

Market Overview



as of: 22nd April 2019

- **Copper:** In recent weeks, largest participants in the copper market have met at one of the largest industry events - the CESCO Chile conference. This year's edition was clearly dominated by topics related to the presentation of new or extensions of existing mining projects (*page 2*).
- **Precious metals:** Researchers from Kent Business School at the University set out to examine to what extent the rising demand for solar panels is responsible for the rising cost of silver, which is core element for their production. Mongolia's central bank launched a campaign to encourage gold miners and individuals to sell gold to banks (*page 5*).
- **IMF:** Global economy slowed down in the second half of last year, reflecting a confluence of factors affecting major economies. In April's edition of World Economic Outlook IMF revised downward forecasts of global growth for 2019, mainly due slower than expected economy growth in Eurozone and still tense macroeconomic situation (*page 7*).

Key market prices

	Close price	2w chng.
LME (USD/t)		
▲ Copper	6 448.00	0.2%
▼ Nickel	12 630.00	-4.0%
LBMA (USD/troz)		
▼ Silver	14.96	-1.2%
▼ Gold (PM)	1 275.70	-1.9%
FX		
▲ EURUSD	1.1250	0.0%
▼ EURPLN	4.2802	-0.2%
▼ USDPLN	3.8051	-0.4%
▲ USDCAD	1.3382	0.4%
▼ USDCLP	662.27	-0.3%
Stocks		
▼ KGHM	107.20	-3.9%

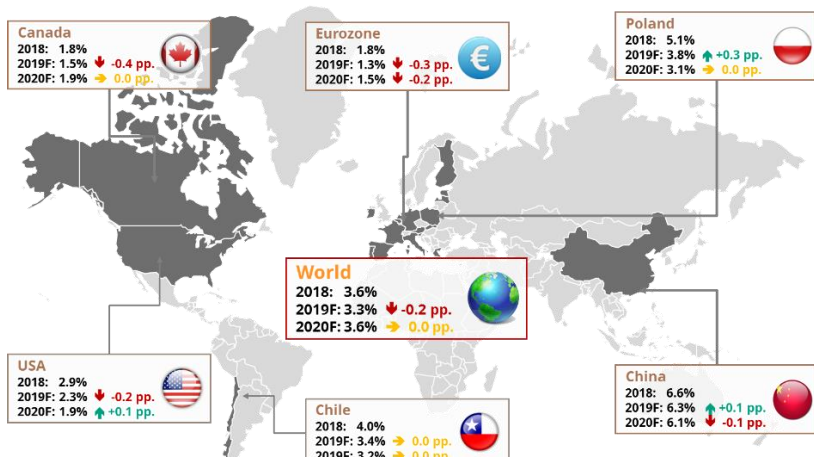
Source: Bloomberg, KGHM Polska Miedź; (*more on page 11*)

Important macroeconomic data

Release	For	
 GDP (yoy)	1Q	6.4% -
 Manufacturing PMI	Apr	44.5 ▲
 Industrial prod. (yoy)	Mar	8.5%
 Philadelphia Fed outlook	Apr	8.5 ▼
 Copper exports (\$)	Mar	2 970 ▲

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

April 2019 IMF forecasts' revisions



Source: IMF, KGHM Polska Miedź

Market Risk Unit

marketrisk@kgm.com

Base and precious metals | Other commodities

Copper

In recent weeks, largest participants in the copper market have met at one of the largest industry events - the CESCO Chile conference. This year's edition was clearly dominated by topics related to the presentation of new or extensions of existing mining projects.

CESCO Chile summary

A clear difference is visible in the themes presented by mining companies at the World Copper Conference in the current and previous year. In 2018, topics related to the optimization of production processes, data analysis (Big Data) or the use of Block Chain technology by mining and trading companies dominated quite clearly. In the current year, there is a tendency to present new mining projects or mine expansions. This was also reflected in the forecasts of copper market analysts pointing to more than 1 million metric tonnes of additional production, planned to be launched in the next few years in relation to expectations from 12 months ago. This significantly affects the estimates of the market balance in next couple of years. Mine costs are systematically growing across the sector, and despite the fact that there is no shortage of resources and mining projects that can be implemented, they are subject to increasing risk (location, jurisdiction, infrastructure...).

It seems that mining companies, despite the fact that current prices remain below the levels referred to as incentive price, i.e. ensuring the expected return on investment in a new project, believed the analyzes of a significant deficit on the copper market in the following years. Some minor investment decisions were made in the hope of a significant increase in prices in the scenario of material shortage on the market. The wide supply reaction, however, means that the scenario of a significant deficit will probably be postponed again. There are also growing concerns about the demand side, especially in terms of the observed slowdown of already small economic growth in Europe, the expected slowdown in growth in the US as well as the ongoing structural change in China. The situation of the copper market in the long term is still positively perceived, in particular due to the development of the electric car sector, related infrastructure and further migration to cities and raising standard of living, particularly in developing economies. Global trends in renewable energy and energy efficiency also support the use of copper in the future. In the short-term, however, there are many concerns related mainly to the US-China trade war, Brexit, doubtful financial situation in Italy and elections to the European Parliament, potential US tariffs on cars from Europe and slowdown in China.

