

Tuesday, November 05, 2019 | weekly publication

Tuesday Espresso

Weekly Commodity Roundup

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Utilities

EEX prices have edged lower to ca. EUR 46/MWh, led in part by slightly tightened ARA coal quotes. At the same time, emission allowances are holding at EUR 25/t. Polish year-ahead contracts have inched a zloty lower to PLN 264/MWh, resulting in narrower model margins for vertically-integrated coal-based power plants (-PLN 2/MWh). It is worth noting the upward shift in prices of green certificates, currently trading at PLN 145/MWh.

Gas & Oil

Refining margins registered another decline to \$5/bbl during the week, driven by tighter diesel cracks (high ARA inventory) and weak margins on HSFO. Gasoline cracks remain high thanks to favorable US market trends. The Urals/Brent pricing differential has turned negative. Petrochemical margins are still falling across the product slate (olefins, polymers, PTA, butadiene, aromatic compounds). Gas for 2020 delivery is currently traded at EUR 17/MWh, i.e. not much more than December 2019 orders sold at EUR 16.8/MWh.

Metals

The China Caixin Manufacturing PMI index has hit its highest level since March 2017 at 51.7 points, with positive effects for the industrial metals market. Copper is gaining in value as speculators close their short positions (see our Chart of the Week below), improving the outlook of Poland's KGHM. On the downside, KGHM is experiencing a dramatic fall in molybdenum prices, down from \$12 to \$9.25/lb over the past month. Revenues from molybdenum sales are expected to halve to less than PLN 300m in 2020 from approximately PLN 600m in 2019E after a decision to curb production in favor of copper and gold. Falling prices of zinc (p. 12) are working to the advantage of the local alloy producer Stalprodukt.

Agricultural Commodities

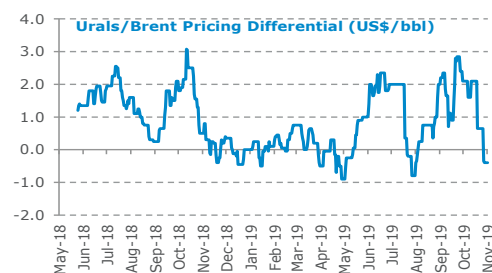
Ukrainian prices of milk have reached a record UAH 760/t, indicating stellar prospects for the dairy business of Astarta, which is also benefitting from increasing sales margins on soybean oil. On the other hand, falling crush margins on sunflower seeds is hurting the profits of Kernel (p. 16 charts).

Coking Coal

Sales of hard coal in Poland amounted to 5.15mmt in September, and with production at 5.025mmt this was the first time since February of output being topped by sales - a development which can have potential positive effects on the local coal miners, JSW and LWB, as well as the mining equipment supplier Famur.

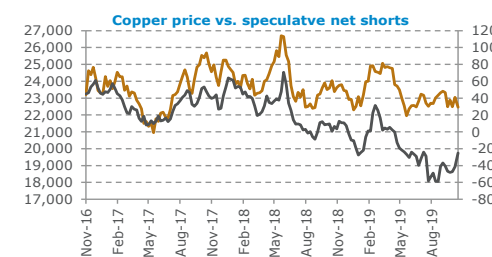
In China, the steel inventory has decreased for several weeks running (see p. 11 charts), The Purchasing Managers' Index for China's steel sector dropped to 42 in October from 43 the month before, with the new orders index down from 38 to 32 points. Seaborne coking coal prices are trading lower in the \$134-138/t range.

Charts of the Week



No IMO 2020 effect on Urals differentials

The Urals-Brent pricing spread is negative at -\$0.4/bbl – a surprising turn in light of the forthcoming IMO 2020 rules. Negative cracking margins on heavy petroleum fractions have increased to where they can no longer be offset by higher diesel cracks. Urals shipments from Russia's Baltic ports are expected to be 10% higher in November 2019 than in the same year-ago month but not nearly as high as in March-September.



Copper speculators cut back positions

Speculative positions in copper have decreased to -25,200 from 41,600 a week ago and a high of 58,500 as investors rush to trim short positions in anticipation of a US-China trade deal amid production disruptions in Chile. There is rising expectation for a rally in copper prices in 2020.

