

Market Overview

 as of: 23rd September 2019

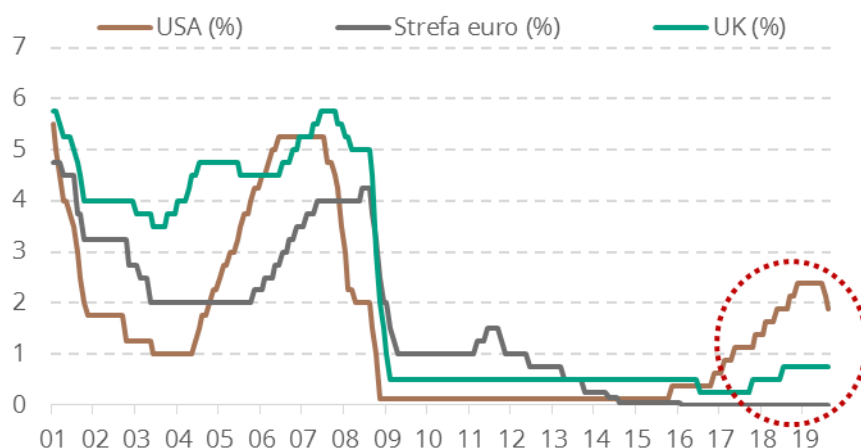
- Copper:** According to unofficial information from the Bloomberg news agency, Codelco intends to increase by at least 20% copper cathode premium in 2020 for US customers, based on the good situation of US demand.

Recent Wood Mackenzie's analysis shows that about 7% of the copper mining industry is below the profitability threshold. Given the situation on the energy market in Zambia, the situation may take even more negative turn, assuming an increase in costs caused by raising energy tariffs in an African country (page 2).

- Precious metals:** After precious metals price correction in the beginning of the month, both silver and gold prices did not find a way to get out of the narrow range in which they were traded for the last two weeks. Market events have recently been refocused by another scandal related to the manipulation of precious metal prices as a result of which an investigation is being conducted by the US prosecutor's office (page 5).

- Fed & trade war:** The US Federal Reserve has lowered its main interest rate by a quarter of a percentage point to a range of 1.75-2.00%. At the same time, the Fed reports readiness to further ease monetary policy in order to mitigate the effects of potential slowdown. China declares to reduce the negative effects of the trade war by exempting some of its goods from 25% tariffs, while the possibility of agreement between the US and Japan has appeared on the horizon (page 7).

The Fed has cut the policy rate for the second time from the last two months



Source: Bloomberg, KGHM Polska Miedź

Key market prices

	Close price	2w chng.
LME (USD/t)		
▲ Copper	5 777.50	0.1%
▲ Nickel	17 960.00	0.4%
LBMA (USD/troz)		
▼ Silver	17.88	-1.6%
▼ Gold (PM)	1 501.90	-0.5%
FX		
▼ EURUSD	1.1030	0.0%
▲ EURPLN	4.3438	0.1%
▲ USDPLN	3.9319	0.0%
▲ USDCAD	1.3275	0.9%
▲ USDCLP	715.24	0.6%
Stocks		
▲ KGHM	81.58	1.4%

Source: Bloomberg, KGHM Polska Miedź; (more on page 11)

Important macroeconomic data

Release	For	
Fed upper rate	Sep	2.00% ▼
Industrial prod. (yoy)	Aug	4.4% ▼
ECB deposit facility rate	Sep	-0.5% ▼
Industrial prod. (yoy)	Aug	-1.3% ▼
Copper exports (\$)	Aug	3 068 ▲

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

Market Risk Unit

marketrisk@kgm.com

Base and precious metals | Other commodities

Copper

According to unofficial information from the Bloomberg news agency, Codelco intends to increase by at least 20% copper cathode premium in 2020 for US customers, based on the good situation of US demand. Recent Wood Mackenzie's analysis shows that about 7% of the copper mining industry is below the profitability threshold. Given the situation on the energy market in Zambia, the situation may take even more negative turn, assuming an increase in costs caused by raising energy tariffs in an African country.

Codelco maintains bonuses for European customers while raising them for the US market

The world's largest copper producer is raising the premium it will charge to deliver the metal to U.S. customers next year in a sign of confidence in the resilience of demand. Chilean miner Codelco will boost the premium it charges on top of futures prices by 20% to 25% next year, according to a person familiar with the matter who asked not to be identified as the negotiations are private. Traditionally, supply contracts aren't signed until late in the fourth quarter, but Codelco has gotten out of the blocks early for a second consecutive year. The shift in strategy is designed to give the state-run mining company more opportunity to negotiate volumes and pricing with individual customers, the person said. A Codelco spokeswoman wasn't immediately able to comment when reached by email. Following a move earlier this month to leave European premiums unchanged, the industry's focus will now shift to the Asian market, which accounts for the largest portion of Codelco's sales. Spot premiums in Shanghai have risen to a nine-month high. Codelco is confident that Chinese economic data will improve over the second half of this year, and remains optimistic about sentiment in the U.S., the person said. Still, the increase in premiums may add more pain to American buyers reeling from country's first manufacturing contraction in three years.