China in response to trade restrictions with the US is introducing economy stimulus package. In analysts' opinion, however, this is a smaller package than

Analysts have revised upwards their supply forecasts in the coming years

China is introducing another economy stimulus package

those introduced in 2009 and in the years 2015-2016 and less direct, i.e. less material-expensive (cuts in taxes instead of infrastructure investments).

Despite the environmental difficulties of several smelters (mainly in Chile and India), strong demand for copper concentrate persists resulting in further gradual lowering of the TCRC premium. One of the factors affecting this situation is limiting the import of Class 7 scrap to China and additional duties imposed on scrap originating from the USA due to a trading dispute. In the mining sector, there are more and more initiatives to highlight or increase value by emphasizing the origin of products. An example is "green copper". Potential social protests are presented as one of the main risks of implementing projects in South America in addition to the threats arising from the US-China trade war, corruption, regulatory transparency and regulatory risk.

In Chile, difficulties in access to water persist and this is one of the main challenges in the implementation of mining projects located mainly in mountainous areas. Especially in the case of medium and small projects, the organization of access to water, the desalination plant adversely affects the economics of projects, that more and more often requires the sharing of such an installation by several projects from the same region.

Other important information on copper market:

- The Chilean copper agency predicts output of the metal will trail consumption by a narrower margin this year than forecast in January as output rises slightly faster than expected. Cochilco forecasts production deficit of 208,000 tons in 2019, compared with its 227,000-ton deficit previous forecast. In 2020, shortfall seen narrowing to 202,000 tons, from earlier forecast of 185,000 tons. Global copper output to increase 1.6% to 21m tons in 2019, bigger than the 20.9m tons predicted in January. Agency sees 2020 copper production at 21.7m tons. Cochilco says 2019 global demand to rise 1.9% to 24.1m tons, bigger than the January forecast of 24m tons. China's 2019 copper use seen at 12.8m tons, stronger than the 12.56m tons predicted in January. Asian nation's demand for copper to increase 2% to 13m tons in 2020, from prior forecast of +1.5% to 12.75m. Chile's output set to expand 2.2% to 5.96m tons in 2019. Previous forecast was +1.6% to 5.94m tons in 2019, 6m tons in 2020. Agency maintains its 2019 copper price forecast for the metal at \$3.05 a pound in 2019, \$3.08 in 2020.
- Freeport-McMoRan Inc plans no dividend hikes, acquisitions or debt buybacks over the next two years as it focuses on expanding Indonesia's Grasberg copper and gold mine underground, its chief executive told Reuters. The strategy underscores Freeport's desire to keep Grasberg, one of the world's largest mines, the crown jewel of its operations even amid the complex task of excavating the largest underground mine ever developed at a cost of more than \$15 billion. "For two years, we're going to be focused on this transition," CEO Richard Adkerson said on the sidelines of the World Copper Conference in Santiago. "If things go well with that two years from

now we're going to be well situated to then look at further debt reductions, potentially higher dividends, potential investments in new projects, and we'll be open to seeing if there's anything in the global M&A market that meets our objectives." The Phoenix-based miner agreed last December to relinquish majority control of Grasberg under pressure from the Indonesian government, although it will remain the project's operator. "Our company is really going to be much better situated in two years' time. We have confidence about this," he said. "The Grasberg asset is so special."

- Copper traders may be looking to shift stockpiles from China to other Asian warehouses as an uncertain demand outlook depresses prices in the world's top consumer of the metal. Inventories of the metal in Asian warehouses monitored by the London Metal Exchange have surged in the past month and are up sevenfold this year at 87,500 metric tons. In China, combined bonded stockpiles and inventories in warehouses monitored by Shanghai Futures Exchange fell 0.5 percent last week to about 762,000 tons, trimming this year's increase to 40 percent, according to data compiled by Bloomberg. There are no LME registered warehouses in China. The increase in stockpiles in Asia reflects a shrinking margin for importing copper to China, which discourages traders from holding the metal in tax-free bonded warehouses, according to Yang Changhua, an analyst with state-owned researcher Beijing Antaike Information Development Co. "The relatively weaker consumption of the metal in the first quarter this year has been weighing on domestic prices as well as import profits," Yang said by phone from Beijing. "Under this circumstance, some traders may move copper from Chinese bonded zones to overseas LME-registered locations for higher premiums."
- Societe Generale SA attached to the list of banks and financial institutions to take a big step back from commodities amid a slump in trading profits. The French bank said lately that it is planning to close its over-the-counter commodities business and its proprietary trading subsidiary as part of a global move to cut about 1,600 jobs after a slump in trading revenue. The bank will also reorganize and refocus activities within fixed income and prime services to make them more profitable. The move comes just months after BNP Paribas shuttered its U.S. commodities derivatives desk as France's largest bank sought to protect profitability. The commodities business has seen a broad retreat from Wall Street and other financial firms in recent years after increased financial regulations and lackluster profits.