1-Week & YTD Performance

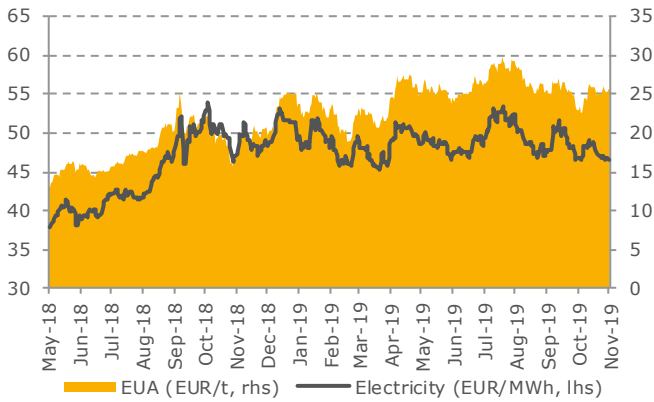
Company	1W	YTD
Boryszew	-0.5%	-9%
PCC Rokita	-0.4%	-33%
Impexmetal	-0.2%	+35%
Kernel	-0.1%	-12%
LW Bogdanka	+0.0%	-27%
Orzeł Biały	+0.0%	-1%
ZE PAK	+0.3%	-9%
ZCh Police	+0.7%	+0%
CEZ	+0.9%	+3%
PGNiG	+1.3%	-27%
Energa	+1.3%	-30%
Tupras	+1.5%	+23%
Kęty	+1.6%	+4%
Tauron	+1.6%	-22%
Enea	+1.8%	-13%
IMC	+2.1%	+25%
OMV	+2.1%	+47%
JSW	+2.2%	-68%
PKN Orlen	+2.6%	+4%
PGE	+4.9%	-16%
MOL	+5.2%	+2%
Tarczyński	+5.2%	-7%
KGHM	+5.3%	+0%
ZA Puławy	+6.5%	+43%
Kruszwica	+6.6%	+28%
Astarta	+6.8%	-22%
Lotos	+8.2%	+16%
Grupa Azoty	+8.6%	+15%
Ciech	+9.1%	-21%
WIG Indices	1W	YTD
WIG	+2.1%	+3%
Chemicals	+7.6%	-3%
Energy	+3.1%	-16%
Oil & Gas	+3.4%	-1%
Food Industry	-0.1%	-11%
Basic Material	+4.9%	-16%
Ukraine	+1.9%	-11%
Sector Indices	1W	YTD
Mining	+3.4%	+19%
Oil & Gas E&P	+4.2%	+2%
Refining EU	+2.3%	+16%
Refining US	+0.5%	+31%
Agri & Food	+0.3%	+31%
Rubber	+0.4%	+21%
Fertilizers	+1.3%	+3%
Chemicals EU	+2.0%	+22%
Industrials EU	+2.2%	+32%
Petchem World	+2.7%	+7%
Utilities EU	+0.0%	+27%
Utilities US	-0.0%	+22%

Source: Bloomberg, Dom Maklerski mBanku

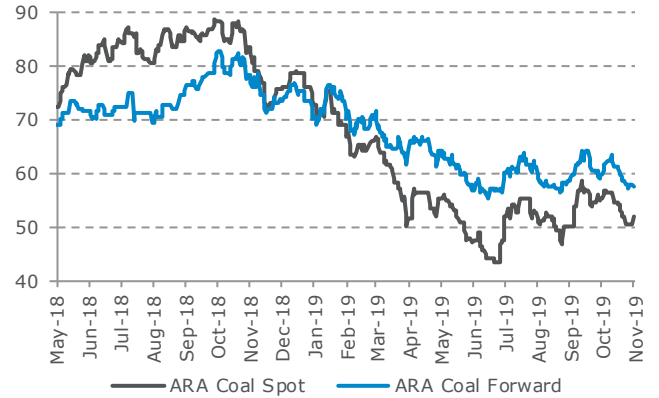


Utilities

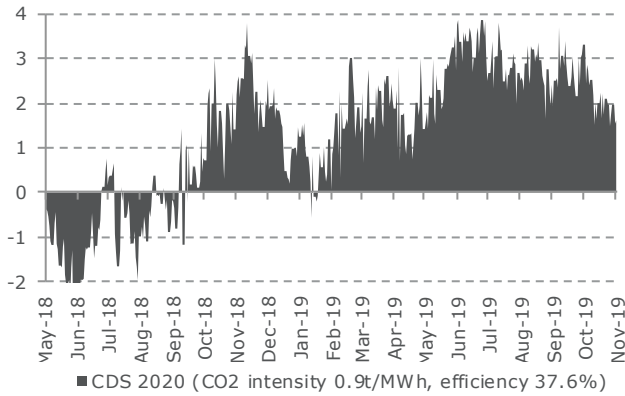
EU Prices of Electricity (EUR/MWh) & EUAs (EUR/t)



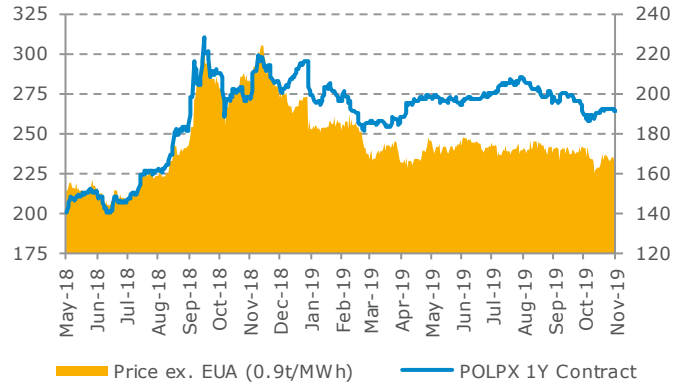
ARA Coal Spot and Forward Prices (EUR/t)



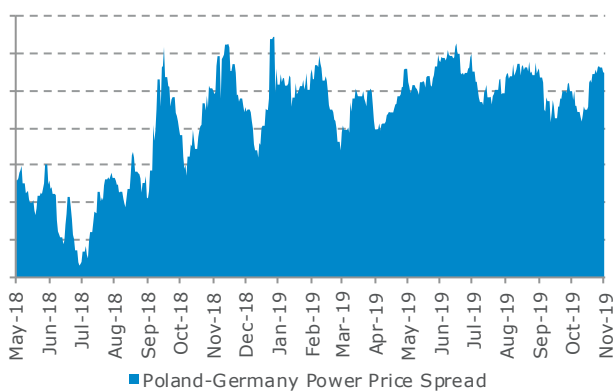
Clean-Dark Spread, Germany (EUR/MWh)



