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Tuesday Espresso

Weekly Commodity Roundup

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Utilities

German power prices have gone up by EUR 1.5/MWh in the past week, currently trading at EUR 46.5/MWh, after a similar rebound to EUR 24.5/t in emission prices, coupled with a slight rise in fuels. At the same time, year-ahead contracts in Poland have dropped from PLN 254 to 246/MWh, dragging the implied model margin for a vertically-integrated coal power plant down from PLN 164 to 152/MWh. As a result, the PL/DE cross-border price spread has tightened from PLN 60 to 47/MWh. Green certificates continue to trade higher at PLN 150/MWh.

Gas & Oil

Model refining margins remain tight at ca. $3/bbl as decreasing HSFO cracking spreads continue to weigh (amid an inventory clearout leading up to the entry into force of IMO 2020). Gasoline cracks have also narrowed over the past week, but expanding margins on middle distillates have more than offset the falls. Refiners in Europe have been enjoying improved Urals differentials to Brent, which bounced to $1.5/bbl after three weeks in the negative territory. Margins on petrochemicals are still shrinking across the whole product mix, including olefins, polyolefins, products, butadiene, and PTA. In the EU gas market, prices are starting to lift as more gas comes out of storage.

Metals

Speculative traders were opening short copper positions over the past week, with contracts up from -26k to -35k, representing the second week in a row of higher bearish bets. Exchange-monitored copper inventories remained stable during the week.

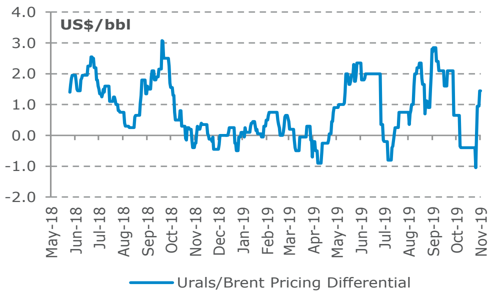
Coking Coal

Coke inventories in China have dropped again from 4.5mmt a week ago to 4.3mmt versus a high of 5.0mmt. According to Platts, Chinese coking coal producers are not anticipating a drop in prices of 2020 Q1 deliveries. At the moment local prices hover around $180/t vs. $133-140/t in the seaborne market. If rates in the Chinese market hold up, this will have a positive effect on prices in other areas of the world.

1-Week & YTD Performance

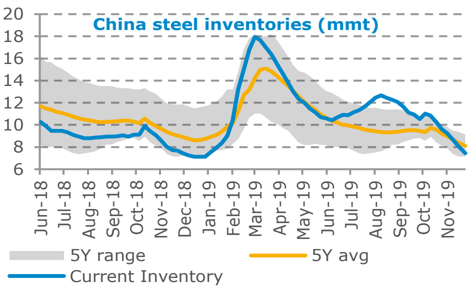
Company	1W	YTD
PKN Orlen	-7.2%	-10%
Ciech	-5.7%	-21%
Grupa Azoty	-4.5%	+5%
KGHM	-3.2%	+4%
PGNiG	-3.2%	-31%
ZA Puławy	-2.2%	+37%
Boryszew	-1.9%	-12%
Lotos	-1.8%	+2%
Kernel	-1.7%	-15%
PCC Rokita	-1.4%	-34%
Tauron	-1.0%	-18%
Tupras	-1.0%	+18%
Astarta	-0.9%	-32%
MOL	-0.9%	+2%
JSW	-0.7%	-68%
PGE	-0.7%	-13%
CEZ	-0.7%	-0%
Orzeł Biały	-0.4%	+8%
Impexmetal	-0.2%	+35%
ZCh Police	+0.0%	-14%
OMV	+0.2%	+44%
ZE PAK	+0.5%	-2%
Kęty	+1.1%	+6%
IMC	+2.2%	+18%
Enea	+2.5%	-9%
Tarczyński	+2.6%	-8%
Kruszwica	+2.7%	+23%
Energa	+3.5%	-24%
LW Bogdanka	+4.2%	-24%
WIG Indices	**1W**	**YTD**
WIG	-1.2%	+1%
Chemicals	-4.4%	-9%
Energy	+0.0%	-13%
Oil & Gas	-5.6%	-12%
Food Industry	-1.0%	-13%
Basic Material	-2.8%	-13%
Ukraine	-0.1%	-14%
Sector Indices	**1W**	**YTD**
Mining	+1.9%	+18%
Oil & Gas E&P	+2.3%	+3%
Refining EU	-2.6%	+6%
Refining US	-2.6%	+26%
Agri & Food	-0.2%	+31%
Rubber	+0.4%	+21%
Fertilizers	+0.9%	+0%
Chemicals EU	-0.5%	+22%
Industrials EU	+0.7%	+35%
Petchem World	-0.7%	+7%
Utilities EU	-0.3%	+26%
Utilities US	-0.4%	+21%

Charts of the Week



Urals regains discount to Brent

Despite the forthcoming entry into force of the IMO 2020 regulations, the usual discount in the price of the Urals crude oil blend versus the benchmark Brent grade a few weeks ago turned into a premium created by lower supply. At the moment the price differential is going back to normal supported by reports of a 15% rebound in December oil loadings for export at the Primorsk and Ust-Luga ports.



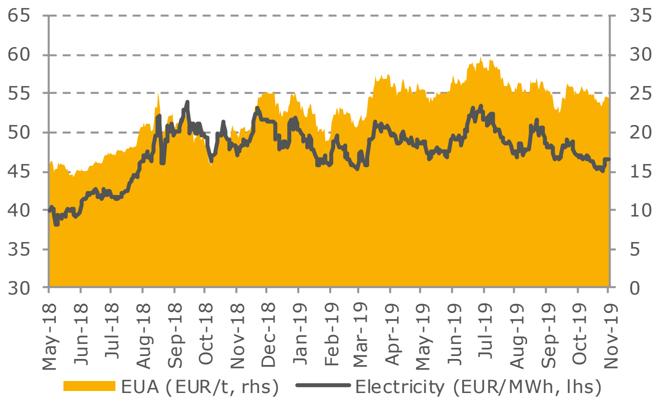
Source: Bloomberg, Dom Maklerski mBanku

China steel inventories keep falling

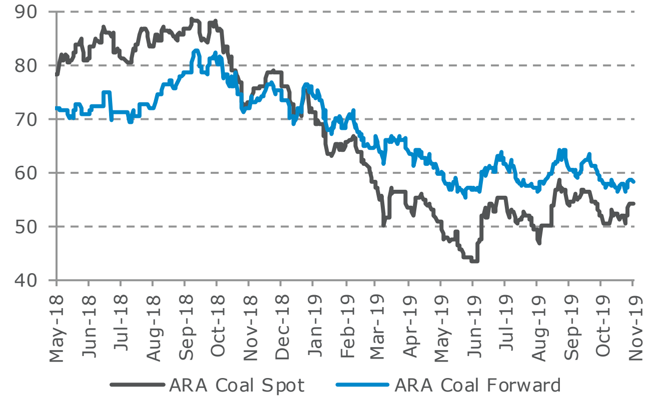
Steel inventories in China have dropped again from 8.1mmt a week ago to 7.5mmt, inching closer toward their five-year low of 7.1mmt. As inventories run low, steel prices in China are seen to be moving higher (see chart son page 10), and there is a chance for an accelerated recovery depending on the next steel PMI print (a positive catalyst for JSW).

Utilities

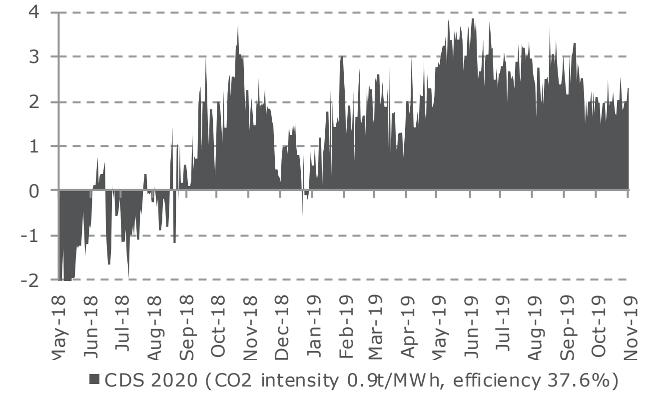
EU Prices of Electricity (EUR/MWh) & EUAs (EUR/t)



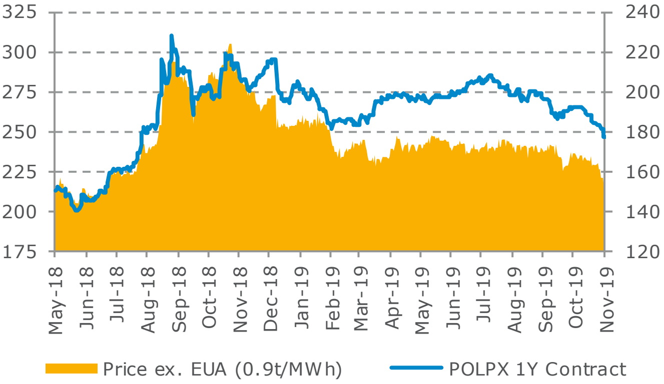
ARA Coal Spot and Forward Prices (EUR/t)



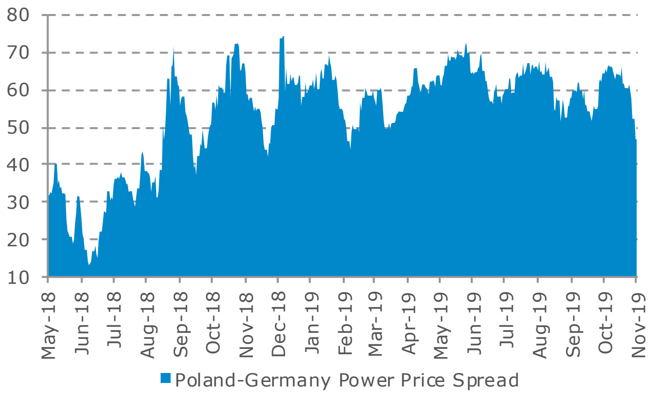
Clean-Dark Spread, Germany (EUR/MWh)



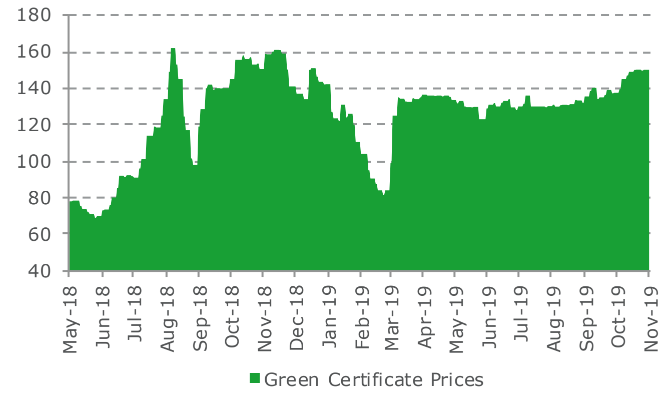
Polish Electricity Prices (1Y) (PLN/MWh)



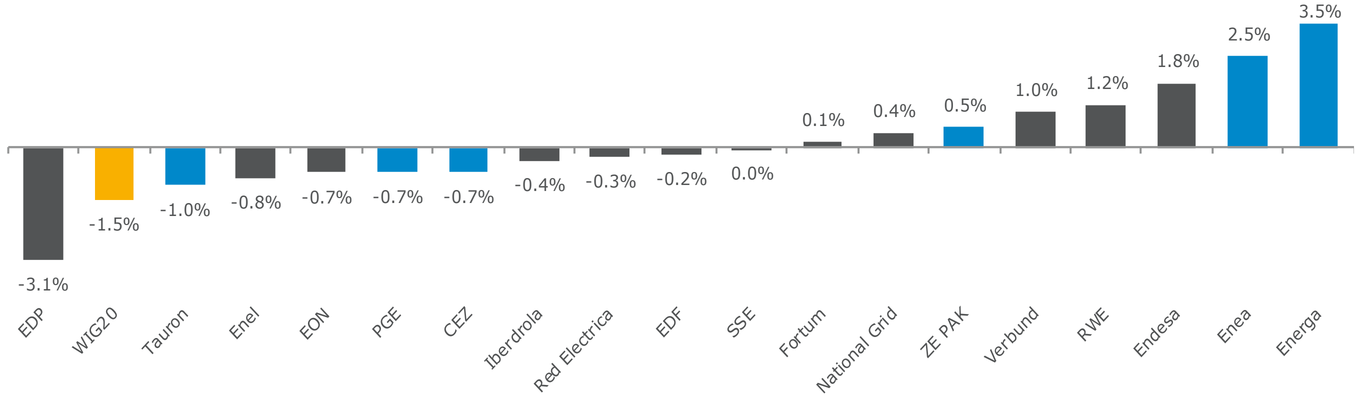
Poland-Germany Power Price Spread (PLN/MWh)



Polish Green Certificate Prices (PLN/MWh)



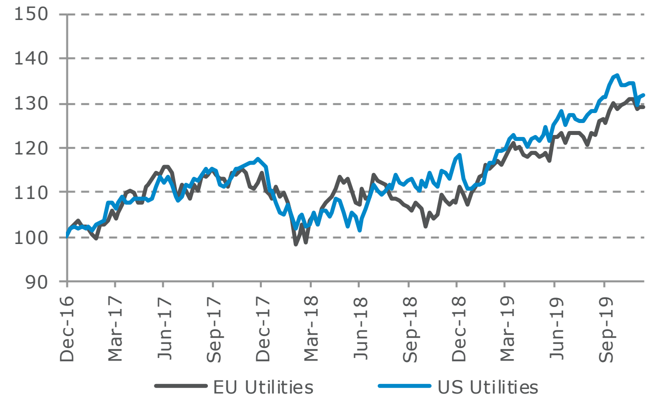
Weekly Returns of Utility Stocks



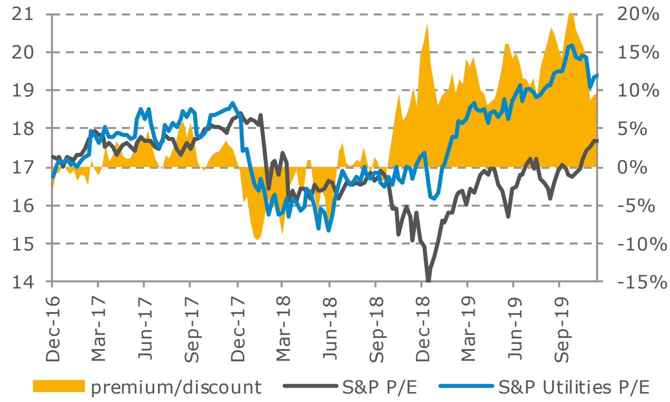
Source: Bloomberg, Dom Maklerski mBanku

Utilities

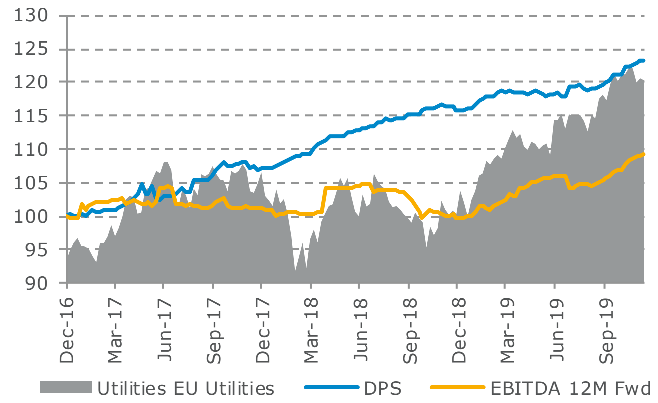
MSCI Utilities Europe vs. S&P Utilities



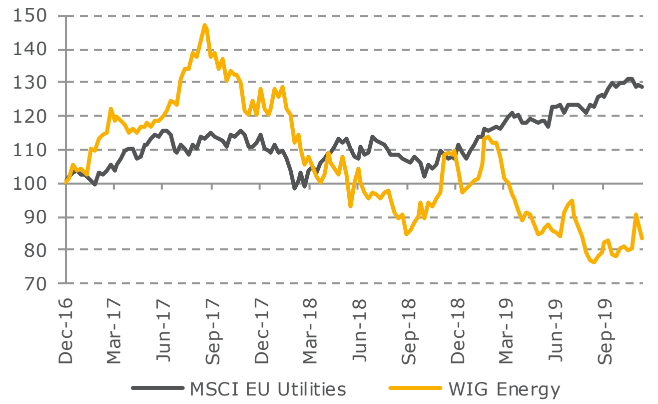
S&P Utilities vs. S&P 500 P/E



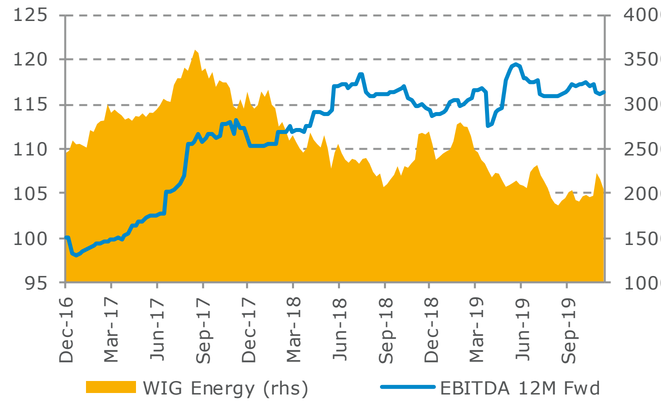
MSCI Utilities EU vs. DPS & EBITDA Expectations



