

Market Overview

as of: 17th December 2018






- Copper:** Premiums for imports of copper into China, the world's biggest copper consumer, sank to an 18-month low lately, in a sign that demand for physical metal is waning after a buying spree. The final takeover of the majority stake granting control over the Grasberg mine by the Indonesian state-owned Asahan company is expected to take place this month (*page 2*).
- Precious metals:** Smaller number of market-implied interest rate increases in the US in 2019 and the negative comments of President Donald Trump regarding monetary policy tightening contributed to the change in investors' perception of safe haven assets, which in turn led to increases in the gold and silver price market. In the meantime, Gold Industrialists' Union recorded a 3% increase in Russian gold production after three quarters of 2018 (*page 4*).
- Eurozone:** Disappointing indicators in the euro area in recent months do not fill with optimism for the upcoming year 2019. Particularly worrying is the situation in France, where the "Yellow Vests" protests disrupted business (*page 6*).

Key market prices

	Close price	2w chng.
LME (USD/t)		
▲ Copper	6 191.50	0.4%
▲ Nickel	12 470.00	0.6%
LBMA (USD/troz)		
▲ Silver	14.61	1.0%
▲ Gold (PM)	1 227.85	3.4%
FX		
▼ EURUSD	1.1470	-0.1%
▼ EURPLN	4.3049	-0.1%
▲ USDPLN	3.7601	0.1%
▲ USDCAD	1.3104	1.3%
▲ USDCLP	674.68	0.3%
Stocks		
▼ KGHM	84.64	-2.5%

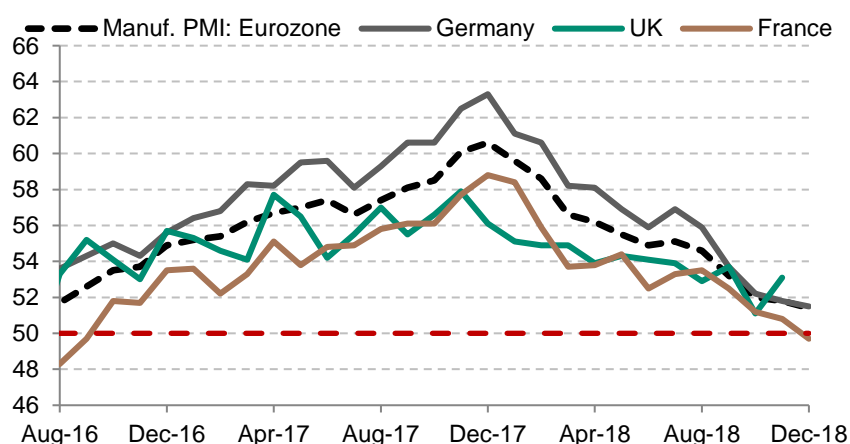
Source: Bloomberg, KGHM Polska Miedź; (*more on page 9*)

Important macroeconomic data

Release	For	
 GDP (yoy)	3Q	6.5% ▼
 CPI (yoy)	Sep	2.3% ▼
 BCCh rate decision	Oct	2.75% ▲
 Industr. prod. (wda, yoy)	Aug	-0.1% ▼
 ZEW survey expectations	Oct	-19.4 ▼

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

Eurozone PMIs disappointed in December



Source: KGHM Polska Miedź, Bloomberg

Market Risk Unit

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Base and precious metals | Other commodities

Copper

Premiums for imports of copper into China, the world's biggest copper consumer, sank to an 18-month low lately, in a sign that demand for physical metal is waning after a buying spree. The final takeover of the majority stake granting control over the Grasberg mine by the Indonesian state-owned Asahan company is expected to take place this month.