Precious Metals

Researchers from Kent Business School at the University set out to examine to what extent the rising demand for solar panels is responsible for the rising cost of silver, which is core element for their production. Mongolia's central bank launched a campaign to encourage gold miners and individuals to sell gold to banks.

To what extent greater interest in renewable energy sources will translate into an increase in demand for silver?

Solar panel demand causing spike in worldwide silver prices

Rising demand for solar panels is having a major effect on the worldwide price of silver, which could lead to solar panel production costs becoming far higher in the future, new research from the University of Kent has demonstrated.

Researchers from Kent Business School at the University set out to examine to what extent the rising demand for solar panels as part of a push to use renewable energy sources is responsible for the rising cost of silver.

Silver is a core element for the manufacture of solar panels, as it has the highest electrical and thermal conductivity of all metals. As such it is heavily used in solar panels, with around 20g per panel which equates to around 6.1% of the total cost of the price of building each unit.

In their analysis the researchers used data from quarterly silver prices measured from the London Bullion Market, installed solar energy capacity and solar gross electricity production between 1990 and 2016 to map correlations in demand and costs.

The data clearly showed a rise in silver price at the same time as increased demand for solar panels, such as after the 2008 global recession indicating the causal relationship between these two variables. Similarly, prices rose after 2011 when there was worldwide concern oil prices were becoming too high leading to a move towards renewable energy sources.

The researchers added that if prices continue to rise it could make solar panels production and subsequent sales costs much higher. This could require intervention from governments such as with energy credits or sales tax waivers to make them more cost-effective to encourage a transition to more renewable energy resources.

Conversely it may lead to a spur in the development of solar panels that use materials instead of silver. However, breakthroughs required to use alternative materials, such as aluminium or copper, are not expected to occur for some time and currently remain far below the quality of silver.

Mongolian central bank launches campaign to increase gold purchase

Mongolia's central bank launched a campaign to encourage gold miners and individuals to sell gold to banks.

Mongolian central bank's annual gold purchase almost doubled to 22 tons in 2018

"The Bank of Mongolia's gold purchase has declined sharply since the beginning of this year due to instability in the domestic tax environment. So, it was decided to again launch a campaign called 'National Gold to the Fund of Treasures' to increase the central bank's gold purchase," Atarbaatar Enkhjin, head of the Reserve Management and Financial Markets Department at the Bank of Mongolia, said at the campaign's launch ceremony.

During the six-month campaign, the Bank of Mongolia is planning to organize activities directed at encouraging gold miners and individuals to sell gold to banks, said Enkhjin.

The Mongolian central bank purchased only 12.7 tons of gold in 2014. Thanks to the low royalty taxes on gold with the 2014 amendments, the central bank's annual gold purchase almost doubled to 22 tons in 2018.

The 2.5-percent of discounted royalty on gold mining ended on Jan. 1. Since then, 5 to 10 percent royalty taxes on gold mining have been imposed on miners.

As a result, the central bank purchased only 772.1 kg of gold from legal entities and individuals in the first three months of this year, down 71.6 percent year on year.

During its extraordinary session on March 18-29, the Mongolian parliament decided to set the gold royalty at a 5 percent rate to revive the central bank's gold purchase.

In May last year, the Mongolian central bank launched the campaign called "National Gold to the Fund of Treasures" for the first time, which lasted for five months.

Global economies | Foreign exchange markets

A Weakening Expansion?

Global economy slowed down in the second half of last year, reflecting a confluence of factors affecting major economies. In April's edition of World Economic Outlook IMF revised downward forecasts of global growth for 2019, mainly due slower than expected economy growth in Eurozone and still tense macroeconomic situation.

Global growth is now projected to slow from 3.6 percent in 2018 to 3.3 percent in 2019

After strong growth in 2017 and early 2018, global economy slowed down in the second half of last year, reflecting a confluence of factors affecting major economies. China's growth declined following a combination of needed regulatory tightening to rein in shadow banking and an increase in trade tensions with the United States. The euro zone lost more momentum than expected with car production in Germany disrupted, investment drop in Italy and external demand softened. Financial market sentiment worsened, with financial conditions tightening for emerging markets in the spring of 2018 and then in advanced economies later in the year. Conditions have eased in 2019 as the US Federal Reserve signaled a more accommodative monetary policy stance and markets became more optimistic about a US-China trade deal, but they remain slightly more restrictive than in the fall.

