

# Market Overview

as of: 11<sup>th</sup> December 2017





- **Copper:** Pricing of copper cathodes may soon include environmental footprint of production, which reflects consumers' interest in this area (*page 2*)
- **Precious metals:** Gold prices at the November December turn have fallen towards 1240 USD/troz level – lowest in four months. The main reason behind the move was strengthening of US dollar as investors were optimistic over U.S. lawmakers making progress on tax legislation that would boost economic growth and lower the need for safe assets such as gold (*page 3*).
- **Asia Copper Week 2017:** Moods at Asia Copper Week 2017 were less bullish than at LME week in London, following moderate readings from Chinese economy. Subjects covered during meetings included changes in Chinese environmental law, 2018 mating season, electric vehicles and its impact on consumption, speculative positions driving price moves or shape of Chinese reforms (*page 5*).

## Key market prices

	Close price	2w chng.
<b>LME (USD/t)</b>		
▼ Copper	6 538.50	-6.2%
▼ Nickel	10 990.00	-8.5%
<b>LBMA (USD/troz)</b>		
▼ Silver	15.83	-7.2%
▼ Gold (PM)	1 250.65	-3.1%
<b>FX</b>		
▼ EURUSD	1.1742	-1.1%
▼ EURPLN	4.2026	-0.2%
▲ USDPLN	3.5808	0.9%
▲ USDCAD	1.2860	1.2%
▲ USDCLP	655.27	3.3%
<b>Stocks</b>		
▼ KGHM	102.40	-10.0%

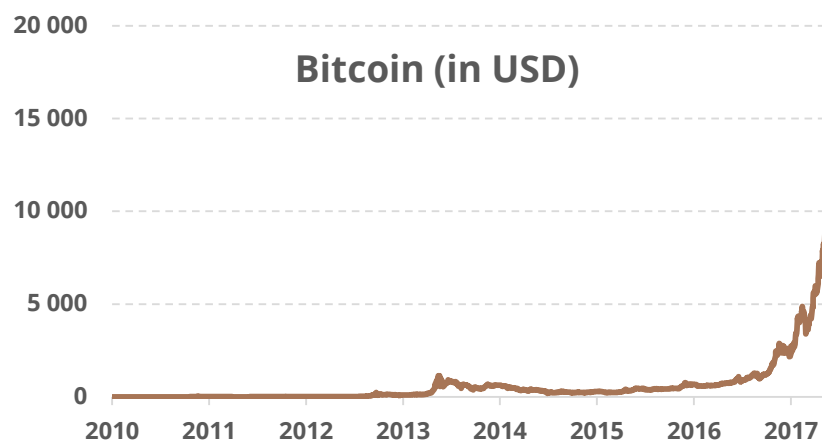
Source: Bloomberg, KGHM Polska Miedź; (*more on page 9*)

## Important macroeconomic data

Release	For		
 GDP (annlzd., qoq)	3Q	3.3%	▲
 GDP (yoy)	3Q	4.9%	▲
 Official manuf. PMI	Nov	51.8	▲
 Manufacturing PMI	Nov	62.5	-
 Econom. activity (yoy)	Oct	2.9%	▲

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

**It seems that sky is the limit for bitcoin; how much time it will take to reverse the bull market?**



Source: Bloomberg, KGHM Polska Miedź

## Market Risk Unit

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## Base and precious metals | Other commodities

### Copper

**Pricing of copper cathodes may soon include environmental footprint of production, which reflects consumers' interest in this area.**

**Codelco plan to certify its production regarding environmental footprint**

#### Codelco includes carbon footprint in the pricing

Chile's Codelco will soon sell its first copper cathodes with pricing that takes into account the environmental footprint of production. The plan would mark a stark change from the traditional pricing model for copper producers where the quality of metal is the price differentiator for what is otherwise a standardized product. Under the scheme, customers would pay different prices for copper depending on the carbon footprint or impact on a local community of its production. The move echoes steps taken by the palm oil industry to establish a sustainable supply chain to address a tarnished environmental reputation. State-run Codelco is currently negotiating with a team of customers - a trader, a wire producer and a final copper product producer - to establish a traceable system of certified copper, Oscar Landerretche told the Asia Copper Conference in Shanghai. The initiative, known in English as Responsible, Sustainable and Traceable Copper, could be dubbed "feng shui copper" in Chinese, Landerretche said, explaining that it was needed because of the "over commercial" nature of today's economy. Under the new terms, Codelco's copper cathodes will be certified in eight ways: carbon footprint, water footprint, territorial impact, community impact, human rights, equal opportunity and inclusion, occupational safety and health, and transparency, ethics and traceability of funds. While Codelco's plan would mark a first for the copper industry, producers of aluminum started charging premiums for low carbon products and metal made from renewable energy earlier this year. Industry sources said there was growing interest among copper consumers in lowering their overall carbon footprint.

