

# Market Overview

 as of: 16<sup>th</sup> December 2019

- Copper:** Chile is known as the country with the biggest copper production in the world. It's position has not changed over a decade, however there is a new trend visible which shows Chile is steadily shrinking its share in the global copper production. The other countries like Peru, China, Mexico and Democratic Republic of Congo have strengthened their positions (*page 2*).
- Precious metals:** Palladium prices reach new historic record almost every day. It far exceeds gold prices already. Analysts predict it might not be the end of the rally due to the high deficit on the market. Palladium prices increase the most among all other metals. (*page 4*).
- Trade War:** Highly anticipated agreement on 'phase-one' deal has been reached between U.S. and China. However, people cannot be delighted due to the little information that has been provided. Still there is huge uncertainty what was already agreed and the deal wasn't officially signed yet (*page 5*).

## Key market prices

	Close price	2w chng.
<b>LME (USD/t)</b>		
▲ Copper	6 154.00	5.1%
▲ Nickel	14 145.00	3.8%
<b>LBMA (USD/troz)</b>		
▲ Silver	16.94	0.4%
▲ Gold (PM)	1 466.60	0.4%
<b>FX</b>		
▲ EURUSD	1.1174	1.4%
▼ EURPLN	4.2747	-0.6%
▼ USDPLN	3.8234	-2.1%
▼ USDCAD	1.3183	-0.9%
▼ USDCLP	768.69	-5.3%
<b>Stocks</b>		
▲ KGHM	96.50	9.8%

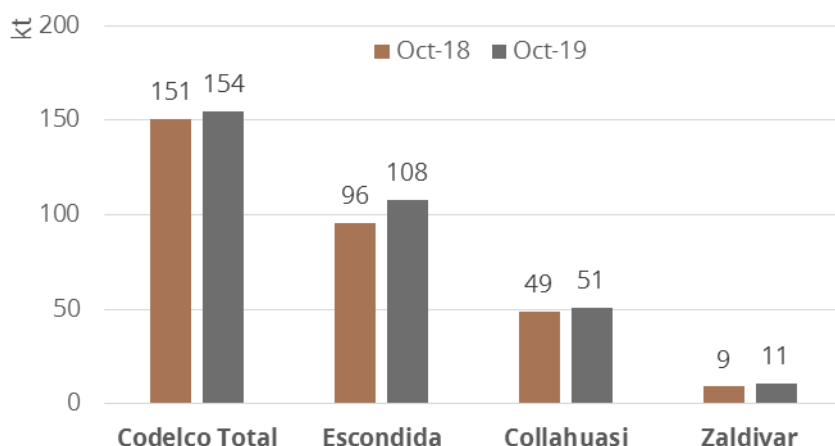
 Source: Bloomberg, KGHM Polska Miedź; (*more on page 9*)

## Important macroeconomic data

Release	For	
 Non-farm payrolls chng.	Nov	266 ▲
 CPI (yoy)	Nov	4.5% ▲
 Copper exports (\$)	Nov	2 772 ▲
 Industr. prod. (wda, yoy)	Oct	-5.3% ▼
 CPI (yoy)	Nov	2.1% ▲

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

## Despite protests, the largest Chilean copper producers recorded in October increases year-on-year



Source: Cochico, KGHM Polska Miedź

## Market Risk Unit

marketrisk@kgm.com

## Base and precious metals | Other commodities

### Copper

**Chile is known as the country with the biggest copper production in the world. It's position has not changed over a decade, however there is a new trend visible which shows Chile is steadily shrinking its share in the global copper production. The other countries like Peru, China, Mexico and Democratic Republic of Congo have strengthened their positions.**

**Global refined copper production rose 32% over the last decade, but production in Chile declined over 25% from 3.3 mln mt to 2.5 mln mt**

