

# Market Overview

as of: 8<sup>th</sup> August 2016






- Copper:** As the Q2 production reports began to be published, it occurred that the number of outages at several of the largest copper mines pushed YTD annualized mine disruption rate much higher than the market participants had initially estimated. On the contrary, the new projects' supply is expected to remain stable in the next couple of years and according to ICSG it is going to grow at around 4% per year until 2019 (page 2).
- Precious metals:** The overall trend is positive in precious metals. Fed officials make it easy for the segment to grow as they signal that the U.S. economy is at increasing risk of becoming trapped in a prolonged phase of slow growth. That points to the need for lower interest rates than previously expected. Meanwhile the PGM's are bid too amid mine strikes and trade union problems in South Africa (page 6).
- Brexit:** Bank of England (BoE) cut Bank Rate by 25 bps to 0.25% and introduces a package of measures designed to provide additional monetary stimulus in the aftermath of June's Brexit vote (page 7).

## Key market prices

	Close price	2w chng.
<b>LME (USD/t)</b>		
▼ Copper	4 792.50	-3.3%
▼ Nickel	10 580.00	-0.7%
<b>LBMA (USD/troz)</b>		
▲ Silver	20.22	2.6%
▲ Gold (PM)	1 340.40	1.5%
<b>FX</b>		
▲ EUR/USD	1.1156	1.3%
▼ EUR/PLN	4.2975	-1.4%
▼ USD/PLN	3.8542	-2.4%
▲ USD/CAD	1.3180	0.0%
▲ USD/CLP	657.36	1.1%
<b>Stocks</b>		
▲ KGHM	79.34	3.0%

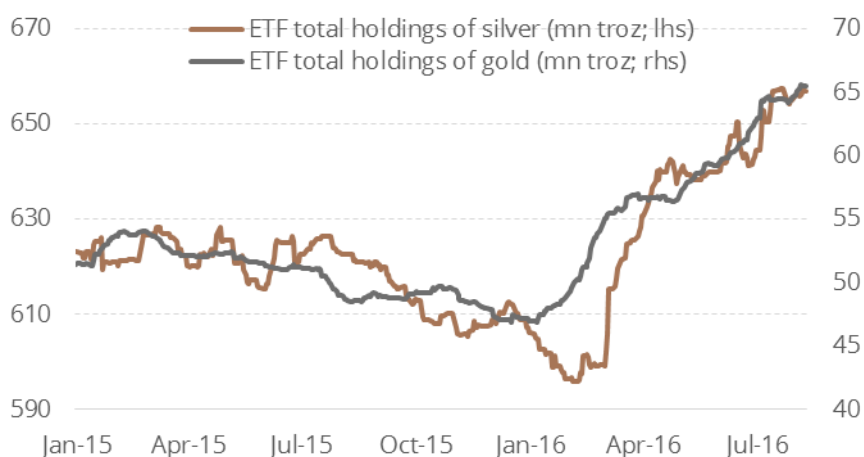
Source: Bloomberg, KGHM Polska Miedź; (more on page 10)

## Important macroeconomic data

Release	For	
 BoE rate decision	Aug	0.25% ▼
 BoE asset purchase target	Aug	4 350 ▲
 GDP (annlzd., qoq)	2Q	1.2% ▲
 Manufacturing PMI	Jul	50.3 ▼
 Caixin's manuf. PMI	Jul	50.6 ▲

Source: Bloomberg, KGHM Polska Miedź; (more on page 8)

## Both silver and gold holdings are swelling at ETF vaults YTD



Source: Bloomberg, KGHM Polska Miedź

## Market Risk Unit

marketrisk@kgm.com

**Grzegorz Laskowski**

**Marek Krochta**

**Wojciech Demski**

*In cooperation with:*

**Michał Kamiński**

## Base and precious metals | Other commodities

### Copper

As the Q2 production reports began to be published, it occurred that the number of outages at several of the largest copper mines pushed YTD annualized mine disruption rate much higher than the market participants had initially estimated. On the contrary, the new projects' supply is expected to remain stable in the next couple of years and according to ICSG it is going to grow at around 4% per year until 2019.

#### Disruptions higher than estimated but still below LT average

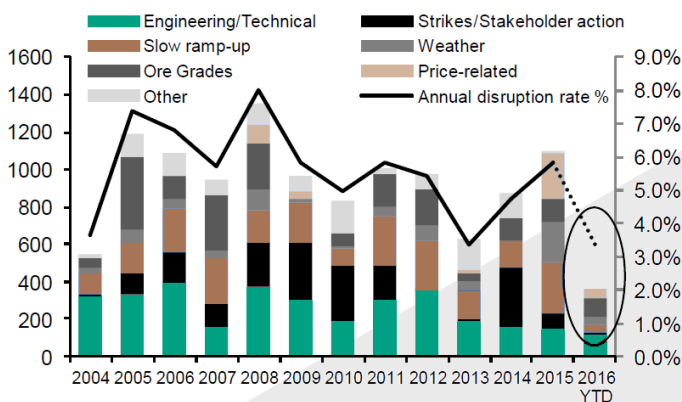
Half-year results revealed that copper disruptions has been more "quiet" than "noisy", meaning that less production outages had been caused by earthquakes, strikes etc. A raft of so-called "quiet" misses, particularly due to lower grade or worse quality ore and technical difficulties, dominated the agenda. The realized YTD rate is still below long-term average, but does support market expectations of a mean reversion to more "normal" copper mine dysfunctionality through the year after a slow start. Meanwhile, not all of the mines had a bad quarter. MMG's new greenfield Las Bambas is a particular stand-out, outperforming in the first half of 2016 and achieving commercial production on July the 1st.