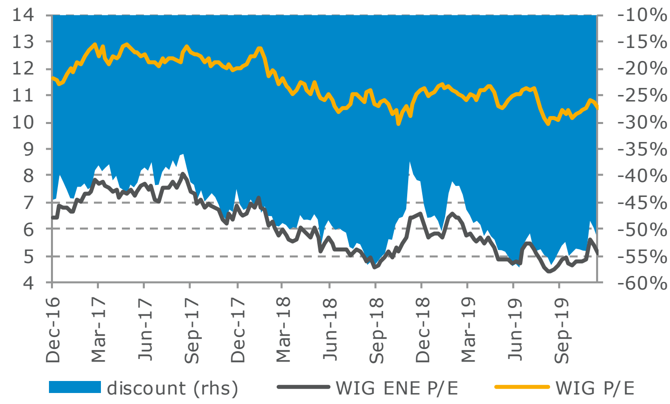
MSCI Utilities EU vs. WIG-ENERGY



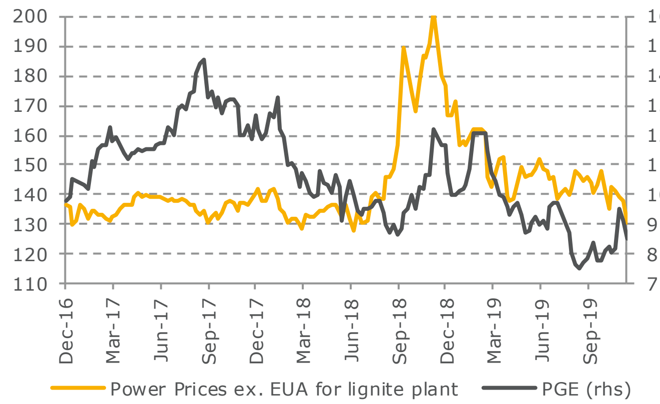
WIG-ENERGY vs. EBITDA Expectations



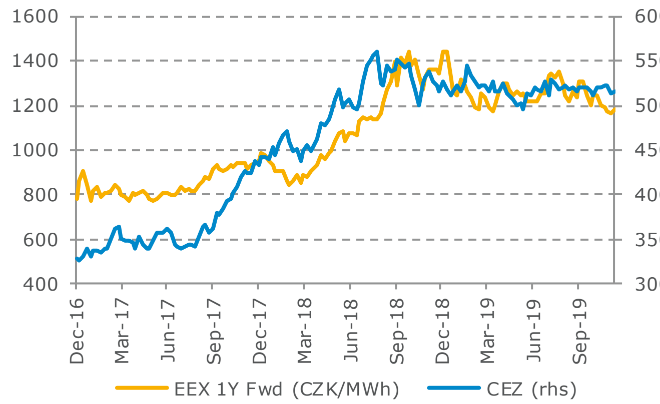
WIG-ENERGY vs. WIG P/E



PGE Performance vs. Power Prices ex. EUA



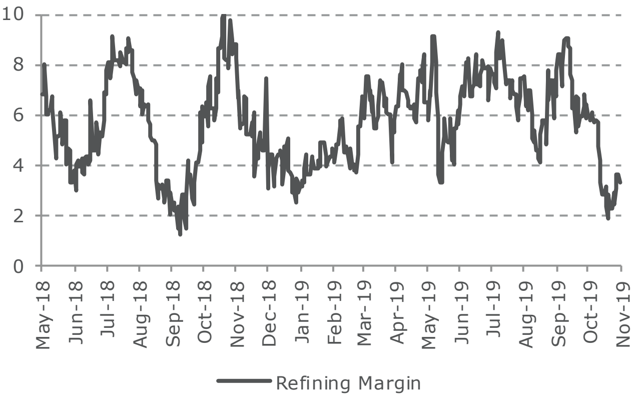
CEZ Performance vs. EEX Power Prices (CZK/MWh)



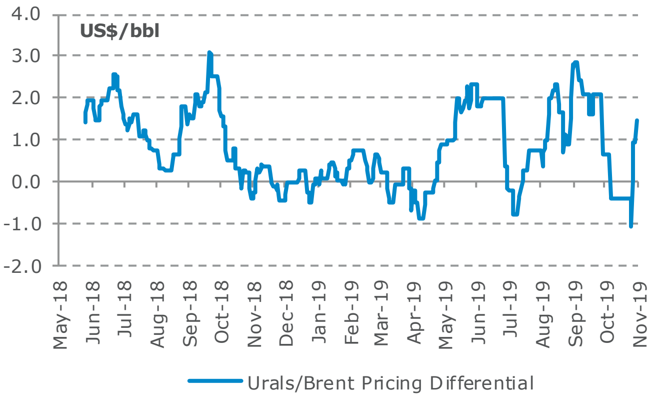
Source: Bloomberg, Dom Maklerski mBanku

Gas & Oil

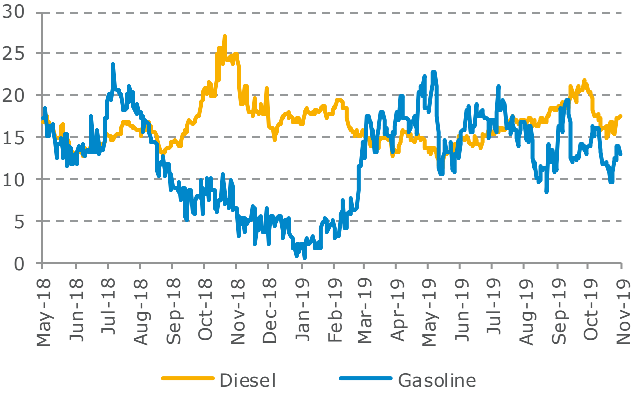
Refining Margins (US$/bbl)



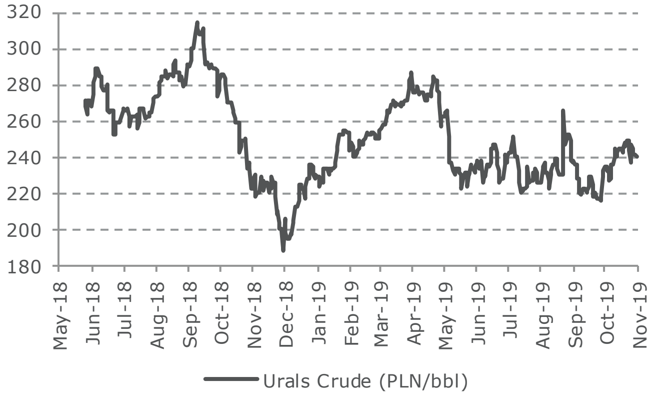
Urals/Brent Pricing Differential (US$/bbl)



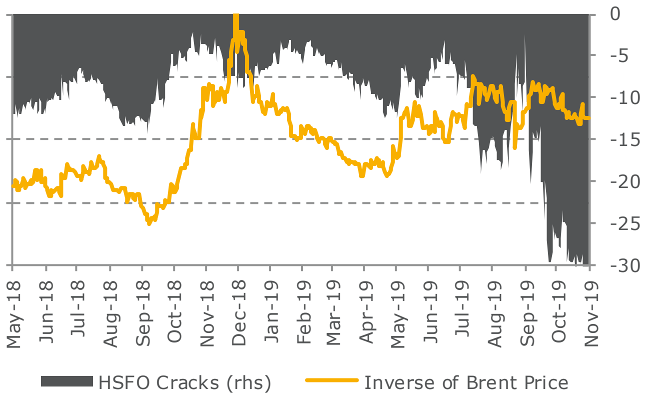
Cracking Margins on Diesel & Gasoline (US$/bbl)



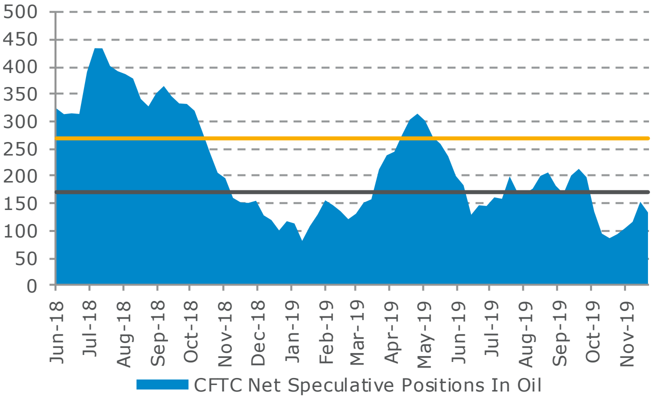
Price of Urals Crude (PLN/bbl)



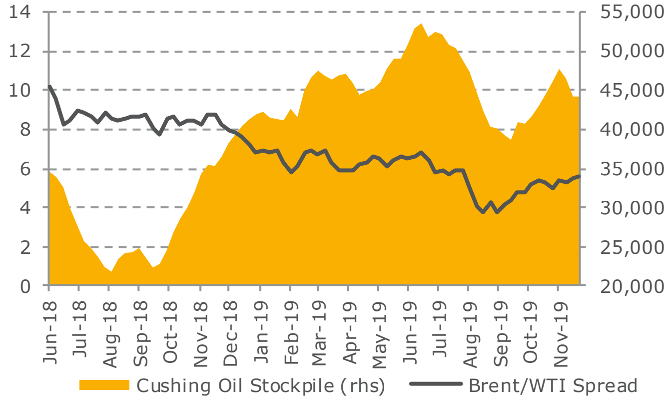
HSFO Cracks (US$/bbl) vs. Inverse of Brent Price



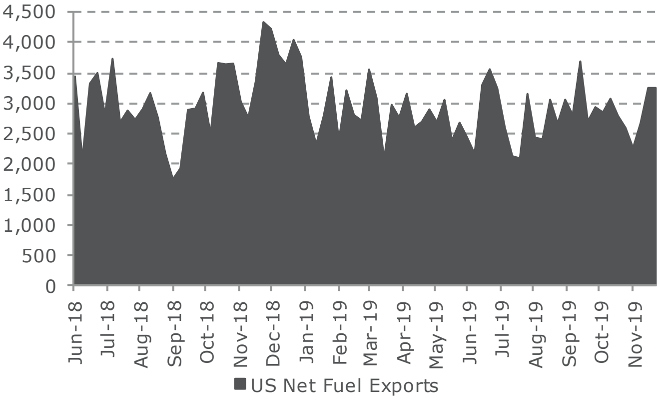
CFTC Net Speculative Positions In Oil



Brent/WTI Spread vs. Cushing Oil Stockpile



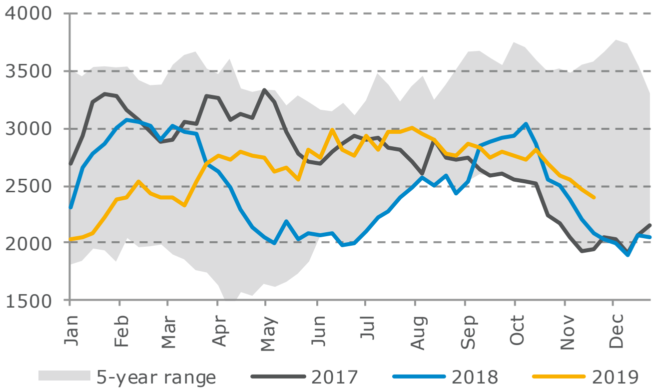
US Net Fuel Exports



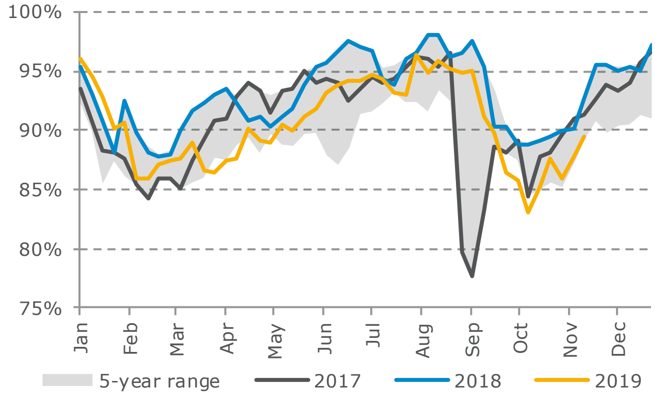
Source: Bloomberg, Dom Maklerski mBanku

Gas & Oil

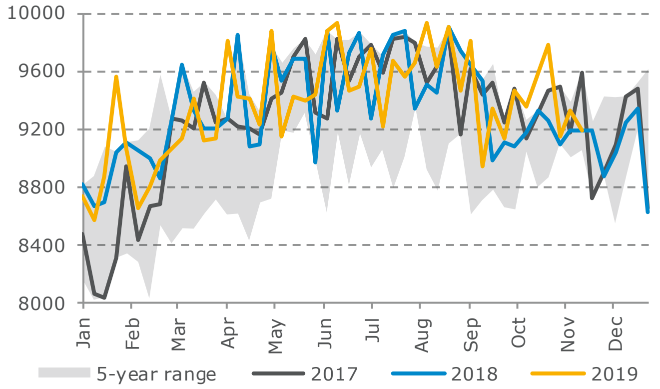
Diesel Inventories @ARA



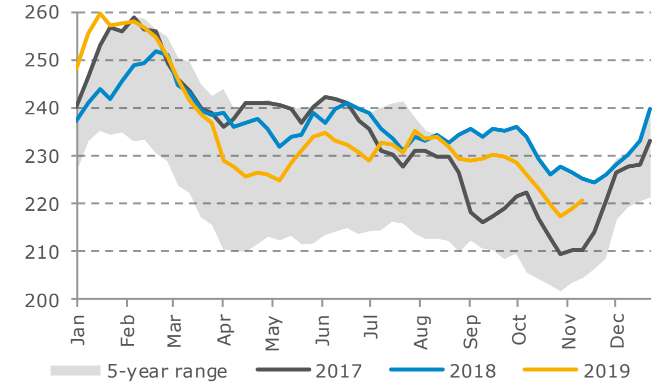
US Refinery Utilization Rates



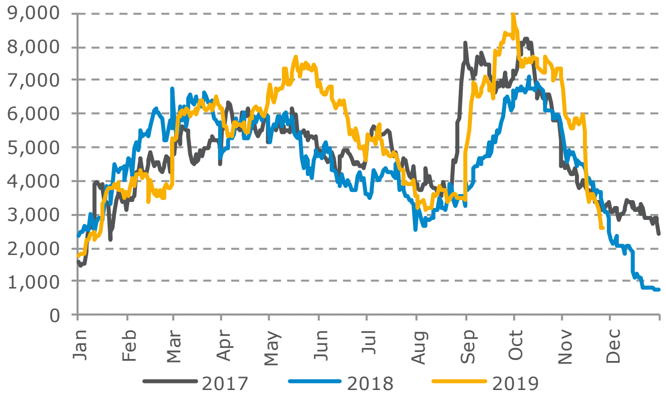
US Gasoline Demand



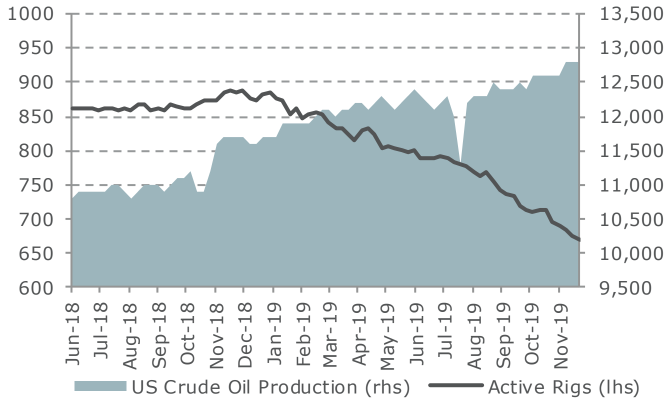
US Gasoline Inventories



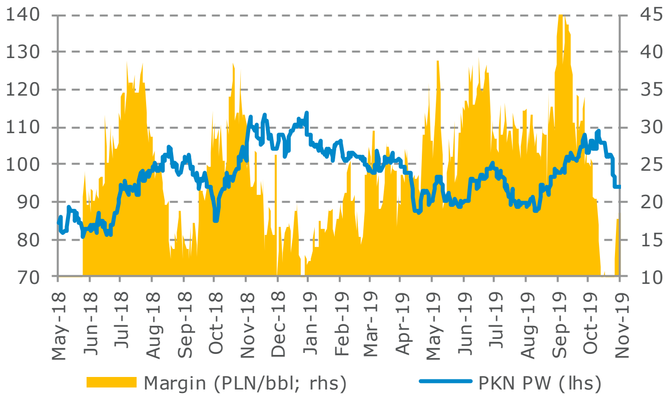
Global Refinery Outages (mbbl/d)