Zambia electricity prices could double as drought slashes supply

Zambia, Africa's second-biggest copper producer, may double power tariffs as the government seeks more costly imports to offset a shortfall from its drought-stricken hydropower dams. The southern African nation has an electricity deficit of more than 700 megawatts, about a quarter of total capacity, and wants to buy 300 megawatts from South Africa, Energy Minister Matthew Nkhuwa told reporters in Lusaka, the capital. This will cost more than \$20 million monthly, requiring higher prices. "I think it will be maybe double the amount, because we are paying half the amount that we are supposed to pay for electricity in Zambia,"

Unofficial market insights appear on the market regarding Codelco's 2020 cathode premiums

Due to power outages in Zambia, the government is considering importing electricity from South Africa

Nkhuwa said when asked about the tariff increase. Zesco Ltd. the state-owned utility, is still determining the proposed hike for consideration by the cabinet and a final announcement will be made “soon,” he said. The increase will fuel inflation, which in August rose for a fifth straight month to the highest level since 2016. A fall in farm output, which is also due to the worst drought in almost four decades in parts of the country, has already stoked consumer prices. And the spike in oil prices after the weekend attack on Saudi Arabia’s biggest oil plant will prompt a fuel price increase in Zambia, Nkhuwa said. Eskom Holdings SOC Ltd., South Africa’s state-owned utility, is in talks with Zambia about a supply deal, the company said in reply to emailed questions. Mining companies, including the local units of First Quantum Minerals Ltd. and Glencore Plc, account for about half of Zambia’s power demand and haven’t been affected by power cuts, while households and other businesses endure daily blackouts as long as eight hours.

Other important information on copper market:

- Chilean deliveries of refined copper to China and US have fallen sharply in recent months, sparking fears the countries' trade war could be dampening demand in the largest markets for the red metal. Government data showed Chile, the world's largest producer of copper, shipped 79,700 mt of cathode to China in July, down 22.8% year on year. It follows year-on-year declines of 40-50% in the previous three months. Shipments to China during the first seven months of 2019 totaled 512,400 mt, down 26.7% compared with 12 months earlier, the report by the Chilean Copper Commission showed. Over the same period, shipments to the US, the second largest buyer of refined copper from Chile, fell 19.2% year on year to 246,300 mt. In contrast, deliveries to South Korea rose 70.8% year on year to 144,300 mt. The drop in shipments of refined copper partially reflects the closure of two of Codelco's smelters for upgrade work earlier this year. Total cathode shipments fell 11.1% year on year to 1.261 million mt in the first seven months of 2019, the data show. Shipments of copper concentrates to China have also slowed after a peak earlier this year as the closed smelters forced Codelco to export more copper in unrefined forms. In July, Chile shipped to China concentrates containing 177,900 mt of copper, down 13.0% from the same month of last year, following similar declines in May and June. That compares with an 80.9% rise in the first quarter of the year to 481,600 mt, the government report showed. Chile exported 2.114 million mt of copper in concentrate during the first seven months of the year, up 8.6% year on year.
- China's Zijin Mining Group plans to invest \$474 million (429.8 million) in the development of the Cukaru Peki Upper Zone mine of the Timok copper-gold project in eastern Serbia, Serbian energy minister Aleksandar Antic has said. Serbia's energy ministry has signed a Memorandum of Understanding (MoU) for the development of the Cukaru Peki Upper Zone with Zijin Mining Group and plans to start production of copper ore in the area in 2021, Antic said in a government press release on Sunday. Zijin aims to produce 200,000 tonnes of copper annually, of which more than 120,000 tonnes to come from

concentrate of Zijin Bor Copper, the Serbian unit of Zijin Mining Group, and 80,000 tonnes from the future Cukaru Peki Upper Zone mine, Antic was quoted as saying on the sidelines of the China International Fair for Investment and Trade (CIFIT) in Xiamen. The Chinese group injected \$350 million in the capital of Serbian copper mining and smelting company RTB Bor in December 2018, acquiring majority ownership, and renamed it to Zijin Bor Copper. The project is located within the central zone of the Timok Magmatic Complex (TMC), in the Serbian section of the East European Carpathian-Balkan Arc.

