

Tuesday, 13 October, 2020 | weekly publication

Tuesday Espresso

Weekly Commodity Roundup

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Utilities

EEX contracts retreated close to €40/MWh over the week, in step with a drop in carbon allowances below €36/t, underpinned by downward-trending prices ARA coal. Polish year-ahead power contracts are also down by about 20 zlotys at PLN 230/MWh, with means DCS remain squeezed even though emissions have become cheaper.

Nevertheless world utility indices continued to move higher over the week, and month-to-date we are seeing positive returns of 6% on EU stocks and 8% on their US peers. Polish generators remain under pressure as Poland seeks the approval of the European Union to provide state aid to our biggest coal producer, PGG, to help further its plan for gradual mine closures.

Gas & Oil

Markets are taking notice of negative shifts in crude, and so refining margins are rebuilding at more than \$2/bbl today. With a larger supply of sour crudes the Urals/Brent differential is probably set to widen from the current \$0.4. In petrochemicals, profits remain squeezed across the whole product mix. Gas prices have stabilized after weeks of upwards movement, with next month's deliveries perched at ~€14/MWh.

Coking Coal

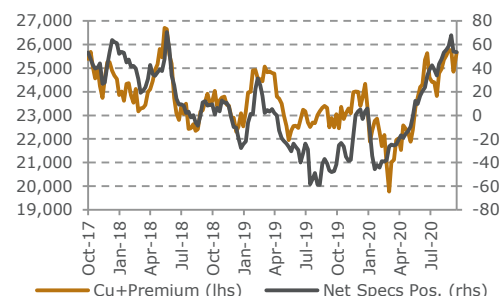
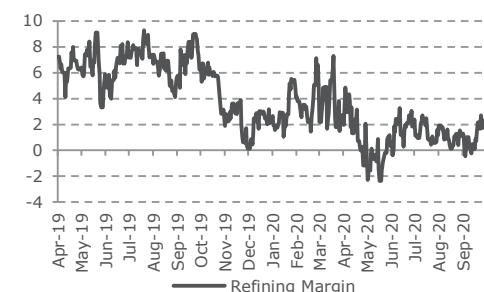
The coking coal market got sidelined briefly at the start of the week after reports emerged that Chinese customs authorities had ordered several state-owned steel mills and power plants to immediately halt coal imports from Australia. If these reports are confirmed, this could put a damper on the prices of metallurgical coal, and with them the shares of its producers, including JSW. The implications of a potential Chinese import ban are mitigated somewhat by forecasts of average-to-above-average cyclone activity in the Australian region in the November-April tropical cyclone season.

Agricultural Commodities

World prices of wheat and corn have rallied to \$220/t in the past week – the highest level since 2012, buoyed by the USDA's crop supply update last Friday. Rising crop prices make for a more bullish outlook for the farmland business of Kernel and Astarta. The latter is also still benefitting from upward-trending global prices of sugar.

On the other hand, the fertilizer industry, represented among others by Grupa Azoty and Yara, are squeezed by increasing prices of natural gas.

Charts of the Week



Source: Bloomberg, mBank

A widening of cracking spreads

As refiners take a step back and let petroleum stocks dwindle, more space has opened for cracking margins to grow, with even more room likely to be created by further downward correction in crude as supply from OPEC+ and Libya increases. For PKN Orlen, last week the model refining margin per barrel of product crossed \$2.

Copper speculators keep positions high

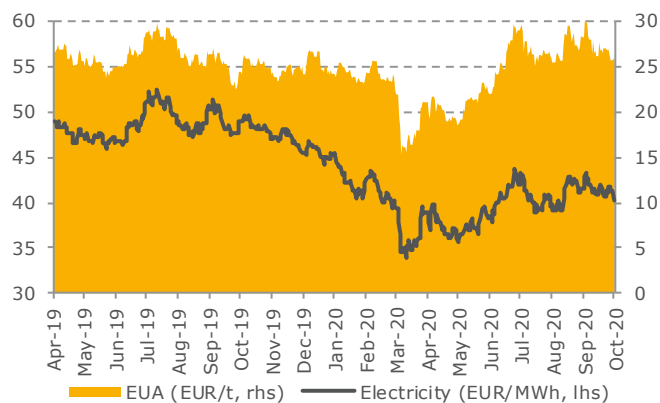
Open positions in copper remain at a stable but high 54,000 contracts, which suggests that the market is close to a tipping point. At the moment traders are focused on recovering global stocks and uncertainty about a new stimulus package in the US, and they are watching for potential supply disruptions as labor talks at major mines in Chile produce varying outcomes.

1-Week & YTD Performance

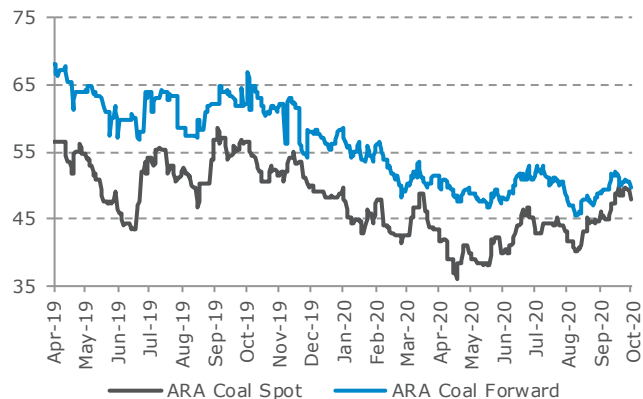
Company	1W	YTD
PGE	-15.0%	-27%
Tauron	-8.4%	26%
Enea	-6.9%	-31%
Grupa Azoty	-6.7%	-17%
JSW	-6.6%	16%
Lotos	-5.8%	-58%
Orzeł Biały	-4.9%	-3%
MOL	-4.2%	-45%
Ciech	-3.3%	-34%
PGNiG	-3.0%	16%
PKN Orlen	-2.8%	-47%
ZCh Police	-2.5%	13%
Kernel	-2.3%	-10%
Kęty	-2.0%	41%
Boryszew	-1.6%	-26%
Kruszwica	-1.1%	14%
Tarczyński	-0.6%	0%
CEZ	-0.3%	-9%
Alumetal	0.0%	-10%
Energa	0.1%	17%
LW Bogdanka	0.3%	-48%
ZE PAK	0.5%	39%
ZA Puławy	1.0%	-5%
Tupras	1.5%	-36%
Astarta	2.7%	19%
PCC Rokita	3.0%	-1%
KGHM	3.0%	28%
IMC	5.9%	1%
OMV	9.1%	-50%
WIG Indices	1W	YTD
WIG	-2.2%	-15%
Chemicals	-4.6%	-20%
Energy	-9.9%	-11%
Oil & Gas	-3.3%	-38%
Food Industry	-2.1%	-4%
Basic Material	2.2%	25%
Ukraine	0.2%	-4%
Sector Indices	1W	YTD
Mining	1.6%	5%
Oil & Gas E&P	4.1%	-48%
Refining EU	-1.9%	-39%
Refining US	2.1%	-50%
Agri & Food	0.1%	2%
Rubber	3.5%	-10%
Fertilizers	-2.5%	-6%
Chemicals EU	1.8%	15%
Industrials EU	2.0%	-4%
Petchem World	3.2%	-8%
Utilities EU	3.6%	8%
Utilities US	+4.5%	+0%

Utilities

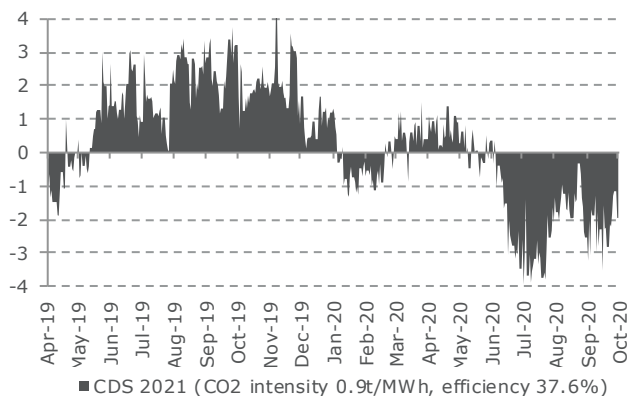
EU Prices of Electricity (EUR/MWh) & EUAs (EUR/t)



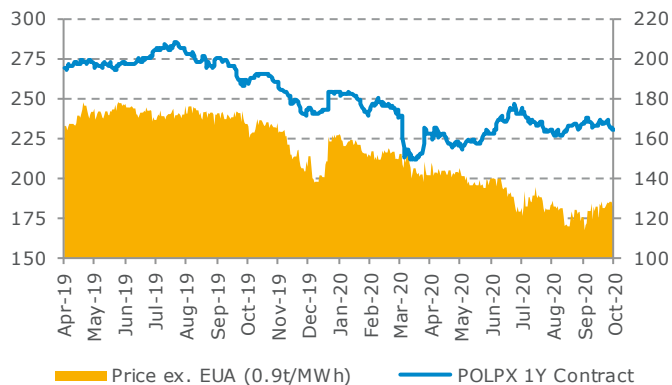
ARA Coal Spot and Forward Prices (EUR/t)



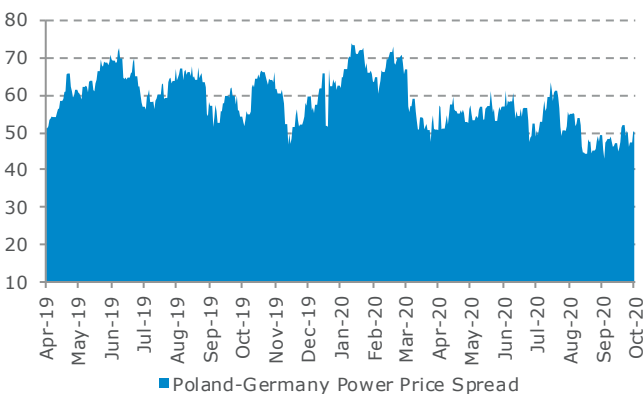
Clean-Dark Spread, Germany (EUR/MWh)



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



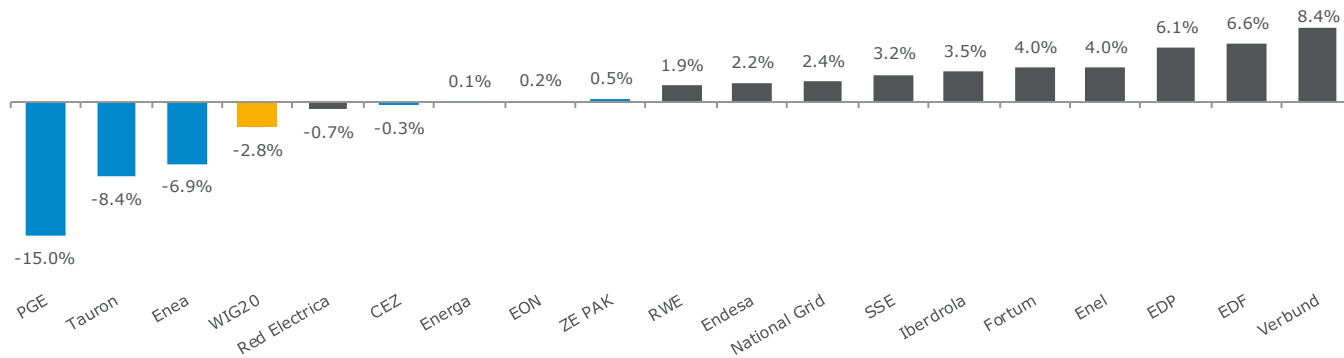
Poland-Germany Power Price Spread (PLN/MWh)



Polish Green Certificate Prices (PLN/MWh)



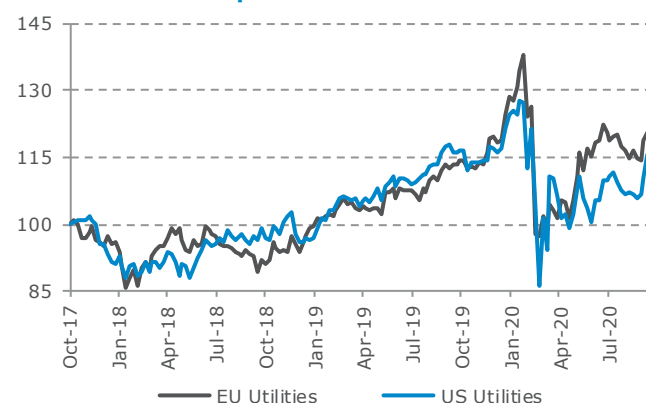
Weekly Returns of Utility Stocks



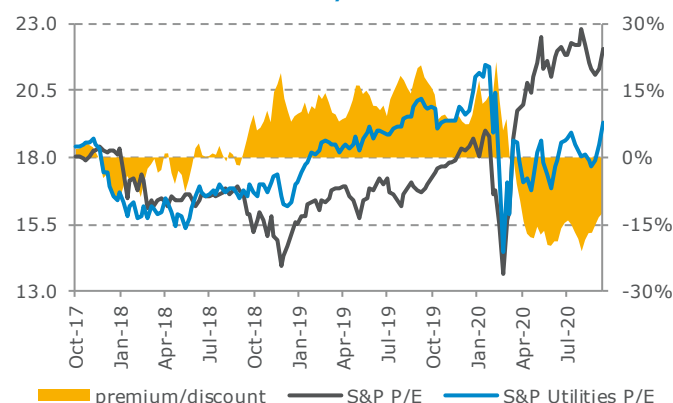
Source: Bloomberg, mBank

Utilities

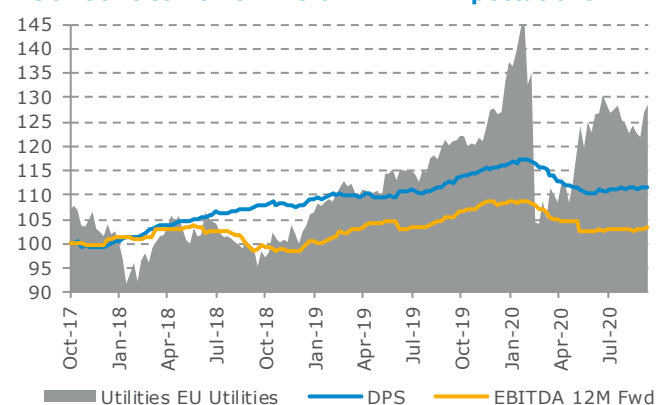
MSCI Utilities Europe vs. S&P Utilities



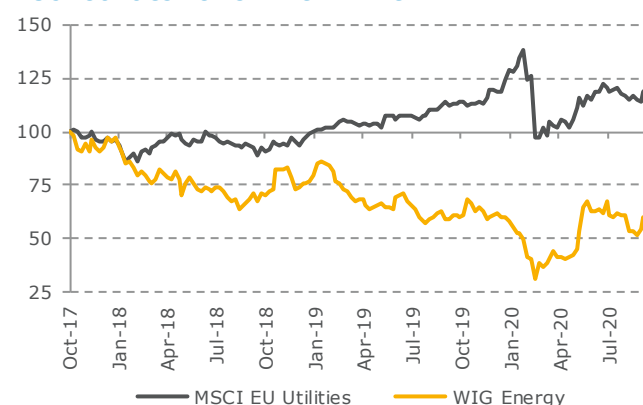
S&P Utilities vs. S&P 500 P/E



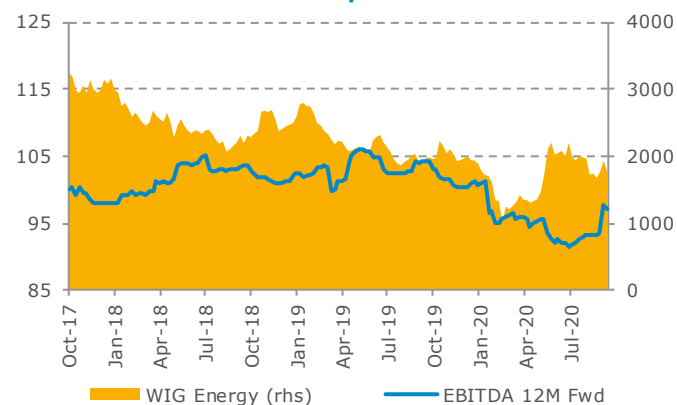
MSCI Utilities EU vs. DPS & EBITDA Expectations