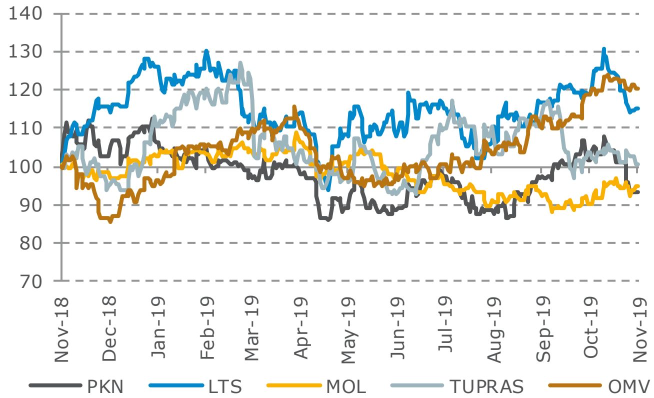
US Crude Oil Production (mboe/d) vs. Active Rigs



PKN Performance vs. Benchmark Margins



Normalized Oil Stock Chart

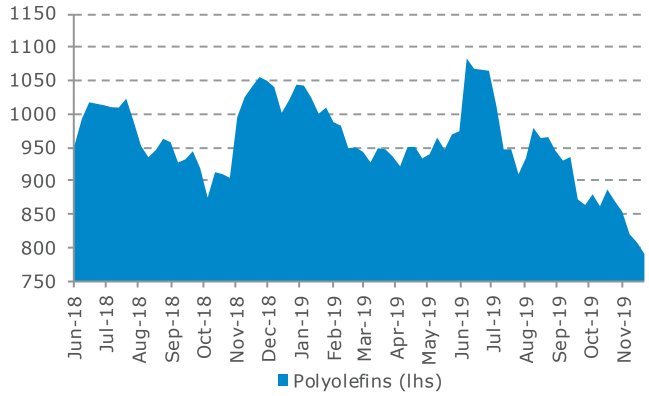


Source: Bloomberg, Dom Maklerski mBanku

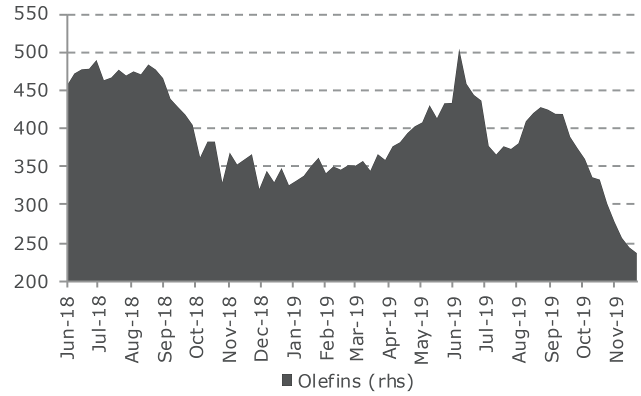
mBank Dom Maklerski

Petrochemicals & NatGas

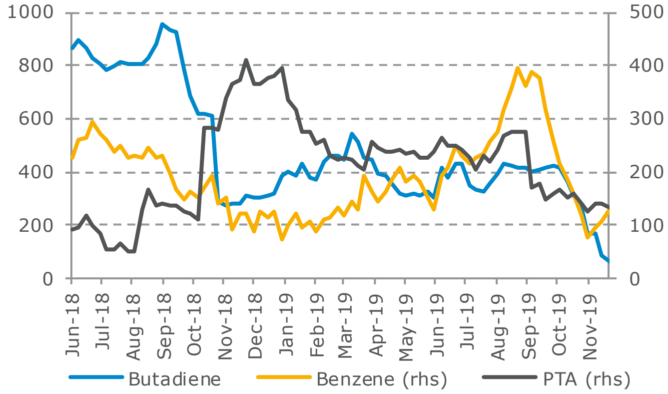
Margins on Polyolefins



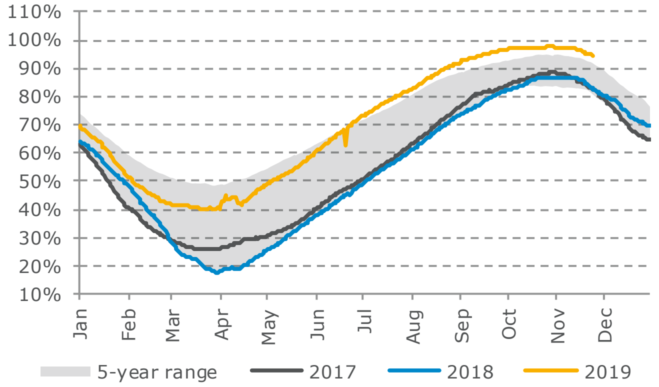
Margins on Olefins



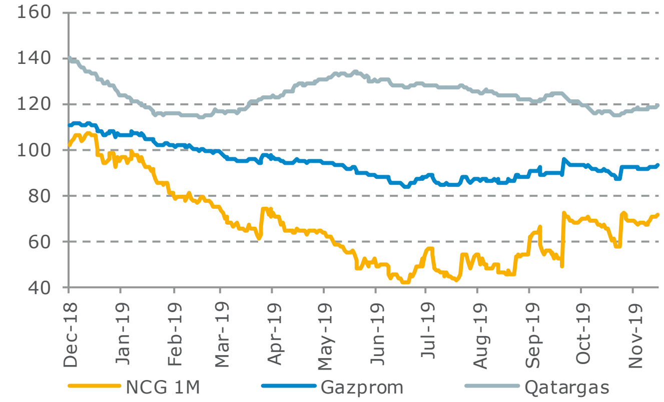
Margins on Butadiene, Benzene & PTA (US$/t)



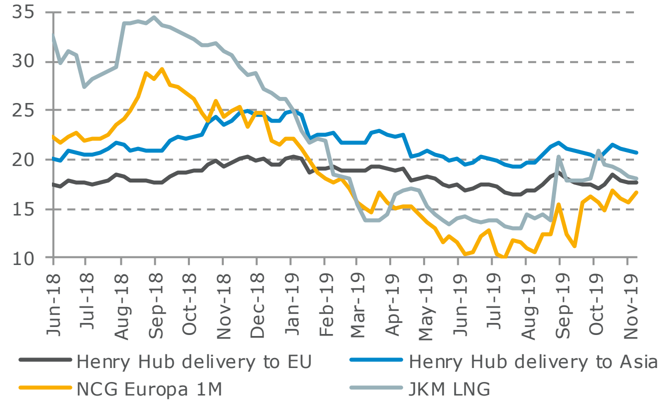
EU Gas Storage Levels (% Full)



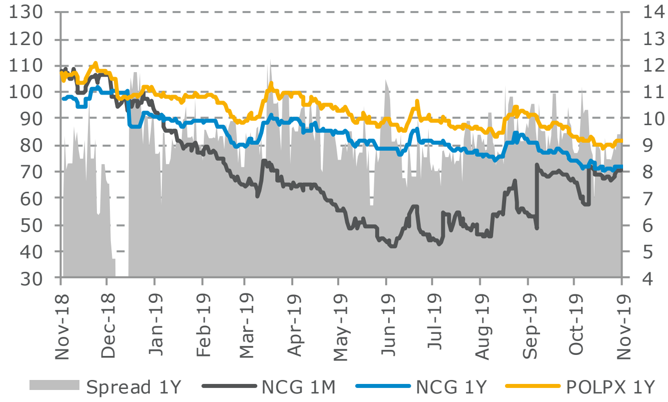
Estimated Costs of Imported Natural Gas (PLN/MWh)



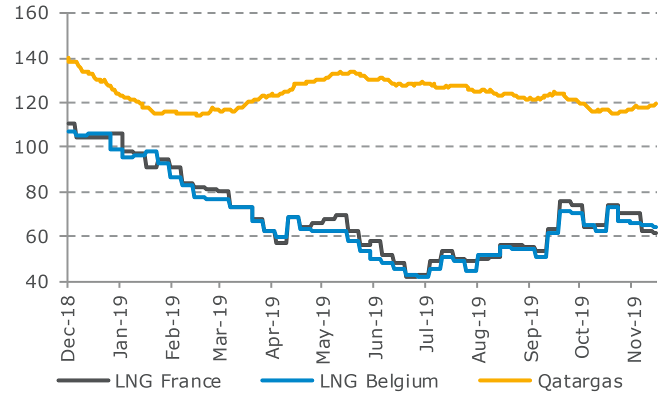
Prices of US LNG Exports to EU and Asia



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



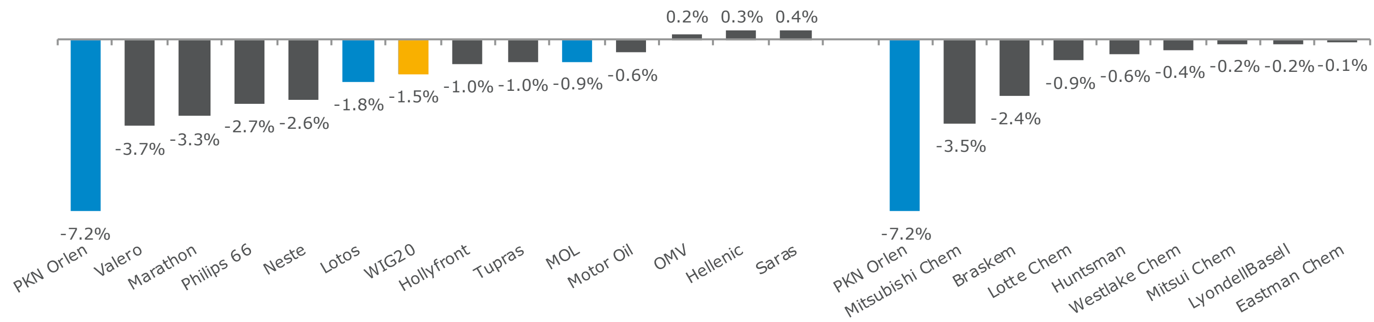
LNG Spot Rates vs. Estimated Qatargas rates



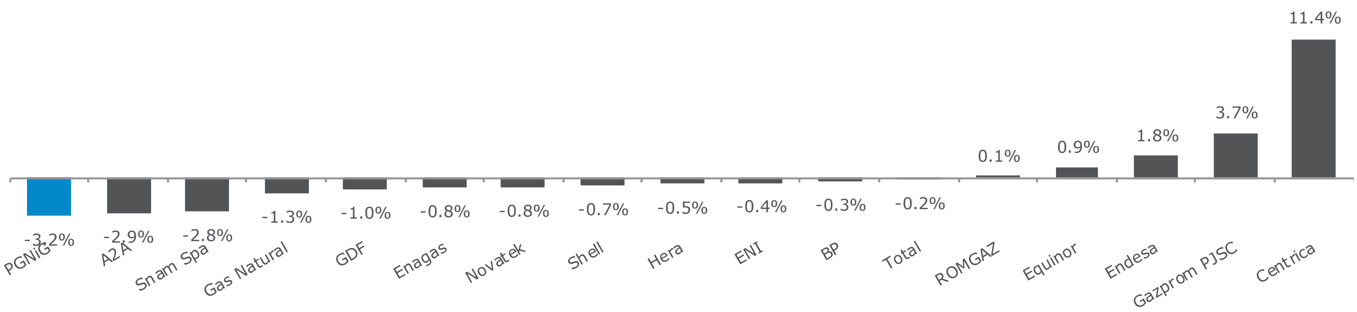
Source: Bloomberg, Dom Maklerski mBanku

Weekly Performance Charts

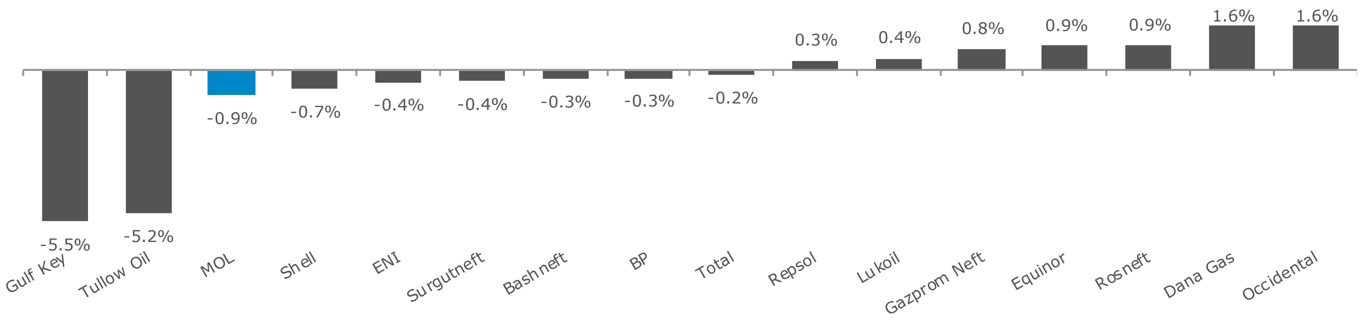
Oil Refiners (L) & Petrochemical Producers (R)



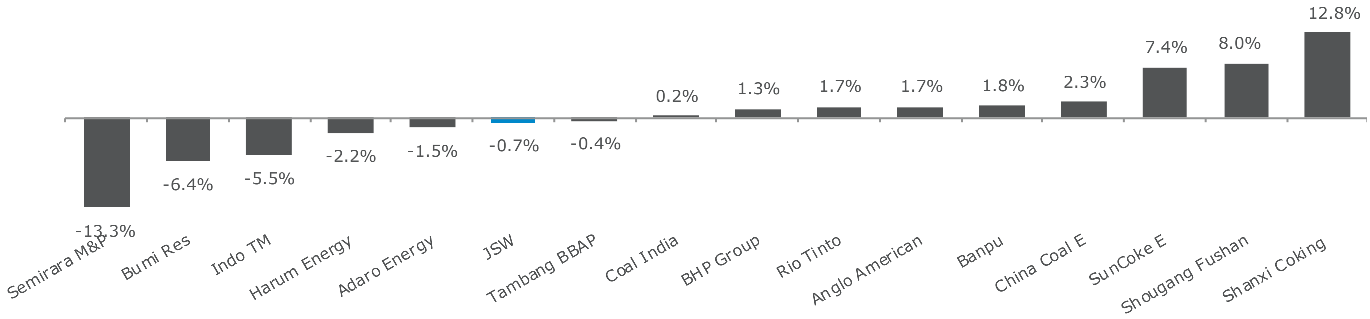
Natural Gas Companies



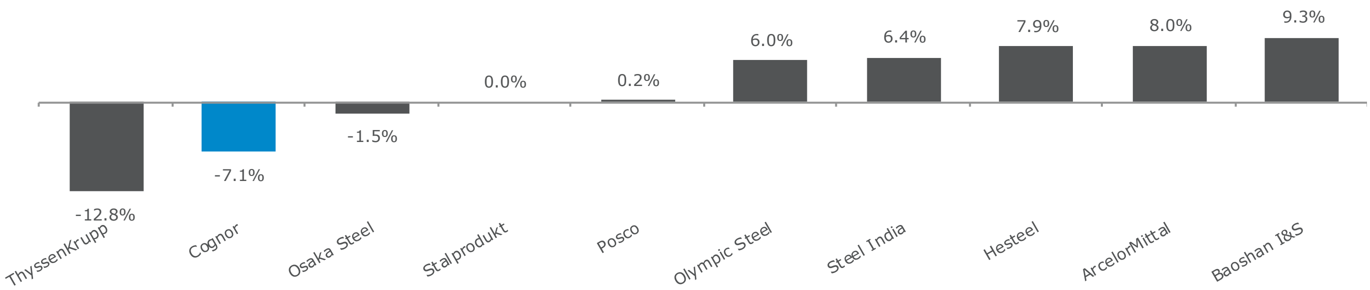
Exploration & Production Companies



Coal Producers



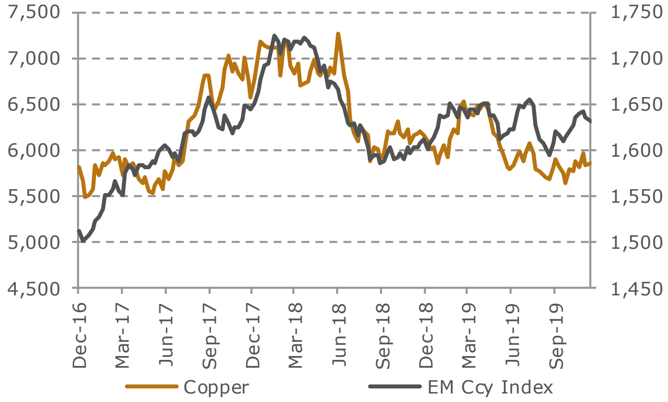
Steel Producers & Distributors



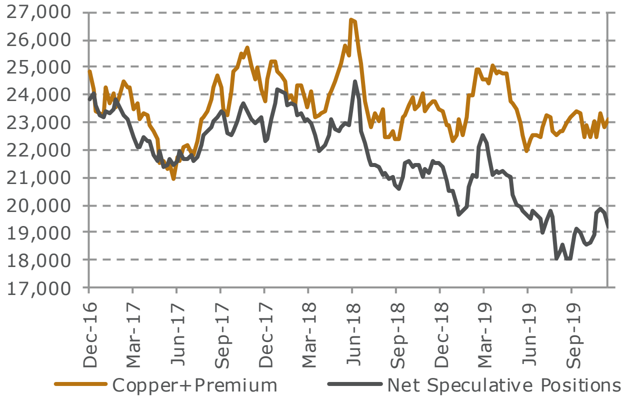
Source: Bloomberg, Dom Maklerski mBanku

Copper Charts

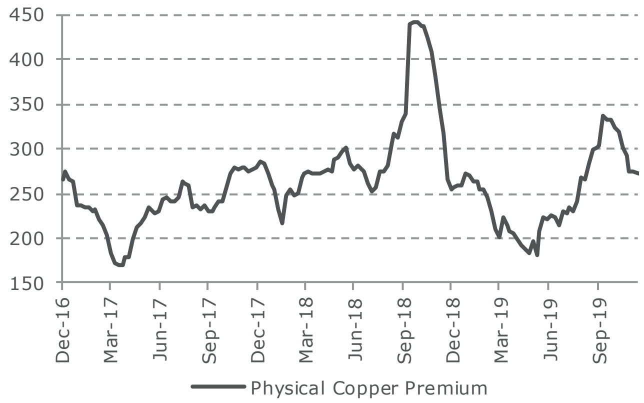
Cu Price (US$/t) vs. EM Currencies (pts.; rhs)



