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Tuesday, February 11, 2020 | weekly publication

Tuesday Espresso

Weekly Commodity Roundup

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Utilities

EEX power prices over the past week have held above EUR 40/MWh even as emissions edged slightly lower. Coal prices at ARA terminals so far remain stable, but gas keeps piling on the pressure, as reflected in a 6 zloty fall to less than PLN 240/MWh in year-ahead power contracts in Poland. As a result, the average margin of a Polish power plant has tightened, most likely underpinned by poorer wind conditions. While utility indexes in the EU and US go from strength to strength, in Poland the power sector stocks drops to a new all-time low every time national assets minister Sasin publicly shares his views on state energy matters.

Gas & Oil

Refining margins bounced back over $5/bbl in the past week thanks to a continued downward slide in crude inputs. We are seeing improvement across the entire product slate, most notably in HSFO and diesel cracks. In Europe, the recovery is reinforced by a decrease in the Brent/WTI pricing differential below $4/bbl. Brent's discount to the Urals is holding in the vicinity of $1.5/bbl. Petrochemicals had a good last seven days amid falling costs of crude inputs, with margins shifting upwards for most products. Against this backdrop, the gas market remains a letdown with EU storage rates still high at 68% versus 48% this time last year.

Metals

Speculative copper traders keep adding bearish bets, with open interest currently made up of -34k contracts vs. -14k a week ago (see chart on p. 9). The negative outlook is fueled by smelter closures in China, which accounts for 50% of the metal's total demand. This is a negative development from the point of view of KGHM. Coincidentally, copper inventories in exchange-monitored warehouses are seen to be increasing (p. 10 chart).

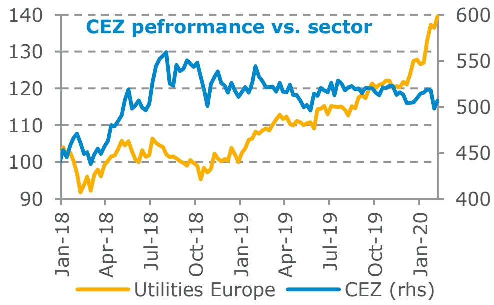
Agricultural Commodities

Sugar prices in Ukraine continue to move higher in line with global markets, a trend which works to the advantage of Astarta (p. 17 chart).

Coking Coal

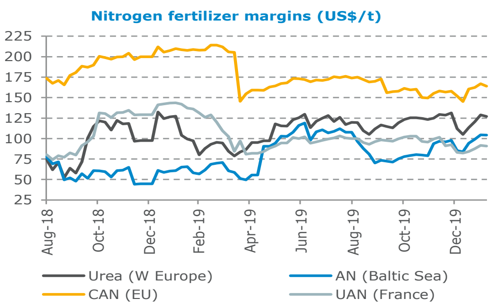
World steel prices slumped last week on fears of plunging demand from China in the wake of the coronavirus, reinforced by increasing inventories (p. 12 chart), which are up to 15mmt vs. a 5Y average of 11.2mmt for this time of the year. The outlook is bearish for Cognor and JSW.

Charts of the Week



CEZ underperformance creates a buy opportunity

CEZ has not taken part in the EU utilities rally of the last few months, due probably to its high-risk nuclear capacity expansion plans. Given the underperformance, in our view the market is overlooking are a number of major upside catalysts in the Czech utility, such as a high dividend yield (6.8%) and coal phase-out plans in favor of EU-funded clean power.



Source: Bloomberg, mBank

Cheap gas supports fertilizer profits

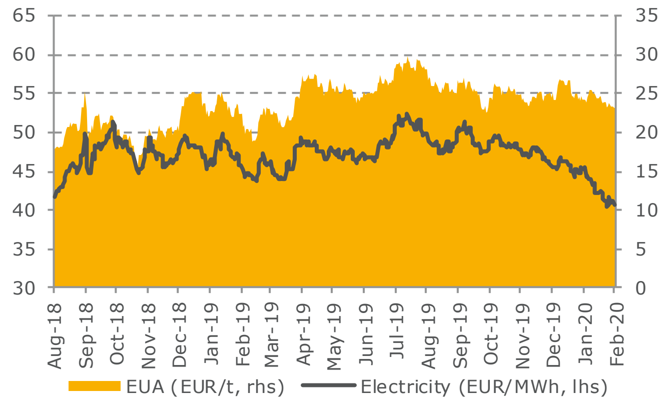
European prices of nitrogen fertilizer are rising in line with falling prices of gas. In its earnings release last Friday, Yara International signaled it was eyeing further reductions in gas costs in H1 2020, while at the same time it was anticipating stronger demand based on upward-trending prices of agricultural commodities. These are positive developments from the point of view of Grupa Azoty.

1-Week & YTD Performance

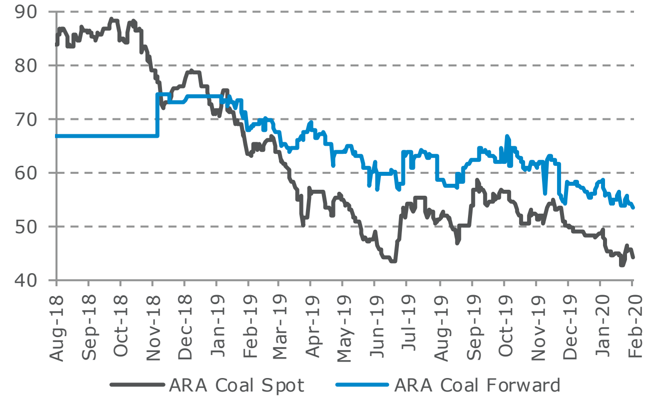
Company	1W	YTD
JSW	-7.7%	-15%
ZA Puławy	-4.8%	-2%
Enea	-4.7%	-13%
PCC Rokita	-4.5%	-1%
PGE	-4.4%	-19%
Orzeł Biały	-3.2%	-2%
LW Bogdanka	-3.0%	-17%
OMV	-2.4%	-14%
Tauron	-1.9%	-11%
Astarta	-1.5%	+1%
Ciech	-1.5%	-1%
Lotos	-1.0%	-12%
ZCh Police	-1.0%	-4%
PGNiG	-0.8%	-18%
Tupras	-0.8%	-12%
PKN Orlen	-0.6%	-15%
KGHM	-0.5%	-4%
IMC	-0.4%	+2%
CEZ	-0.3%	-1%
ZE PAK	+0.0%	-4%
Alumetal	+0.4%	+11%
Boryszew	+1.3%	+5%
Energa	+2.3%	+3%
MOL	+2.5%	-10%
Tarczyński	+2.7%	-4%
Kernel	+3.4%	+7%
Kęty	+4.8%	+11%
Kruszwica	+5.2%	+16%
Grupa Azoty	+8.8%	-6%
WIG Indices	**1W**	**YTD**
WIG	+1.2%	-1%
Chemicals	+3.1%	-4%
Energy	-2.4%	-12%
Oil & Gas	-0.7%	-15%
Food Industry	+2.5%	+8%
Basic Material	-1.1%	-5%
Ukraine	+2.5%	+8%
Sector Indices	**1W**	**YTD**
Mining	+1.3%	-7%
Oil & Gas E&P	+0.7%	-12%
Refining EU	+0.6%	-8%
Refining US	+3.8%	-13%
Agri & Food	+2.0%	+4%
Rubber	+1.9%	-8%
Fertilizers	+4.5%	-4%
Chemicals EU	+1.8%	-2%
Industrials EU	+2.7%	+3%
Petchem World	+2.6%	-8%
Utilities EU	+2.3%	+12%
Utilities US	-0.5%	+6%

Utilities

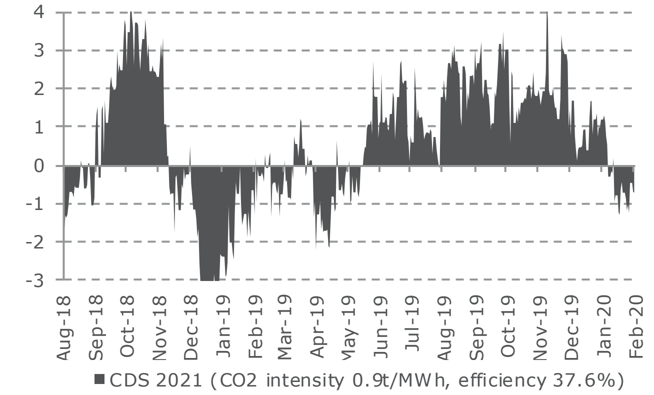
EU Prices of Electricity (EUR/MWh) & EUAs (EUR/t)



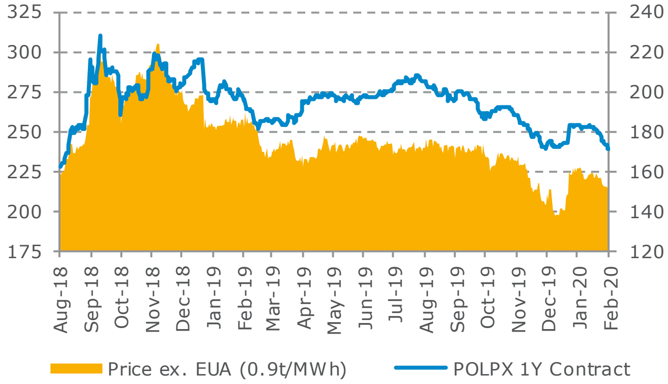
ARA Coal Spot and Forward Prices (EUR/t)



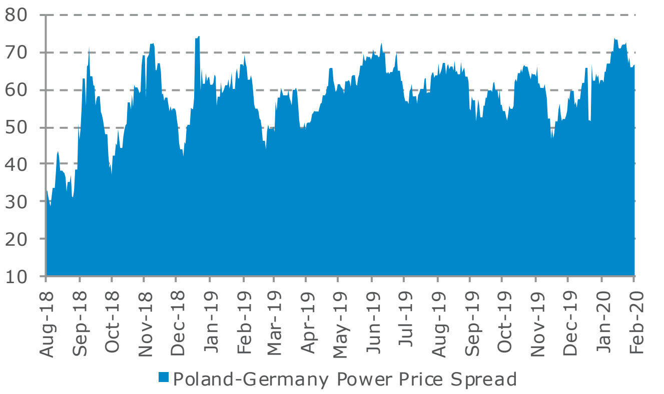
Clean-Dark Spread, Germany (EUR/MWh)



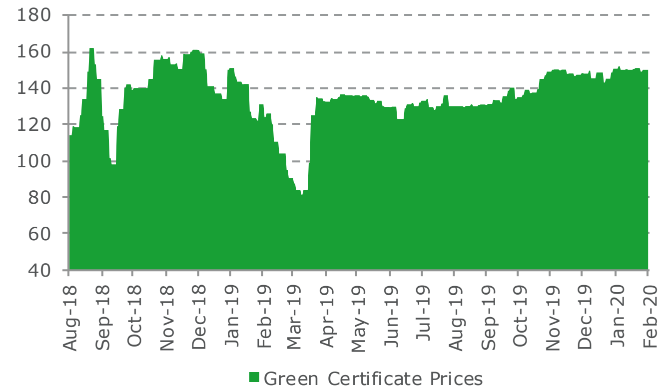
Polish Electricity Prices (1Y) (PLN/MWh)



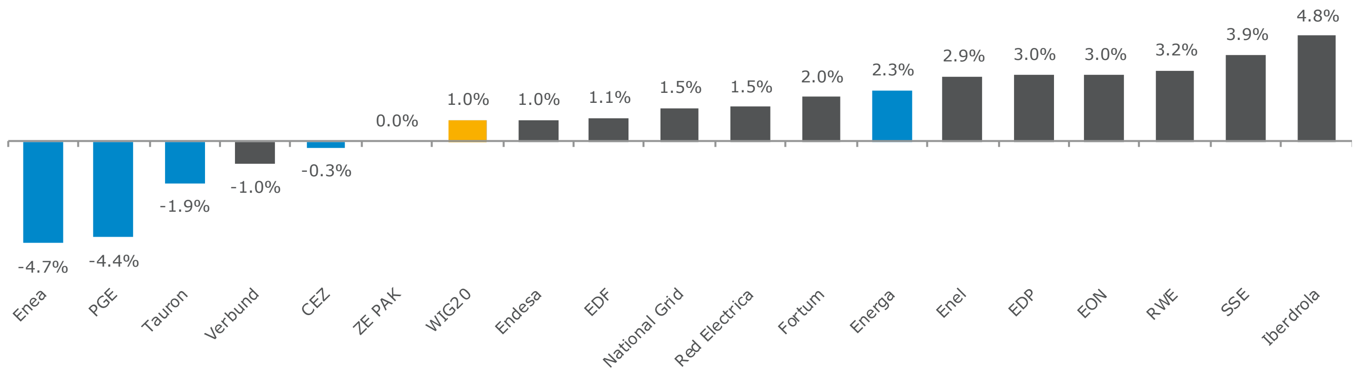
Poland-Germany Power Price Spread (PLN/MWh)



Polish Green Certificate Prices (PLN/MWh)



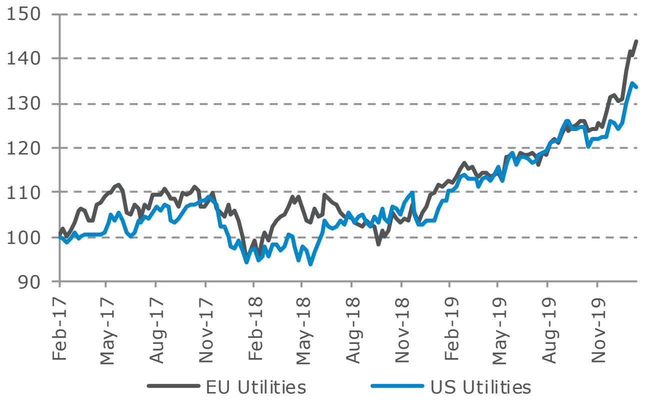
Weekly Returns of Utility Stocks



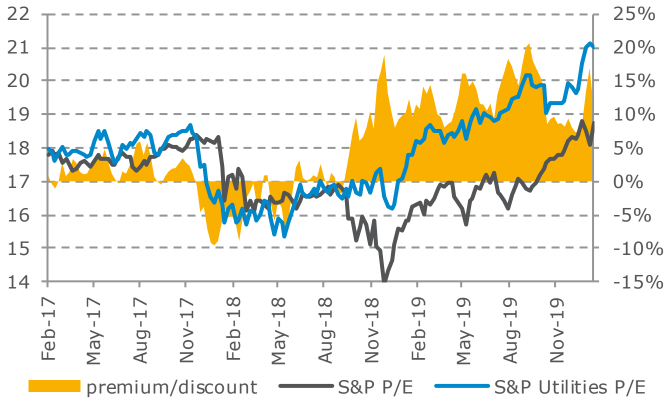
Source: Bloomberg, mBank

Utilities

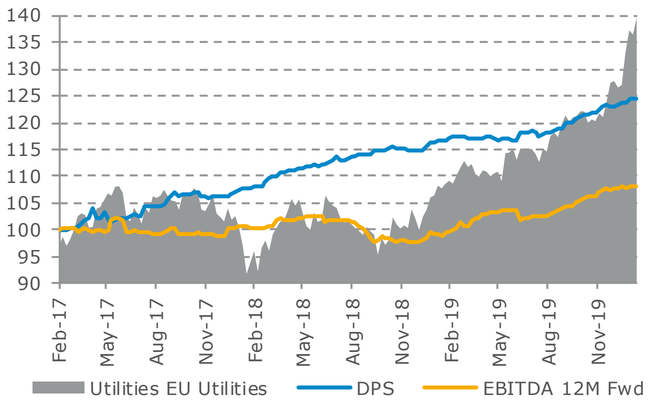
MSCI Utilities Europe vs. S&P Utilities



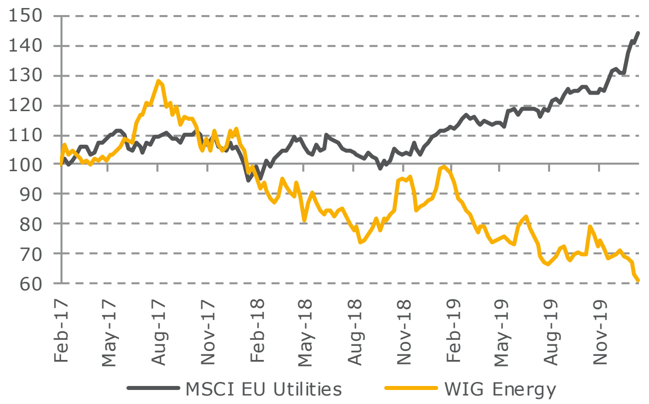
S&P Utilities vs. S&P 500 P/E



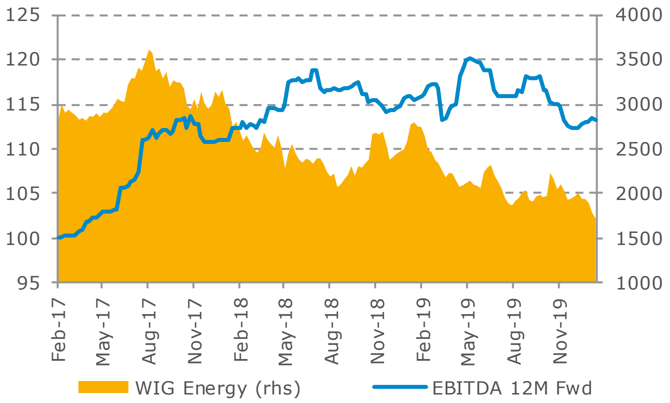
MSCI Utilities EU vs. DPS & EBITDA Expectations



