSD	1.1863	▼ -0.1%	▲ 1.3%	▲ 5.6%	▲ 7.0%	1.1337	1.0707	1.1987	
EURPLN	4.4679	▼ -1.3%	▼ -1.3%	▲ 4.9%	▲ 4.0%	4.4409	4.2279	4.6330	
USDPLN	3.7677	▼ -1.4%	▼ -2.5%	▼ -0.8%	▼ -2.7%	3.9226	3.6707	4.2654	
USDCAD	1.3071	▲ 0.2%	▼ -2.0%	▲ 0.6%	▼ -1.6%	1.3482	1.2970	1.4496	
USDCNY	6.5630	▼ -0.7%	▼ -3.4%	▼ -5.7%	▼ -6.7%	6.9450	6.5568	7.1671	
USDCLP	758.62	▲ 0.9%	▼ -3.3%	▲ 1.9%	▼ -4.8%	798.35	748.74	867.83	
<b>Money market</b>									
3m LIBOR USD	0.205	▼ 0.00	▼ -0.03	▼ -1.70	▼ -1.70	0.699	0.205	1.900	
3m EURIBOR	-0.528	▼ -0.02	▼ -0.03	▼ -0.15	▼ -0.12	-0.414	-0.528	-0.161	
3m WIBOR	0.220	- 0.00	- 0.00	▼ -1.49	▼ -1.49	0.713	0.220	1.710	
5y USD interest rate swap	0.440	▲ 0.02	▲ 0.09	▼ -1.29	▼ -1.11	0.606	0.243	1.693	
5y EUR interest rate swap	-0.467	▲ 0.02	▼ -0.04	▼ -0.36	▼ -0.26	-0.331	-0.490	-0.090	
5y PLN interest rate swap	0.615	▲ 0.10	▲ 0.11	▼ -1.17	▼ -1.14	0.860	0.443	2.050	
<b>Fuel</b>									
WTI Cushing	42.15	▲ 13.5%	▲ 4.8%	▼ -31.0%	▼ -28.0%	38.39	-37.63	63.27	
Brent	44.32	▲ 14.2%	▲ 8.2%	▼ -33.3%	▼ -29.7%	41.38	17.32	69.02	
Diesel NY (ULSD)	128.63	▲ 12.6%	▲ 12.2%	▼ -36.5%	▼ -33.9%	122.38	60.67	206.01	
<b>Others</b>									
VIX	23.70	▼ -1.16	▼ -2.67	▲ 9.92	▲ 10.57	30.09	12.10	82.69	
BBG Commodity Index	74.14	▲ 1.8%	▲ 4.6%	▼ -8.3%	▼ -5.7%	69.26	59.48	81.64	
S&P500	3 557.54	▲ 1.4%	▲ 5.8%	▲ 10.1%	▲ 14.6%	3 162.47	2 237.40	3 626.91	
DAX	13 137.25	▲ 5.3%	▲ 3.0%	▼ -0.8%	▼ 0.0%	12 219.30	8 441.71	13 789.00	
Shanghai Composite	3 377.73	▲ 2.0%	▲ 5.0%	▲ 10.7%	▲ 16.3%	3 091.88	2 660.17	3 451.09	
WIG 20	1 820.85	▲ 7.3%	▲ 6.3%	▼ -15.3%	▼ -16.5%	1 774.79	1 305.73	2 200.10	
KGHM	142.50	▲ 3.4%	▲ 20.8%	▲ 49.1%	▲ 55.1%	101.04	49.40	144.90	