Global Copper Demand Rises 33% Over 2008-2017 On Chinese Growth

[The apparent usage of refined copper increased by 33% over 2008-2017 to 23.8 million mt due to rise in Chinese demand, which more than doubled, according to data released Wednesday by the International Copper Study Group. Chinese demand grew by about 6.5 million mt over the 10-year period, accounting for 50% of the world's usage in 2017 compared with 29% in 2008, ICSG analysts said in a report. The world usage excluding China decreased by 5.5% during the period, mainly due to a decline in refined usage in three of the major copper using regions: the European Union, which fell -15%, Japan, which declined -16%, and the US, which was 11% down. However, usage increased significantly in the Middle East/North Africa region, rising 83%, and in the Asia, ex-China/Japan, region, up 25%, ICSG analysts said.

The global copper production rose by around 29% to 20 million mt in 2017 from 15.5 million mt in 2008, with concentrate production rising by around 31% and solvent extraction-electrowinning (SX-EW) by 22%. Mine capacity utilization rates averaged around 84% between 2008 and 2017. But the capacity averaged 82% over the 2009-2011 period due to labor unrest, accidents, technical problems, and temporary shutdowns/production cuts resulting from the financial crisis, the Lisbon-based research group said. The production also was significantly constrained by operational issues in 2017. Mine production growth averaged 2.9%/year over the 10-year period over 2008-2017. However, excluding 2009-2011 production, the growth was around 4%/year, according to ICSG data. The SX-EW share of total mine production declined to 19% in 2017 from 20% in 2008.

Notable changes in annual mine production levels over 2008-2017 included increases of 1.2 million mt in Peru, 600,000 mt in China, 790,000 mt in the Democratic Republic of Congo and 495,000 mt in Mexico, the ICSG noted. Annual production in Chile, by far the world's largest world copper mine producer, increased by only 175,000 mt over the period. Consequently, the country's contribution in the world production declined to 27% from 34%, with Peru and China increasing their shares to 12% and 9% from 8% and 7%, respectively, ICSG analysts said. The revival of the African copper belt led to an increase in African annual copper mine output of around 1.1 million mt. Annual output from

countries that were minor producers in 2008, or where copper mine production was non-existent, increased by around 470,000 mt.

Global refined copper production rose by nearly 29% to 23.5 million mt in 2017 from 18.2 million mt in 2008, with a CAGR of 3%, according to ICSG analysts. Primary (electrolytic and SX-EW) and secondary (from scrap) refined production increased by 27% and 43%, respectively. The share of secondary production in total refined production increased gradually from 15% in 2008 to around 18% over 2011-2013 before stabilizing at around 17%. "Over the 10-year period, China's annual refined production more than doubled from 3.8 million mt to 8.9 million mt, while production in Chile (the second ranked refined copper producer) declined by 20% from 3.1 million mt to 2.4 million mt," ICSG analysts said. The expansion of electrolytic refinery capacity in India and Bulgaria and electrowon capacity in Mexico led to significant increases in annual output in these countries -- 25%, 80% and 50%, respectively -- they added. With the start up of several SX-EW plants, annual production in the DRC grew to 720,000 mt in 2017 from about 60,000 mt in 2008. In North America, production fell by 8.5% to 1.8 million mt over the 2008-2017 period due to refinery closures in both the US and Canada. Refined production in the EU rose by 6.5% to 2.7 million mt/year over the same period, the ICSG said.

Other important information on copper market:

- Premiums for imports of copper into China, the world's biggest copper consumer, sank to an 18-month low on Monday in a sign that demand for physical metal is waning after a buying spree. The premiums, paid on top of benchmark three-month London Metal Exchange (LME) prices, fell 10.7 percent from Friday's levels to \$62.50 a tonne, the lowest since June 2017. "It is possible that in the short term there has been a certain amount of (copper) inventory build in China," said Guy Wolf, global head of market analytics at brokerage Marex Spectron. "And now they are at a point where, especially with Chinese New Year on the horizon, there is no desperate need." Premiums hit three-year highs of \$120 a tonne in late September as an open arbitrage window, which allows copper to be bought on the LME and sold on the Shanghai Futures Exchange for a profit, tempted bargain-hunters. But premiums have almost halved over the past two months and are at their lowest level for this time of year since at least 2011.
- Freeport-McMoRan Inc. and Indonesia are set to wrap up a deal for the giant Grasberg copper and gold mine before Christmas, with all the formalities related to the \$3.85 billion transaction nearly done after almost two years of negotiations. PT Indonesia Asahan Aluminium, the state-owned company buying a majority stake in Freeport's local unit that operates the Grasberg mine, plans to hold a ceremony to mark the completion of the transaction between Dec. 17 and Dec. 21, spokesman Rendi Witular said. All the documentation related to fresh environmental and fiscal terms has been cleared and Freeport has also secured antitrust clearance from China, he said.