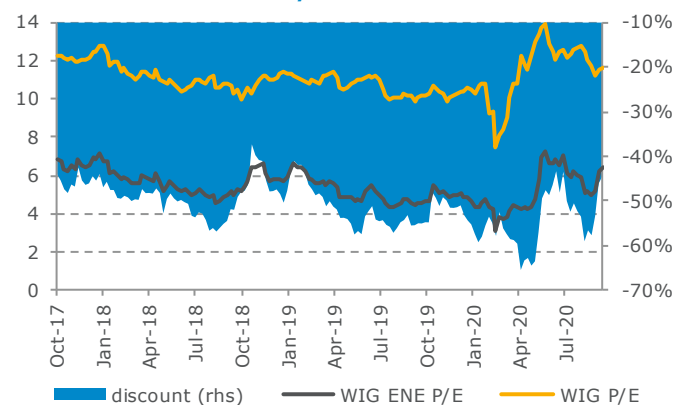
MSCI Utilities EU vs. WIG-ENERGY



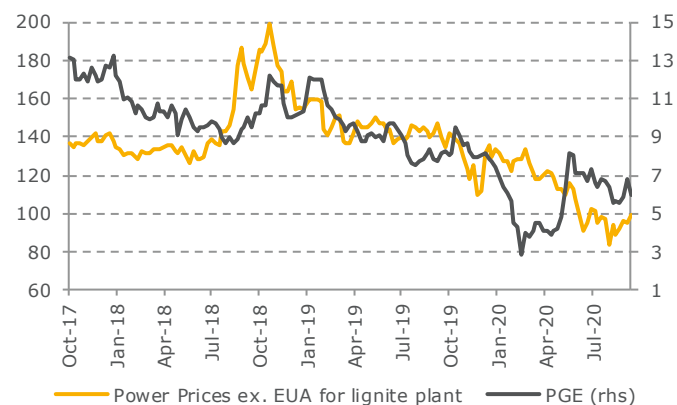
WIG-ENERGY vs. EBITDA Expectations



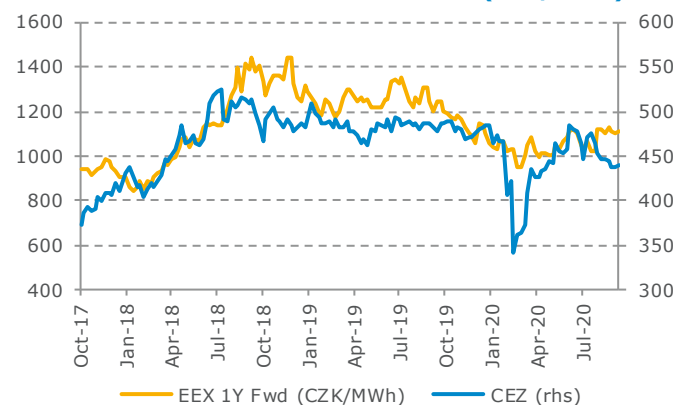
WIG-ENERGY vs. WIG P/E



PGE Performance vs. Power Prices ex. EUA



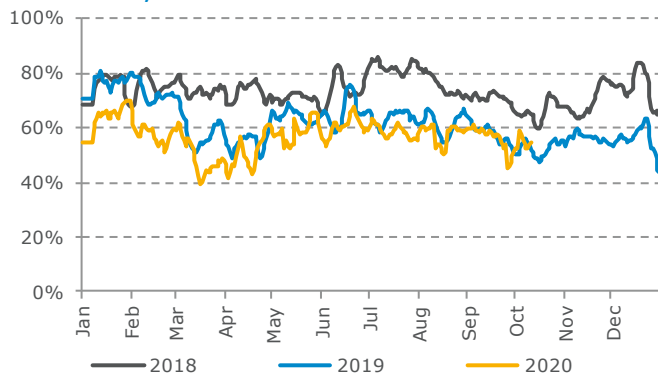
CEZ Performance vs. EEX Power Prices (CZK/MWh)



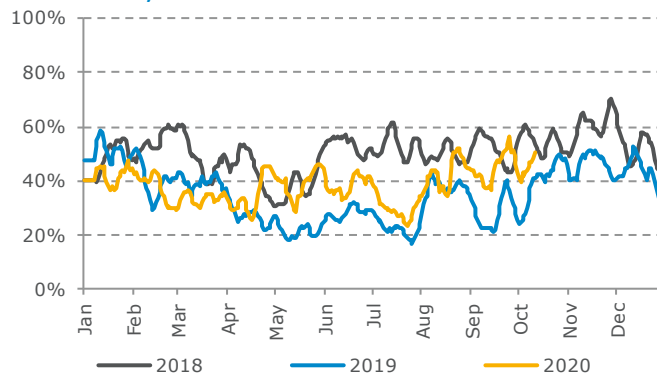
Source: Bloomberg, mBank

Utilities

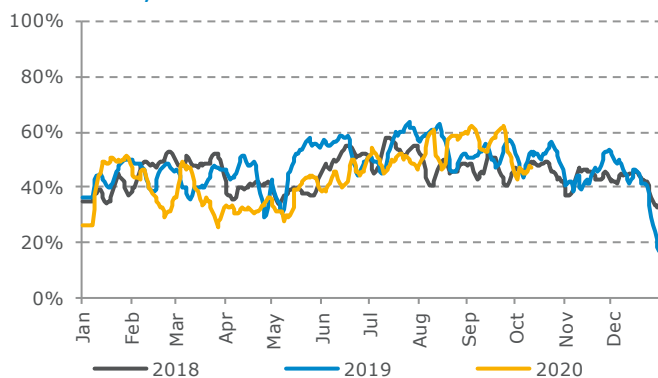
Load Factor, Bełchatów Power Station



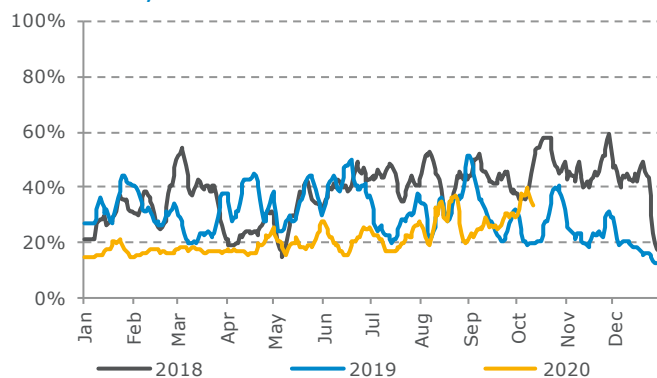
Load Factor, Turów Power Station



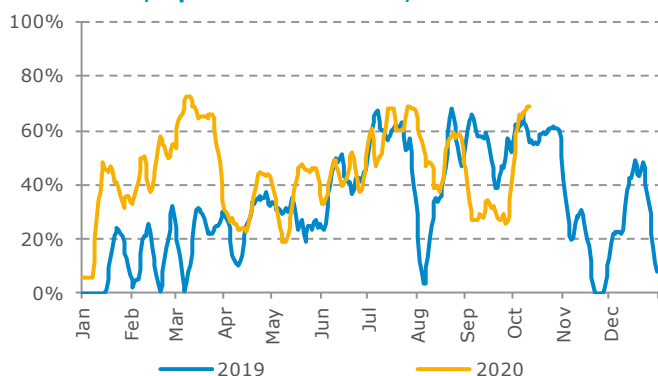
Load Factor, Kozienice Power Station



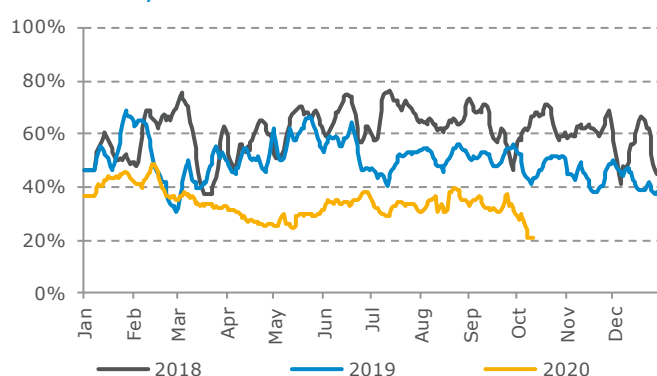
Load Factor, Jaworzno Power Station



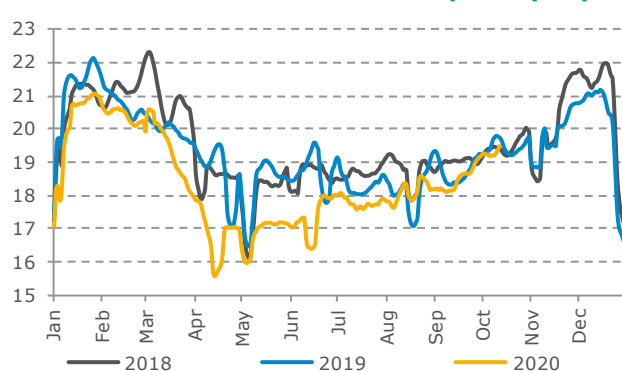
Load Factor, Opole Power Station, Blocks B5&B6



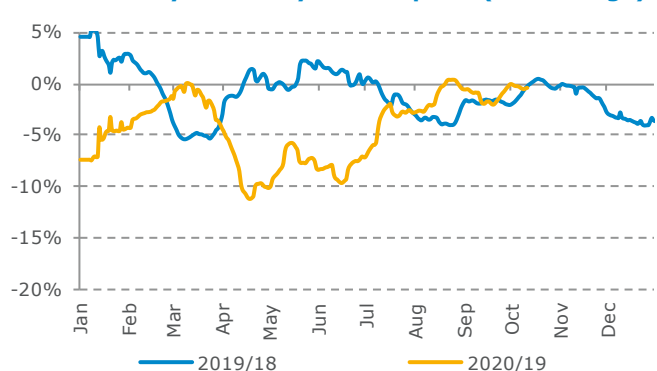
Load Factor, Połaniec Power Station



Actual Total Load of the Polish Power System (GW)



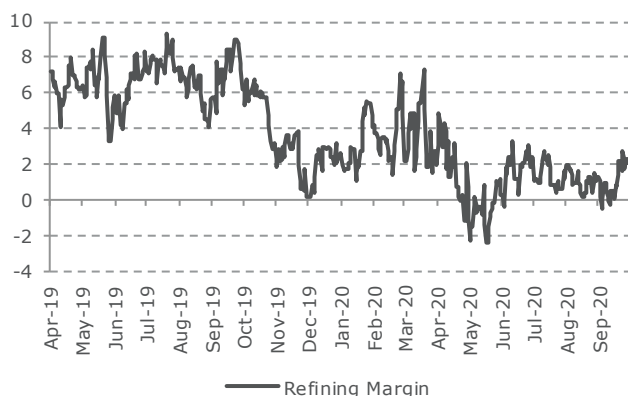
Polish Monthly Electricity Consumption (YoY Change)



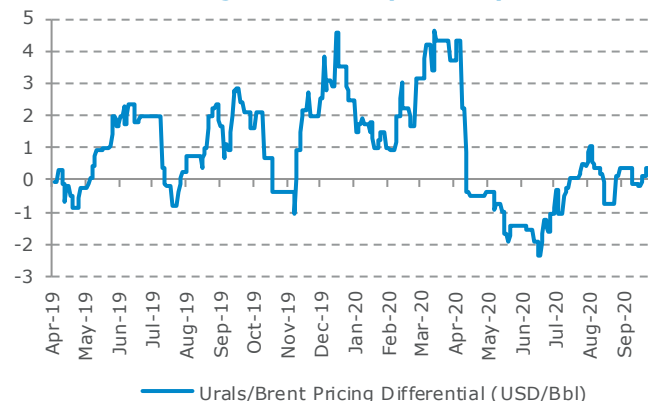
Source: PSE, mBank; Load factor = actual generation (7-day average) as a percentage of available capacity

Gas & Oil

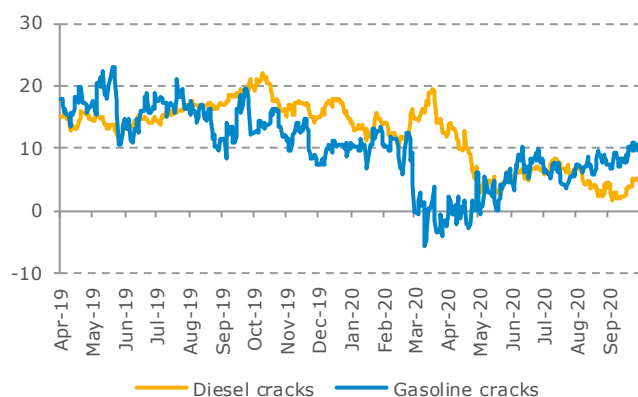
Refining Margins (US\$/bbl)



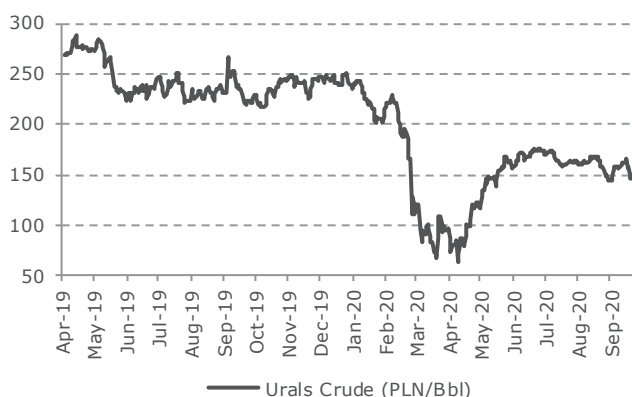
Urals/Brent Pricing Differential (US\$/bbl)



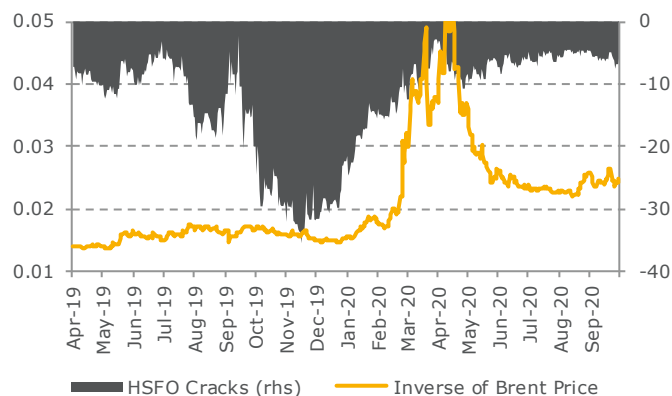
Cracking Margins on Diesel & Gasoline (US\$/bbl)



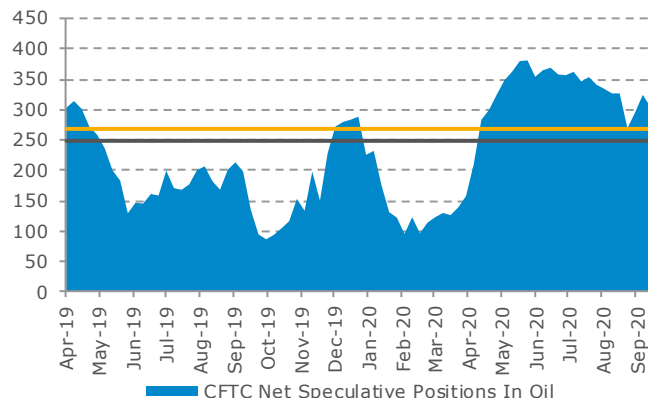
Price of Urals Crude (PLN/bbl)



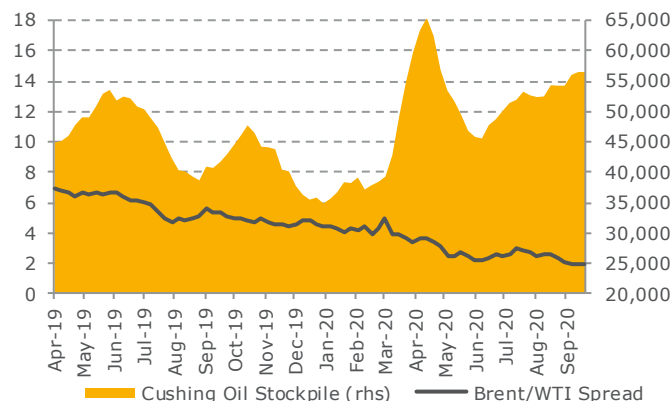
HSFO Cracks (US\$/bbl) vs. Inverse of Brent Price