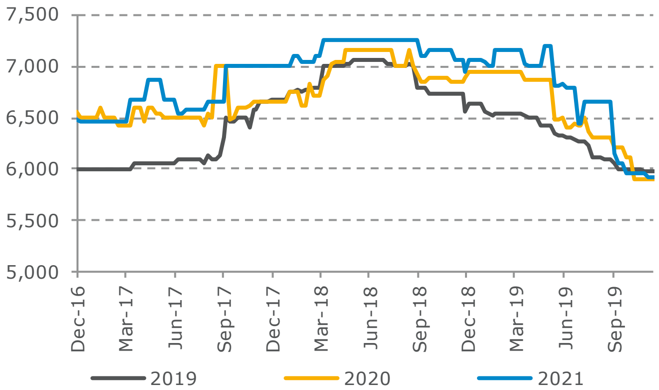
CU Price incl. Supplier Premium (PLN 1,000/t; lhs) vs. Net Speculative Positions (1,000, rhs)



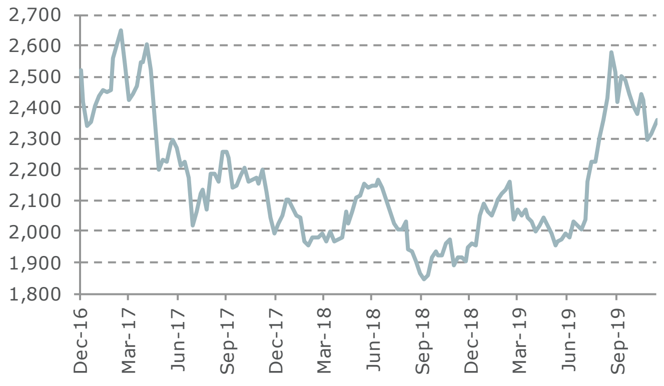
Physical Copper Premiums (PLN/t)



Copper Price Forecasts (median; US$/t)

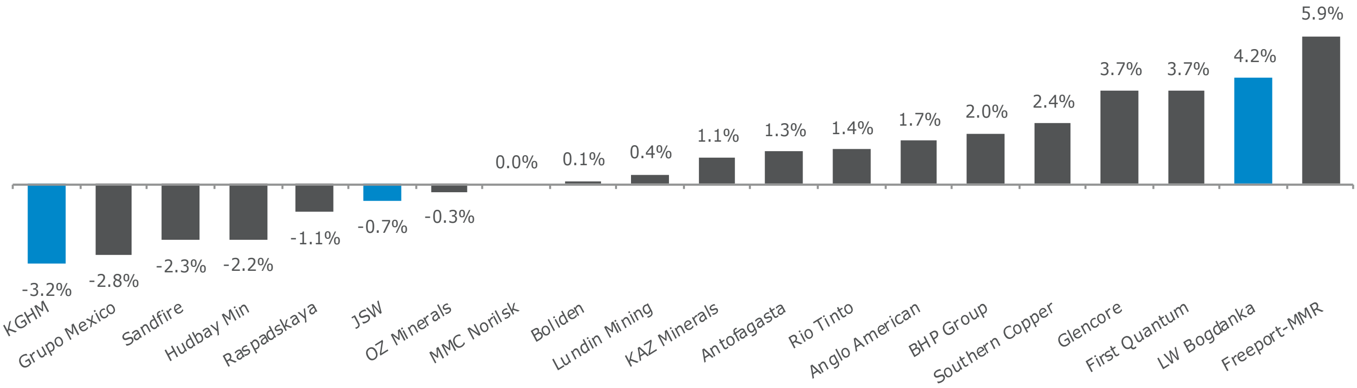


Silver prices (PLN/kg)



Prices of gold (PLN/oz)

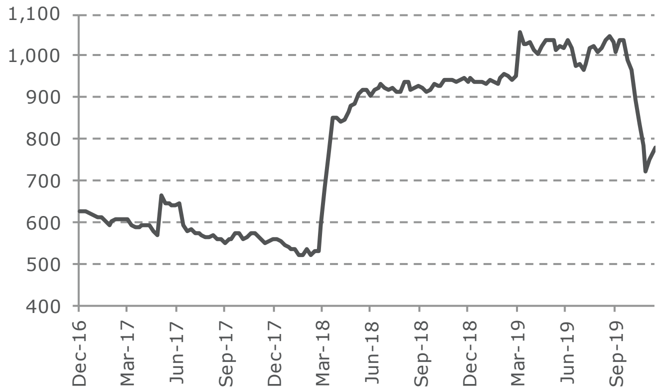
Weekly Returns of Metal & Mining Stocks



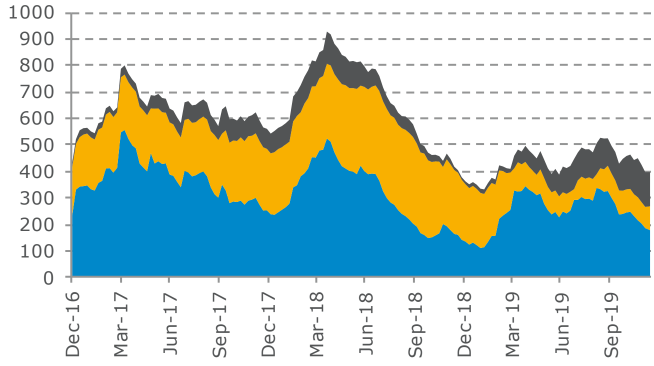
Source: Bloomberg, Dom Maklerski mBanku

More Copper Charts

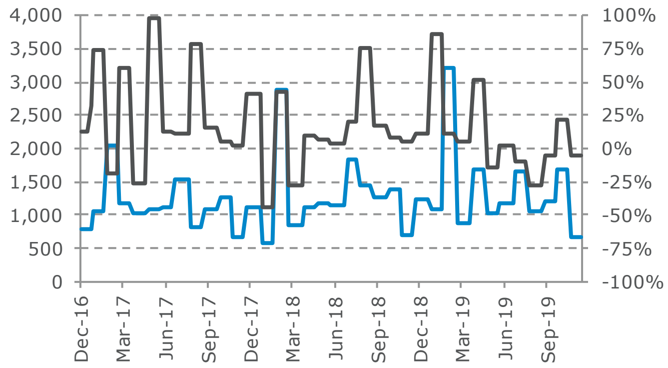
Prices of molybdenum (PLN/10 kg)



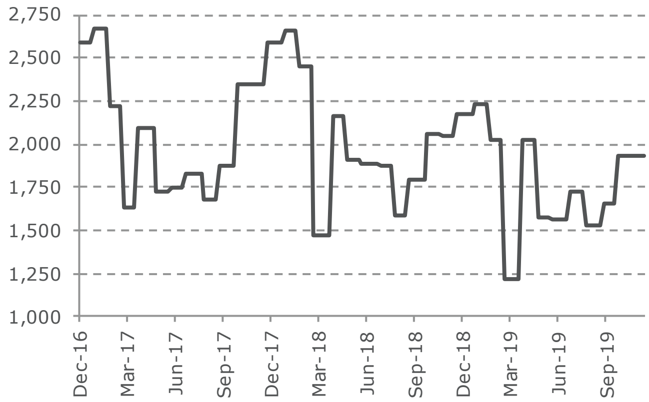
Global Copper Inventories (1,000t)



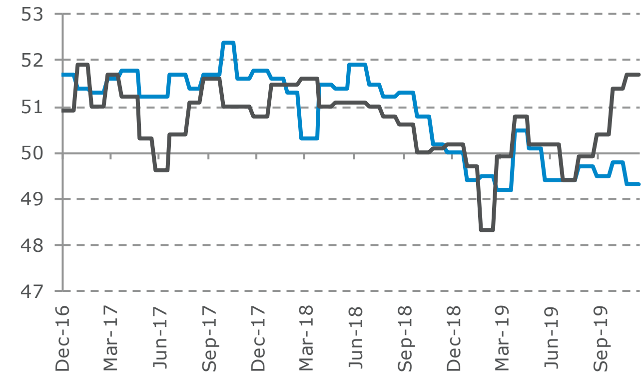
New Bank Lending in China (CNY bn)



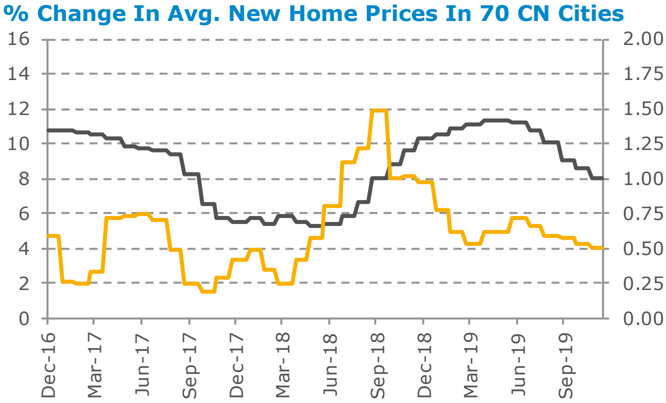
Car Sales in China (thousands)



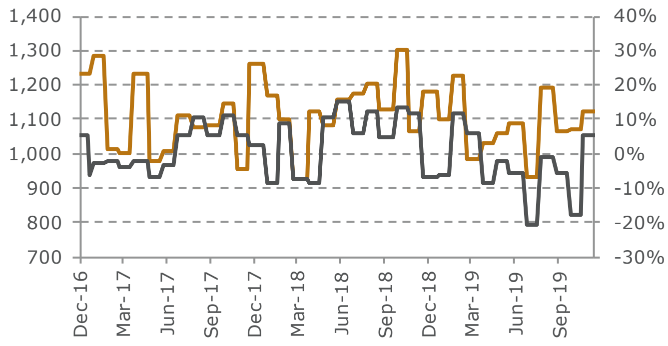
China PMI (points)



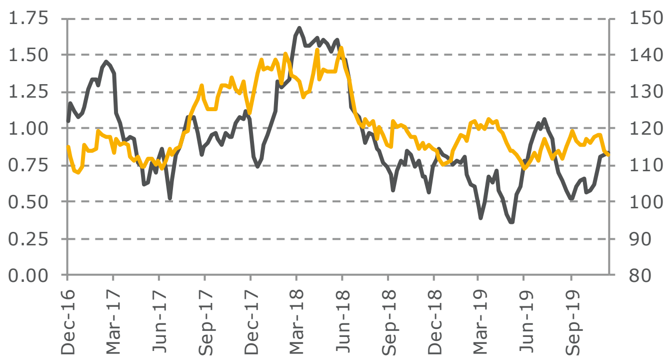
% Change In Avg. New Home Prices In 70 CN Cities



Chine Copper Imports (concentrates, refined metal, scrap)



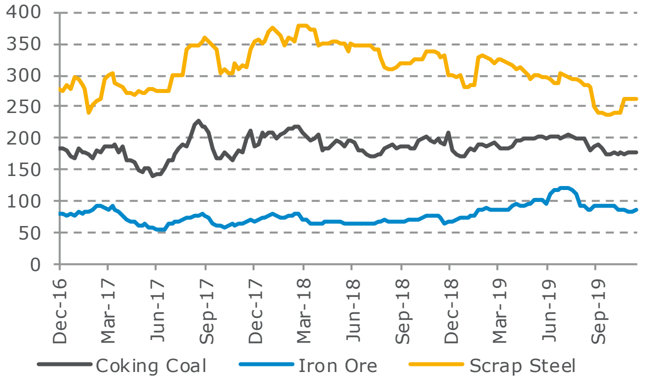
Metal Price Index (pts, rhs) vs. Net Speculative Positions (million contracts, lhs)



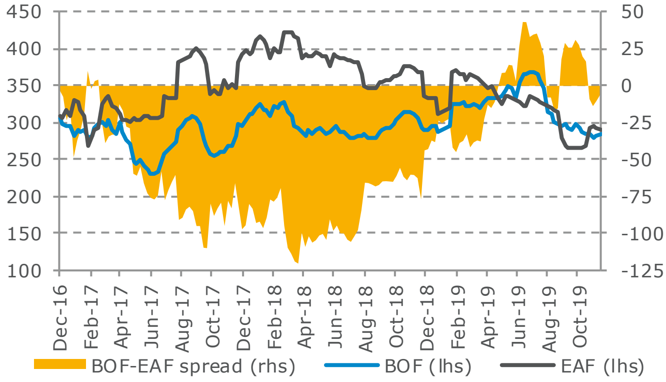
Source: Bloomberg, Dom Maklerski mBanku

Steel Charts

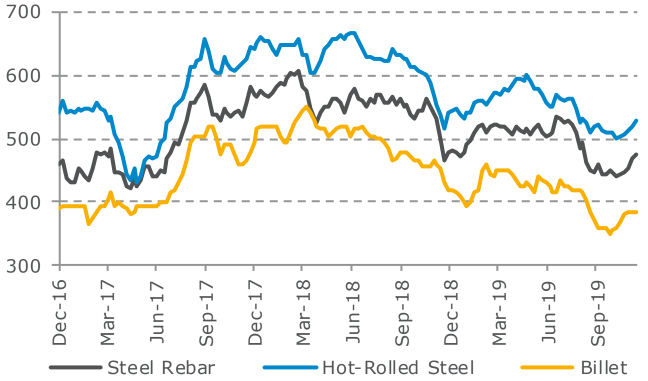
China Coking Coal & Iron Ore Prices, Rotterdam Scrap Steel Prices (US$/t)



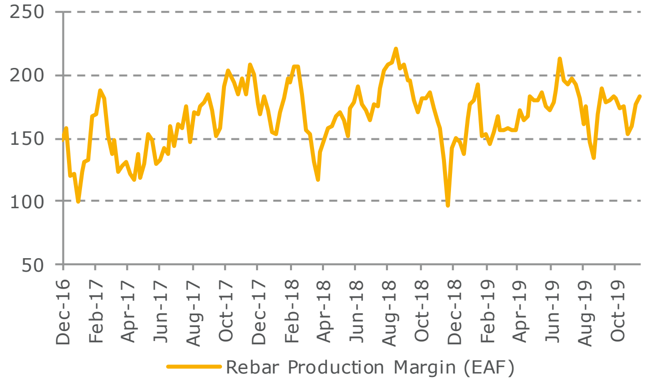
Production Costs of BOF vs. EAF Steel Producers (US$/t)



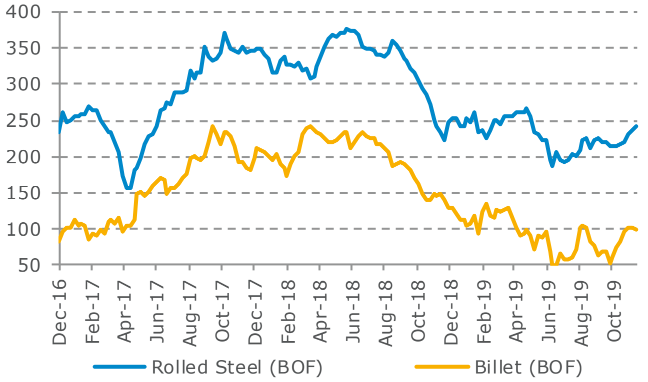
Prices of Steel Rebar & Hot-Rolled Steel (US$/t)