As a result of these developments, global growth is now projected to slow from 3.6 percent in 2018 to 3.3 percent in 2019, before returning to 3.6 percent in 2020. The current forecast envisages that global growth will level off in the first half of 2019 and firm up after that. The projected pickup in the second half of 2019 is predicated on an ongoing buildup of policy stimulus in China, recent improvements in global financial market sentiment, the waning of some temporary drags on growth in the euro area, and a gradual stabilization of conditions in emerging market economies, including Argentina and Turkey. Improved momentum for emerging market and developing economies is projected to continue into 2020, primarily reflecting developments in economies currently experiencing macroeconomic distress. By contrast, activity in advanced economies is projected to continue to slow gradually as the impact of US fiscal stimulus fades and growth tends toward the modest potential for the group.

Beyond 2020, global growth is set to plateau at about 3.6 percent over the medium term, sustained by the increase in the relative size of economies, such as those of China and India, which are projected to have robust growth by comparison to slower-growing advanced and emerging market economies. As noted in previous WEO reports, tepid labor productivity growth and slowing expansion of the labor force amid population aging will drag advanced economy growth lower over the projection horizon. Growth across emerging market and developing economies is projected to stabilize slightly below 5 percent, though with variations by region and country. The baseline outlook for emerging Asia remains favorable, with China's growth projected to slow gradually toward

sustainable levels and convergence in frontier economies toward higher income levels.

For other regions, the outlook is complicated by a combination of structural bottlenecks, slower advanced economy growth and, in some cases, high debt and tighter financial conditions. These factors, alongside subdued commodity prices and civil strife or conflict in some cases, contribute to subdued medium-term prospects for Latin America; the Middle East, North Africa, and Pakistan region; and parts of sub-Saharan Africa.





In particular, convergence prospects are bleak for some 41 emerging market and developing economies, accounting for close to 10 percent of global GDP in purchasing-power-parity terms and with total population close to 1 billion, where per capita incomes are projected to fall further behind those in advanced economies over the next five years.








While global growth could surprise favorably if trade differences are resolved quickly, the balance of risks to the outlook remains on the downside. The potential deterioration in market sentiment would imply portfolio reallocations away from risk assets, wider spreads over safe haven securities, and generally tighter financial conditions, especially for vulnerable economies. Possible triggers for such an episode include a no-deal Brexit; and prolonged fiscal uncertainty and elevated yields in Italy. A rapid reassessment by markets of the monetary policy stance in the United States could also tighten global financial conditions. Over the medium term, climate change and political discord in the context of rising inequality are key risks that could lower global potential output, with particularly severe implications for some vulnerable countries.

Amid waning global growth momentum and limited policy space to combat downturns, macroeconomic and financial policy should aim to prevent further deceleration. At the national level, this requires monetary policy to ensure that inflation remains on track toward the central bank's target and that inflation expectations remain anchored. It requires fiscal policy to manage tradeoffs between supporting demand and making sure that public debt stays on a sustainable path. Where fiscal consolidation is needed and monetary policy is constrained, its pace should be calibrated to secure stability while avoiding harming near-term growth and depleting programs that protect the vulnerable. If the current slowdown turns out to be more severe and protracted than expected in the baseline, macroeconomic policies should become more accommodative, particularly where output remains below potential and financial stability is not at risk. Across all economies, the imperative is to take actions that boost potential output growth, improve inclusiveness, and strengthen resilience. At the multilateral level, the main priority is for countries to resolve trade disagreements cooperatively, without raising distortionary barriers that would further destabilize a slowing global economy.