#### Other important information on copper market:

- Following the sharp rise in copper prices this year Zambia's state-controlled firm ZCCM Investments Holdings wants to increase its stakes in the country's mines and also expects higher dividend payments, according to its chief executive. ZCCM-IH, which was formerly called Zambia Consolidated Copper Mines Investment Holdings, has assets of about \$1 billion with minority stakes held in the local mine operating subsidiaries of foreign miners including Glencore, First Quantum Minerals, Vedanta and Jinchuan Group International Resources. Zambia is Africa's second largest copper producer behind the Democratic Republic of Congo and a 22% rise in prices this year has boosted profits for the miners. It was not disclosed how much money ZCCM-IH would invest in the companies or over what period.
- Milan-based cable maker Prysmian Group will acquire General Cable for \$30 per share in cash, which values the US company at about \$3 billion including

debt and liabilities. The deal, which was unanimously approved by each company's board, is expected to close by the third quarter of 2018, the companies said. It is subject to the approval of General Cable's shareholders representing the majority of the outstanding shares of the company as well as requiring regulatory approvals and other customary conditions. According to Prysmian CEO, Valerio Battista, the acquisition of General Cable represents a landmark moment for the group. Through the combination of two of the premier companies in the cable industry Prysmian will be enhancing our position in the sector, by increasing our presence in North America and expanding its footprint in Europe and South America. The combined group, which had sales of more than €11 billion (\$13 billion) for the 12 months to the end of September, will operate in more than 50 countries. Prysmian is a leading producer in the energy and telecom cables and systems industry. Its output includes a wide range of copper and aluminium cables. Kentucky-based General Cable also produces copper, aluminium and fiber optic wire and cable products for the energy, specialty and communications market. Among the main commodities purchased by both companies are copper and aluminium, the prices of which have been recovering this year.

## Precious Metals

**Gold prices at the November December turn have fallen towards 1240 USD/troz level - lowest in four months. The main reason behind the move was strengthening of US dollar as investors were optimistic over U.S. lawmakers making progress on tax legislation that would boost economic growth and lower the need for safe assets such as gold.**

### Australia's new gold rush lures prospectors

Canada-based Kirkland Lake Gold will list its shares on the Australia bourse after investing millions of dollars and joining dozens of other prospectors in a modern-day gold rush. Kirkland Lake expects to produce a quarter-million ounces of gold in 2017 from a mine it bought a year ago in eastern Australia and is also planning to set a foot in new gold region on the other side of the continent. More than 25 publicly-listed companies and legions of small prospectors are exploring for gold on the western fringe of Australia in an area known as the Pilbara, better regarded for iron ore. The target is gold occurring in clusters of pebbles and which investors such as Kirkland are betting will compare in size with South Africa's massive Witwatersrand Basin, where more than a third of the world's gold has been mined. In the past year a record 1,896 gold prospecting licenses were granted by the Western Australia Department of Mines, many for individual prospectors known as "detectorists" trying their luck. The excitement stems from the discovery of gold in July by another Canadian company, Novo Resources, at the Purdey's Reward prospect with joint venture partner Artemis Resources. Also, in September, De Grey Mining discovered gold at a spot named Loudens Patch, 100 kms (62 miles) to the east of Purdey's Reward. Kirkland Lake already holds

18.2 percent of Novo via a A\$56 million investment, and earlier this month subscribed to A\$5 million of De Grey Mining shares, pending shareholder approval.

### **Data workers prove a rare resource for Barrick, fellow miners**

Barrick Gold, the world's biggest gold miner, is staking new ground in push to overhaul its operations, seeking scarce artificial intelligence experts to oversee projects using technology for everything from exploration to robot-run mining. But for an industry perceived as slow-moving, attracting prized human resources can be as difficult as striking gold - particularly as technology titans like Facebook and Alphabet Inc.'s Google chase the same talent. Though the mining sector is late to the so-called "digitization" party, Barrick and others are compelled to push productivity gains in the face of rising costs and depleting resources. Miners are stepping up investments in technology that ranges from driverless trucks to computers that sift through and make sense of mountains of data from operations. That shift could deliver global efficiency gains of \$373 billion by 2025 for the industry and its stakeholders, estimates consulting giant McKinsey & Co. At Barrick, artificial intelligence (AI) managers will oversee projects that use computers to study reams of data, from sensors tracking equipment and workers, to better understand mine geology. Computers could analyze that information to predict where to mine the best ore, or when equipment maintenance is needed.