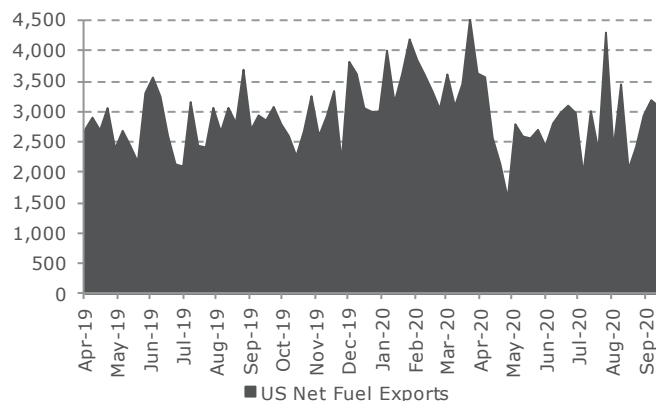
CFTC Net Speculative Positions In Oil



Brent/WTI Spread vs. Cushing Oil Stockpile



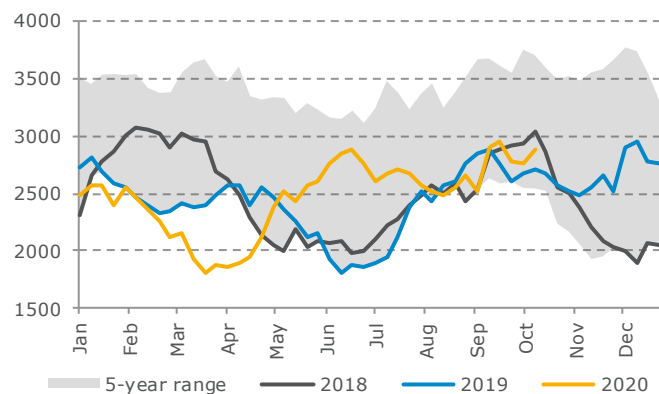
US Net Fuel Exports



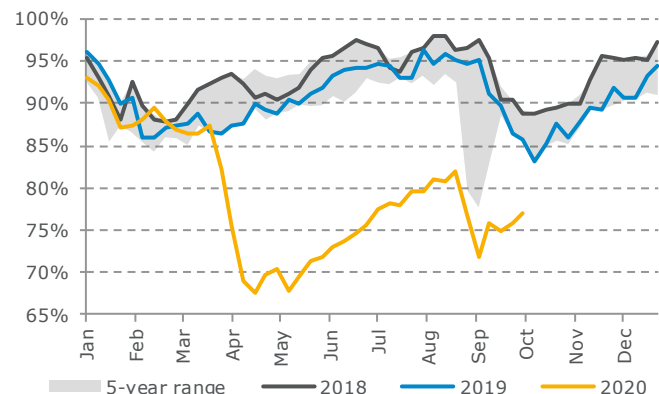
Source: Bloomberg, mBank

Gas & Oil

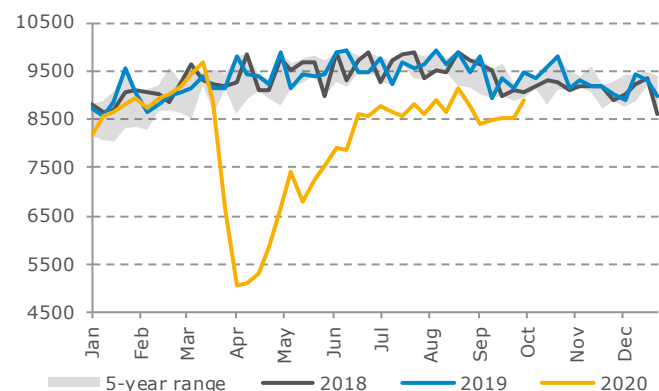
Diesel Inventories @ARA



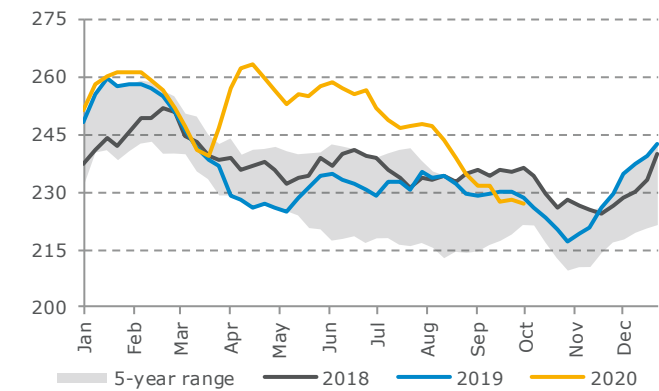
US Refinery Utilization Rates



US Gasoline Demand



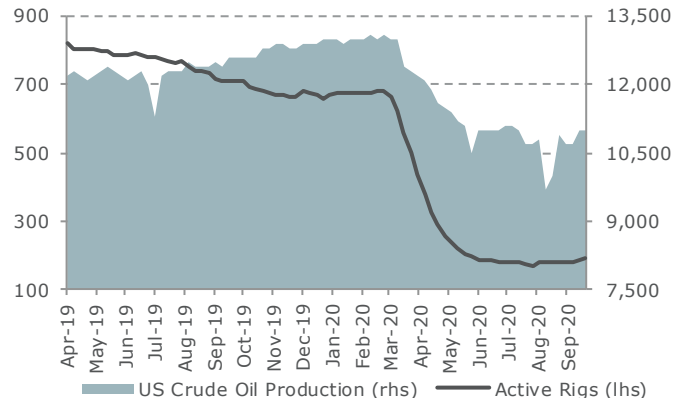
US Gasoline Inventories



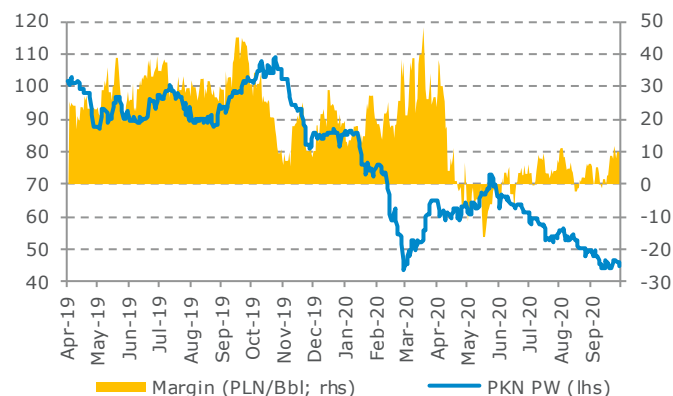
Global Refinery Outages (mbbl/d)



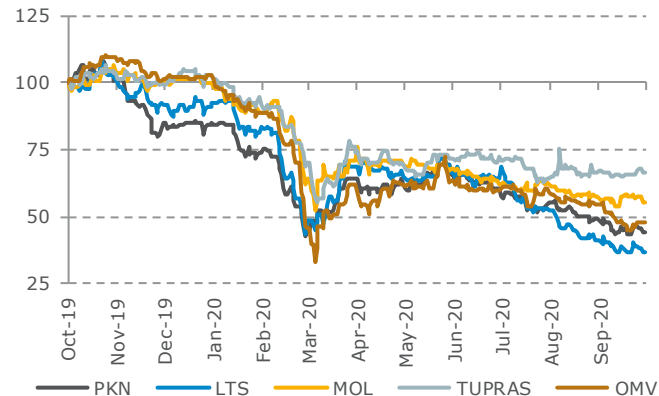
US Crude Oil Production (mboe/d) vs. Active Rigs



PKN Performance vs. Benchmark Margins



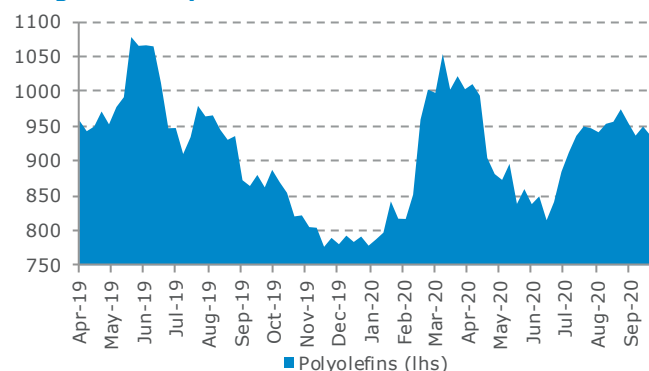
Normalized Oil Stock Chart



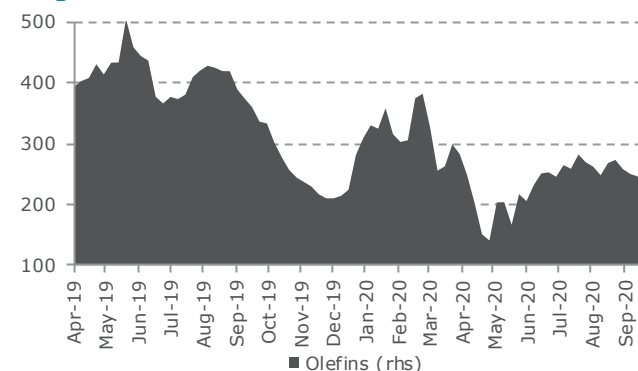
Source: Bloomberg, mBank

Petrochemicals & NatGas

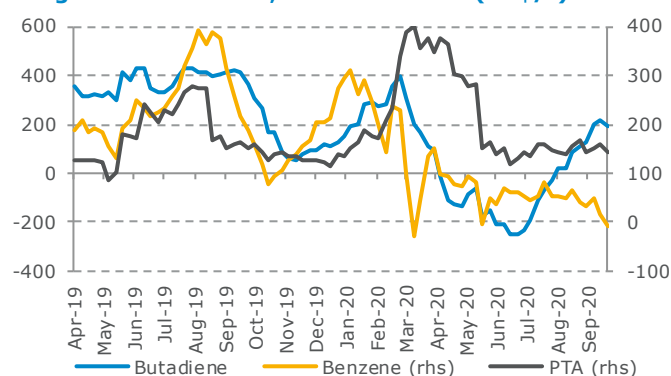
Margins on Polyolefins



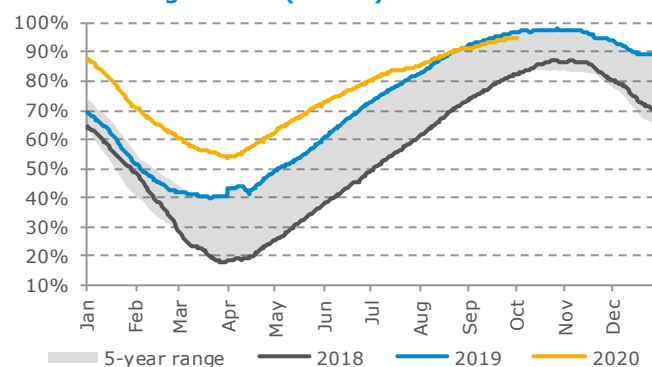
Margins on Olefins



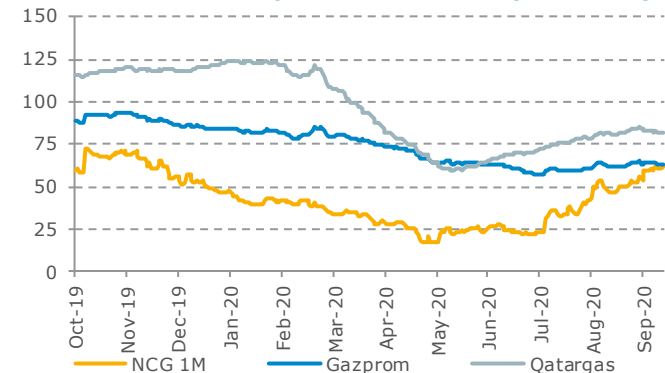
Margins on Butadiene, Benzene & PTA (US\$/t)



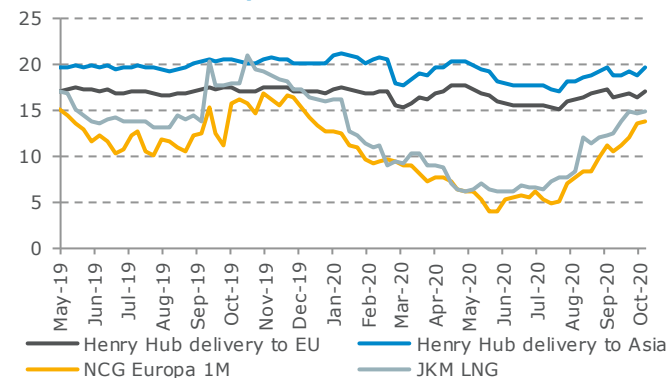
EU Gas Storage Levels (% Full)



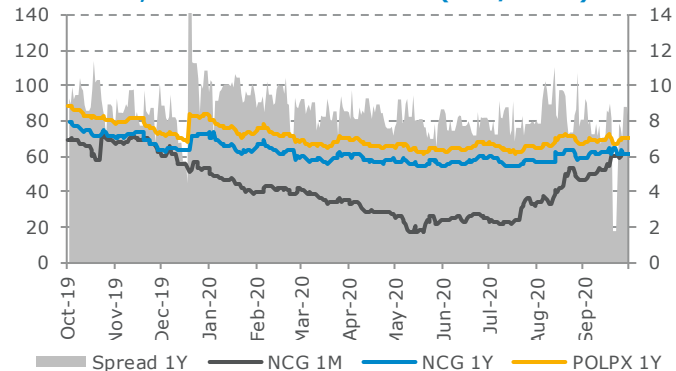
Estimated Costs of Imported Natural Gas (PLN/MWh)



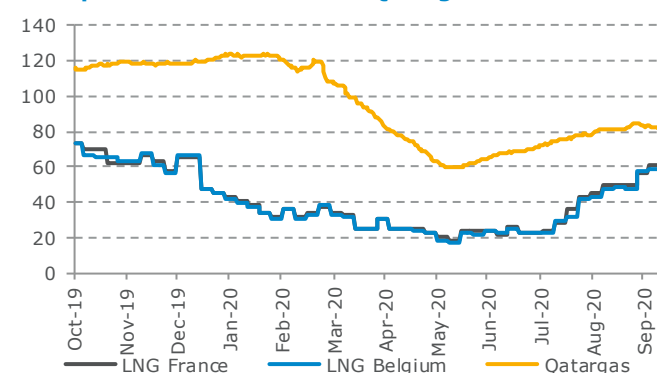
Prices of US LNG Exports to EU and Asia



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



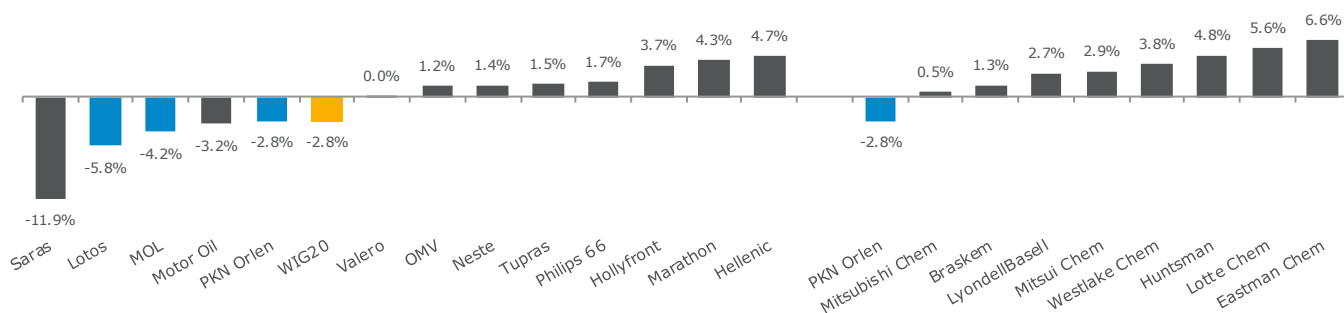
LNG Spot Rates vs. Estimated Qatargas rates



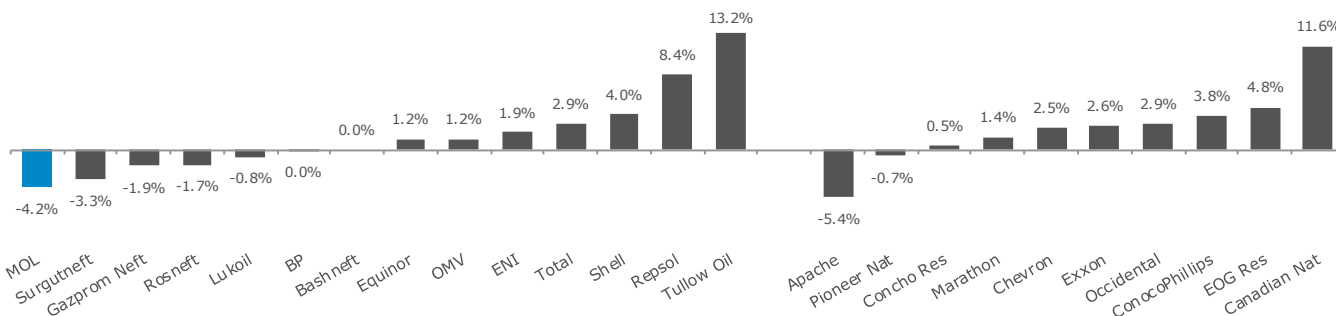
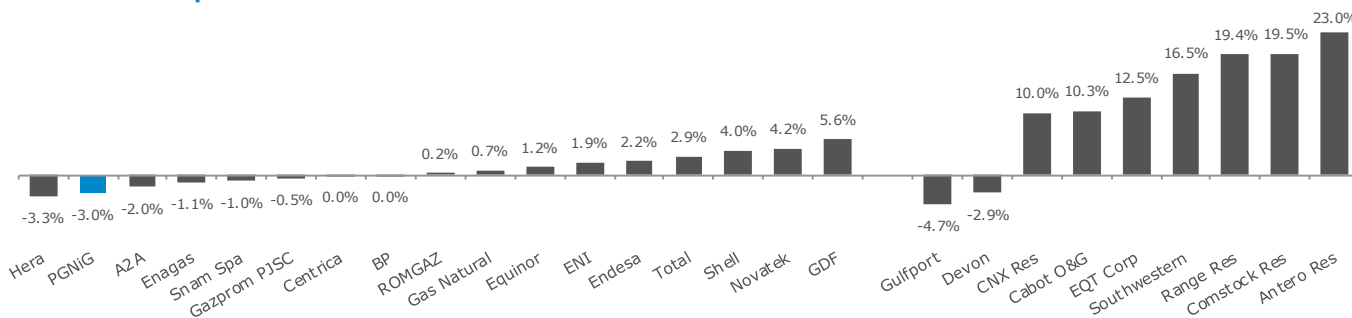
Source: Bloomberg, mBank