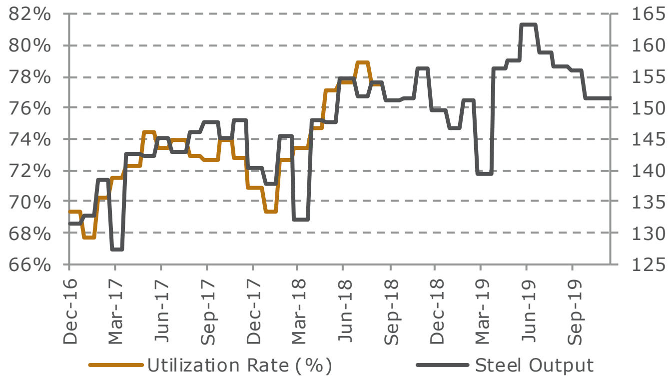
Rebar Production Margins of EAF Steelmakers (US$/t)



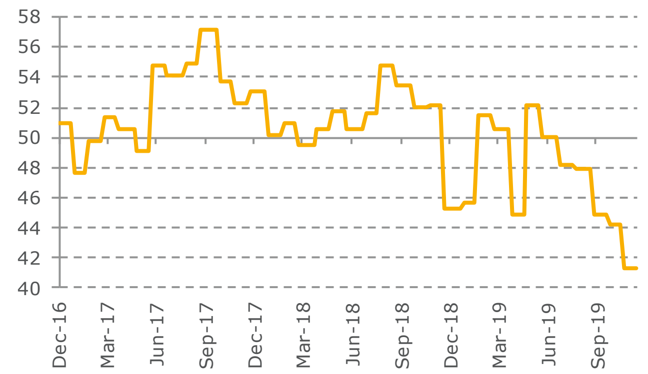
Rolled Steel & Billet Margins of BOF Steelmakers (US$/t)



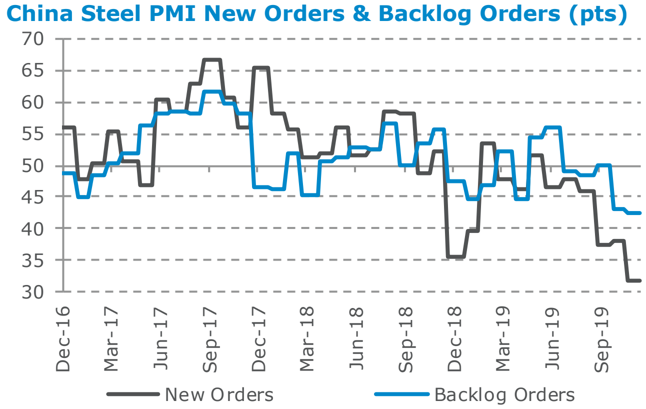
Global Steel Plant Capacity Utilization Rates & Output (Mt)



China Steel PMI (pts)



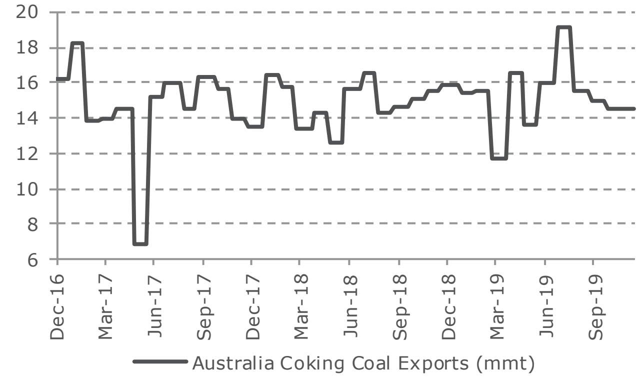
China Steel PMI New Orders & Backlog Orders (pts)



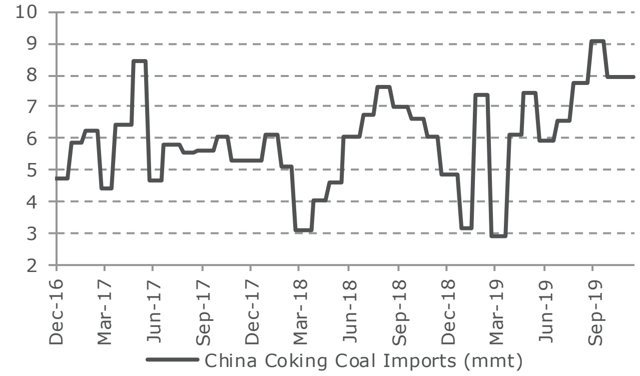
Source: Bloomberg, Dom Maklerski mBanku

More Steel Charts

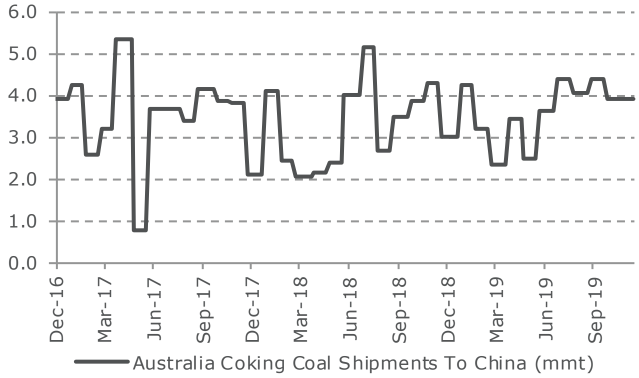
Australia Coking Coal Exports (mmt)



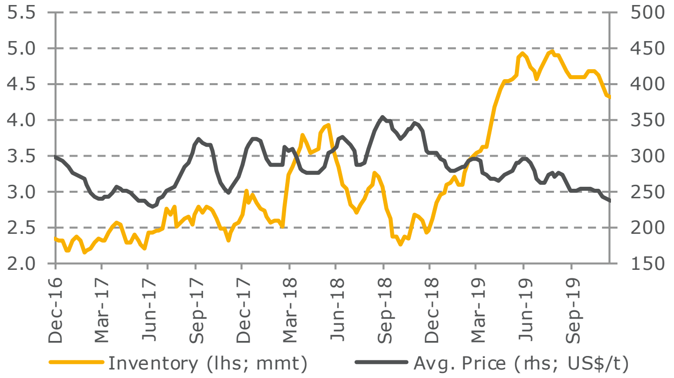
China Coking Coal Imports (mmt)



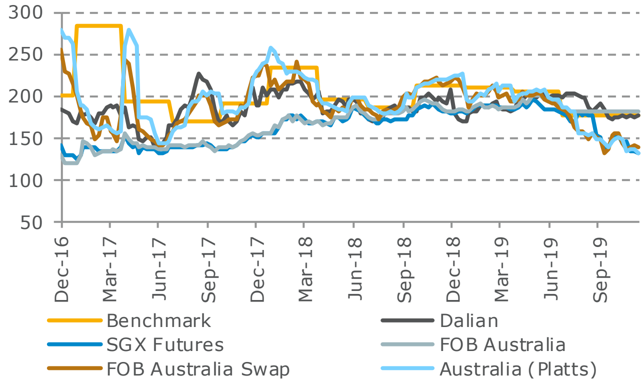
Australia Coking Coal Shipments To China (mmt)



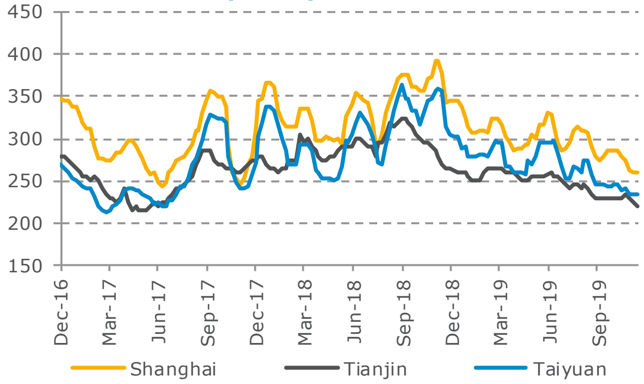
China Coke Inventories (lhs; mmt) & Average Prices (rhs; US$/t)



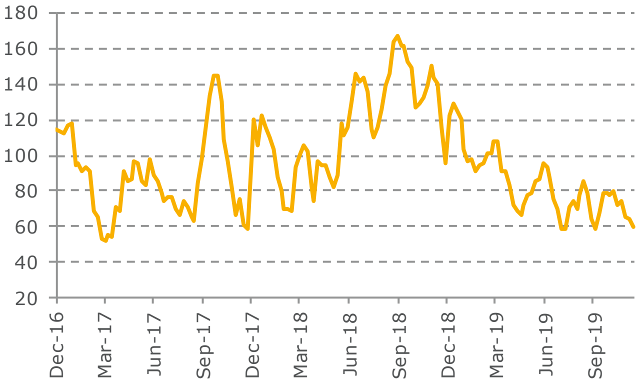
China Coking Coal Prices vs. Benchmark (US$/t)



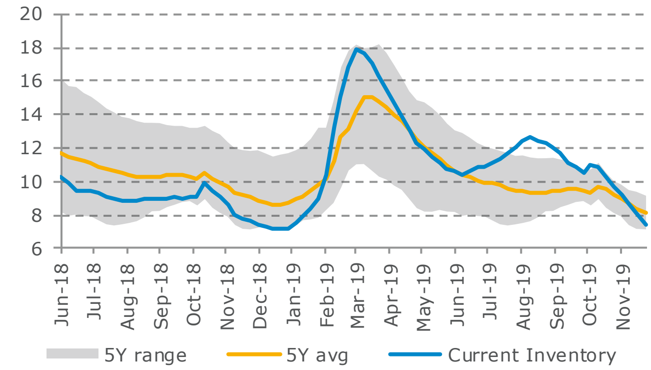
China Coke Prices (US$/t)



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



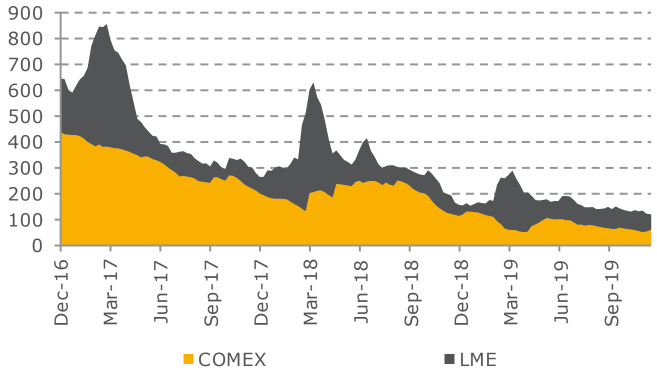
China Steel Inventory (mmt)



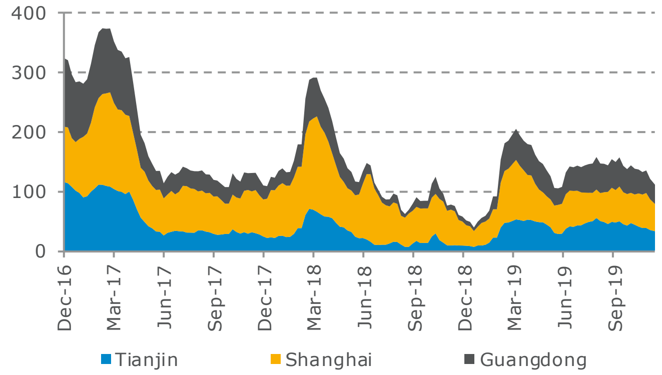
Source: Bloomberg, Dom Maklerski mBanku

Zinc and Electrical Steel Charts

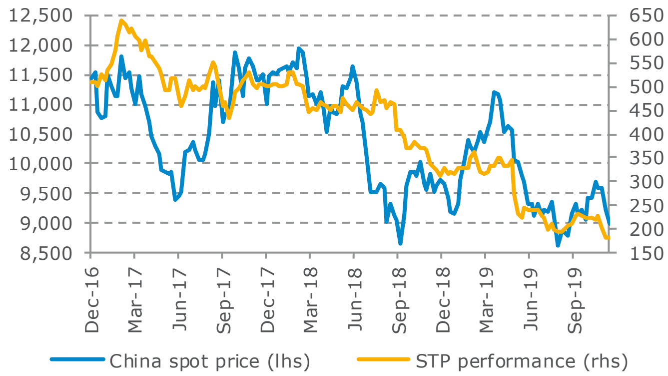
Exchange-Monitored Zinc Inventories (1,000t)



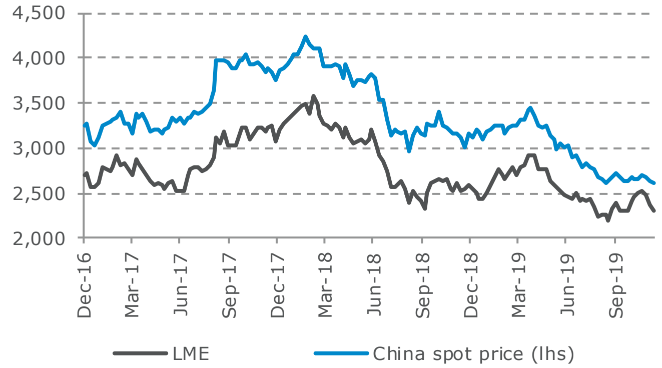
Zinc Inventories in Three Chinese Regions (1,000t)



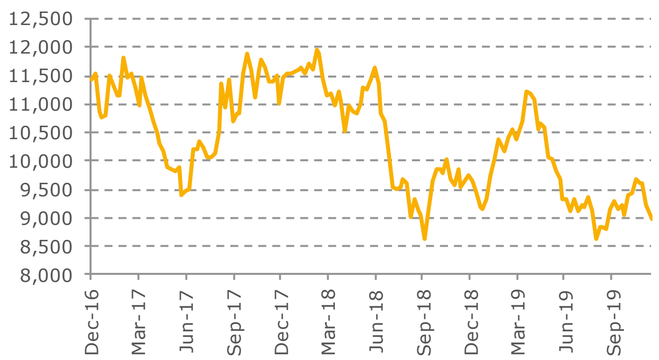
Zinc Prices vs. Stalprodukt Stock Performance (PLN)



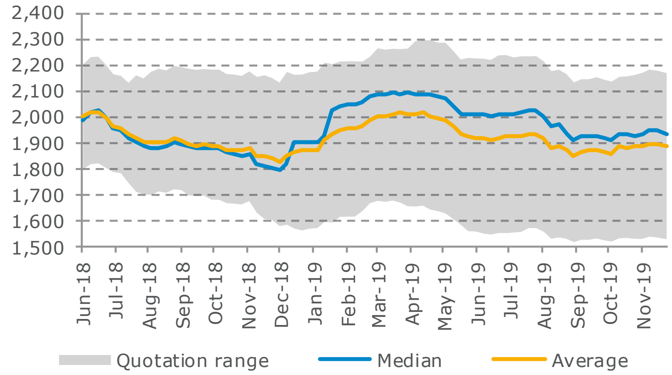
US Dollar Zinc Prices (US$/t)



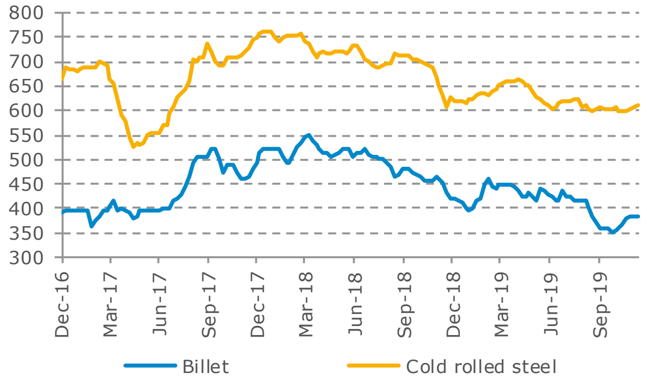
Polish Zloty Zinc Prices (PLN/t)



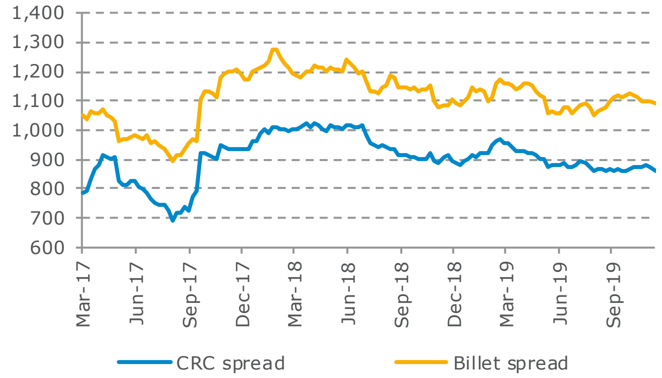
China Electrical Steel Prices (US$/t)



