

Tuesday, June 09, 2020 | weekly publication

Tuesday Espresso

Weekly Commodity Roundup

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Utilities

German power contracts rebounded to EUR 40/MWh, thanks mainly to a rapid rise in emissions allowances, currently at EUR 23/t, accompanied by upward-trending European coal and gas markets. In Poland, contracts for year-ahead deliveries have moved higher in line with EUA prices, resulting in stable clean-dark spreads.

Utility stocks in Europe and the US have registered gains as strong as 10% over the last two weeks as investors rotate from growth to value. Stocks in Poland are also trending higher, but here their upward move has more to do with rising expectations of a radical change in Poland's energy policy.

Gas & Oil

The price of oil stopped its upward move after crossing the \$40/bbl mark, taking some pressure off refining margins which, according to our calculations, bounced to an estimated \$0.9/bbl in yesterday's trading. Obviously we are not trying to gauge future trends based on a one-day session, however what this calculation shows us is a probability that, once crude prices stabilized, cracking margins could be expected to hold in the positive territory. Admittedly margins of less than a dollar a barrel are not what any refiner would consider satisfying, especially while the Urals/Brent differential remains negative at -\$1.4. We believe it will take several months before the situation in the refining sector goes back to normal looking at high inventories and increasing supply as facilities reopen from lockdown and new facilities prepare to go on line while petroleum production in China reaches record levels.

Profits from petrochemicals are down across the board, with squeezed margins registered on whole sales mix from olefins to polymers, aromatic compounds, and PTA. With this, any previous gains enjoyed in April have been wiped out.

European spot market prices for natural gas have shifted upwards from EUR 4 to over EUR 5/MWh, with contracts for 2021 delivery also rebounding from EUR 12 closer to EUR 13 – trends which should alleviate fears about prices turning negative in the summer similarly to what happened with oil in April.

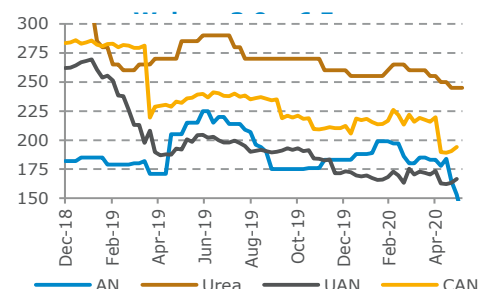
Metals

Net copper imports into China were 13% higher in May 2020 than in the same month a year earlier, representing an acceleration from a 10% rise in April. According to commentators, China is stocking up on strategic commodities while their prices are low and tension with the US have not escalated beyond repair. Copper production in Chile is reported to have increased by 2.8% in April and by 3.8% in the year to date despite coronavirus disruptions. Further, more than 90% of copper mines operating in Peru have recently declared readiness to resume production. Open speculative positions in copper have dropped to just 1,000 from -10,000 a month ago after the closure of 45,000 contracts by traders since mid-February. A worse-than-expected report on Chinese imports at the beginning of the week caused a temporary fluctuation in industrial metals.

Coking Coal

Prices of iron ore have shifted upward on supply concerns in Brazil while China signals stronger demand. Prices of coking coal are trading in the \$105-115/t range. Last week commentators pointed to increased interest in coking coal in the seaborne market. On the other hand, we are getting reports on a weekly basis about coking coal mines getting shut down for lack of demand.

Chart of the Week



EU prices of nitrogen fertilizers (USD/t)

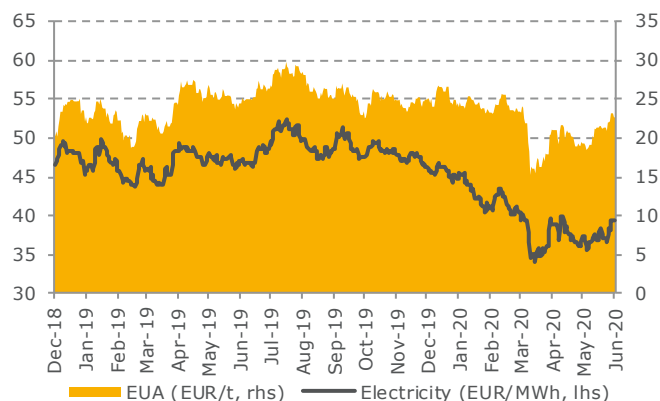
European markets for nitrogen fertilizer have been on a sharp downward curve since the end of May, driven by a seasonal reduction in demand after spring fertilization, combined with low prices of natural gas. As sales prices retreat from their 2020 Q1 highs, this is a negative signal for Grupa Azoty and Yara.

1-Week & YTD Performance

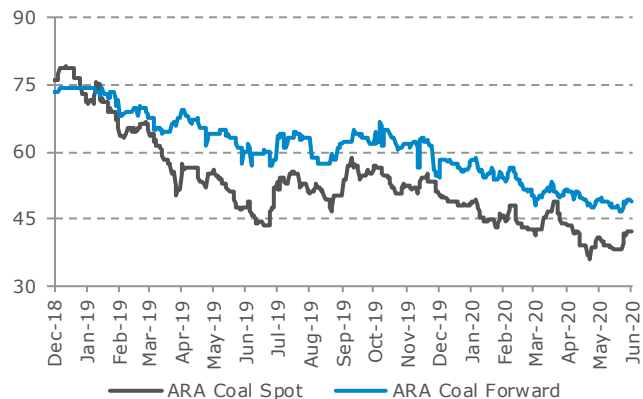
Company	1W	YTD
Ciech	-5.3%	-12%
Kruszwica	-3.2%	24%
Boryszew	-2.2%	-14%
ZE PAK	-2.0%	3%
Grupa Azoty	-0.9%	14%
PCC Rokita	-0.6%	1%
ZA Puławy	-0.6%	5%
IMC	-0.4%	-2%
Kernel	0.6%	-4%
Tupras	0.6%	-30%
Energa	1.1%	14%
Orzeł Biały	1.1%	-13%
Astarta	2.2%	3%
CEZ	3.3%	-2%
Tarczyński	3.5%	-8%
MOL	3.6%	-31%
KGHM	3.9%	-5%
PGNiG	4.2%	3%
Alumetal	4.4%	0%
Kęty	4.5%	7%
PKN Orlen	5.8%	-17%
Lotos	9.1%	-22%
JSW	9.7%	-10%
Enea	12.1%	-12%
Tauron	13.6%	-11%
LW Bogdanka	15.6%	-32%
PGE	19.7%	-21%
OMV	19.9%	-29%
ZCh Police	22.7%	39%
WIG Indices	1W	YTD
WIG	5.8%	-11%
Chemicals	-0.3%	5%
Energy	12.1%	-11%
Oil & Gas	5.9%	-14%
Food Industry	0.8%	0%
Basic Material	4.5%	-6%
Ukraine	-0.1%	-2%
Sector Indices	1W	YTD
Mining	7.8%	-2%
Oil & Gas E&P	17.2%	-28%
Refining EU	4.9%	-20%
Refining US	14.5%	-21%
Agri & Food	0.2%	-1%
Rubber	16.0%	-15%
Fertilizers	7.4%	-7%
Chemicals EU	6.7%	-3%
Industrials EU	7.9%	-10%
Petchem World	11.6%	-12%
Utilities EU	4.9%	1%
Utilities US	+4.2%	-2%

Utilities

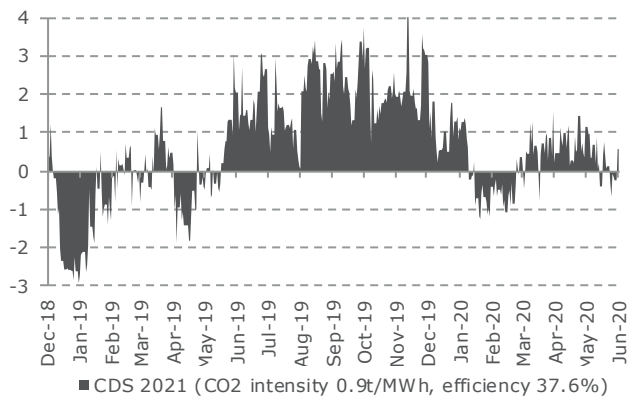
EU Prices of Electricity (EUR/MWh) & EUAs (EUR/t)



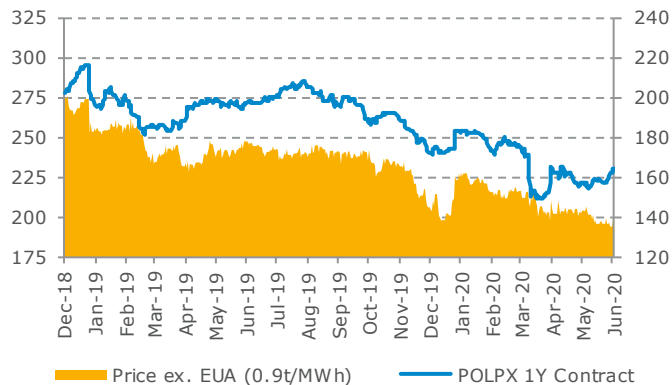
ARA Coal Spot and Forward Prices (EUR/t)



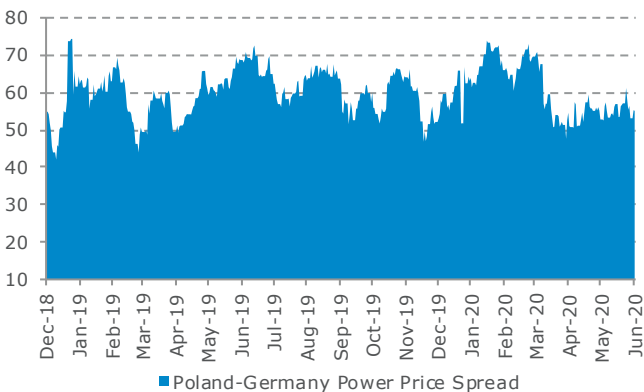
Clean-Dark Spread, Germany (EUR/MWh)



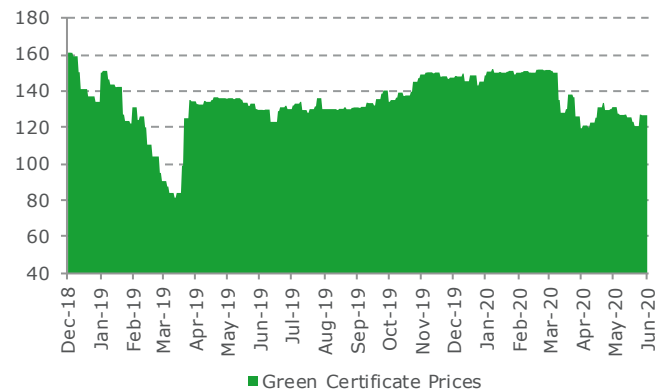
Polish Electricity Prices (1Y) (PLN/MWh)



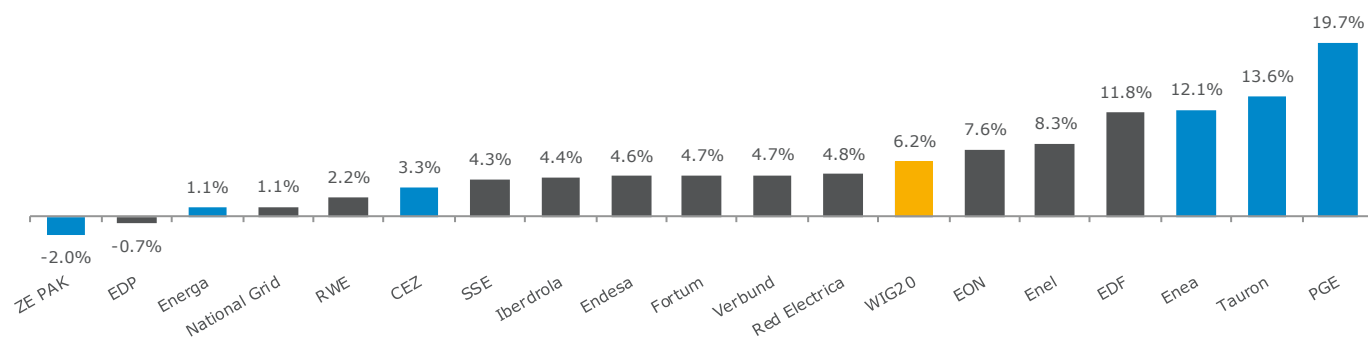
Poland-Germany Power Price Spread (PLN/MWh)



Polish Green Certificate Prices (PLN/MWh)



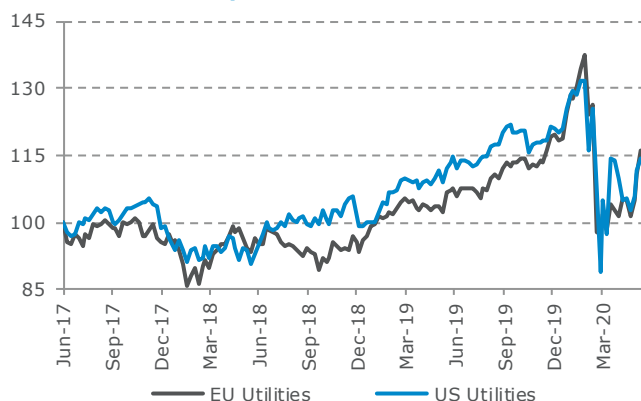
Weekly Returns of Utility Stocks



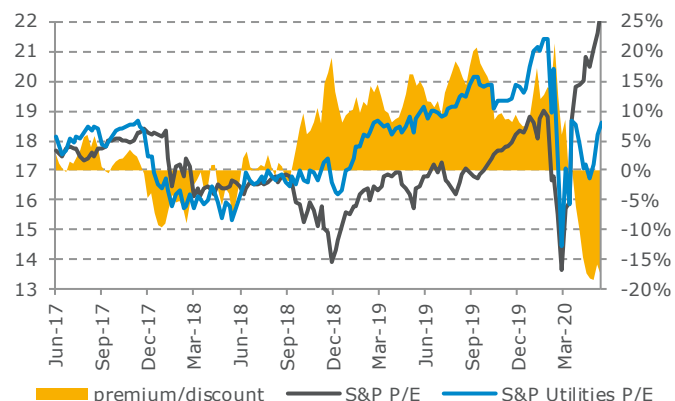
Source: Bloomberg, mBank

Utilities

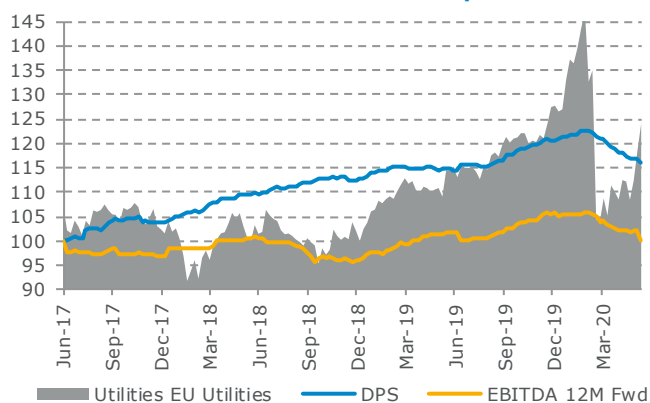
MSCI Utilities Europe vs. S&P Utilities



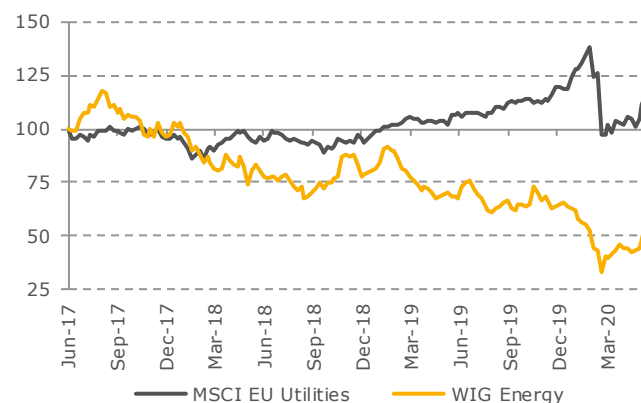
S&P Utilities vs. S&P 500 P/E



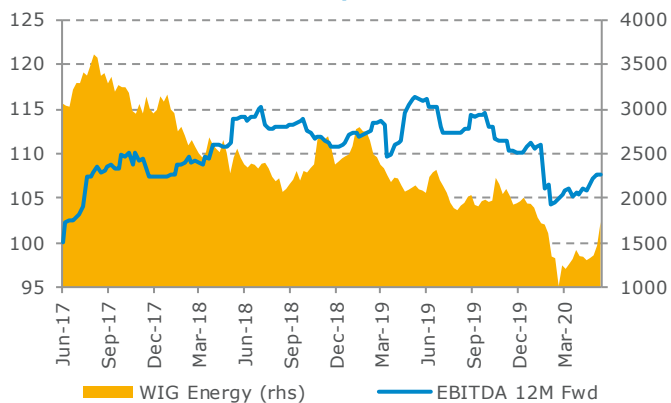
MSCI Utilities EU vs. DPS & EBITDA Expectations