Weekly Performance Charts

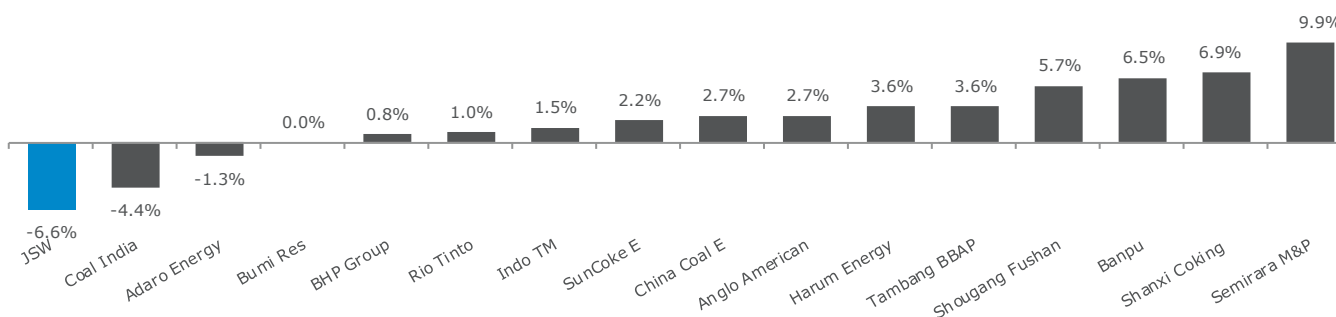
Oil Refiners (L) & Petrochemical Producers (R)



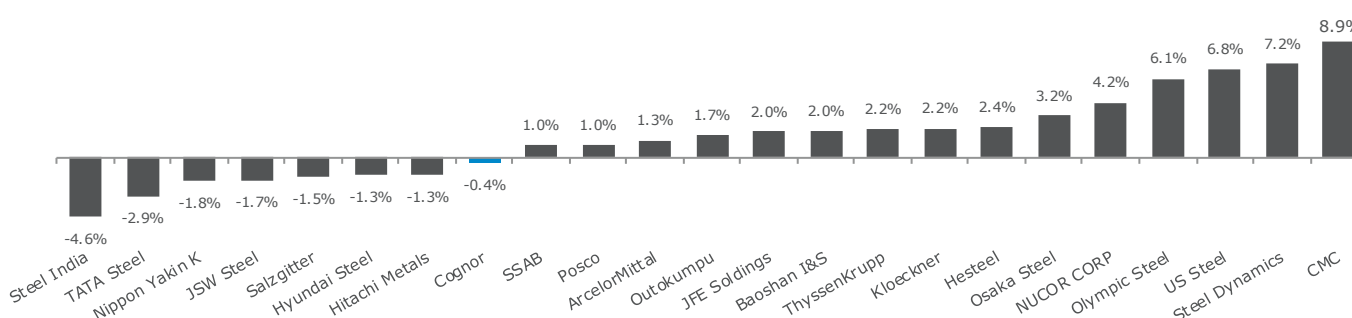
Natural Gas Companies



Coal Producers



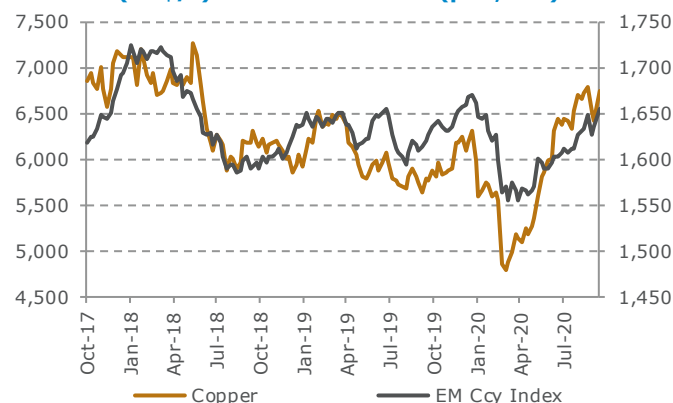
Steel Producers & Distributors



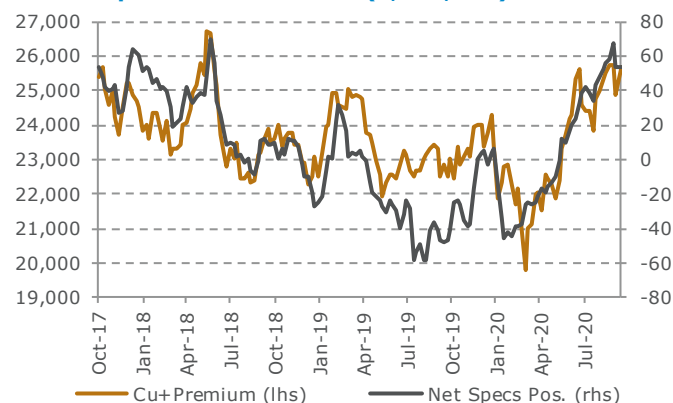
Source: Bloomberg, mBank

Copper Charts

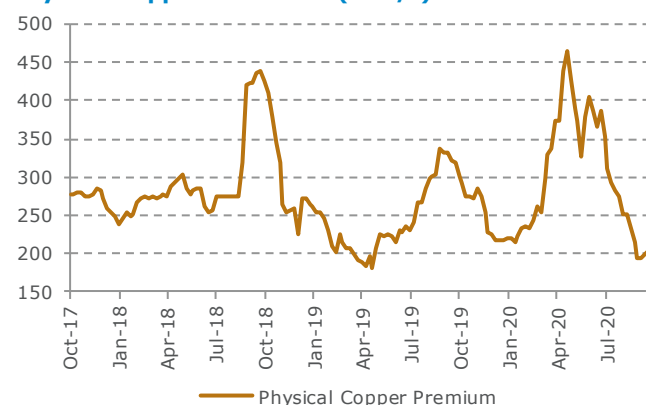
Cu Price (US\$/t) vs. EM Currencies (pts.; rhs)



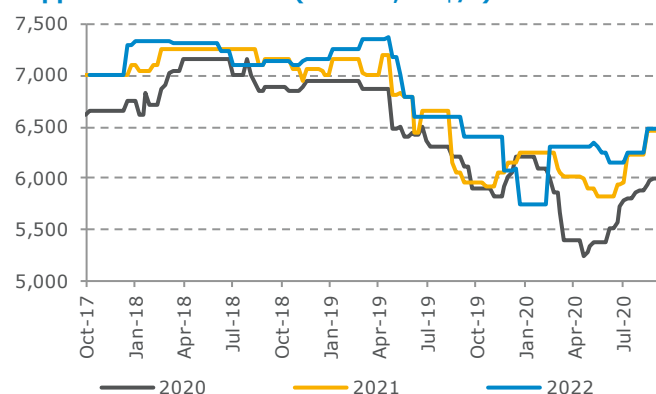
CU Price incl. Supplier Premium (PLN 1,000/t; lhs) vs. Net Speculative Positions (1,000, rhs)



Physical Copper Premiums (PLN/t)



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



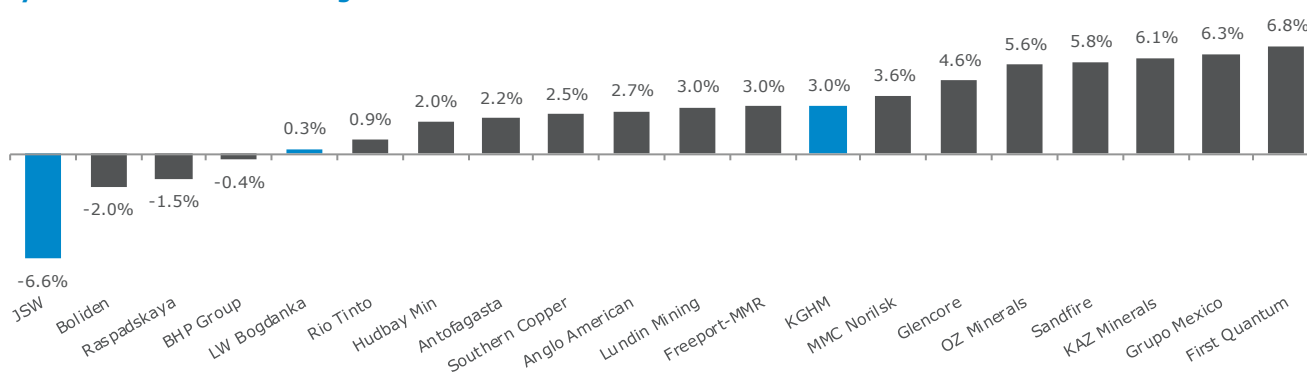
Silver prices (PLN/kg)



Prices of gold (PLN/oz)



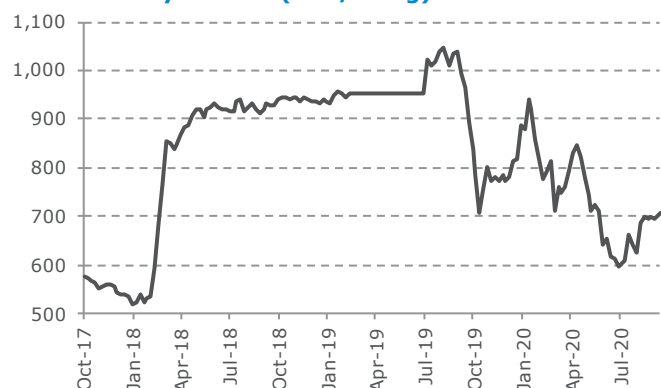
Weekly Returns of Metal & Mining Stocks



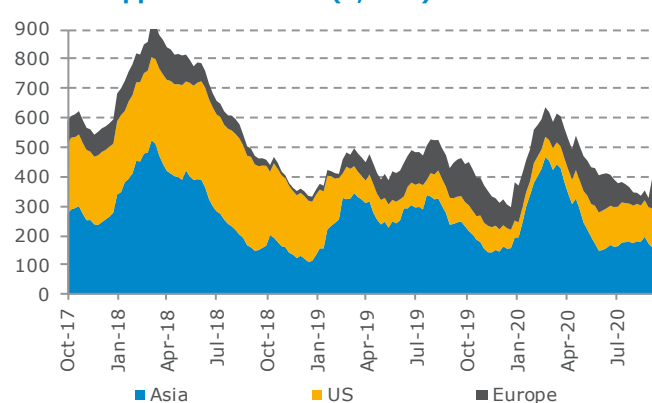
Source: Bloomberg, mBank

More Copper Charts

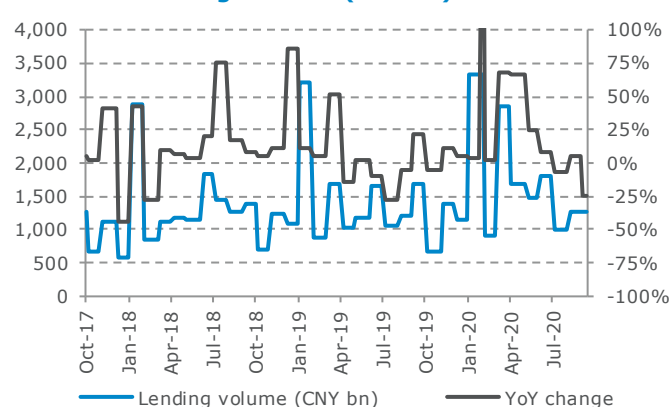
Prices of molybdenum (PLN/10 kg)



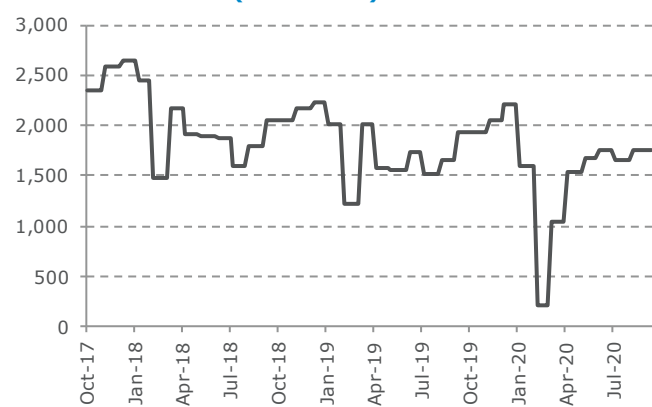
Global Copper Inventories (1,000t)



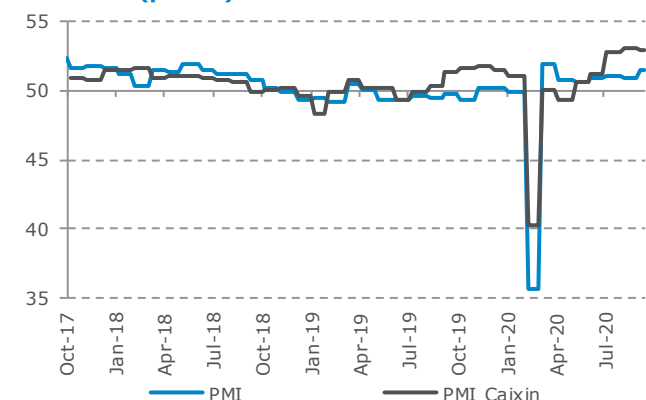
New Bank Lending in China (CNY bn)



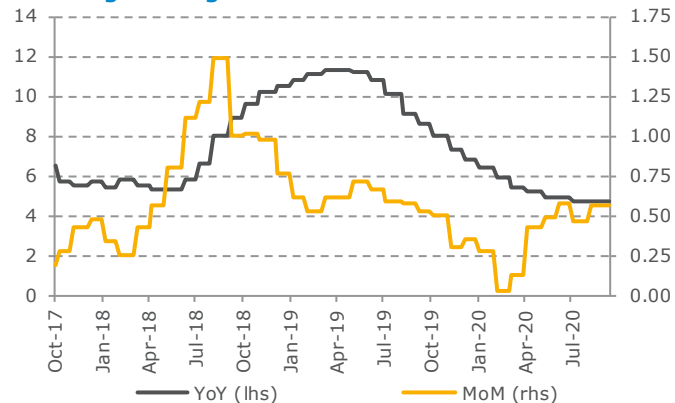
Car Sales in China (thousands)



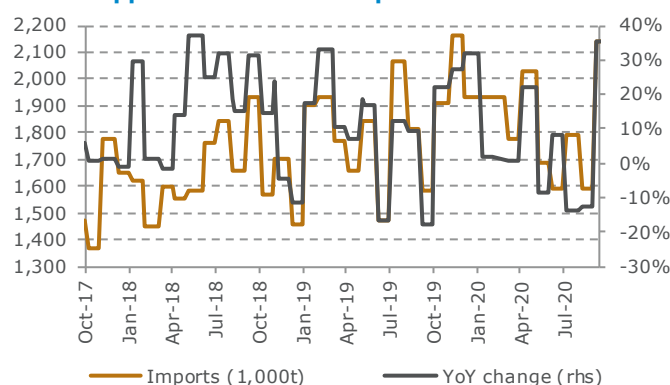
China PMI (points)



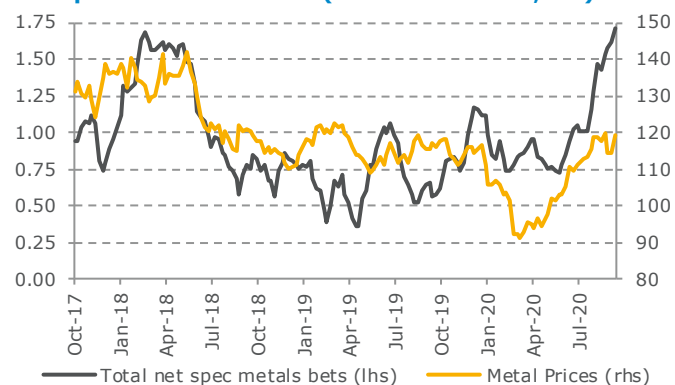
% Change In Avg. New Home Prices In 70 CN Cities



China Copper Concentrates Imports



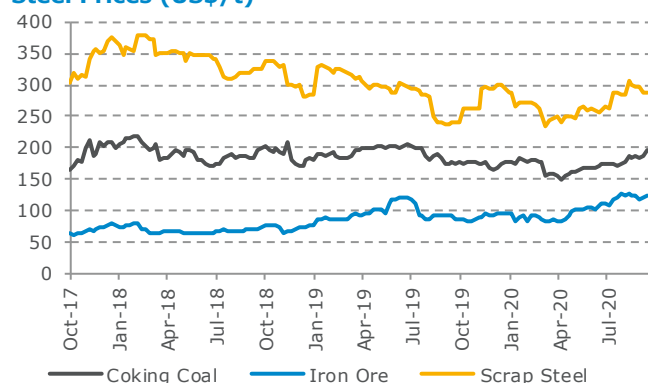
Metal Price Index (pts, rhs) vs. Net Speculative Positions (million contracts, lhs)



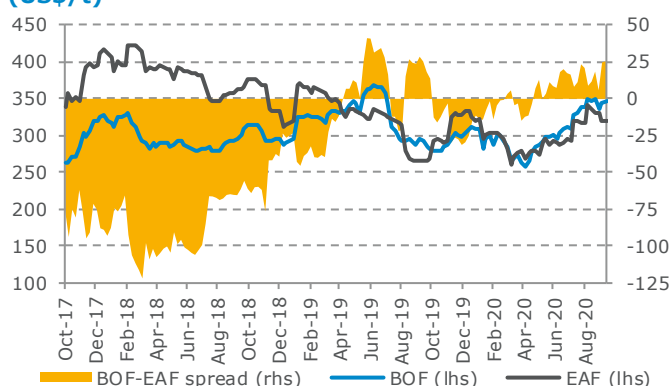
Source: Bloomberg, mBank

Steel Charts

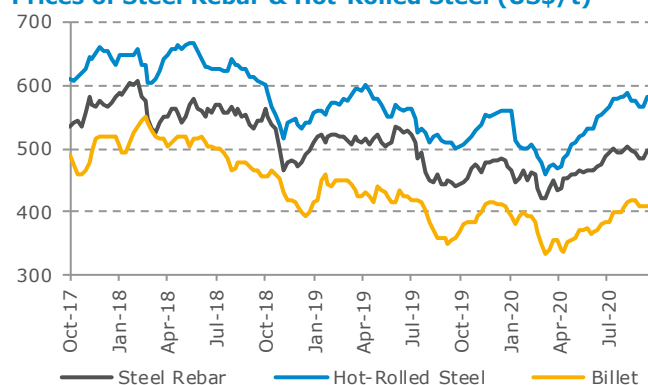
China Coking Coal & Iron Ore Prices, Rotterdam Scrap Steel Prices (US\$/t)