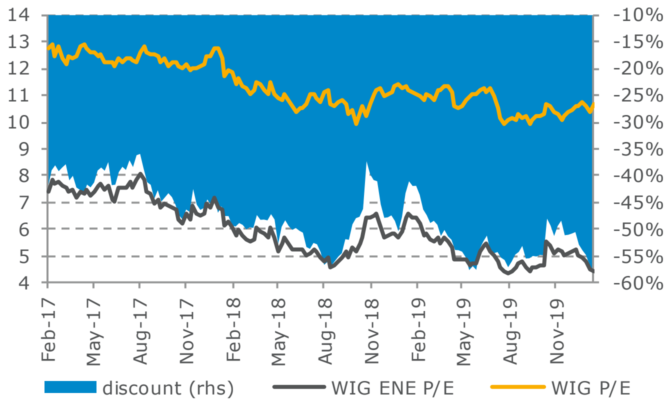
MSCI Utilities EU vs. WIG-ENERGY



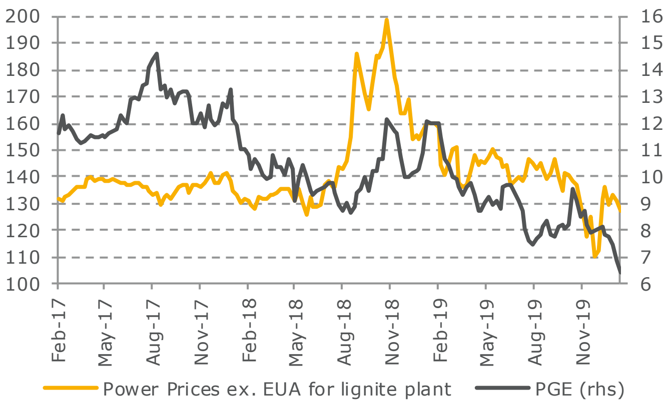
WIG-ENERGY vs. EBITDA Expectations



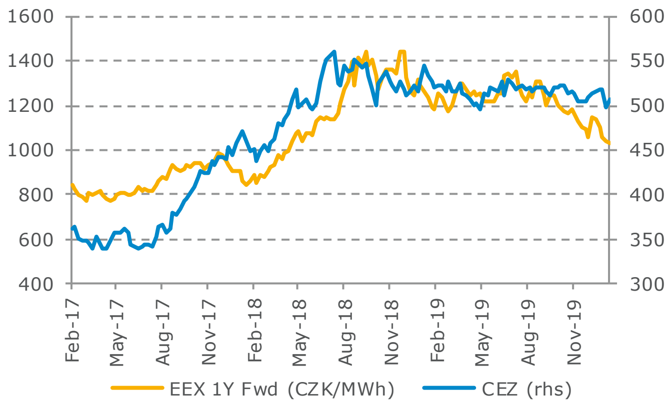
WIG-ENERGY vs. WIG P/E



PGE Performance vs. Power Prices ex. EUA



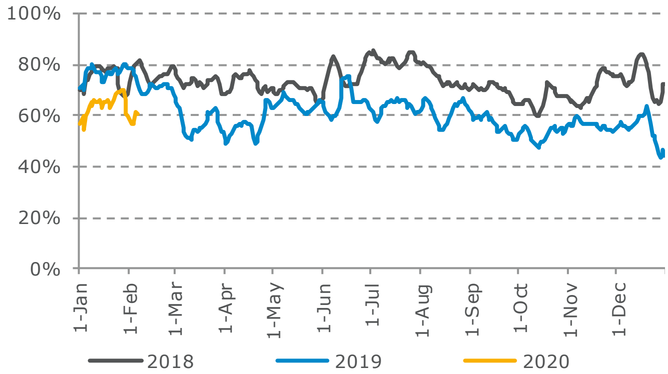
CEZ Performance vs. EEX Power Prices (CZK/MWh)



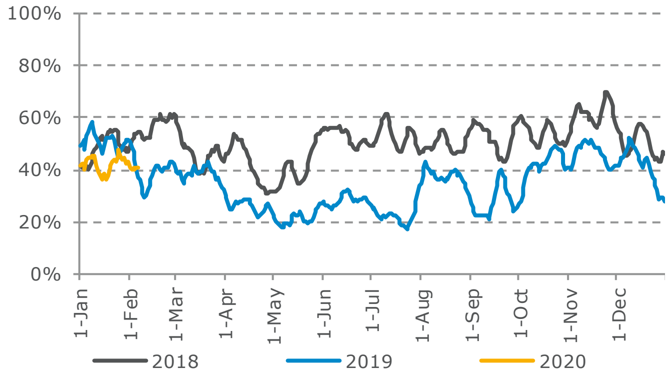
Source: Bloomberg, mBank

Utilities

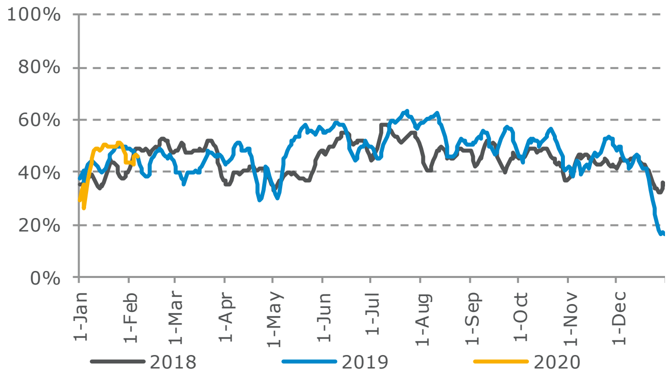
Load Factor, Bełchatów Power Station



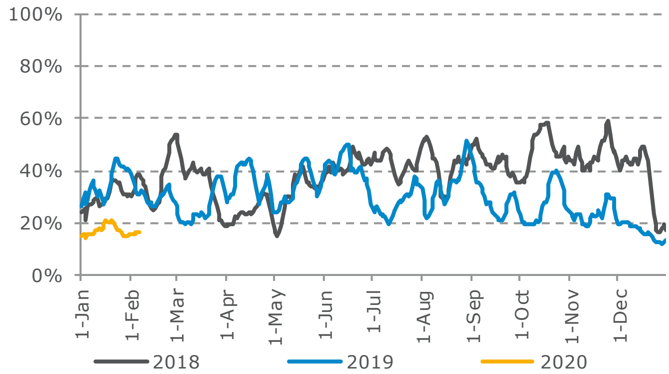
Load Factor, Turów Power Station



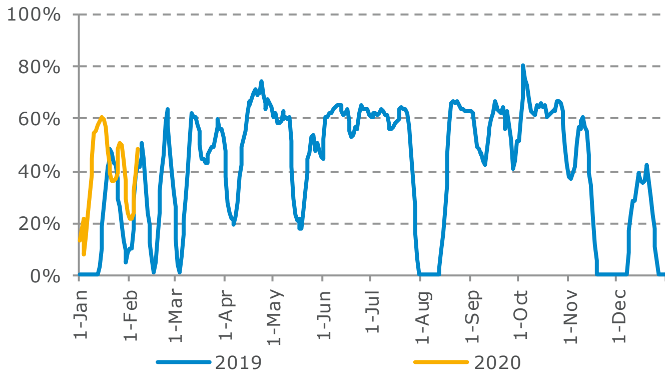
Load Factor, Kozienice Power Station



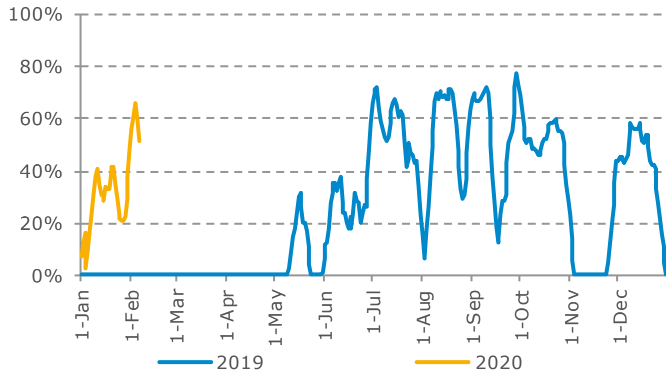
Load Factor, Jaworzno Power Station



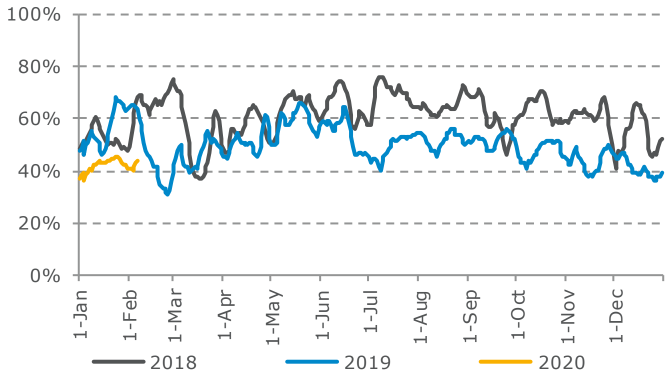
Load Factor, Opole Power Station, Block B5



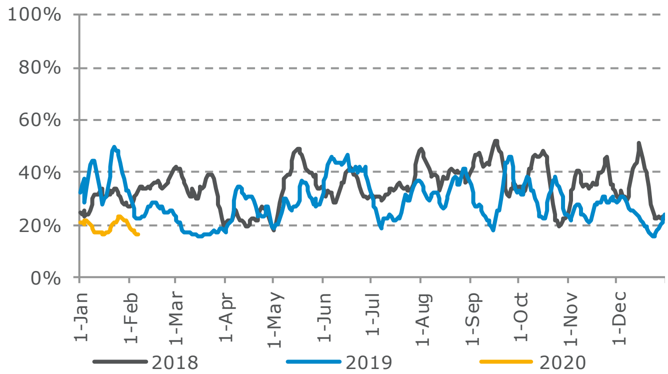
Load Factor, Opole Power Station, Block B6



Load Factor, Połaniec Power Station



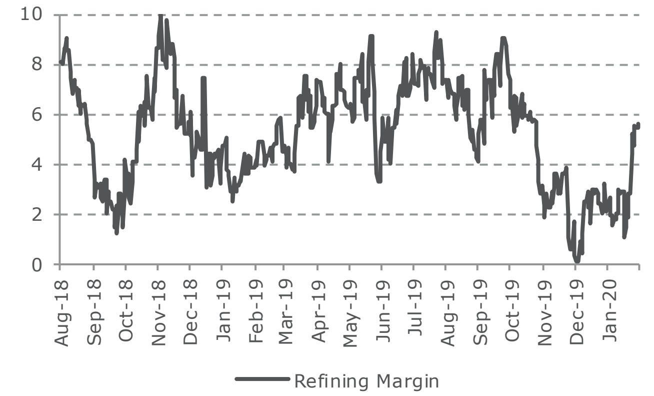
Load Factor, Rybnik Power Station



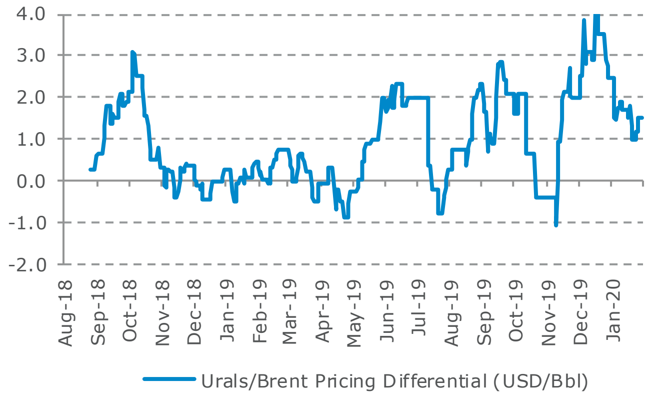
Source: PSE, mBank; Load factor = actual generation (7-day average) as a percentage of available capacity

Gas & Oil

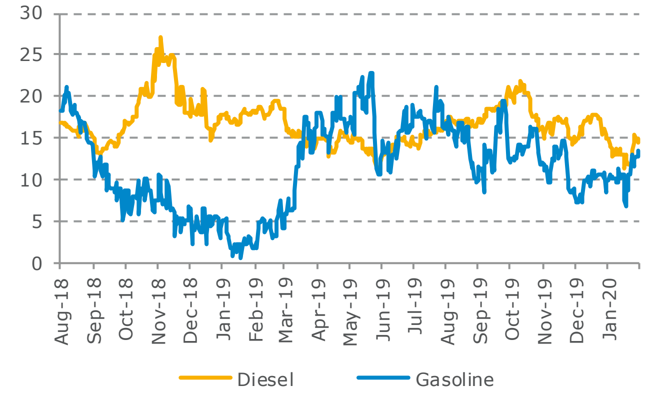
Refining Margins (US$/bbl)



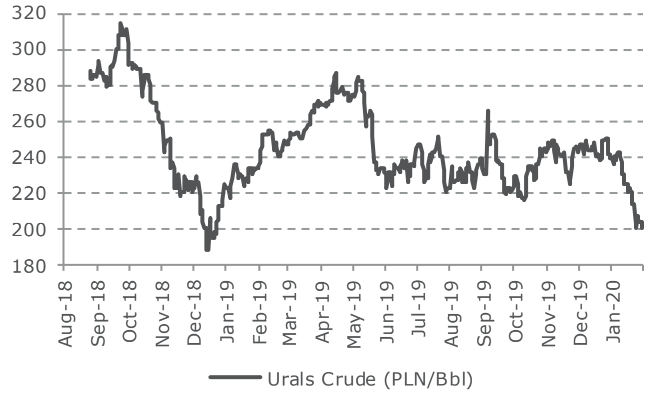
Urals/Brent Pricing Differential (US$/bbl)



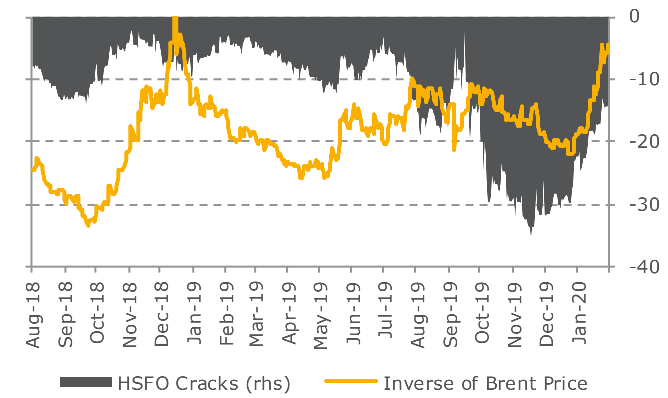
Cracking Margins on Diesel & Gasoline (US$/bbl)



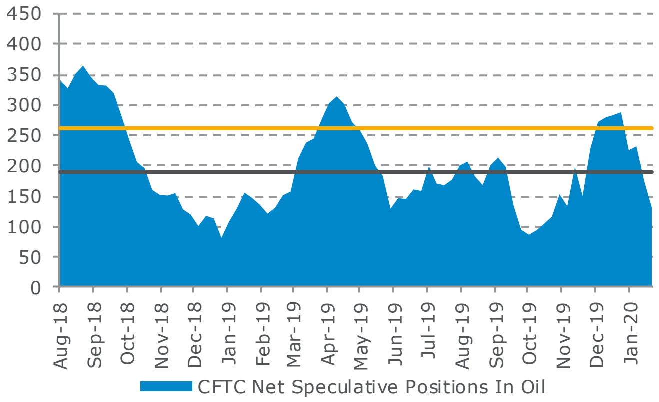
Price of Urals Crude (PLN/bbl)



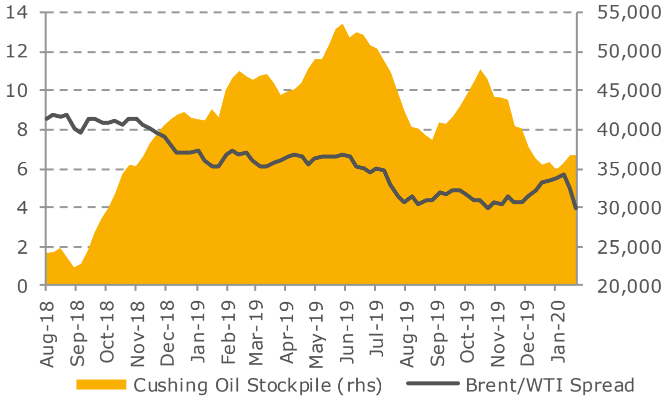
HSFO Cracks (US$/bbl) vs. Inverse of Brent Price