#### Chile Loses Share Of World Copper Producer Over A Decade

According to Platts, Chile's share of annual world copper mine production fell to 28% in 2018 from 34% in 2009, as the world's largest copper miner increased annual output over that period at a slower rate of 440,000 mt compared with other countries, according to data released by the International Copper Study Group. "Notable changes in annual mine production levels over 2009-2018 included increases of 1.2 mln mt in Peru (8% compound annual growth rate), 550,000 mt in China (5% CAGR), 900,000 mt in the Democratic Republic of Congo (17% CAGR) and 510,000 mt in Mexico (15% CAGR)," analysts said in the ICSG 2019 Statistical Yearbook. With the slower copper mining growth in Chile, Peru increased its share of world copper mining production to 12% in 2018 from 8% in 2009, the ICSG said. Overall global copper mine production rose 29.6% over the last decade to 20.6 mln mt in 2018 from 15.9 mln mt in 2009. Annual copper mine output in Africa also increased about 1.1 mln mt. World refined copper production rose 32% to 24.1 mln mt in 2018 from 18.2 mln mt in 2009, the ICSG said. Secondary production increased at a slightly higher pace (4%/year) than primary production (3%/year). Production in Chile declined over 25% to 2.5 mln mt from 3.3 mln mt over the 10-year period. China's annual refined copper production increased to 9.3 mln mt in 2018 from 4 mln mt in 2009, a 132.5% increase, according to the ICSG. Annual refined production also significantly increased in DRC, where the startup of several SX-EW plants contributed to an annual copper output of 890,000 mt in 2018, up from 170,000 mt in 2009, ICSG analysts said. Global apparent refined copper usage in China increased in 2018 by about 5.4 mln mt compared with usage in 2009, raising the country's share of world usage to 51% from 40% in that same period, according to the ICSG report. "With the expansion of semis production capacity, refined copper usage increased significantly in the United Arab Emirates (23% CAGR) and in Vietnam (14% CAGR) and to a lesser extent in Indonesia (4%/year), Malaysia 4%/year and Thailand 6%/year," ICSG analysts said. Total world apparent refined usage increased by 37% over the 10-year period.

### Chile's Top Miners Boost Copper Output Even Amid Protests

Chilean copper commission Cochilco informed that copper production at Chile's top mines increased in October, even as protests gripped the nation. Output at top copper miner Codelco increased 2.5% in October over the same month in 2018, to 154,500 tonnes. Production at BHP's Escondida copper mine - the world's largest - rose 12.7% to 108,100 tonnes in October, and the Collahuasi copper mine in northern Chile, a joint-venture between Anglo American and Glencore, produced 50,900 tonnes October, up 3.7%. Weeks of unrest in Chile have led to at least 26 deaths and billions in losses to private businesses and public infrastructure. The protests prompted the central bank to slash forecasts for growth, investment and demand through 2020. Chile's vast copper mines have nonetheless largely maintained production.

### Other important information on copper market:

- Reuters inform, Aurubis AG, Europe's biggest copper smelter, said that an accident at its plant in Olen in Belgium in November has disrupted copper production but that deliveries to customers are continuing normally. A crane collapsed in one section of the Olen tank house holding liquids for copper production on Nov. 19, stopping production of copper cathodes, an Aurubis spokeswoman said. The Olen plant produces about 340,000 tonnes of copper annually with products such as rod and specialty wire mainly for west European markets. "We have been able to support the Olen plant from our smelters in Hamburg and Luenen so metal and product deliveries for customers have not been disrupted," the spokeswoman said. "According to the current status, the unaffected part of the tank house - where production had been stopped for precautionary reasons - is to resume work before the end of this year," she added. "The affected part is to be put back into operation in the second quarter of 2020 at the latest." All other production areas in Olen are continuing as normal. The Aurubis group produces just over 1 mln tonnes of copper cathodes annually.
- Rio Tinto Group plans to invest \$1.5 bln to extend the life of its Kennecott copper complex in the U.S. as it looks to ride a wave of demand for the metal used in electric vehicles and renewable-power technologies. The investment over the next six years will allow mining to continue into a new area of the ore body and deliver about 1 mln tonnes of refined copper between 2026 and 2032. Chief Executive Officer Jean-Sebastien Jacques said Rio is already considering options to extend the operation beyond 2032. Jacques said in a telephone interview. "The U.S. is short on copper and we're pretty keen to be a part of the solutions." The company extracts ore from the Bingham Canyon mine in Utah and sends copper concentrate to Kennecott's smelter to be turned into refined copper. U.S. refined copper supply was about 1.1 mln tonnes in 2018, while U.S. refined demand was about 1.8 mln, according to data compiled by Bloomberg Intelligence. Rio also produces gold, silver, platinum group metals and molybdenum at Kennecott.

- Jiangxi Copper Co, one of China's biggest copper producers, will receive "financial assistance" to the tune of 1.5 bln yuan (\$213.10 mln) from its parent to repay loans and cut financing costs. The support from controlling shareholder Jiangxi Copper Co comes after the state-run company said it would pay \$1.1 bln for an 18% stake in Canadian miner First Quantum Minerals. The transaction would make Jiangxi Copper the single largest shareholder of Toronto-listed company. The financial assistance can only be used by the company to supplement its working capital or repay bank loans. Jiangxi Copper produced 1.46 mln mt copper cathode, 208,300 mt copper concentrates, and 1.12 mln mt processed copper products in 2018.