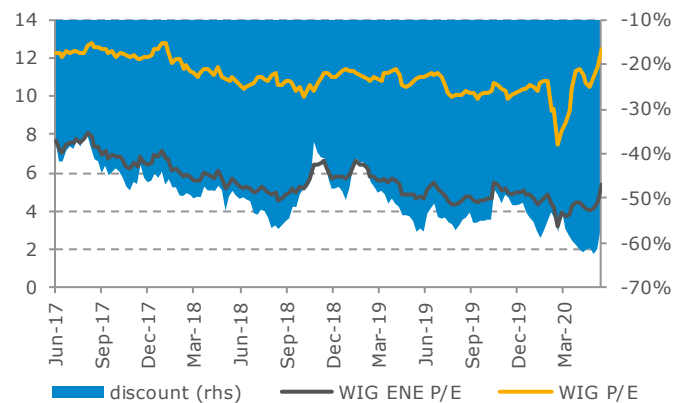
MSCI Utilities EU vs. WIG-ENERGY



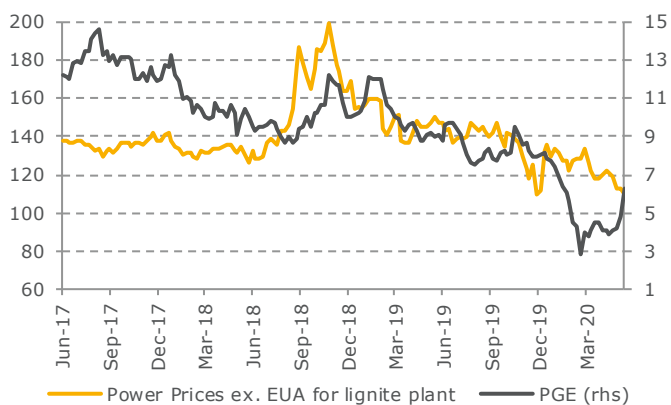
WIG-ENERGY vs. EBITDA Expectations



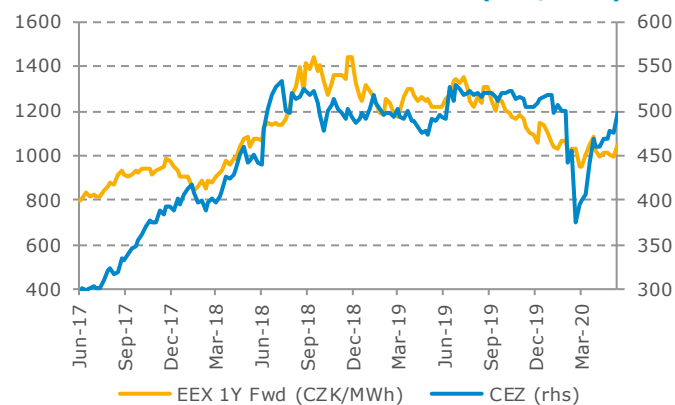
WIG-ENERGY vs. WIG P/E



PGE Performance vs. Power Prices ex. EUA



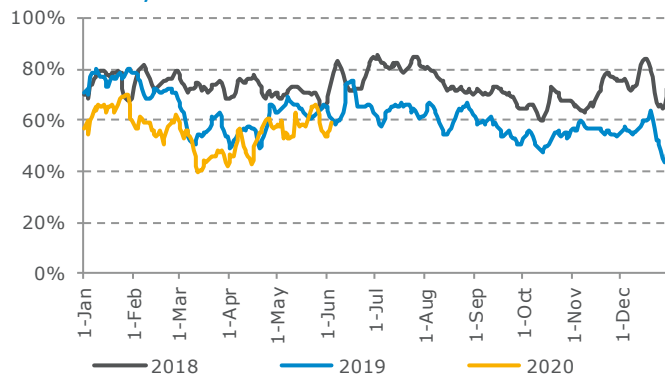
CEZ Performance vs. EEX Power Prices (CZK/MWh)



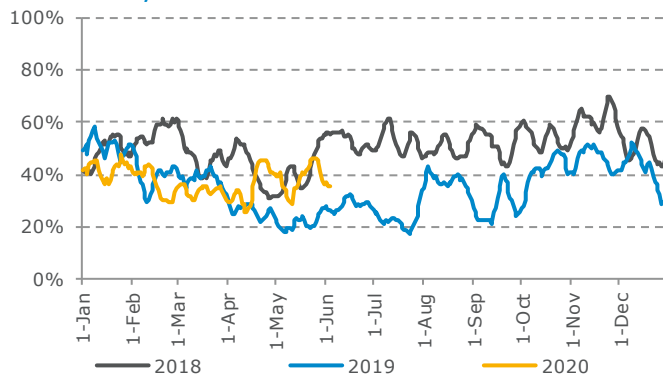
Source: Bloomberg, mBank

Utilities

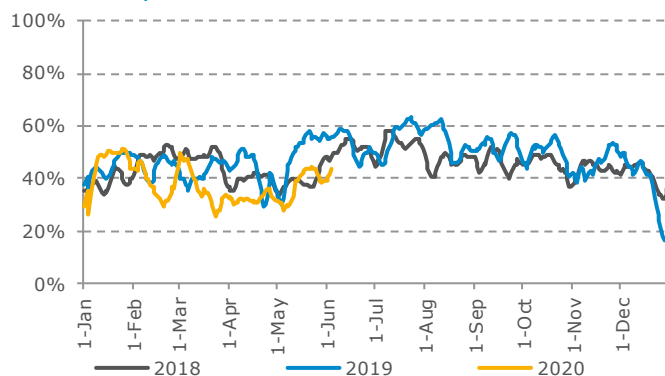
Load Factor, Bełchatów Power Station



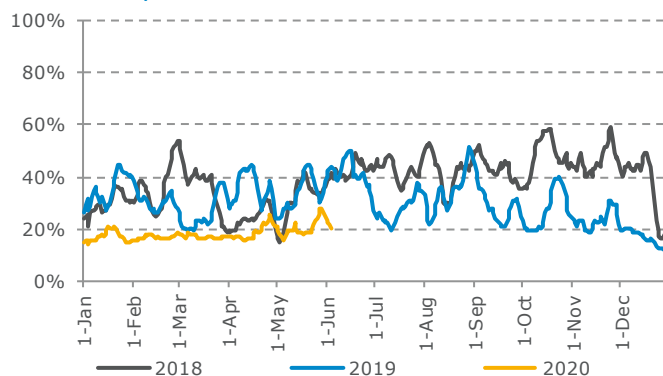
Load Factor, Turów Power Station



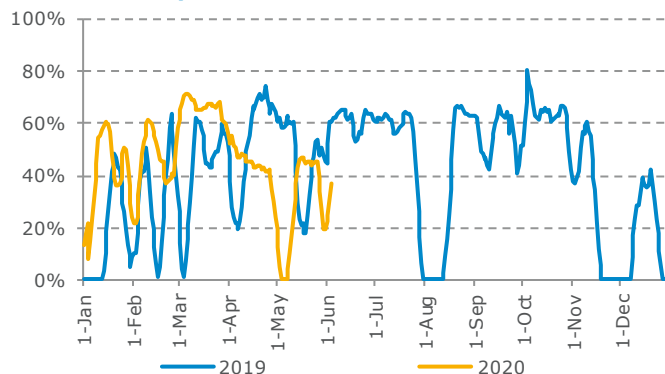
Load Factor, Kozienice Power Station



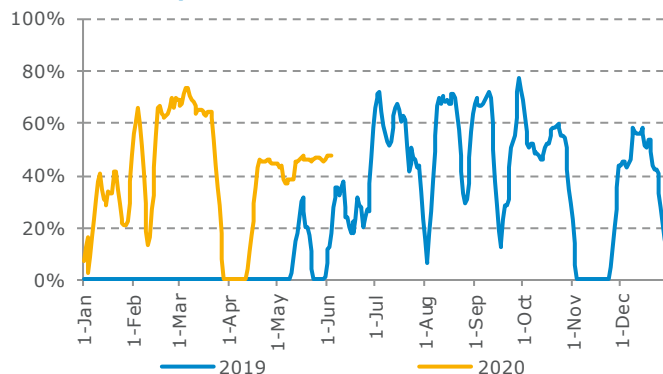
Load Factor, Jaworzno Power Station



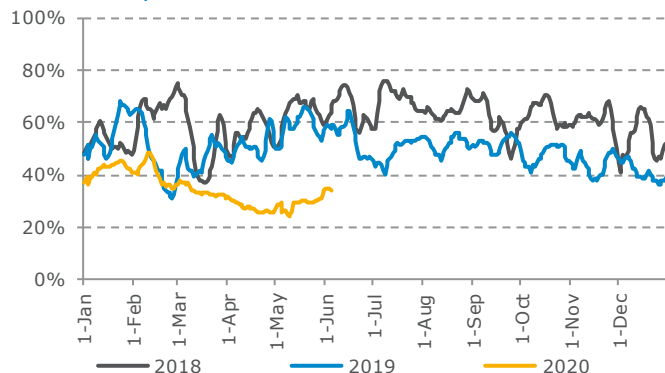
Load Factor, Opole Power Station, Block B5



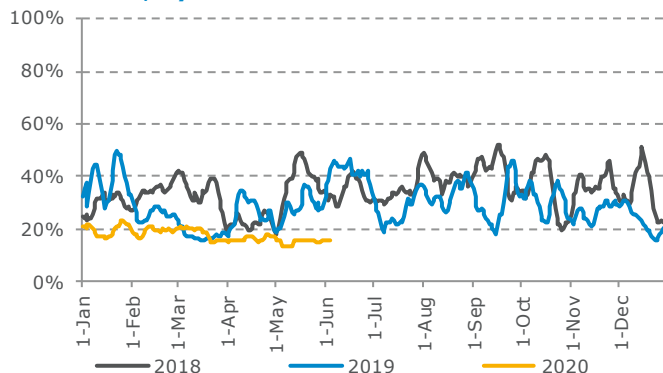
Load Factor, Opole Power Station, Block B6



Load Factor, Połaniec Power Station



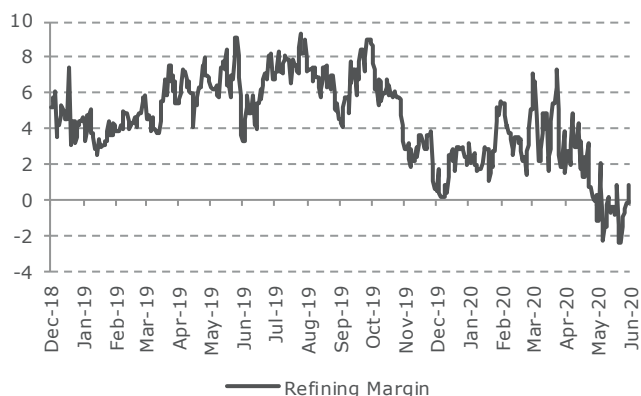
Load Factor, Rybnik Power Station



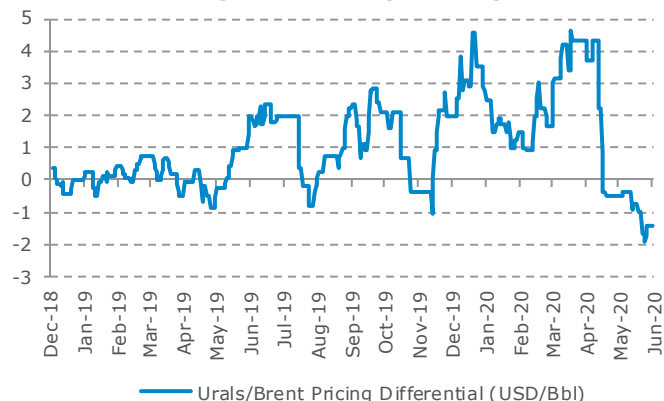
Source: PSE, mBank; Load factor = actual generation (7-day average) as a percentage of available capacity

Gas & Oil

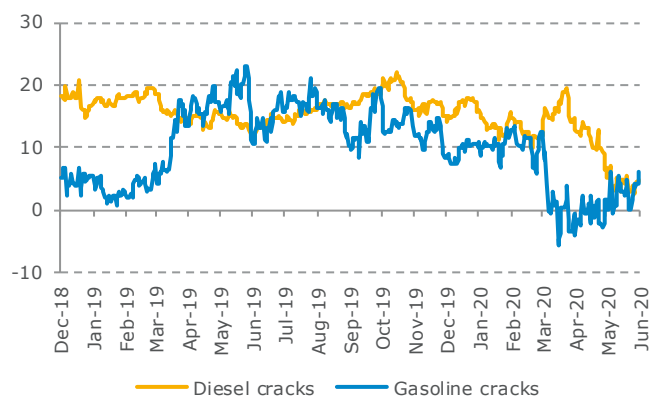
Refining Margins (US\$/bbl)



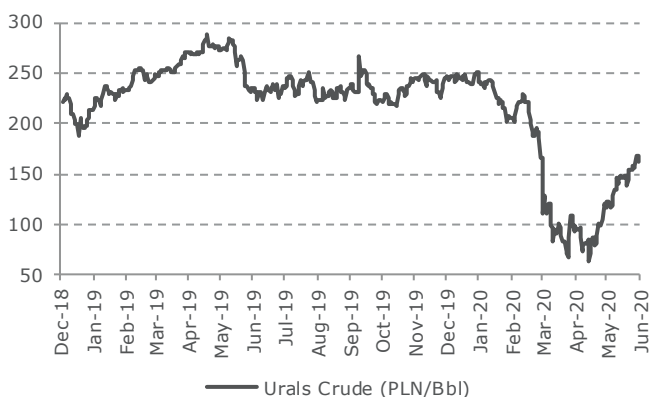
Urals/Brent Pricing Differential (US\$/bbl)



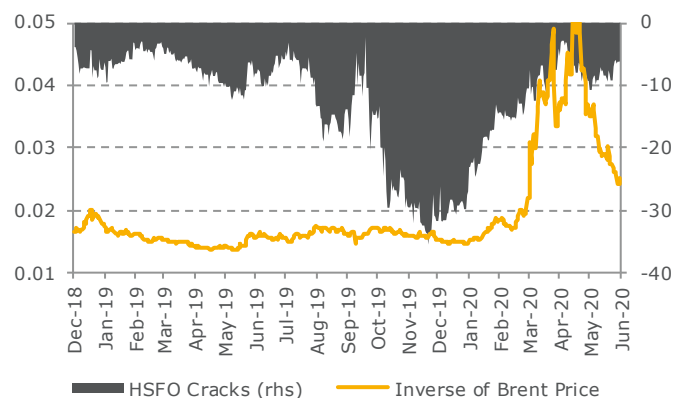
Cracking Margins on Diesel & Gasoline (US\$/bbl)



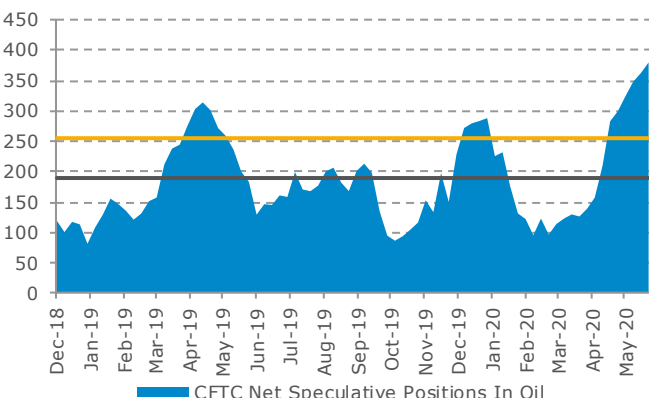
Price of Urals Crude (PLN/bbl)



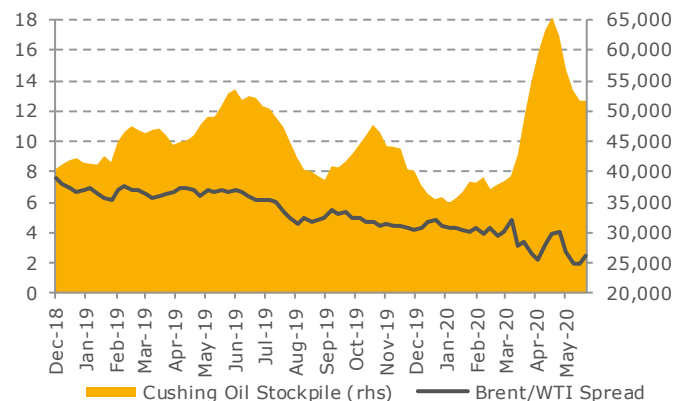
HSFO Cracks (US\$/bbl) vs. Inverse of Brent Price