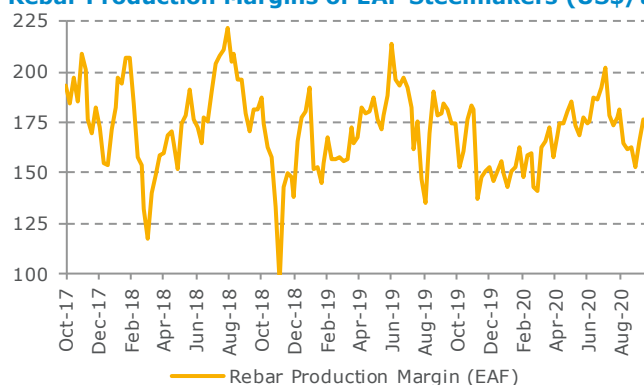
Production Costs of BOF vs. EAF Steel Producers (US\$/t)



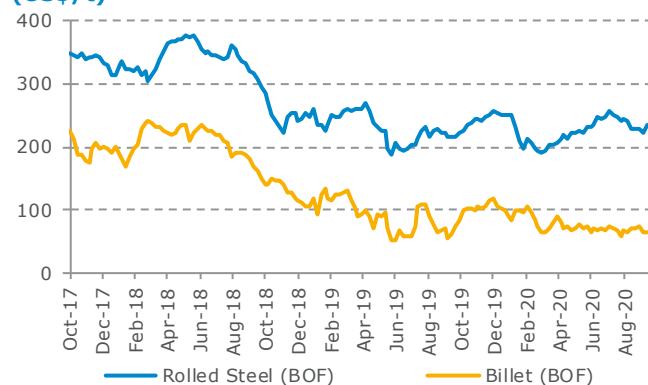
Prices of Steel Rebar & Hot-Rolled Steel (US\$/t)



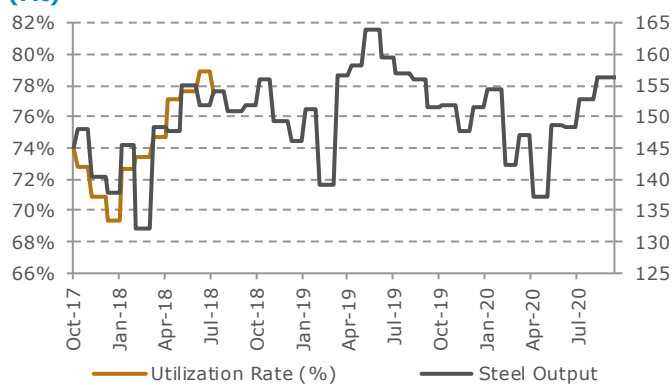
Rebar Production Margins of EAF Steelmakers (US\$/t)



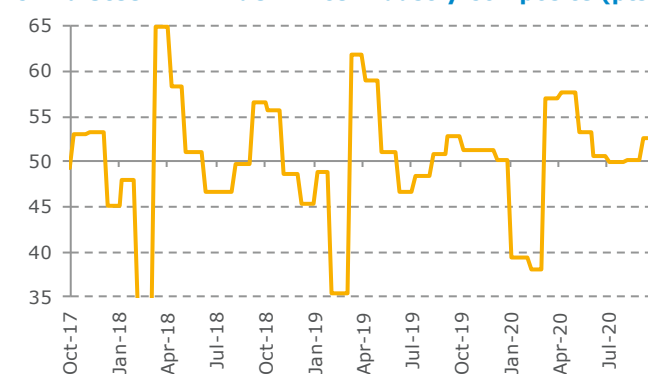
Rolled Steel & Billet Margins of BOF Steelmakers (US\$/t)



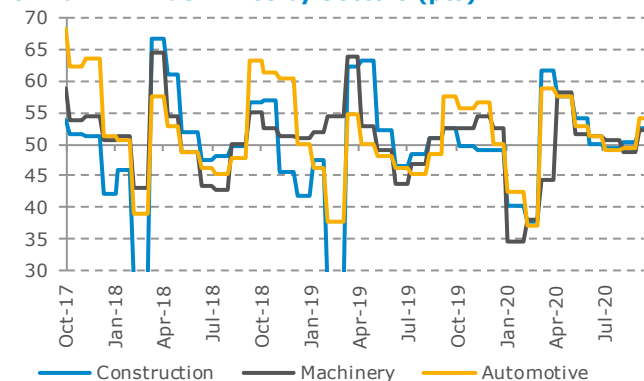
Global Steel Plant Capacity Utilization Rates & Output (Mt)



China Steel PMI Index Price Industry Composite (pts)



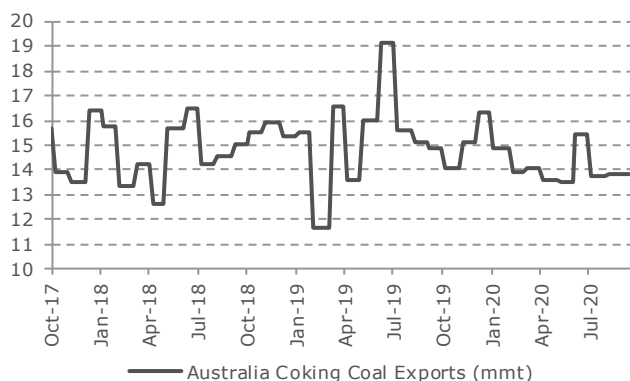
China PMI Index Price by Sectors (pts)



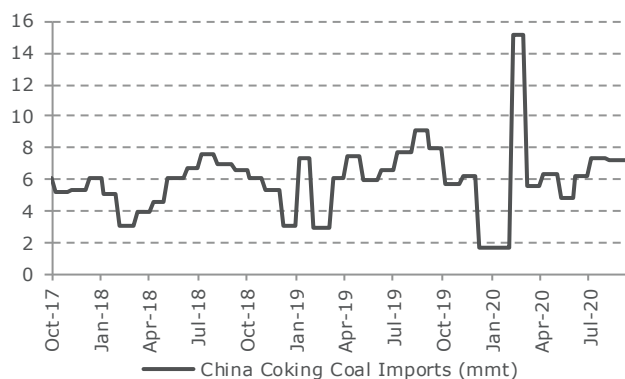
Source: Bloomberg, mBank

More Steel Charts

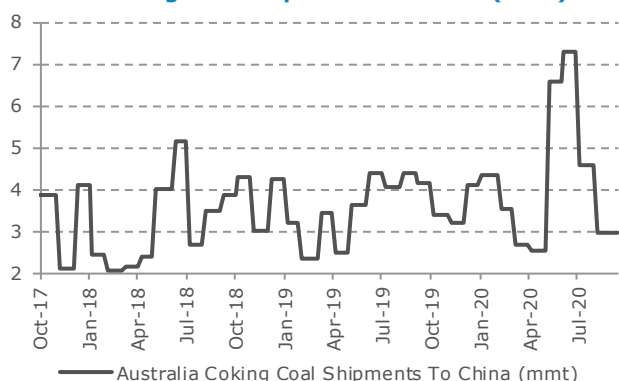
Australia Coking Coal Exports (mmt)



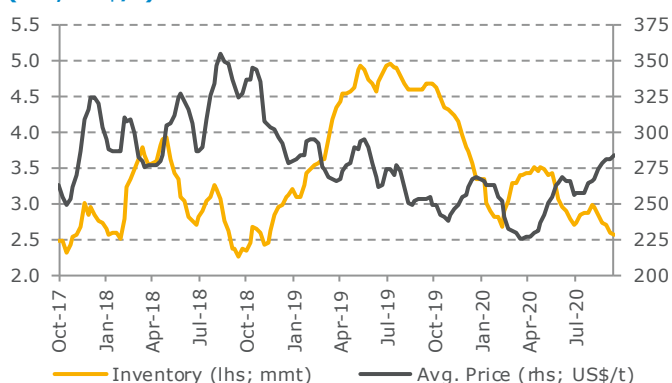
China Coking Coal Imports (mmt)



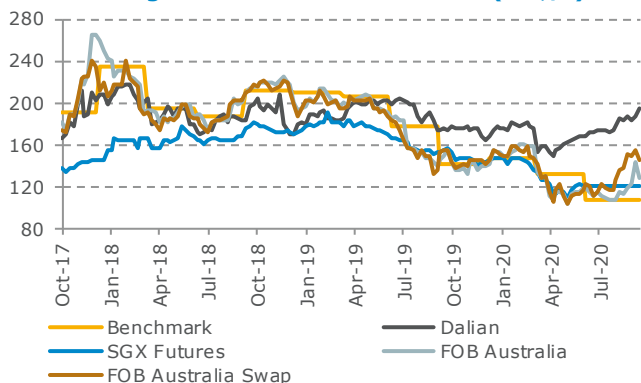
Australia Coking Coal Shipments To China (mmt)



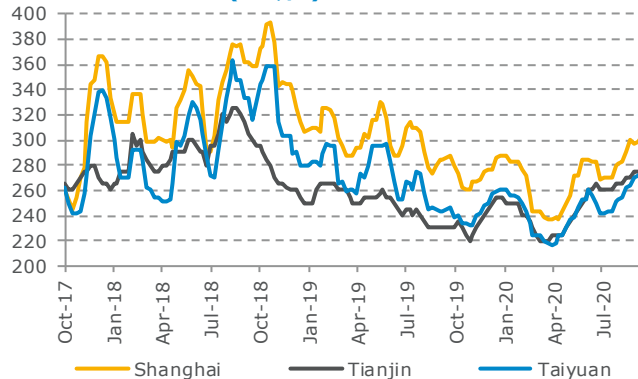
China Coke Inventories (lhs; mmt) & Average Prices (rhs; US\$/t)



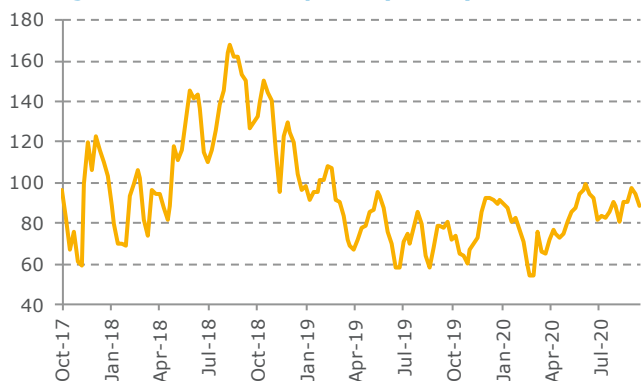
China Coking Coal Prices vs. Benchmark (US\$/t)



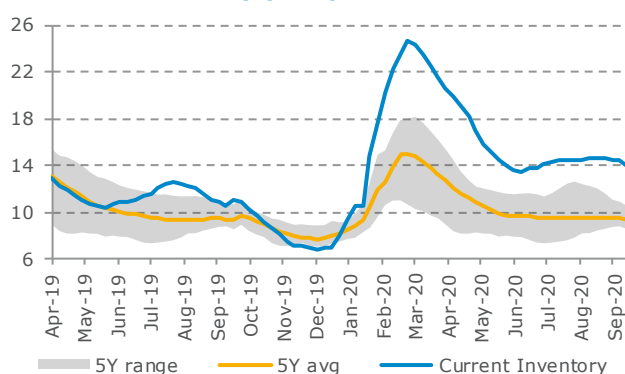
China Coke Prices (US\$/t)



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



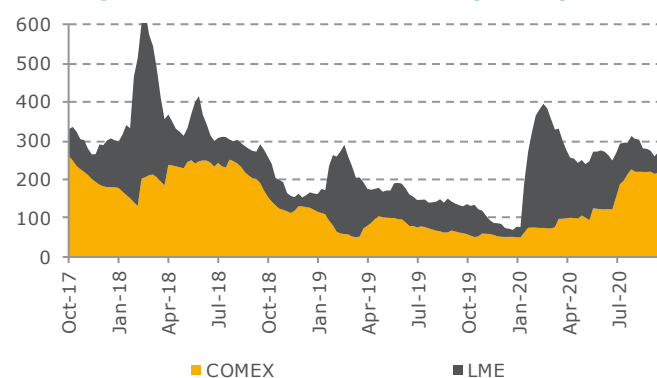
China Steel Inventory (mmt)



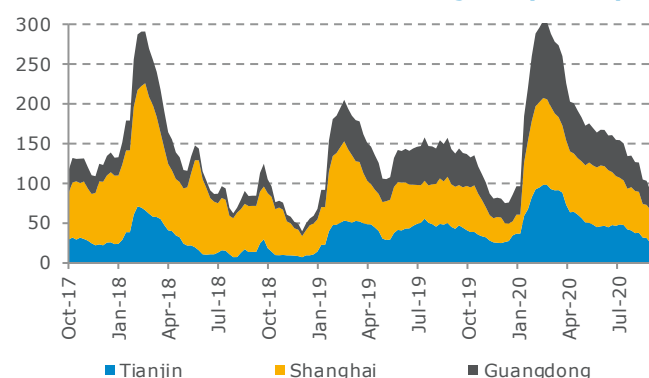
Source: Bloomberg, mBank

Zinc and Electrical Steel Charts

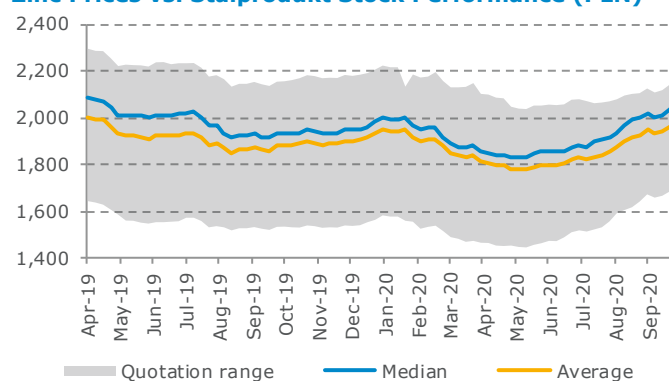
Exchange-Monitored Zinc Inventories (1,000t)



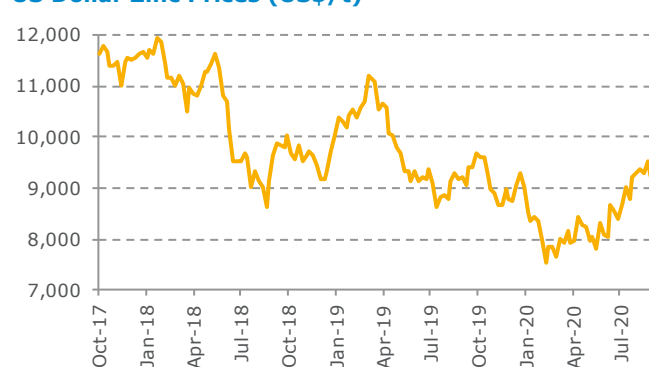
Zinc Inventories in Three Chinese Regions (1,000t)



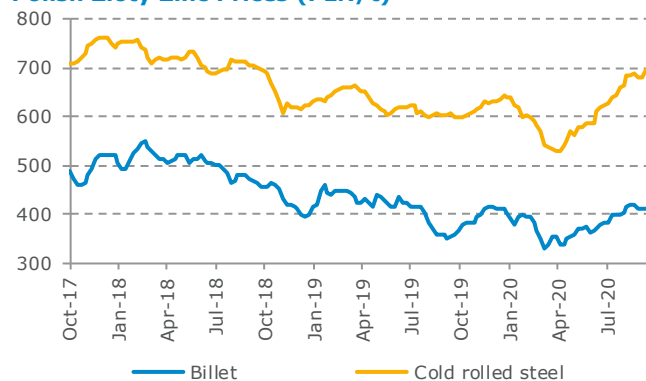
Zinc Prices vs. Stalprodukt Stock Performance (PLN)



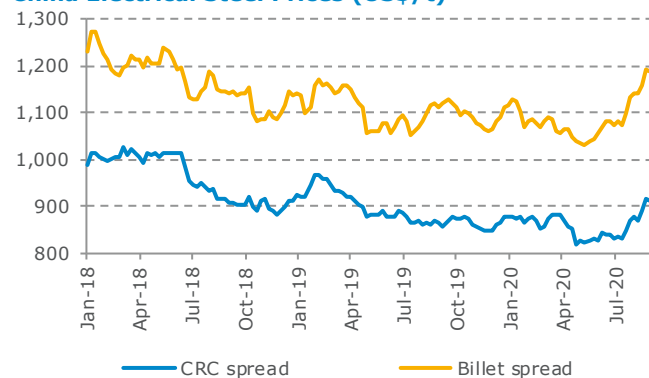
US Dollar Zinc Prices (US\$/t)