## Precious Metals

**Palladium prices reach new historic record almost every day. It far exceeds gold prices already. Analysts predict it might not be the end of the rally due to the high deficit on the market. Palladium prices increase the most among all other metals.**

### Palladium Prices Top \$1,900 to the New Record

A move past \$1,900 an ounce for palladium futures marked a fresh record for the precious metal, taking its year-to-date tally to a gain of roughly 60%. Futures prices have set new records every day since Dec. 4. The rally was finished when the market reacted on the trade deal between U.S. and China. The reason for the rally in palladium prices seems to be growing demand and shrinking supply. Widespread power outages in South Africa have led to a decline in platinum group metals production in the nation. South Africa's mining production fell for a third month in a row, down 2.9% year on year in October. Although power challenges are short term, the another problem highlights tighter emission standards requiring more metal. Palladium is primarily used in catalytic converters for vehicles with gasoline-powered engines.

**Futures prices have set new records every day since Dec. 4**

### Top Gold ETF Sees Biggest Outflow in 3 Years

Gold exchange-traded fund investors are selling off holdings as a more positive global outlook decreases their interest in haven assets. On Friday, the 6<sup>th</sup> of December, \$620.7 mln was withdrawn from State Street's SPDR Gold Shares, the most since October 2016. The fund is the largest ETF backed by physical gold. It is said that the move is directly related to the risk-on rally caused by very positive U.S. labour data.

**After U.S. NFP data release, investors changed the strategy to risk-on mood**

## Global economies | Foreign exchange markets

### U.S. and China 'Phase-One' Deal Easing Trade Tensions

**Highly anticipated agreement on 'phase-one' deal has been reached between U.S. and China. However, people cannot be delighted due to the little information that has been revealed. Still there is huge uncertainty what was already agreed and the deal wasn't officially signed yet.**

**Deal or no deal? A lot of ambiguity and little clarity on important details**

The U.S. and China said they agreed to the details of the first phase of a trade agreement in a move that will see the U.S. reduce tariffs and at least temporarily calm fears of an escalating trade war between the world's two largest economies. The deal announced hinges on China increasing purchases of American farm goods such as soybeans and pork, and making new commitments on intellectual property and currency. President Donald Trump said he expects China's agriculture buying "pretty soon," without specifying a timetable. In return, Trump agreed to reduce some existing U.S. tariffs, halving 15% duties on \$120 bln of imports but maintaining a 25% levy on some \$250 bln of Chinese goods. He said he would also delay new import taxes set to take effect on Sunday on \$160 bln of products such as smartphones and toys. The S&P 500 Index swung between gains and losses, while the dollar fluctuated with Treasuries as neither side delivered enough details to calm investors. That mixed market reaction reflected the fact that details of the deal remained murky. While it had been agreed, Chinese officials said, the text still needed to undergo a review by lawyers on both sides, a normal step for trade agreements. U.S. tariffs would be rolled back in stages, they said. The interim deal with China offers a short-term political victory for the president and will allow him to claim that his tariffs have paid dividends. Trump said that negotiations on a phase-two of the agreement would begin immediately. China would like to see the tariffs off and U.S. is ok but they'll use them at a negotiating table for the phase two deal. Many analysts remain sceptical that Trump will be able to conclude those talks on those more intractable issues before the November 2020 election. Chinese officials have privately expressed scepticism that progress can be made past phase one, as have some U.S. business leaders. The reason the president insisted phase-two will start immediately might be the fact that phase-one is very small.

**It's the biggest House of Commons majority for the Conservatives since Margaret Thatcher's 1987 triumph**

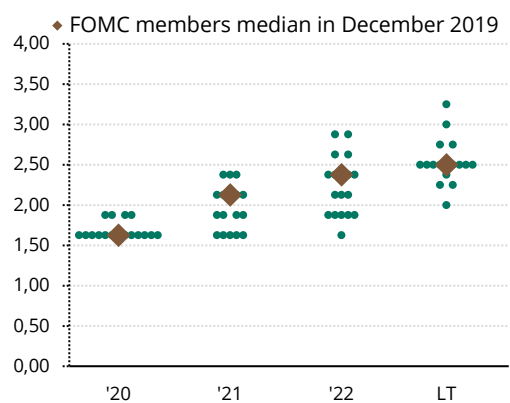
### Boris Johnson Victory Propels Britain Towards Swift Brexit