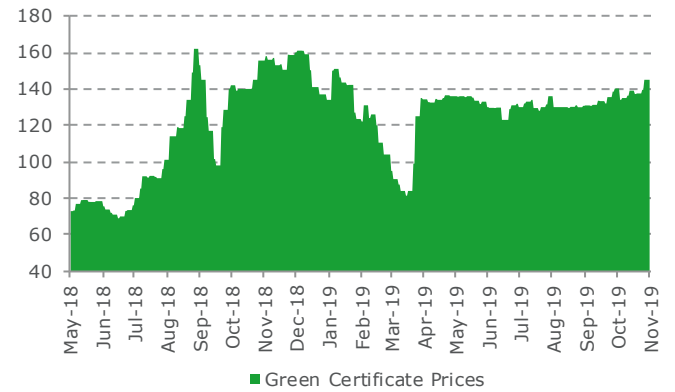
Polish Electricity Prices (1Y) (PLN/MWh)



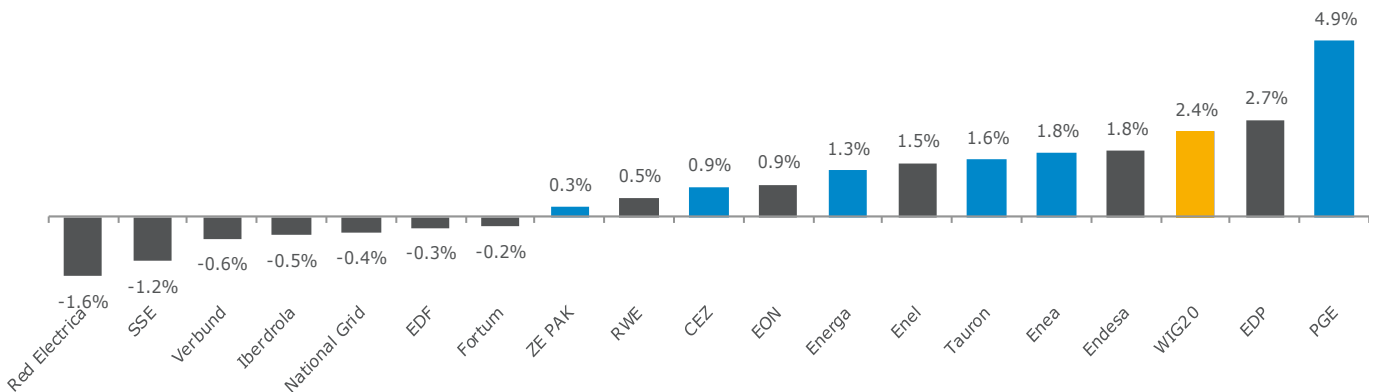
Poland-Germany Power Price Spread (PLN/MWh)



Polish Green Certificate Prices (PLN/MWh)