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



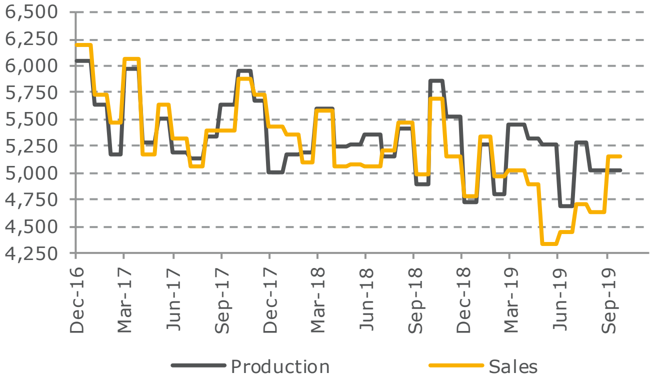
Electrical Steel Production Margins (US$/t)



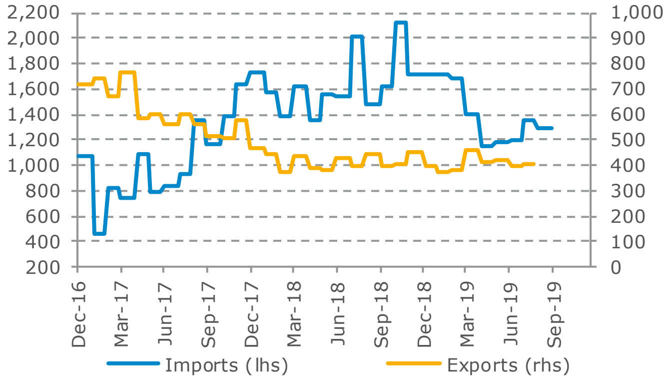
Source: Bloomberg, Dom Maklerski mBanku

Thermal Coal Charts

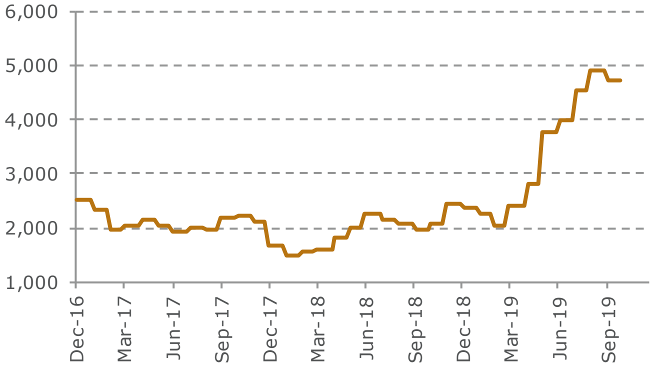
Hard Coal Production & Sales in Poland (1,000t)



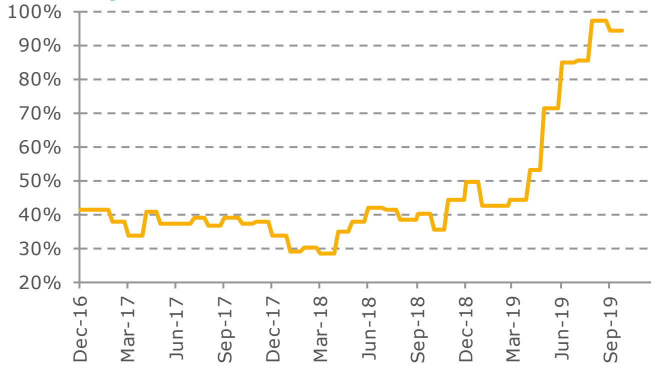
Poland Hard Coal Imports & Exports (1,000t)



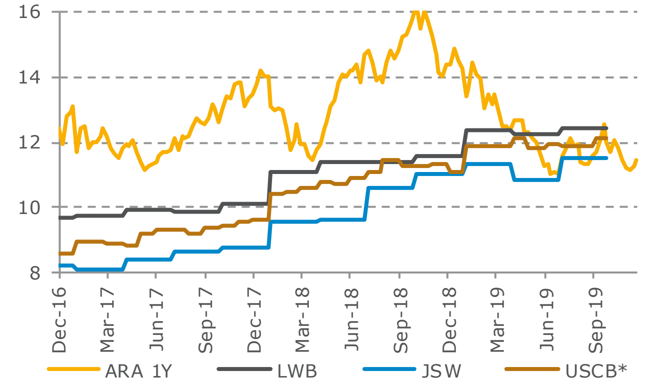
Hard Coal Stockpiled By Polish Mines (1,000t)



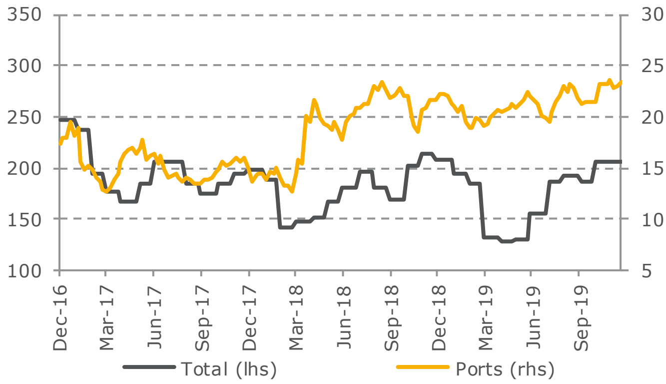
Inventory/ Production Ratio



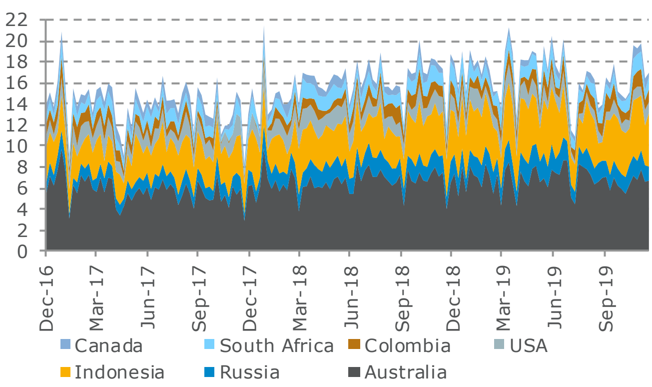
Thermal Coal Prices vs. Benchmarks (PLN/GJ)



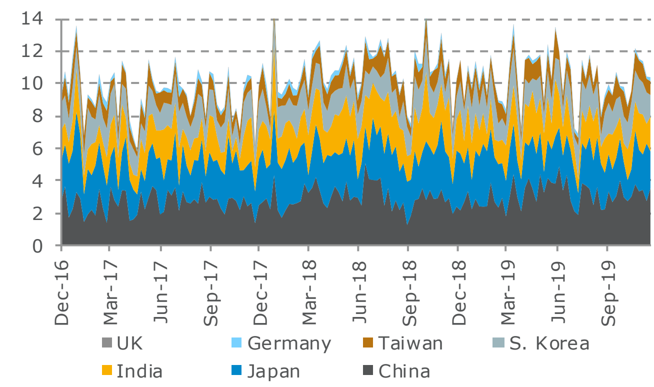
China Thrml Coal Inventories, Total & In Ports (mmt)



Thermal Coal Exports By Top Producers (mmt)



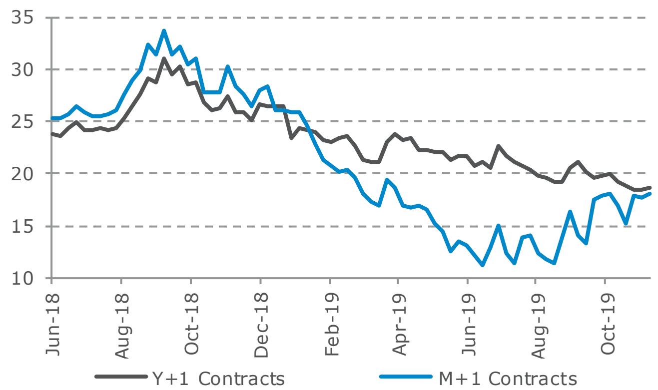
Thermal Coal Imports by Top Importers (mmt)



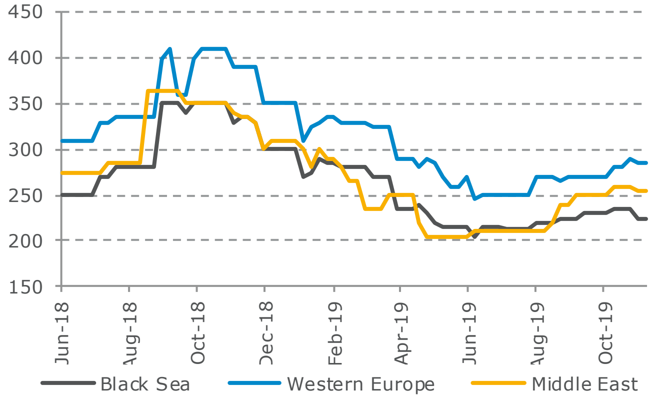
Source: Bloomberg, ARP, Eurostat, Dom Maklerski mBanku *Upper Silesian Coal Basin

Fertilizer Charts

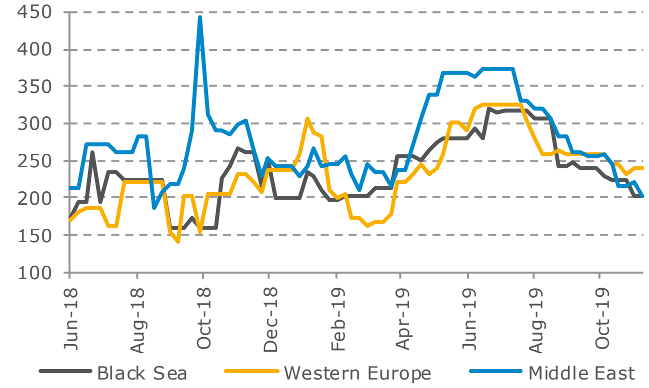
German NatGas Prices (US$/MWh)



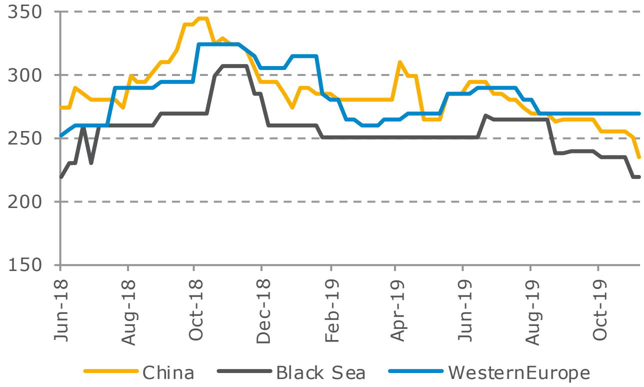
World Ammonia Prices (US$/t)



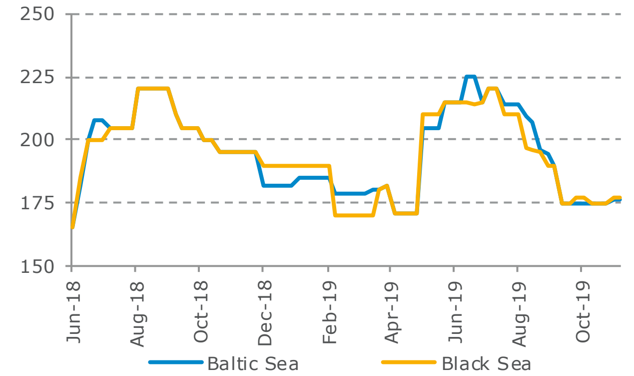
Urea-Ammonia Price Difference



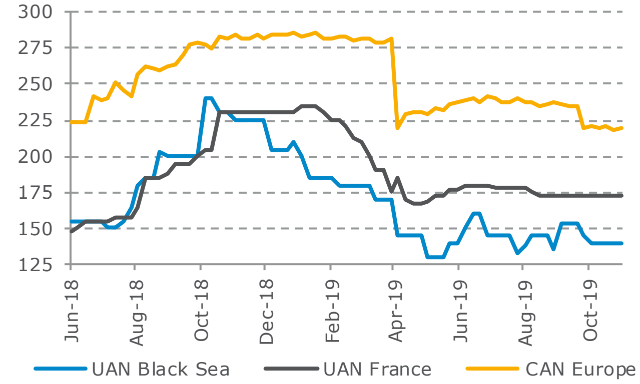
World Urea Prices (US$/t)



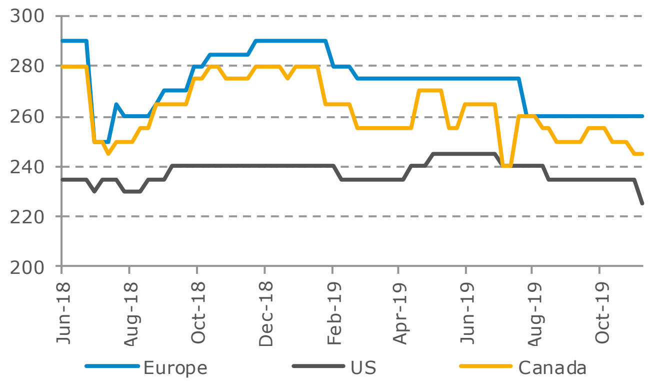
World Ammonium Nitrate Prices (US$/t)



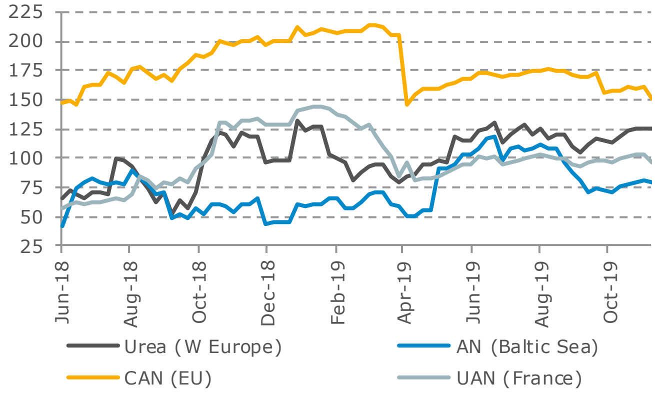
CAN & UAN prices (US$/t)



World Ammonium Sulfate Prices (US$/t)



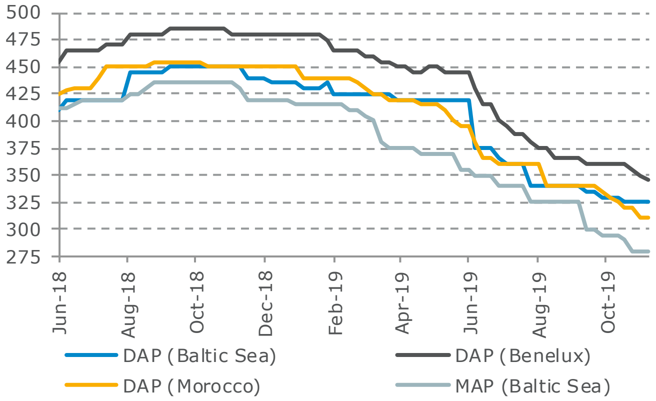
Production Margins On Nitrogen Fertilizers (US$/t)



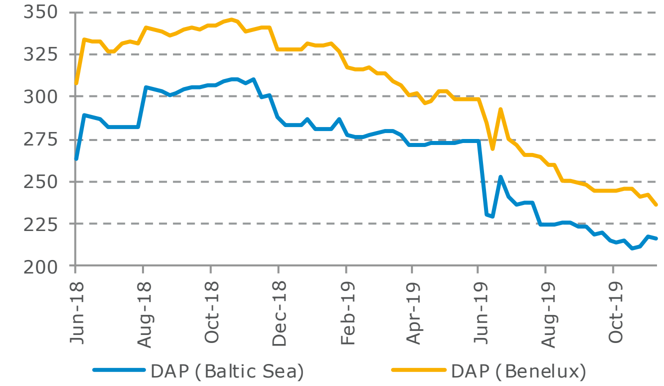
Source: Bloomberg, Dom Maklerski mBanku

Fertilizer Charts

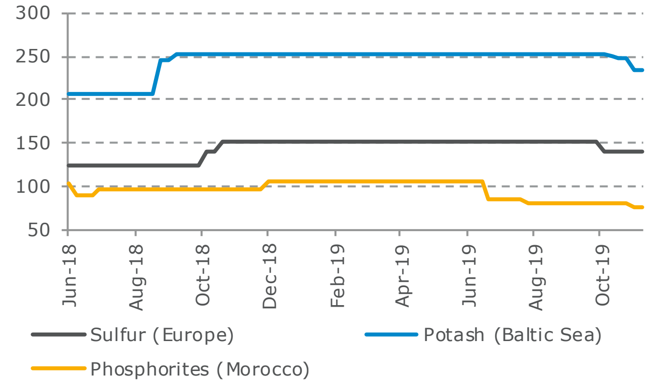
Prices of P & K Fertilizers (US$/t)