- Nokia and Telefónica Peru have signed a contract with Minera Las Bambas, the world's ninth largest copper mine, to enable digitalization and automation projects at its site in Apurimac, Peru. The contract will build and deploy a private LTE network 4,600 meters above sea level, then perform an assessment of the mine applications in order to begin services migration to the new network. The contract includes planning the site's capacity and providing technical support for the next five years. As part of the deal, Nokia will deploy its LTE Radio Access Network solution, including base stations, technical support and training services to enable more reliable communications between machines and people. The new network will improve existing wireless service, allowing Las Bambas to deploy additional safety solutions and reduce operating costs of its Tetra communication system. As the network evolves further towards 5G, the Las Bambas mine will also benefit from push-to-talk and push-to-video.
- Copper producer Antofagasta plc has avoided its first ever strike after supervisory staff at the Zaldívar copper mine in northern Chile voted narrowly to accept a new pay contract from management. 79 members of the union voted in favor of the proposal compared with 70 who had voted against. The decision comes after the union and the company held government-mediated negotiations in order to reach the deal. Antofagasta plc operates and owns 50% of the Zaldívar mine. Barrick Gold owns the other 50%. The mine produced 47,300 mt of copper cathode (SX-EW) last year.
- Significantly lower prices of copper and its byproduct cobalt have driven an increase in the number of producers making losses, which is expected to deter them from investing in new capacity. The prolonged trade conflict between the United States and China has weakened economic growth and demand prospects for industrial metals including copper, widely used in the power and construction industries. Consultants Wood Mackenzie estimate 7% of global production is loss making compared with 3% around the same time last year when copper prices fell to around \$5,800 a tonne. "The industry is beginning to feel pressure," said WoodMac Copper Mine Costs Research Manager William Tankard. "Lower copper prices are driving a behavioral shift where there is less enthusiasm by developers to push ahead with projects than was the case 12 months ago." Copper demand is expected to climb, partly due to higher use in electric vehicles, which use twice as much copper as internal combustion engines. But a lack of investment threatens future supply. If prices do not improve from current levels, few copper projects will

get the green light, creating larger deficits than previously expected in the long term, WoodMac's Tankard said.

Precious Metals

After precious metals price correction in the beginning of the month, both silver and gold prices did not find a way to get out of the narrow range in which they were traded for the last two weeks. Market events have recently been refocused by another scandal related to the manipulation of precious metal prices as a result of which an investigation is being conducted by the US prosecutor's office.

JPMorgan precious metals trading desk has been accused of price spoofing

JPMorgan's metals desk was a criminal enterprise, U.S. says

U.S. prosecutors took an unusually aggressive turn in their investigation of price fixing at JPMorgan Chase & Co., describing its precious metals trading desk as a criminal enterprise operating inside the bank for nearly a decade. The prosecutors charged the head of JPMorgan's global metals trading operation and two others, accusing them of "conspiracy to conduct the affairs of an enterprise involved in interstate or foreign commerce through a pattern of racketeering activity" -- counts more commonly known as RICO charges. The RICO language, rarely used in big bank cases, suggests that JPMorgan may face deeper legal jeopardy that goes beyond the several individuals who have already been prosecuted. "Based on the fact that it was conduct that was widespread on the desk, it was engaged in in thousands of episodes over an eight-year period -- that it is precisely the kind of conduct that the RICO statute is meant to punish," Assistant Attorney General Brian Benczkowski told reporters.

This case differs from previous market-rigging cases in other ways, including the number of bank personnel who have been implicated by the government. JPMorgan pleaded guilty in a 2015 investigation of price fixing in currency markets, a matter in which one of the bank's traders was charged. In the metals-manipulation matter, more than a dozen people participated in the scheme, prosecutors said. Two of them have pleaded guilty and are cooperating with authorities.

The head of the bank's global precious metals desk, Michael Nowak, 45, and two others ripped off market participants and even clients as they illegally moved prices for gold, silver, platinum and palladium, the Justice Department said Monday. Nowak was placed on leave last month, a person familiar with the matter has said. The other traders charged were Gregg Smith, 55 and Christopher Jordan, 47.

Prosecutors said the men engaged in spoofing, or the practice of making buy and sell orders for precious metals futures contracts with the intent to cancel those orders before execution. The conspirators placed those orders electronically and by phone calls to floor brokers in trading pits. The practice began before

JPMorgan's May 2008 purchase of Bear Stearns and grew even larger after that acquisition, the U.S. said.

By placing fraudulent orders, the traders were able to generate millions of dollars in trading profits for themselves and cause millions in losses for counter-parties, the precious metals desk and "ultimately" the bank itself, prosecutors said. Still, the men intended to deceive the bank, prosecutors said. Both Jordan and Smith have lied to law enforcement investigators and bank compliance officers for years, according to the indictment.

Global economies | Foreign exchange markets

The US Federal Reserve has lowered its main interest rate by a quarter of a percentage point to a range of 1.75-2.00%. At the same time, the Fed reports readiness to further ease monetary policy in order to mitigate the effects of potential slowdown. China declares to reduce the negative effects of the trade war by exempting some of its goods from 25% tariffs, while the possibility of agreement between the US and Japan has appeared on the horizon.