Macroeconomic calendar

Important macroeconomic data releases

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²	
China							
⊕⊕⊕⊕	11-Apr	Consumer inflation CPI (yoy)	Mar	2.3% ▲	1.5%	2.3%	⊙
⊕⊕	11-Apr	Producer inflation PPI (yoy)	Mar	0.4% ▲	0.1%	0.4%	⊙
⊕⊕	12-Apr	Trade balance (USD bn)‡	Mar	32.7 ▲	4.1	5.7	▲
⊕⊕	12-Apr	Exports (yoy)‡	Mar	14.2% ▲	-20.8%	6.5%	▲
⊕	12-Apr	New yuan loans (CNY bn)	Mar	1 690 ▲	886	1 250	▲
⊕⊕⊕⊕⊕	17-Apr	GDP (yoy)‡	1Q	6.4% -	6.4%	6.3%	▲
⊕⊕⊕⊕⊕	17-Apr	GDP (sa, qoq)	1Q	1.4% ▼	1.5%	1.4%	⊙
⊕⊕⊕⊕	17-Apr	Industrial production (yoy)	Mar	8.5%	--	5.9%	▲
⊕⊕	17-Apr	Fixed assets investments (ytd, yoy)	Mar	6.3% ▲	6.1%	6.3%	⊙
⊕	17-Apr	Retail sales (yoy)	Mar	8.7%	--	8.4%	▲
Poland							
⊕⊕	12-Apr	Trade balance (EUR mn)‡	Feb	-1 327 ▼	- 290	- 262	▼
⊕⊕	12-Apr	Exports (EUR mn)‡	Feb	18 324 ▼	18 445	17 964	▲
⊕⊕	12-Apr	Current account balance (EUR mn)‡	Feb	-1 386 ▼	1 825	- 400	▼
⊕⊕⊕⊕	15-Apr	Consumer inflation CPI (yoy) - final data	Mar	1.7% -	1.7%	--	
⊕⊕⊕⊕	16-Apr	Core CPI (excluding food and energy, yoy)	Mar	1.4% ▲	1.0%	1.3%	▲
⊕⊕	17-Apr	Average gross salary (yoy)	Mar	5.7% ▼	7.6%	7.3%	▼
⊕	17-Apr	Employment (yoy)	Mar	3.0% ▲	2.9%	2.9%	▲
⊕⊕⊕⊕	18-Apr	Sold industrial production (yoy)	Mar	5.6% ▼	6.9%	4.4%	▲
⊕⊕	18-Apr	Producer inflation PPI (yoy)	Mar	2.5% ▼	2.9%	2.6%	▼
US							
⊕⊕	08-Apr	Durable goods orders - final data	Feb	-1.6% -	-1.6%	-1.6%	⊙
⊕⊕⊕⊕	10-Apr	Consumer inflation CPI (mom)	Mar	0.4% ▲	0.2%	0.4%	⊙
⊕⊕⊕⊕	10-Apr	Consumer inflation CPI (yoy)	Mar	1.9% ▲	1.5%	1.8%	▲
⊕⊕	12-Apr	University of Michigan confidence index - preliminary data	Apr	96.9 ▼	98.4	98.2	▼
⊕⊕⊕⊕	16-Apr	Industrial production (mom)‡	Mar	-0.1% ▼	0.1%	0.2%	▼
⊕	16-Apr	Capacity utilization‡	Mar	78.8% ▼	79.0%	79.2%	▼
⊕⊕⊕	18-Apr	Composite PMI - preliminary data	Apr	52.8 ▼	54.6	--	
⊕⊕⊕	18-Apr	Manufacturing PMI - preliminary data	Apr	52.4 -	52.4	52.8	▼
⊕⊕⊕	18-Apr	PMI services - preliminary data	Apr	52.9 ▼	55.3	55.0	▼
⊕⊕	18-Apr	Philadelphia Fed business outlook	Apr	8.5 ▼	13.7	11.0	▼
⊕⊕	18-Apr	Retail sales (excluding autos, mom)‡	Mar	1.2% ▲	-0.2%	0.7%	▲
Eurozone							
⊕⊕⊕⊕⊕	10-Apr	ECB main refinancing rate	Apr	0.00% -	0.00%	0.00%	⊙
⊕⊕⊕⊕⊕	10-Apr	ECB deposit facility rate	Apr	-0.4% -	-0.4%	-0.4%	⊙
⊕⊕⊕⊕	12-Apr	Industrial production (sa, mom)‡	Feb	-0.2% ▼	1.9%	-0.5%	▲
⊕⊕⊕⊕	12-Apr	Industrial production (wda, yoy)‡	Feb	-0.3% ▲	-0.7%	-0.9%	▲
⊕	16-Apr	ZEW survey expectations	Apr	4.5 ▲	- 2.5	--	
⊕⊕⊕⊕	17-Apr	Consumer inflation CPI (yoy) - final data	Mar	1.4% -	1.4%	1.4%	⊙
⊕⊕⊕⊕	17-Apr	Core CPI (yoy) - final data	Mar	0.8% -	0.8%	0.8%	⊙
⊕	17-Apr	Trade balance (EUR mn)	Feb	17.9 ▲	1.5	--	
⊕⊕⊕	18-Apr	Composite PMI - preliminary data	Apr	51.3 ▼	51.6	51.8	▼
⊕⊕⊕	18-Apr	Manufacturing PMI - preliminary data	Apr	47.8 ▲	47.5	48.0	▼
⊕⊕⊕	18-Apr	Services PMI - preliminary data	Apr	52.5 ▼	53.3	53.1	▼