Britain is speeding towards Brexit after Prime Minister Boris Johnson won a crushing election victory, ending three years of uncertainty since the country decided to leave the bloc. The result represented the biggest House of Commons majority for the Conservatives since Margaret Thatcher's 1987 triumph. Overnight, results pouring in from the 650 parliamentary constituencies around the United Kingdom showed that Johnson's Conservative Party had trounced its main opponent, winning 364 seats to the Labour Party's 203. Sterling jumped by 2.5%, its biggest single rise in nearly three years, on the first signs of the scale of Johnson's victory. Prime Minister is now free to lead his country swiftly out of EU, but faces the daunting task of negotiating trade deals around the world

and of keeping a divided kingdom in one piece. U.S. President Donald Trump was quick to congratulate Johnson and added that they are free to strike a massive new Trade Deal after BREXIT. This deal has the potential to be far bigger and more lucrative than any deal that could be made with the E.U. There is, on the other hand a very different picture in Scotland, where the anti-Brexit, pro-independence Scottish National Party (SNP) won 48 out of 59 Commons seats by thrashing both the Conservatives and Labour. Nicola Sturgeon, SNP leader and first minister of Scotland said that Boris Johnson may have a mandate to take England out of the European Union but does not have a mandate to take Scotland out of the European Union. She insist on having the second referendum on Scotland's independence, however the only problem might be Johnson's approval.

### Other important information on global economies:

FOMC Dot Plot December 2019







Source: Bloomberg, KGHM Polska Miedź

- The U.S. Federal Reserve held interest rates steady and signaled borrowing costs will not change anytime soon, with moderate economic growth and historically low unemployment expected to persist through the 2020 presidential election. The policy decision left the Fed's benchmark overnight lending rate in its current target range between 1.50% and 1.75%. The vote on its latest policy statement showed 13 of 17 Fed policymakers foresee no change in interest rates until at least 2021. Notably, no policymakers suggested lower rates would be appropriate in coming months.
- The U.S. proposed tariffs of up to 100% on roughly \$2.4 bln in French products, in response to a tax on digital revenues that hits large American tech companies including Google, Apple, Facebook and Amazon. Sparkling wine, cheeses and handbags are on the list of potential tariff targets. The tariffs would be imposed after a public comment period concludes in early 2020 and interested parties have a chance to weigh in on the proposed duties. USTR is exploring whether to open investigations into similar digital taxes imposed by Austria, Italy and Turkey.
- President Donald Trump is reinstating tariffs on steel and aluminum from Argentina and Brazil, nations. He criticized for cheapening their currencies to the detriment of U.S. farmers. The president's action amounts to retaliation against two nations that have become alternative suppliers of soybeans and other agricultural products to China, grabbing market share away from the U.S. Rural voters, including farmers, are a key constituency for Trump as he heads into the 2020 presidential elections.
- As expected, OPEC and its non-member partners (OPEC+) announced that the group will reduce its production target by an additional 500,000 barrels a day, bringing total cuts down by 1.7 mln barrels a day from the baseline level as of October 2018. OPEC's 14 members control 35 percent of global oil supplies and 82 percent of proven reserves. With the addition of the 10 Non-OPEC nations, notable among them Russia, Mexico and Kazakhstan, those shares increase to 55 percent and 90 percent respectively. This affords OPEC+ a level of influence over the world economy never seen before.