- First Quantum Minerals Ltd.'s unit in Zambia will lay off more than 1,000 workers due to the country's adoption of new mining taxes, the nation's state-owned broadcaster reported, citing Labor Minister Joyce Nonde-Simukoko. The copper mining company wrote to the government to inform it about the decision, the Zambia National Broadcasting Corp. reported on Friday. The government will not accept the job cuts because it's of the view that the decision wasn't justified, Nonde-Simukoko said in an interview with the broadcaster. First Quantum is in talks with the government about the issue, company spokesman John Gladston told Bloomberg by phone, while declining to comment further. Zambian lawmakers on Thursday passed a bill that will increase mining royalties by at least 1.5 percentage points, a move the industry said could lead to more than 21,000 job losses and operators cutting \$500 million in capital spending over the next three years.

Precious Metals

Smaller number of market-implied interest rate increases in the US in 2019 and the negative comments of President Donald Trump regarding monetary policy tightening contributed to the change in investors' perception of safe haven assets, which in turn led to increases in the gold and silver price market. In the meantime, Gold Industrialists' Union recorded a 3% increase in Russian gold production after three quarters of 2018.

Russia boosts year-on-year gold output by 3%

Russia's gold production increased by three percent from January through September against the same period a year ago, according to the Gold Industrialists' Union. Gold output reached 243,000 kilograms, the data from the Moscow-based group showed. The significant boost was reportedly due to increased volumes of ore processing in several of the country's gold mines, including Olimpiada, the Blagodatnoe gold-sulfide deposit, the Verninskoe and Kuranakh mines, as well as others.

Production of high karat gold saw a two-percent increase, while by-product gold output was reduced by 13 percent. Scrap gold production declined by four percent. Output of the precious metal from derived products saw an enormous increase of 57 percent.

Russia is currently third in the global rating of gold miners after Australia and China. The Russian gold mining sector has nearly doubled its volume of extraction over the last two decades. Over the last ten years, the country's producers mined 2,189 tons of gold, the Russian Union of Gold Producers reported in January. Earlier this year, the Moscow-based Institute of Geotechnology forecasted that in less than a decade Russia may change its position in the rating of global gold miners. The country is expected to become the world's second-largest producer due to the further boost of production.

After three quarters of 2019 Russia's gold production increased by 3% yoy

Russia's gold production had seen an annual growth by up to seven percent on average in ten years through 2017. Top producer Polyus and Polymetal used to account for most of the growth last year, and are expected to do so again in 2018. Russia may be one of the world's biggest gold producers, but it's just the twentieth in the ranking of the biggest exporters of the precious metal, according to the trade metrics service World's Top Exports. Most of the country's gold is purchased by the government to boost national gold reserves.

Global economies | Foreign exchange markets

France exacerbates Euro-Area slowdown as 2018 draws to a close

Disappointing indicators in the euro area in recent months do not fill with optimism for the upcoming year 2019. Particularly worrying is the situation in France, where the "Yellow Vests" protests disrupted business.

PMI indicators are disappointing







The euro-area economy is closing out 2018 on a gloomy note, with a measure of activity unexpectedly dropping to its lowest in just over four years. The decline in IHS Markit's composite Purchasing Managers' Index was largely driven by France, where the "Yellow Vests" movement disrupted business. The French number dropped below 50, the dividing line between expansion and contraction.