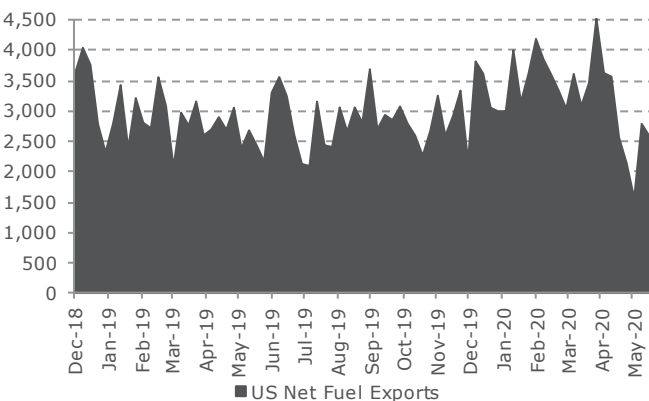
CFTC Net Speculative Positions In Oil



Brent/WTI Spread vs. Cushing Oil Stockpile



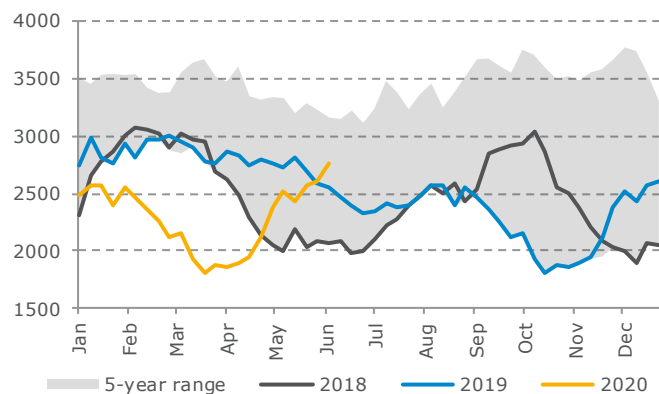
US Net Fuel Exports



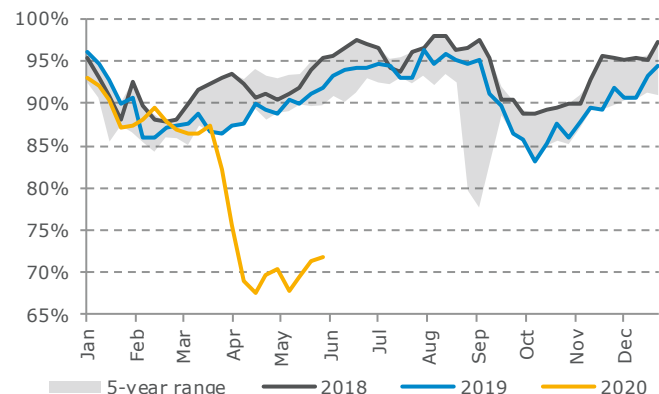
Source: Bloomberg, mBank

Gas & Oil

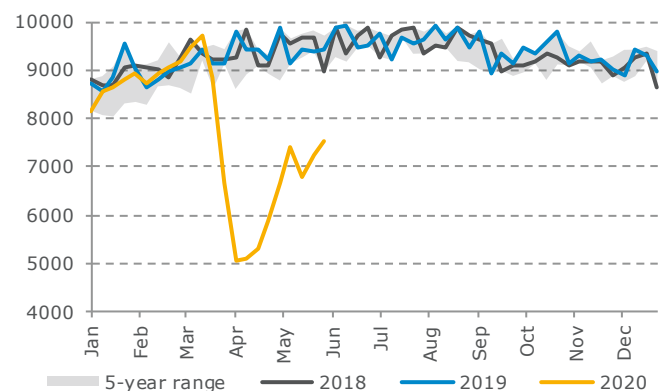
Diesel Inventories @ARA



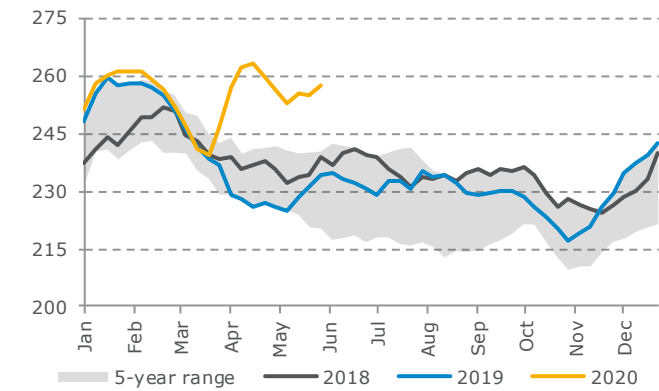
US Refinery Utilization Rates



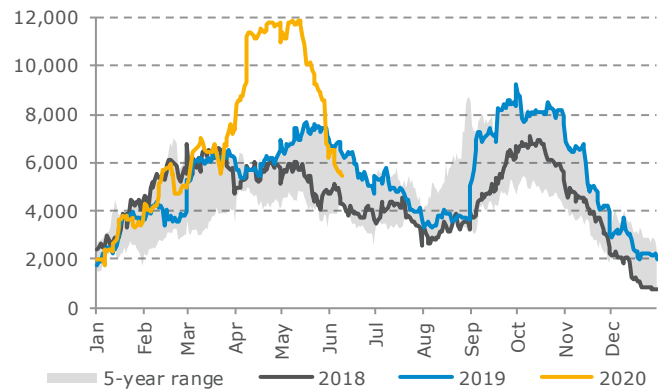
US Gasoline Demand



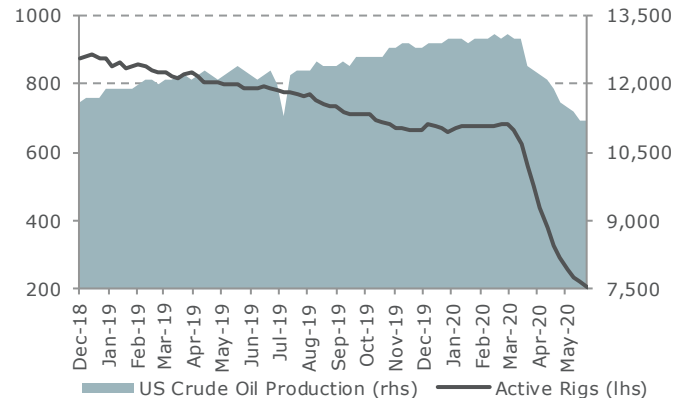
US Gasoline Inventories



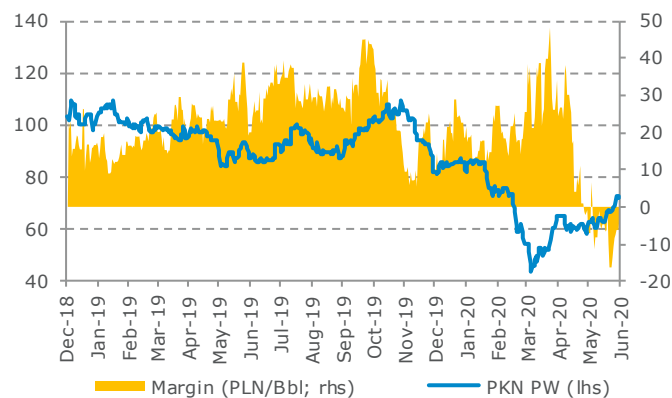
Global Refinery Outages (mbbl/d)



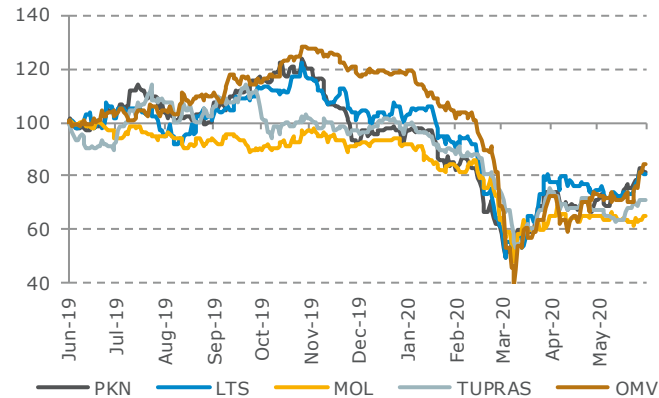
US Crude Oil Production (mboe/d) vs. Active Rigs



PKN Performance vs. Benchmark Margins



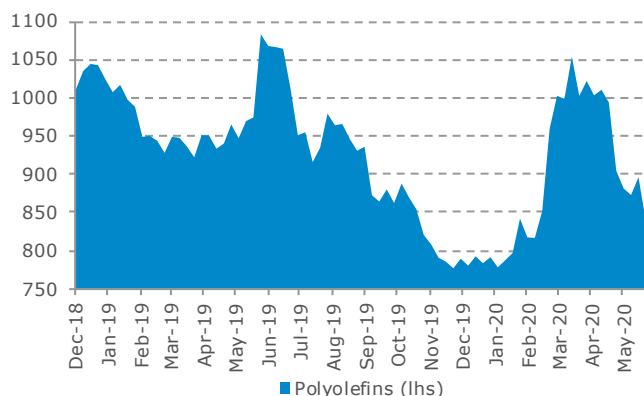
Normalized Oil Stock Chart



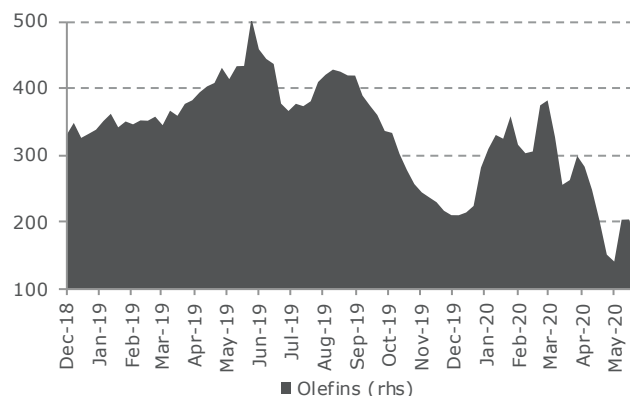
Source: Bloomberg, mBank

Petrochemicals & NatGas

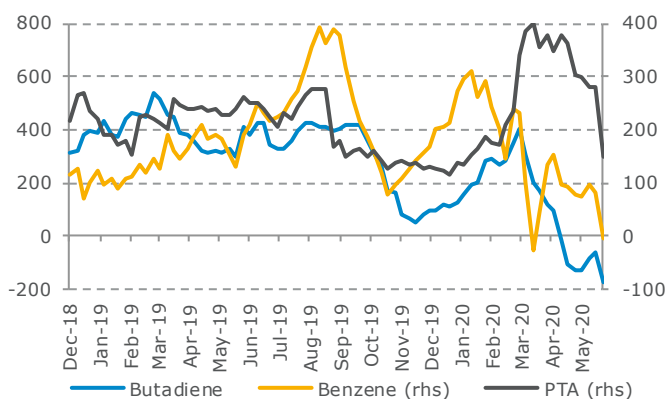
Margins on Polyolefins



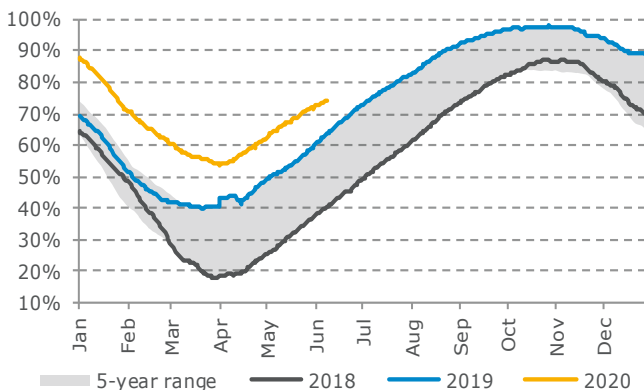
Margins on Olefins



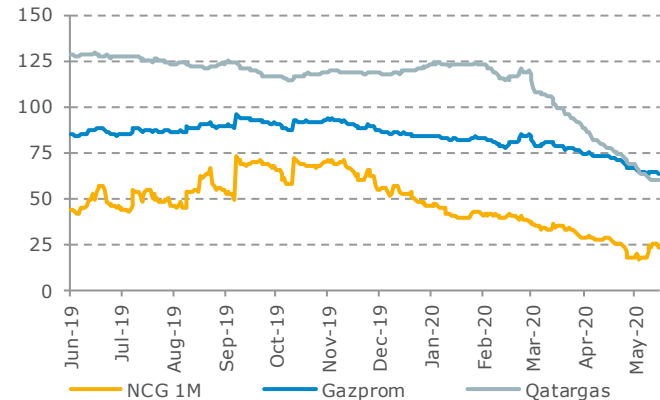
Margins on Butadiene, Benzene & PTA (US\$/t)



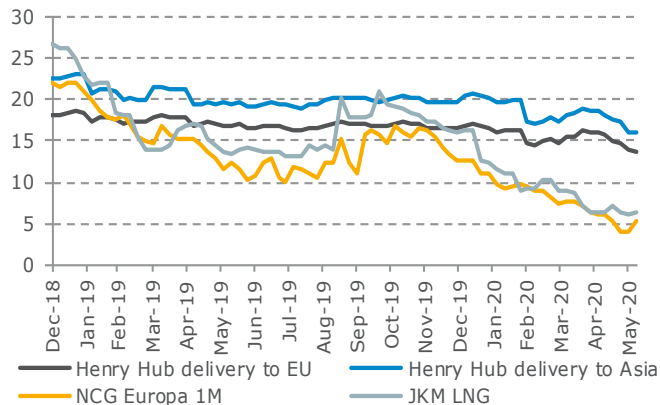
EU Gas Storage Levels (% Full)



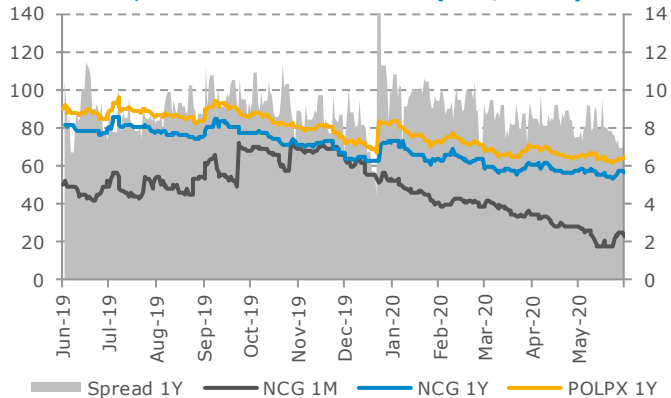
Estimated Costs of Imported Natural Gas (PLN/MWh)



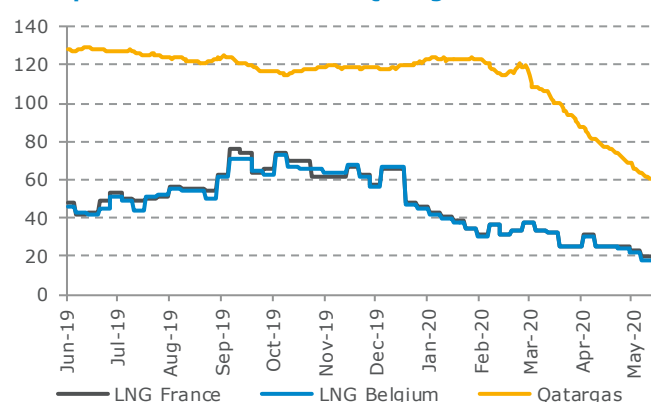
Prices of US LNG Exports to EU and Asia



NCG Prices, POLPX vs. Benchmarks (PLN/MWh)



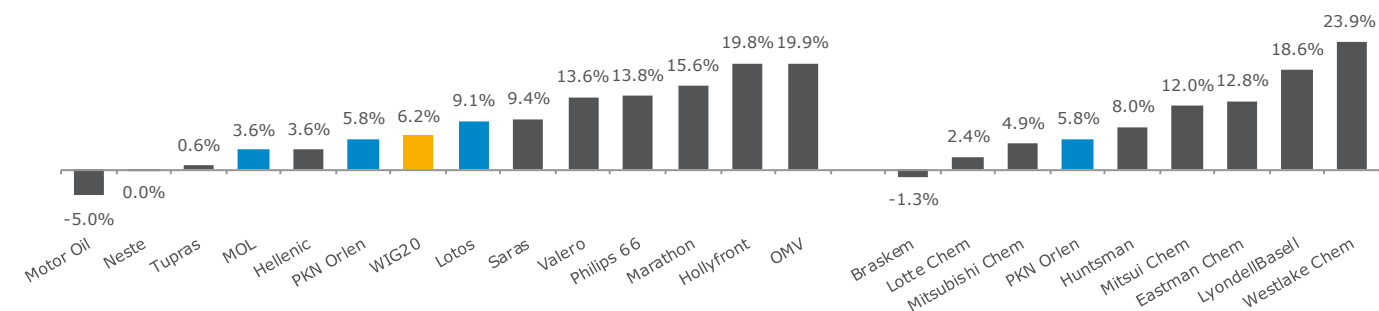
LNG Spot Rates vs. Estimated Qatargas rates



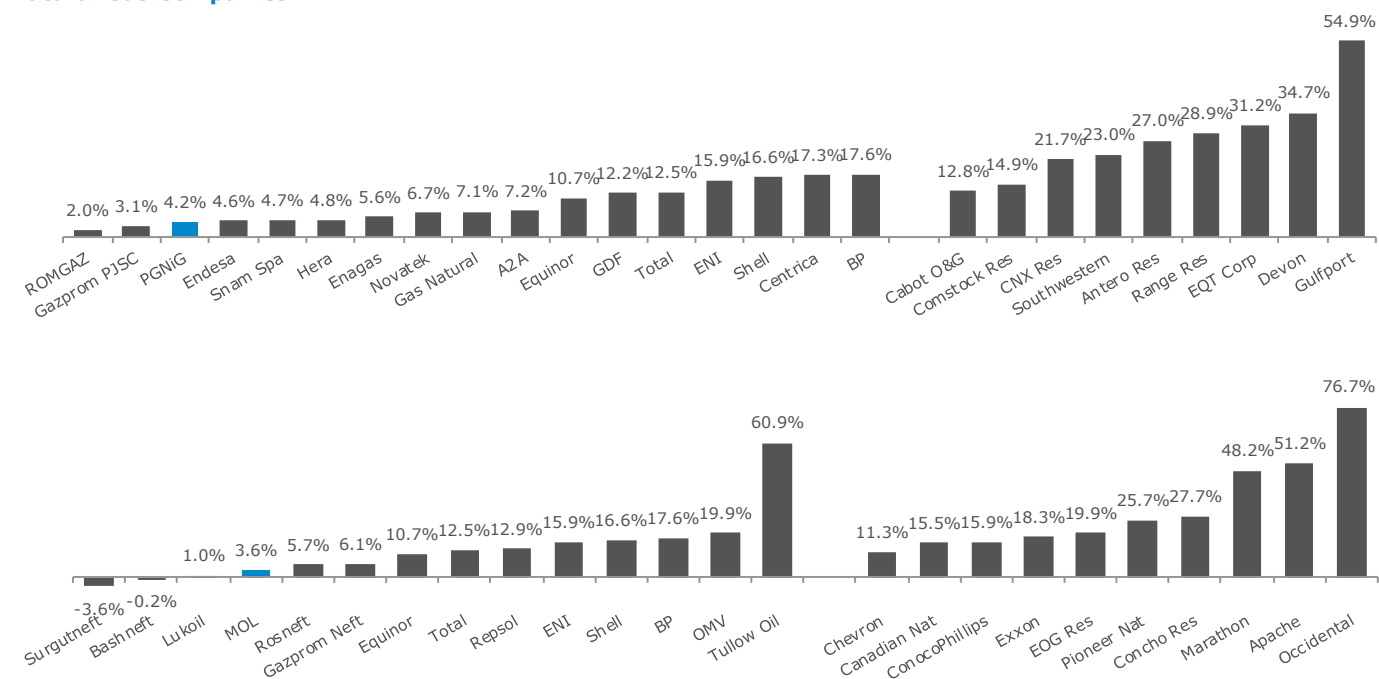
Source: Bloomberg, mBank

Weekly Performance Charts

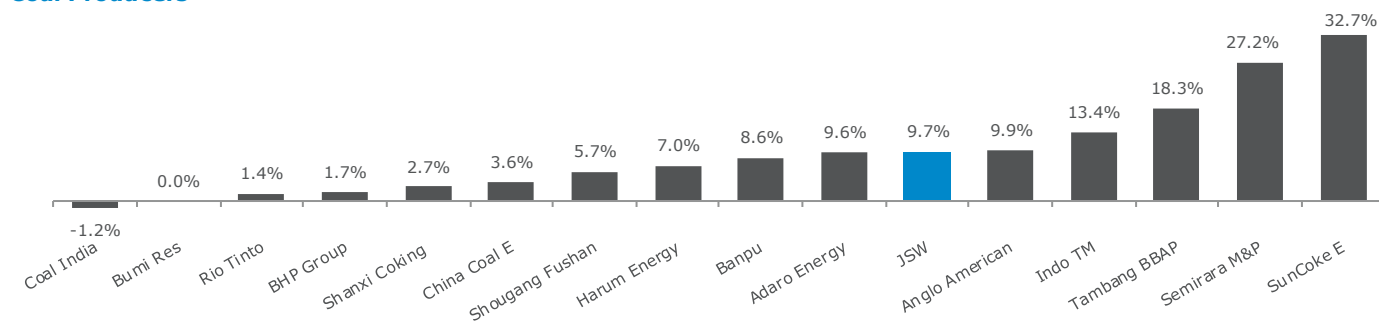
Oil Refiners (L) & Petrochemical Producers (R)