# Macroeconomic calendar

## Important macroeconomic data releases

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>
<b>China</b> 						
🔴🔴🔴	02-Dec	Caixin's manufacturing PMI	Nov	51.8 ▲	51.7	51.5 ▲
🔴	07-Dec	Foreign reserves (USD bn)	Nov	3 096 ▼	3 105	3 100 ▼
🔴🔴	08-Dec	Trade balance (USD bn)‡	Nov	38.7 ▼	42.5	44.5 ▼
🔴🔴	08-Dec	Exports (yoy)‡	Nov	-1.1% ▼	-0.8%	0.8% ▼
🔴🔴🔴🔴	10-Dec	Consumer inflation CPI (yoy)	Nov	4.5% ▲	3.8%	4.3% ▲
🔴🔴	10-Dec	Producer inflation PPI (yoy)	Nov	-1.4% ▲	-1.6%	-1.5% ▲
🔴	10-Dec	New yuan loans (CNY bn)	Nov	1 390 ▲	661	1 200 ▲
<b>Poland</b> 						
🔴🔴🔴	02-Dec	Manufacturing PMI	Nov	46.7 ▲	45.6	46.3 ▲
🔴🔴🔴🔴🔴	04-Dec	NBP base rate decision	Dec	1.50% -	1.50%	1.50% ○
🔴🔴🔴🔴	13-Dec	Consumer inflation CPI (yoy) - final data	Nov	2.6% -	2.6%	--
<b>US</b> 						
🔴🔴🔴	02-Dec	Manufacturing PMI - final data‡	Nov	52.6 -	52.6	52.2 ▲
🔴🔴	02-Dec	ISM Manufacturing	Nov	48.1 ▼	48.3	49.2 ▼
🔴🔴🔴	04-Dec	Composite PMI - final data‡	Nov	52.0 -	52.0	--
🔴🔴🔴	04-Dec	PMI services - final data	Nov	51.6 ▲	50.6	51.6 ○
🔴🔴	05-Dec	Durable goods orders - final data	Oct	0.5% ▼	0.6%	0.6% ▼
🔴🔴	06-Dec	Change in non-farm payrolls (ths)‡	Nov	266 ▲	156	180 ▲
🔴🔴	06-Dec	Underemployment rate (U6)	Nov	6.9% ▼	7.0%	--
🔴🔴	06-Dec	Unemployment rate	Nov	3.5% ▼	3.6%	3.6% ▼
🔴🔴	06-Dec	University of Michigan confidence index - preliminary data	Dec	99.2 ▲	96.8	97.0 ▲
🔴	06-Dec	Average hourly earnings (yoy)‡	Nov	3.1% ▼	3.2%	3.0% ▲
🔴🔴🔴🔴🔴	11-Dec	FOMC base rate decision - upper bound (Fed)	Dec	1.75% -	1.75%	1.75% ○
🔴🔴🔴🔴🔴	11-Dec	FOMC base rate decision - lower bound (Fed)	Dec	1.50% -	1.50%	1.50% ○
🔴🔴🔴🔴	11-Dec	Consumer inflation CPI (mom)	Nov	0.3% ▼	0.4%	0.2% ▲
🔴🔴🔴🔴	11-Dec	Consumer inflation CPI (yoy)	Nov	2.1% ▲	1.8%	2.0% ▲
🔴🔴	13-Dec	Retail sales (excluding autos, mom)‡	Nov	0.1% ▼	0.3%	0.4% ▼
<b>Eurozone</b> 						
🔴🔴🔴	02-Dec	Manufacturing PMI - final data‡	Nov	46.9 -	46.9	46.6 ▲
🔴🔴	03-Dec	Producer inflation PPI (yoy)	Oct	-1.9% ▼	-1.2%	-1.8% ▼
🔴🔴🔴	04-Dec	Composite PMI - final data	Nov	50.6 -	50.6	50.3 ▲
🔴🔴🔴	04-Dec	Services PMI - final data‡	Nov	51.9 -	51.9	51.5 ▲
🔴🔴🔴🔴🔴	05-Dec	GDP (sa, yoy) - final data	3Q	1.2% -	1.2%	1.2% ○
🔴🔴🔴🔴🔴	05-Dec	GDP (sa, qoq) - final data	3Q	0.2% -	0.2%	0.2% ○
🔴🔴🔴	05-Dec	Gross fixed capital (qoq)‡	3Q	0.3% ▼	5.7%	0.3% ○
🔴🔴🔴	05-Dec	Households consumption (qoq)	3Q	0.5% ▲	0.2%	0.3% ▲
🔴🔴	05-Dec	Retail sales (yoy)‡	Oct	1.4% ▼	2.7%	2.2% ▼
🔴	10-Dec	ZEW survey expectations	Dec	11.2 ▲	- 1.0	--
🔴🔴🔴🔴🔴	12-Dec	ECB main refinancing rate	Dec	0.00% -	0.00%	0.00% ○
🔴🔴🔴🔴🔴	12-Dec	ECB deposit facility rate	Dec	-0.5% -	-0.5%	-0.5% ○
🔴🔴🔴🔴	12-Dec	Industrial production (sa, mom)‡	Oct	-0.5% ▼	-0.1%	-0.5% ○
🔴🔴🔴🔴	12-Dec	Industrial production (wda, yoy)‡	Oct	-2.2% ▼	-1.8%	-2.4% ▲



Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>	
<b>Germany</b>							
☉☉☉	02-Dec	Manufacturing PMI - final data‡	Nov	44.1 -	44.1	43.8	
☉☉☉	04-Dec	Composite PMI - final data‡	Nov	49.4 -	49.4	49.2	
☉☉☉	05-Dec	Factory orders (wda, yoy)‡	Oct	-5.5% ▼	-5.0%	-4.7%	
☉☉☉☉	06-Dec	Industrial production (wda, yoy)‡	Oct	-5.3% ▼	-4.5%	-3.6%	
☉☉☉☉	12-Dec	Harmonized consumer inflation HICP (yoy) - final data	Nov	1.2% -	1.2%	1.2%	
☉☉☉☉	12-Dec	Consumer inflation CPI (yoy) - final data	Nov	1.1% -	1.1%	1.1%	
<b>France</b>							
☉☉☉	02-Dec	Manufacturing PMI - final data‡	Nov	51.7 -	51.7	51.6	
☉☉☉	04-Dec	Composite PMI - final data‡	Nov	52.1 -	52.1	52.7	
☉☉☉☉	10-Dec	Industrial production (yoy)‡	Oct	-0.2% ▼	0.2%	-0.4%	
☉☉☉☉	12-Dec	Harmonized consumer inflation HICP (yoy) - final data	Nov	1.2% -	1.2%	1.2%	
☉☉☉☉	12-Dec	Consumer inflation CPI (yoy) - final data	Nov	1.0% -	1.0%	1.0%	
<b>Italy</b>							
☉☉☉	02-Dec	Manufacturing PMI	Nov	47.6 ▼	47.7	47.5	
☉☉☉	04-Dec	Composite PMI	Nov	49.6 ▼	50.8	50.6	
☉☉☉☉	10-Dec	Industrial production (wda, yoy)‡	Oct	-2.4% ▼	-2.2%	-2.0%	
<b>UK</b>							
☉☉☉	02-Dec	Manufacturing PMI (sa) - final data	Nov	48.9 ▼	49.6	48.3	
☉☉☉	04-Dec	Composite PMI - final data	Nov	49.3 ▼	50.0	48.5	
☉☉☉☉	10-Dec	Industrial production (yoy)	Oct	-1.3% ▲	-1.4%	-1.2%	
<b>Japan</b>							
☉☉☉	02-Dec	Manufacturing PMI - final data‡	Nov	48.9 -	48.9	--	
☉☉☉	04-Dec	Composite PMI - final data	Nov	49.8 ▲	49.1	--	
☉☉☉☉☉	09-Dec	GDP (annualized, qoq) - final data	3Q	1.8% ▲	0.2%	0.6%	
☉☉☉☉☉	09-Dec	GDP (qoq, sa) - final data	3Q	0.4% ▲	0.1%	0.2%	
☉☉☉☉	13-Dec	Industrial production (yoy) - final data	Oct	-7.7% ▼	-7.4%	--	
<b>Chile</b>							
☉☉☉☉	02-Dec	Economic activity (yoy)	Oct	-3.4% ▼	3.0%	-0.5%	
☉☉☉☉☉	04-Dec	BCCh overnight rate target	Dec	1.75% -	1.75%	1.50%	
☉☉	05-Dec	Nominal wages (yoy)	Oct	4.5% ▲	4.4%	--	
☉☉☉	09-Dec	Copper exports (USD mn)	Nov	2 772 ▲	2 515	--	
<b>Canada</b>							
☉☉☉☉☉	04-Dec	BoC base rate decision	Dec	1.75% -	1.75%	1.75%	
☉☉☉	06-Dec	Net change in employment (ths)	Nov	- 71.2 ▼	- 1.8	10.0	
☉☉☉	11-Dec	Capacity utilization	3Q	81.7% ▼	83.3%	82.1%	

<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

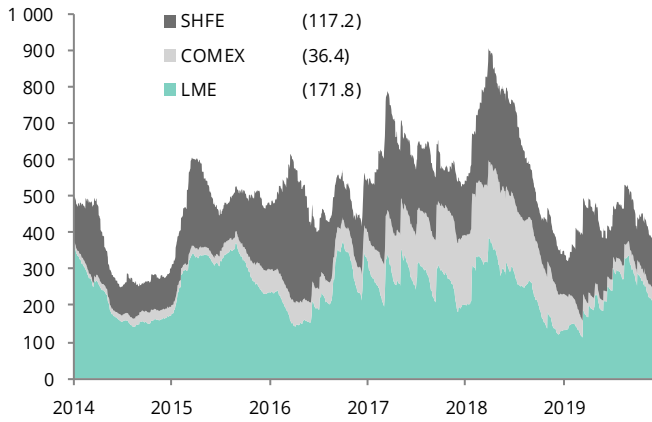
### Key base & precious metal prices, exchange rates and other important market factors