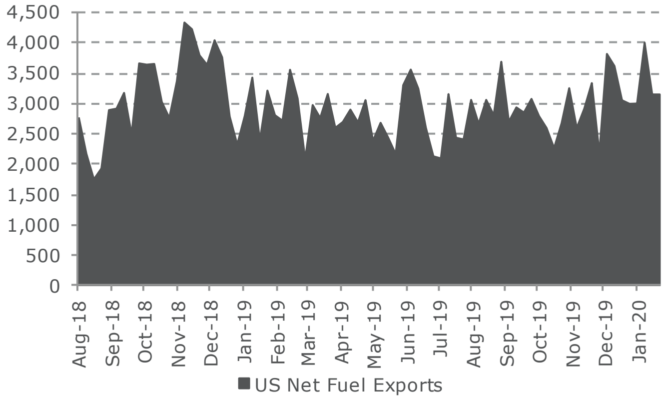
CFTC Net Speculative Positions In Oil



Brent/WTI Spread vs. Cushing Oil Stockpile



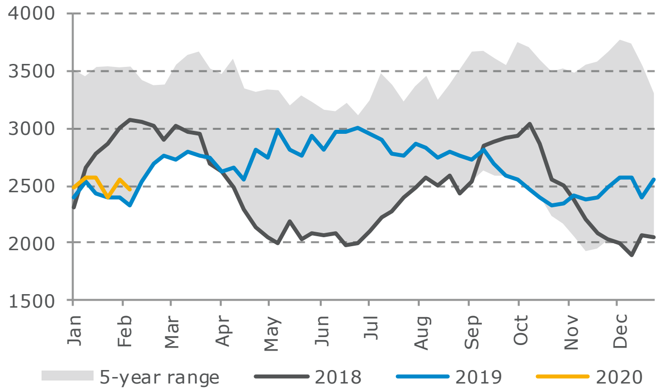
US Net Fuel Exports



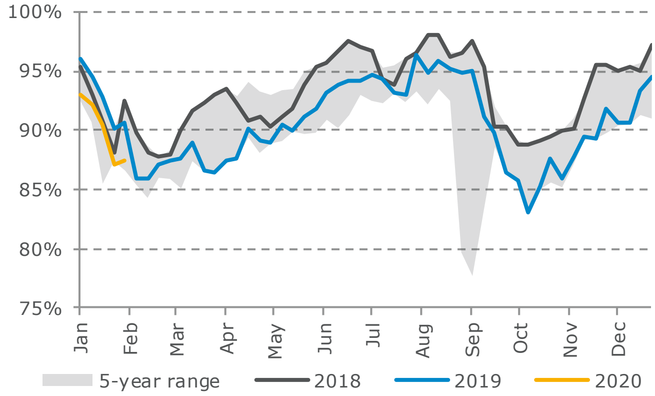
Source: Bloomberg, mBank

Gas & Oil

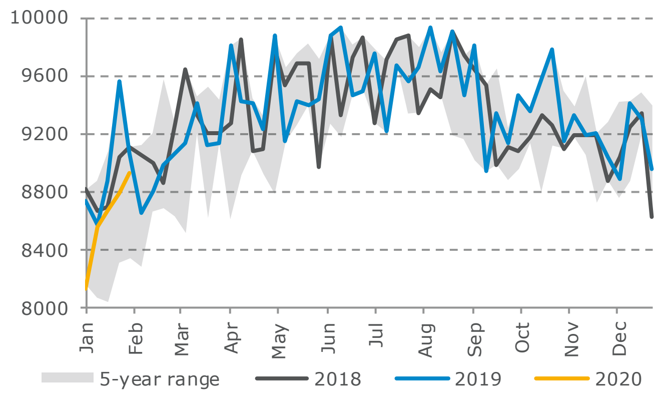
Diesel Inventories @ARA



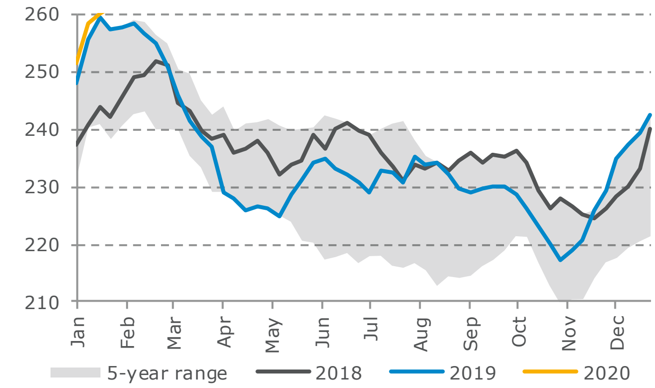
US Refinery Utilization Rates



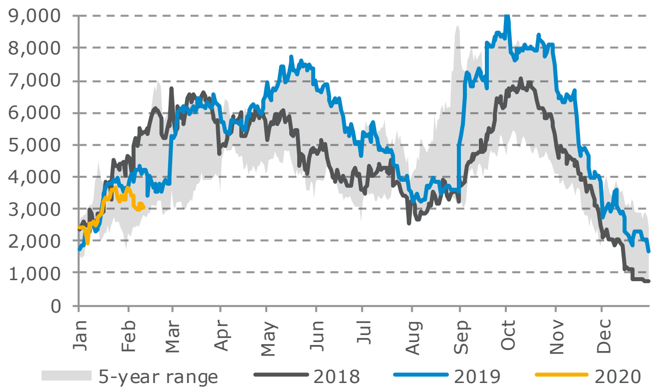
US Gasoline Demand



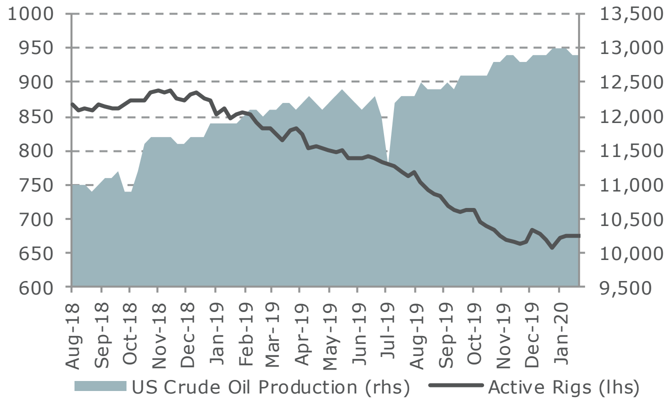
US Gasoline Inventories



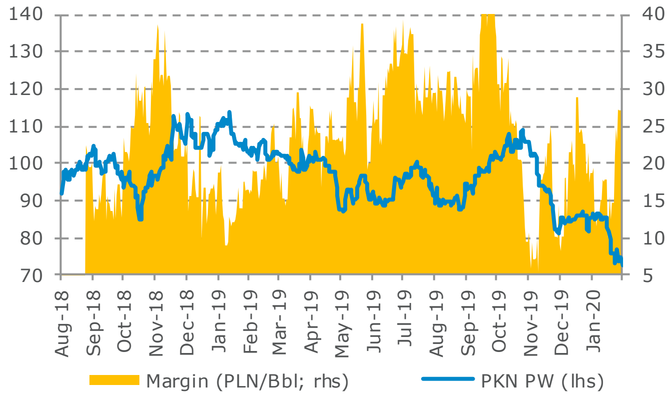
Global Refinery Outages (mbbl/d)



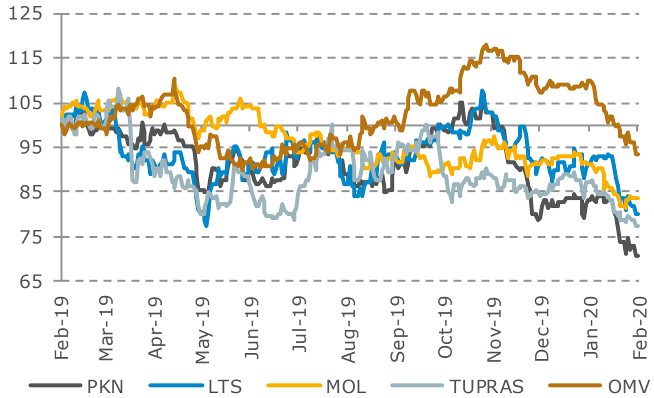
US Crude Oil Production (mboe/d) vs. Active Rigs



PKN Performance vs. Benchmark Margins



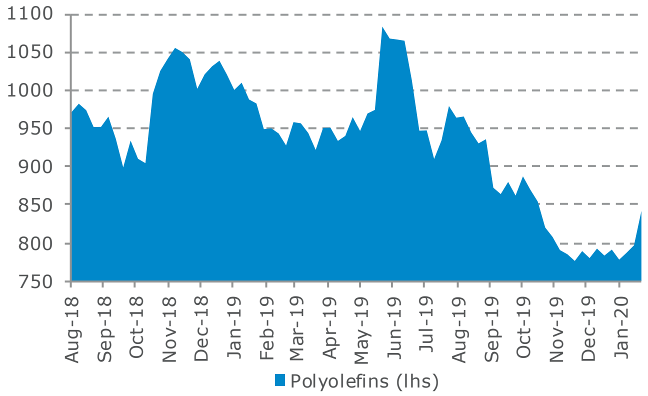
Normalized Oil Stock Chart



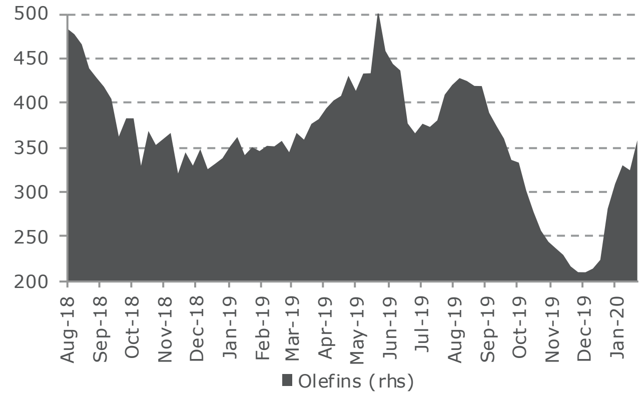
Source: Bloomberg, mBank

Petrochemicals & NatGas

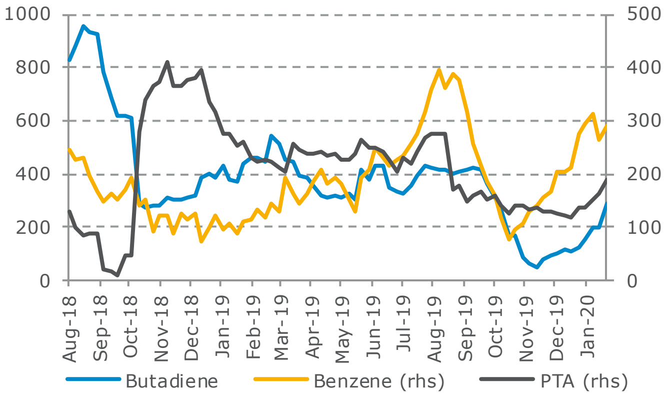
Margins on Polyolefins



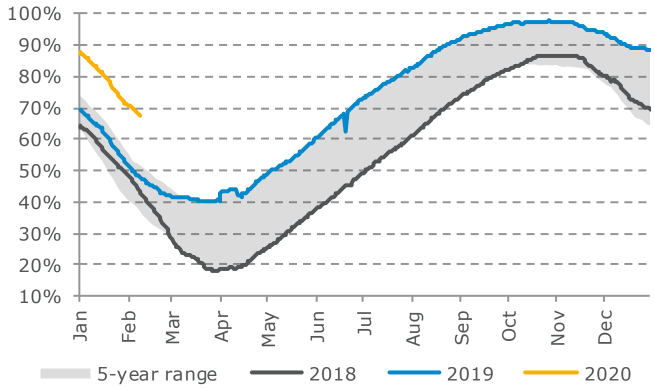
Margins on Olefins



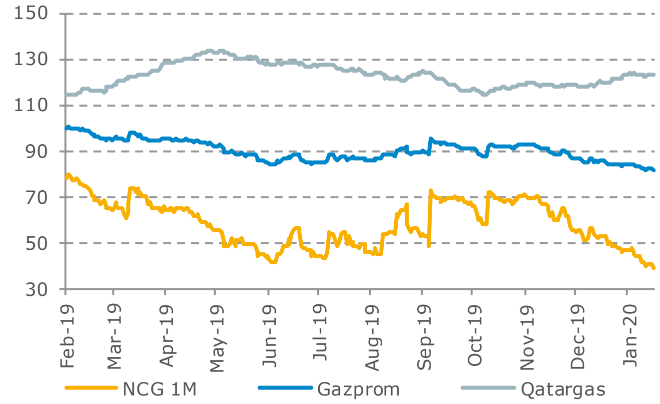
Margins on Butadiene, Benzene & PTA (US$/t)



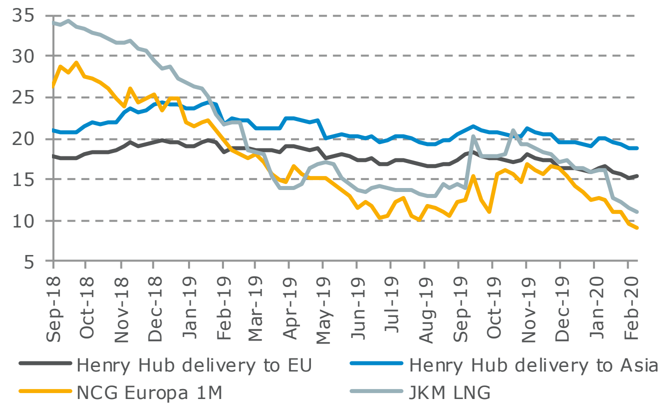
EU Gas Storage Levels (% Full)



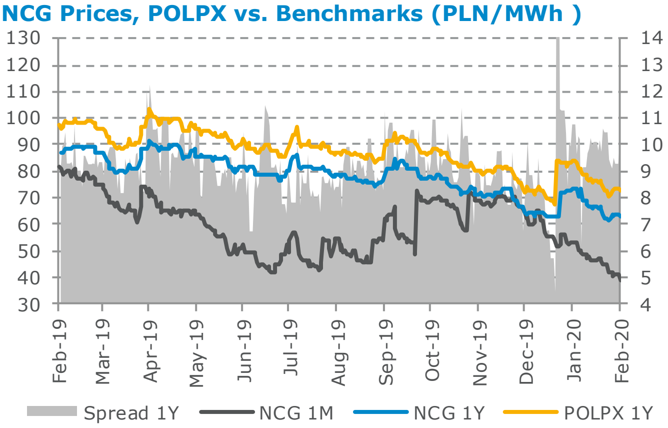
Estimated Costs of Imported Natural Gas (PLN/MWh)



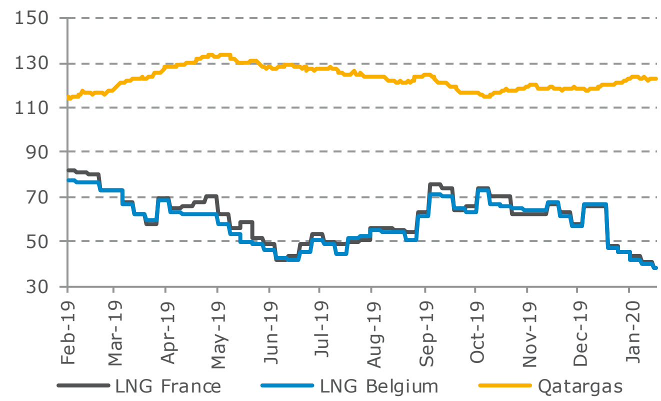
Prices of US LNG Exports to EU and Asia



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



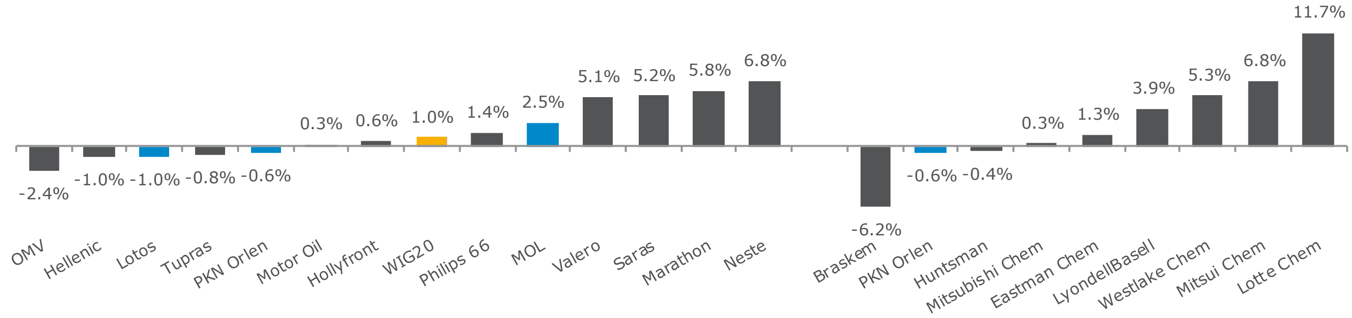
LNG Spot Rates vs. Estimated Qatargas rates



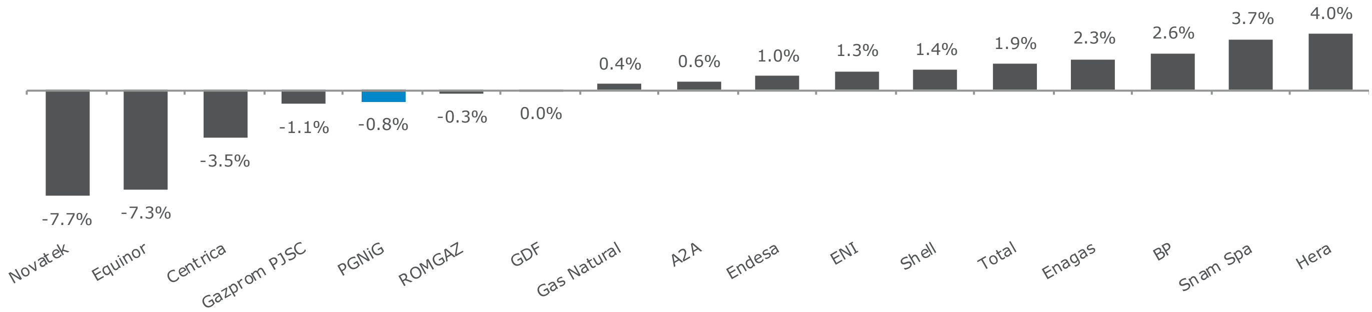
Source: Bloomberg, mBank

Weekly Performance Charts

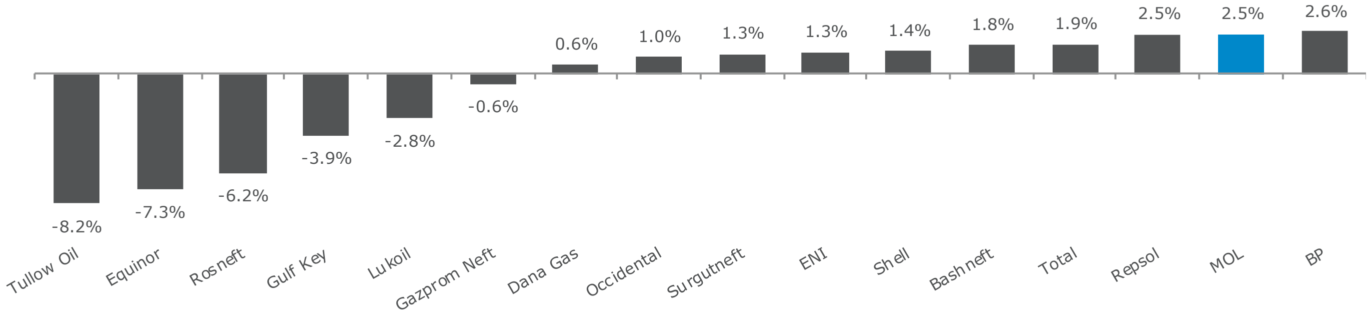
Oil Refiners (L) & Petrochemical Producers (R)