° 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>

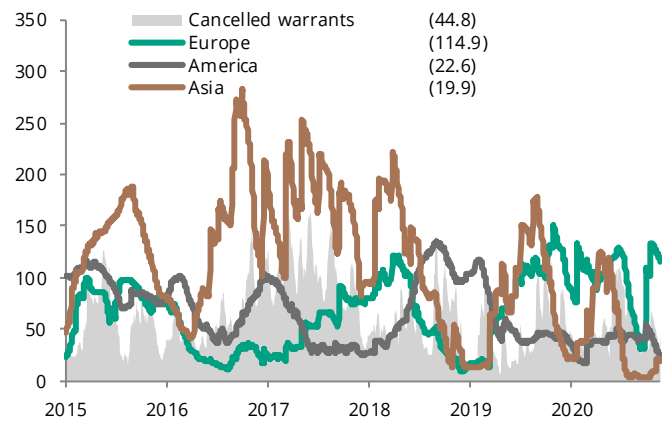
Source: Bloomberg, KGHM Polska Miedź

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



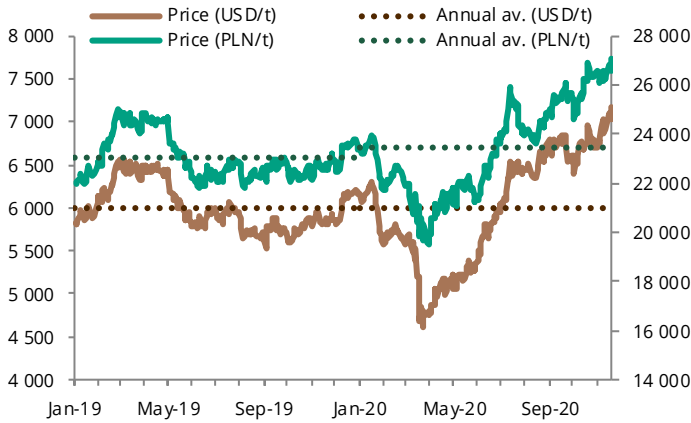
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



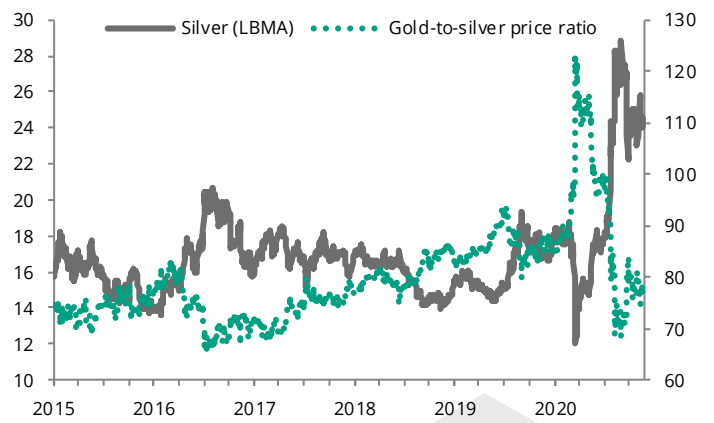
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



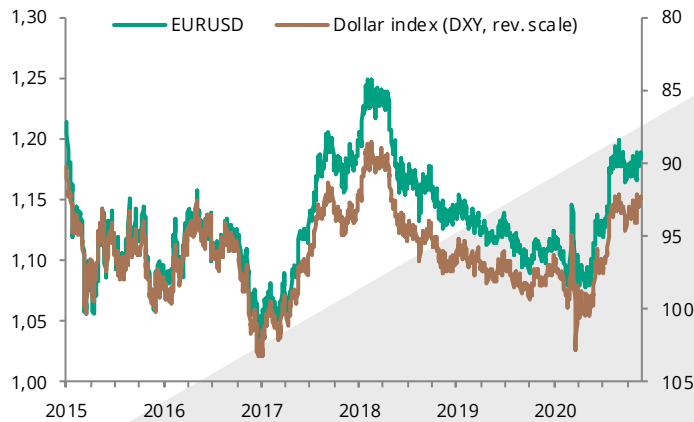
Source: Bloomberg, KGHM Polska Miedź

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



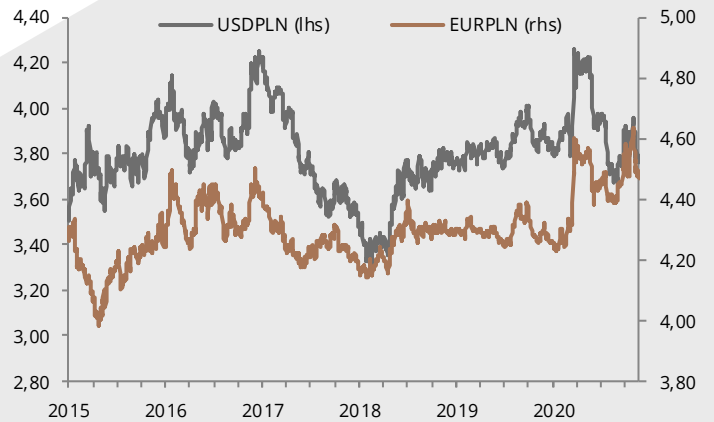
Source: Bloomberg, KGHM Polska Miedź

**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: **9 – 22 November 2020.**

- 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](http://thebulliondesk.com), ▪ [lbma.org.uk](http://lbma.org.uk), ▪ [lme.co.uk](http://lme.co.uk), ▪ [metalbulletin.com](http://metalbulletin.com), ▪ [nbp.pl](http://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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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