Quiet misses have dominated the disruptions agenda in 1h 2016

Realized disruptions @367k metric tonnes after 1H 2016

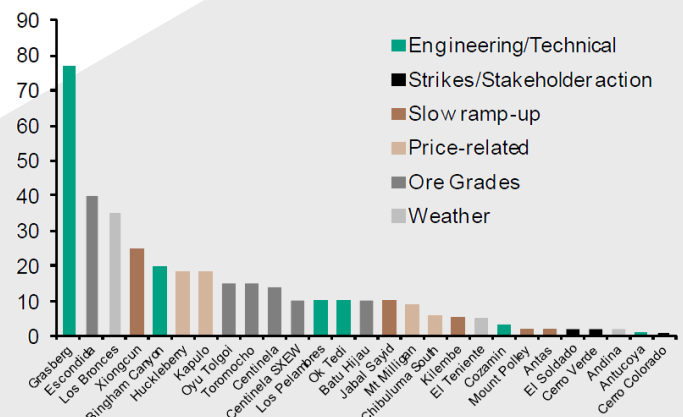
According to Macquarie analysts, the realized disruptions have reached 367k metric tonnes. The main outages were seen in Escondida (40kt), Grasberg (45kt), Los Bronces (35kt), Bingham Canyon (20kt), Centinela (24kt) and Los Pelambres (10kt), plus a handful of smaller losses elsewhere. The outages are mainly due to lower ore quality, snow at Los Bronces and a mill failure at Grasberg.

#### Copper disruptions were much higher than previously expected due to less „noisy” reasons



Source: Macquarie, KGHM Polska Miedź

#### Engineering and ore grades issues among the main culprits of lower than expected copper production



Source: Macquarie, KGHM Polska Miedź

Grasberg is an interesting case in which calendar year guidance was reduced again to 590kt by Q2, but since 169k tonnes were produced in 1H 2016 only the promised move into a much higher grade ore zone at the bottom of the open pit would deliver the expected output.

It is widely expected that high rate of technical challenges will be visible, as cost-cutting too far at some operations will cause issues, stakeholders are likely to remain less disruptive through the low prices, while high-grading at some mines to cut costs and lower levels of site staff turnover are helping to boost production.

### Mine production capacity to grow 4% per year through 2019

Copper mine production capacity through 2019 is expected to grow at an average rate of about 4% per year to reach 26.5 million metric tonnes (mt) in 2019, an increase of about 3.9 million mt, or 17%, from 2015, according to International Copper Study Group analysts. Among the new capacity, copper concentrate output will represent 83% of the growth (3.2 million mt), while SXEW will account to 17% (670,000 mt). The initial estimates have been lowered for 2018 and 2019 by around 200,000 mt and 500,000 mt, respectively, mostly because of ongoing delays for many project expansions and startups. During the 2015-2019 period, copper in-concentrate capacity is expected to rise around 4%/year to reach 21 million mt/year in 2019, and solvent SX-EW capacity is expected to increase at a slower rate of 3% per year to reach 5.5 million mt per year in 2019. Peru is projected to account for 25% of additional capacity from new mine projects and expansions through 2019, followed by Zambia, the Democratic Republic of the Congo, China and Mexico. Together those five countries will represent 65% of the world growth.

**Copper production capacity will grow at an average rate of 4% per year until 2019**

**New copper production countries: Afghanistan, Ecuador, Ethiopia, Fiji, Greece, Israel, Panama, Sudan and Thailand**

New projects are also being planned in countries that currently do not mine copper, including Afghanistan, Ecuador, Ethiopia, Fiji, Greece, Israel, Panama, Sudan and Thailand. The ICSG's report says that by 2019, total expected copper production capacity from projects starting in these new copper mining countries could reach 330,000 mt per year. Capacity could continue to increase well above 1 million mt per year if projects under evaluation in these countries are developed. Concurrently, production from countries that started mining copper in the last ten years is seen as increasing to around 400,000 mt per year this year from zero in 2000. Annual copper smelter capacity growth is projected to lag behind growth in concentrate capacity, growing an average of almost 3% per year to reach 22.8 million mt per year in 2019, an increase of 2.4 million mt, or 12%, from that in 2015.