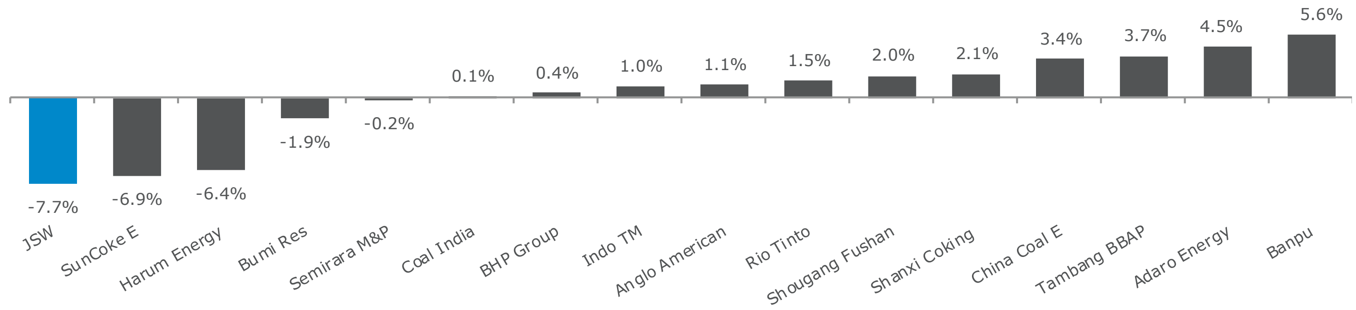
Natural Gas Companies



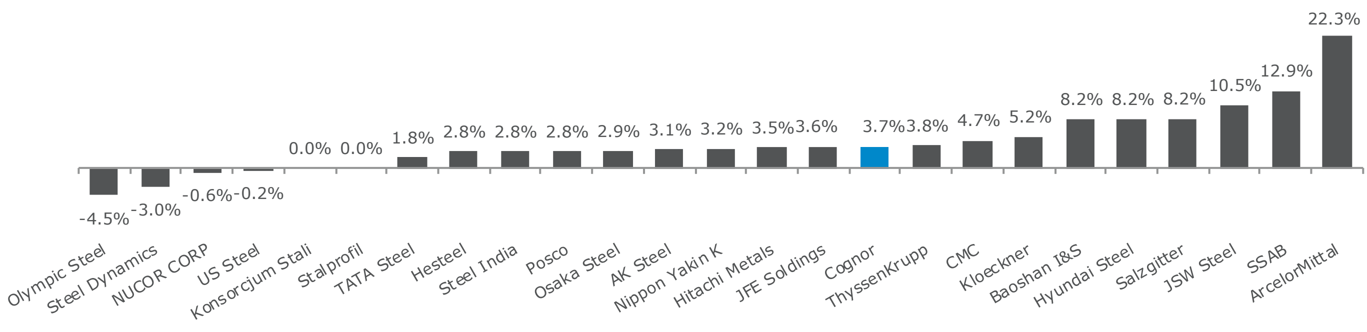
Exploration & Production Companies



Coal Producers



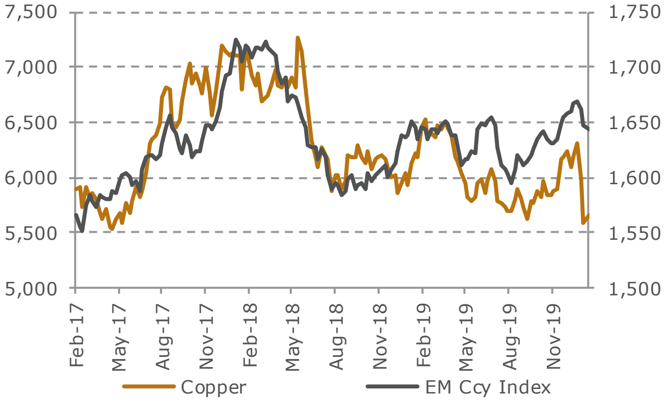
Steel Producers & Distributors



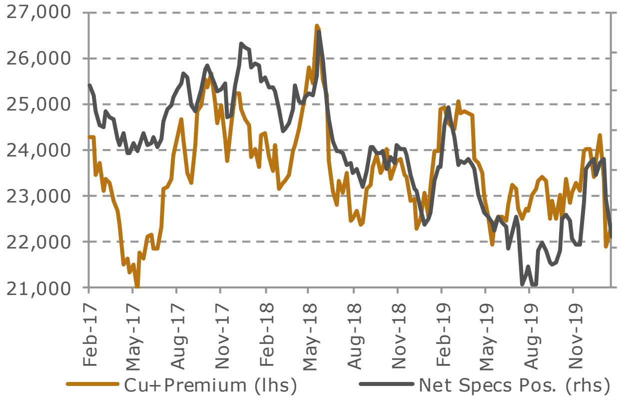
Source: Bloomberg, mBank

Copper Charts

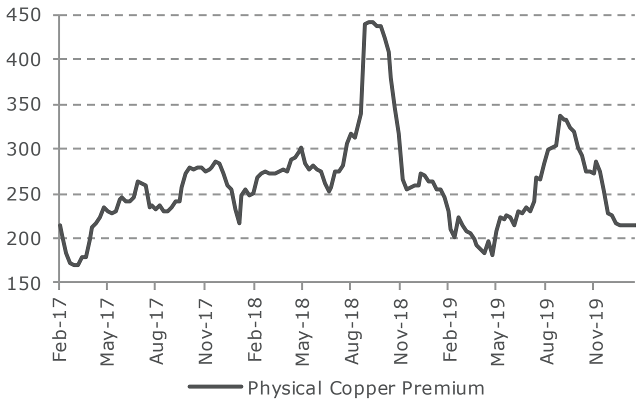
Cu Price (US$/t) vs. EM Currencies (pts.; rhs)



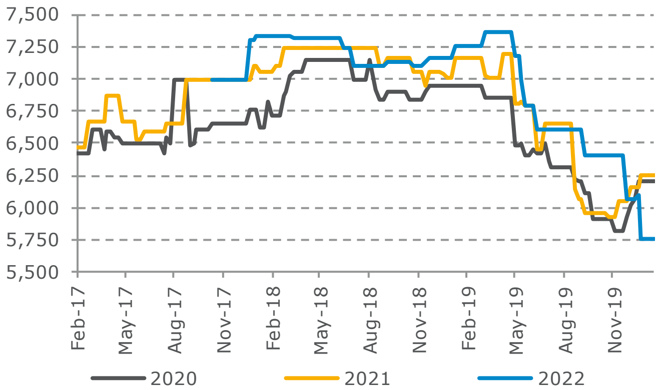
CU Price incl. Supplier Premium (PLN 1,000/t; lhs) vs. Net Speculative Positions (1,000, rhs)



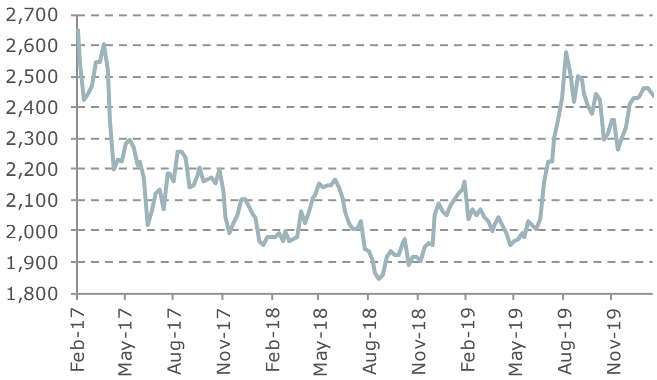
Physical Copper Premiums (PLN/t)



Copper Price Forecasts (median; US$/t)

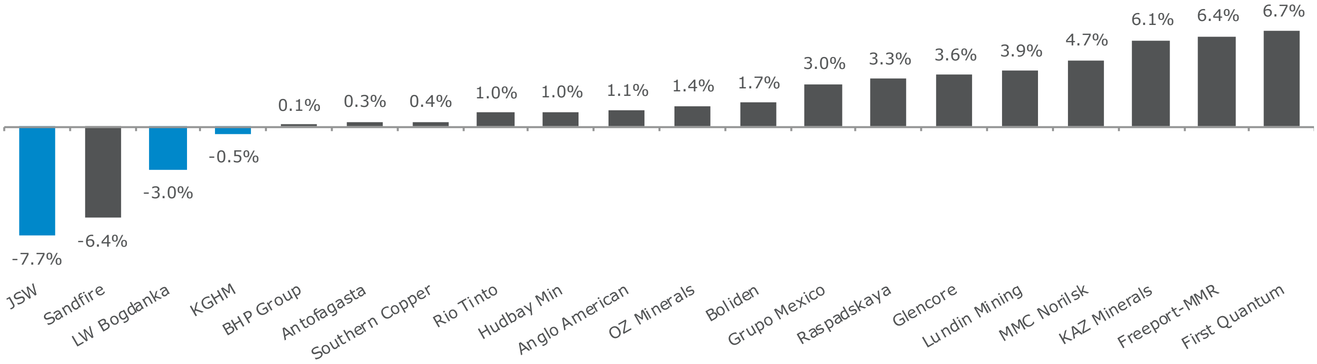


Silver prices (PLN/kg)



Prices of gold (PLN/oz)

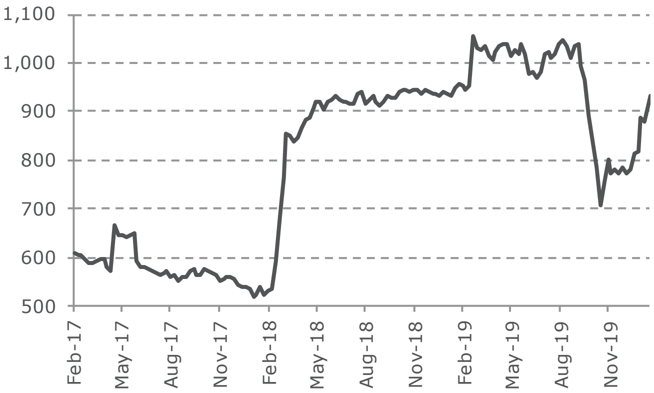
Weekly Returns of Metal & Mining Stocks



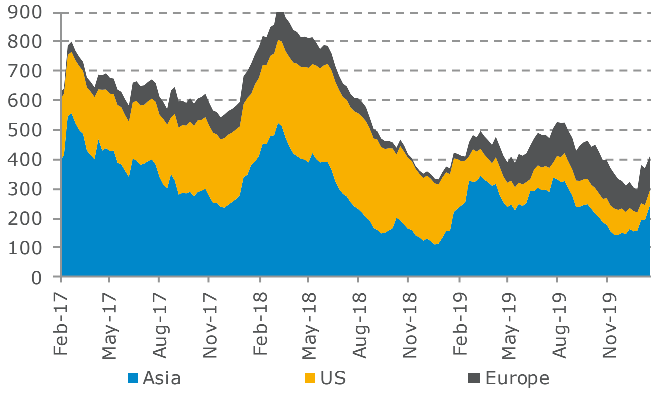
Source: Bloomberg, mBank

More Copper Charts

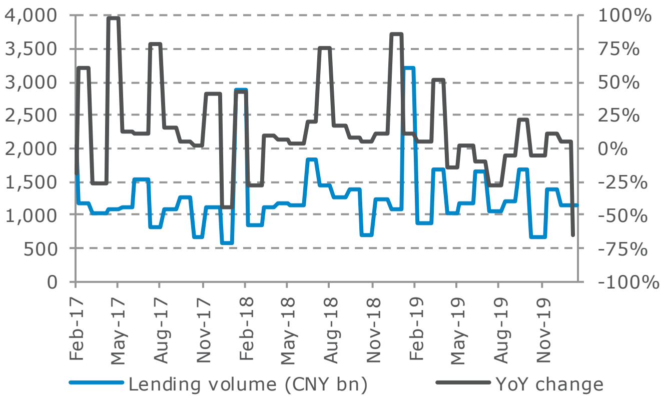
Prices of molybdenum (PLN/10 kg)



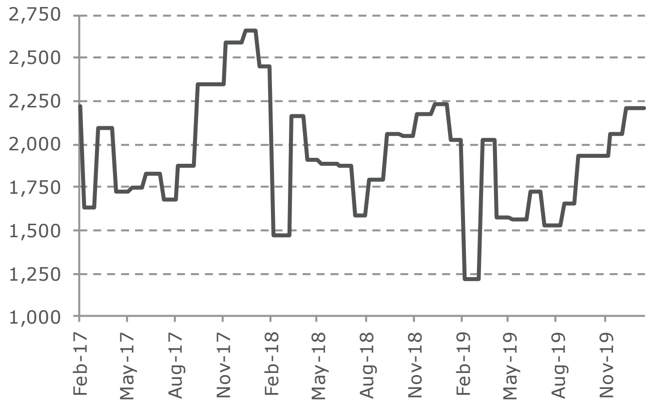
Global Copper Inventories (1,000t)



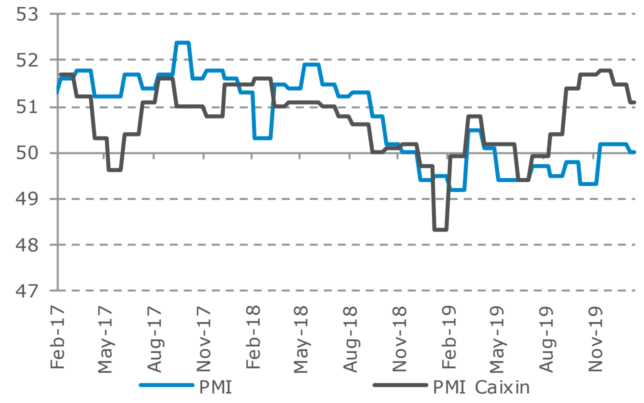
New Bank Lending in China (CNY bn)



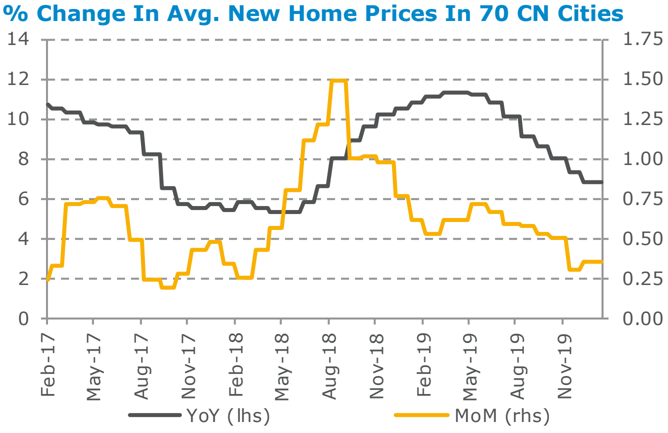
Car Sales in China (thousands)



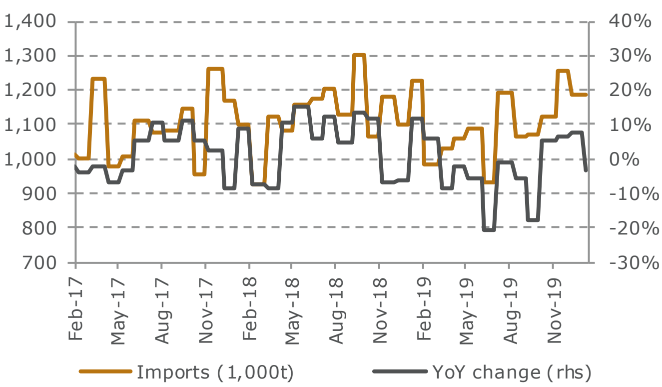
China PMI (points)



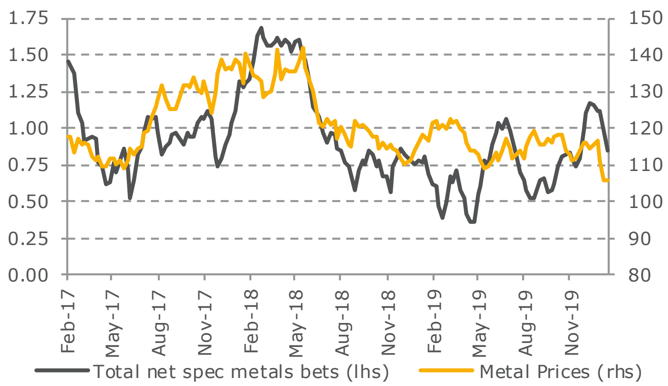
% Change In Avg. New Home Prices In 70 CN Cities



Chine Copper Imports (concentrates, refined metal, scrap)