The euro gauge fell to 51.3 in December from 52.7 in November. The services sector was the main source of weakness, even though manufacturing activity also cooled. Economists had forecast that the combined figure would rise slightly. December's decline means the euro-region number has now fallen for nine months this year. That puts weight behind European Central Bank President's Mario Draghi's cautious tone on Thursday, when he said the balance of risks is "moving to the downside."

Draghi made the comment as he confirmed the ECB would cap its quantitative-easing programs at the end of this month. Acknowledging the risks, he added that reinvestments of maturing bonds would continue to provide significant stimulus to the 19-nation economy. IHS Markit said its index suggests the euro area is now barely growing. Forward-looking measures such as new orders and expectations remained subdued. That doesn't bode well for future demand, "adding to downside risks to the immediate outlook," it said. For the fourth quarter as a whole, IHS Markit said its index suggests growth of 0.3 percent, up from 0.2 percent in the previous three months.

Macroeconomic calendar

Important macroeconomic data releases

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²
China 						
☉☉	12-Oct	Trade balance (USD bn)‡	Sep	31.7 ▲	26.7	19.2 ▲
☉☉	12-Oct	Exports (yoy)‡	Sep	14.5% ▲	9.1%	8.2% ▲
☉☉☉☉	16-Oct	Consumer inflation CPI (yoy)	Sep	2.5% ▲	2.3%	2.5% ○
☉☉	16-Oct	Producer inflation PPI (yoy)	Sep	3.6% ▼	4.1%	3.5% ▲
☉	17-Oct	New yuan loans (CNY bn)	Sep	1 380 ▲	1 280	1 359 ▲
☉☉☉☉☉	19-Oct	GDP (yoy)	3Q	6.5% ▼	6.7%	6.6% ◡
☉☉☉☉☉	19-Oct	GDP (sa, qoq)‡	3Q	1.6% ▼	1.7%	1.6% ○
☉☉☉☉	19-Oct	Industrial production (yoy)	Sep	5.8% ▼	6.1%	6.0% ◡
☉☉	19-Oct	Fixed assets investments (ytd, yoy)	Sep	5.4% ▲	5.3%	5.3% ▲
☉	19-Oct	Retail sales (yoy)	Sep	9.2% ▲	9.0%	9.0% ▲
Poland 						
☉☉☉☉	15-Oct	Consumer inflation CPI (yoy) - final data	Sep	1.9% ▲	1.8%	--
☉☉	15-Oct	Trade balance (EUR mn)‡	Aug	- 329 ▲	- 344	- 321 ◡
☉☉	15-Oct	Exports (EUR mn)‡	Aug	17 195 ▼	17 228	16 951 ▲
☉☉	15-Oct	Current account balance (EUR mn)‡	Aug	- 549 ▲	- 750	- 442 ◡
☉☉☉☉	16-Oct	Core CPI (excluding food and energy, yoy)	Sep	0.8% ▼	0.9%	0.9% ◡
☉☉	16-Oct	Average gross salary (yoy)	Sep	6.7% ▼	6.8%	7.1% ◡
☉	16-Oct	Employment (yoy)	Sep	3.2% ▼	3.4%	3.4% ◡
☉☉☉☉	17-Oct	Sold industrial production (yoy)	Sep	2.8% ▼	5.0%	4.1% ◡
☉☉	17-Oct	Producer inflation PPI (yoy)	Sep	2.9% ▼	3.0%	2.9% ○
☉☉☉	19-Oct	Retail sales (yoy)	Sep	5.6% ▼	9.0%	8.1% ◡
US 						
☉☉☉☉	11-Oct	Consumer inflation CPI (mom)	Sep	0.1% ▼	0.2%	0.2% ◡
☉☉☉☉	11-Oct	Consumer inflation CPI (yoy)	Sep	2.3% ▼	2.7%	2.4% ◡
☉☉	12-Oct	University of Michigan confidence index - preliminary data	Oct	99.0 ▼	100	101 ◡
☉☉	15-Oct	Retail sales (excluding autos, mom)‡	Sep	-0.1% ▼	0.2%	0.4% ◡
☉☉☉☉	16-Oct	Industrial production (mom)	Sep	0.3% ▼	0.4%	0.2% ▲
☉	16-Oct	Capacity utilization	Sep	78.1% -	78.1%	78.2% ◡
☉☉	18-Oct	Philadelphia Fed business outlook	Oct	22.2 ▼	22.9	20.0 ▲
Eurozone 						
☉☉☉☉	12-Oct	Industrial production (sa, mom)‡	Aug	1.0% ▲	-0.7%	0.5% ▲
☉☉☉☉	12-Oct	Industrial production (wda, yoy)‡	Aug	0.9% ▲	0.3%	-0.2% ▲
☉	16-Oct	Trade balance (EUR mn)	Aug	11.7 ▼	17.6	--
☉	16-Oct	ZEW survey expectations	Oct	- 19.4 ▼	- 7.2	--
☉☉☉☉	17-Oct	Consumer inflation CPI (yoy) - final data	Sep	2.1% ▲	2.0%	2.1% ○
☉☉☉☉	17-Oct	Core CPI (yoy) - final data	Sep	0.9% -	0.9%	0.9% ○
Germany 						
☉☉☉☉	08-Oct	Industrial production (wda, yoy)‡	Aug	-0.1% ▼	1.5%	-0.1% ○
☉☉☉☉	12-Oct	Harmonized consumer inflation HICP (yoy) - final data	Sep	2.2% -	2.2%	2.2% ○
☉☉☉☉	12-Oct	Consumer inflation CPI (yoy) - final data	Sep	2.3% -	2.3%	2.3% ○
France 						
☉☉☉☉	10-Oct	Industrial production (yoy)‡	Aug	1.6% ▼	1.9%	1.5% ▲
☉☉☉☉	11-Oct	Harmonized consumer inflation HICP (yoy) - final data	Sep	2.5% -	2.5%	2.5% ○
☉☉☉☉	11-Oct	Consumer inflation CPI (yoy) - final data	Sep	2.2% -	2.2%	2.2% ○