**65% of world refined capacity growth until 2019 will come from China**

As the ICSG's analyst says, China continues to expand its smelting capacity and will account for 65% of the expected world growth through 2019. China's copper smelting capacity quintupled in the 2000-2015 period to around 4.7 million mt per year, and is expected to rise a further 1.5 million mt per year by 2019. Outside of Middle Kingdom, a new copper smelter started last year in Zambia and others are expected to be built in India, Indonesia, Iran, Kazakhstan, Mexico and Mongolia. The balance between concentrate production and available smelting capacity will depend on capacity utilization

rates. ICSG calculations indicate that world copper refinery capacity will reach 29.7 million mt per year in 2019, an increase of 2.4 million mt per year, or 9%, from 2015. About 1.7 million mt per year of the expansion is expected to come from electrolytic refineries and around 700,000 mt per year from SX-EW capacity. Electrolytic refinery capacity growth is projected to average 2% mt per year and is generally tied to the growth of smelter capacity. About 50% (1.2 million mt per year) of the world refinery capacity increase during this period is expected to come from electrolytic refineries in China and about 25% (600,000 mt per year) from electrowinning capacity increases in DRC, Mexico, Myanmar and Zambia.

### Other important information on copper market:

- Newly-established German company Metalprodex is planning to start a trading platform for the buying and selling of base metals for immediate physical delivery. The main target, according to Metalprodex managing director Janko Linhart, is to start offering an electronic trading platform in September which will be able to provide delivery of physical metal within two days. The platform aims to offer an additional service which is not available on markets such as the London Metal Exchange (LME). One of the main goals of the project is that the platform would be available for producers and fabricators rather than for speculative purposes. Market participants will provide the metals traded but there will be no short selling, so sellers will have to have metal they are selling available immediately. The initial focus would be on aluminium, copper, lead and zinc in standard 25-tonne lot sizes. The main locations for delivery will include Rotterdam, Hamburg, Szczecin, Barcelona, Genoa and Istanbul. Dutch warehousing company C. Steinweg will provide warehousing services. Trading will be in euros and prices will be set regionally.
- According to Bloomberg, Chile's state copper processor Enami is pushing a more ambitious project at almost double the cost to ensure its Paipote smelter meets new environmental standards. An initial investment of as much as 65 million USD will allow Enami to comply with new rules that require smelters to capture 95% of emissions by 2018. A second phase requiring as much as 700 USD mn would use Chinese technology and funding to expand the plant and capture 99% of emissions by 2020. The new plan is nearly double as expensive as it supposed to be at the end of last year with the initial cost of 418 million USD. Smelting technology is decade-old in Chile and needs to be overhauled in order to catch up with its peers in Japan, China and Europe. The timing of the investment is not ideal as the industry is cutting costs to cope with lower prices. Adding to the challenge in Chile, the biggest copper-producing country, are high levels of arsenic in the concentrates it produces. According to Enami's Executive Vice-President Jaime Perez, the investment is inevitable because it is impossible to move concentrates with such high levels of arsenic around the world. Chilean company is thinking about revamping the current export model to

become more industrialized rather than basing on raw materials exports only. The company, which processes material for small and mid-sized mines, is studying the possibility of doubling capacity to 700k metric tons of concentrate a year.

- Recent Chilean Copper Commission report revealed that costs in Chile's mining industry, which supplies almost a third of the world's copper, are continuing to fall as producers continue to adapt to sharply lower prices for the red metal. According to the study, C1 cash costs at Chile's 19 largest mines fell to an average of \$1.285/lb during the first three months of the year, down 13% from the same quarter of last year. The sample included mines operated by BHP Billiton, Antofagasta Minerals, Codelco, and Teck and represented 88% of Chilean copper production during the period. Cochilco said the fall in production costs reflected improvement mine management and lower costs for energy and services, offset by lower prices for byproducts and lower ore grades. Although costs fell at 14 mines, representing 84% of copper production, costs rose at the remaining five.
- The Chinese Ministry of Trade said in a filing on its website that the Chinese government has granted approval to three smelters to import copper concentrate and export refined copper and products. The three smelters are Yuguang Gold and Lead Group Co. in the central Henan province, Zhejiang Jiangtong Fuye Heding Copper Co. in the eastern Zhejiang province, and Chifeng Yunnan Copper's joint venture in the Inner Mongolia Autonomous Region. China relies heavily on imported copper concentrate as domestic ores are mostly of a lower grade with an average ore grade of just 0.87%, less than one-third of the grade at the main global copper mines. In H1 2016, Middle Kingdom has exported 203,050 mt of refined copper which is up almost 70% year on year, with South Korea, Taiwan and Singapore the key customers.
- The London Metal Exchange (LME) is going to cut fees and may offer more incentives to users as it aims to bolster trading on the world's biggest metals marketplace. According to the statement, the exchange will cut fees on short-dated carry trades, which involves buying metal and selling it within 15 days, by 44% starting from the 1st of September. Other changes include limiting charges for position transfers and reducing initial margin costs. After LME's take over by Hong Kong Exchanges & Clearing Ltd. in 2012, the fees have been raised by an average 34% last year and has added charges for using its data. As a result trading volume had risen on Chinese and American exchanges earlier this year, while it declined on the London bourse.