The US Federal Reserve cuts interest rates by another quarter percentage point

Fed lowers interest rate by a quarter-point, and is open to the idea of more easing

In a move to support the economy in a time of greater uncertainty about the outlook, the Fed reduced its benchmark short-term rate to a range between 1.75% and 2%. Wednesday's cut was the second in two months. Fed officials think a few rate cuts will help the economy weather the uncertainty caused mainly by President Donald Trump's trade war with China.

There were three dissents from the quarter-point cut, the first time there have been three "no" votes at a Fed meeting since September 2016. Boston Fed President Eric Rosengren and Kansas City Fed President Esther George voted against the move because they wanted the Fed to hold rates steady. They also voted against the Fed's cut in July. St. Louis Fed President James Bullard dissented because he wanted a more aggressive half-point cut.

At his press conference, Fed Chairman Jerome Powell said the Fed will "act as needed." Seven Fed officials said they believed there would be one more rate cut this year.

China declares to reduce the negative effects of the trade war by exempting some goods from 25% tariffs

China starts tariff exemptions, keeps pressure on U.S. farms

China announced a range of U.S. goods to be exempted from 25% extra tariffs put in place last year, as the government seeks to ease the impact from the trade war without lifting charges on major agricultural items like soybeans and pork. Pharmaceuticals and lubricant oil are among exclusions to levies on imports announced by the Ministry of Finance on its website. The exemptions, effective from Sept. 17 to Sept. 16 2020, will cover 16 categories of products worth about \$1.65 billion, according to Bloomberg calculations based on China's 2018 trade data. Other products on the list include alfalfa, fish meal and pesticides. Today's exemptions apply to the round of tariffs China imposed on U.S. goods starting last July in retaliation for higher U.S. levies. The Chinese government began accepting applications for tariff exemptions in May, but it is the first time they have stated which products will be excluded. The U.S. Trade Representative's Office has announced six rounds of exclusions for the punitive tariffs on \$34 billion in Chinese goods since December. Chinese stocks edged down and the yuan pared earlier gains after the announcement. State-run Global Times editor-

in-chief Hu Xijin said on Twitter that China will announce moves to ease the negative impact of the trade war before the exemption list was announced.







US-Japan cooperation on trade appears to be heading towards closing this trade war front






Trump says U.S., Japan reach initial agreement on tariffs

President Donald Trump said his administration will enter into an initial trade accord over tariffs with Japan in the coming weeks while Tokyo warned any final deal must include assurances that Washington won't slap new duties on \$50 billion of Japanese automobiles. In a notice to Congress, Trump also said the U.S. will be entering an "executive agreement" with Japan over digital trade. There was no mention by Trump if he'll end the threat to impose tariffs on Japanese auto imports as part of the trade deal. Japanese Foreign Minister Toshimitsu Motegi, the country's point man for the trade talks with Washington, said Tokyo wanted to see the Trump administration lay to rest the threat of new auto tariffs before agreeing to a final trade deal. Key details still need to be worked out. While Japan is a key export market for U.S. rice farmers, American growers won't get increased sales under the current terms of the deal, people familiar with the accord said. U.S. producers hope the issue will be dealt with in the second phase of negotiations between the two countries, according to one of the people. The threat of steep new U.S. tariffs on imported automobiles and components has loomed over the auto industry and major American trading partners since the Commerce Department in February found those imports could impair national security. After meeting Japanese Prime Minister Shinzo Abe at the G-7 summit in France last month, Trump announced that the two countries had struck a trade deal "in principle." The leaders said they hoped to sign the pact on the sidelines of the United Nations General Assembly in New York later this month.