## Asia Copper Week 2017

### Key findings from Asia Copper Week (28.11.2017 – 01.12.2017):




**Moods at Asia Copper Week 2017 were less bullish than at LME week in London, following moderate readings from Chinese economy. Subjects covered during meetings included changes in Chinese environmental law, 2018 mating season, electric vehicles and its impact on consumption, speculative positions driving price moves or shape of Chinese reforms.**






- Extremely bullish moods seen during LME Week a month before has cooled down. Enthusiasm in London was mainly caused by better than expected data coming from Chinese economy, but discussions among participants about situation in China were more general. In Shanghai, chats between market players focused more on detailed analysis of Chinese markets and covered GDP growth potential, copper consumption in 2018, changing legal environment affecting import of copper scrap into China and changes in smelting area as a result of environmental protection policies.
- Majority of participants expect maintaining growth of GDP and copper consumption on a stable, but slightly lower level in 2018 (2,0 - 2,5% copper consumption growth y-o-y). Second quarter of 2018 is expected to be crucial for the general outlook, mainly because Q1 is usually not fully representative for the shape of industry due to accumulation of holidays in Gregorian and Chinese calendars. Key readings from Chinese economy will continue to drive investors' actions, so dynamic market changes cannot be excluded, if Q2'2018 results are substantially different from forecast values.
- Widely commented was introduction of regulations, affecting copper scrap import into China. What market knew already was the import ban for category 7 scrap, which is estimated to decrease scrap availability by 150 – 200 kt in 2018. General consensus point out that effect of this regulation will be temporary, as there are already rumors about new infrastructure being built in other countries (i.e. Vietnam) which will allow upgrading low category material to acceptable standards before delivery to China. As a result the import quantity should not be limited by mentioned regulation in longer term, but the price of scrap will increase. During the conference it turned out that final shape of legislation in the area of copper scraps is not fully clear at the moment and some market participants fear that new law may extend the limits to other categories of scrap.
- According to some sources, the uncertainty around scrap regulation in China was the main reason behind the courageous decision of one of the Chinese funds to take substantial long position in copper in Q3'2017 and expanding it further during next months. At the time of the conference the position was estimated to 200 kt Cu, which is a substantial figure having in mind current market balance and liquidity of particular derivatives. The valuation of open position is positive for the fund, but the key problem is to close it without being noticed and without causing market sell-off. Recent copper price dips (from 7200 USD/mt to 6500 USD/mt) suggest that they are not fully effective in solving this issue. Meanwhile other hedge funds and trading companies are observing the situation and may take a short speculative position on the market to force Chinese player to close its long position.

- Discussions with representatives of International Copper Association regarding new demand drivers for metals (cobalt, nickel, but also copper) contained in electric vehicles shows, that there is a real potential for the demand, but rather in longer term. Currently the biggest issue for this sector is creating a battery standard, available for mass production. At the moment the concept for batteries is in the period of constant changes (i.e. companies are working on cutting the use of expensive metals, like cobalt), which implies difficulties in a vehicle production lines. Additionally there is a huge competition between Chinese companies, trying to use technological change to build their position in automotive sector, and the traditional carmakers (i.e. Volkswagen, Toyota) – with the important influence on setting the standards for vehicles productions. Currently it seems that traditional producers may be little bit behind the new competition in this race. Forecasts for copper consumptions coming from electric car industry may be significant in long term, but there is lack of reliable calculation of net growth of demand (i.e. nobody calculates the lost consumption from the traditional cars production, which will be limited after electric technology takes its place).
- Physical copper market talks were dominated by announcement of Codelco benchmark cathodes premium for China in 2018, set on a level on 75 USD/t, 3 USD/t higher than in 2017. At the same time Japanese smelters maintained the level of 72 USD/t, same as in 2017. China premium was surprising for the market participants, who expected 65-70 USD/mt reflecting current spot market. Another important issue are the prolonged negotiations between Chinese smelters and mining companies, regarding TC/RCs in 2018. For 2017 annual TC/RCs were set at the level of 92,5 USD/t / 9,25 US\$/lb. Because of restrained supply of mining production, producers expect lowering the charges to 80 / 8,0, while Chinese smelters try to keep the level set in 2017, arguing that smelting capacities will be restrained too after introduction of new environmental law in China. It seems negotiations will not be finished until the Q1'2018.
- It's worth pointing out, that information gathered during the conference has not changed substantially our thinking about China in mid to long term. The Middle Kingdom will keep reforming its economy, while the base metal consumption growth (including copper) will be still positive, with slightly lower, but stable dynamics.
- Widely commented was a subject of investment in crypto-currencies and its future. This market is currently attractive for investors, but its further dynamic growth may cause a major risk for financial markets. First of all cryptocurrencies market lacks the regulation. Secondly its valuation increases exponentially, while size is not really known, as the new kinds of crypto-coins are being offered. In the event of dynamic decrease of price, after market valuation gets to the peak, the decisions regarding divestment may grow, which can eventually limit the liquidity and influence other capital markets.