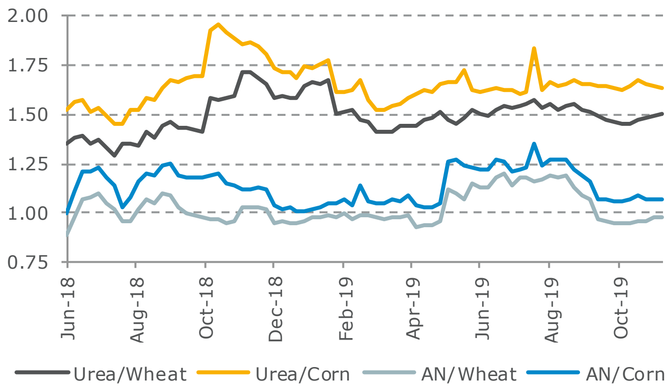
Production Margins on P & K Fertilizers (US$/t)



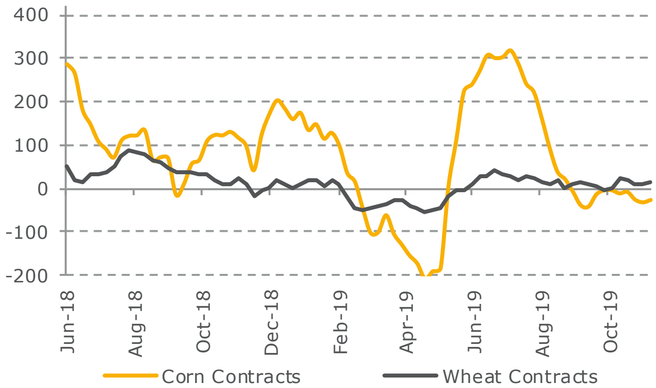
Prices of Sulfur, Potash & Phosphorites (US$/t)



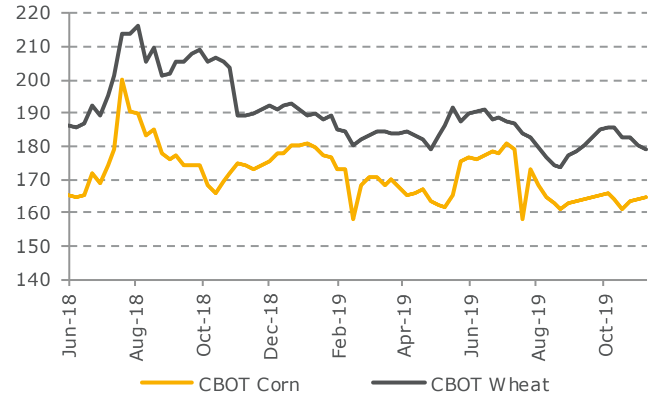
Fertilizer-to-Crop Price Ratios



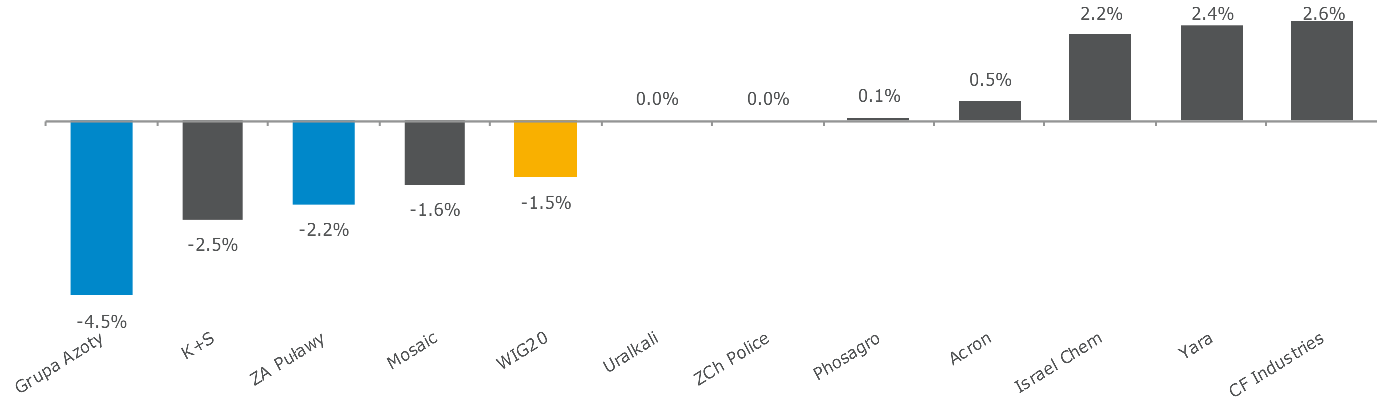
CBOT Open Positions In Corn and Wheat CBT



CBOT Corn and Wheat Prices (US$/t)



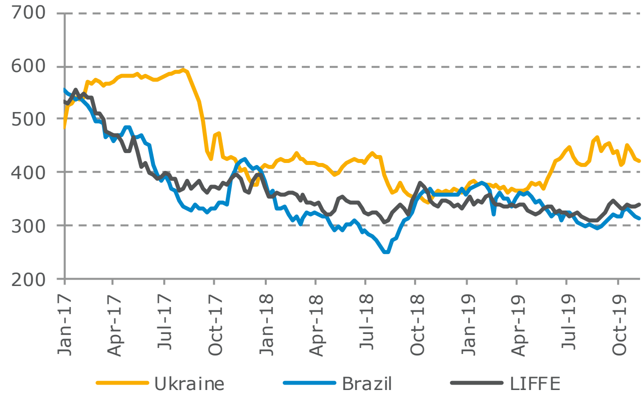
Weekly Returns of Fertilizer Stocks



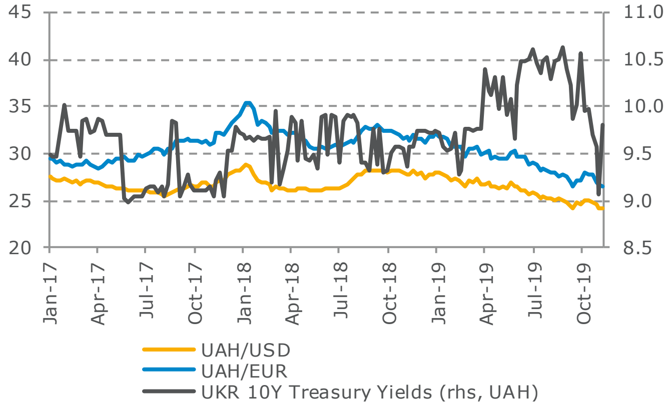
Source: Bloomberg, Dom Maklerski mBanku

Agricultural Commodities

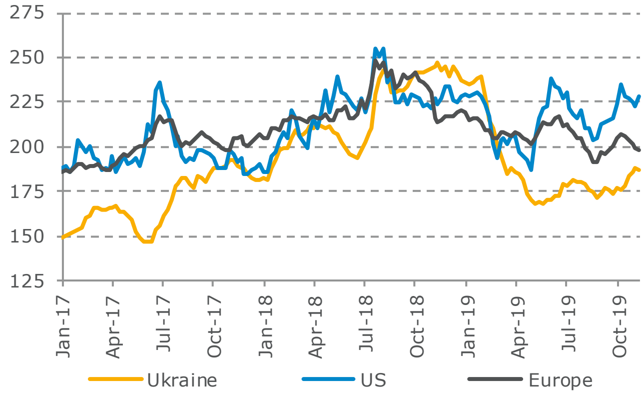
Sugar Prices (US$/Mt)



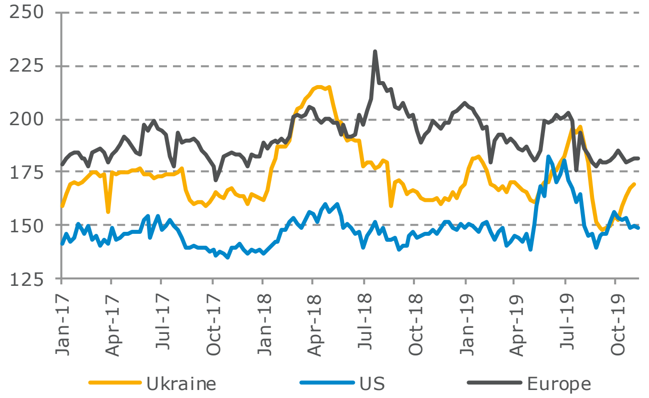
UAH Exchange Rates & Ukraine 10Y Treasury Yields



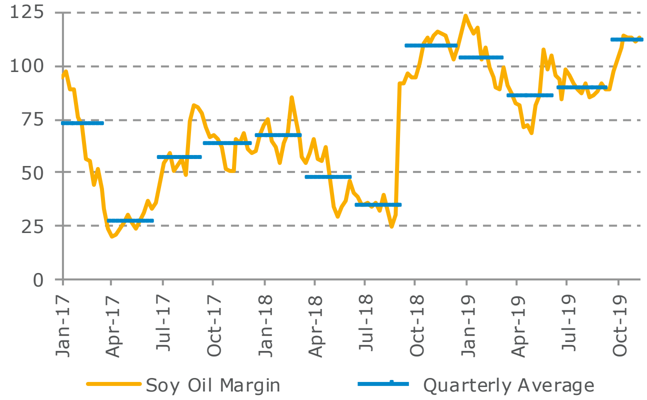
Wheat Prices (US$/Mt)



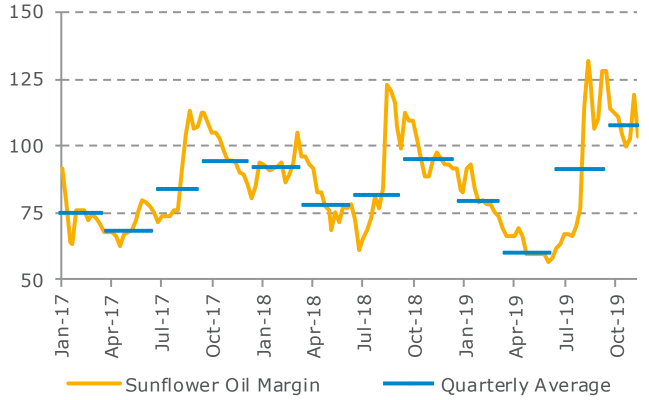
Corn Prices (US$/Mt)



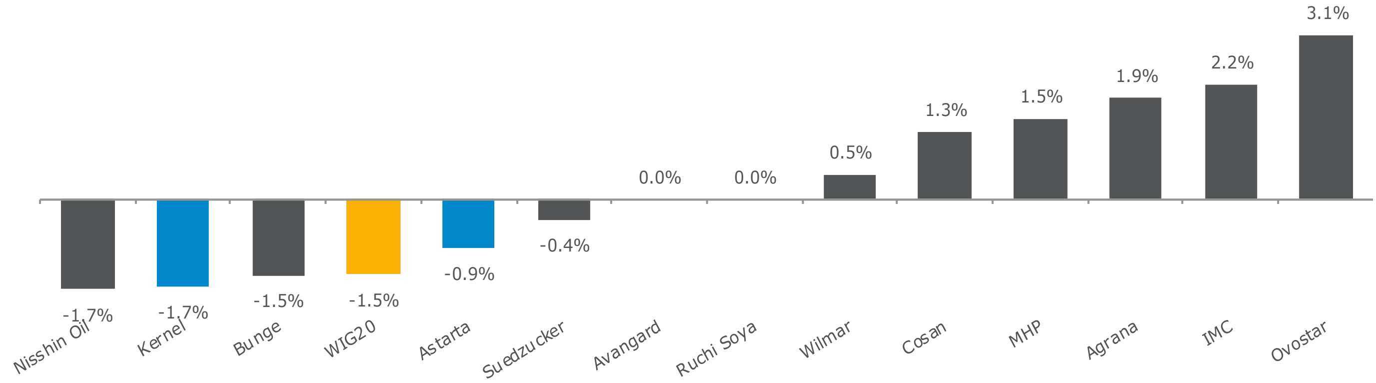
Model Margins on Soy Oil (US$/Mt)



Model Margins on Sunflower Oil (US$/Mt)



Weekly Returns of Agricultural Stocks



Source: Bloomberg, Dom Maklerski mBanku

Comparison of Utility 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
UTILITIES																
CEZ	511.5	7.4	6.8	6.7	2.1	1.9	1.8	15.3	13.3	13.3	29%	28%	27%	4.7%	5.9%	6.8%
Enea	9.0	3.3	3.3	3.0	0.7	0.6	0.6	3.8	3.7	2.9	20%	18%	21%	0.0%	0.0%	2.7%
Energa	6.7	3.6	4.1	4.4	0.7	0.7	0.8	5.3	5.0	4.6	19%	17%	17%	0.0%	0.0%	0.0%
PGE	8.7	3.5	3.9	3.0	0.7	0.7	0.7	5.8	7.5	4.7	21%	17%	22%	0.0%	4.3%	3.3%
Tauron	1.8	4.2	3.9	3.3	0.7	0.7	0.6	3.5	2.9	2.3	18%	17%	19%	0.0%	0.0%	0.0%
ZE PAK*	7.4	0.8	0.9	0.6	0.1	0.1	0.1	4.6	5.3	1.6	11%	11%	17%	-	6.6%	5.6%
EDF	9.3	4.1	3.8	3.7	1.0	0.9	0.9	13.8	11.6	11.4	23%	24%	25%	3.4%	4.1%	4.2%
EDP	3.7	9.2	8.8	8.4	2.0	2.0	2.0	16.8	15.3	14.2	22%	22%	24%	5.2%	5.3%	5.6%
Endesa	24.6	8.6	8.5	8.3	1.6	1.6	1.5	17.0	16.6	16.1	18%	18%	19%	5.8%	6.0%	5.1%
Enel	6.8	7.7	7.3	7.0	1.7	1.7	1.6	14.5	13.3	12.5	22%	23%	23%	4.8%	5.3%	5.7%
EON	9.1	6.4	4.8	4.7	1.0	0.5	0.5	13.5	14.4	13.3	16%	11%	11%	5.1%	5.3%	5.4%
Fortum	21.4	14.3	10.8	9.9	4.3	1.9	1.3	14.8	14.0	12.8	30%	18%	13%	5.1%	5.2%	5.2%
Iberdola	8.9	10.7	10.0	9.5	2.9	2.7	2.6	16.9	15.7	14.9	27%	27%	28%	4.3%	4.5%	4.8%
National Grid	9.1	13.3	11.2	10.6	4.0	3.8	3.7	20.4	15.5	14.8	30%	34%	35%	5.1%	5.4%	5.5%
Red Electrica	17.3	9.5	9.4	9.5	7.4	7.3	7.3	13.0	13.9	14.2	78%	78%	77%	6.1%	5.9%	5.8%
RWE	26.9	8.0	5.2	4.5	1.2	0.8	0.7	18.3	15.6	11.7	15%	16%	17%	3.0%	3.4%	4.1%
SSE	13.4	10.8	12.2	11.2	1.0	3.3	3.2	9.7	15.8	13.6	9%	27%	29%	7.3%	6.0%	6.2%
Verbund	45.5	15.0	12.6	12.0	5.3	4.7	4.5	28.2	22.5	21.1	35%	37%	38%	1.6%	2.0%	2.5%
Median		**7.8**	**7.1**	**6.9**	**1.4**	**1.6**	**1.4**	**14.1**	**13.9**	**13.0**	**21%**	**20%**	**23%**	**4.7%**	**5.2%**	**5.2%**

Comparison of Gas & Oil 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
OIL REFINERS																
Lotos	87.60	6.8	5.7	5.0	0.7	0.7	0.6	13.3	12.3	11.2	10%	11%	12%	3.4%	2.3%	2.4%
MOL	3006.00	4.5	4.2	3.8	0.7	0.6	0.6	10.9	9.6	8.3	15%	15%	15%	4.7%	5.0%	5.2%
PKN Orlen	94.20	4.9	5.4	5.9	0.4	0.4	0.4	8.4	10.5	13.0	9%	8%	7%	3.7%	3.7%	3.7%
Hellenic Petroleum	8.68	7.0	5.6	5.7	0.5	0.5	0.5	12.3	7.3	7.8	7%	9%	8%	5.3%	5.5%	5.6%
HollyFrontier	53.35	6.2	6.2	6.8	0.7	0.7	0.6	10.3	10.0	11.3	11%	11%	9%	2.5%	2.6%	2.8%
Marathon Petroleum	62.43	8.2	6.3	6.8	0.6	0.6	0.6	13.9	8.4	10.2	8%	9%	9%	3.4%	3.8%	4.2%
Motor Oil	21.56	5.2	4.4	4.9	0.3	0.3	0.3	8.7	7.0	7.7	6%	7%	7%	6.1%	6.3%	6.6%
Neste Oil	30.75	11.5	11.0	10.2	1.5	1.6	1.5	19.4	16.8	15.5	13%	15%	15%	2.8%	3.1%	3.4%
OMV	53.00	4.8	4.6	4.5	1.2	1.2	1.2	9.7	9.4	8.9	25%	26%	27%	3.7%	4.1%	4.4%
Phillips 66	115.42	8.7	7.5	7.6	0.6	0.6	0.6	12.9	10.9	10.7	7%	8%	7%	3.0%	3.3%	3.6%
Saras	1.58	4.0	2.6	3.6	0.2	0.2	0.2	14.2	5.3	8.6	4%	7%	5%	4.4%	9.3%	5.8%
Tupras	122.60	7.6	4.6	5.0	0.4	0.4	0.4	15.3	6.0	5.9	5%	8%	8%	6.8%	13.9%	14.5%
Valero Energy	97.35	9.2	6.3	6.9	0.5	0.4	0.4	19.4	9.9	11.1	5%	7%	6%	3.7%	4.0%	4.3%
Median		**6.8**	**5.6**	**5.7**	**0.6**	**0.6**	**0.6**	**12.9**	**9.6**	**10.2**	**8%**	**9%**	**8%**	**3.7%**	**4.0%**	**4.3%**