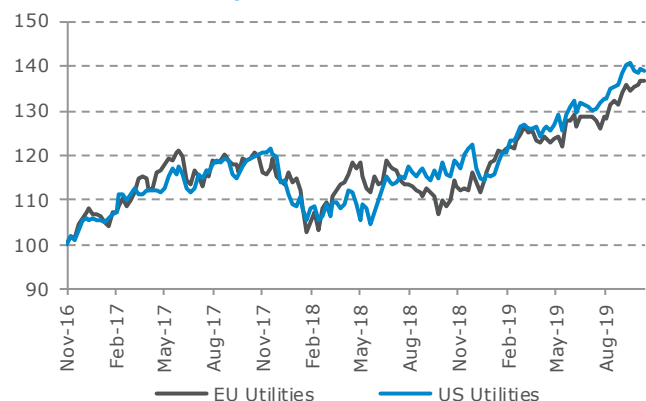
Weekly Returns of Utility Stocks



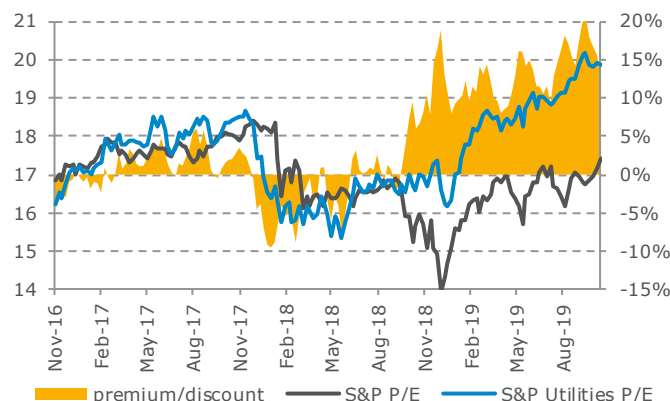
Source: Bloomberg, Dom Maklerski mBanku

Utilities

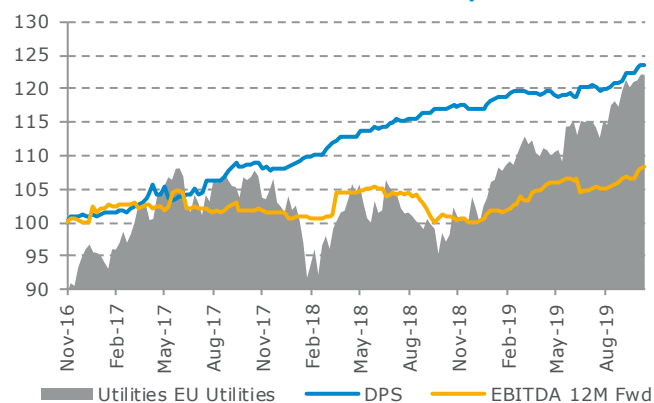
MSCI Utilities Europe vs. S&P Utilities



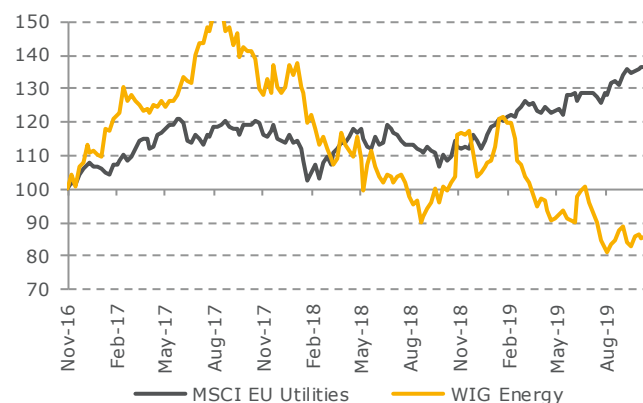
S&P Utilities vs. S&P 500 P/E



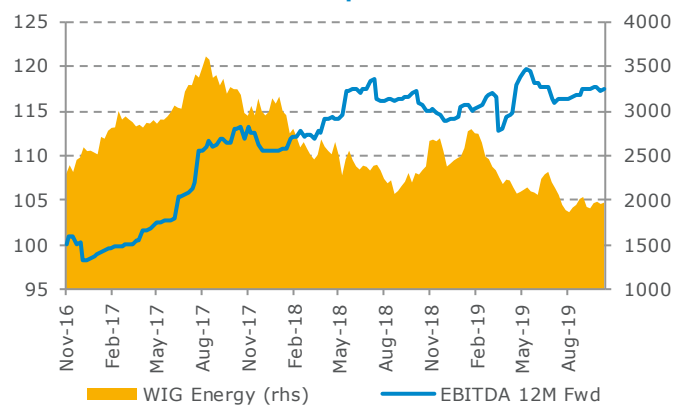
MSCI Utilities EU vs. DPS & EBITDA Expectations