(as of: 13-Dec-19)		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	6 154.00	▲	5.1%	▲	7.4%	▲	3.2%	▼	-0.7%	5 992.88	5 537.00	6 572.00
Molybdenum	9.15	-	0.0%	▼	-22.3%	-	-	-	-	11.41	8.28	12.70
Nickel	14 145.00	▲	3.8%	▼	-19.5%	▲	33.5%	▲	31.0%	13 928.93	10 440.00	18 625.00
Aluminum	1 763.50	▼	-1.5%	▲	3.5%	▼	-5.7%	▼	-8.3%	1 791.78	1 697.00	1 923.00
Tin	17 200.00	▲	4.2%	▲	7.1%	▼	-11.8%	▼	-11.4%	18 703.33	15 710.00	21 925.00
Zinc	2 279.00	▼	-0.3%	▼	-4.1%	▼	-9.2%	▼	-15.1%	2 556.37	2 211.00	3 018.00
Lead	1 934.00	▲	1.2%	▼	-7.2%	▼	-3.7%	▼	-1.0%	2 003.78	1 768.00	2 267.00
<b>LBMA (USD/troz)</b>												
Silver	16.94	▲	0.4%	▼	-1.9%	▲	9.5%	▲	15.4%	16.16	14.38	19.31
Gold <sup>2</sup>	1 466.60	▲	0.4%	▼	-1.3%	▲	14.4%	▲	18.0%	1 389.51	1 269.50	1 546.10
<b>LPPM (USD/troz)</b>												
Platinum <sup>2</sup>	933.00	▲	4.0%	▲	3.7%	▲	17.5%	▲	17.5%	860.57	782.00	977.00
Palladium <sup>2</sup>	1 971.00	▲	6.1%	▲	17.7%	▲	56.1%	▲	56.2%	1 524.09	1 267.00	1 971.00
<b>FX<sup>3</sup></b>												
EURUSD	1.1174	▲	1.4%	▲	2.6%	▼	-2.4%	▼	-1.7%	1.1197	1.0889	1.1535
EURPLN	4.2747	▼	-0.6%	▼	-2.3%	▼	-0.6%	▼	-0.4%	4.3004	4.2406	4.3891
USDPLN	3.8234	▼	-2.1%	▼	-4.4%	▲	1.7%	▲	1.3%	3.8405	3.7243	4.0154
USDCAD	1.3183	▼	-0.9%	▼	-0.5%	▼	-3.4%	▼	-1.3%	1.3276	1.3038	1.3600
USDCNY	6.9852	▼	-0.8%	▼	-2.3%	▲	1.6%	▲	1.5%	6.9033	6.6872	7.1789
USDCLP	768.69	▼	-5.3%	▲	5.9%	▲	10.6%	▲	13.2%	700.64	649.22	828.25
<b>Money market</b>												
3m LIBOR USD	1.900	▼	0.00	▼	-0.19	▼	-0.91	▼	-0.89	2.343	1.885	2.804
3m EURIBOR	-0.400	-	0.00	▲	0.02	▼	-0.09	▼	-0.09	-0.355	-0.448	-0.306
3m WIBOR	1.700	▼	-0.01	▼	-0.02	▼	-0.02	▼	-0.02	1.718	1.700	1.720
5y USD interest rate swap	1.630	▲	0.02	▲	0.13	▼	-0.94	▼	-1.23	1.968	1.254	2.715
5y EUR interest rate swap	-0.195	▼	-0.01	▲	0.21	▼	-0.39	▼	-0.47	-0.140	-0.553	0.222
5y PLN interest rate swap	1.665	▼	-0.02	▲	0.02	▼	-0.45	▼	-0.56	1.866	1.440	2.240
<b>Fuel</b>												
WTI Cushing	60.07	▲	7.3%	▲	11.1%	▲	32.3%	▲	14.2%	56.84	46.54	66.40
Brent	66.90	▲	10.1%	▲	11.8%	▲	25.8%	▲	10.3%	63.92	53.83	73.89
Diesel NY (ULSD)	198.64	▲	5.1%	▲	4.2%	▲	18.1%	▲	5.8%	193.49	170.01	212.40
<b>Others</b>												
VIX	12.63	▼	-2.28	▼	-3.61	▼	-12.79	▼	-8.02	15.50	11.54	25.45
BBG Commodity Index	79.41	▲	3.0%	▲	2.1%	▲	3.5%	▼	-3.8%	79.37	75.97	83.06
S&P500	3 168.80	▲	1.8%	▲	6.5%	▲	26.4%	▲	19.6%	2 899.53	2 447.89	3 168.80
DAX	13 282.72	▲	2.5%	▲	6.9%	▲	25.8%	▲	21.6%	12 069.71	10 416.66	13 289.46
Shanghai Composite	2 967.68	▲	3.2%	▲	2.2%	▲	19.0%	▲	12.7%	2 915.05	2 464.36	3 270.80
WIG 20	2 106.51	▼	-0.7%	▼	-3.1%	▼	-7.5%	▼	-8.8%	2 254.72	2 047.34	2 414.41
KGHM	96.50	▲	9.8%	▲	20.6%	▲	8.6%	▲	6.7%	92.76	73.76	112.00