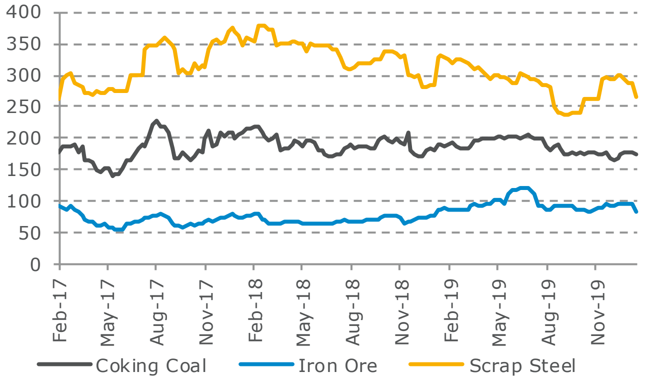
Metal Price Index (pts, rhs) vs. Net Speculative Positions (million contracts, lhs)



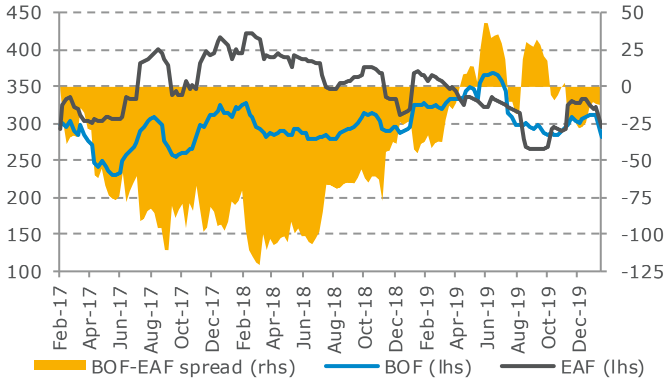
Source: Bloomberg, mBank

Steel Charts

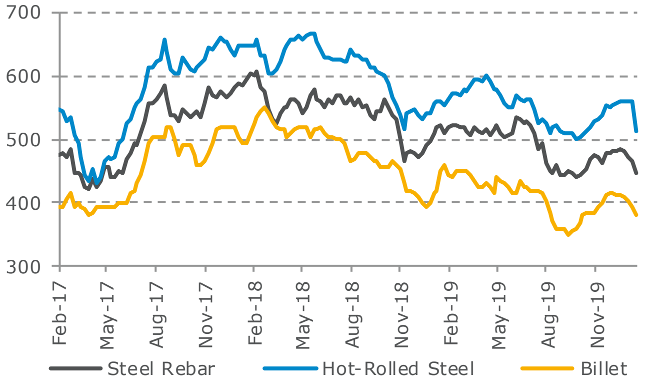
China Coking Coal & Iron Ore Prices, Rotterdam Scrap Steel Prices (US$/t)



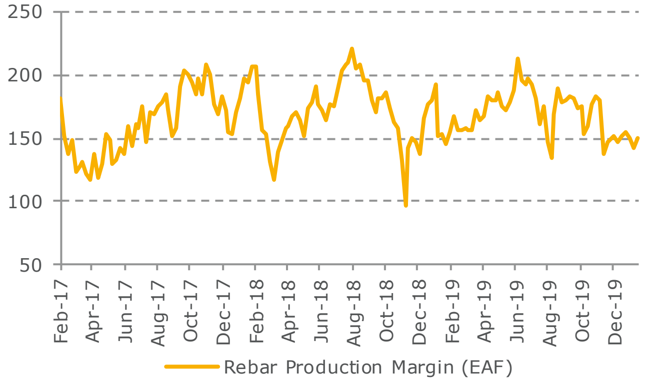
Production Costs of BOF vs. EAF Steel Producers (US$/t)



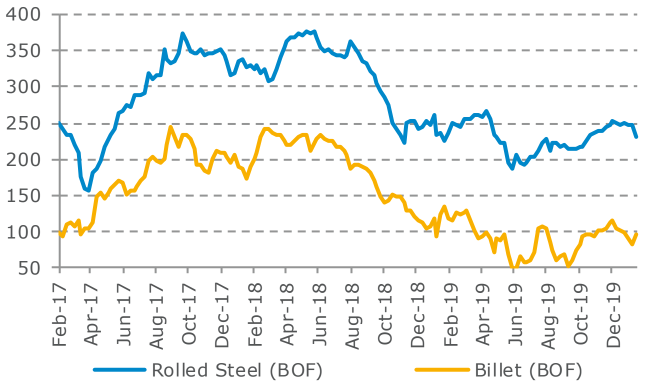
Prices of Steel Rebar & Hot-Rolled Steel (US$/t)



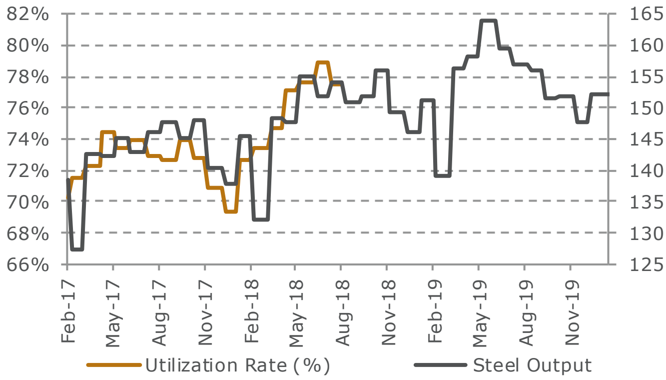
Rebar Production Margins of EAF Steelmakers (US$/t)



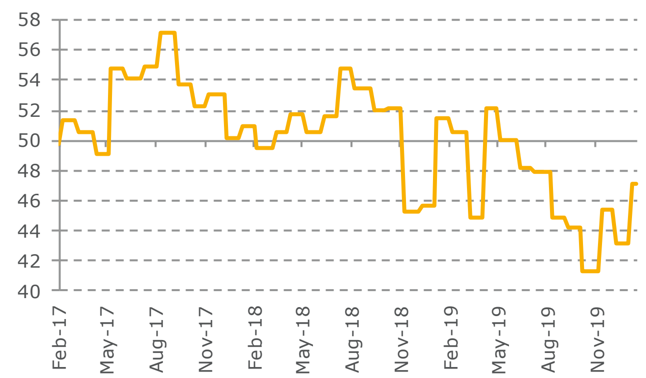
Rolled Steel & Billet Margins of BOF Steelmakers (US$/t)



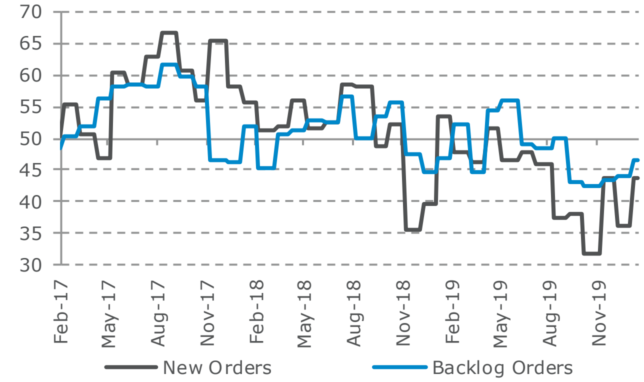
Global Steel Plant Capacity Utilization Rates & Output (Mt)



China Steel PMI (pts)



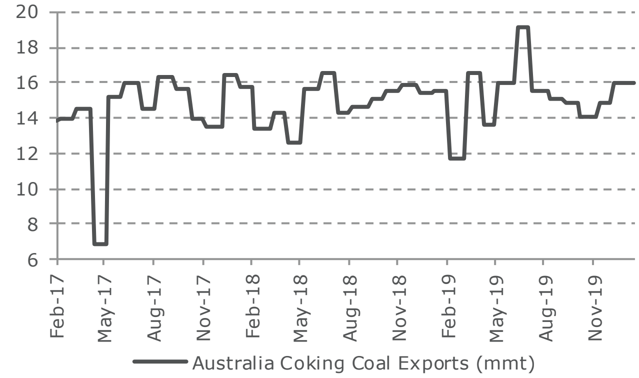
China Steel PMI New Orders & Backlog Orders (pts)



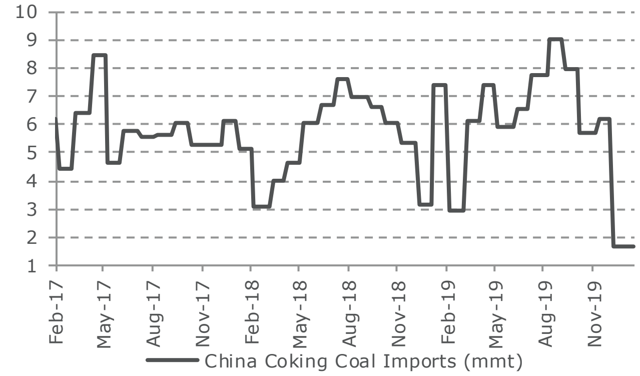
Source: Bloomberg, mBank

More Steel Charts

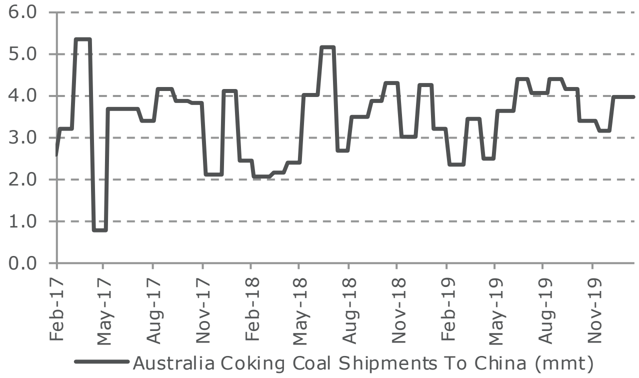
Australia Coking Coal Exports (mmt)



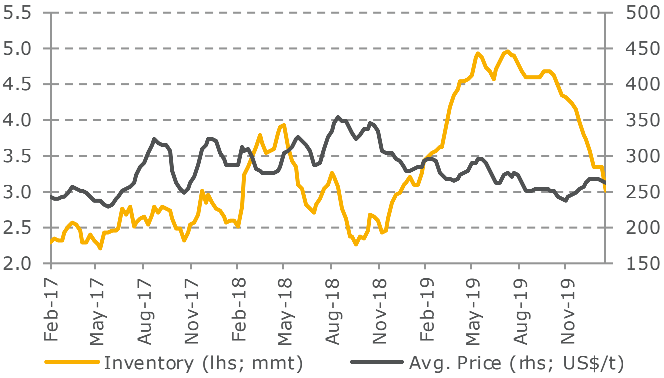
China Coking Coal Imports (mmt)



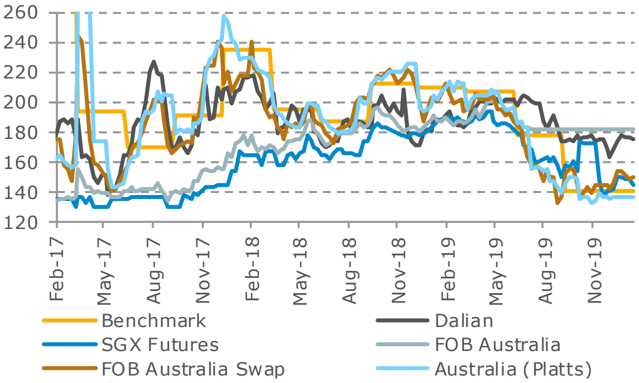
Australia Coking Coal Shipments To China (mmt)



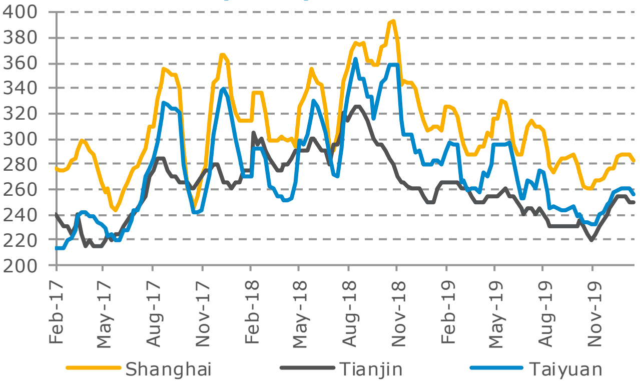
China Coke Inventories (lhs; mmt) & Average Prices (rhs; US$/t)



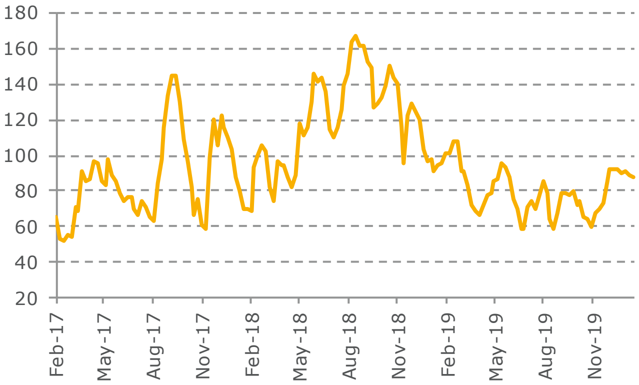
China Coking Coal Prices vs. Benchmark (US$/t)



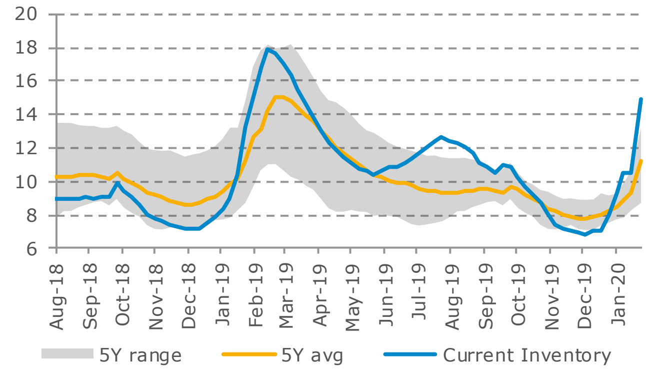
China Coke Prices (US$/t)



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



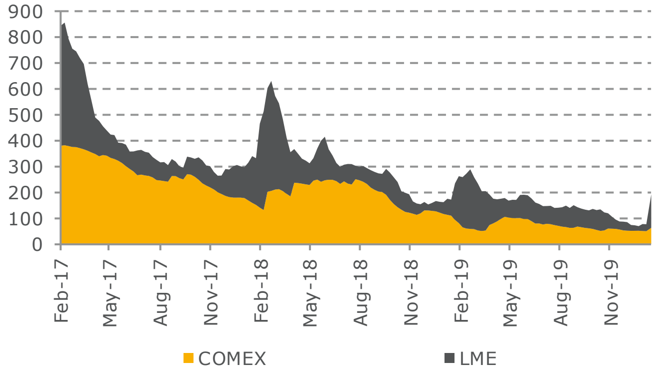
China Steel Inventory (mmt)



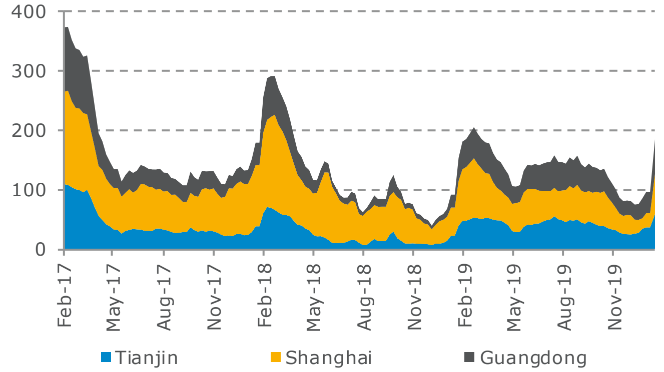
Source: Bloomberg, mBank

Zinc and Electrical Steel Charts

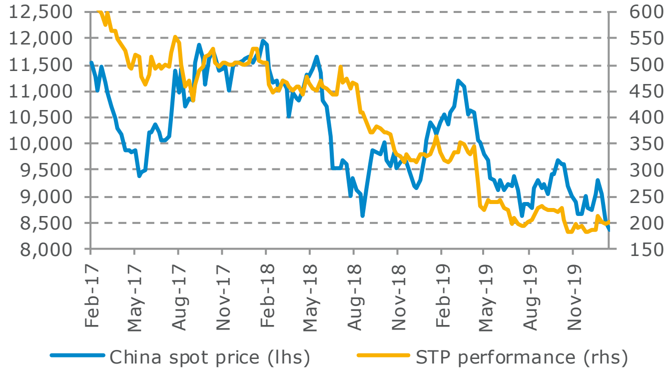
Exchange-Monitored Zinc Inventories (1,000t)



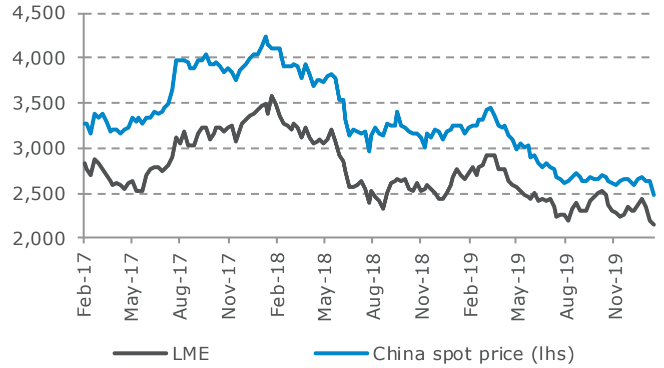
Zinc Inventories in Three Chinese Regions (1,000t)