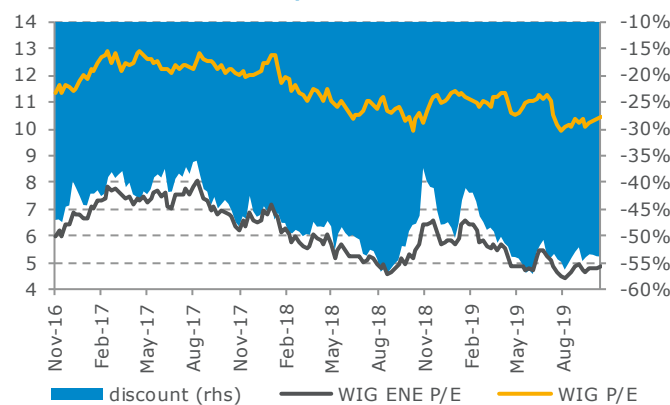
MSCI Utilities EU vs. WIG-ENERGY



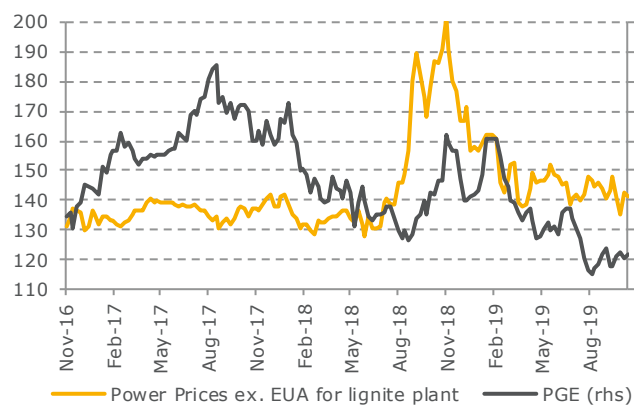
WIG-ENERGY vs. EBITDA Expectations



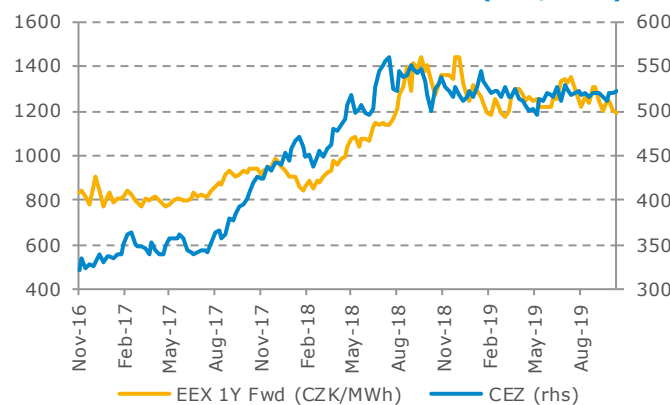
WIG-ENERGY vs. WIG P/E



PGE Performance vs. Power Prices ex. EUA



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

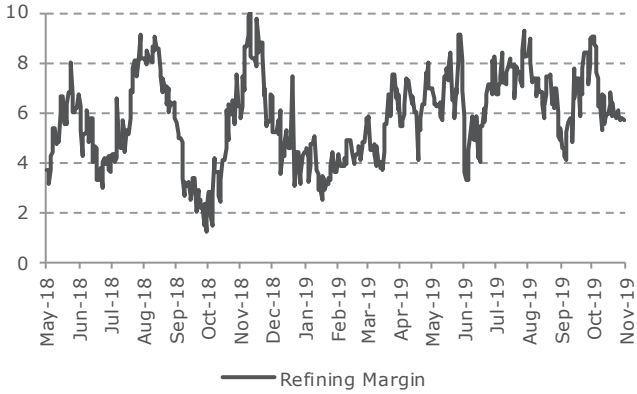


Source: Bloomberg, Dom Maklerski mBanku

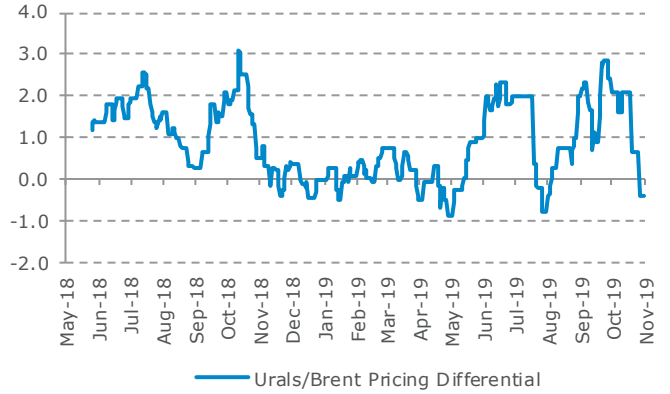