<sup>o</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>

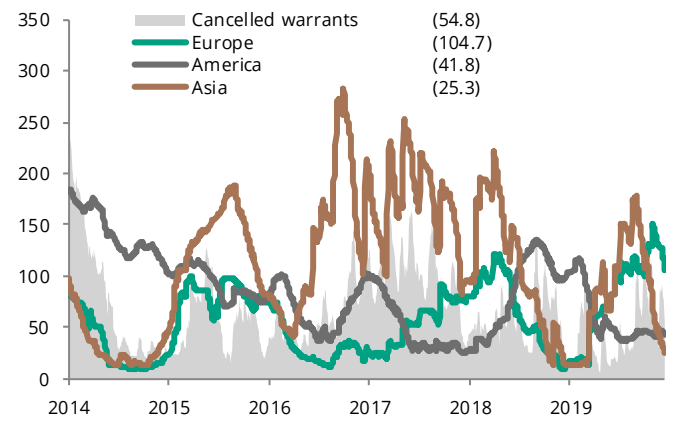
Source: Bloomberg, KGHM Polska Miedź

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



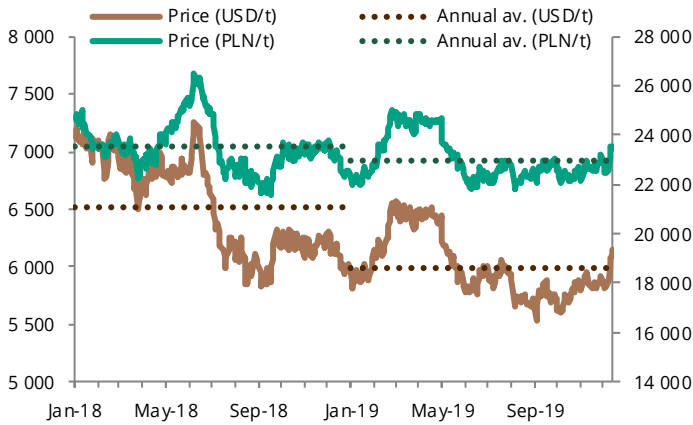
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



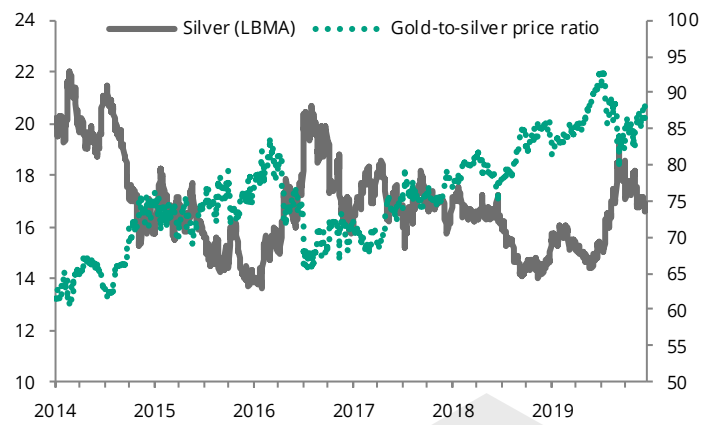
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



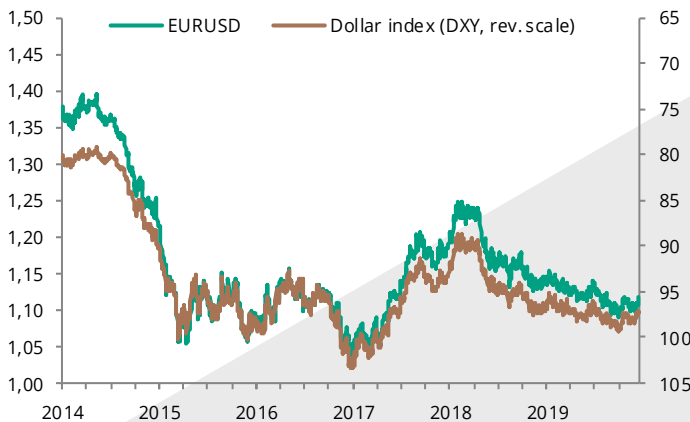
Source: Bloomberg, KGHM Polska Miedź

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



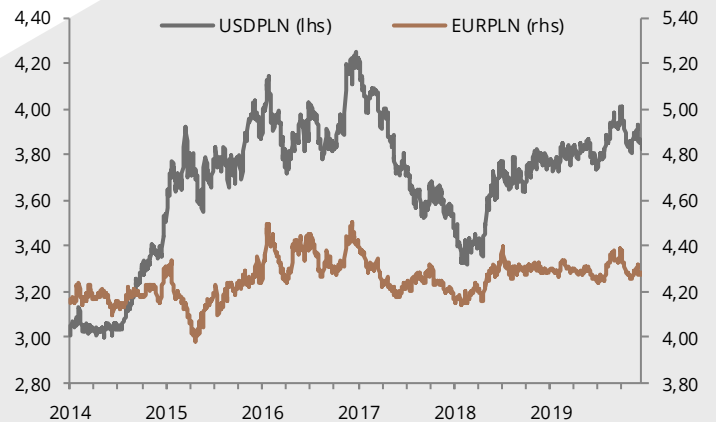
Source: Bloomberg, KGHM Polska Miedź

**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:  
**2<sup>nd</sup> December 2019 – 15<sup>th</sup> December 2019.**

- 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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