## Macroeconomic calendar

### Important macroeconomic data releases

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>
<b>China</b> 						
☼☼	27-Nov	Industrial profits (yoy)	Oct	25.1% ▼	27.7%	--
☼☼☼	30-Nov	Official manufacturing PMI	Nov	51.8 ▲	51.6	51.4 ▲
☼☼☼	01-Dec	Caixin's manufacturing PMI	Nov	50.8 ▼	51.0	50.9 ▼
☼	07-Dec	Foreign reserves (USD bn)	Nov	3 119 ▲	3 109	3 124 ▼
☼☼	08-Dec	Trade balance (USD bn)‡	Nov	40.2 ▲	38.1	35.0 ▲
☼☼	08-Dec	Exports (yoy)‡	Nov	12.3% ▲	6.8%	5.3% ▲
☼☼☼☼	09-Dec	Consumer inflation CPI (yoy)	Nov	1.7% ▼	1.9%	1.8% ▼
☼☼	09-Dec	Producer inflation PPI (yoy)	Nov	5.8% ▼	6.9%	5.8% ○
<b>Poland</b> 						
☼☼☼☼☼	30-Nov	GDP (yoy) - final data	3Q	4.9% ▲	4.7%	--
☼☼☼☼☼	30-Nov	GDP (qoq) - final data	3Q	1.2% ▲	1.1%	--
☼☼☼☼	30-Nov	Consumer inflation CPI (yoy) - preliminary data	Nov	2.5% ▲	2.1%	2.3% ▲
☼☼☼	01-Dec	Manufacturing PMI	Nov	54.2 ▲	53.4	54.0 ▲
☼☼☼☼☼	05-Dec	NBP base rate decision	Dec	1.50% -	1.50%	1.50% ○
<b>US</b> 						
☼	27-Nov	Dallas Fed manufacturing activity	Nov	19.4 ▼	27.6	24.0 ▼
☼	28-Nov	Richmond Fed manufacturing index	Nov	30.0 ▲	12.0	14.0 ▲
☼	28-Nov	S&P/CaseShiller home price index‡	Sep	204 ▲	203	--
☼☼☼☼☼	29-Nov	GDP (annualized, qoq) -	3Q	3.3% ▲	3.0%	3.2% ▲
☼☼☼☼	30-Nov	Consumer spending inflation PCE (mom)‡	Oct	0.2% -	0.2%	0.2% ○
☼☼☼☼	30-Nov	Consumer spending inflation PCE (yoy)‡	Oct	1.4% -	1.4%	1.4% ○
☼☼	30-Nov	Personal income (sa, mom)	Oct	0.4% -	0.4%	0.3% ▲
☼☼	30-Nov	Personal spending (sa, mom)‡	Oct	0.3% ▼	0.9%	0.3% ○
☼☼☼	01-Dec	Manufacturing PMI - final data	Nov	53.9 ▲	53.8	54.0 ▼
☼☼	01-Dec	ISM Manufacturing	Nov	58.2 ▼	58.7	58.3 ▼
☼☼	04-Dec	Durable goods orders - final data	Oct	-0.8% ▲	-1.2%	-1.1% ▲
☼☼☼	05-Dec	Composite PMI - final data	Nov	54.5 ▼	54.6	--
☼☼☼	05-Dec	PMI services - final data	Nov	54.5 ▼	54.7	55.2 ▼
☼☼	08-Dec	Change in non-farm payrolls (ths)‡	Nov	228 ▼	244	195 ▲
☼☼	08-Dec	Underemployment rate (U6)	Nov	8.0% ▲	7.9%	--
☼☼	08-Dec	Unemployment rate	Nov	4.1% -	4.1%	4.1% ○
☼☼	08-Dec	University of Michigan confidence index - preliminary data	Dec	96.8 ▼	98.5	99.0 ▼
☼	08-Dec	Average hourly earnings (yoy)‡	Nov	2.5% ▲	2.3%	2.7% ▼