Weight	Date	Event	For	Reading ¹	Previous	Consensus ²	
Germany							
⊕⊕⊕⊕	11-Apr	Harmonized consumer inflation HICP (yoy) - final data	Mar	1.4% -	1.4%	1.4%	⊙
⊕⊕⊕⊕	11-Apr	Consumer inflation CPI (yoy) - final data	Mar	1.3% -	1.3%	1.3%	⊙
⊕⊕⊕	18-Apr	Composite PMI - preliminary data	Apr	52.1 ▲	51.4	51.7	▲
⊕⊕⊕	18-Apr	Manufacturing PMI - preliminary data	Apr	44.5 ▲	44.1	45.0	▲
France							
⊕⊕⊕⊕	10-Apr	Industrial production (yoy)	Feb	0.6% ▼	1.7%	-0.2%	▲
⊕⊕⊕⊕	11-Apr	Harmonized consumer inflation HICP (yoy) - final data	Mar	1.3% -	1.3%	1.3%	⊙
⊕⊕⊕⊕	11-Apr	Consumer inflation CPI (yoy) - final data	Mar	1.1% -	1.1%	1.1%	⊙
⊕⊕⊕	18-Apr	Composite PMI - preliminary data	Apr	50.0 ▲	48.9	49.7	▲
⊕⊕⊕	18-Apr	Manufacturing PMI - preliminary data	Apr	49.6 ▼	49.7	50.0	▲
Italy							
⊕⊕⊕⊕	10-Apr	Industrial production (wda, yoy)	Feb	0.9% ▲	-0.8%	-1.1%	▲
⊕⊕⊕⊕	17-Apr	Harmonized consumer inflation HICP (yoy) - final data	Mar	1.1% -	1.1%	1.1%	⊙
UK							
⊕⊕⊕⊕	10-Apr	Industrial production (yoy)‡	Feb	0.1% ▲	-0.3%	-0.9%	▲
⊕⊕	16-Apr	Unemployment rate (ILO, 3-months)	Feb	3.9% -	3.9%	3.9%	⊙
⊕⊕⊕⊕	17-Apr	Consumer inflation CPI (yoy)	Mar	1.9% -	1.9%	2.0%	▲
Japan							
⊕⊕⊕⊕	17-Apr	Industrial production (yoy) - final data	Feb	-1.1% ▼	-1.0%	--	▲
⊕⊕⊕	18-Apr	Manufacturing PMI - preliminary data	Apr	49.5 ▲	49.2	--	▲
⊕⊕⊕⊕	19-Apr	Consumer inflation CPI (yoy)	Mar	0.5% ▲	0.2%	0.5%	⊙
Chile							
⊕⊕⊕	08-Apr	Copper exports (USD mn)	Mar	2 970 ▲	2 586	--	▲
Canada							
⊕⊕⊕⊕	17-Apr	Consumer inflation CPI (yoy)	Mar	1.9% ▲	1.5%	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

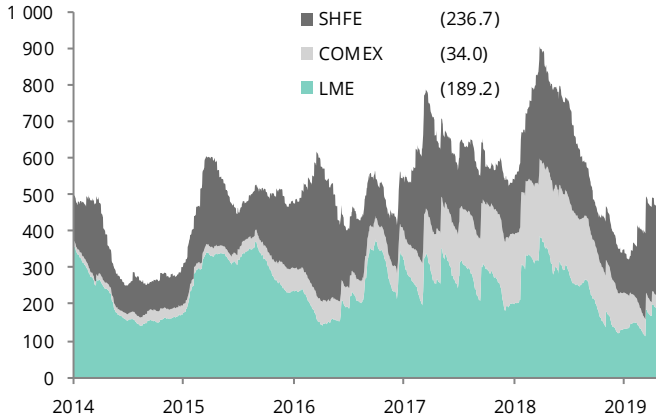
Key base & precious metal prices, exchange rates and other important market factors