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²
Italy						
⊕⊕⊕⊕	10-Oct	Industrial production (wda, yoy)	Aug	-0.8% ▲	-1.3%	-1.5% ▲
⊕⊕⊕⊕	16-Oct	Harmonized consumer inflation HICP (yoy) - final data	Sep	1.5% ▼	1.6%	1.6% ◐
UK						
⊕⊕⊕⊕	10-Oct	Industrial production (yoy)‡	Aug	1.3% ▲	1.0%	1.0% ▲
⊕⊕	16-Oct	Unemployment rate (ILO, 3-months)	Aug	4.0% -	4.0%	4.0% ◐
⊕⊕⊕⊕	17-Oct	Consumer inflation CPI (yoy)	Sep	2.4% ▼	2.7%	2.6% ◐
Japan						
⊕⊕⊕⊕	15-Oct	Industrial production (yoy) - final data	Aug	0.2% ▼	0.6%	--
⊕⊕⊕⊕	19-Oct	Consumer inflation CPI (yoy)	Sep	1.2% ▼	1.3%	1.3% ◐
Chile						
⊕⊕⊕⊕	08-Oct	Consumer inflation CPI (yoy)	Sep	3.1% ▲	2.6%	3.2% ◐
⊕⊕⊕	08-Oct	Copper exports (USD mn)	Sep	2 808 ▲	2 742	--
⊕⊕⊕⊕⊕	18-Oct	BCCh overnight rate target	Oct	2.75% ▲	2.50%	2.75% ◐
Canada						
⊕⊕⊕⊕	19-Oct	Consumer inflation CPI (yoy)	Sep	2.2% ▼	2.8%	2.7% ◐