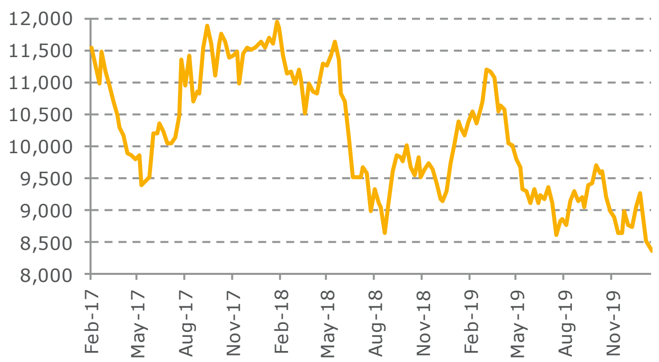
Zinc Prices vs. Stalprodukt Stock Performance (PLN)



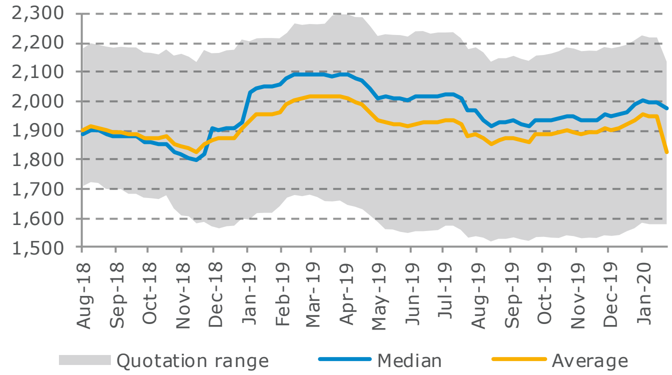
US Dollar Zinc Prices (US$/t)



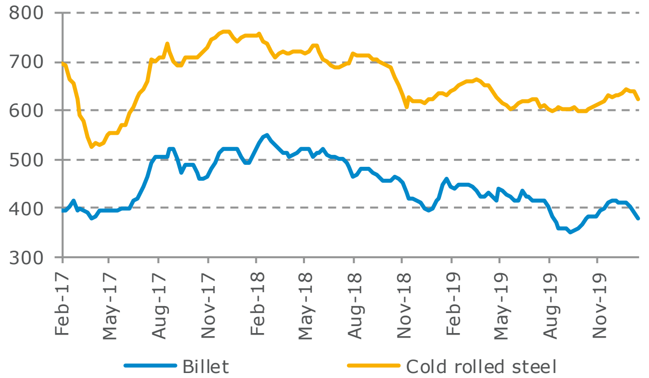
Polish Zloty Zinc Prices (PLN/t)



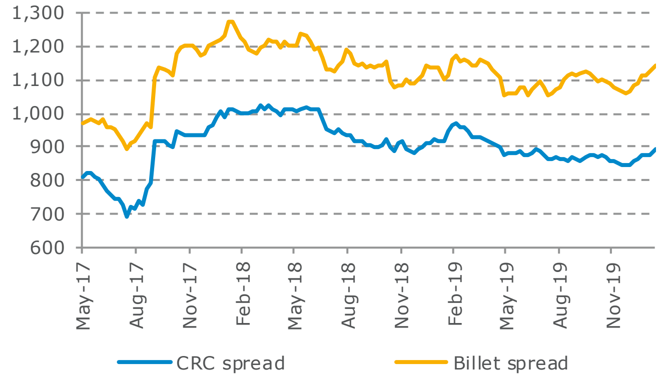
China Electrical Steel Prices (US$/t)



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



Electrical Steel Production Margins (US$/t)

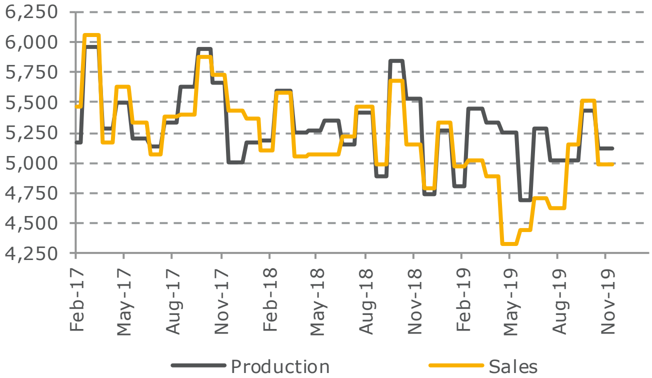


Source: Bloomberg, mBank

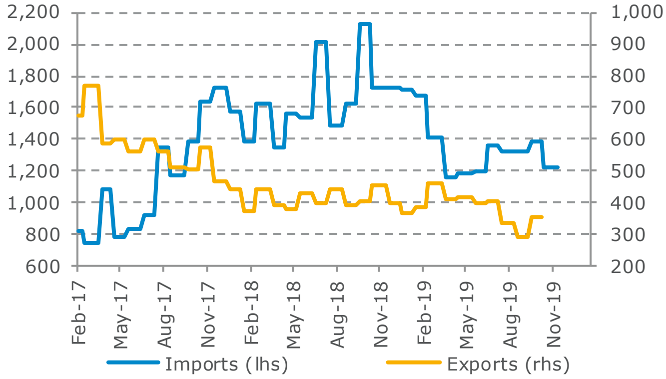
mBank Biuro maklerskie

Thermal Coal Charts

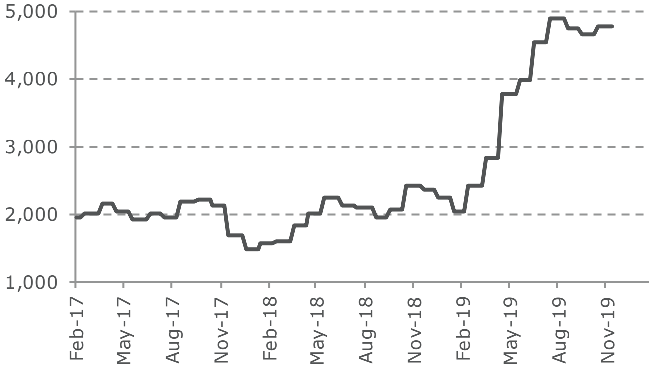
Hard Coal Production & Sales in Poland (1,000t)



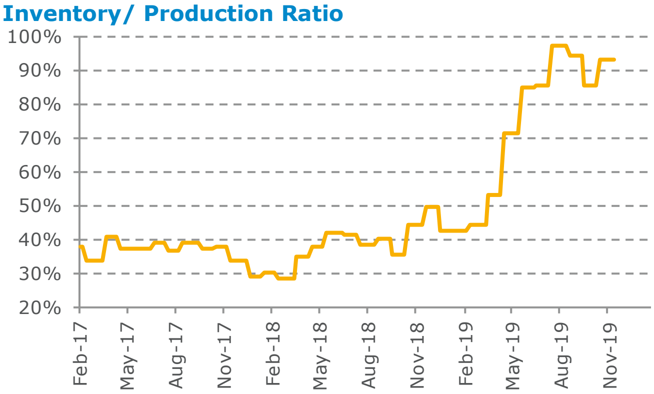
Poland Hard Coal Imports & Exports (1,000t)



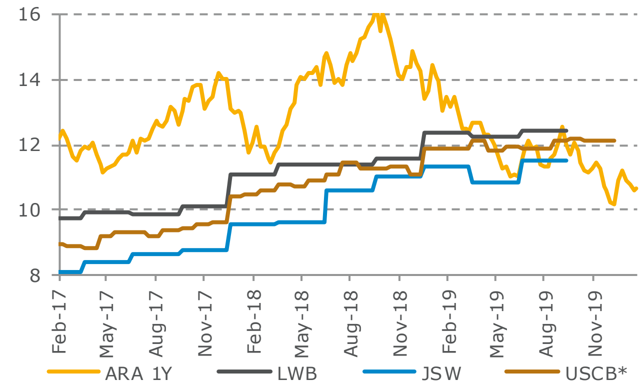
Hard Coal Stockpiled By Polish Mines (1,000t)



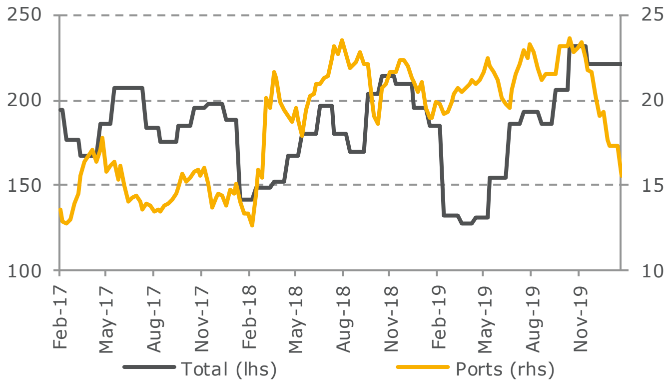
Inventory/ Production Ratio



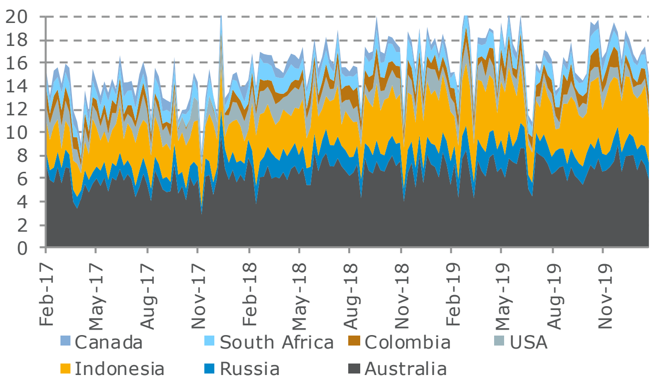
Thermal Coal Prices vs. Benchmarks (PLN/GJ)



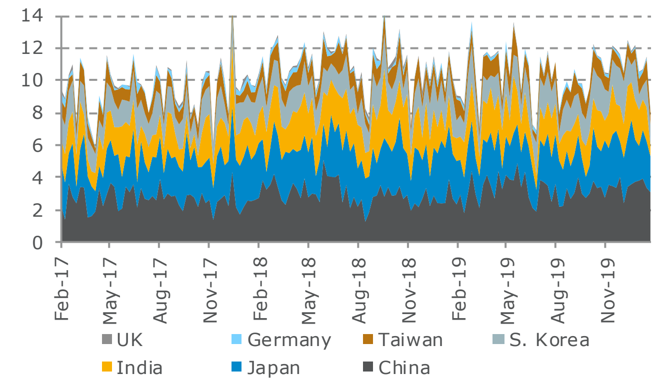
China Thrml Coal Inventories, Total & In Ports (mmt)



Thermal Coal Exports By Top Producers (mmt)



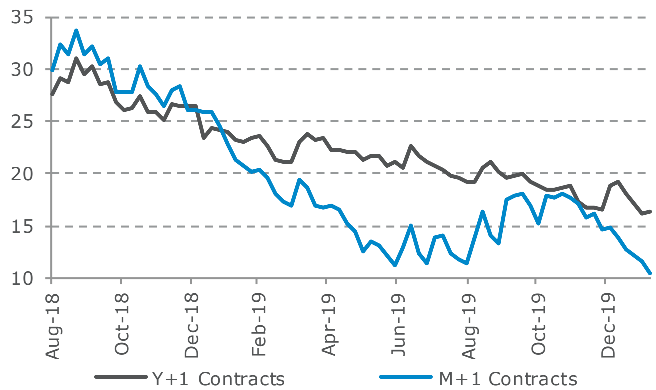
Thermal Coal Imports by Top Importers (mmt)



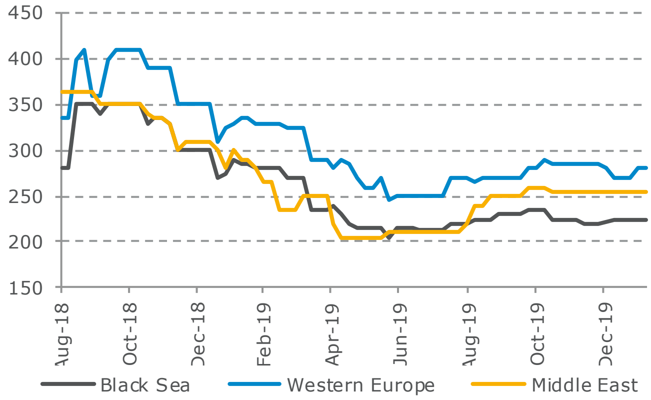
Source: Bloomberg, ARP, Eurostat, mBank *Upper Silesian Coal Basin

Fertilizer Charts

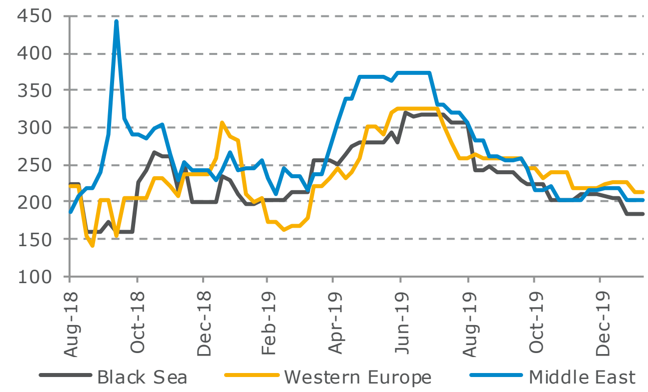
German NatGas Prices (US$/MWh)



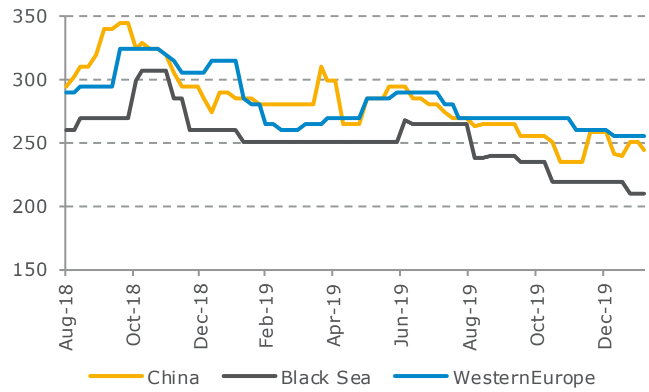
World Ammonia Prices (US$/t)



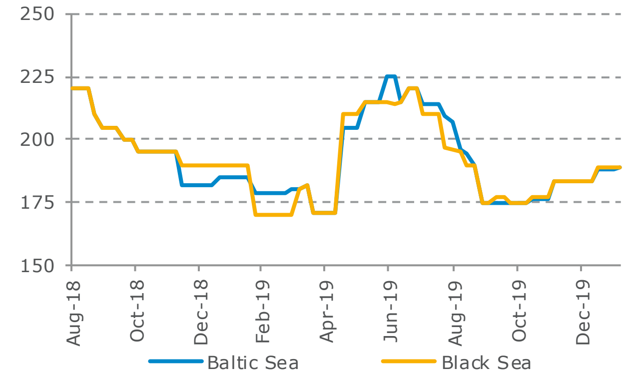
Urea-Ammonia Price Difference



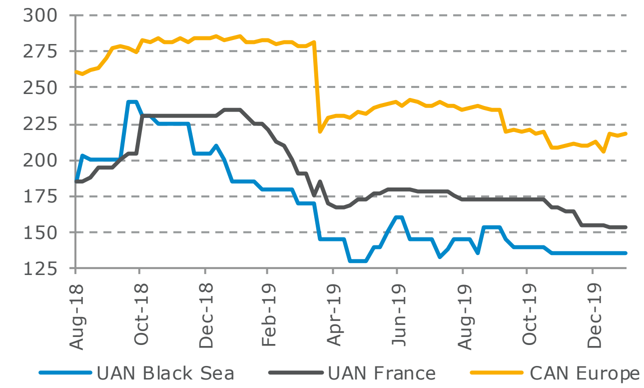
World Urea Prices (US$/t)



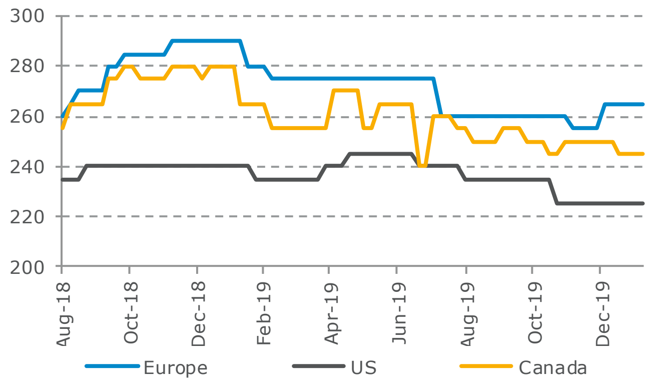
World Ammonium Nitrate Prices (US$/t)



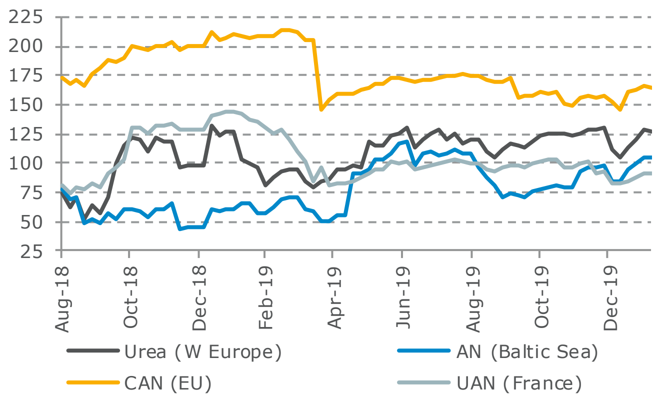
CAN & UAN prices (US$/t)



World Ammonium Sulfate Prices (US$/t)