Gas & Oil

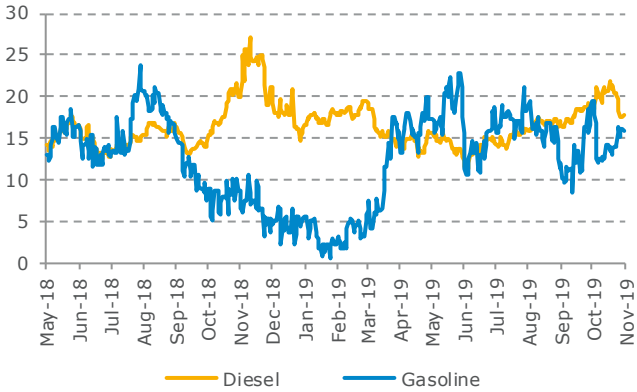
Refining Margins (US\$/bbl)



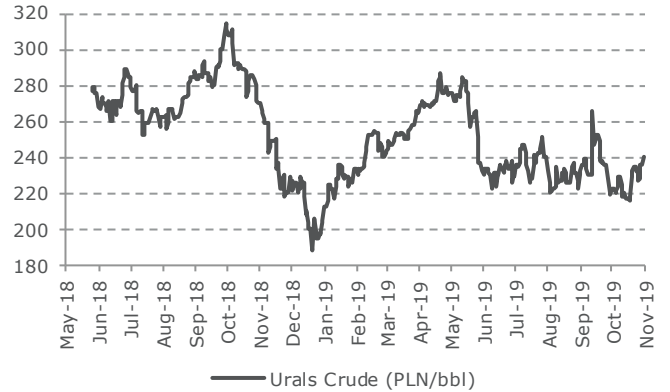
Urals/Brent Pricing Differential (US\$/bbl)



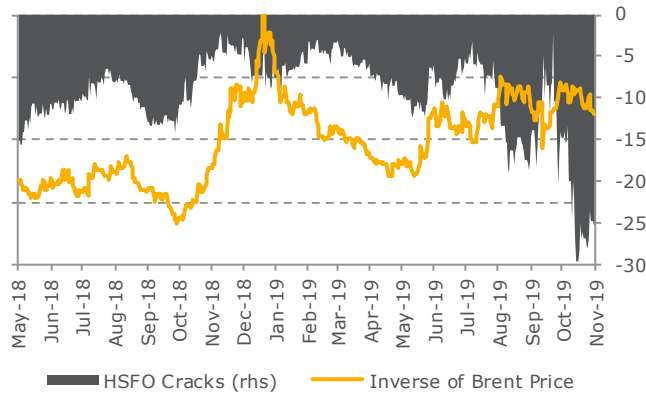
Cracking Margins on Diesel & Gasoline (US\$/bbl)



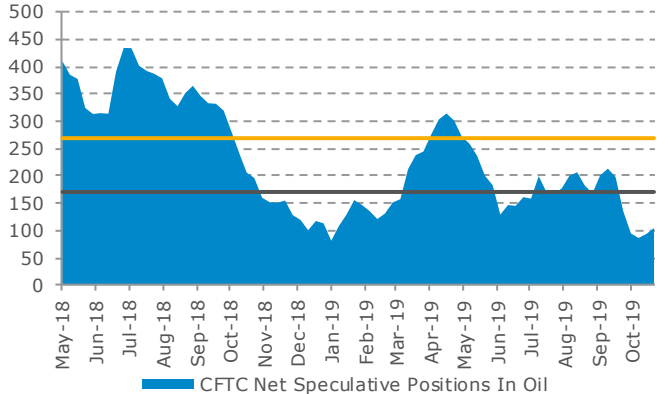
Price of Urals Crude (PLN/bbl)



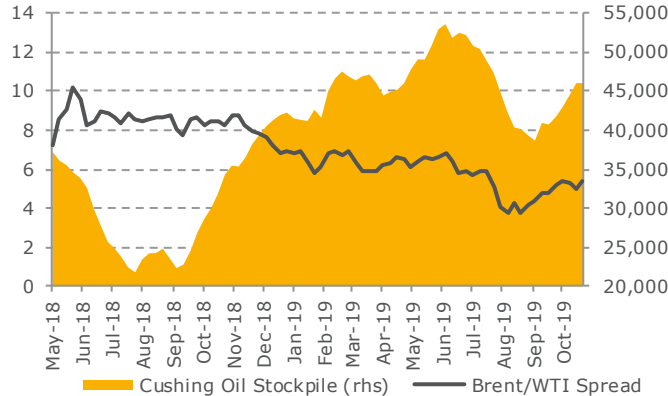
HSFO Cracks (US\$/bbl) vs. Inverse of Brent Price