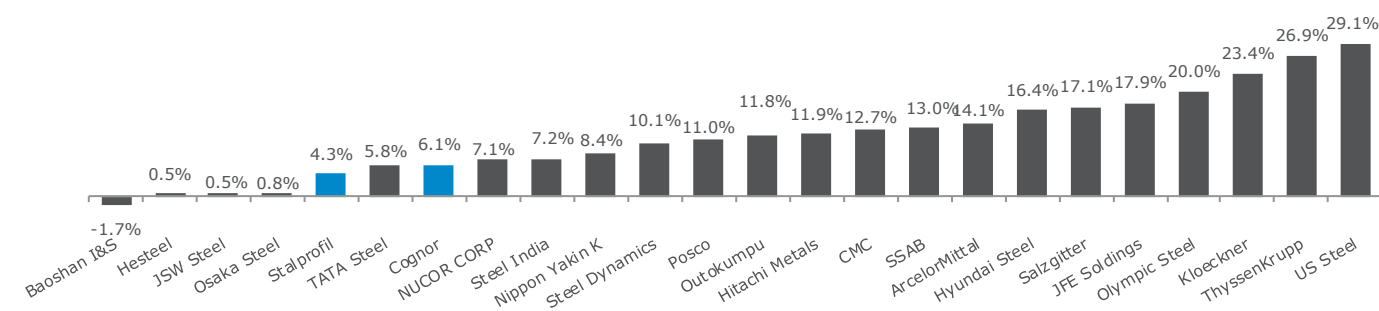
Natural Gas Companies



Coal Producers



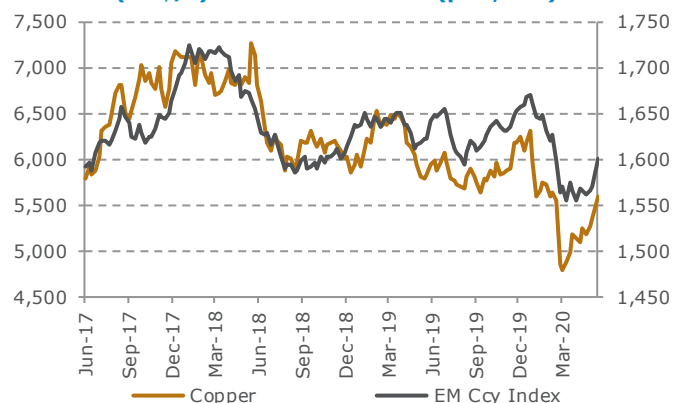
Steel Producers & Distributors



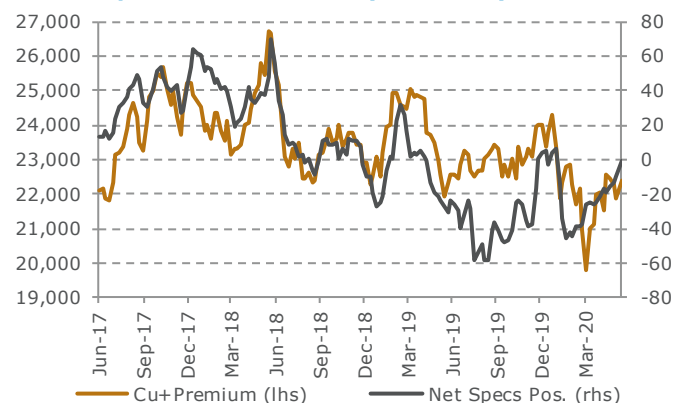
Source: Bloomberg, mBank

Copper Charts

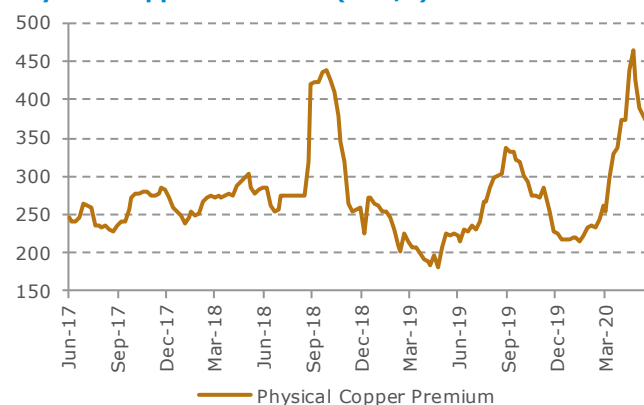
Cu Price (US\$/t) vs. EM Currencies (pts.; rhs)



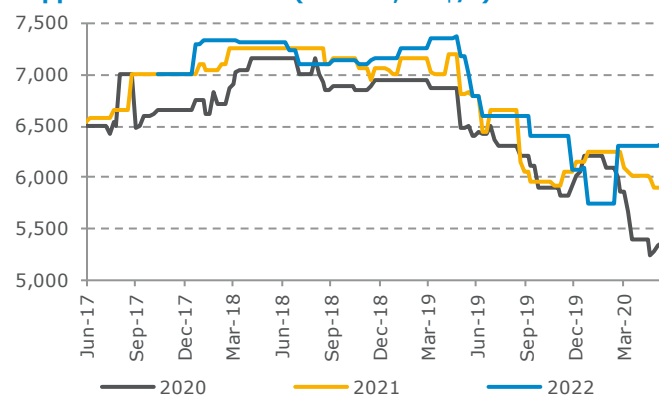
CU Price incl. Supplier Premium (PLN 1,000/t; lhs) vs. Net Speculative Positions (1,000, rhs)



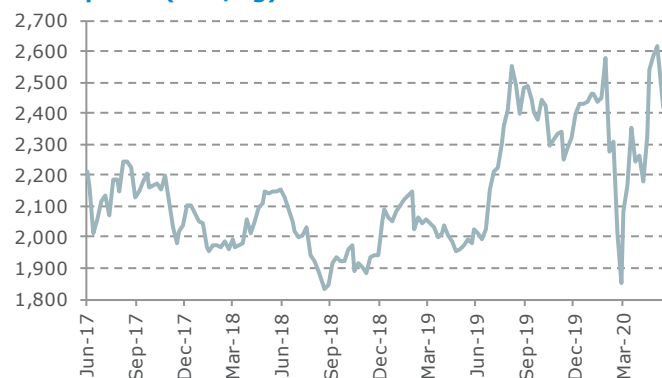
Physical Copper Premiums (PLN/t)



Copper Price Forecasts (median; US\$/t)



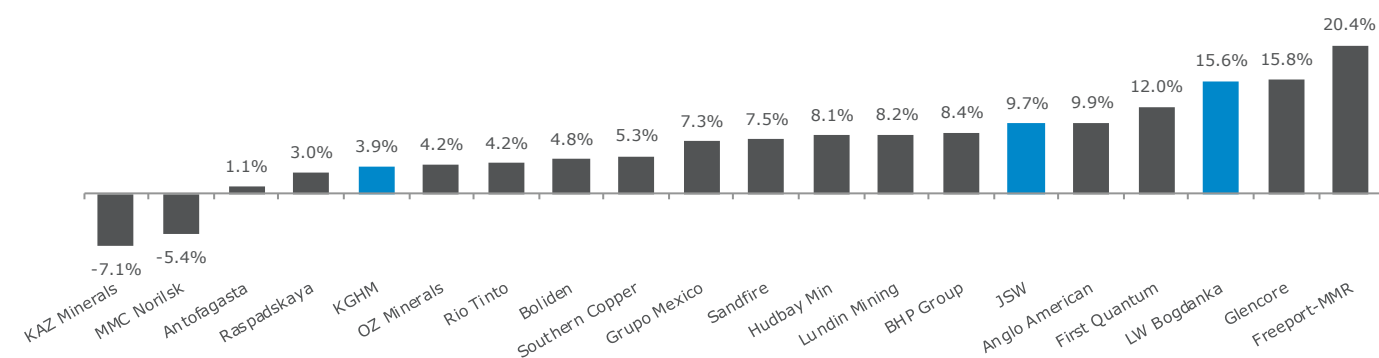
Silver prices (PLN/kg)



Prices of gold (PLN/oz)



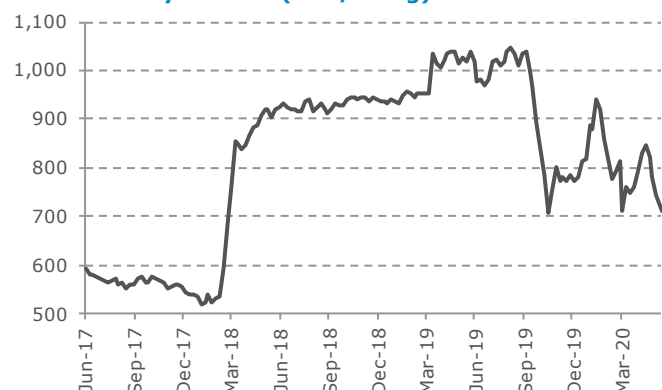
Weekly Returns of Metal & Mining Stocks



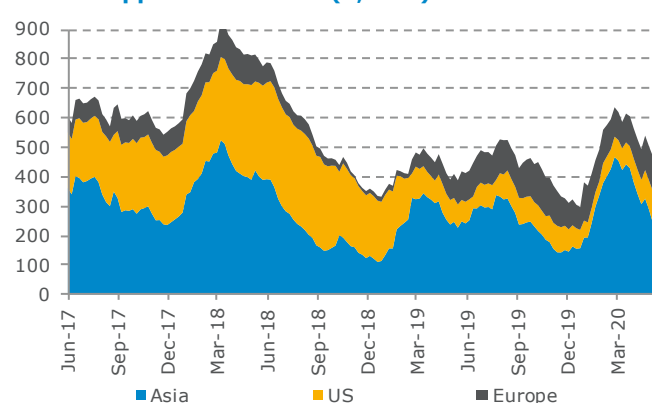
Source: Bloomberg, mBank

More Copper Charts

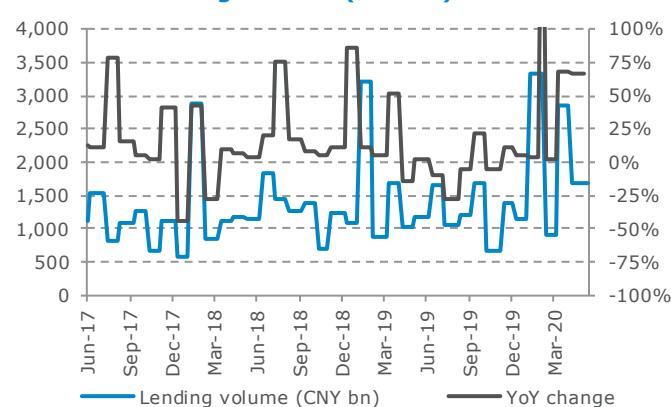
Prices of molybdenum (PLN/10 kg)



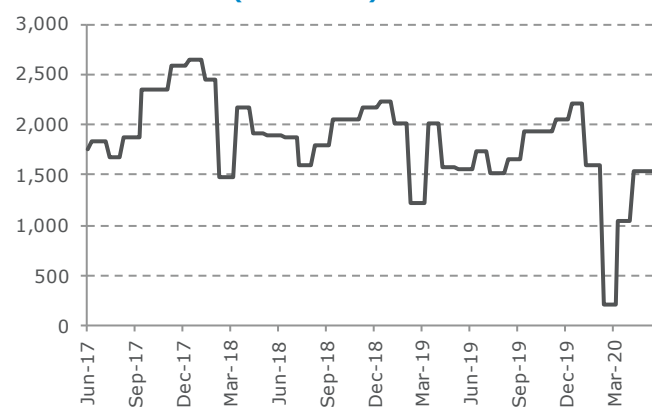
Global Copper Inventories (1,000t)



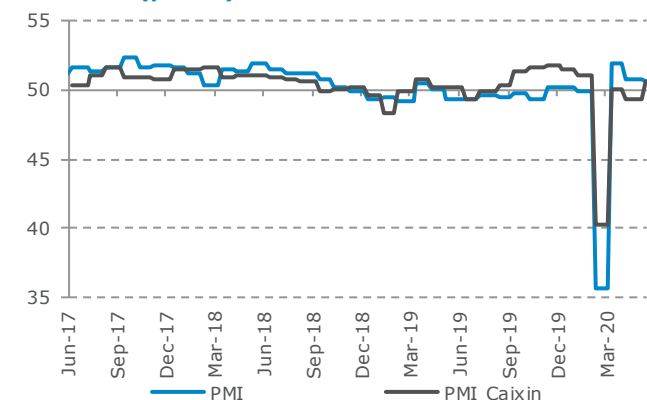
New Bank Lending in China (CNY bn)



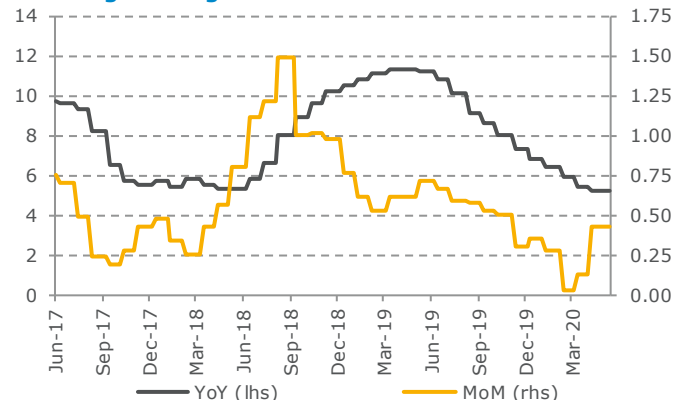
Car Sales in China (thousands)



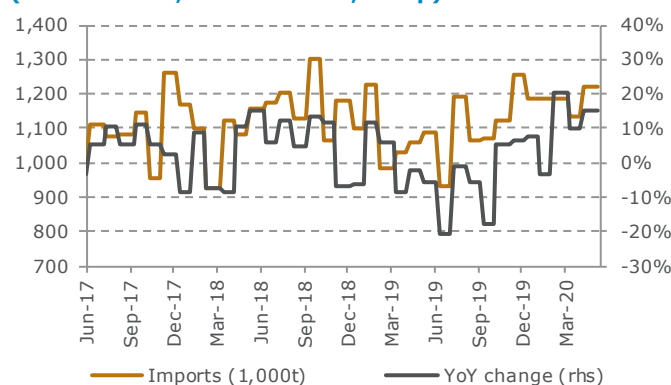
China PMI (points)



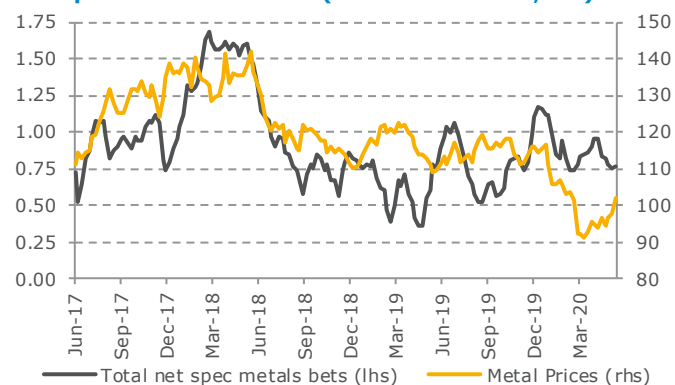
% Change In Avg. New Home Prices In 70 CN Cities



China Copper Imports (concentrates, refined metal, scrap)