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

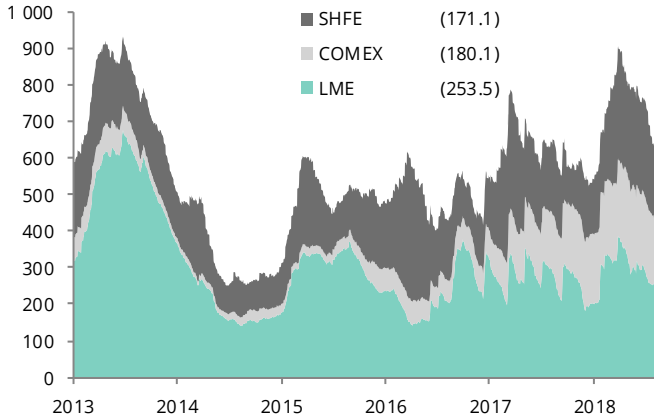
Key base & precious metal prices, exchange rates and other important market factors

<i>(as of: 10-Aug-18)</i>		Price change ¹				From year beginning ²		
	Price	2W	QTD	YTD	1Y	Average	Min	Max
LME (USD/t)								
Copper	6 120.00	▼ -1.1%	▼ -7.9%	▼ -14.5%	▼ -4.6%	6 781.10	5 982.00	7 262.50
Molybdenum	26 000.00	- 0.0%	- 0.0%	▲ 62.5%	▲ 62.5%	22 648.39	16 000.00	26 000.00
Nickel	13 635.00	▼ -0.5%	▼ -8.6%	▲ 11.2%	▲ 26.6%	13 842.52	12 415.00	15 750.00
Aluminum	2 039.00	▼ -0.7%	▼ -6.6%	▼ -9.0%	▲ 0.7%	2 184.24	1 967.00	2 602.50
Tin	19 560.00	▼ -2.2%	▼ -0.6%	▼ -1.6%	▼ -3.9%	20 813.77	19 405.00	22 105.00
Zinc	2 552.50	▼ -1.4%	▼ -13.4%	▼ -22.9%	▼ -13.0%	3 148.38	2 527.00	3 618.00
Lead	2 092.00	▼ -1.9%	▼ -14.0%	▼ -16.2%	▼ -11.3%	2 403.91	2 073.00	2 683.00
LBMA (USD/troz)								
Silver	15.38	▼ -0.7%	▼ -4.1%	▼ -8.8%	▼ -10.0%	16.46	15.26	17.52
Gold ²	1 214.40	▼ -0.8%	▼ -2.9%	▼ -6.3%	▼ -5.5%	1 301.13	1 209.55	1 354.95
LPPM (USD/troz)								
Platinum ²	828.00	▲ 0.2%	▼ -2.7%	▼ -10.7%	▼ -15.7%	919.90	798.00	1 020.00
Palladium ²	911.00	▼ -1.8%	▼ -4.4%	▼ -13.7%	▲ 0.8%	991.76	886.00	1 129.00
FX ³								
EURUSD	1.1456	▼ -2.0%	▼ -1.7%	▼ -4.5%	▼ -2.4%	1.2018	1.1456	1.2493
EURPLN	4.2942	▲ 0.2%	▼ -1.5%	▲ 3.0%	▲ 0.5%	4.2383	4.1423	4.3978
USDPLN	3.7481	▲ 2.2%	▲ 0.1%	▲ 7.7%	▲ 2.9%	3.5287	3.3173	3.7759