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>
<b>Eurozone</b> 						
⊛	28-Nov	M3 money supply (yoy)‡	Oct	5.0% ▼	5.2%	5.1% ◐
⊛	29-Nov	Economic confidence‡	Nov	115 ▲	114	115 ◐
⊛	29-Nov	Industrial confidence‡	Nov	8.2 ▲	8.0	8.6 ◐
⊛	29-Nov	Consumer confidence - final data	Nov	0.1 =	0.1	0.1 ◐
⊛	29-Nov	Business climate indicator	Nov	1.5 ▲	1.4	1.5 ◐
⊛⊛⊛⊛	30-Nov	Core CPI (yoy) - estimation	Nov	0.9% =	0.9%	1.0% ◐
⊛⊛⊛⊛	30-Nov	CPI estimate (yoy)	Nov	1.5% ▲	1.4%	1.6% ◐
⊛⊛	30-Nov	Unemployment rate	Oct	8.8% ▼	8.9%	8.9% ◐
⊛⊛⊛	01-Dec	Manufacturing PMI - final data	Nov	60.1 ▲	60.0	60.0 ◐
⊛⊛	04-Dec	Producer inflation PPI (yoy)‡	Oct	2.5% ▼	2.8%	2.6% ◐
⊛⊛⊛	05-Dec	Composite PMI - final data	Nov	57.5 =	57.5	57.5 ◐
⊛⊛⊛	05-Dec	Services PMI - final data	Nov	56.2 =	56.2	56.2 ◐
⊛⊛	05-Dec	Retail sales (yoy)‡	Oct	0.4% ▼	4.0%	1.6% ◐
⊛⊛⊛⊛⊛	07-Dec	GDP (sa, yoy) - final data	3Q	2.6% ▲	2.5%	2.5% ◐
⊛⊛⊛⊛⊛	07-Dec	GDP (sa, qoq) - final data	3Q	0.6% =	0.6%	0.6% ◐
⊛⊛⊛	07-Dec	Gross fixed capital (qoq)‡	3Q	1.1% ▼	2.2%	0.7% ◐
⊛⊛⊛	07-Dec	Households consumption (qoq)	3Q	0.3% ▼	0.5%	0.4% ◐
<b>Germany</b> 						
⊛⊛	28-Nov	GfK consumer confidence	Dec	10.7 =	10.7	10.7 ◐
⊛⊛⊛⊛	29-Nov	Harmonized consumer inflation HICP (yoy) - preliminary data	Nov	1.8% ▲	1.5%	1.7% ◐
⊛⊛⊛⊛	29-Nov	Consumer inflation CPI (yoy) - preliminary data	Nov	1.8% ▲	1.6%	1.7% ◐
⊛⊛⊛	30-Nov	Retail sales (yoy)	Oct	-1.4% ▼	4.1%	2.8% ◐
⊛⊛	30-Nov	Unemployment rate	Nov	5.6% =	5.6%	5.6% ◐
⊛⊛⊛	01-Dec	Manufacturing PMI - final data	Nov	62.5 =	62.5	62.5 ◐
⊛⊛⊛	05-Dec	Composite PMI - final data	Nov	57.3 ▼	57.6	57.6 ◐
⊛⊛⊛	06-Dec	Factory orders (wda, yoy)‡	Oct	6.9% ▼	9.7%	7.0% ◐
⊛⊛⊛⊛	07-Dec	Industrial production (wda, yoy)‡	Oct	2.7% ▼	4.1%	4.3% ◐
<b>France</b> 						
⊛⊛⊛⊛⊛	29-Nov	GDP (yoy) - preliminary data	3Q	2.2% =	2.2%	2.2% ◐
⊛⊛⊛⊛⊛	29-Nov	GDP (qoq) - preliminary data	3Q	0.5% =	0.5%	0.5% ◐
⊛⊛⊛⊛	30-Nov	Harmonized consumer inflation HICP (yoy) - preliminary data	Nov	1.3% ▲	1.2%	1.2% ◐
⊛⊛⊛⊛	30-Nov	Consumer inflation CPI (yoy) - preliminary data	Nov	1.2% ▲	1.1%	1.2% ◐
⊛⊛⊛	01-Dec	Manufacturing PMI - final data	Nov	57.7 ▲	57.5	57.5 ◐
⊛⊛⊛	05-Dec	Composite PMI - final data	Nov	60.3 ▲	60.1	60.1 ◐
⊛⊛⊛⊛	08-Dec	Industrial production (yoy)	Oct	5.5% ▲	3.2%	2.9% ◐
<b>Italy</b> 						
⊛⊛⊛⊛	30-Nov	Harmonized consumer inflation HICP (yoy) - preliminary data	Nov	1.1% =	1.1%	1.2% ◐
⊛⊛	30-Nov	Unemployment rate - preliminary data	Oct	11.1% =	11.1%	11.1% ◐
⊛⊛⊛⊛⊛	01-Dec	GDP (wda, yoy) - final data‡	3Q	1.7% =	1.7%	1.8% ◐
⊛⊛⊛⊛⊛	01-Dec	GDP (wda, qoq) - final data‡	3Q	0.4% =	0.4%	0.5% ◐
⊛⊛⊛	01-Dec	Manufacturing PMI	Nov	58.3 ▲	57.8	58.3 ◐
⊛⊛⊛	05-Dec	Composite PMI	Nov	56.0 ▲	53.9	55.0 ◐
<b>UK</b> 						
⊛⊛⊛	01-Dec	Manufacturing PMI (sa)‡	Nov	58.2 ▲	56.6	56.5 ◐
⊛⊛⊛	05-Dec	Composite PMI	Nov	54.9 ▼	55.8	55.8 ◐
⊛⊛⊛⊛	08-Dec	Industrial production (yoy)	Oct	3.6% ▲	2.5%	3.5% ◐