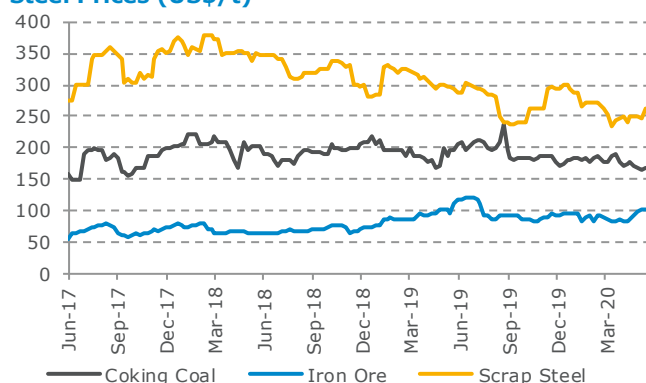
Metal Price Index (pts, rhs) vs. Net Speculative Positions (million contracts, lhs)



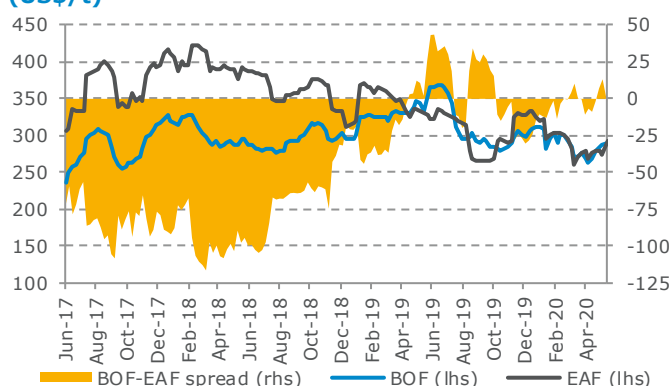
Source: Bloomberg, mBank

Steel Charts

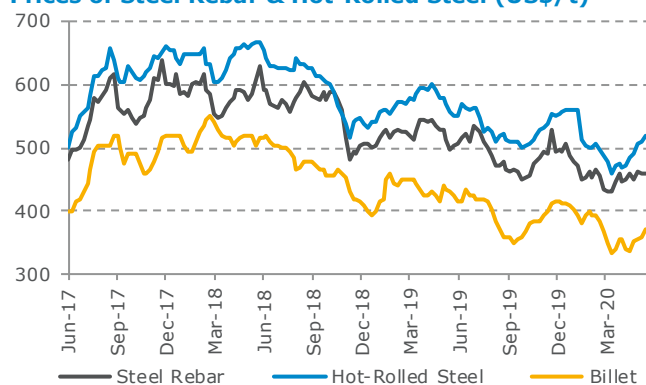
China Coking Coal & Iron Ore Prices, Rotterdam Scrap Steel Prices (US\$/t)



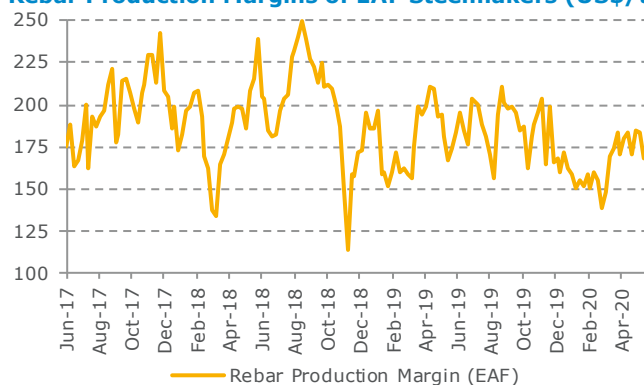
Production Costs of BOF vs. EAF Steel Producers (US\$/t)



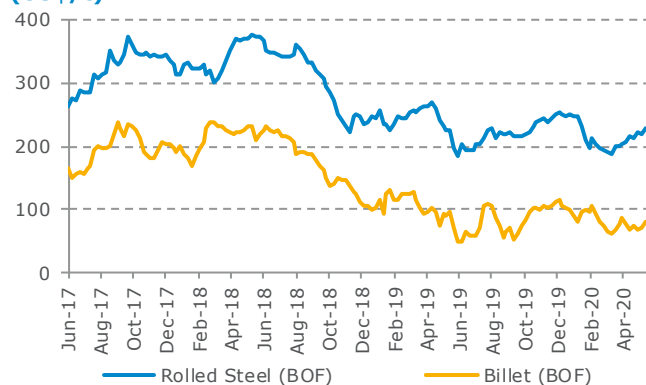
Prices of Steel Rebar & Hot-Rolled Steel (US\$/t)



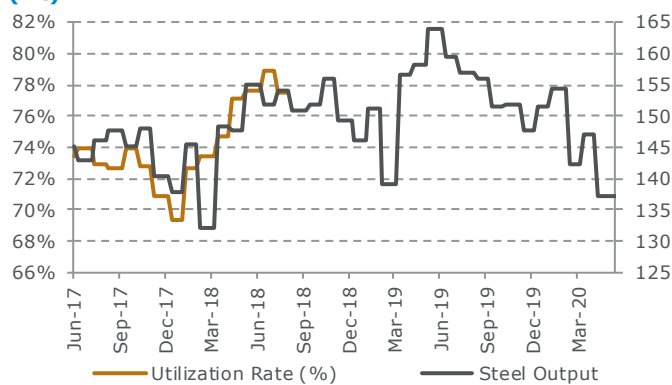
Rebar Production Margins of EAF Steelmakers (US\$/t)



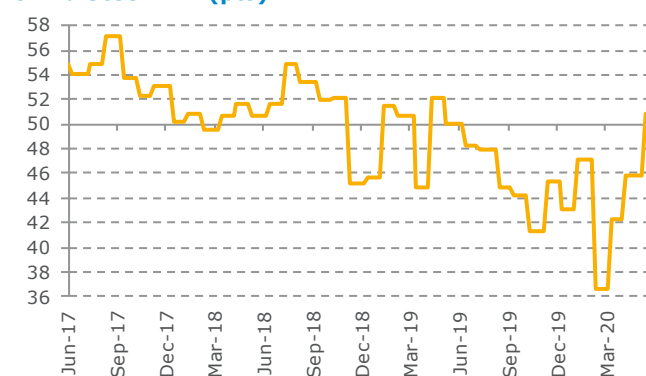
Rolled Steel & Billet Margins of BOF Steelmakers (US\$/t)



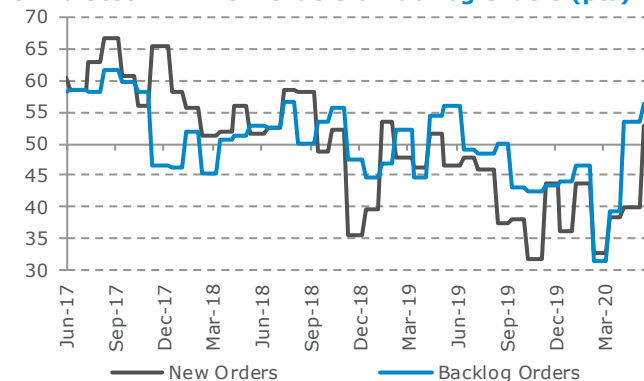
Global Steel Plant Capacity Utilization Rates & Output (Mt)



China Steel PMI (pts)



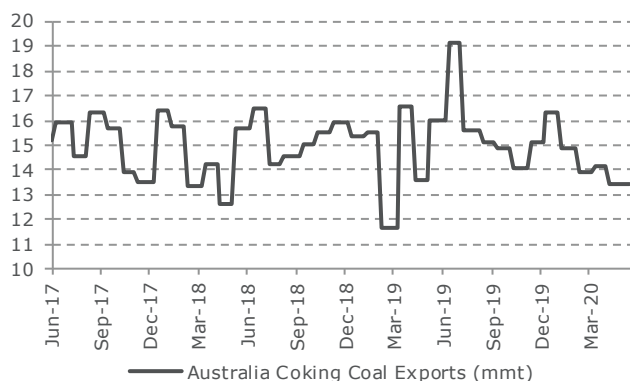
China Steel PMI New Orders & Backlog Orders (pts)



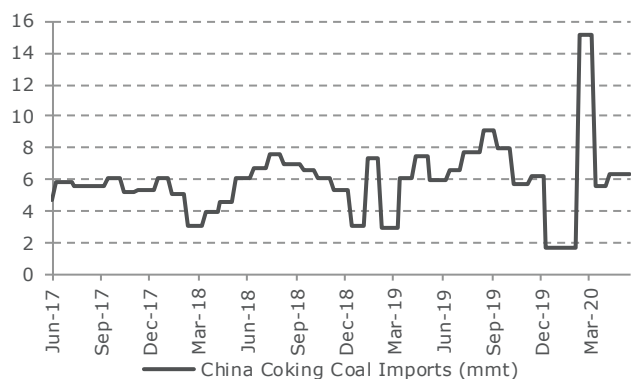
Source: Bloomberg, mBank

More Steel Charts

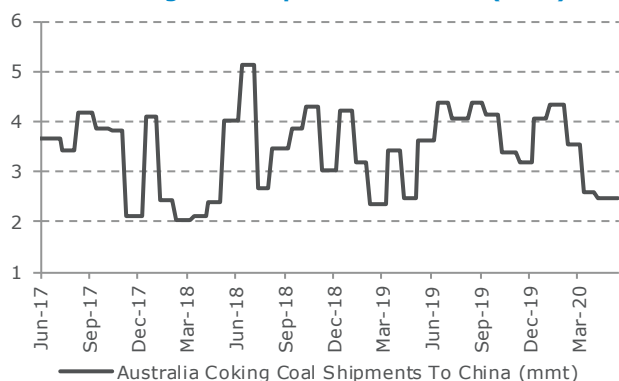
Australia Coking Coal Exports (mmt)



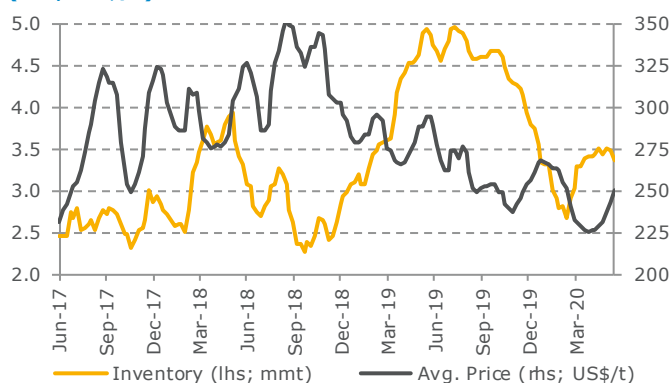
China Coking Coal Imports (mmt)



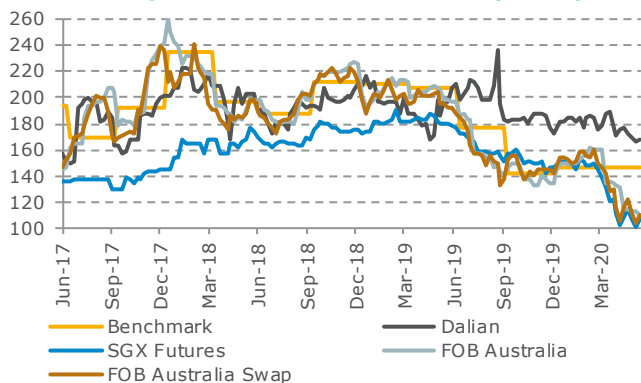
Australia Coking Coal Shipments To China (mmt)



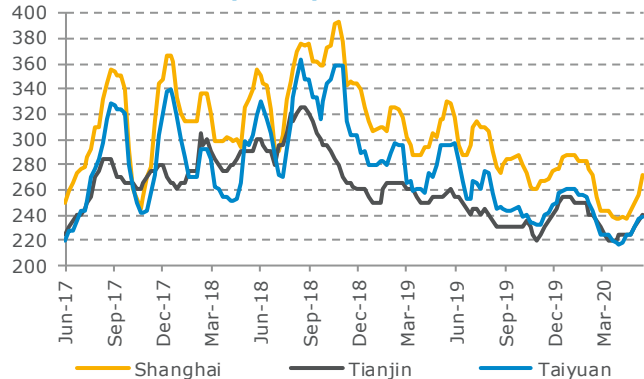
China Coke Inventories (lhs; mmt) & Average Prices (rhs; US\$/t)



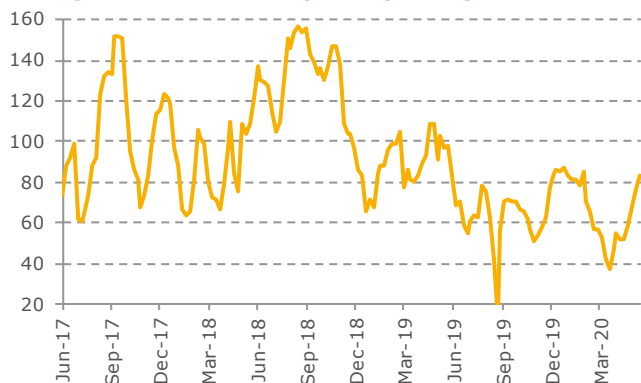
China Coking Coal Prices vs. Benchmark (US\$/t)



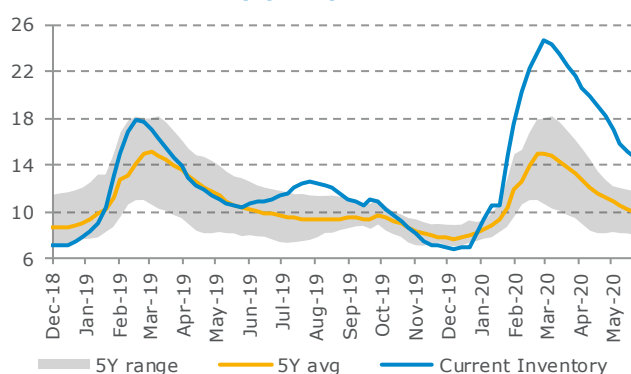
China Coke Prices (US\$/t)



Coking Coal-Coke Price Spread (US\$/t)



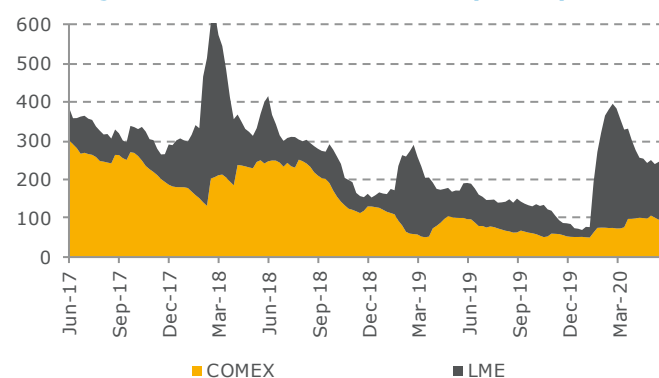
China Steel Inventory (mmt)



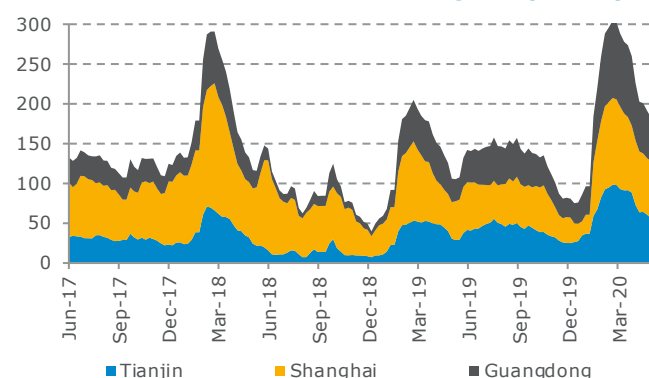
Source: Bloomberg, mBank

Zinc and Electrical Steel Charts

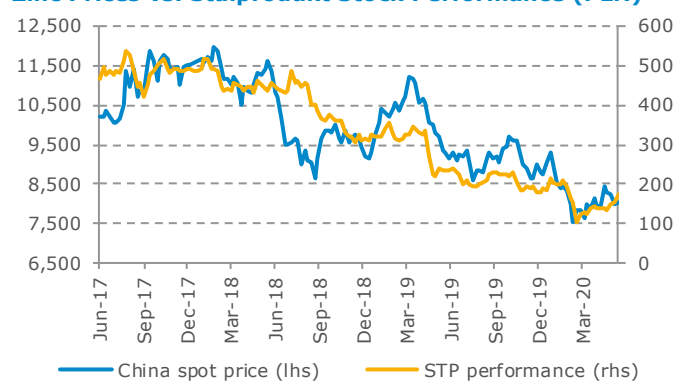
Exchange-Monitored Zinc Inventories (1,000t)



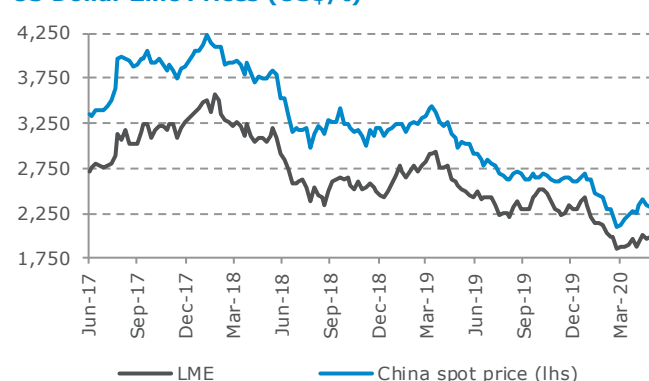
Zinc Inventories in Three Chinese Regions (1,000t)



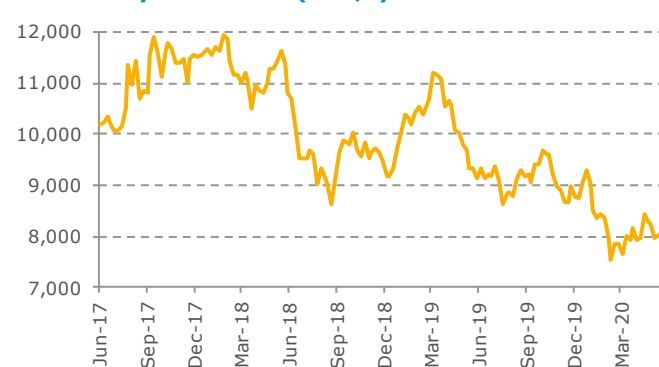
Zinc Prices vs. Stalprodukt Stock Performance (PLN)