## Precious metals

**The overall trend is positive in precious metals. Fed officials make it easy for the segment to grow as they signal that the U.S. economy is at increasing risk of becoming trapped in a prolonged phase of slow growth. That points to the need for lower interest rates than previously expected. Meanwhile the PGM's are bid too amid mine strikes and trade union problems in South Africa.**

### London market to get new gold futures contracts

The World Gold Council and the London Metal Exchange (LME), together with Goldman Sachs, ICBC Standard Bank, Morgan Stanley, Natixis, OSTC and Societe Generale, announced recently their intention to introduce a suite of exchange-traded and centrally-cleared precious metals products.

The initiative has been driven by the need for greater market transparency, to support and aid ongoing regulatory change, provide additional robustness to the precious metals market, broaden market access and make trading more capital efficient.

The announcement follows an extended process of engagement with major market participants and users, and the LMEprecious service has been designed based on extensive consultation with core market players. Advanced discussions are taking place with a number of other leading institutions that have indicated their strong support for this initiative.

LMEprecious will comprise spot, daily and monthly futures, options and calendar spread contracts for gold and silver. Future developments will include platinum and palladium contracts. All trading will be centrally cleared on LME Clear, the LME's cutting-edge, real-time clearing house, and leverage the London market's existing delivery infrastructure. The new product suite will complement the bilateral over-the-counter (OTC) market, offering market participants similar levels of execution flexibility, including the ability to bring bilaterally negotiated (phone-based) trades into clearing. Market participants will also benefit from tight on-exchange price discovery and a product model designed to maximize capital efficiencies.

The banks participating in this initiative will act as liquidity providers for the precious contracts to ensure efficient price discovery and establish market depth. Additional market participants are openly invited to participate in supporting and sharing in the success of the new contracts. LMEprecious will launch in the first half of 2017, following a comprehensive process of integration and testing with participants and subject to regulatory approvals.

**WGC liaise with LME on new futures contracts**

**All contracts will be constantly cleared**

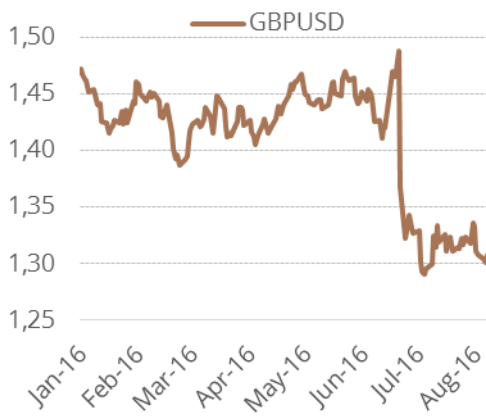
**Liquidity will be provided by big players such as: Goldman Sachs, ICBC Standard Bank, Morgan Stanley, Natixis and OSTC.**

## Global economies | Foreign exchange markets

### BoE cuts to 0.25% and introduces a package of measures

**Bank of England (BoE) cut Bank Rate by 25 bps to 0.25% and introduces a package of measures designed to provide additional monetary stimulus in the aftermath of June's Brexit vote.**

#### British pound continues depreciation path initiated after June's Brexit vote



Source: Bloomberg, KGHM Polska Miedź




At its meeting ending 3 August 2016, the MPC voted for a package of measures designed to provide additional support to growth and to achieve a sustainable return of inflation to the target. According to the BoE statement this package comprises: a 25 basis point cut in Bank Rate to 0.25%; a new Term Funding Scheme to reinforce the pass-through of the cut in Bank Rate; the purchase of up to £10 billion of UK corporate bonds; and an expansion of the asset purchase scheme for UK government bonds of £60 billion, taking the total stock of these asset purchases to £435 billion. The last three elements will be financed by the issuance of central bank reserves.

Following the United Kingdom's vote to leave the European Union, the exchange rate has fallen and the outlook for growth in the short to medium term has weakened markedly. The fall in sterling is likely to push up on CPI inflation in the near term, hastening its return to the 2% target and probably causing it to rise above the target in the latter part of the MPC's forecast period, before the exchange rate effect dissipates thereafter. In the real economy, although the weaker medium-term outlook for activity largely reflects a downward revision to the economy's supply capacity, near-term weakness in demand is likely to open up a margin of spare capacity, including an eventual rise in unemployment. Consistent with this, recent surveys of business activity, confidence and optimism suggest that the United Kingdom is likely to see little growth in GDP in the second half of this year.