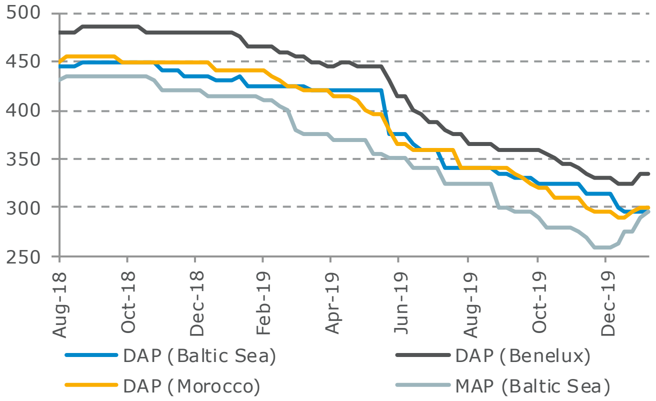
Production Margins On Nitrogen Fertilizers (US$/t)



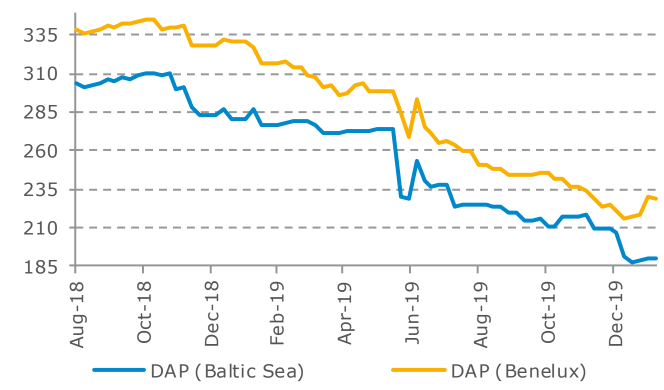
Source: Bloomberg, mBank

Fertilizer Charts

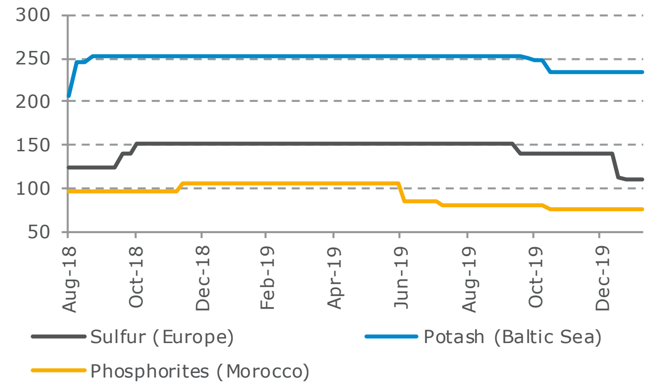
Prices of P & K Fertilizers (US$/t)



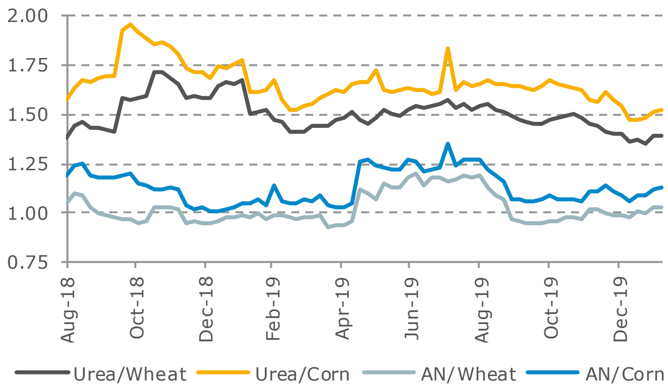
Production Margins on P & K Fertilizers (US$/t)



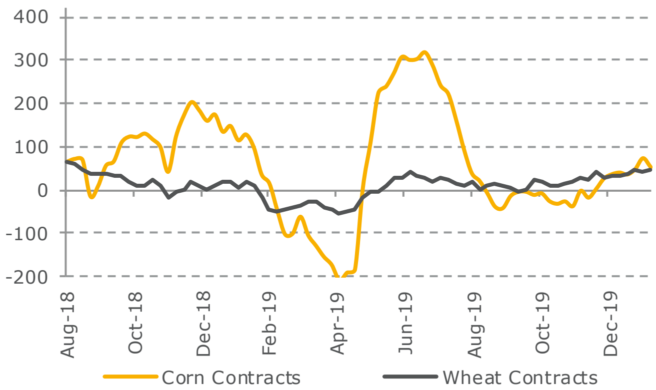
Prices of Sulfur, Potash & Phosphorites (US$/t)



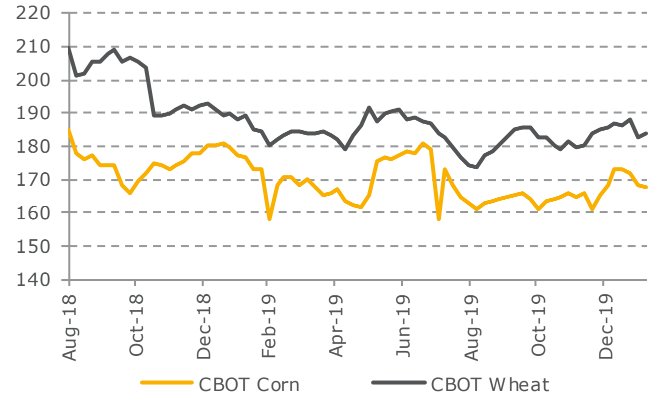
Fertilizer-to-Crop Price Ratios



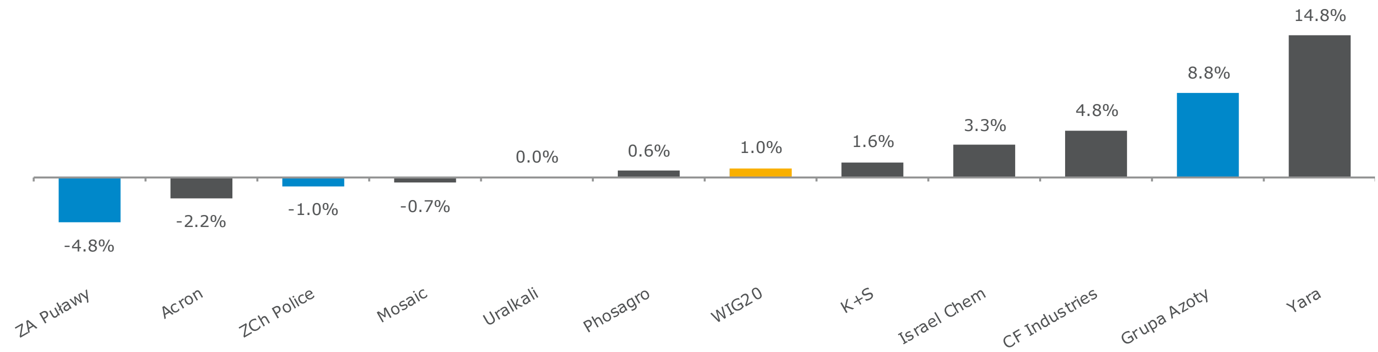
CBOT Open Positions In Corn and Wheat CBT



CBOT Corn and Wheat Prices (US$/t)



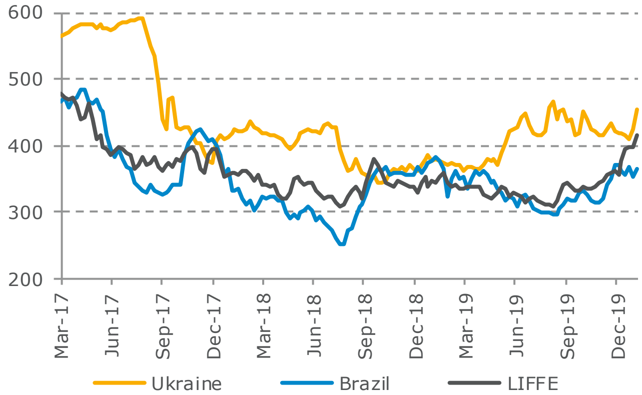
Weekly Returns of Fertilizer Stocks



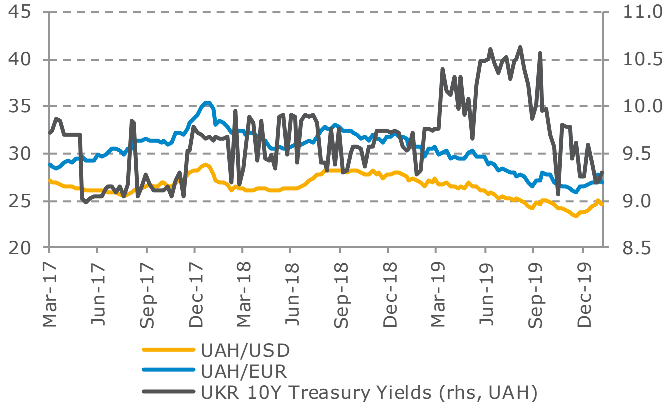
Source: Bloomberg, mBank

Agricultural Commodities

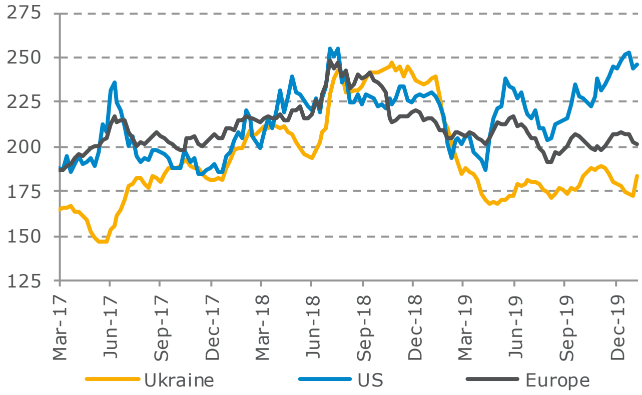
Sugar Prices (US$/Mt)



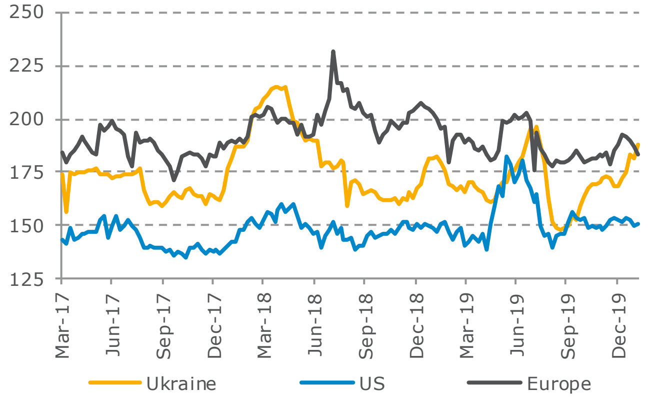
UAH Exchange Rates & Ukraine 10Y Treasury Yields



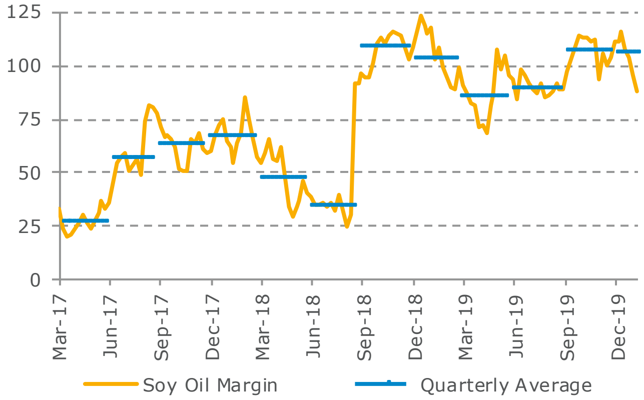
Wheat Prices (US$/Mt)



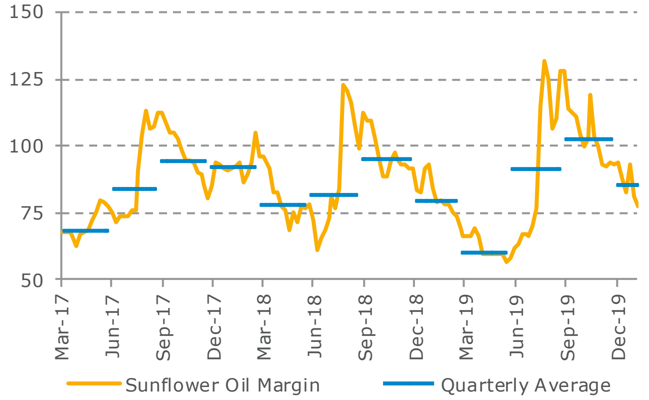
Corn Prices (US$/Mt)



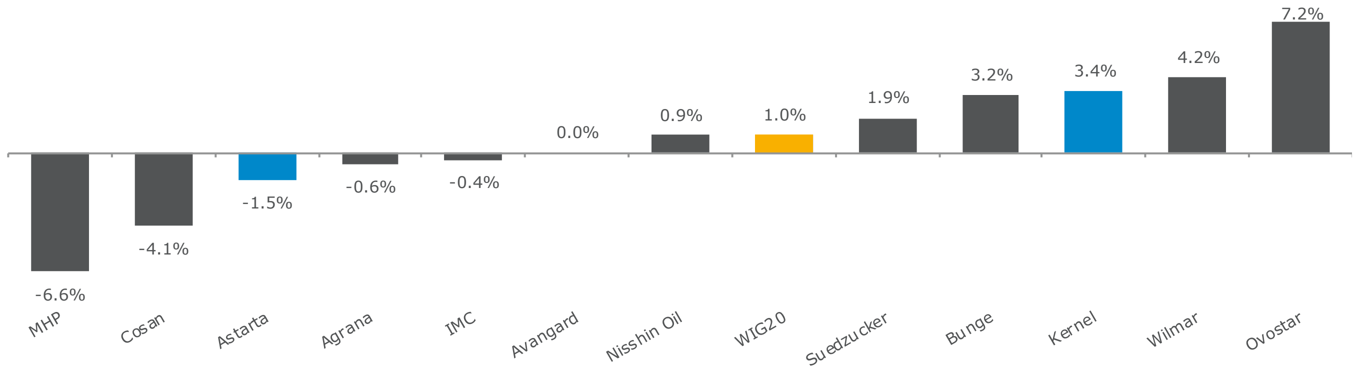
Model Margins on Soy Oil (US$/Mt)



Model Margins on Sunflower Oil (US$/Mt)



Weekly Returns of Agricultural Stocks



Source: Bloomberg, mBank

Comparison of Utility Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
UTILITIES	**Price**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**
CEZ	503.0	7.3	6.7	6.6	2.1	1.9	1.8	15.0	13.0	13.1	29%	28%	27%	4.8%	6.0%	6.9%
Enea	6.9	3.0	3.0	2.7	0.6	0.5	0.6	2.9	2.8	2.2	20%	18%	21%	0.0%	0.0%	3.6%
Energa	7.3	3.7	4.2	4.5	0.7	0.7	0.8	5.7	5.5	5.0	19%	17%	17%	0.0%	0.0%	0.0%
PGE	6.4	2.9	3.3	2.6	0.6	0.6	0.6	4.3	5.6	3.8	21%	17%	21%	0.0%	5.8%	4.5%
Tauron	1.5	4.0	3.7	3.2	0.7	0.6	0.6	2.8	2.3	1.9	18%	17%	19%	0.0%	0.0%	0.0%
ZE PAK*	7.4	0.7	0.9	0.9	0.1	0.1	0.1	4.0	4.2	3.2	12%	9%	11%	-	5.4%	8.1%
EDF	11.5	4.6	4.2	4.1	1.1	1.0	1.0	17.1	14.2	13.8	23%	24%	25%	2.7%	3.2%	3.4%
EDP	4.6	10.1	9.8	9.5	2.2	2.2	2.2	21.7	19.9	18.7	22%	22%	23%	4.1%	4.1%	4.3%
Endesa	25.0	8.7	8.4	8.2	1.6	1.6	1.6	17.1	16.1	15.6	19%	19%	19%	5.8%	6.1%	5.3%
Enel	8.2	8.6	8.3	7.9	1.9	1.9	1.9	17.2	15.6	14.7	22%	23%	24%	4.0%	4.5%	4.8%
EON	10.7	10.9	8.2	7.9	1.7	1.0	0.9	16.5	16.2	14.9	16%	12%	11%	4.3%	4.5%	4.7%
Fortum	22.0	14.5	11.1	13.7	4.5	4.4	4.4	12.9	14.4	14.3	31%	40%	32%	5.0%	5.0%	5.0%
Iberdola	10.4	11.7	11.0	10.4	3.1	3.0	2.9	19.6	18.3	17.4	27%	27%	28%	3.7%	3.9%	4.1%
National Grid	10.2	14.3	12.0	11.4	4.3	4.1	4.0	23.0	17.4	16.7	30%	34%	35%	4.5%	4.8%	4.9%
Red Electrica	18.3	9.6	9.4	9.5	7.5	7.3	7.4	13.8	14.8	15.0	78%	78%	78%	5.7%	5.7%	5.6%
RWE	32.6	9.5	6.4	5.5	1.5	1.2	1.2	19.4	19.6	14.5	16%	19%	21%	2.5%	2.8%	3.3%
SSE	16.0	11.9	13.6	12.5	1.1	3.1	3.0	11.6	18.8	16.3	9%	23%	24%	6.1%	5.0%	5.1%
Verbund	46.0	15.1	12.7	12.3	5.3	4.8	4.7	28.3	23.0	21.9	35%	37%	38%	1.6%	2.0%	2.2%
Median		**9.1**	**8.2**	**7.9**	**1.7**	**1.7**	**1.7**	**15.8**	**15.2**	**14.6**	**21%**	**22%**	**23%**	**4.0%**	**4.5%**	**4.6%**