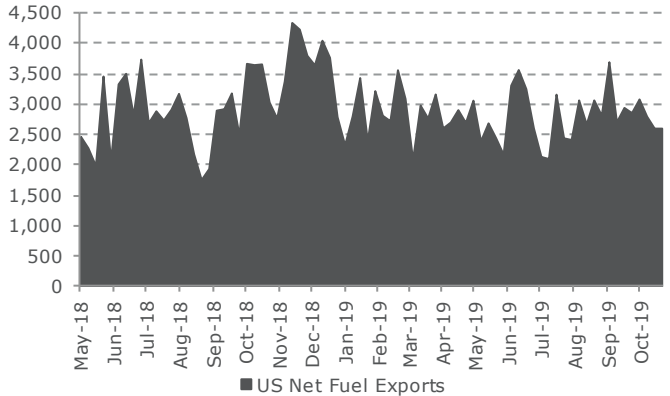
CFTC Net Speculative Positions In Oil



Brent/WTI Spread vs. Cushing Oil Stockpile



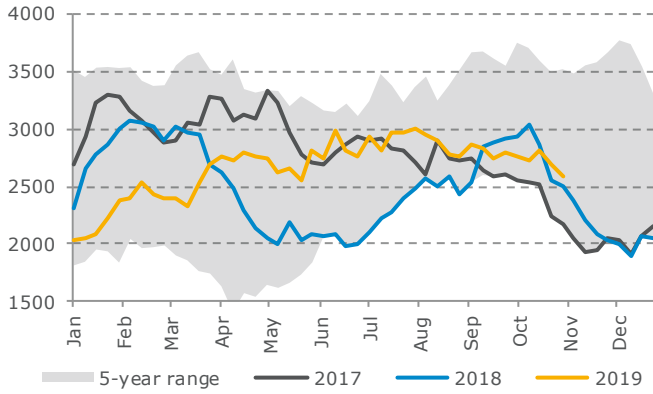
US Net Fuel Exports



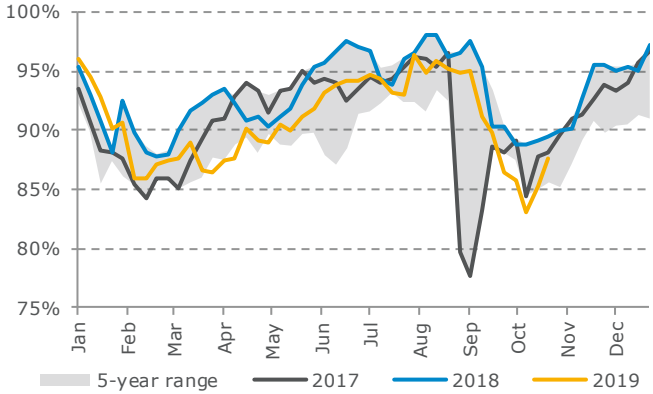
Source: Bloomberg, Dom Maklerski mBanku

Gas & Oil

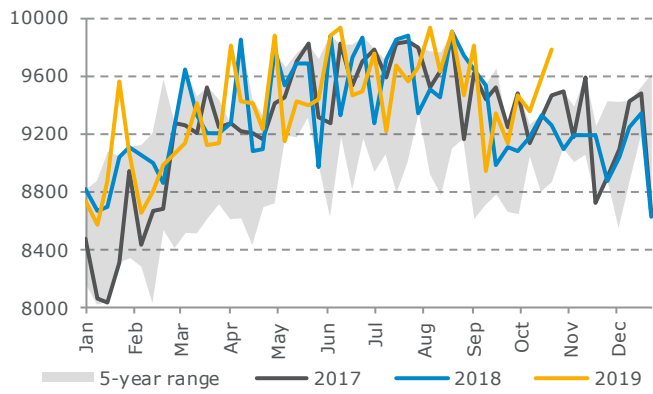
Diesel Inventories @ARA



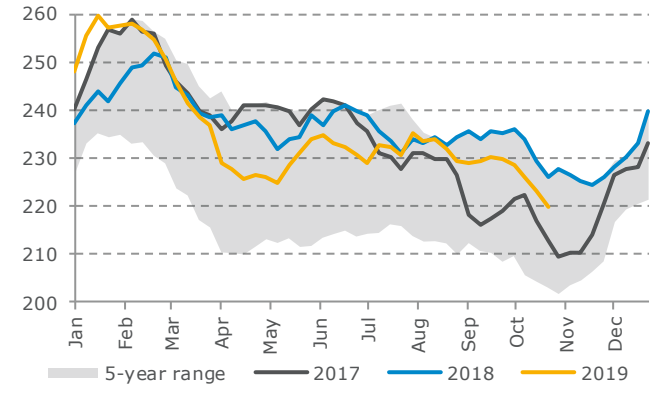
US Refinery Utilization Rates



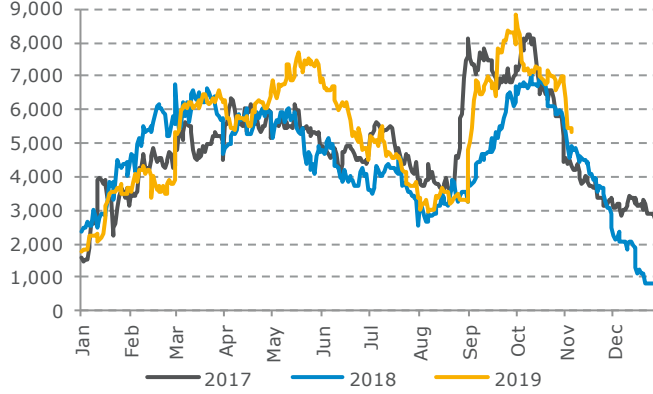
US Gasoline Demand



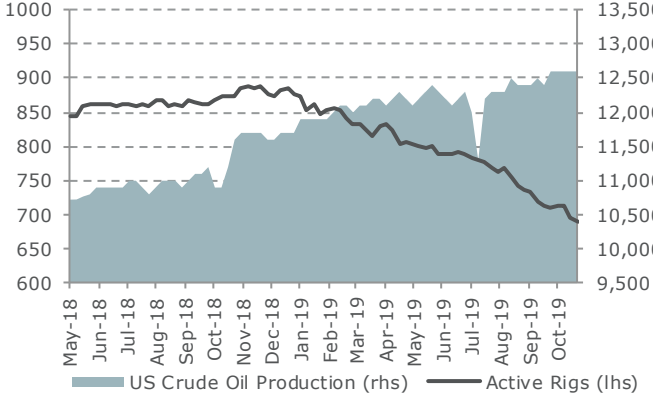
US Gasoline Inventories



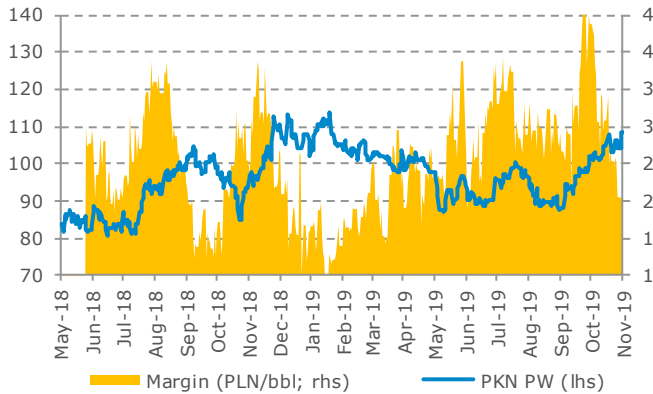
Global Refinery Outages (mmbbl/d)



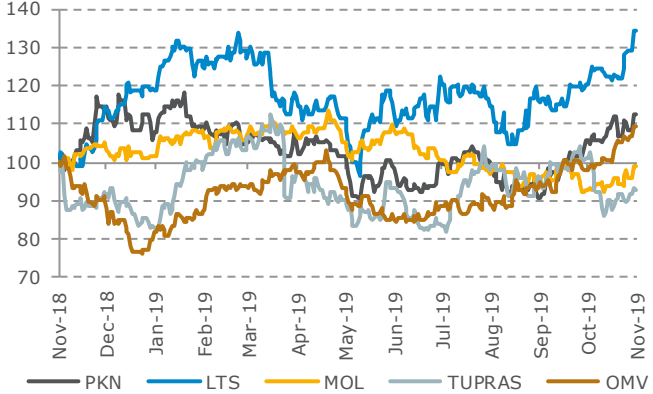
US Crude Oil Production (mboe/d) vs. Active Rigs