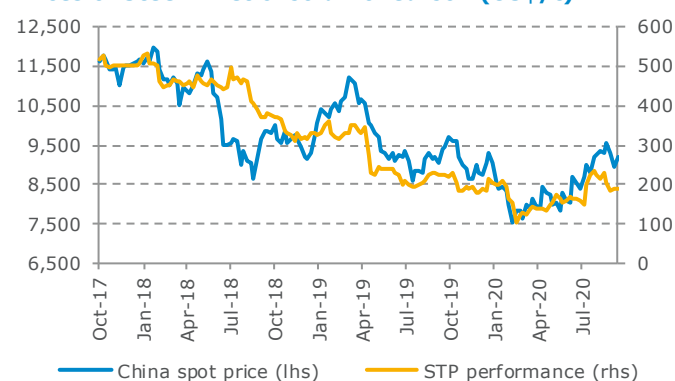
Polish Zloty Zinc Prices (PLN/t)



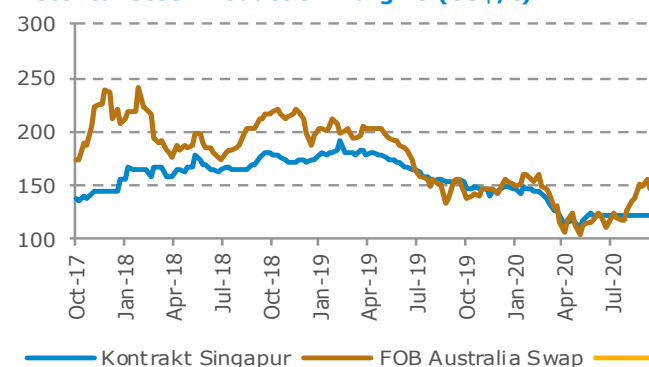
China Electrical Steel Prices (US\$/t)



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



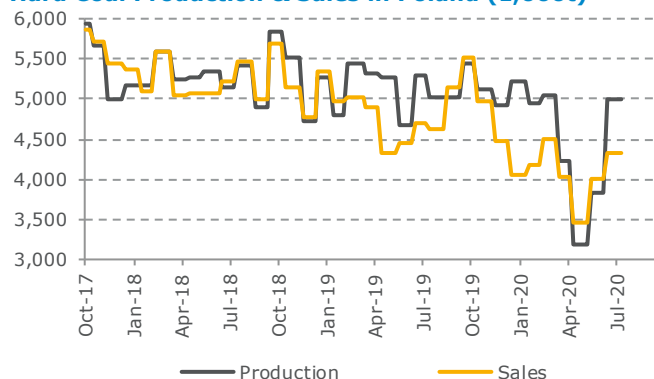
Electrical Steel Production Margins (US\$/t)



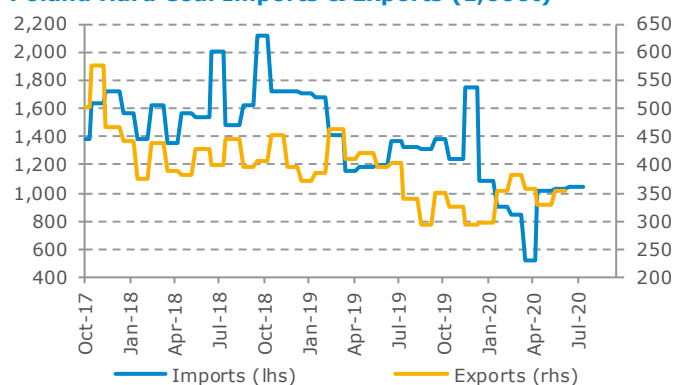
Source: Bloomberg, mBank

Thermal Coal Charts

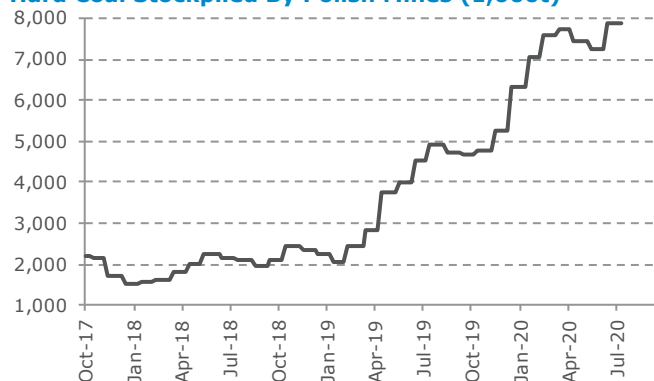
Hard Coal Production & Sales in Poland (1,000t)



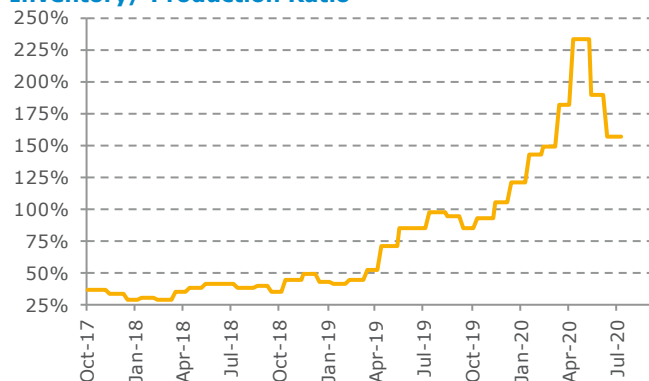
Poland Hard Coal Imports & Exports (1,000t)



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



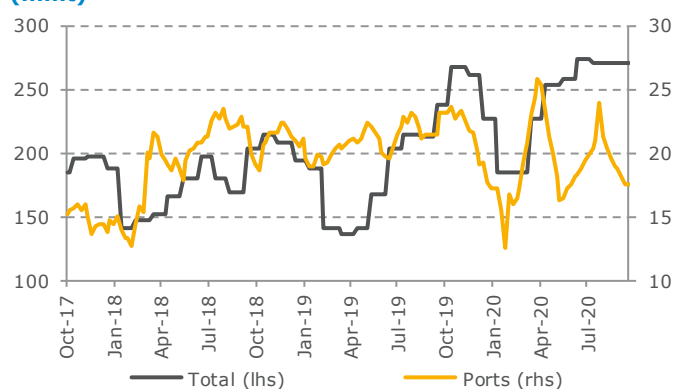
Inventory/ Production Ratio



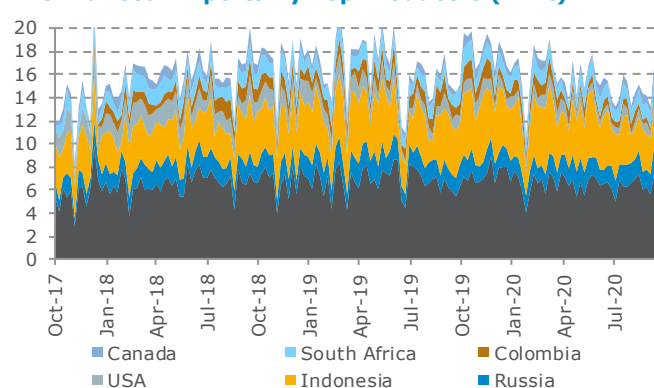
Thermal Coal Prices vs. Benchmarks (PLN/GJ)



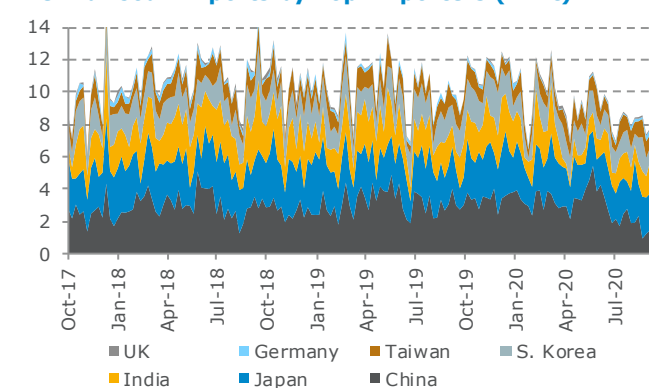
China Thermal Coal Inventories, Total & In Ports (mmt)



Thermal Coal Exports By Top Producers (mmt)



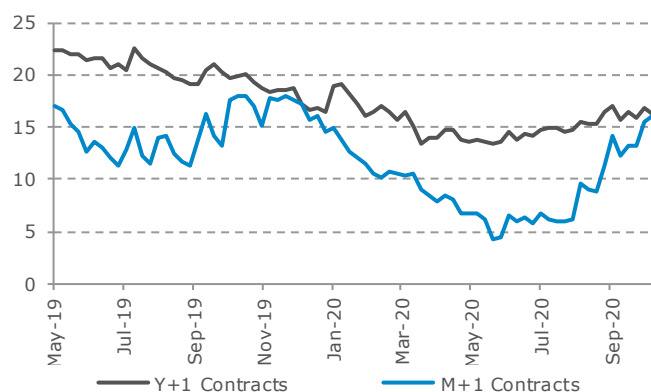
Thermal Coal Imports by Top Importers (mmt)



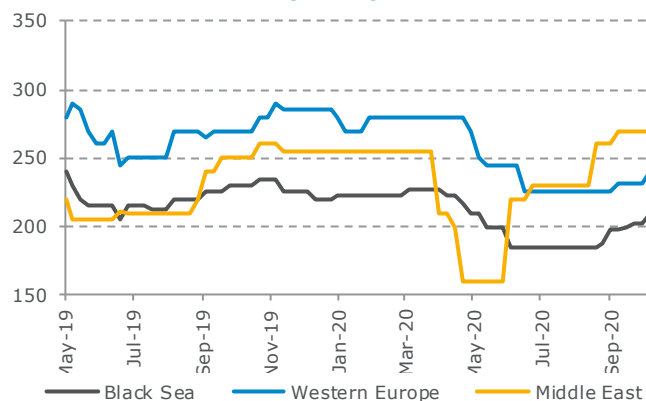
Source: Bloomberg, ARP, Eurostat, mBank *Upper Silesian Coal Basin

Fertilizer Charts

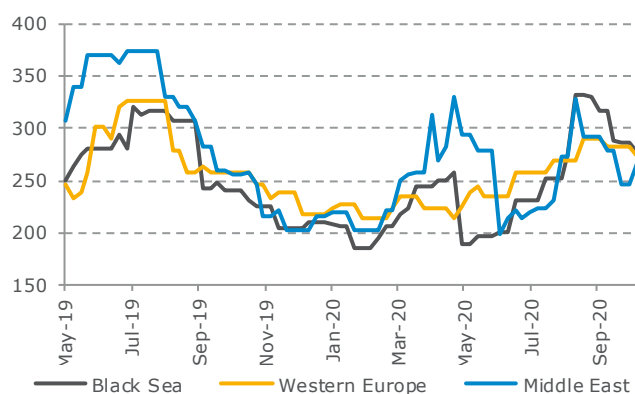
German NatGas Prices (US\$/MWh)



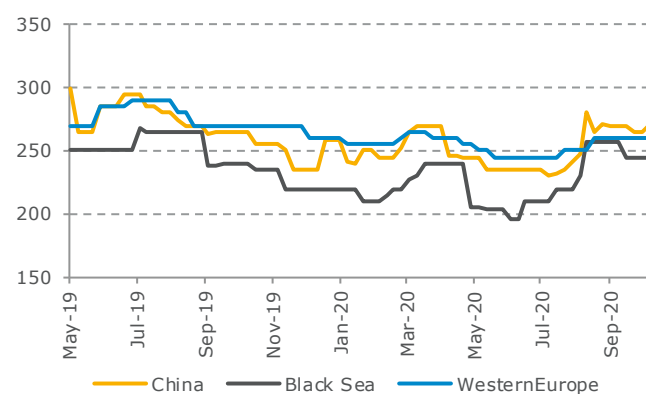
World Ammonia Prices (US\$/t)



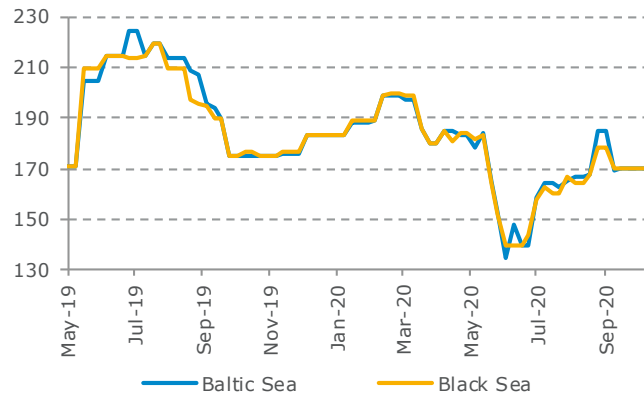
Urea-Ammonia Price Difference



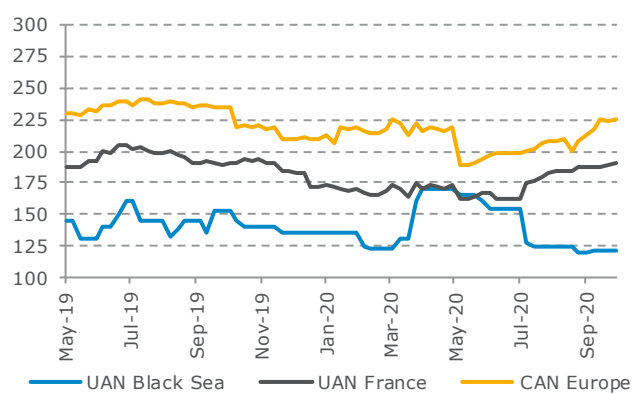
World Urea Prices (US\$/t)



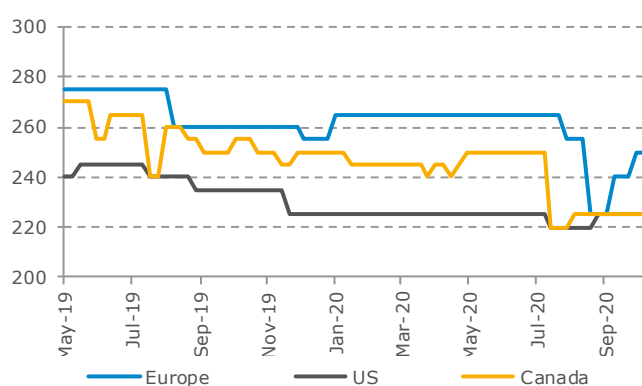
World Ammonium Nitrate Prices (US\$/t)



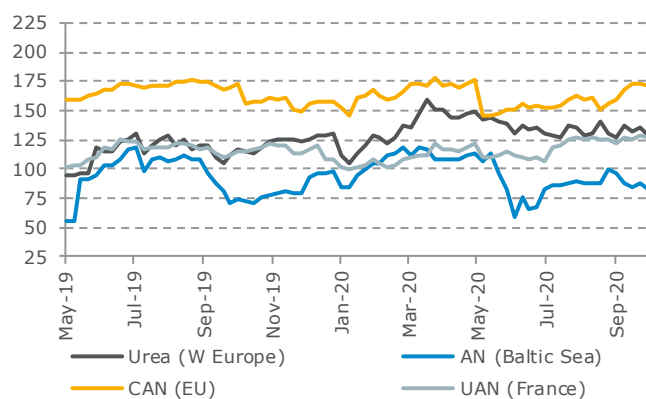
CAN & UAN prices (US\$/t)



World Ammonium Sulfate Prices (US\$/t)



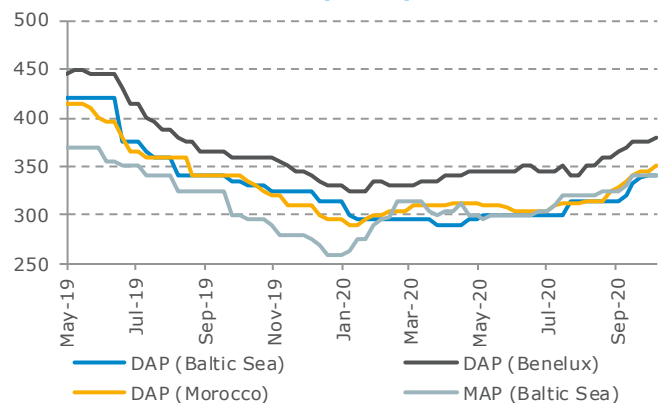
Production Margins On Nitrogen Fertilizers (US\$/t)



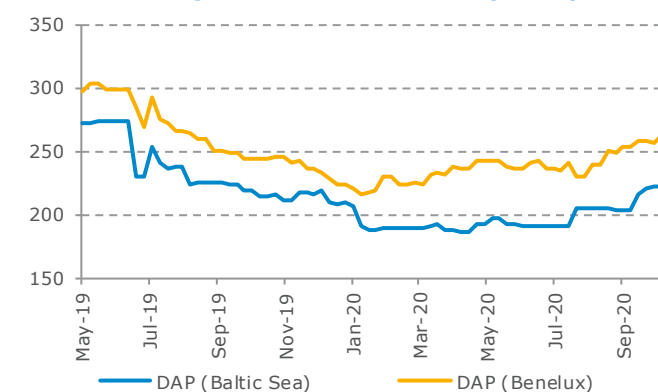
Source: Bloomberg, mBank

Fertilizer Charts

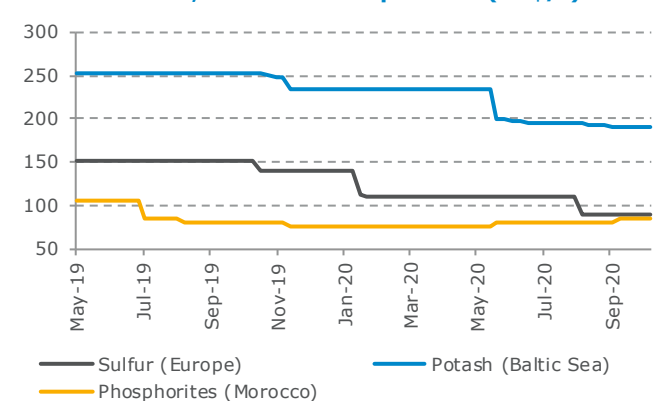
Prices of P & K Fertilizers (US\$/t)