<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



## Key market data

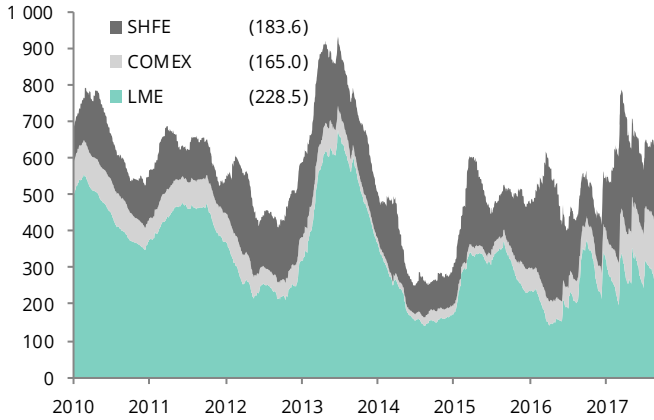
### Key base & precious metal prices, exchange rates and other important market factors

(as of: 08-Dec-17)		Price change <sup>1</sup>					From year beginning <sup>2</sup>		
	Price	2W	QTD	YTD	1Y	Average	Min	Max	
<b>LME (USD/t)</b>									
Copper	6 538.50	▼ -6.2%	▲ 0.8%	▲ 18.9%	▲ 12.0%	6 127.18	5 466.00	7 073.50	
Molybdenum	16 000.00	- 0.0%	- 0.0%	▲ 4.9%	▲ 4.9%	15 898.54	15 250.00	17 500.00	
Nickel	10 990.00	▼ -8.5%	▲ 3.8%	▲ 9.8%	▼ -3.3%	10 347.09	8 715.00	12 830.00	
Aluminum	1 992.00	▼ -5.3%	▼ -5.6%	▲ 16.3%	▲ 15.0%	1 962.10	1 701.00	2 188.00	
Tin	19 575.00	▼ -0.4%	▼ -6.8%	▼ -7.2%	▼ -8.5%	20 144.08	18 760.00	21 300.00	
Zinc	3 094.00	▼ -5.4%	▼ -3.8%	▲ 20.7%	▲ 12.7%	2 879.02	2 434.50	3 370.00	
Lead	2 428.00	▼ -2.1%	▼ -3.6%	▲ 22.3%	▲ 4.2%	2 306.84	2 007.00	2 585.00	
<b>LBMA (USD/troz)</b>									
Silver	15.83	▼ -7.2%	▼ -6.1%	▼ -2.6%	▼ -7.6%	17.10	15.22	18.56	
Gold <sup>2</sup>	1 250.65	▼ -3.1%	▼ -2.5%	▲ 7.9%	▲ 6.8%	1 257.03	1 151.00	1 346.25	
<b>LPPM (USD/troz)</b>									
Platinum <sup>2</sup>	892.00	▼ -4.6%	▼ -3.0%	▼ -1.7%	▼ -5.1%	950.71	891.00	1 033.00	
Palladium <sup>2</sup>	1 009.00	▲ 0.8%	▲ 7.9%	▲ 49.3%	▲ 39.2%	861.78	706.00	1 016.00	
<b>FX <sup>3</sup></b>									
EURUSD	1.1742	▼ -1.1%	▼ -0.5%	▲ 11.4%	▲ 9.1%	1.1271	1.0385	1.2060	
EURPLN	4.2026	▼ -0.2%	▼ -2.5%	▼ -5.0%	▼ -5.3%	4.2607	4.1737	4.4002	