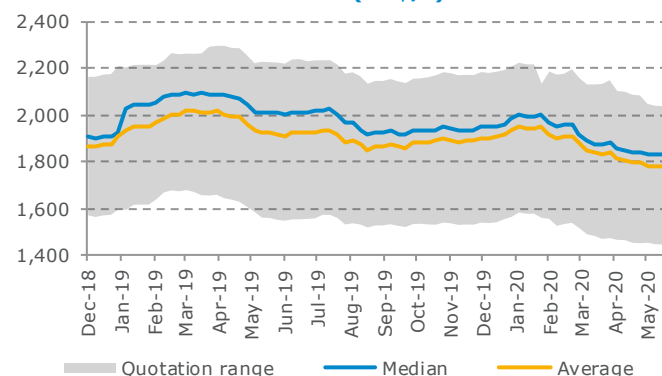
US Dollar Zinc Prices (US\$/t)



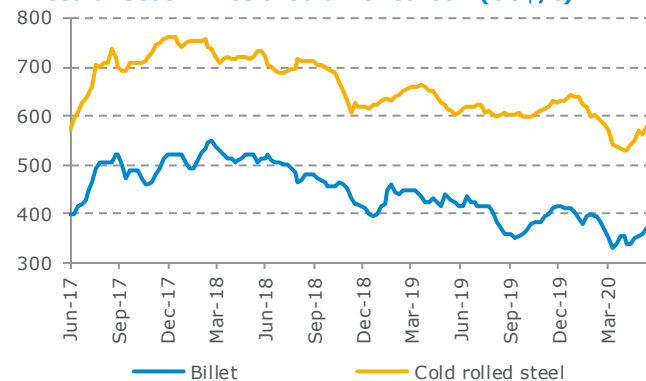
Polish Zloty Zinc Prices (PLN/t)



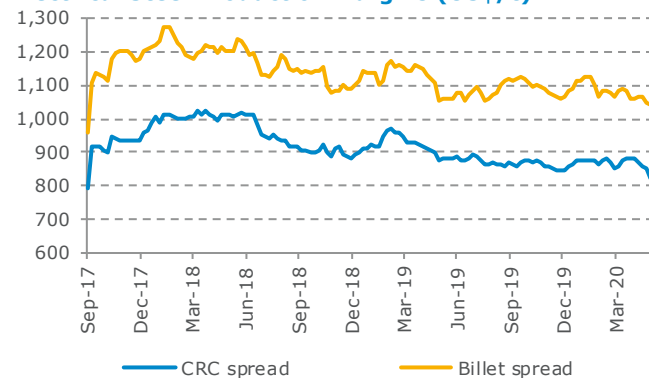
China Electrical Steel Prices (US\$/t)



Prices of Steel Billet & Cold Rolled Coil (US\$/t)



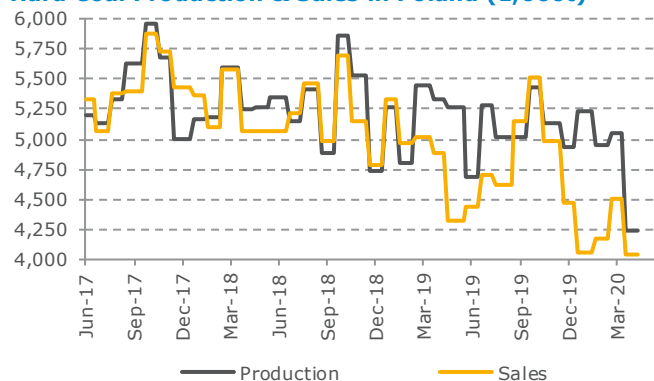
Electrical Steel Production Margins (US\$/t)



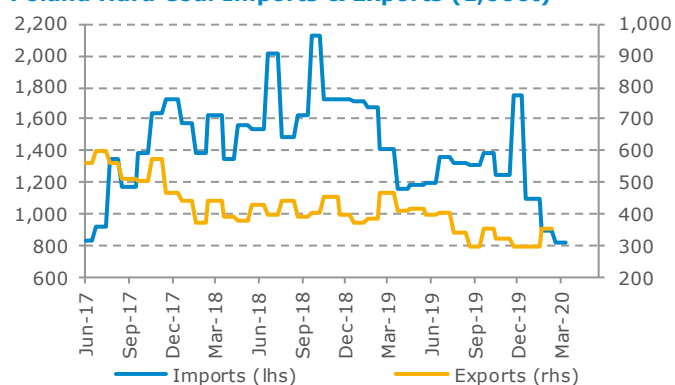
Source: Bloomberg, mBank

Thermal Coal Charts

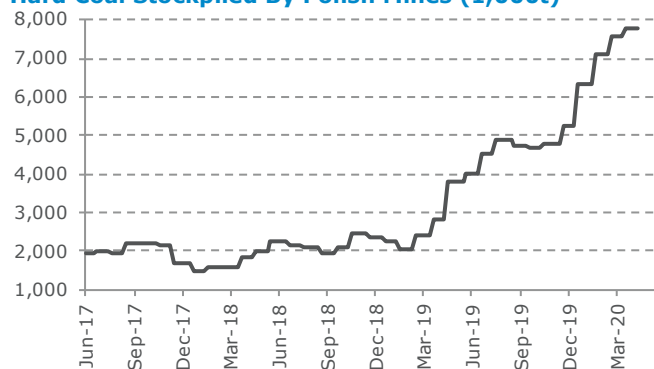
Hard Coal Production & Sales in Poland (1,000t)



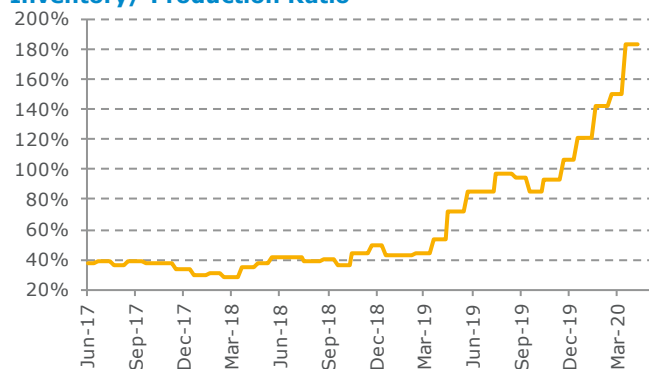
Poland Hard Coal Imports & Exports (1,000t)



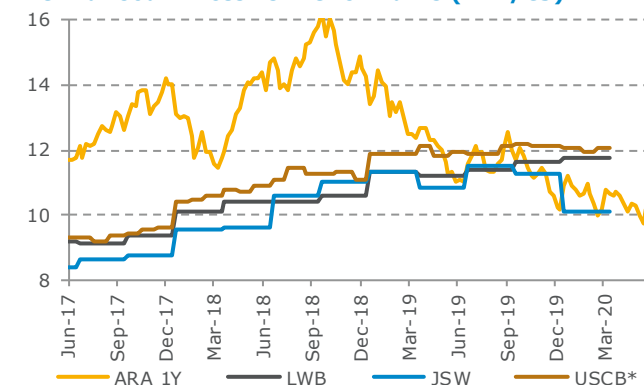
Hard Coal Stockpiled By Polish Mines (1,000t)



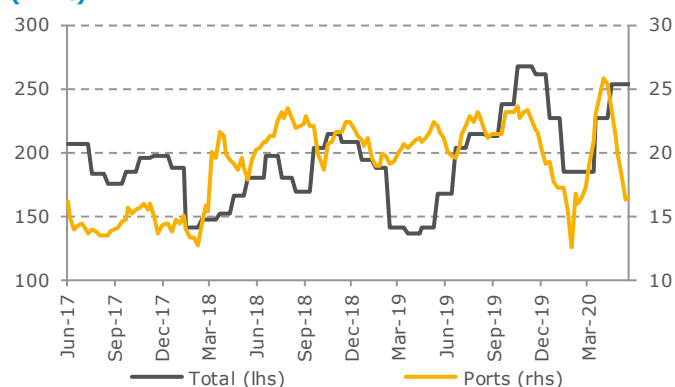
Inventory/ Production Ratio



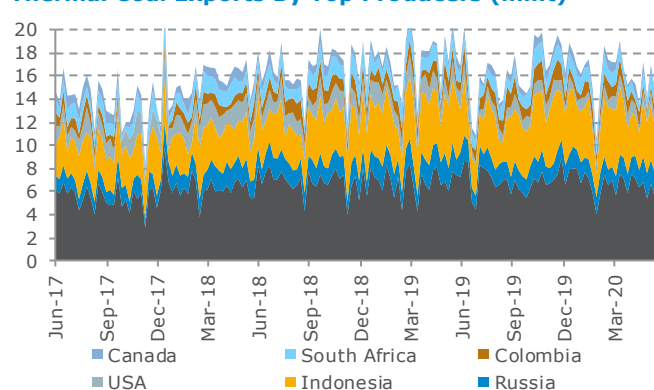
Thermal Coal Prices vs. Benchmarks (PLN/GJ)



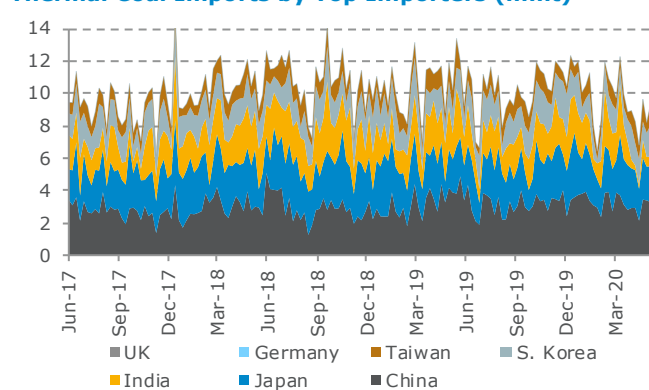
China Thermal Coal Inventories, Total & In Ports (mmt)



Thermal Coal Exports By Top Producers (mmt)



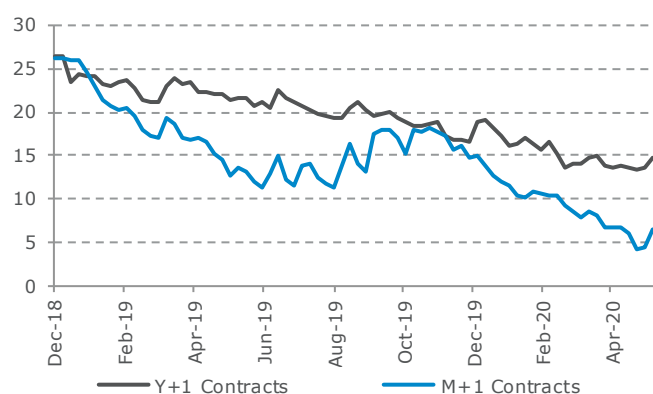
Thermal Coal Imports by Top Importers (mmt)



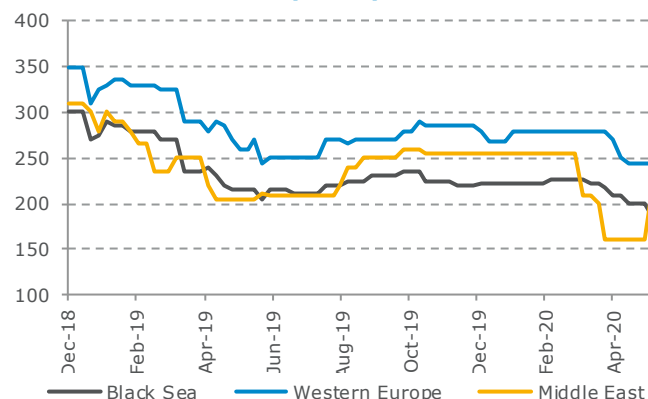
Source: Bloomberg, ARP, Eurostat, mBank *Upper Silesian Coal Basin

Fertilizer Charts

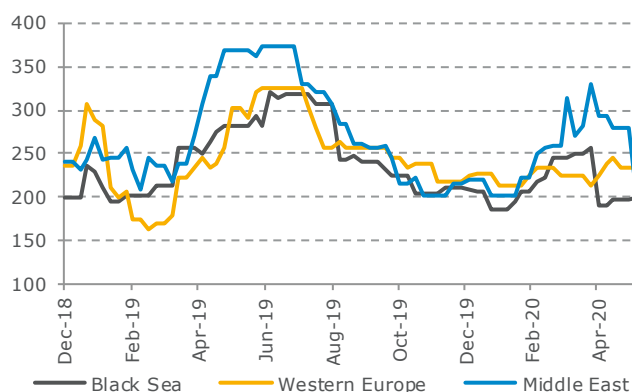
German NatGas Prices (US\$/MWh)



World Ammonia Prices (US\$/t)



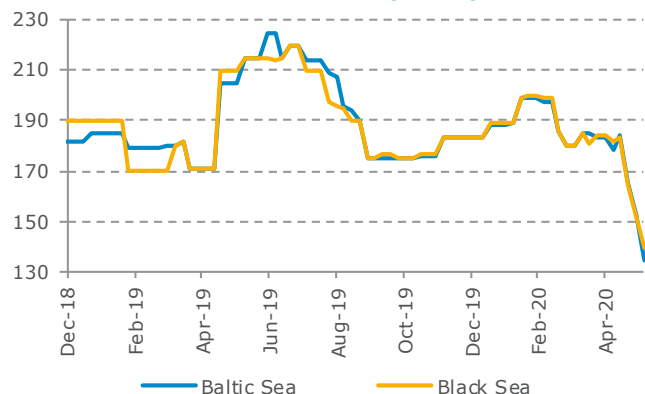
Urea-Ammonia Price Difference



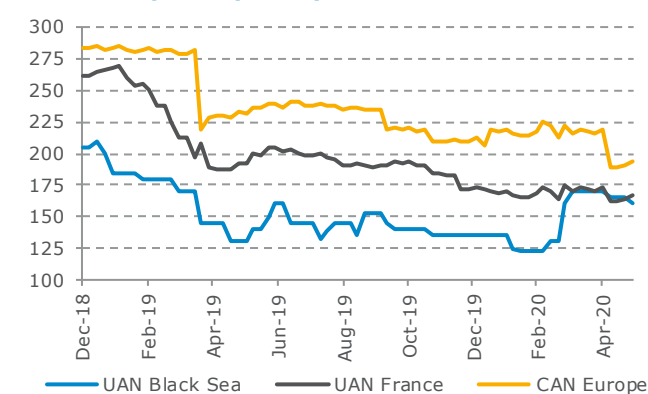
World Urea Prices (US\$/t)



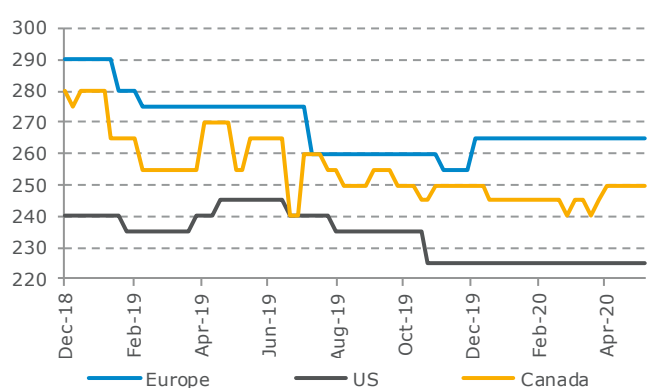
World Ammonium Nitrate Prices (US\$/t)



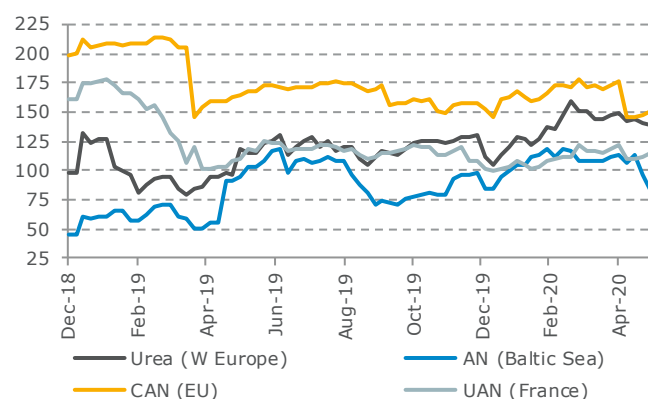
CAN & UAN prices (US\$/t)



World Ammonium Sulfate Prices (US\$/t)



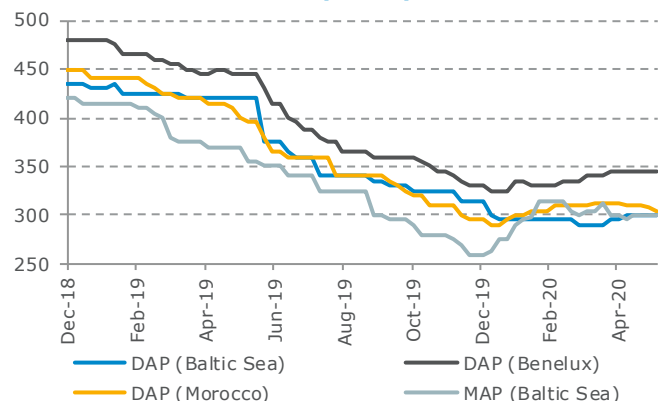
Production Margins On Nitrogen Fertilizers (US\$/t)