Macroeconomic calendar

Important macroeconomic data releases

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²	
China							
🔴🔴🔴🔴	10-Sep	Consumer inflation CPI (yoy)	Aug	2.8% -	2.8%	2.7%	🟢
🔴🔴	10-Sep	Producer inflation PPI (yoy)	Aug	-0.8% ▼	-0.3%	-0.9%	🟢
🔴	11-Sep	New yuan loans (CNY bn)	Aug	1 210 ▲	1 060	1 200	🟢
🔴🔴🔴🔴	16-Sep	Industrial production (yoy)	Aug	4.4% ▼	4.8%	5.2%	🔴
🔴🔴	16-Sep	Fixed assets investments (ytd, yoy)	Aug	5.5% ▼	5.7%	5.7%	🔴
🔴	16-Sep	Retail sales (yoy)	Aug	7.5% ▼	7.6%	7.9%	🔴
Poland							
🔴🔴🔴🔴🔴	11-Sep	NBP base rate decision	Sep	1.50% -	1.50%	1.50%	🟡
🔴🔴🔴🔴	13-Sep	Consumer inflation CPI (yoy) - final data	Aug	2.9% ▲	2.8%	--	
🔴🔴	13-Sep	Trade balance (EUR mn)	Jul	- 376 ▼	- 77.0	- 111	🔴
🔴🔴	13-Sep	Exports (EUR mn)	Jul	19 239 ▲	18 068	19 077	🟢
🔴🔴	13-Sep	Current account balance (EUR mn)	Jul	- 814 ▼	21.0	- 295	🔴
🔴🔴🔴🔴	16-Sep	Core CPI (excluding food and energy, yoy)	Aug	2.2% -	2.2%	2.1%	🟢
🔴🔴	18-Sep	Average gross salary (yoy)	Aug	6.8% ▼	7.4%	6.8%	🟡
🔴	18-Sep	Employment (yoy)	Aug	2.6% ▼	2.7%	2.7%	🔴
🔴🔴🔴🔴	19-Sep	Sold industrial production (yoy)	Aug	-1.3% ▼	5.8%	1.3%	🔴
🔴🔴	19-Sep	Producer inflation PPI (yoy)‡	Aug	0.7% ▲	0.5%	0.8%	🔴
🔴🔴🔴	20-Sep	Retail sales (yoy)	Aug	6.0% ▼	7.4%	6.5%	🔴
US							
🔴🔴🔴🔴	12-Sep	Consumer inflation CPI (mom)	Aug	0.1% ▼	0.3%	0.1%	🟡
🔴🔴🔴🔴	12-Sep	Consumer inflation CPI (yoy)	Aug	1.7% ▼	1.8%	1.8%	🔴
🔴🔴	13-Sep	Retail sales (excluding autos, mom)	Aug	0.0% ▼	1.0%	0.1%	🔴
🔴🔴	13-Sep	University of Michigan confidence index - preliminary data	Sep	92.0 ▲	89.8	90.8	🟢
🔴🔴🔴🔴	17-Sep	Industrial production (mom)‡	Aug	0.6% ▲	-0.1%	0.2%	🟢
🔴	17-Sep	Capacity utilization	Aug	77.9% ▲	77.5%	77.6%	🟢
🔴🔴🔴🔴🔴	18-Sep	FOMC base rate decision - upper bound (Fed)	Sep	2.00% ▼	2.25%	2.00%	🟡
🔴🔴🔴🔴🔴	18-Sep	FOMC base rate decision - lower bound (Fed)	Sep	1.75% ▼	2.00%	1.75%	🟡
🔴🔴	19-Sep	Philadelphia Fed business outlook	Sep	12.0 ▼	16.8	10.5	🟢
Eurozone							
🔴🔴🔴🔴🔴	12-Sep	ECB main refinancing rate	Sep	0.00% -	0.00%	0.00%	🟡
🔴🔴🔴🔴🔴	12-Sep	ECB deposit facility rate	Sep	-0.5% ▼	-0.4%	-0.5%	🟡
🔴🔴🔴🔴	12-Sep	Industrial production (sa, mom)‡	Jul	-0.4% ▲	-1.4%	-0.1%	🔴
🔴🔴🔴🔴	12-Sep	Industrial production (wda, yoy)‡	Jul	-2.0% ▲	-2.4%	-1.4%	🔴
🔴🔴	13-Sep	Labour costs (yoy)‡	2Q	2.7% ▲	2.5%	--	
🔴	13-Sep	Trade balance (EUR mn)	Jul	24.8 ▲	20.6	--	
🔴	17-Sep	ZEW survey expectations	Sep	- 22.4 ▲	- 43.6	--	
🔴🔴🔴🔴	18-Sep	Consumer inflation CPI (yoy) - final data	Aug	1.0% -	1.0%	1.0%	🟡
🔴🔴🔴🔴	18-Sep	Core CPI (yoy) - final data	Aug	0.9% -	0.9%	0.9%	🟡
🔴	20-Sep	Consumer confidence - estimation	Sep	- 6.5 ▲	- 7.1	- 7.0	🟢
Germany							
🔴🔴🔴🔴	12-Sep	Harmonized consumer inflation HICP (yoy) - final data	Aug	1.0% -	1.0%	1.0%	🟡
🔴🔴🔴🔴	12-Sep	Consumer inflation CPI (yoy) - final data	Aug	1.4% -	1.4%	1.4%	🟡
France							
🔴🔴🔴🔴	10-Sep	Industrial production (yoy)‡	Jul	-0.2% ▼	-0.1%	0.5%	🔴