(as of: 19-Apr-19)		Price change ¹					From year beginning ²		
	Price	2W	QTD	YTD	1Y	Average	Min	Max	
LME (USD/t)									
Copper	6 448.00	▲ 0.2%	▼ -0.6%	▲ 8.1%	▼ -7.1%	6 262.00	5 811.00	6 572.00	
Molybdenum	-	-	-	-	-	-	-	-	
Nickel	12 630.00	▼ -4.0%	▼ -3.0%	▲ 19.2%	▼ -19.6%	12 489.94	10 440.00	13 610.00	
Aluminum	1 839.00	▼ -1.0%	▼ -3.2%	▼ -1.6%	▼ -29.3%	1 857.92	1 775.50	1 923.00	
Tin	20 425.00	▼ -2.7%	▼ -5.3%	▲ 4.7%	▼ -6.6%	21 037.37	19 500.00	21 925.00	
Zinc	2 854.00	▼ -3.6%	▼ -4.9%	▲ 13.7%	▼ -11.7%	2 750.22	2 462.00	3 018.00	
Lead	1 919.00	▼ -3.1%	▼ -5.1%	▼ -4.5%	▼ -18.2%	2 020.63	1 910.00	2 154.00	
LBMA (USD/troz)									
Silver	14.96	▼ -1.2%	▼ -1.0%	▼ -3.3%	▼ -13.0%	15.47	14.94	16.08	
Gold ²	1 275.70	▼ -1.9%	▼ -1.5%	▼ -0.5%	▼ -5.4%	1 300.96	1 275.70	1 343.75	
LPPM (USD/troz)									
Platinum ²	890.00	▼ -2.6%	▲ 4.7%	▲ 12.1%	▼ -5.6%	834.67	782.00	914.00	
Palladium ²	1 395.00	▲ 1.8%	▲ 0.4%	▲ 10.5%	▲ 34.7%	1 423.60	1 267.00	1 604.00	
FX³									
EURUSD	1.1250	▲ 0.0%	▲ 0.1%	▼ -1.7%	▼ -9.1%	1.1339	1.1200	1.1535	
EURPLN	4.2802	▼ -0.2%	▼ -0.5%	▼ -0.5%	▲ 2.7%	4.3000	4.2706	4.3402	
USDPLN	3.8051	▼ -0.4%	▼ -0.8%	▲ 1.2%	▲ 12.9%	3.7915	3.7243	3.8516	
USDCAD	1.3382	▲ 0.4%	▲ 0.1%	▼ -1.9%	▲ 5.9%	1.3305	1.3095	1.3600	
USDCNY	6.7042	▼ -0.2%	▼ -0.1%	▼ -2.5%	▲ 6.8%	6.7406	6.6872	6.8721	
USDCLP	662.27	▼ -0.3%	▼ -2.8%	▼ -4.7%	▲ 11.4%	666.99	649.22	697.64	
Money market									
3m LIBOR USD	2.581	▼ 0.00	▼ -0.02	▼ -0.23	▲ 0.22	2.669	2.581	2.804	
3m EURIBOR	-0.311	▼ 0.00	- 0.00	▼ 0.00	▲ 0.02	-0.309	-0.311	-0.306	
3m WIBOR	1.720	- 0.00	- 0.00	- 0.00	▲ 0.02	1.720	1.720	1.720	
5y USD interest rate swap	2.407	▲ 0.04	▲ 0.12	▼ -0.16	▼ -0.47	2.508	2.198	2.715	
5y EUR interest rate swap	0.040	▼ 0.00	▲ 0.03	▼ -0.16	▼ -0.37	0.115	-0.010	0.222	
5y PLN interest rate swap	2.080	▲ 0.04	▲ 0.14	▼ -0.04	▼ -0.25	2.032	1.908	2.140	
Fuel									
WTI Cushing	64.00	▼ -0.6%	▲ 6.4%	▲ 40.9%	▼ -6.3%	56.56	46.54	64.61	
Brent	71.45	▲ 0.9%	▲ 5.8%	▲ 34.4%	▼ -3.0%	64.67	53.83	71.45	
Diesel NY (ULSD)	207.09	▲ 0.6%	▲ 4.8%	▲ 23.1%	▼ -2.2%	195.67	170.01	208.88	
Others									
VIX	12.09	▼ -1.09	▼ -1.62	▼ -13.33	▼ -3.87	15.77	12.01	25.45	
BBG Commodity Index	81.71	▼ -1.3%	▲ 0.8%	▲ 6.5%	▼ -9.2%	80.97	76.99	83.06	
S&P500	2 905.03	▲ 0.3%	▲ 2.5%	▲ 15.9%	▲ 7.9%	2 754.50	2 447.89	2 907.41	
DAX	12 222.39	▲ 2.2%	▲ 6.0%	▲ 15.8%	▼ -2.7%	11 398.59	10 416.66	12 222.39	
Shanghai Composite	3 270.80	▲ 0.8%	▲ 5.8%	▲ 31.2%	▲ 4.9%	2 876.68	2 464.36	3 270.80	
WIG 20	2 365.36	▲ 0.2%	▲ 2.3%	▲ 3.9%	▲ 1.7%	2 349.25	2 247.22	2 414.41	
KGHM	107.20	▼ -3.9%	▲ 0.2%	▲ 20.6%	▲ 11.8%	99.52	86.12	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

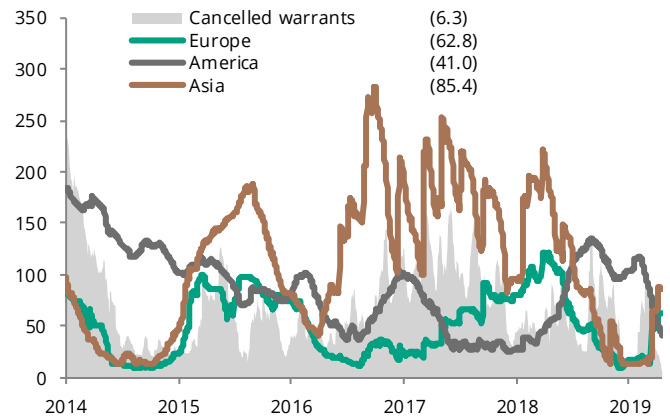
Source: Bloomberg, KGHM Polska Miedź

Copper: official exchange stocks (thousand tonnes)