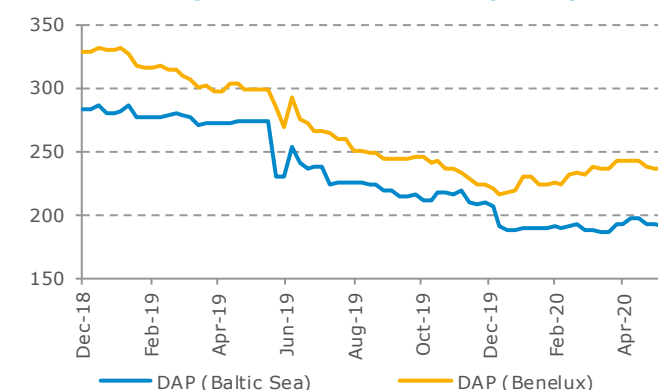
Source: Bloomberg, mBank

Fertilizer Charts

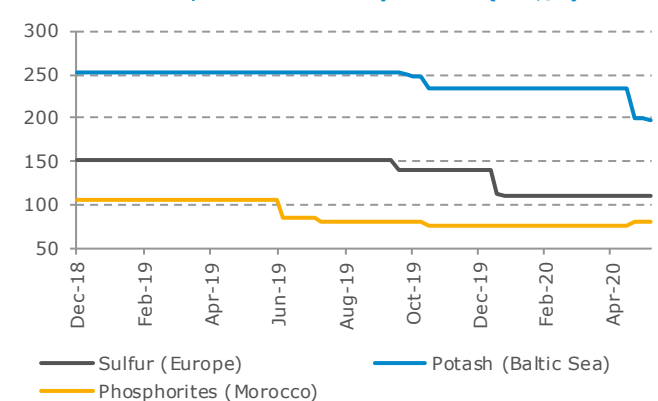
Prices of P & K Fertilizers (US\$/t)



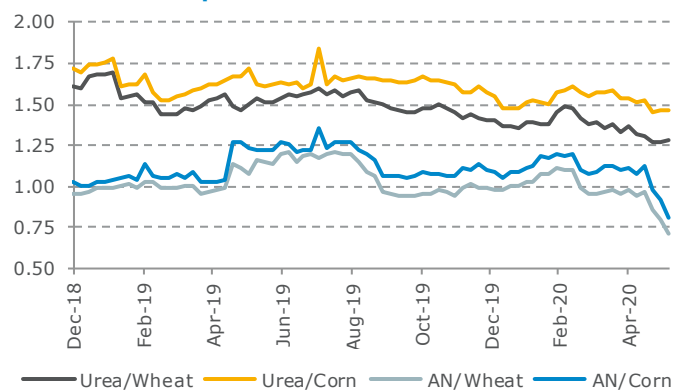
Production Margins on P & K Fertilizers (US\$/t)



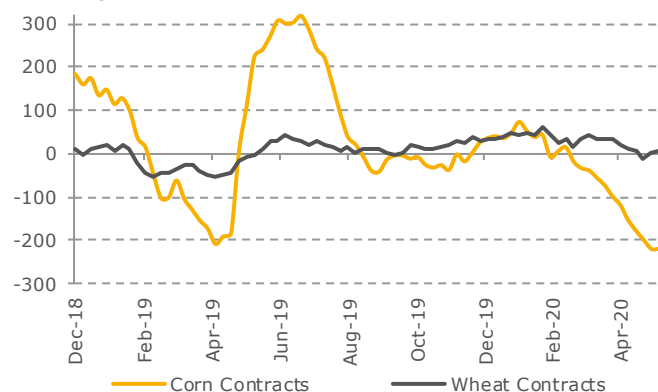
Prices of Sulfur, Potash & Phosphorites (US\$/t)



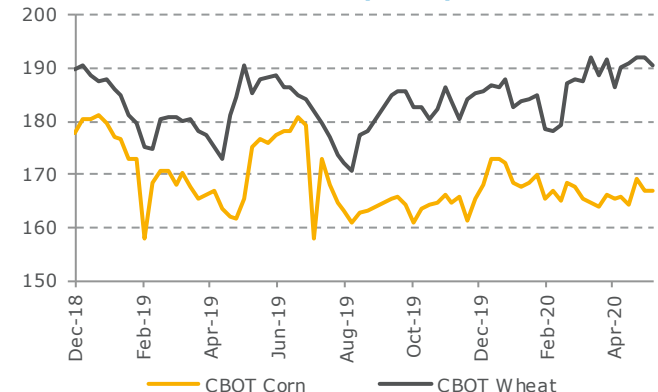
Fertilizer-to-Crop Price Ratios



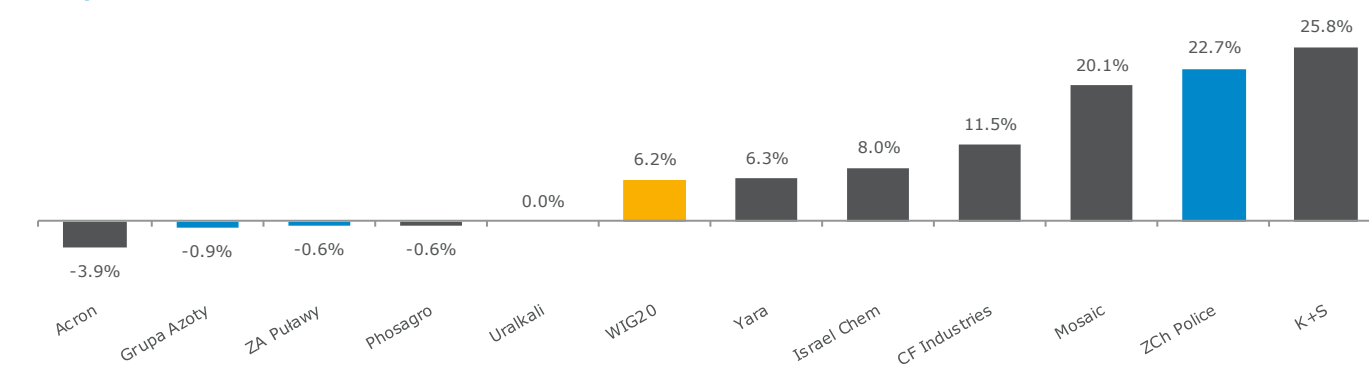
CBOT Open Positions In Corn and Wheat CBT



CBOT Corn and Wheat Prices (US\$/t)



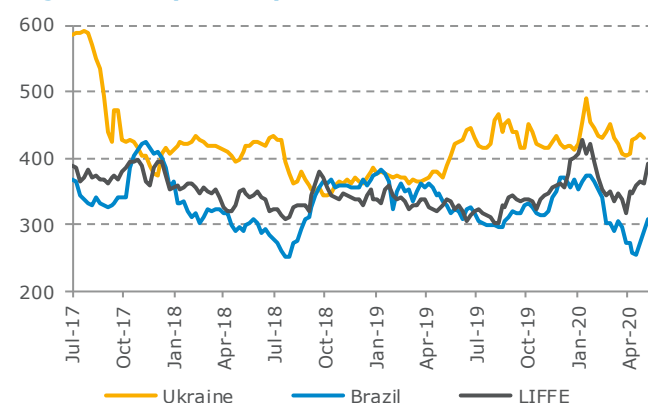
Weekly Returns of Fertilizer Stocks



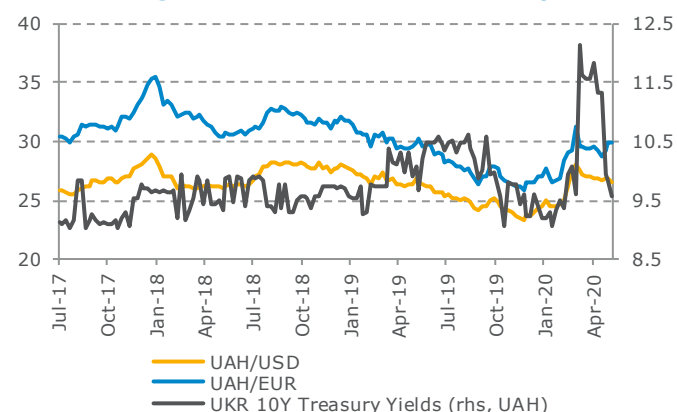
Source: Bloomberg, mBank

Agricultural Commodities

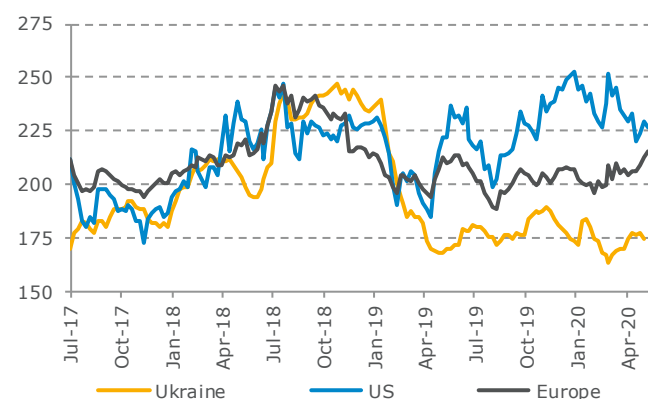
Sugar Prices (US\$/Mt)



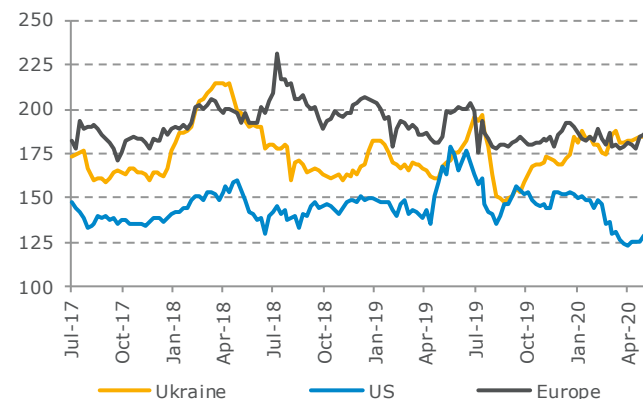
UAH Exchange Rates & Ukraine 10Y Treasury Yields



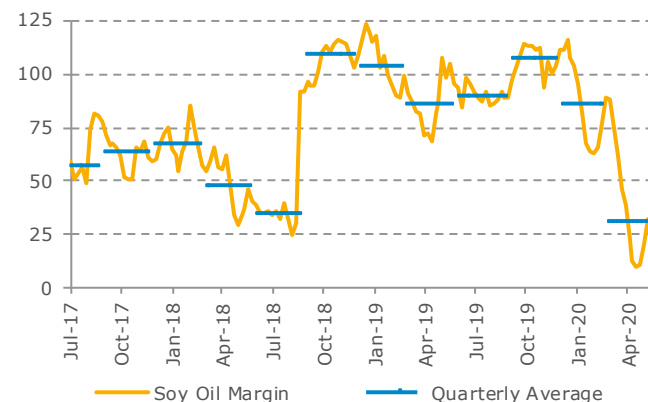
Wheat Prices (US\$/Mt)



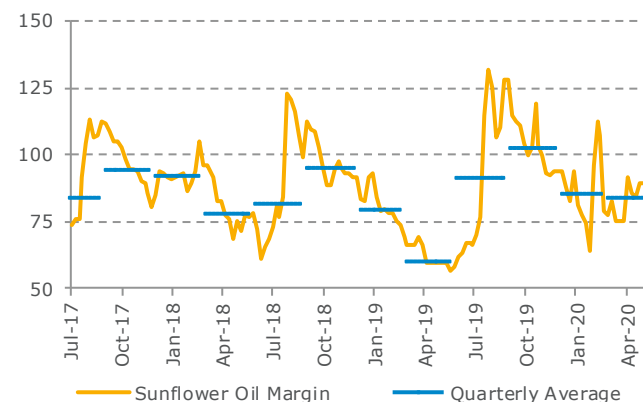
Corn Prices (US\$/Mt)



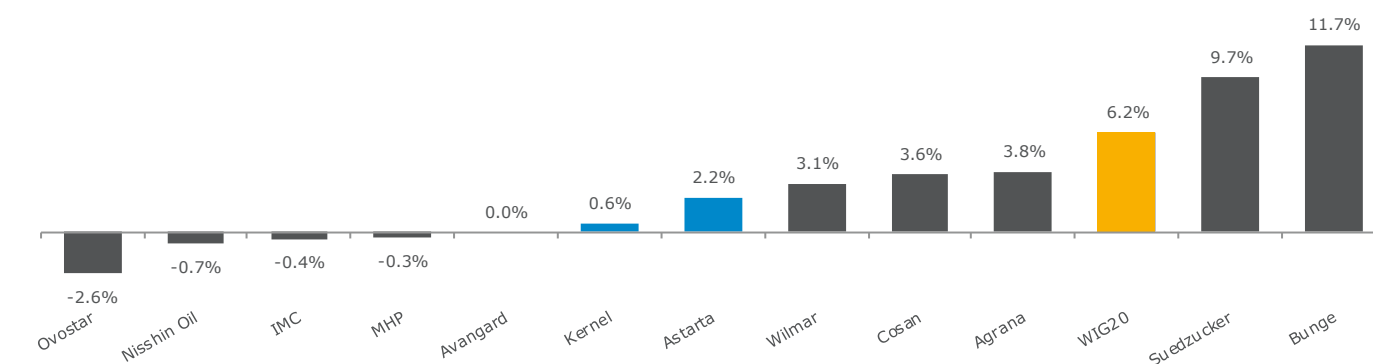
Model Margins on Soy Oil (US\$/Mt)



Model Margins on Sunflower Oil (US\$/Mt)



Weekly Returns of Agricultural Stocks



Source: Bloomberg, mBank

Comparison of Utility Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
UTILITIES																
CEZ	500.0	6.8	7.6	8.2	1.9	2.0	2.0	12.4	17.3	22.7	29%	27%	25%	6.8%	7.3%	5.2%
Enea	7.0	3.0	2.7	-	0.5	0.6	-	2.8	2.2	-	18%	21%		0.0%	3.5%	-
Energa	8.1	5.1	4.5	4.4	0.8	0.8	0.8	10.5	8.2	8.1	15%	18%	18%	0.0%	0.0%	1.8%
PGE	6.3	3.7	2.8	2.8	0.6	0.6	0.6	8.6	4.1	4.6	15%	21%	21%	0.0%	2.9%	6.1%
Tauron	1.5	4.9	4.3	3.9	0.8	0.8	0.8	3.9	2.1	2.1	17%	19%	21%	0.0%	0.0%	0.0%
ZE PAK*	7.9	0.6	0.5	0.6	0.0	0.1	0.1	10.6	3.9	8.1	8%	11%	8%	-	3.2%	4.4%
EDF	9.0	4.9	4.6	4.5	1.1	1.1	1.1	20.6	15.5	13.7	22%	23%	24%	2.2%	3.0%	3.1%
EDP	4.2	9.3	9.2	8.8	2.2	2.2	2.6	18.3	17.2	16.3	24%	24%	30%	4.6%	4.7%	5.0%
Endesa	22.7	7.7	7.6	7.6	1.5	1.5	1.5	14.3	14.1	14.4	20%	20%	20%	6.9%	5.8%	5.0%
Enel	7.6	7.8	7.5	7.2	1.8	1.7	1.7	15.1	14.1	13.4	22%	23%	23%	4.7%	5.0%	5.4%
EON	10.3	8.4	8.1	7.7	1.0	0.9	0.9	16.6	14.8	12.0	11%	11%	12%	4.6%	4.8%	5.0%
Fortum	18.1	10.0	8.9	9.0	0.6	0.5	0.5	11.7	12.9	13.7	6%	6%	5%	6.0%	6.0%	5.9%
Iberdola	10.1	10.6	10.0	9.4	3.0	2.8	2.7	18.1	16.9	15.9	28%	29%	29%	4.1%	4.4%	4.6%
National Grid	9.4	11.5	11.0	10.6	3.9	3.8	3.8	15.9	15.5	15.7	34%	35%	36%	5.2%	5.3%	5.4%
Red Electrica	16.8	10.2	10.2	9.9	7.9	7.9	7.7	13.7	13.7	13.1	77%	78%	77%	6.1%	6.1%	6.3%
RWE	31.0	7.6	6.8	6.6	1.5	1.4	1.3	18.9	15.6	15.7	19%	21%	20%	2.7%	2.9%	3.0%
SSE	13.0	12.5	11.9	11.7	3.4	3.5	3.4	15.8	14.5	14.5	27%	29%	29%	6.0%	6.1%	6.2%
Verbund	41.9	13.5	13.4	12.5	4.5	4.5	4.3	26.5	26.3	24.2	33%	33%	34%	1.8%	1.9%	2.1%
Median		7.8	7.6	7.7	1.5	1.5	1.5	14.7	14.3	13.7	21%	22%	23%	4.6%	4.5%	5.0%