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²
Italy 						
⊕⊕⊕⊕	10-Sep	Industrial production (wda, yoy)	Jul	-0.7% ▲	-1.2%	0.3% ◡
⊕⊕⊕⊕	16-Sep	Harmonized consumer inflation HICP (yoy) - final data	Aug	0.5% -	0.5%	0.5% ○
UK 						
⊕⊕⊕⊕	09-Sep	Industrial production (yoy)	Jul	-0.9% ▼	-0.6%	-1.1% ▲
⊕⊕	10-Sep	Unemployment rate (ILO, 3-months)	Jul	3.8% ▼	3.9%	3.9% ◡
⊕⊕⊕⊕	18-Sep	Consumer inflation CPI (yoy)	Aug	1.7% ▼	2.1%	1.9% ◡
⊕⊕⊕⊕⊕	19-Sep	BoE base rate decision	Sep	0.75% -	0.75%	0.75% ○
⊕⊕⊕⊕	19-Sep	BoE asset purchase target (GBP bn)	Sep	435 -	435	435 ○
Japan 						
⊕⊕⊕⊕⊕	09-Sep	GDP (annualized, qoq) - final data	2Q	1.3% ▼	1.8%	1.3% ○
⊕⊕⊕⊕⊕	09-Sep	GDP (qoq, sa) - final data	2Q	0.3% ▼	0.4%	0.3% ○
⊕⊕⊕⊕	13-Sep	Industrial production (yoy) - final data	Jul	0.7% -	0.7%	--
⊕⊕⊕⊕	20-Sep	Consumer inflation CPI (yoy)	Aug	0.3% ▼	0.5%	0.3% ○
Chile 						
⊕⊕⊕	09-Sep	Copper exports (USD mn)	Aug	3 068 ▲	2 639	--
Canada 						
⊕⊕⊕	11-Sep	Capacity utilization‡	2Q	83.3% ▲	81.1%	82.0% ▲
⊕⊕⊕⊕	18-Sep	Consumer inflation CPI (yoy)	Aug	1.9% ▼	2.0%	1.9% ○

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

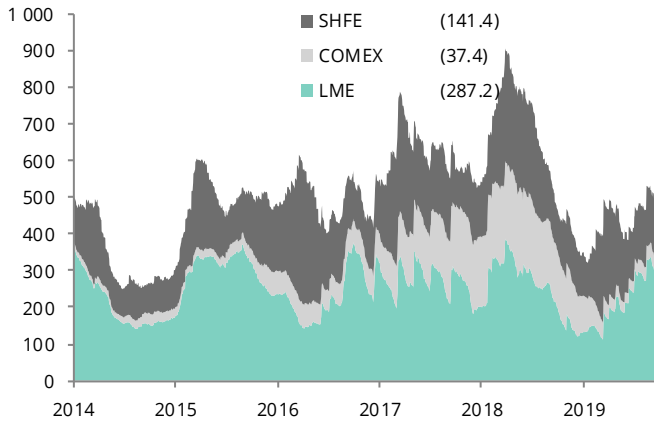
Key base & precious metal prices, exchange rates and other important market factors