USDCAD	1.3113	▲ 0.7%	▼ -0.4%	▲ 4.5%	▲ 3.2%	1.2840	1.2288	1.3310
USDCNY	6.8463	▲ 0.5%	▲ 3.4%	▲ 5.2%	▲ 3.0%	6.4473	6.2690	6.8535
USDCLP	645.95	▲ 0.4%	▼ -0.3%	▲ 5.0%	▼ -0.5%	618.95	588.28	662.43
Money market								
3m LIBOR USD	2.319	▼ -0.02	▼ -0.02	▲ 0.62	▲ 1.01	2.171	1.696	2.369
3m EURIBOR	-0.319	- 0.00	▲ 0.00	▲ 0.01	▲ 0.01	-0.325	-0.329	-0.319
3m WIBOR	1.700	- 0.00	- 0.00	▼ -0.02	▼ -0.03	1.706	1.700	1.720
5y USD interest rate swap	2.878	▼ -0.10	▼ -0.01	▲ 0.63	▲ 1.02	2.793	2.283	3.036
5y EUR interest rate swap	0.274	▼ -0.05	▲ 0.00	▼ -0.04	▲ 0.08	0.372	0.224	0.509
5y PLN interest rate swap	2.458	▼ -0.04	▲ 0.00	▼ -0.04	▲ 0.08	2.472	2.280	2.740
Fuel								
WTI Cushing	67.63	▼ -3.6%	▼ -8.8%	▲ 11.9%	▲ 39.2%	66.36	59.19	74.15
Brent	72.06	▼ -3.3%	▼ -8.3%	▲ 7.8%	▲ 40.1%	71.40	62.33	79.18
Diesel NY (ULSD)	213.72	▼ -1.5%	▼ -3.2%	▲ 3.5%	▲ 31.2%	207.91	183.32	229.33
Others								
VIX	13.16	▼ -1.10	▼ -2.93	▲ 2.12	▼ -2.88	15.65	9.15	37.32
BBG Commodity Index	84.23	▼ -1.3%	▼ -3.6%	▼ -4.5%	▲ 0.8%	87.93	82.82	91.57
S&P500	2 833.28	▲ 1.1%	▲ 4.2%	▲ 6.0%	▲ 16.2%	2 734.70	2 581.00	2 872.87
DAX	12 424.35	▼ -2.9%	▲ 1.0%	▼ -3.8%	▲ 3.4%	12 643.15	11 787.26	13 559.60
Shanghai Composite	2 795.31	▼ -2.6%	▼ -1.8%	▼ -15.5%	▼ -14.3%	3 128.86	2 705.16	3 559.47
WIG 20	2 247.15	▼ -3.5%	▲ 5.2%	▼ -8.7%	▼ -5.7%	2 313.52	2 098.75	2 630.37
KGHM	90.30	▼ -5.9%	▲ 2.6%	▼ -18.8%	▼ -25.1%	97.63	84.20	115.00