Comparison of Gas & Oil Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
OIL REFINERS	**Price**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**
Lotos	73.70	5.7	5.0	4.7	0.6	0.6	0.5	11.7	9.4	9.8	10%	11%	11%	4.1%	4.1%	4.1%
MOL	2634.00	4.1	5.0	4.4	0.5	0.7	0.6	8.7	9.2	7.9	13%	13%	15%	5.4%	5.7%	6.0%
PKN Orlen	72.56	4.1	5.0	5.1	0.3	0.4	0.4	6.9	10.7	11.0	8%	7%	7%	4.8%	4.8%	4.8%
Hellenic Petroleum	7.78	6.8	5.6	5.6	0.5	0.5	0.4	11.4	6.9	6.6	7%	8%	8%	6.0%	6.1%	6.4%
HollyFrontier	43.39	5.3	5.6	6.0	0.6	0.6	0.5	8.8	9.0	10.1	11%	10%	9%	3.1%	3.3%	3.4%
Marathon Petroleum	55.07	6.9	5.4	5.6	0.5	0.5	0.5	13.8	8.2	9.2	7%	9%	9%	3.8%	4.2%	4.7%
Motor Oil	18.70	5.2	4.4	4.6	0.3	0.3	0.3	8.3	6.3	7.0	5%	6%	6%	6.9%	7.2%	7.5%
Neste Oil	38.22	10.5	13.0	11.7	1.8	2.0	1.9	16.4	20.1	17.9	18%	16%	16%	2.7%	2.7%	2.9%
OMV	43.17	4.4	4.1	4.0	1.1	1.1	1.0	8.4	8.4	7.7	24%	26%	26%	4.6%	4.9%	5.3%
Phillips 66	90.26	16.7	7.9	7.7	0.6	0.6	0.5	13.3	9.4	9.1	3%	7%	7%	4.0%	4.3%	4.6%
Saras	1.28	3.6	2.4	3.1	0.1	0.1	0.1	14.3	5.2	7.6	4%	6%	4%	5.1%	8.6%	7.0%
Tupras	111.20	8.7	5.1	4.8	0.4	0.4	0.3	24.9	6.5	5.8	5%	7%	7%	5.6%	13.2%	15.2%
Valero Energy	84.37	6.9	5.6	6.1	0.4	0.4	0.4	14.4	9.4	10.2	6%	6%	6%	4.3%	4.7%	5.0%
Median		**5.7**	**5.1**	**5.1**	**0.5**	**0.5**	**0.5**	**11.7**	**9.0**	**9.1**	**7%**	**8%**	**8%**	**4.6%**	**4.8%**	**5.0%**

Comparison of Petrochemical Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
PETROCHEMICALS	**Price**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**
PKN Orlen	72.56	4.1	5.0	5.1	0.3	0.4	0.4	6.9	10.7	11.0	8%	7%	7%	4.8%	4.8%	4.8%
Axiall	64.00	7.5	7.0	6.7	1.4	1.3	1.3	17.1	14.6	13.3	18%	19%	19%	1.6%	1.7%	1.8%
Braskem	31.39	7.7	7.9	7.0	1.1	1.1	1.0	-	100+	100+	14%	14%	14%	1.4%	0.9%	0.1%
Eastman Chemical	73.13	9.0	7.8	7.5	1.7	1.7	1.6	13.2	9.9	9.0	19%	21%	22%	3.1%	3.7%	3.9%
Huntsman Corp	20.56	7.9	8.1	7.4	1.0	1.0	1.0	11.8	10.9	9.2	12%	13%	13%	3.2%	3.3%	3.4%
Lotte Chemicals	209,500	5.1	5.7	4.9	0.6	0.6	0.6	10.0	9.3	7.8	12%	11%	12%	3.6%	3.4%	3.9%
LyondellBasell	81.93	7.3	6.7	6.2	1.1	1.2	1.1	8.6	8.0	7.2	16%	17%	18%	5.5%	5.5%	5.8%
Mitsubishi Chemical	794.20	7.3	7.6	7.2	0.9	0.9	0.9	6.7	9.8	9.0	12%	12%	13%	5.0%	5.0%	4.9%
Mitsui Chemicals	2590.00	6.9	7.7	7.1	0.7	0.7	0.7	6.7	12.7	9.6	10%	9%	10%	3.9%	3.9%	3.9%
Westlake Chemical	64.00	7.5	7.0	6.7	1.4	1.3	1.3	17.1	14.6	13.3	18%	19%	19%	1.6%	1.7%	1.8%
Median		**7.4**	**7.3**	**6.9**	**1.0**	**1.1**	**1.0**	**10.0**	**10.7**	**9.2**	**13%**	**13%**	**14%**	**3.4%**	**3.6%**	**3.9%**

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

Comparison of NatGas Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
	Price	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
GAS COMPANIES																
PGNiG	3.53	4.4	4.3	3.4	0.5	0.6	0.6	11.7	13.7	9.0	12%	13%	16%	3.1%	3.4%	2.9%
A2A	1.82	7.7	7.5	7.2	1.4	1.4	1.4	16.6	16.0	15.3	19%	19%	19%	4.3%	4.4%	4.6%
BG Group	19.74	5.4	4.7	4.5	0.8	0.8	0.8	12.8	10.4	9.3	15%	17%	17%	7.5%	7.4%	7.5%
BP	4.65	6.7	4.8	4.7	0.6	0.6	0.6	29.9	9.3	9.8	9%	13%	13%	6.9%	7.0%	7.2%
Centrica	0.83	4.8	4.9	5.4	0.3	0.4	0.4	11.3	9.2	8.6	7%	7%	7%	6.0%	6.0%	6.3%
Enagas	24.80	10.8	10.9	11.7	9.1	9.3	10.2	13.7	13.5	13.7	84%	86%	87%	6.5%	6.8%	6.8%
Endesa	25.00	8.7	8.4	8.2	1.6	1.6	1.6	17.1	16.1	15.6	19%	19%	19%	5.8%	6.1%	5.3%
Engie	15.63	6.9	6.6	6.3	1.1	1.0	1.0	15.2	13.7	12.3	16%	16%	16%	5.0%	5.3%	5.8%
Eni	12.78	3.8	3.6	3.4	0.9	0.9	0.9	14.3	11.1	9.9	24%	25%	25%	6.7%	6.9%	7.0%
Equinor	154.75	3.2	2.7	2.4	1.1	1.0	0.9	32.0	10.1	8.9	35%	36%	38%	1.5%	6.5%	6.8%
Gas Natural SDG	23.68	9.2	9.0	8.8	1.8	1.7	1.6	16.6	16.4	15.4	20%	19%	19%	5.7%	6.1%	6.4%
Gazprom	225.20	3.9	4.0	3.6	1.0	1.1	1.0	4.0	5.0	4.4	27%	26%	27%	6.7%	7.5%	11.0%
Hera	4.28	8.7	8.3	8.1	1.4	1.3	1.2	19.6	20.1	19.4	16%	16%	15%	2.4%	2.5%	2.6%
NovaTek	163.20	12.2	10.0	9.7	3.6	3.6	3.4	3.4	9.7	10.4	30%	36%	35%	2.8%	3.4%	3.6%
ROMGAZ	34.55	4.8	5.1	5.0	2.3	2.4	2.4	8.6	9.3	9.1	48%	48%	49%	9.6%	9.0%	9.7%
Shell	23.48	5.6	4.7	4.5	0.8	0.8	0.8	13.3	10.4	9.3	15%	17%	17%	7.2%	7.4%	7.5%
Snam	5.06	13.5	13.3	12.9	10.9	10.7	10.4	15.6	15.3	14.7	81%	81%	81%	4.8%	5.0%	5.2%
Total	44.58	5.0	4.5	4.3	0.9	0.8	0.8	11.9	9.8	9.2	19%	18%	19%	6.0%	6.3%	6.6%
Median		**6.1**	**5.0**	**5.2**	**1.1**	**1.0**	**1.0**	**14.0**	**10.8**	**9.9**	**19%**	**19%**	**19%**	**5.9%**	**6.2%**	**6.5%**

Comparison of E&P Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
	Price	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
E&P COMPANIES																
MOL	2634.00	4.6	4.3	4.0	0.6	0.6	0.6	7.6	7.0	6.4	14%	15%	15%	4.8%	5.2%	5.7%
Bashneft	2004.50	2.1	2.0	1.8	0.5	0.5	0.5	3.1	3.0	2.5	24%	24%	25%	10.7%	10.5%	11.5%
BP	4.65	6.7	4.8	4.7	0.6	0.6	0.6	29.9	9.3	9.8	9%	13%	13%	6.9%	7.0%	7.2%
Dana Gas	0.90	6.6	5.9	-	3.4	3.1	3.0	12.3	12.3	12.3	51%	53%	-	6.6%	6.6%	7.8%
Eni	12.78	3.8	3.6	3.4	0.9	0.9	0.9	14.3	11.1	9.9	24%	25%	25%	6.7%	6.9%	7.0%
Equinor	154.75	3.2	2.7	2.4	1.1	1.0	0.9	32.0	10.1	8.9	35%	36%	38%	1.5%	6.5%	6.8%
Gazprom Neft	440.00	4.3	4.4	4.1	1.1	1.1	1.0	5.2	5.3	5.0	26%	25%	25%	8.2%	9.2%	10.2%
Gulf Keystone	1.78	2.3	1.4	1.0	1.3	0.9	0.7	10.3	5.7	3.6	60%	66%	69%	8.4%	6.2%	7.5%
Lukoil	6410.00	3.9	4.1	4.0	0.6	0.6	0.6	6.8	7.1	7.1	16%	16%	16%	6.9%	11.2%	11.0%
Occidental Petroleum	40.50	10.1	8.0	7.6	4.7	3.9	3.8	21.0	43.5	23.2	46%	48%	51%	7.7%	7.8%	7.9%
Repsol	12.59	4.5	4.0	4.0	0.6	0.6	0.6	8.9	7.0	7.0	14%	16%	16%	7.7%	8.0%	8.2%
Rosneft Oil	450.00	4.3	4.1	3.8	1.0	1.1	1.0	6.5	5.7	5.1	24%	25%	26%	7.2%	8.5%	9.7%
Shell	23.48	5.6	4.7	4.5	0.8	0.8	0.8	13.3	10.4	9.3	15%	17%	17%	7.2%	7.4%	7.5%
Surgutneftegas	35.14	-	-	-	-	-	-	5.3	3.8	3.9	-	-	-	4.2%	8.1%	7.1%
Total	44.58	5.0	4.5	4.3	0.9	0.8	0.8	11.9	9.8	9.2	19%	18%	19%	6.0%	6.3%	6.6%
Tullow Oil	0.45	4.0	4.9	5.2	3.0	3.4	3.5	4.0	7.5	9.4	73%	68%	67%	6.0%	2.2%	3.1%
Median		**4.3**	**4.3**	**4.0**	**0.9**	**0.9**	**0.8**	**9.6**	**7.3**	**8.0**	**24%**	**25%**	**25%**	**6.9%**	**7.2%**	**7.5%**

Comparison of Mining Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
	Price	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
MINING COMPANIES																
JSW	18.20	0.7	3.0	3.1	0.1	0.2	0.3	4.6	-	-	19%	8%	10%	9.4%	0.0%	0.0%
KGHM	92.16	4.6	4.5	5.3	1.1	1.1	1.1	8.3	8.2	11.8	24%	24%	20%	0.0%	1.6%	3.7%
LW Bogdanka*	29.00	1.0	1.0	1.1	0.3	0.3	0.3	3.2	4.2	5.7	36%	34%	31%	3.2%	7.2%	7.4%
Anglo American	20.15	4.4	4.3	4.6	1.5	1.5	1.5	9.4	9.5	10.6	34%	34%	32%	4.2%	4.2%	3.8%
Antofagasta	8.38	5.6	5.5	5.1	2.7	2.7	2.5	21.3	20.0	17.2	49%	49%	50%	2.5%	2.4%	3.4%
BHP Group	16.57	6.0	5.7	6.1	3.0	3.0	3.1	13.4	10.8	12.0	50%	53%	51%	6.2%	6.5%	5.9%
Freeport-McMoRan	12.17	13.4	9.6	5.4	2.3	2.2	1.9	-	28.4	10.1	17%	23%	35%	1.6%	1.6%	1.8%
Glencore	2.30	6.7	6.1	5.6	0.4	0.4	0.3	18.1	13.4	10.5	5%	6%	6%	6.2%	5.8%	5.7%
Grupo Mexico	51.98	6.1	5.8	5.5	2.8	2.7	2.5	12.9	12.0	11.3	46%	46%	46%	6.7%	5.7%	8.2%
Kazakhmys	4.69	4.7	4.7	4.6	2.6	2.5	2.4	6.1	6.1	5.9	54%	53%	52%	1.6%	1.7%	1.6%
Rio Tinto	41.23	4.9	5.4	6.0	2.4	2.5	2.6	8.6	9.5	11.6	49%	46%	44%	8.2%	6.6%	5.7%
Southern CC	38.34	9.9	9.4	9.1	4.9	4.7	4.6	18.9	17.4	16.7	50%	50%	50%	4.2%	4.2%	4.1%
Median		**5.3**	**5.4**	**5.4**	**2.4**	**2.4**	**2.1**	**9.4**	**10.8**	**11.3**	**41%**	**40%**	**39%**	**4.2%**	**4.2%**	**4.0%**
ALUMINUM PRODUCERS																
Grupa Kęty	385.50	8.8	9.6	9.8	1.4	1.5	1.5	13.1	15.1	15.5	16%	15%	15%	6.2%	6.1%	5.0%
Alcoa	15.42	10.0	4.2	3.5	0.5	0.5	0.5	-	-	32.3	5%	13%	15%	-	-	-
Constellium	12.71	6.6	6.3	5.8	0.6	0.6	0.6	28.2	12.2	8.6	10%	10%	11%	-	-	-
Kaiser Aluminum	103.45	8.6	8.0	7.8	1.2	1.2	1.2	15.3	13.8	13.0	14%	15%	15%	2.3%	2.4%	2.5%
Norsk Hydro	27.43	7.3	4.9	4.2	0.5	0.5	0.5	-	15.3	10.1	7%	10%	11%	9.1%	4.7%	5.0%
Rusal	4.25	15.3	11.5	9.4	1.5	1.6	1.5	6.5	5.1	4.8	10%	13%	15%	1.6%	3.6%	4.6%
Median		**8.7**	**7.2**	**6.8**	**0.9**	**0.9**	**0.9**	**14.2**	**13.8**	**11.5**	**10%**	**13%**	**15%**	**4.3%**	**4.1%**	**4.8%**

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

Comparison of Fertilizer Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
	Price	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
FERTILIZER PRODUCERS																
Grupa Azoty	27.48	4.3	5.7	7.7	0.5	0.6	0.8	6.8	12.5	52.4	13%	11%	10%	0.0%	0.0%	0.0%
ZA Police*	10.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acron	4782.00	8.7	7.6	7.3	2.7	2.4	2.2	9.7	7.9	7.8	31%	32%	30%	6.8%	6.9%	7.2%
CF Industries	41.67	9.8	9.4	9.0	3.4	3.4	3.3	19.5	17.9	15.0	35%	36%	37%	2.9%	2.9%	3.0%
Israel Chemicals	14.20	6.5	6.4	6.1	1.5	1.4	1.3	10.7	10.4	9.4	22%	22%	22%	4.9%	4.7%	5.1%
K+S	8.94	7.9	7.3	6.4	1.2	1.2	1.1	18.8	15.1	8.7	16%	16%	18%	2.7%	3.3%	4.2%
Phosagro	2440.00	5.8	6.1	5.6	1.8	1.8	1.8	8.1	10.4	10.4	31%	30%	31%	7.2%	4.9%	4.9%
The Mosaic Company	19.83	8.6	7.7	6.3	1.4	1.4	1.3	47.4	21.7	12.2	16%	18%	20%	1.0%	1.1%	1.3%
Yara International	386.00	8.2	6.5	5.9	1.2	1.1	1.0	19.9	12.1	10.3	15%	17%	17%	1.7%	4.6%	5.4%
Median		**8.1**	**6.9**	**6.3**	**1.4**	**1.4**	**1.3**	**14.8**	**12.3**	**10.3**	**19%**	**20%**	**21%**	**2.8%**	**3.9%**	**4.5%**

Comparison of Agricultural Company Valuations

		EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
	Price	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
AGRI PRODUCERS																
Astarta*	16.20	6.4	3.9	3.8	0.8	0.8	0.7	-	3.0	2.6	13%	19%	19%	-	-	5.0%
Kernel	48.50	5.0	6.5	5.8	0.4	0.5	0.5	5.9	8.1	7.3	9%	8%	8%	1.8%	2.0%	1.9%
Agrana Beteiligungs	19.00	11.1	8.7	7.5	0.7	0.7	0.7	46.3	23.5	16.8	6%	8%	9%	5.3%	5.5%	5.8%
Bunge Limited	54.67	10.4	10.1	9.7	0.4	0.3	0.3	19.0	15.6	12.8	3%	3%	3%	3.7%	4.0%	4.4%
Cosan	78.90	6.8	6.4	5.9	0.6	0.5	0.5	15.2	15.2	13.9	8%	8%	9%	1.9%	1.7%	2.1%
MHP	8.20	5.1	4.9	4.4	1.2	1.1	1.1	5.7	6.0	4.5	23%	23%	24%	9.1%	9.1%	9.1%
Nisshin Oillio	3730.00	8.9	8.5	8.2	0.5	0.5	0.5	14.1	14.2	13.7	6%	6%	6%	2.1%	2.1%	2.1%
Suedzucker	15.86	-	12.2	7.7	0.8	0.8	0.8	-	-	15.8	-	7%	10%	1.3%	1.3%	1.9%
Wilmar Int.	4.01	14.2	12.8	12.0	0.8	0.7	0.7	16.1	13.9	12.6	6%	6%	6%	2.6%	2.8%	3.1%
Median		**7.8**	**8.5**	**7.5**	**0.7**	**0.7**	**0.7**	**15.2**	**14.1**	**12.8**	**7%**	**8%**	**9%**	**2.4%**	**2.5%**	**3.1%**

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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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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