Comparison of Gas & Oil Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
OIL REFINERS																
Lotos	65.60	28.3	5.1	4.5	0.9	0.8	0.6	-	9.3	8.3	3%	15%	14%	1.5%	4.6%	4.6%
MOL	2040.00	7.8	5.5	4.3	1.1	0.9	0.8	100+	12.2	7.7	14%	17%	18%	0.0%	3.4%	3.6%
PKN Orlen	71.60	9.2	4.9	4.9	0.7	0.6	0.5	-	10.5	10.8	7%	12%	10%	1.4%	4.2%	4.3%
Hellenic Petroleum	6.55	8.7	6.5	5.7	0.7	0.6	0.5	13.4	6.7	7.1	8%	9%	10%	5.3%	6.4%	8.3%
HollyFrontier	37.32	14.5	7.7	6.0	0.8	0.6	0.3	100+	18.4	10.8	6%	7%	6%	3.8%	3.8%	4.0%
Marathon Petroleum	42.21	13.0	8.0	6.5	0.8	0.6	0.5	-	19.0	10.3	6%	8%	8%	5.5%	5.7%	6.2%
Motor Oil	14.85	8.0	5.5	4.8	0.4	0.4	0.3	15.1	7.8	6.6	5%	7%	7%	6.2%	7.5%	8.3%
Neste Oil	35.85	15.2	12.7	10.3	2.5	2.2	1.8	23.5	20.3	15.6	17%	17%	18%	2.5%	2.8%	3.4%
OMV	35.62	6.0	4.3	3.6	1.3	1.1	0.9	20.8	9.8	7.1	22%	25%	25%	5.6%	5.6%	6.1%
Phillips 66	89.73	16.8	8.6	8.0	0.7	0.6	0.5	39.8	14.2	12.0	4%	7%	6%	4.1%	4.3%	4.6%
Saras	0.89	4.8	3.6	4.0	0.2	0.2	0.1	52.3	12.0	11.9	4%	4%	3%	4.8%	4.3%	3.7%
Tupras	89.35	10.3	5.8	5.0	0.6	0.4	0.4	79.0	8.2	5.9	6%	7%	7%	8.0%	11.3%	14.9%
Valero Energy	75.62	22.5	8.4	6.2	0.7	0.5	0.4	-	19.4	11.3	3%	6%	6%	5.2%	5.3%	5.4%
Median		10.3	5.8	5.0	0.7	0.6	0.5	23.5	12.0	10.3	6%	8%	8%	4.8%	4.6%	4.6%

Comparison of Petrochemical Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
PETROCHEMICALS																
PKN Orlen	71.60	9.2	4.9	4.9	0.7	0.6	0.5	-	10.5	10.8	7%	12%	10%	1.4%	4.2%	4.3%
Axiall	59.72	10.1	9.1	8.6	1.6	1.5	1.4	45.8	28.4	22.6	16%	17%	17%	1.8%	1.8%	2.0%
Braskem	27.55	8.0	6.9	5.7	1.2	1.1	0.9	-	26.0	12.9	15%	15%	16%	0.1%	0.5%	3.6%
Eastman Chemical	77.34	9.5	8.7	8.4	2.0	1.9	1.9	13.1	11.2	9.7	21%	22%	22%	3.4%	3.6%	3.9%
Huntsman Corp	19.90	12.1	7.5	6.4	1.0	0.9	0.8	53.6	14.4	11.2	8%	11%	13%	3.3%	3.4%	3.5%
Lotte Chemicals	194,000	5.4	3.9	3.5	0.6	0.5	0.5	15.8	8.6	7.5	11%	14%	15%	3.0%	3.6%	3.9%
LyondellBasell	76.39	10.4	7.9	7.2	1.5	1.4	1.3	16.4	10.3	9.0	15%	17%	18%	5.5%	5.7%	5.9%
Mitsubishi Chemical	671.30	8.7	8.4	7.2	0.9	1.0	0.9	17.6	17.2	9.6	10%	12%	13%	4.8%	4.6%	4.9%
Mitsui Chemicals	2486.00	8.0	9.2	7.2	0.7	0.8	0.7	12.8	15.7	10.2	9%	9%	10%	4.0%	3.6%	3.9%
Westlake Chemical	59.72	10.1	9.1	8.6	1.6	1.5	1.4	45.8	28.4	22.6	16%	17%	17%	1.8%	1.8%	2.0%
Median		9.4	8.1	7.2	1.1	1.0	0.9	17.0	15.1	10.5	13%	15%	15%	3.1%	3.6%	3.9%

Source: mBank for Polish companies, Bloomberg for foreign firms and companies marked with an asterisk

Comparison of NatGas Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
GAS COMPANIES																
PGNiG	4.47	5.1	4.2	4.0	0.8	0.9	0.8	14.5	10.0	9.0	16%	20%	20%	2.1%	2.8%	5.0%
A2A	1.35	6.9	6.6	6.1	1.2	1.1	1.1	14.6	14.3	12.2	17%	17%	18%	5.9%	6.1%	6.4%
BG Group	15.04	7.3	5.5	4.3	1.0	0.8	0.7	49.1	15.0	9.6	13%	14%	16%	3.7%	3.7%	4.1%
BP	3.66	7.8	5.9	4.6	0.9	0.7	0.6	100+	12.5	7.0	11%	12%	13%	8.3%	8.1%	8.4%
Centrica	0.45	4.0	4.0	4.0	0.3	0.3	0.3	10.4	7.1	6.3	7%	7%	7%	4.3%	5.4%	8.7%
Enagas	22.09	9.7	10.0	10.4	8.2	8.7	9.0	13.1	12.9	13.3	84%	87%	87%	7.6%	7.7%	7.7%
Endesa	22.69	7.7	7.6	7.6	1.5	1.5	1.5	14.3	14.1	14.4	20%	20%	20%	6.9%	5.8%	5.0%
Engie	11.95	6.3	5.8	5.5	1.0	1.0	0.9	14.2	11.1	10.2	16%	17%	17%	5.7%	6.6%	7.1%
Eni	9.66	6.0	4.4	3.4	1.0	0.9	0.8	-	25.4	11.4	17%	20%	22%	7.7%	7.7%	7.9%
Equinor	156.30	5.3	3.8	3.0	1.5	1.3	1.1	100+	20.7	12.0	28%	34%	38%	2.9%	3.8%	4.3%
Gas Natural SDG	17.70	8.5	8.0	7.9	1.6	1.5	1.5	14.7	12.7	12.4	19%	19%	19%	8.1%	8.5%	8.9%
Gazprom	204.91	5.3	4.5	3.4	1.2	1.0	0.9	9.1	5.4	3.7	22%	23%	27%	4.8%	8.4%	13.4%
Hera	3.62	8.0	7.8	7.8	1.2	1.2	1.1	17.9	17.1	16.1	15%	15%	15%	3.0%	3.1%	3.2%
NovaTek	158.90	15.1	12.5	9.5	4.4	3.9	3.3	17.1	13.3	9.9	29%	32%	34%	2.9%	5.3%	4.2%
ROMGAZ	31.10	4.5	4.5	4.2	2.2	2.1	2.0	9.0	9.7	8.8	49%	47%	46%	10.2%	9.4%	10.4%
Shell	17.13	7.3	5.5	4.3	1.0	0.8	0.7	49.8	15.2	9.7	13%	14%	16%	3.6%	3.6%	4.0%
Snam	4.50	12.6	12.2	11.8	10.1	9.9	9.7	13.8	13.0	12.7	80%	81%	82%	5.5%	5.8%	6.2%
Total	38.85	8.2	6.3	4.8	1.1	1.0	0.9	38.9	17.1	10.4	14%	16%	18%	6.7%	6.9%	7.1%
Median		7.3	5.9	4.7	1.2	1.1	1.0	14.5	13.1	10.3	17%	19%	19%	5.6%	5.9%	6.7%

Comparison of E&P Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
E&P COMPANIES																
MOL	2040.00	5.1	3.9	3.4	0.7	0.5	0.5	18.5	6.5	5.0	13%	14%	14%	5.2%	5.9%	6.4%
Bashneft	1820.00	1.9	1.6	-	0.5	0.4	-	2.6	2.1	-	24%	25%	-	13.1%	14.2%	-
BP	3.66	7.8	5.9	4.6	0.9	0.7	0.6	100+	12.5	7.0	11%	12%	13%	8.3%	8.1%	8.4%
Dana Gas	0.67	4.6	5.4	3.9	2.4	2.6	2.2	10.9	13.2	7.1	52%	49%	57%	8.5%	8.2%	12.0%
Eni	9.66	6.0	4.4	3.4	1.0	0.9	0.8	-	25.4	11.4	17%	20%	22%	7.7%	7.7%	7.9%
Equinor	156.30	5.3	3.8	3.0	1.5	1.3	1.1	100+	20.7	12.0	28%	34%	38%	2.9%	3.8%	4.3%
Gazprom Neft	358.00	6.5	5.2	4.5	1.4	1.2	1.0	8.2	6.3	5.0	21%	22%	21%	6.5%	7.9%	10.0%
Gulf Keystone	1.02	6.8	2.0	1.0	2.0	1.1	0.5	-	100+	2.8	30%	54%	52%	-	-	-
Lukoil	5372.00	5.2	4.2	3.5	0.7	0.6	0.5	15.0	9.4	7.2	14%	15%	15%	6.4%	8.0%	9.9%
Occidental Petroleum	24.40	13.1	10.3	7.9	3.8	3.8	3.5	-	-	-	29%	37%	45%	6.6%	1.6%	1.6%
Repsol	9.73	6.5	4.9	4.3	0.9	0.7	0.7	19.8	9.2	7.1	14%	15%	15%	9.9%	9.8%	10.0%
Rosneft Oil	400.15	7.0	5.2	4.3	1.6	1.2	1.0	27.0	7.6	5.4	22%	24%	24%	2.6%	6.5%	9.0%
Shell	17.13	7.3	5.5	4.3	1.0	0.8	0.7	49.8	15.2	9.7	13%	14%	16%	3.6%	3.6%	4.0%
Surgutneftegas	34.15	-	-	-	-	-	-	3.3	5.0	4.4	-	-	-	56.0%	3.8%	9.0%
Total	38.85	8.2	6.3	4.8	1.1	1.0	0.9	38.9	17.1	10.4	14%	16%	18%	6.7%	6.9%	7.1%
Tullow Oil	0.38	5.7	6.1	5.9	3.7	4.0	3.7	-	-	-	66%	65%	63%	-	-	-
Median		6.5	5.2	4.3	1.1	1.0	0.8	16.7	9.4	7.1	21%	22%	22%	6.7%	7.3%	8.4%

Comparison of Mining Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
MINING COMPANIES																
JSW	19.20	5.1	3.2	3.3	0.4	0.3	0.4	-	-	-	8%	11%	11%	0.0%	0.0%	0.0%
KGHM	90.80	5.4	6.7	5.2	1.1	1.2	1.0	11.7	23.3	12.1	20%	17%	20%	0.0%	1.7%	2.1%
LW Bogdanka*	23.75	0.9	1.2	1.2	0.3	0.3	0.3	4.7	7.8	10.8	30%	25%	26%	5.9%	2.5%	3.0%
Anglo American	18.67	5.3	4.5	4.5	1.6	1.4	1.4	13.3	10.2	10.4	31%	32%	31%	3.1%	4.1%	3.8%
Antofagasta	9.05	8.8	6.0	5.7	3.5	2.9	2.8	69.1	24.7	21.6	40%	49%	50%	0.8%	2.3%	2.4%
BHP Group	17.27	6.2	6.9	6.7	3.3	3.4	3.3	12.1	14.4	14.0	52%	50%	49%	5.3%	4.5%	4.5%
Freeport-McMoRan	11.25	16.1	6.2	5.6	2.7	2.0	1.9	-	12.2	10.3	17%	32%	34%	0.4%	1.5%	1.6%
Glencore	1.82	7.3	5.9	5.5	0.4	0.3	0.3	64.9	17.5	14.2	5%	5%	5%	3.6%	5.8%	7.3%
Grupo Mexico	53.47	7.0	5.9	5.4	3.0	2.6	2.4	25.0	13.0	10.8	42%	44%	45%	4.1%	7.7%	8.2%
Kazakhmys	4.55	5.9	5.4	4.6	2.9	2.7	2.3	8.5	7.2	5.8	49%	50%	50%	1.3%	1.3%	1.5%
Rio Tinto	45.63	6.0	6.4	6.8	2.8	2.8	2.9	11.4	12.9	14.0	47%	44%	43%	5.5%	5.0%	4.8%
Southern CC	38.79	14.2	10.8	10.1	5.8	4.9	4.7	34.2	21.6	19.9	41%	45%	47%	2.9%	3.6%	4.4%
Median		6.1	6.0	5.5	2.8	2.3	2.1	12.7	13.0	12.1	35%	38%	38%	3.0%	3.0%	3.4%
ALUMINUM PRODUCERS																
Grupa Kęty	370.00	9.0	8.7	8.5	1.4	1.3	1.3	13.7	13.0	12.6	16%	15%	15%	4.2%	5.9%	5.8%
Alcoa	12.98	6.2	4.4	4.0	0.6	0.5	0.5	-	-	44.0	9%	12%	13%	-	-	-
Constellium	9.75	7.4	6.2	5.1	0.7	0.6	0.6	-	13.7	6.0	9%	10%	12%	-	-	-
Kaiser Aluminum	85.85	12.9	8.6	7.5	1.3	1.2	1.0	34.6	21.8	12.9	10%	14%	14%	3.0%	3.4%	3.6%
Norsk Hydro	28.03	6.1	4.9	4.2	0.5	0.5	0.5	30.0	15.1	10.9	9%	10%	11%	4.5%	4.4%	5.0%
Rusal	3.16	19.4	14.7	10.1	1.5	1.4	1.3	4.7	4.2	3.8	8%	9%	12%	1.5%	4.9%	5.6%
Median		8.2	7.4	6.3	1.0	0.9	0.8	21.8	13.7	11.7	9%	11%	12%	3.6%	4.7%	5.3%

Source: mBank for Polish companies, Bloomberg for foreign firms and companies marked with an asterisk

Comparison of Fertilizer Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
FERTILIZER PRODUCERS																
Grupa Azoty	33.25	6.3	9.2	9.2	0.8	0.9	0.9	15.6	-	79.6	13%	9%	10%	0.0%	0.0%	0.0%
ZA Police*	14.60	16.5	9.2	6.8	0.8	0.7	0.7	-	-	-	5%	8%	10%	-	-	-
Acron	5652.00	9.5	8.1	7.9	2.9	2.6	2.4	14.9	10.3	10.2	31%	32%	30%	6.4%	6.2%	5.4%
CF Industries	32.98	9.8	9.7	8.9	3.3	3.2	3.1	21.9	19.2	14.6	34%	33%	34%	3.7%	3.7%	3.7%
Israel Chemicals	12.66	7.9	6.9	6.7	1.5	1.4	1.3	15.7	12.2	11.3	18%	20%	20%	2.5%	4.0%	4.4%
K+S	7.28	9.2	7.1	6.2	1.2	1.1	1.1	-	23.4	10.2	13%	16%	18%	1.2%	2.0%	3.5%
Phosagro	2785.00	6.9	6.2	6.0	2.1	2.0	1.9	17.8	11.3	9.9	30%	32%	31%	3.0%	5.1%	6.2%
The Mosaic Company	14.98	9.2	6.7	5.7	1.3	1.2	1.1	100+	18.8	10.3	14%	18%	20%	1.3%	1.3%	1.5%
Yara International	353.70	6.6	6.1	5.9	1.2	1.1	1.1	12.0	10.0	9.2	18%	18%	18%	4.3%	5.5%	5.8%
Median		9.2	7.1	6.7	1.3	1.2	1.1	15.6	12.2	10.3	18%	18%	20%	2.7%	3.9%	4.0%

Comparison of Agricultural Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
AGRI PRODUCERS																
Astarta*	16.45	4.2	2.8	3.7	0.8	0.7	0.7	-	2.7	9.1	19%	25%	20%	-	5.7%	18.3%
Kemel	42.25	6.0	5.8	5.5	0.6	0.6	0.6	9.5	6.2	6.2	9%	11%	10%	2.3%	2.4%	2.1%
Agrana Beteiligungs	18.06	9.0	-	-	0.7	-	-	23.5	-	-	7%	-	-	5.5%	-	-
Bunge Limited	43.81	10.2	8.8	8.3	0.3	0.3	0.3	16.1	11.0	9.5	3%	4%	4%	4.4%	4.7%	5.7%
Cosan	69.30	6.8	6.0	5.7	0.6	0.5	0.5	18.9	13.4	13.2	8%	8%	8%	2.1%	2.2%	3.2%
MHP	5.98	4.3	3.8	-	1.0	0.9	-	-	3.3	-	24%	24%	-	8.6%	12.5%	-
Nisshin Oillio	3435.00	7.8	7.7	7.5	0.5	0.5	0.5	14.0	13.0	12.5	6%	6%	6%	2.3%	2.3%	2.3%
Suedzucker	14.75	11.7	7.8	6.8	0.8	0.8	0.8	-	16.8	11.7	7%	10%	11%	1.4%	1.9%	2.5%
Wilmar Int.	4.04	11.9	11.0	10.3	0.7	0.7	0.6	15.1	13.6	12.4	6%	6%	6%	2.9%	3.2%	3.4%
Median		7.8	6.8	6.8	0.7	0.6	0.6	15.6	12.0	11.7	7%	9%	8%	2.6%	2.8%	3.2%

Source: mBank for Polish companies, Bloomberg for foreign firms and companies marked with an asterisk

List of abbreviations and ratios contained in the report:

EV – net debt + market value (EV – economic value)
EBIT – Earnings Before Interest and Taxes
EBITDA – EBIT + Depreciation and Amortisation
PBA – Profit on Banking Activity
P/CE – price to earnings with amortisation
MC/S – market capitalisation to sales
EBIT/EV – operating profit to economic value
P/E – (Price/Earnings) – price divided by annual net profit per share
ROE – (Return on Equity) – annual net profit divided by average equity
P/BV – (Price/Book Value) – price divided by book value per share
Net debt – credits + debt papers + interest bearing loans – cash and cash equivalents
EBITDA margin – EBITDA/Sales

OVERWEIGHT (OW) – a rating which indicates that we expect a stock to outperform the broad market
NEUTRAL (N) – a rating which indicates that we expect the stock to perform in line with the broad market
UNDERWEIGHT (UW) – a rating which indicates that we expect the stock to underperform the broad market

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BUY – we expect that the rate of return from an investment will be at least 15%
ACCUMULATE – we expect that the rate of return from an investment will range from 5% to 15%
HOLD – we expect that the rate of return from an investment will range from -5% to +5%
REDUCE – we expect that the rate of return from an investment will range from -5% to -15%
SELL – we expect that an investment will bear a loss greater than 15%
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Economic profits – discounting of future economic profits; the weak point is high sensitivity to changes in the assumptions made in the valuation model.

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