USDPLN	3.5808	▲ 0.9%	▼ -1.9%	▼ -14.3%	▼ -12.9%	3.7890	3.5239	4.2271	
USDCAD	1.2860	▲ 1.2%	▲ 3.0%	-	-	1.2997	1.2128	1.3743	
USDCNY	6.6209	▲ 0.3%	▼ -0.5%	▼ -4.7%	▼ -3.9%	6.7663	6.4870	6.9640	
USDCLP	655.27	▲ 3.3%	▲ 2.9%	▼ -1.8%	▼ -0.1%	650.28	615.58	679.05	
<b>Money market</b>									
3m LIBOR USD	1.549	▲ 0.08	▲ 0.21	▲ 0.55	▲ 0.60	1.242	0.999	1.549	
3m EURIBOR	-0.326	▲ 0.00	▲ 0.00	▼ -0.01	▼ -0.01	-0.329	-0.332	-0.319	
3m WIBOR	1.720	▼ -0.01	▼ -0.01	▼ -0.01	▼ -0.01	1.730	1.720	1.730	
5y USD interest rate swap	2.203	▲ 0.07	▲ 0.20	▲ 0.23	▲ 0.36	1.968	1.711	2.239	
5y EUR interest rate swap	0.204	▼ -0.01	▼ -0.05	▲ 0.13	▲ 0.08	0.196	0.078	0.326	
5y PLN interest rate swap	2.480	▼ -0.03	▲ 0.04	▲ 0.08	▲ 0.06	2.416	2.165	2.625	
<b>Fuel</b>									
WTI Cushing	57.36	▼ -2.5%	▲ 11.0%	▲ 6.8%	▲ 12.8%	50.37	42.31	58.85	
Brent	63.67	▲ 0.3%	▲ 12.6%	▲ 14.9%	▲ 19.9%	53.69	44.21	64.13	
Diesel NY (ULSD)	192.26	▼ -0.3%	▲ 6.5%	▲ 13.2%	▲ 20.3%	163.77	135.85	195.07	
<b>Others</b>									
VIX	9.58	▼ -0.09	▲ 0.07	▼ -4.46	▼ -3.06	11.15	9.14	16.04	
BBG Commodity Index	84.01	▼ -3.4%	▼ -0.5%	▼ -4.0%	▼ -4.1%	84.88	79.36	89.36	
S&P500	2 651.50	▲ 1.9%	▲ 5.2%	▲ 18.4%	▲ 18.0%	2 435.70	2 257.83	2 651.50	
DAX	13 153.70	▲ 0.7%	▲ 2.5%	▲ 14.6%	▲ 17.7%	12 401.54	11 509.84	13 478.86	
Shanghai Composite	3 289.99	▼ -1.9%	▼ -1.8%	▲ 6.0%	▲ 2.3%	3 246.92	3 052.79	3 447.84	
WIG 20	2 408.83	▼ -2.8%	▼ -1.8%	▲ 23.7%	▲ 25.4%	2 328.25	1 989.64	2 551.78	
KGHM	102.40	▼ -10.0%	▼ -12.8%	▲ 10.7%	▲ 4.5%	118.29	94.00	135.50	