<i>(as of: 20-Sep-19)</i>		Price change ¹					From year beginning ²		
	Price	2W	QTD	YTD	1Y	Average	Min	Max	
LME (USD/t)									
Copper	5 777.50	▲ 0.1%	▼ -3.3%	▼ -3.1%	▼ -4.6%	6 050.11	5 537.00	6 572.00	
Molybdenum	-	-	-	-	-	-	-	-	
Nickel	17 960.00	▲ 0.4%	▲ 41.8%	▲ 69.5%	▲ 43.3%	13 292.57	10 440.00	18 625.00	
Aluminum	1 766.00	▼ -0.2%	▼ -0.4%	▼ -5.5%	▼ -12.5%	1 806.63	1 712.50	1 923.00	
Tin	16 425.00	▼ -4.6%	▼ -12.7%	▼ -15.8%	▼ -13.8%	19 401.37	15 710.00	21 925.00	
Zinc	2 310.00	▼ -0.1%	▼ -10.5%	▼ -8.0%	▼ -5.2%	2 609.00	2 211.00	3 018.00	
Lead	2 107.00	▲ 1.1%	▲ 10.1%	▲ 4.9%	▲ 5.2%	1 981.17	1 768.00	2 154.00	
LBMA (USD/troz)									
Silver	17.88	▼ -1.6%	▲ 17.5%	▲ 15.6%	▲ 25.7%	15.76	14.38	19.31	
Gold ²	1 501.90	▼ -0.5%	▲ 6.6%	▲ 17.2%	▲ 24.3%	1 358.85	1 269.50	1 546.10	
LPPM (USD/troz)									
Platinum ²	940.00	▼ -2.0%	▲ 14.9%	▲ 18.4%	▲ 13.8%	846.08	782.00	977.00	
Palladium ²	1 646.00	▲ 5.4%	▲ 8.0%	▲ 30.3%	▲ 56.8%	1 446.09	1 267.00	1 646.00	
FX³									
EURUSD	1.1030	▼ 0.0%	▼ -3.1%	▼ -3.7%	▼ -6.3%	1.1245	1.0937	1.1535	
EURPLN	4.3438	▲ 0.1%	▲ 2.2%	▲ 1.0%	▲ 1.2%	4.2995	4.2406	4.3857	
USDPLN	3.9319	▲ 0.0%	▲ 5.3%	▲ 4.6%	▲ 7.1%	3.8232	3.7243	3.9882	
USDCAD	1.3275	▲ 0.9%	▲ 1.4%	▼ -2.7%	▲ 2.9%	1.3293	1.3038	1.3600	
USDCNY	7.0909	▼ -0.4%	▲ 3.3%	▲ 3.1%	▲ 3.6%	6.8580	6.6872	7.1789	
USDCLP	715.24	▲ 0.6%	▲ 5.2%	▲ 2.9%	▲ 4.4%	684.50	649.22	725.69	
Money market									
3m LIBOR USD	2.135	▼ 0.00	▼ -0.19	▼ -0.67	▼ -0.23	2.472	2.102	2.804	
3m EURIBOR	-0.393	▲ 0.04	▼ -0.05	▼ -0.08	▼ -0.07	-0.339	-0.448	-0.306	
3m WIBOR	1.720	-	-	-	-	1.720	1.720	1.720	
5y USD interest rate swap	1.544	▲ 0.11	▼ -0.22	▼ -1.03	▼ -1.54	2.098	1.254	2.715	
5y EUR interest rate swap	-0.373	▲ 0.10	▼ -0.14	▼ -0.57	▼ -0.73	-0.097	-0.553	0.222	
5y PLN interest rate swap	1.705	▼ -0.04	▼ -0.16	▼ -0.41	▼ -0.80	1.916	1.440	2.240	
Fuel									
WTI Cushing	58.09	▲ 0.4%	▼ -0.6%	▲ 27.9%	▼ -18.0%	57.10	46.54	66.40	
Brent	64.62	▲ 2.0%	▲ 0.3%	▲ 21.5%	▼ -17.6%	64.65	53.83	73.89	
Diesel NY (ULSD)	198.63	▲ 3.3%	▲ 2.2%	▲ 18.1%	▼ -10.8%	193.45	170.01	212.40	
Others									
VIX	15.32	▲ 0.05	▲ 0.24	▼ -10.10	▲ 3.52	15.85	12.01	25.45	
BBG Commodity Index	79.20	▲ 1.0%	▼ -0.6%	▲ 3.2%	▼ -5.6%	79.60	75.97	83.06	
S&P500	2 992.07	▲ 0.5%	▲ 1.7%	▲ 19.4%	▲ 2.1%	2 851.71	2 447.89	3 025.86	
DAX	12 468.01	▲ 2.0%	▲ 0.6%	▲ 18.1%	▲ 1.1%	11 819.34	10 416.66	12 629.90	
Shanghai Composite	3 006.45	▼ -0.6%	▲ 0.9%	▲ 20.6%	▲ 10.2%	2 909.22	2 464.36	3 270.80	
WIG 20	2 171.75	▼ -0.1%	▼ -6.7%	▼ -4.6%	▼ -3.8%	2 282.05	2 051.44	2 414.41	
KGHM	81.58	▲ 1.4%	▼ -21.2%	▼ -8.2%	▼ -6.4%	94.94	73.76	112.00	

^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

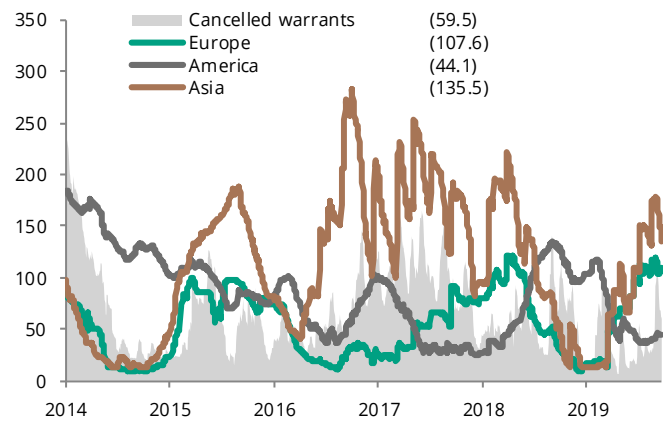
Source: Bloomberg, KGHM Polska Miedź

Copper: official exchange stocks (thousand tonnes)



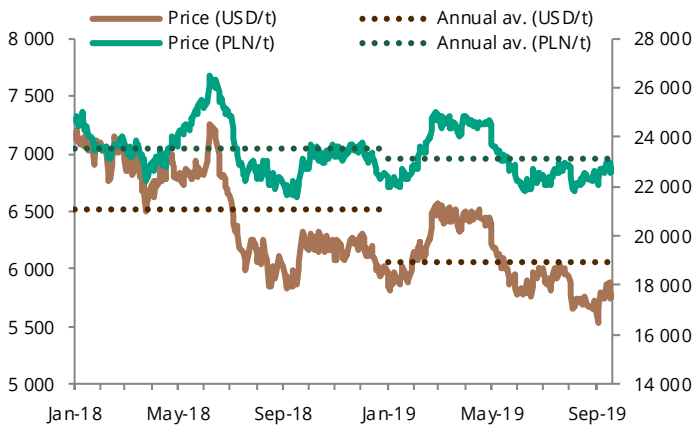
Note: Latest values in brackets. Source: Bloomberg, KGHM