## Macroeconomic calendar

### Important macroeconomic data releases

Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>	
<b>China</b>							
☉☉☉	16-Jan	Official manufacturing PMI	Jul	49.9 ▼	50.0	50.0	☹
☉☉☉	16-Jan	Caixin's manufacturing PMI	Jul	50.6 ▲	48.6	48.8	☺
☉☉	27-Jul	Industrial profits (yoy)	Jun	5.1% ▲	3.7%	--	
<b>Poland</b>							
☉☉☉	16-Jan	Manufacturing PMI	Jul	50.3 ▼	51.8	51.6	☹
☉☉	25-Jul	Unemployment rate	Jun	8.8% ▼	9.1%	8.8%	☉
☉☉☉☉	29-Jul	Consumer inflation CPI (yoy) - preliminary data	Jul	-0.9% ▼	-0.8%	-0.8%	☹
<b>US</b>							
☉☉☉	16-Jan	Manufacturing PMI - final data	Jul	52.9 -	52.9	52.9	☉
☉☉	16-Jan	ISM Manufacturing	Jul	52.6 ▼	53.2	53.0	☹
☉☉☉☉	16-Feb	Consumer spending inflation PCE (mom)	Jun	0.1% ▼	0.2%	0.1%	☉
☉☉☉☉	16-Feb	Consumer spending inflation PCE (yoy)	Jun	1.6% -	1.6%	1.6%	☉
☉☉	16-Feb	Personal income (sa, mom)	Jun	0.2% -	0.2%	0.3%	☹
☉☉	16-Feb	Personal spending (sa, mom)	Jun	0.4% -	0.4%	0.3%	☺
☉☉☉	16-Mar	Composite PMI - final data	Jul	51.8 ▲	51.5	--	
☉☉☉	16-Mar	PMI services - final data	Jul	51.4 ▲	50.9	51.0	☺
☉☉	16-Apr	Durable goods orders - final data	Jun	-3.9% ▲	-4.0%	-4.0%	☺
☉☉	16-May	Change in non-farm payrolls (ths)‡	Jul	255 ▼	292	180	☺
☉☉	16-May	Underemployment rate (U6)	Jul	9.7% ▲	9.6%	--	
☉☉	16-May	Unemployment rate	Jul	4.9% -	4.9%	4.8%	☺
☉	16-May	Average hourly earnings (yoy)	Jul	2.6% -	2.6%	2.6%	☉
☉	25-Jul	Dallas Fed manufacturing activity	Jul	- 1.3 ▲	- 18.3	- 10.0	☺
☉	26-Jul	S&P/CaseShiller home price index	May	188 ▲	187	190	☹
☉☉☉	26-Jul	Composite PMI - preliminary data	Jul	--	51.2	--	
☉☉☉	26-Jul	PMI services - preliminary data	Jul	--	51.4	52.0	
☉	26-Jul	Richmond Fed manufacturing index‡	Jul	10.0 ▲	- 10.0	- 5.0	☺
☉☉	27-Jul	Durable goods orders - preliminary data‡	Jun	-4.0% ▼	-2.8%	-1.4%	☹
☉☉☉☉☉	27-Jul	FOMC base rate decision - upper bound (Fed)	Jul	0.50% -	0.50%	0.50%	☉
☉☉☉☉☉	27-Jul	FOMC base rate decision - lower bound (Fed)	Jul	0.25% -	0.25%	0.25%	☉
☉☉☉☉☉	29-Jul	GDP (annualized, qoq) - estimation‡	2Q	1.2% ▲	0.8%	2.5%	☹
☉☉	29-Jul	University of Michigan confidence index - final data	Jul	90.0 ▲	89.5	90.2	☹