<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>

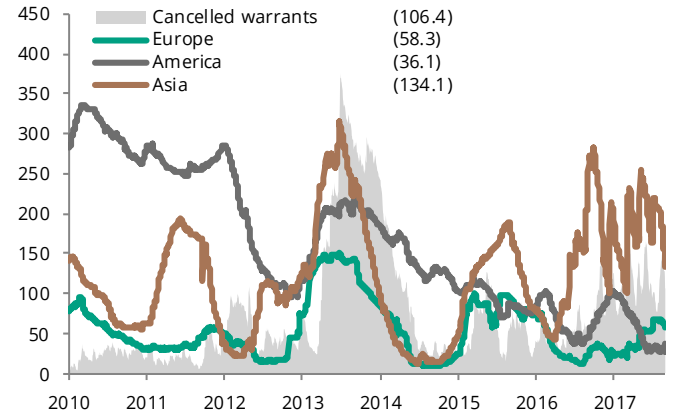
Source: Bloomberg, KGHM

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



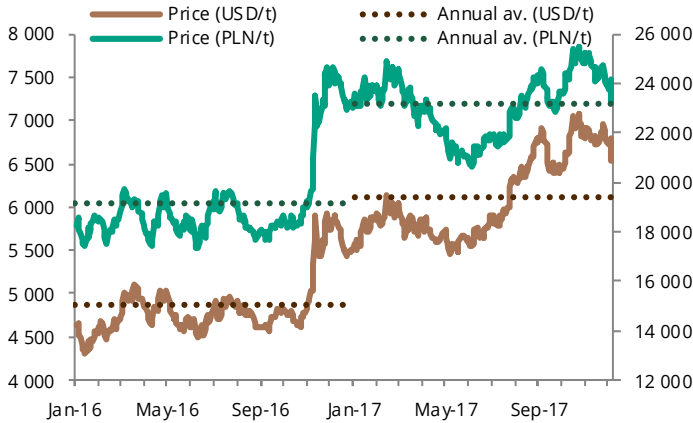
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



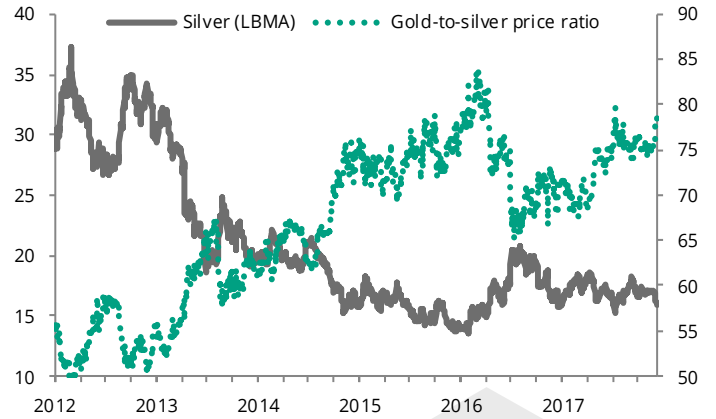
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



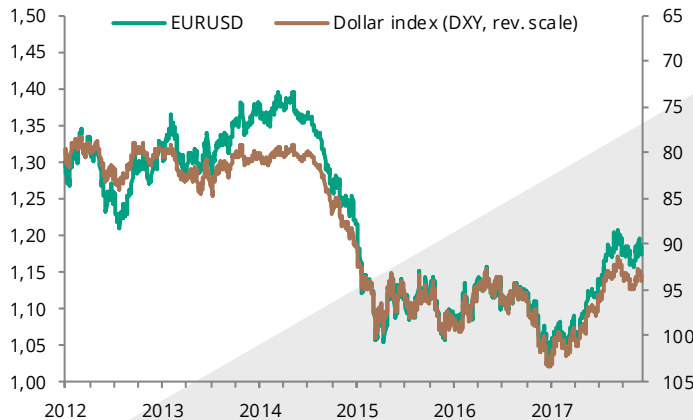
Source: Bloomberg, KGHM Polska Miedź

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



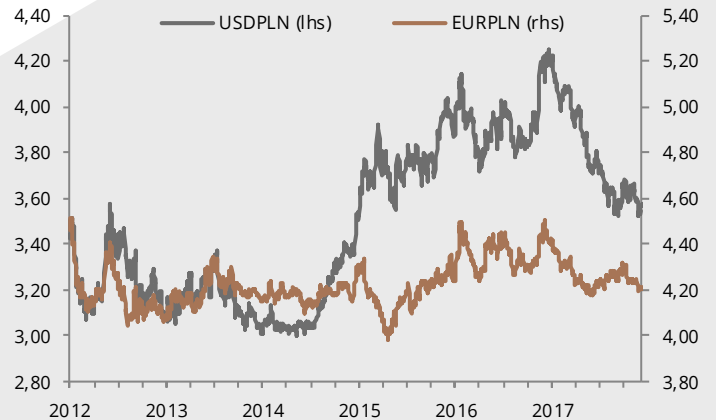
Source: Bloomberg, KGHM Polska Miedź

**USD: dollar index (rhs) and ECB-based EURUSD (lhs)**



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:  
**27<sup>th</sup> November – 10<sup>th</sup> December 2017.**

- 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.

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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