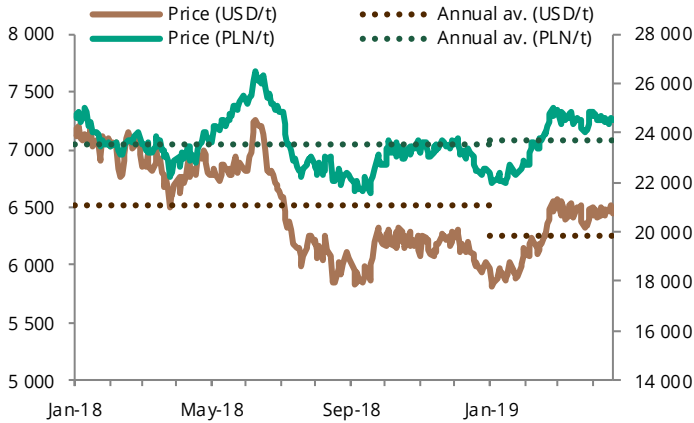
Note: Latest values in brackets. Source: Bloomberg, KGHM

Copper: official LME stocks (thousand tonnes)



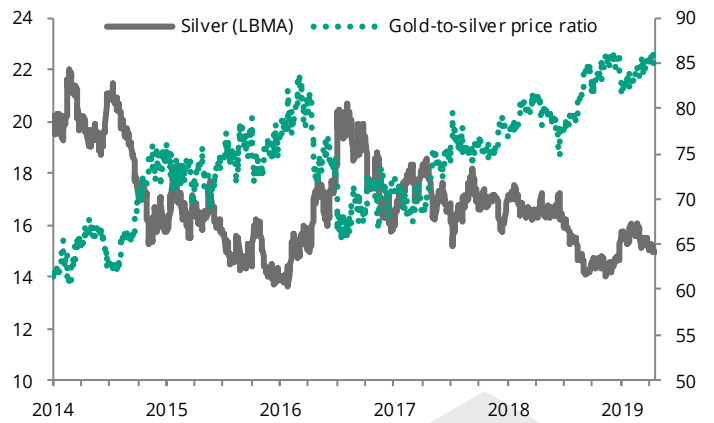
Note: Latest values in brackets. Source: Bloomberg, KGHM

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



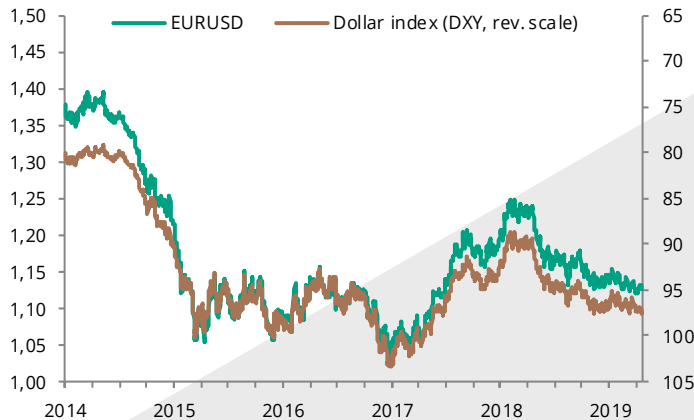
Source: Bloomberg, KGHM Polska Miedź

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



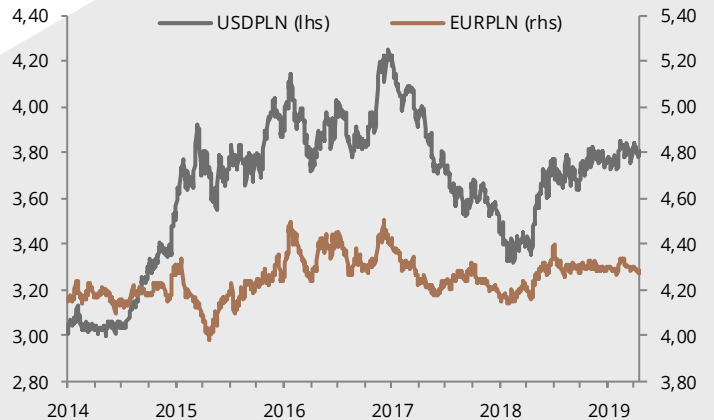
Source: Bloomberg, KGHM Polska Miedź

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:
8th – 21st April 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

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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