^o 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

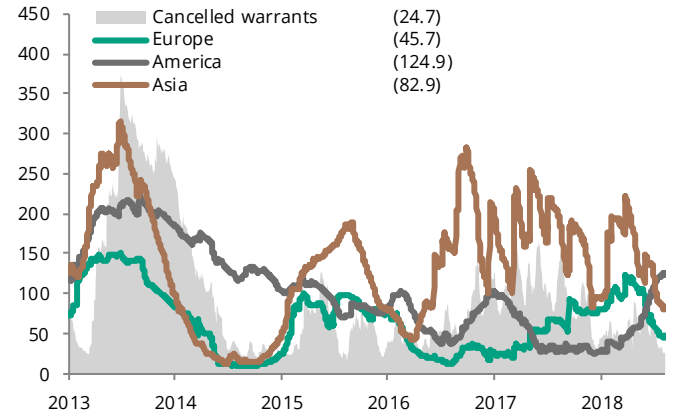
Source: Bloomberg, KGHM Polska Miedź

Copper: official exchange stocks (thousand tonnes)



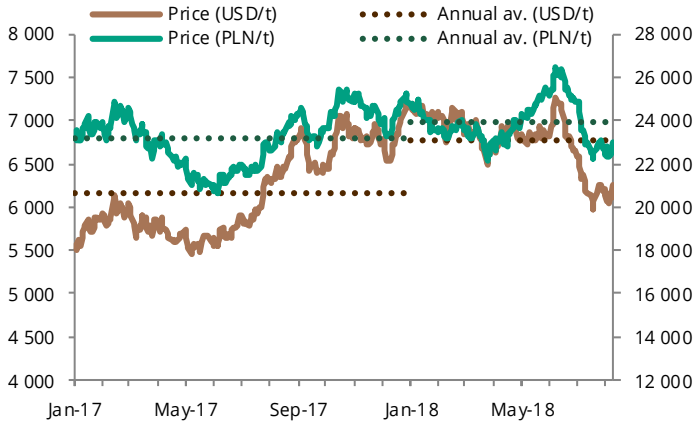
Note: Latest values in brackets. Source: Bloomberg, KGHM

Copper: official LME stocks (thousand tonnes)



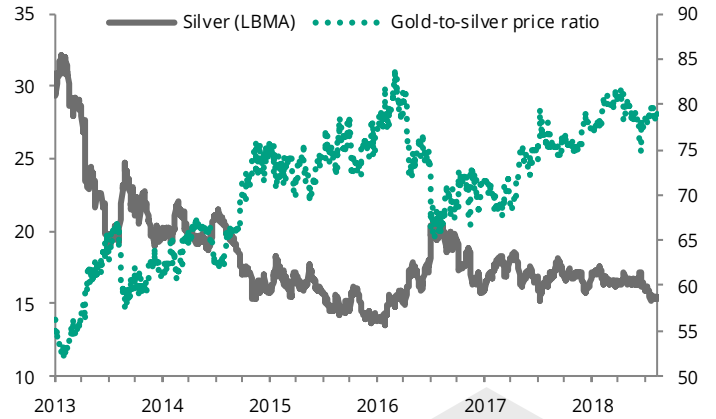
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



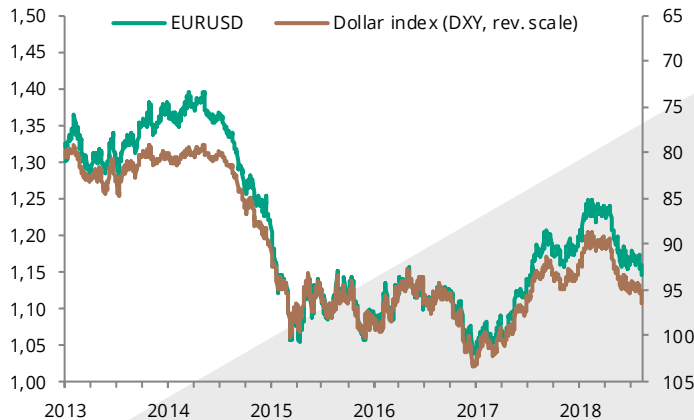
Source: Bloomberg, KGHM Polska Miedź

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



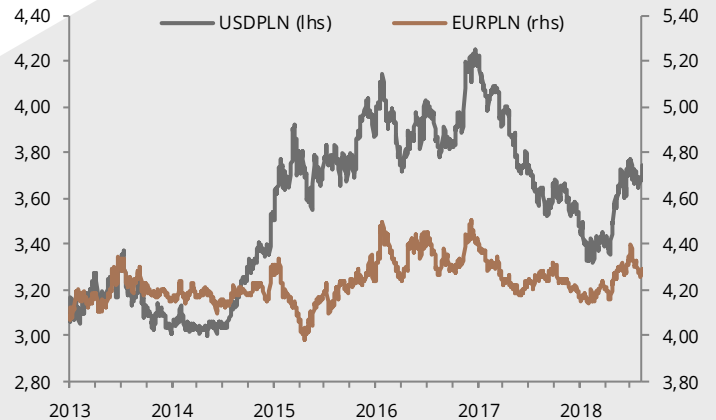
Source: Bloomberg, KGHM Polska Miedź

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:
3th – 16th December 2018.

- 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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