Weight	Date	Event	For	Reading <sup>1</sup>	Previous	Consensus <sup>2</sup>	
<b>Eurozone</b>							
☉☉☉	16-Jan	Manufacturing PMI - final data	Jul	52.0 ▲	51.9	51.9	▲
☉☉	16-Feb	Producer inflation PPI (yoy)‡	Jun	-3.1% ▲	-3.8%	-3.4%	▲
☉☉☉	16-Mar	Composite PMI - final data	Jul	53.2 ▲	52.9	52.9	▲
☉☉☉	16-Mar	Services PMI - final data	Jul	52.9 ▲	52.7	52.7	▲
☉☉	16-Mar	Retail sales (yoy)	Jun	1.6% -	1.6%	1.8%	◡
☉	27-Jul	M3 money supply (yoy)	Jun	5.0% ▲	4.9%	5.0%	○
☉	28-Jul	Economic confidence	Jul	105 ▲	104	104	▲
☉	28-Jul	Industrial confidence	Jul	-2.4 ▲	-2.8	-3.3	▲
☉	28-Jul	Consumer confidence - final data	Jul	-7.9 -	-7.9	-7.9	○
☉	28-Jul	Business climate indicator	Jul	0.4 ▲	0.2	0.2	▲
☉☉☉☉☉	29-Jul	GDP (sa, yoy) - estimation	2Q	1.6% ▼	1.7%	1.5%	▲
☉☉☉☉☉	29-Jul	GDP (sa, qoq) - estimation	2Q	0.3% ▼	0.6%	0.3%	○
☉☉☉☉	29-Jul	Core CPI (yoy) - estimation	Jul	0.9% -	0.9%	0.8%	▲
☉☉☉☉	29-Jul	CPI estimate (yoy)	Jul	0.2% ▲	0.1%	0.1%	▲
☉☉	29-Jul	Unemployment rate	Jun	10.1% -	10.1%	10.1%	○
<b>Germany</b>							
☉☉☉	16-Jan	Manufacturing PMI - final data	Jul	53.8 ▲	53.7	53.7	▲
☉☉☉	16-Mar	Composite PMI - final data	Jul	55.3 -	55.3	55.3	○
☉☉☉	16-May	Factory orders (wda, yoy)‡	Jun	-3.1% ▼	0.0%	-1.5%	◡
☉☉	25-Jul	IFO business climate	Jul	108 ▼	109	108	▲
☉☉	27-Jul	GfK consumer confidence	Aug	10.0 ▼	10.1	9.9	▲
☉☉	28-Jul	Unemployment rate	Jul	6.1% -	6.1%	6.1%	○
☉☉☉☉	28-Jul	Harmonized consumer inflation HICP (yoy) - preliminary data	Jul	0.4% ▲	0.2%	0.3%	▲
☉☉☉☉	28-Jul	Consumer inflation CPI (yoy) - preliminary data	Jul	0.4% ▲	0.3%	0.3%	▲
☉☉☉	29-Jul	Retail sales (yoy)‡	Jun	2.7% ▼	2.8%	1.5%	▲
<b>France</b>							
☉☉☉	16-Jan	Manufacturing PMI - final data	Jul	48.6 -	48.6	48.6	○
☉☉☉	16-Mar	Composite PMI - final data	Jul	50.1 ▲	50.0	50.0	▲
☉☉☉☉☉	29-Jul	GDP (yoy) - estimation	2Q	1.4% ▲	1.3%	1.6%	◡
☉☉☉☉☉	29-Jul	GDP (qoq) - estimation‡	2Q	0.0% ▼	0.7%	0.2%	◡
☉☉☉☉	29-Jul	Harmonized consumer inflation HICP (yoy) - preliminary data	Jul	0.4% ▲	0.3%	0.4%	○
☉☉☉☉	29-Jul	Consumer inflation CPI (yoy) - preliminary data	Jul	0.2% -	0.2%	0.3%	◡
<b>Italy</b>							
☉☉☉	16-Jan	Manufacturing PMI	Jul	51.2 ▼	53.5	52.5	◡
☉☉☉	16-Mar	Composite PMI	Jul	52.2 ▼	52.6	52.4	◡
☉☉☉☉	16-May	Industrial production (wda, yoy)	Jun	-1.0% ▼	-0.6%	1.0%	◡
☉☉	29-Jul	Unemployment rate - preliminary data	Jun	11.6% ▲	11.5%	11.4%	▲
☉☉☉☉	29-Jul	Harmonized consumer inflation HICP (yoy) - preliminary data	Jul	-0.1% ▲	-0.2%	-0.2%	▲
<b>UK</b>							
☉☉☉	16-Jan	Manufacturing PMI (sa) - final data	Jul	48.2 ▼	49.1	49.1	◡
☉☉☉	16-Mar	Composite PMI - final data	Jul	47.5 ▼	47.7	47.7	◡
☉☉☉☉☉	16-Apr	BoE base rate decision	Aug	0.25% ▼	0.50%	0.25%	○
☉☉☉☉	16-Apr	BoE asset purchase target (GBP bn)	Aug	4 350 ▲	3 750	3 750	▲
☉☉☉☉☉	27-Jul	GDP (yoy) - estimation	2Q	2.2% ▲	2.0%	2.1%	▲
☉☉☉☉☉	27-Jul	GDP (qoq) - estimation	2Q	0.6% ▲	0.4%	0.5%	▲
<b>Japan</b>							

<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

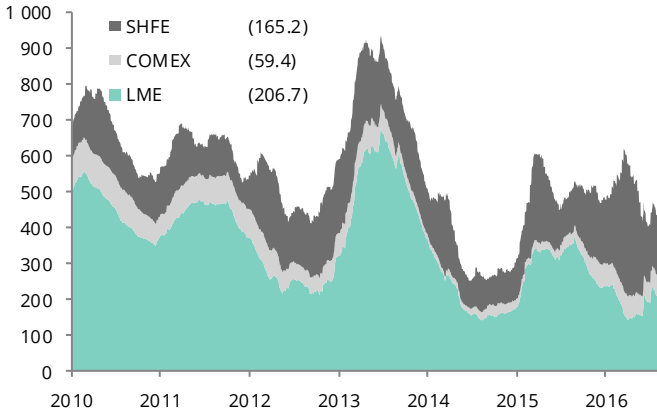
(as of: 05-Aug-16)