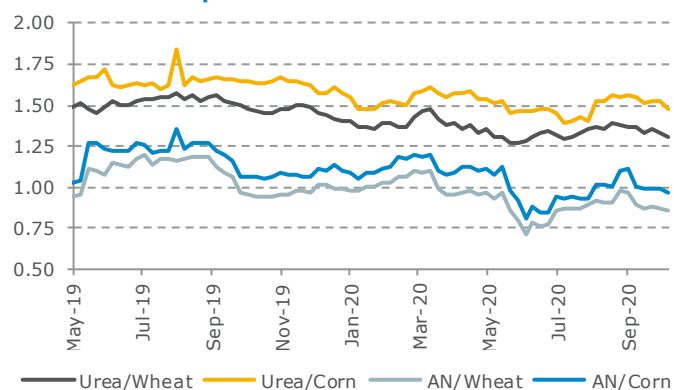
Production Margins on P & K Fertilizers (US\$/t)



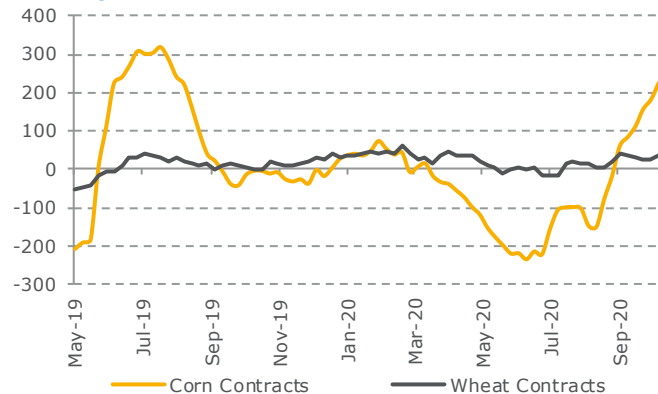
Prices of Sulfur, Potash & Phosphorites (US\$/t)



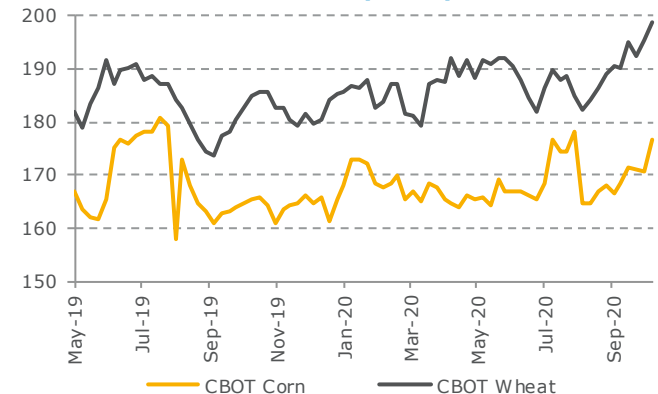
Fertilizer-to-Crop Price Ratios



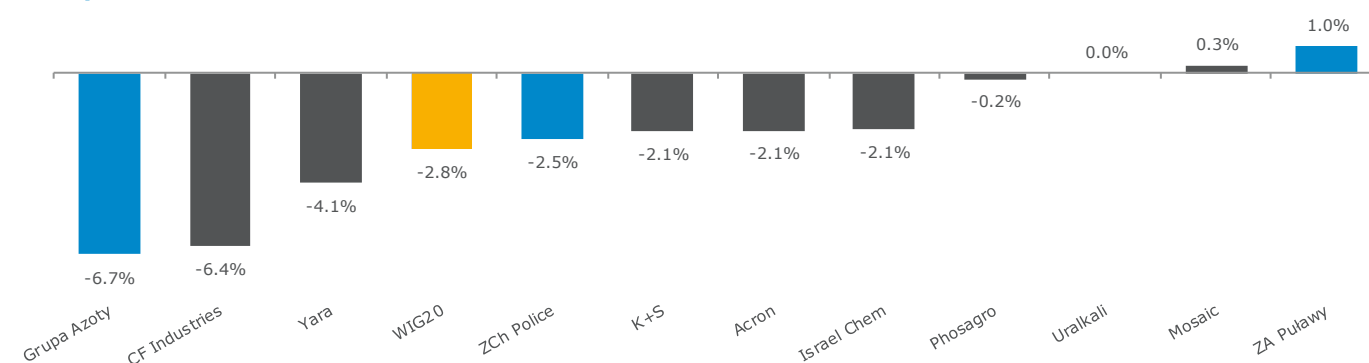
CBOT Open Positions In Corn and Wheat CBT



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



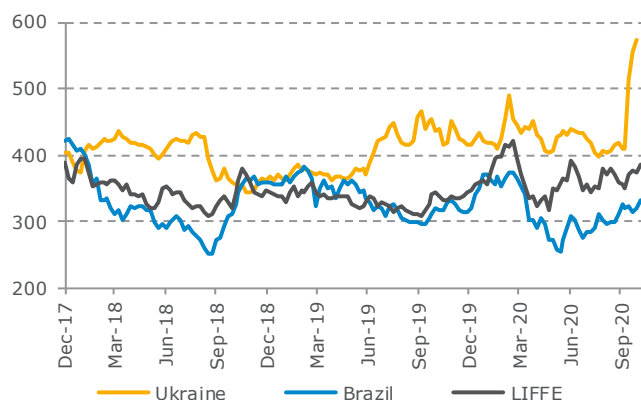
Weekly Returns of Fertilizer Stocks



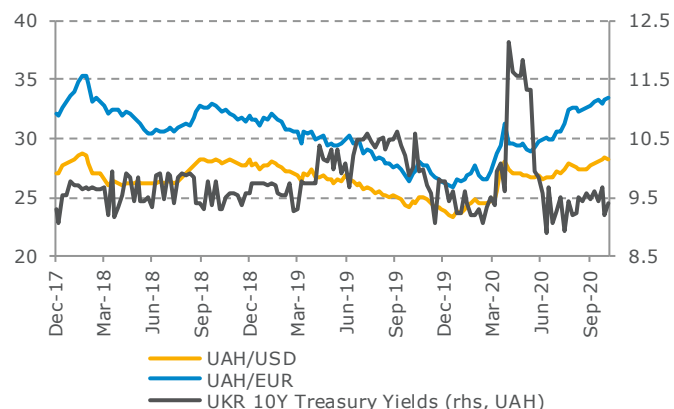
Source: Bloomberg, mBank

Agricultural Commodities

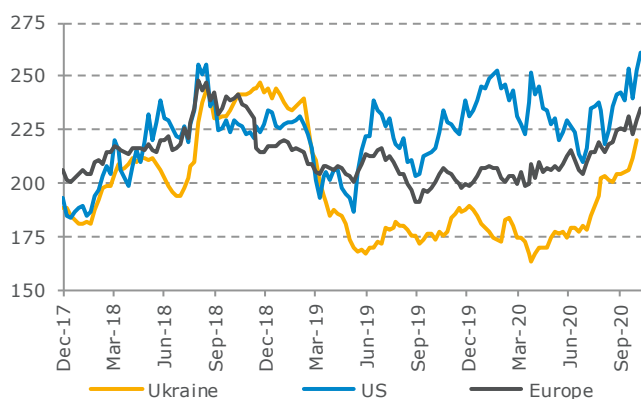
Sugar Prices (US\$/Mt)



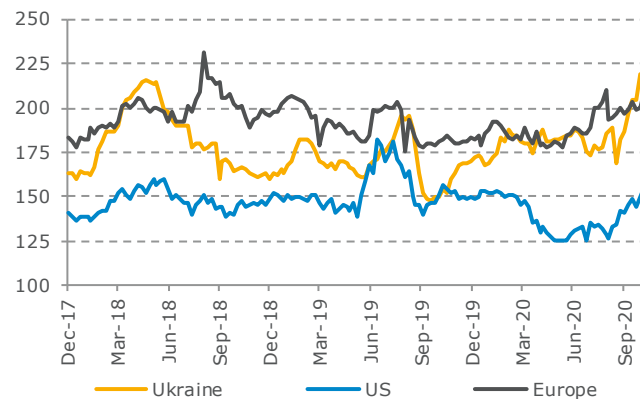
UAH Exchange Rates & Ukraine 10Y Treasury Yields



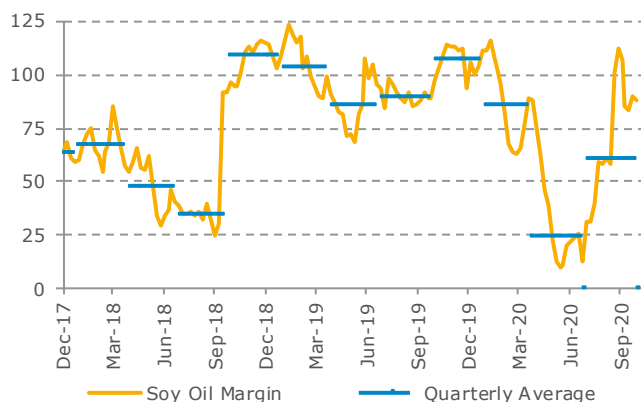
Wheat Prices (US\$/Mt)



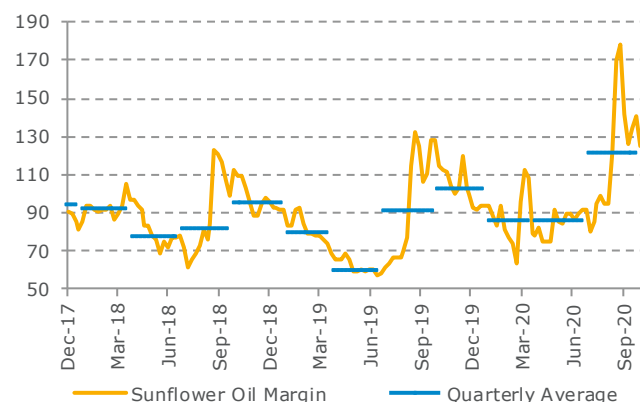
Corn Prices (US\$/Mt)



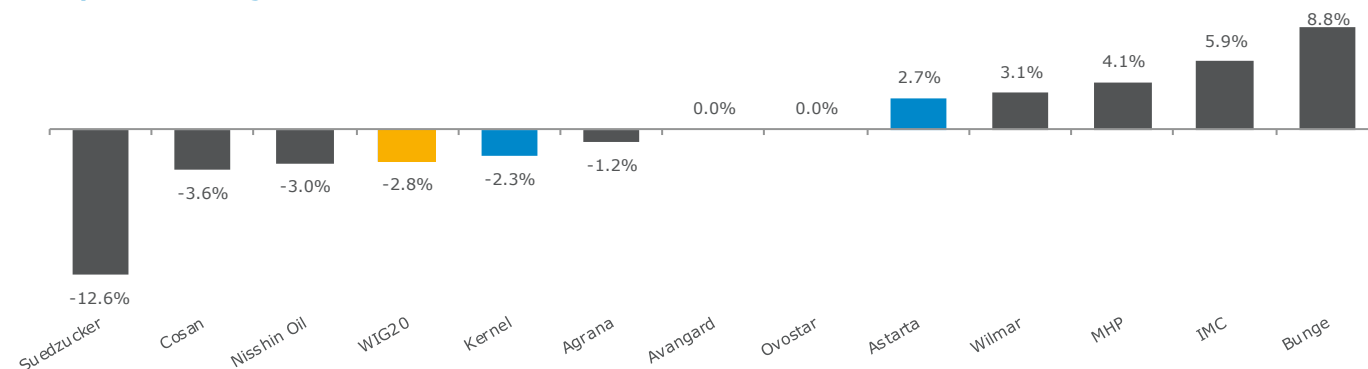
Model Margins on Soy Oil (US\$/Mt)



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	435.0	6.2	7.0	7.5	1.8	1.9	1.9	10.8	15.1	19.8	29%	27%	25%	7.8%	8.4%	6.0%
Enea	5.5	3.2	2.6	2.5	0.6	0.6	0.6	2.3	1.9	2.0	18%	22%	22%	0.0%	4.4%	10.5%
Energa	8.3	5.2	4.5	4.5	0.8	0.8	0.8	10.8	8.4	8.3	15%	18%	18%	0.0%	0.0%	1.8%
PGE	5.8	3.6	2.7	2.7	0.5	0.6	0.6	7.9	3.8	4.3	15%	21%	21%	0.0%	3.2%	6.6%
Tauron	2.1	5.2	4.6	4.1	0.9	0.9	0.8	5.5	3.0	3.0	17%	19%	21%	0.0%	0.0%	0.0%
ZE PAK*	10.7	4.3	2.8	3.4	0.2	0.3	0.3	-	16.0	33.4	5%	9%	7%	-	-	2.8%
EDF	10.3	5.4	5.0	4.8	1.2	1.2	1.1	21.1	18.8	16.5	22%	23%	24%	1.8%	2.3%	3.0%
EDP	4.5	10.5	10.4	10.0	2.5	2.5	2.5	21.5	19.3	18.4	24%	24%	25%	4.2%	4.3%	4.6%
Endesa	23.8	7.9	7.8	7.7	1.6	1.6	1.6	14.4	14.5	14.5	20%	20%	20%	6.7%	5.6%	4.9%
Enel	7.7	8.3	7.9	7.7	1.9	1.8	1.8	15.3	14.3	13.6	23%	23%	23%	4.6%	5.0%	5.3%
EON	9.8	8.6	8.2	7.7	0.9	0.9	0.8	16.0	13.9	11.1	10%	11%	11%	4.8%	5.1%	5.3%
Fortum	18.4	10.0	9.2	8.9	0.7	0.5	0.5	12.7	13.0	13.9	7%	6%	5%	6.0%	6.0%	5.9%
Iberdola	11.1	11.3	10.6	10.0	3.2	3.1	2.9	19.8	18.6	17.5	29%	29%	29%	3.8%	4.0%	4.2%
National Grid	9.4	14.0	12.1	11.1	4.3	4.1	4.1	25.8	17.9	16.7	30%	34%	37%	5.1%	5.3%	5.2%
Red Electrica	16.0	10.0	10.0	9.7	7.8	7.8	7.6	13.0	13.1	12.6	78%	78%	78%	6.3%	6.3%	6.2%
RWE	33.8	8.2	7.5	7.2	1.6	1.5	1.5	21.0	17.2	17.9	20%	20%	21%	2.5%	2.7%	2.8%
SSE	13.3	14.2	13.4	12.5	3.7	3.6	3.5	-	18.0	15.8	26%	27%	28%	6.0%	6.1%	6.3%
Verbund	53.4	16.8	15.9	14.7	5.3	5.2	5.0	33.7	32.0	28.4	31%	33%	34%	1.3%	1.4%	1.6%
Median		8.2	7.8	7.7	1.6	1.5	1.5	14.9	14.8	15.2	21%	23%	22%	4.2%	4.4%	5.1%

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	33.91	-	4.7	3.3	0.4	0.4	0.4	-	12.3	6.1		10%	12%	2.9%	8.8%	8.8%
MOL	1605.00	6.0	5.4	4.1	0.8	0.8	0.7	-	12.5	6.3	13%	16%	18%	0.0%	4.3%	4.6%
PKN Orlen	44.70	5.2	5.0	4.2	0.5	0.5	0.4	8.1	10.1	7.0	10%	10%	11%	2.2%	2.2%	5.9%
Hellenic Petroleum	4.77	9.4	6.0	5.4	0.6	0.5	0.5	45.0	7.8	6.0	7%	9%	9%	4.7%	9.0%	11.5%
HollyFrontier	20.77	11.7	6.8	4.5	0.5	0.5	0.4	-	26.3	6.8	5%	7%	8%	6.7%	6.8%	6.9%
Marathon Petroleum	30.49	17.9	9.5	7.6	0.8	0.8	0.7	-	100+	10.1	5%	8%	9%	7.6%	7.3%	7.6%
Motor Oil	9.92	5.3	4.5	4.0	0.3	0.3	0.3	8.5	5.7	4.8	6%	6%	6%	4.9%	9.7%	12.4%
Neste Oil	47.41	21.1	17.2	15.4	3.2	2.9	2.6	31.3	27.0	23.5	15%	17%	17%	1.9%	2.1%	2.3%
OMV	23.44	4.9	3.6	3.0	1.0	0.9	0.8	10.6	6.6	4.7	21%	24%	25%	7.5%	7.8%	8.2%
Phillips 66	53.46	16.8	7.9	6.3	0.6	0.5	0.5	-	11.9	8.3	3%	6%	7%	6.7%	6.9%	7.1%
Saras	0.44	5.2	3.1	3.1	0.1	0.1	0.1	-	17.6	11.3	2%	4%	3%	2.0%	5.0%	4.8%
Tupras	81.20	14.4	6.1	4.9	0.5	0.4	0.3	-	10.1	6.6	4%	6%	7%	4.4%	8.2%	12.1%
Valero Energy	43.09	19.8	7.2	5.2	0.5	0.4	0.3	-	22.4	8.4	2%	5%	6%	9.1%	9.3%	9.8%
Median		10.5	6.0	4.5	0.5	0.5	0.4	10.6	12.1	6.8	5%	8%	9%	4.7%	7.3%	7.6%