Copper: official LME stocks (thousand tonnes)



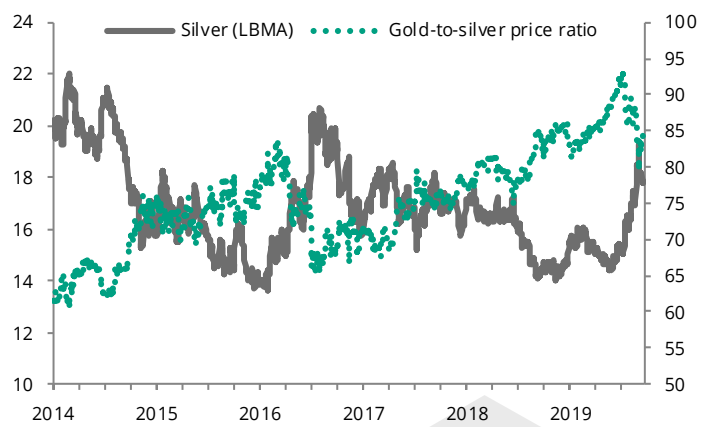
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



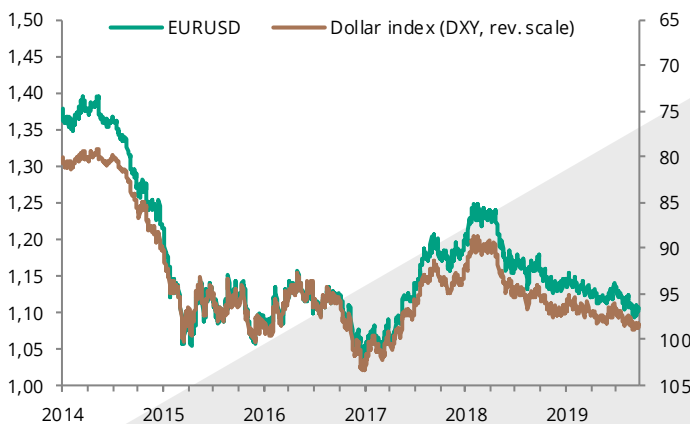
Source: Bloomberg, KGHM Polska Miedź

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



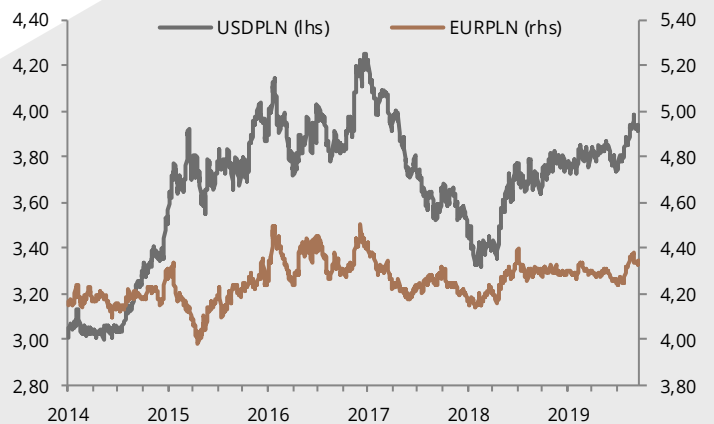
Source: Bloomberg, KGHM Polska Miedź

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:
9th – 22nd September 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 (charge-free logging)
- silver and gold: www.lbma.org.uk/pricing-and-statistics
- platinum and palladium: www.lppm.com/statistics.aspx

DISCLAIMER

This document reflects the market view of the staff of KGHM Polska Miedz (Polish Copper)'s Market Risk Unit employees on the economy, commodity as well as financial markets. Although, according to the our best of our knowledge, all the facts presented in this publication come from or are based on reliable sources, we do not guarantee their correctness. Moreover, they may be incomplete or shortened. All the opinions and forecasts are backed by diligently-performed analyses valid as of the publishing date and may be subject to change. KGHM Polska Miedz (Polish Copper) S.A. is not obligated to announce any subsequent change of these opinions or forecasts. This document's purpose is solely informative and must not be interpreted as an offer or advice with regards to the purchase/sale of any mentioned financial instrument, nor it is part of such offer or advice.

Re-printing or using this publication or its in whole or part requires prior written consent from KGHM. To acquire that such consent please contact the Communications and CSR Department of Communication (Departament Komunikacji i CSR) of and CSR KGHM Polska Miedz SA.

In case of questions or comments please contact us:

KGHM Polska Miedz (Polish Copper) S.A.
Departament Ryzyka Finansowego i Rynkowego (Financial and Market Risk Department)
Wydział Ryzyka Rynkowego (Market Risk Unit)
ul. M. Skłodowskiej-Curie 48
59-301 Lubin, Poland