	Price	Price change °					From year beginning ²		
		2W	QTD	YTD	1Y	Average	Min	Max	
<b>LME (USD/t)</b>									
Copper	4 792.50	▼ -3.3%	▼ -0.7%	▲ 1.9%	▼ -7.2%	4 726.89	4 310.50	5 103.00	
Molybdenum	16 000.00	▲ 4.9%	▼ -5.9%	▲ 33.3%	▲ 16.8%	13 705.63	11 750.00	17 000.00	
Nickel	10 580.00	▼ -0.7%	▲ 12.4%	▲ 22.1%	▼ -2.2%	8 948.58	7 710.00	10 795.00	
Aluminum	1 628.00	▲ 1.8%	▼ -0.4%	▲ 8.0%	▲ 4.8%	1 558.65	1 453.00	1 682.00	
Tin	18 410.00	▲ 3.4%	▲ 7.9%	▲ 26.1%	▲ 18.8%	16 510.40	13 235.00	18 410.00	
Zinc	2 271.00	▲ 0.4%	▲ 8.0%	▲ 41.9%	▲ 21.0%	1 868.29	1 453.50	2 281.00	
Lead	1 795.00	▼ -2.7%	▲ 0.8%	▼ -0.4%	▲ 5.2%	1 748.20	1 597.00	1 901.00	
<b>LBMA (USD/troz)</b>									
Silver	20.22	▲ 2.6%	▲ 10.1%	▲ 46.3%	▲ 38.6%	16.55	13.58	20.71	
Gold ¹	1 340.40	▲ 1.5%	▲ 1.5%	▲ 26.2%	▲ 23.0%	1 241.95	1 077.00	1 366.25	
<b>LPPM (USD/troz)</b>									
Platinum ¹	1 146.00	▲ 4.9%	▲ 14.7%	▲ 31.4%	▲ 20.9%	983.79	814.00	1 175.00	
Palladium ¹	699.00	▲ 2.2%	▲ 18.7%	▲ 27.8%	▲ 16.7%	565.63	470.00	721.00	
<b>FX ³</b>									
EUR/USD	1.1156	▲ 1.3%	▲ 0.5%	▲ 2.5%	▲ 2.5%	1.1147	1.0742	1.1569	
EUR/PLN	4.2975	▼ -1.4%	▼ -2.9%	▲ 0.8%	▲ 2.8%	4.3708	4.2355	4.4987	
USD/PLN	3.8542	▼ -2.4%	▼ -3.2%	▼ -1.2%	▲ 0.4%	3.9213	3.7193	4.1475	
USD/CAD	1.3180	▲ 0.0%	▲ 1.3%	▼ -4.8%	▲ 0.2%	1.3263	1.2544	1.4589	
USD/CNY	6.6603	▼ -0.3%	▲ 0.2%	▲ 2.6%	▲ 7.3%	6.5610	6.4536	6.7045	
USD/CLP	657.36	▲ 1.1%	▼ -0.6%	▼ -7.4%	▼ -3.7%	684.27	650.09	730.31	
<b>Money market</b>									
3m LIBOR USD	0.792	▲ 0.07	▲ 0.14	▲ 0.18	▲ 0.48	0.647	0.612	0.792	
3m EURIBOR	-0.298	▼ 0.00	▼ -0.01	▼ -0.17	▼ -0.27	-0.236	-0.299	-0.132	
3m WIBOR	1.710	- 0.00	- 0.00	▼ -0.01	▼ -0.01	1.688	1.670	1.720	
5y USD interest rate swap	1.184	▲ 0.01	▲ 0.20	▼ -0.55	▼ -0.56	1.222	0.928	1.709	
5y EUR interest rate swap	-0.128	▼ -0.02	▼ -0.07	▼ -0.46	▼ -0.54	0.014	-0.183	0.309	
5y PLN interest rate swap	1.880	▲ 0.01	▲ 0.09	▼ -0.11	▼ -0.44	1.874	1.735	2.118	
<b>Fuel</b>									
WTI Cushing	41.80	▼ -3.9%	▼ -13.5%	▲ 12.9%	▼ -6.4%	40.33	26.21	51.23	
Brent	43.26	▼ -2.6%	▼ -10.7%	▲ 21.0%	▼ -11.8%	40.99	26.39	51.33	
Diesel NY (ULSD)	130.32	▼ -1.6%	▼ -11.6%	▲ 21.1%	▼ -15.3%	125.17	86.44	156.18	
<b>Others</b>									
VIX	11.39	▼ -0.63	▼ -4.24	▼ -6.82	▼ -2.38	17.19	11.39	28.14	
BBG Commodity Index	83.85	▼ -0.9%	▼ -5.6%	▲ 6.7%	▼ -7.4%	81.56	72.88	89.94	
S&P500	2 182.87	▲ 0.4%	▲ 4.0%	▲ 6.8%	▲ 4.8%	2 037.67	1 829.08	2 182.87	
DAX	10 367.21	▲ 2.2%	▲ 7.1%	▼ -3.5%	▼ -10.5%	9 846.97	8 752.87	10 435.73	
Shanghai Composite	2 976.70	▼ -1.2%	▲ 1.6%	▼ -15.9%	▼ -18.7%	2 929.97	2 655.66	3 361.84	
WIG 20	1 825.45	▲ 1.8%	▲ 4.3%	▼ -1.8%	▼ -16.9%	1 823.34	1 674.57	1 999.93	
KGHM	79.34	▲ 3.0%	▲ 20.2%	▲ 25.0%	▼ -12.1%	66.79	52.29	79.76	