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	44.70	5.2	5.0	4.2	0.5	0.5	0.4	8.1	10.1	7.0	10%	10%	11%	2.2%	2.2%	5.9%
Axiall	69.69	10.3	9.1	8.2	1.7	1.5	1.5	38.9	25.9	20.3	16%	17%	18%	1.5%	1.6%	1.6%
Braskem	21.32	7.9	7.0	6.6	1.2	1.0	1.0	-	17.3	11.9	15%	14%	15%	0.0%	2.1%	4.4%
Eastman Chemical	85.85	10.2	9.1	8.6	2.1	2.0	1.9	15.2	12.3	10.9	20%	21%	22%	3.1%	3.3%	3.5%
Huntsman Corp	24.57	12.6	8.7	7.6	1.2	1.0	1.0	36.7	15.8	12.5	9%	12%	13%	2.6%	2.7%	2.8%
Lotte Chemicals	225,000	7.6	4.7	4.2	0.7	0.6	0.6	33.5	11.3	9.3	9%	13%	13%	1.8%	2.7%	3.1%
LyondellBasell	77.45	10.4	7.8	7.1	1.5	1.3	1.2	16.3	10.5	9.5	14%	16%	17%	5.4%	5.5%	5.8%
Mitsubishi Chemical	616.00	8.8	9.2	7.6	0.9	1.0	0.9	16.2	22.1	9.8	10%	11%	12%	5.2%	3.9%	4.2%
Mitsui Chemicals	2642.00	8.0	8.2	6.3	0.7	0.9	0.8	13.6	20.0	11.0	9%	10%	12%	3.8%	3.8%	3.7%
Westlake Chemical	69.69	10.3	9.1	8.2	1.7	1.5	1.5	38.9	25.9	20.3	16%	17%	18%	1.5%	1.6%	1.6%
Median		9.5	8.5	7.3	1.2	1.0	1.0	16.3	16.6	11.0	12%	14%	14%	2.4%	2.7%	3.6%

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	4.93	2.1	3.6	3.4	0.8	0.8	0.7	3.9	9.7	8.7	37%	21%	21%	1.9%	3.8%	5.2%
A2A	1.22	6.6	6.4	5.9	1.1	1.1	1.0	12.8	12.4	11.0	17%	17%	17%	6.6%	6.7%	7.4%
BG Group	9.91	4.9	4.4	3.6	0.8	0.6	0.6	19.2	9.3	6.4	16%	15%	16%	5.9%	5.8%	6.5%
BP	2.18	6.9	4.7	4.0	0.7	0.6	0.5	-	10.8	6.8	10%	12%	13%	9.5%	7.4%	7.4%
Centrica	0.41	3.8	4.4	4.4	0.3	0.3	0.4	8.6	8.8	7.2	7%	8%	8%	3.4%	6.8%	7.3%
Enagas	19.53	9.7	10.1	10.5	8.4	8.9	9.4	11.5	11.5	11.9	86%	88%	90%	8.6%	8.7%	8.8%
Endesa	23.75	7.9	7.8	7.7	1.6	1.6	1.6	14.4	14.5	14.5	20%	20%	20%	6.7%	5.6%	4.9%
Engie	12.16	6.5	5.8	5.6	1.0	1.0	0.9	16.3	11.5	10.5	16%	17%	17%	4.6%	6.2%	6.7%
Eni	6.82	4.7	3.7	3.0	0.9	0.7	0.6	-	16.5	8.8	18%	20%	22%	6.1%	6.5%	7.8%
Equinor	133.85	4.5	3.3	2.7	1.4	1.2	1.1	26.8	14.3	10.3	32%	36%	39%	3.2%	4.4%	5.4%
Gas Natural SDG	17.86	9.0	8.1	8.1	1.8	1.6	1.5	17.3	13.6	13.4	20%	20%	19%	8.0%	8.4%	8.8%
Gazprom	169.05	5.9	4.3	3.5	1.2	1.0	0.9	11.1	5.0	3.4	20%	24%	27%	5.1%	9.5%	13.5%
Hera	3.01	7.0	6.7	6.5	1.0	1.0	1.0	14.5	13.6	12.9	15%	15%	15%	3.6%	3.8%	4.0%
NovaTek	143.10	14.3	11.3	9.5	4.8	4.0	3.4	23.6	14.3	11.7	33%	35%	36%	2.1%	2.9%	3.7%
Shell	11.13	4.9	4.4	3.6	0.8	0.6	0.6	19.5	9.5	6.5	16%	15%	16%	5.8%	5.7%	6.4%
Snam	4.40	12.7	12.3	12.0	10.2	9.9	9.8	13.4	12.6	12.5	80%	80%	82%	5.7%	5.9%	6.4%
Total	29.68	7.2	5.4	4.5	1.0	0.9	0.8	25.7	12.2	8.4	14%	16%	18%	8.6%	8.8%	9.0%
Median		6.6	5.4	4.5	1.0	1.0	0.9	14.5	12.2	10.3	18%	20%	19%	5.8%	6.2%	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	1605.00	5.5	4.3	3.7	0.7	0.6	0.6	34.4	6.4	4.5	13%	14%	15%	5.1%	6.8%	7.6%
Bashneft	1634.50	1.5	1.4	-	0.4	0.4	-	2.2	1.7	-	25%	25%	-	16.1%	17.4%	-
BP	2.18	6.9	4.7	4.0	0.7	0.6	0.5	-	10.8	6.8	10%	12%	13%	9.5%	7.4%	7.4%
Eni	6.82	4.7	3.7	3.0	0.9	0.7	0.6	-	16.5	8.8	18%	20%	22%	6.1%	6.5%	7.8%
Equinor	133.85	4.5	3.3	2.7	1.4	1.2	1.1	26.8	14.3	10.3	32%	36%	39%	3.2%	4.4%	5.4%
Gazprom Neft	286.30	5.8	4.3	4.1	1.1	1.0	0.9	10.1	5.9	6.1	20%	22%	22%	4.4%	8.4%	8.2%
Gulf Keystone	0.76	4.2	1.6	0.8	1.6	0.9	0.5	-	100+	2.3	38%	54%	66%	-	2.4%	3.0%
Lukoil	4445.00	4.4	3.5	3.1	0.6	0.5	0.5	29.7	8.1	6.4	14%	15%	15%	7.0%	7.3%	10.7%
Occidental Petroleum	10.81	9.4	7.8	6.8	3.3	3.3	3.2	-	-	-	35%	42%	47%	10.2%	1.2%	3.7%
Repsol	6.20	5.6	4.0	3.4	0.7	0.6	0.5	22.2	7.2	5.1	12%	14%	15%	14.9%	13.4%	13.8%
Rosneft Oil	384.15	6.6	5.0	4.1	1.4	1.2	1.0	20.8	6.8	4.8	21%	24%	25%	3.0%	6.5%	9.7%
Shell	11.13	4.9	4.4	3.6	0.8	0.6	0.6	19.5	9.5	6.5	16%	15%	16%	5.8%	5.7%	6.4%
Surgutneftegas	38.09	-	-	-	-	-	-	4.1	6.4	6.2	-	-	-	11.8%	4.0%	5.8%
Total	29.68	7.2	5.4	4.5	1.0	0.9	0.8	25.7	12.2	8.4	14%	16%	18%	8.6%	8.8%	9.0%
Tullow Oil	0.17	7.1	6.5	5.8	3.8	4.1	3.8	-	-	-	53%	63%	65%	-	-	-
Median		5.5	4.3	3.7	0.9	0.8	0.6	21.5	7.6	6.3	19%	21%	22%	7.0%	6.7%	7.6%

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	24.82	4.1	2.2	2.5	0.5	0.4	0.4	-	23.4	-	12%	17%	16%	0.0%	0.0%	0.0%
KGHM	121.90	5.1	5.8	5.7	1.2	1.3	1.2	9.7	13.5	13.7	24%	22%	22%	0.0%	1.6%	3.0%
LW Bogdanka*	18.26	0.8	0.8	0.9	0.2	0.2	0.2	4.9	4.1	9.6	27%	26%	24%	10.6%	8.3%	-
Anglo American	19.30	5.4	4.5	4.7	1.7	1.5	1.5	12.0	8.6	9.8	32%	33%	32%	3.4%	4.8%	4.2%
Antofagasta	10.25	7.3	5.9	6.0	3.6	3.1	3.2	30.3	20.1	20.9	49%	53%	52%	1.6%	2.5%	2.6%
BHP Group	16.47	6.7	6.0	6.3	3.2	3.3	3.3	13.2	11.1	12.0	48%	54%	53%	6.9%	6.5%	5.9%
Freeport-McMoRan	16.81	12.2	6.3	6.0	3.1	2.4	2.2	52.4	11.6	10.7	25%	37%	37%	0.3%	1.1%	1.2%
Glencore	1.71	6.6	5.5	5.4	0.4	0.3	0.3	45.1	11.7	10.3	6%	6%	6%	2.2%	5.3%	7.1%
Grupo Mexico	58.00	6.5	5.7	5.6	2.9	2.6	2.5	18.0	10.8	10.9	44%	46%	45%	7.6%	9.3%	10.4%
Kazakhmys	5.50	5.5	4.9	4.5	3.1	2.8	2.5	6.9	6.0	5.3	56%	58%	56%	1.3%	1.4%	1.5%
Rio Tinto	47.30	5.3	5.4	6.3	2.7	2.7	2.9	9.4	10.0	12.1	51%	50%	46%	6.7%	6.5%	5.3%
Southern CC	47.96	12.9	11.2	11.8	5.9	5.4	5.5	31.4	21.3	22.0	46%	49%	47%	2.7%	3.4%	3.2%
Median		6.0	5.6	5.6	2.8	2.5	2.4	13.2	11.3	10.9	38%	42%	41%	2.4%	4.1%	3.2%
ALUMINUM PRODUCERS																
Grupa Kęty	451.00	8.3	9.5	9.5	1.6	1.6	1.5	11.4	13.9	13.8	19%	16%	16%	7.8%	7.0%	5.8%
Alcoa	12.59	5.0	3.9	3.7	0.5	0.5	0.5	-	-	28.7	11%	13%	14%	-	-	-
Constellium	8.81	7.3	6.0	4.9	0.7	0.6	0.6	-	11.6	5.6	9%	10%	11%	-	-	-
Kaiser Aluminum	61.44	8.6	7.1	5.8	1.0	0.9	0.8	21.6	13.0	9.7	11%	13%	14%	4.4%	4.7%	5.0%
Norsk Hydro	26.00	5.6	4.6	4.1	0.5	0.5	0.5	33.9	13.6	10.7	9%	10%	11%	4.8%	4.9%	5.2%
Rusal	3.17	18.6	12.6	10.6	1.5	1.3	1.2	8.1	4.4	4.1	8%	11%	12%	0.6%	3.2%	4.9%
Median		7.8	6.5	5.3	0.8	0.8	0.7	16.5	13.0	10.2	10%	12%	13%	4.6%	4.8%	5.1%

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	24.35	6.2	7.7	8.0	0.7	0.8	0.8	18.0	40.6	30.7	12%	10%	11%	0.0%	0.0%	0.0%
Acron	6084.00	9.9	8.1	8.2	3.0	2.7	2.5	15.5	10.5	10.9	31%	33%	31%	6.0%	5.9%	5.9%
CF Industries	29.52	9.0	8.8	8.2	3.1	2.9	2.8	18.9	18.8	13.9	35%	33%	34%	4.1%	4.2%	4.1%
Israel Chemicals	12.76	8.3	7.0	6.6	1.5	1.4	1.4	20.0	12.5	11.5	18%	20%	21%	2.6%	3.9%	4.2%
K+S	6.87	9.6	7.5	7.1	1.2	1.3	1.2	-	40.6	14.4	13%	17%	17%	0.8%	1.4%	2.6%
Phosagro	2858.00	6.3	6.0	5.7	2.0	1.9	1.8	13.0	11.3	9.4	32%	32%	32%	5.1%	4.1%	5.8%
The Mosaic Company	19.34	8.9	6.9	6.1	1.4	1.3	1.3	64.9	18.0	12.5	16%	19%	21%	1.1%	1.1%	1.3%
Yara International	346.10	6.4	6.0	5.7	1.2	1.1	1.0	11.7	10.3	9.4	18%	18%	18%	4.7%	5.3%	6.4%
Median		8.6	7.3	6.8	1.5	1.4	1.3	18.0	15.3	12.0	18%	20%	21%	3.3%	4.0%	4.2%

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																
Kemel	39.70	5.9	5.1	4.7	0.6	0.6	0.5	8.6	4.5	4.4	9%	11%	11%	2.4%	2.5%	2.3%
Agrana Beteiligungs	16.80	8.7	7.5	6.8	0.6	0.6	0.6	21.8	16.1	15.3	7%	8%	9%	4.6%	6.0%	6.0%
Bunge Limited	51.39	10.7	9.7	9.6	0.4	0.4	0.4	14.5	11.7	10.7	3%	4%	4%	4.1%	4.0%	4.8%
Cosan	66.24	6.8	5.9	5.6	0.6	0.5	0.5	23.4	12.9	12.3	9%	9%	9%	2.3%	2.7%	3.4%
MHP	5.60	4.9	4.5	4.3	1.1	1.0	1.0	-	9.8	5.9	22%	23%	24%	5.0%	5.0%	13.4%
Nisshin Oillio	3100.00	7.7	7.7	7.4	0.5	0.5	0.5	12.7	12.0	11.6	6%	7%	7%	2.6%	2.6%	2.6%
Suedzucker	14.30	11.2	7.6	6.8	0.8	0.8	0.7	-	20.1	13.4	7%	10%	11%	1.4%	1.8%	2.3%
Wilmar Int.	4.65	14.7	13.8	13.0	0.9	0.9	0.8	17.2	15.8	14.4	6%	6%	6%	2.7%	2.9%	3.0%
Median		8.2	7.5	6.8	0.6	0.6	0.6	15.8	12.5	12.0	7%	8%	9%	2.6%	2.8%	3.2%

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

Selected Commodity ETFs Available to Retail Investors with mBank Brokerage Accounts

	Name of Instrument on mdm.pl Website	Market	ISIN	Ticker
Agri Commodities				
Sugar	WISDOMTREE SUGAR (OD7R GR ETF)	DEU-XETRA	DE000A0KRJ85	OD7R:GR
Cocoa	WISDOMTREE 2X DAILY LONG COCOA (4RUP GR ETF)	DEU-XETRA	DE000A0V9ZE9	4RUP:GR
Coffee	WISDOMTREE COFFEE (OD7B GR ETF)	DEU-XETRA	DE000A0KRJT2	OD7B:GR
Wheat	WISDOMTREE WHEAT (OD7S GR ETF)	DEU-XETRA	DE000A0KRJ93	OD7S:GR
Metals				
Copper	WISDOMTREE COPPER (OD7C GR ETF)	DEU-XETRA	DE000A0KRJU0	OD7C:GR
Nickel	WISDOMTREE NICKEL (OD7M GR ETF)	DEU-XETRA	DE000A0KRJ44	OD7M:GR
Platinum	WISDOMTREE PHYSICAL PLATINUM	DEU-XETRA	DE000A0N62D7	VZLA:GR
Silver	WISDOMTREE PHYSICAL SILVER (VZLC GR ETF)	DEU-XETRA	DE000A0N62F2	VZLC:GR
	WISDOMTREE 2X DAILY LONG SILVER (4RUE GR ETF)	DEU-XETRA	DE000A0V9Y57	4RUE:GR
Gold	XETRA GOLD (4GLD GR ETF)	DEU-XETRA	DE000A0S9GB0	4GLD:GR
	WISDOMTREE PHYSICAL GOLD (VZLD GR ETF)	DEU-XETRA	DE000A0N62G0	VZLD:GR
	XTRACKERS PHYSICAL GOLD ETC EUR (XAD5 GR ETF)	DEU-XETRA	DE000A1E0HR8	XAD5:GR
	DB-X PHYSICAL GOLD EURO HEDGED ETC (XAD1 GR ETF)	DEU-XETRA	DE000A1EK0G3	XAD1:GR
	WISDOMTREE 2X DAILY LONG GOLD (4RT8 GR ETF)	DEU-XETRA	DE000A0V9YZ7	4RT8:GR
	ISHARES PHYSICAL GOLD (SGLN LN ETF)	GBR-LSE	IE00B4ND3602	SGLN:LN
Energy				
Brent Crude	WISDOMTREE BRENT CRUDE (OOEA GR ETF)	DEU-XETRA	DE000A1N49P6	OOEA:GR
WTI Crude	WISDOMTREE WTI CRUDE OIL (OD7F GR ETF)	DEU-XETRA	DE000A0KRJX4	OD7F:GR
	WISDOMTREE 1X DAILY SHORT WTI CRUDE OIL (9GA7 GR ETF)	DEU-XETRA	DE000A0V9XY2	9GA7:GR
	WISDOMTREE 2X DAILY LONG WTI CRUDE OIL (4RT6 GR ETF)	DEU-XETRA	DE000A2BDEB6	4RT6:GR

Source: mBank

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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A recommendation is valid for a period of 9 months, unless a subsequent recommendation is issued within this period. Expected returns from individual recommendations are as follows:

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%
Recommendations are updated at least once every nine months.

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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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