Comparison of Petrochemical 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
PETROCHEMICALS																
PKN Orlen	94.20	4.9	5.4	5.9	0.4	0.4	0.4	8.4	10.5	13.0	9%	8%	7%	3.7%	3.7%	3.7%
Axiall	70.56	8.0	7.3	7.0	1.5	1.4	1.4	18.5	15.0	13.3	18%	19%	19%	1.4%	1.5%	1.6%
Braskem	27.85	6.6	6.1	5.4	1.0	1.0	0.9	29.5	21.9	18.4	15%	16%	17%	1.9%	0.9%	1.7%
Eastman Chemical	79.16	8.4	8.1	7.7	1.8	1.8	1.7	11.1	10.0	8.8	22%	22%	22%	3.1%	3.3%	3.7%
Huntsman Corp	23.41	8.6	8.7	8.0	1.1	1.1	1.1	13.3	12.0	10.2	12%	13%	13%	2.8%	2.9%	3.0%
Lotte Chemicals	223,500	4.8	4.5	4.2	0.6	0.6	0.6	8.1	7.1	6.5	12%	13%	14%	4.0%	4.2%	4.5%
LyondellBasell	94.75	7.5	6.9	6.7	1.3	1.2	1.2	9.3	8.1	7.7	17%	18%	18%	4.5%	4.8%	4.9%
Mitsubishi Chemical	833.80	7.4	7.1	6.8	0.9	0.9	0.9	7.0	8.5	8.2	12%	13%	13%	4.8%	4.8%	4.9%
Mitsui Chemicals	2674.00	6.8	7.3	6.7	0.7	0.7	0.7	6.9	10.7	8.6	10%	10%	10%	3.7%	3.7%	3.8%
Westlake Chemical	70.56	8.0	7.3	7.0	1.5	1.4	1.4	18.5	15.0	13.3	18%	19%	19%	1.4%	1.5%	1.6%
Median		**7.4**	**7.2**	**6.8**	**1.0**	**1.0**	**1.0**	**10.2**	**10.6**	**9.5**	**14%**	**14%**	**15%**	**3.4%**	**3.5%**	**3.7%**

Source: Dom Maklerski mBanku 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	4.70	5.1	3.9	3.5	0.7	0.7	0.6	14.1	9.2	8.2	14%	17%	18%	2.3%	2.8%	4.3%
A2A	1.71	7.4	7.1	6.8	1.4	1.3	1.3	15.4	14.5	13.8	19%	19%	19%	4.6%	4.7%	4.9%
BG Group	22.76	5.6	5.2	4.9	0.9	0.9	0.8	13.0	10.8	9.8	16%	17%	17%	6.4%	6.4%	6.6%
BP	5.00	5.2	4.8	4.8	0.7	0.7	0.7	13.1	11.6	11.0	13%	14%	14%	6.3%	6.5%	6.7%
Centrica	0.83	4.7	4.6	4.9	0.3	0.3	0.3	11.7	8.7	8.4	7%	8%	7%	6.0%	6.1%	6.1%
Enagas	22.89	9.9	9.8	10.4	8.2	8.3	8.9	12.6	12.0	12.5	83%	85%	86%	7.0%	7.3%	7.4%
Endesa	24.62	8.6	8.5	8.3	1.6	1.6	1.5	17.0	16.6	16.1	18%	18%	19%	5.8%	6.0%	5.1%
Engie	14.20	6.6	6.3	6.0	1.0	1.0	1.0	13.8	12.3	11.1	16%	16%	16%	5.5%	5.9%	6.4%
Eni	14.05	4.0	3.8	3.6	1.0	1.0	1.0	14.3	11.6	10.5	25%	26%	27%	6.1%	6.3%	6.4%
Equinor	175.80	3.2	2.8	2.6	1.1	1.0	1.0	12.7	10.8	9.8	34%	36%	37%	5.5%	5.8%	6.1%
Gas Natural SDG	23.75	9.3	8.9	8.8	1.5	1.5	1.6	17.4	15.9	15.2	17%	17%	18%	5.8%	6.1%	6.4%
Gazprom	255.20	3.8	3.7	3.5	1.1	1.0	1.0	4.2	4.6	4.3	28%	28%	28%	6.4%	7.2%	9.4%
Hera	3.99	8.3	7.9	7.7	1.4	1.3	1.2	19.1	18.7	18.1	17%	17%	16%	2.6%	2.8%	2.9%
NovaTek	204.00	12.9	12.5	12.7	4.6	4.6	4.1	8.8	13.7	12.2	36%	37%	32%	2.2%	2.8%	3.0%
ROMGAZ	37.50	5.4	5.6	5.3	2.6	2.7	2.6	9.9	10.2	9.7	48%	47%	49%	8.5%	8.4%	9.3%
Shell	26.67	5.5	5.1	4.8	0.9	0.9	0.8	13.0	10.8	9.8	16%	17%	17%	6.4%	6.4%	6.6%
Snam	4.49	12.6	12.4	12.0	10.2	10.0	9.7	13.9	13.7	13.1	81%	81%	81%	5.4%	5.6%	5.8%
Total	48.94	5.3	4.9	4.7	0.9	0.9	0.9	11.9	10.4	9.9	17%	18%	18%	5.5%	5.8%	6.1%
Median		**5.6**	**5.4**	**5.1**	**1.1**	**1.0**	**1.0**	**13.0**	**11.6**	**10.8**	**18%**	**18%**	**18%**	**5.8%**	**6.0%**	**6.3%**

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	3006.00	5.1	4.6	4.5	0.7	0.7	0.6	8.3	7.0	7.1	14%	15%	14%	4.3%	4.6%	5.0%
Bashneft	1935.50	2.0	2.0	1.7	0.5	0.5	0.4	2.9	2.9	2.4	24%	24%	25%	11.3%	11.0%	12.0%
BP	5.00	5.2	4.8	4.8	0.7	0.7	0.7	13.1	11.6	11.0	13%	14%	14%	6.3%	6.5%	6.7%
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	14.05	4.0	3.8	3.6	1.0	1.0	1.0	14.3	11.6	10.5	25%	26%	27%	6.1%	6.3%	6.4%
Equinor	175.80	3.2	2.8	2.6	1.1	1.0	1.0	12.7	10.8	9.8	34%	36%	37%	5.5%	5.8%	6.1%
Gazprom Neft	426.20	4.2	4.2	3.9	1.1	1.0	1.0	5.0	5.1	4.8	25%	25%	25%	8.2%	9.4%	10.6%
Gulf Keystone	2.08	2.9	1.9	1.4	1.7	1.2	1.0	11.9	6.7	5.3	59%	66%	70%	7.4%	5.3%	6.5%
Lukoil	6103.00	3.8	3.9	3.8	0.6	0.6	0.6	6.9	6.9	7.0	15%	16%	16%	6.1%	9.1%	8.8%
Occidental Petroleum	39.93	10.0	7.7	7.1	4.7	3.9	3.6	22.8	44.1	20.4	47%	51%	51%	7.8%	8.0%	8.1%
Repsol	14.68	4.9	4.4	4.4	0.7	0.7	0.7	9.6	7.9	7.8	15%	16%	16%	6.6%	6.9%	7.0%
Rosneft Oil	455.00	4.3	4.1	3.9	1.0	1.0	1.0	6.6	5.7	5.4	24%	25%	25%	6.9%	8.4%	9.5%
Shell	26.67	5.5	5.1	4.8	0.9	0.9	0.8	13.0	10.8	9.8	16%	17%	17%	6.4%	6.4%	6.6%
Surgutneftegas	37.30	-	-	-	-	-	-	5.1	4.4	3.7	-	-	-	9.6%	6.2%	3.7%
Total	48.94	5.3	4.9	4.7	0.9	0.9	0.9	11.9	10.4	9.9	17%	18%	18%	5.5%	5.8%	6.1%
Tullow Oil	1.36	4.9	4.9	4.7	3.6	3.5	3.4	10.7	10.4	9.7	75%	70%	72%	4.3%	4.3%	4.5%
Median		**4.9**	**4.4**	**4.1**	**1.0**	**1.0**	**1.0**	**11.3**	**9.1**	**8.8**	**24%**	**25%**	**25%**	**6.5%**	**6.4%**	**6.6%**

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	20.22	0.2	1.3	1.1	0.0	0.2	0.2	3.4	-	17.5	19%	12%	16%	8.5%	0.0%	0.0%
KGHM	92.24	4.3	4.6	4.1	1.0	1.0	0.9	7.6	9.4	8.7	23%	21%	22%	0.0%	1.6%	3.2%
LW Bogdanka*	38.25	1.4	1.4	1.6	0.5	0.5	0.5	4.5	5.5	6.9	36%	33%	31%	3.0%	4.6%	4.4%
Anglo American	20.62	4.3	4.6	4.8	1.5	1.5	1.5	9.0	10.1	10.8	35%	33%	31%	4.4%	3.9%	4.0%
Antofagasta	8.91	5.8	5.8	5.3	2.8	2.8	2.7	19.5	20.2	17.0	49%	48%	50%	2.4%	2.3%	2.9%
BHP Group	17.20	6.1	5.9	6.3	3.1	3.1	3.2	13.9	11.2	12.5	50%	52%	51%	6.0%	6.3%	5.9%
Freeport-McMoRan	11.66	13.7	8.7	5.3	2.3	2.2	1.8	100+	22.0	8.9	17%	25%	34%	1.7%	2.6%	3.1%
Glencore	2.48	6.9	5.9	5.5	0.4	0.4	0.4	19.1	12.6	9.8	5%	6%	7%	5.4%	5.0%	5.7%
Grupo Mexico	51.57	5.8	5.5	5.2	2.7	2.5	2.4	12.0	10.9	10.6	46%	46%	46%	5.3%	5.2%	7.7%
Kazakhmys	4.94	4.8	4.9	4.7	2.6	2.6	2.5	6.5	6.4	5.9	55%	54%	54%	1.5%	1.7%	1.3%
Rio Tinto	42.23	4.9	5.6	6.2	2.4	2.5	2.7	8.5	10.0	12.1	49%	46%	43%	8.3%	6.7%	5.5%
Southern CC	38.20	10.1	9.7	9.1	4.9	4.7	4.5	19.1	18.4	17.2	49%	49%	49%	4.1%	3.8%	3.9%
Median		**5.3**	**5.5**	**5.2**	**2.3**	**2.3**	**2.1**	**9.0**	**10.9**	**10.7**	**41%**	**39%**	**39%**	**4.2%**	**3.9%**	**3.9%**
ALUMINUM PRODUCERS																
Grupa Kęty	324.00	7.9	8.5	8.7	1.3	1.3	1.3	11.0	12.6	12.9	16%	15%	15%	7.4%	7.3%	5.9%
Alcoa	20.44	4.1	4.1	3.7	0.6	0.6	0.6	-	23.3	15.5	16%	16%	17%	-	0.1%	0.2%
Constellium	14.09	7.1	6.5	6.0	0.7	0.7	0.7	30.9	12.9	9.5	10%	10%	11%	-	-	-
Kaiser Aluminum	108.77	9.0	8.0	8.1	1.3	1.2	1.2	16.7	13.9	13.3	14%	15%	15%	2.2%	2.3%	2.3%
Norsk Hydro	33.01	7.7	5.4	4.6	0.6	0.6	0.5	38.2	14.8	10.6	8%	10%	12%	3.7%	3.8%	4.2%
Rusal	3.47	13.1	10.1	8.5	1.4	1.4	1.3	5.2	4.1	3.9	10%	14%	15%	1.7%	4.4%	5.5%
Median		**7.8**	**7.3**	**7.0**	**1.0**	**1.0**	**1.0**	**16.7**	**13.4**	**11.7**	**12%**	**14%**	**15%**	**2.9%**	**3.8%**	**4.2%**

Source: Dom Maklerski mBanku 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	32.60	4.1	7.6	8.0	0.5	0.7	0.8	6.1	27.8	16.9	13%	9%	9%	0.0%	0.0%	1.1%
ZA Police*	10.30	7.6	5.3	5.1	0.5	0.5	0.5	31.2	15.4	15.8	7%	10%	10%	-	-	-
Acron	4902.00	8.6	7.5	7.2	2.6	2.4	2.2	10.9	9.6	9.6	31%	32%	30%	6.6%	6.7%	7.0%
CF Industries	46.29	9.9	9.3	8.8	3.6	3.5	3.4	21.3	17.7	15.2	36%	38%	38%	2.6%	2.6%	2.7%
Israel Chemicals	16.00	6.7	6.6	6.3	1.5	1.5	1.4	11.1	10.5	10.0	23%	23%	22%	4.6%	4.6%	4.9%
K+S	10.56	8.2	7.0	6.1	1.3	1.2	1.2	18.0	11.0	8.1	16%	18%	19%	2.7%	3.7%	4.7%
Phosagro	2432.00	5.7	5.7	5.5	1.7	1.7	1.7	8.3	9.6	9.7	31%	31%	31%	7.3%	5.2%	5.3%
The Mosaic Company	18.64	7.9	6.4	5.4	1.3	1.2	1.2	32.8	13.4	9.0	16%	20%	22%	1.2%	1.2%	1.4%
Yara International	351.50	6.8	6.0	5.6	1.1	1.0	1.0	12.3	10.4	9.2	16%	17%	17%	3.3%	4.8%	5.6%
Median		**7.6**	**6.6**	**6.1**	**1.3**	**1.2**	**1.2**	**12.3**	**11.0**	**9.7**	**16%**	**20%**	**22%**	**3.0%**	**4.2%**	**4.8%**

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*	15.65	4.9	3.5	3.7	0.8	0.8	0.7	-	2.9	2.8	16%	21%	19%	-	-	5.1%
Kernel	41.00	4.5	5.5	4.9	0.4	0.4	0.4	5.0	7.7	6.9	9%	7%	7%	2.2%	2.3%	3.1%
Agrana Beteiligungs	17.80	10.6	8.8	8.3	0.7	0.6	0.6	43.4	23.7	18.9	6%	7%	8%	5.6%	5.6%	5.6%
Bunge Limited	53.88	10.3	9.7	8.9	0.3	0.3	0.3	30.1	15.4	12.7	3%	4%	4%	3.7%	4.0%	4.5%
Cosan	62.50	5.7	5.4	5.0	0.5	0.5	0.4	14.1	12.9	12.7	8%	9%	9%	2.5%	3.0%	3.2%
MHP	9.18	5.4	5.1	4.6	1.3	1.2	1.1	6.3	6.8	5.1	23%	23%	24%	8.2%	8.2%	8.2%
Nisshin Oillio	3960.00	9.1	8.6	8.2	0.5	0.5	0.5	14.9	15.4	14.7	6%	6%	6%	2.0%	2.0%	2.0%
Suedzucker	12.59	-	10.9	6.7	0.7	0.7	0.7	-	-	15.2	-	6%	10%	1.6%	1.6%	2.1%
Wilmar Int.	4.16	14.4	13.3	12.6	0.8	0.8	0.7	16.4	14.6	13.7	6%	6%	6%	2.4%	2.5%	2.7%
Median		**7.4**	**8.6**	**6.7**	**0.7**	**0.6**	**0.6**	**14.9**	**13.8**	**12.7**	**7%**	**7%**	**8%**	**2.5%**	**2.8%**	**3.2%**

Source: Dom Maklerski mBanku for Polish companies, Bloomberg for foreign firms and companies marked with an asterisk

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

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

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BUY – we expect that the rate of return from an investment will be at least 15%
ACCUMULATE – we expect that the rate of return from an investment will range from 5% to 15%
HOLD – we expect that the rate of return from an investment will range from -5% to +5%
REDUCE – we expect that the rate of return from an investment will range from -5% to -15%
SELL – we expect that an investment will bear a loss greater than 15%
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