° 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

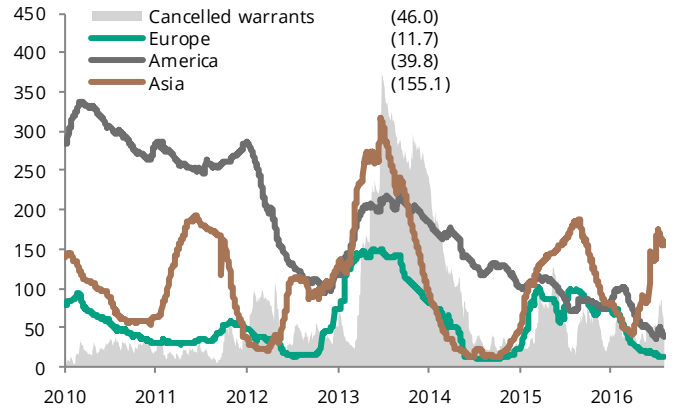
Source: Bloomberg, KGHM

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



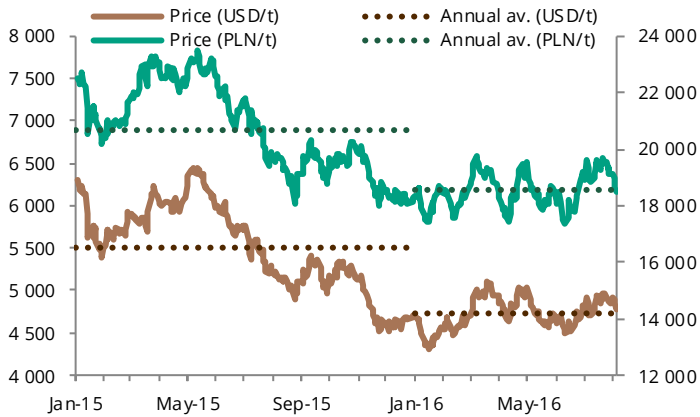
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



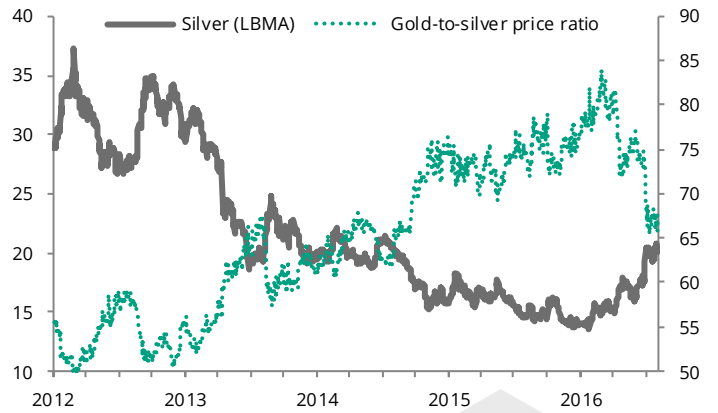
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



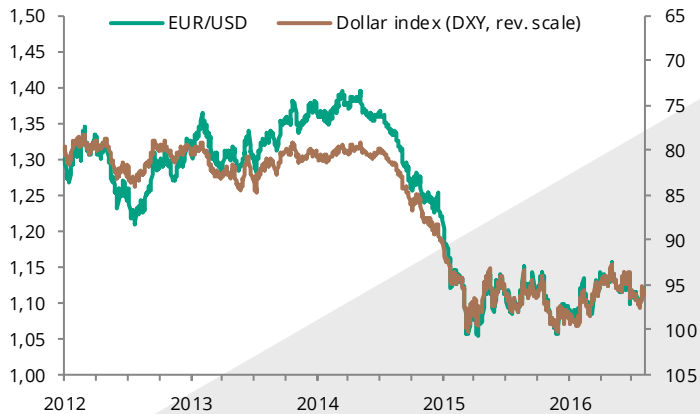
Source: Bloomberg, KGHM

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



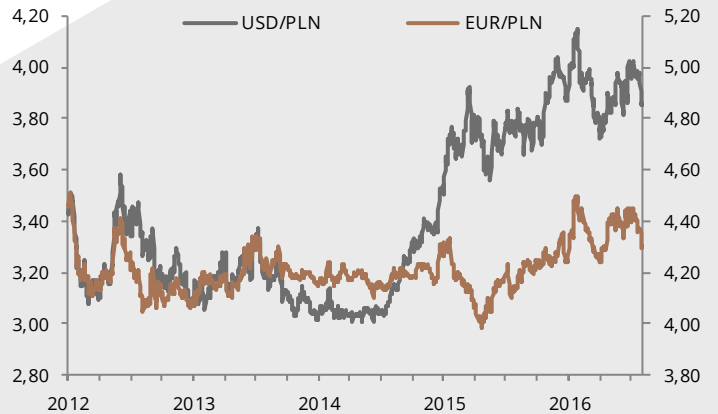
Source: Bloomberg, KGHM

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



Source: Bloomberg, KGHM

**PLN: NBP-fixing based rate vs. USD (lhs) and EUR (rhs)**



Source: Bloomberg, KGHM

## Legal note

This document has been prepared based on the below listed reports, among others, published in the following period:  
**25<sup>th</sup> July – 7<sup>th</sup> August 2016.**

- 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, ▪ SNL Metals & Mining.

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), a także systemów: Bloomberg oraz 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 Zarządzania Ryzykiem Rynkowym i Kredytowym (Market and Credit Risk Management Department)

Wydział Ryzyka Rynkowego (Market Risk Unit)

ul. M. Skłodowskiej-Curie 48

59-301 Lubin, Poland