PKN Performance vs. Benchmark Margins



Normalized Oil Stock Chart

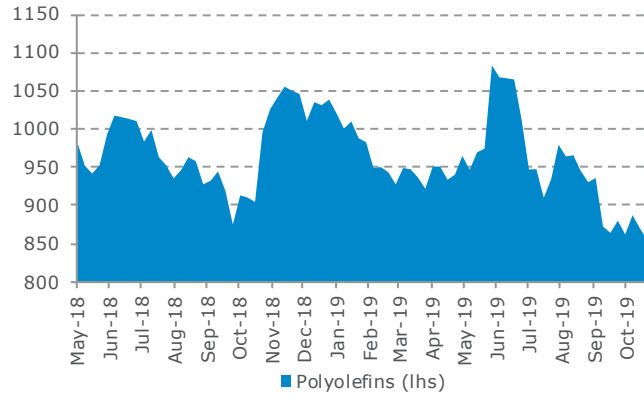


Source: Bloomberg, Dom Maklerski mBanku

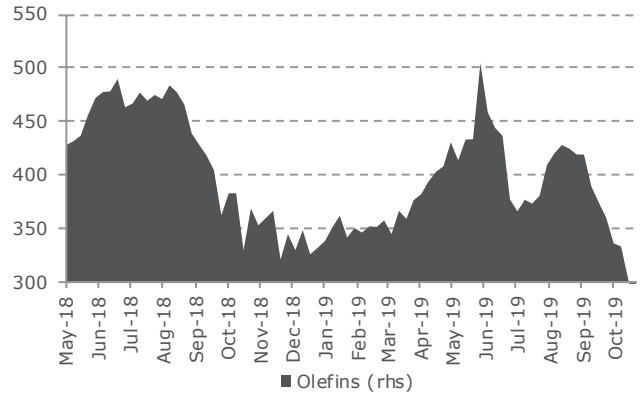


Petrochemicals & NatGas

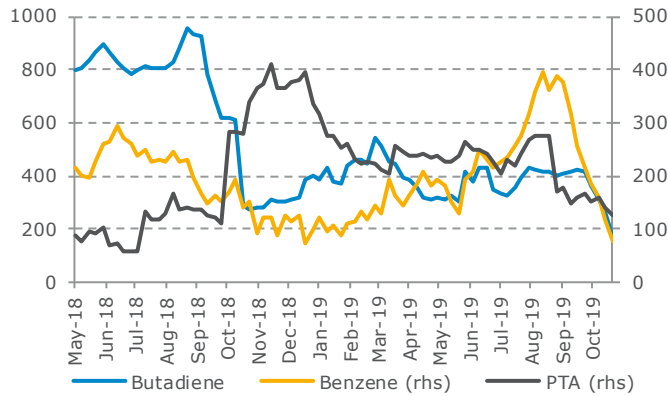
Margins on Polyolefins



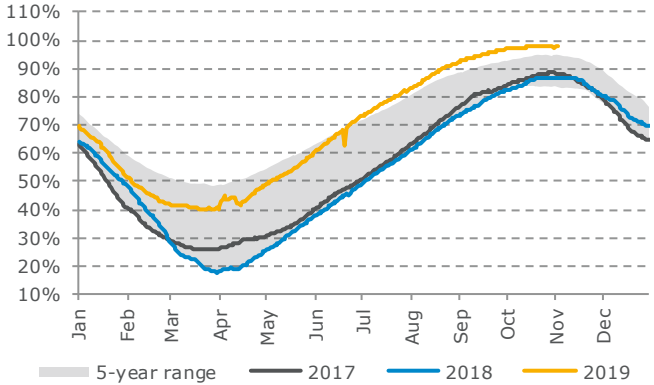
Margins on Olefins



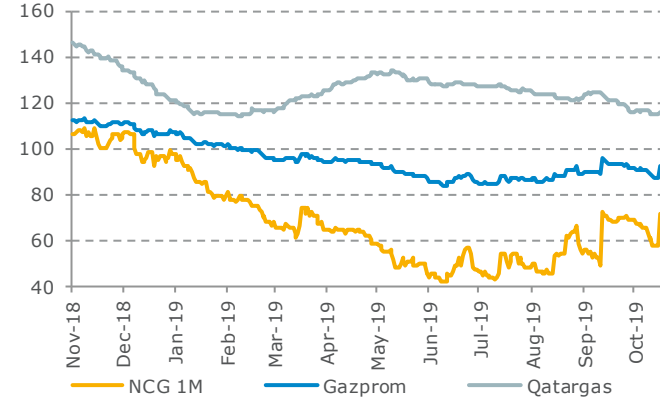
Margins on Butadiene, Benzene & PTA (US\$/t)



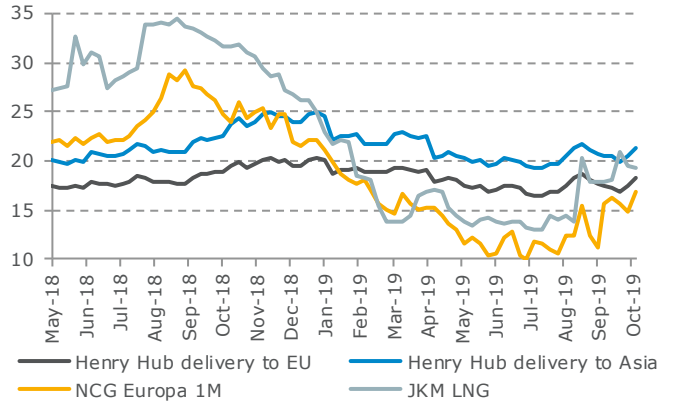
EU Gas Storage Levels (% Full)



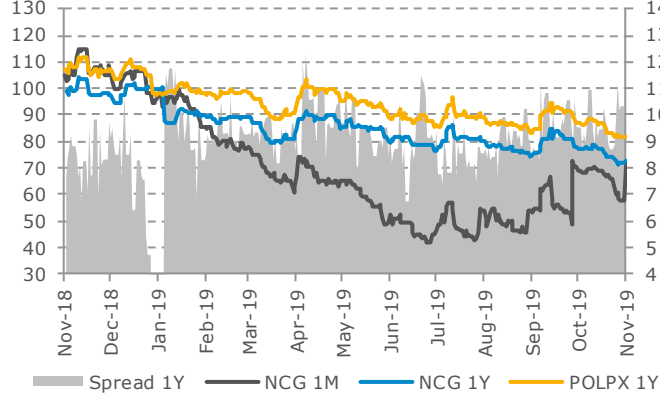
Estimated Costs of Imported Natural Gas (PLN/MWh)



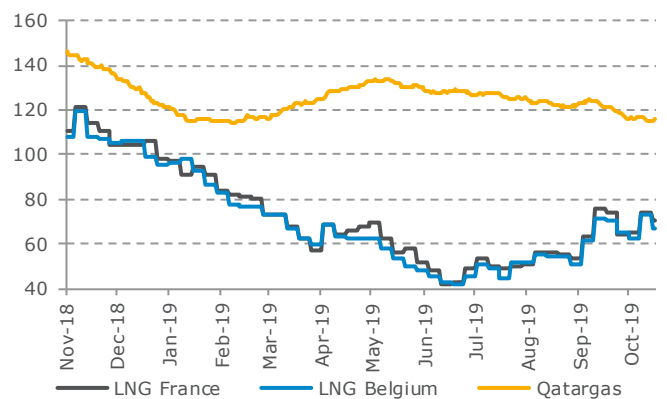
Prices of US LNG Exports to EU and Asia



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



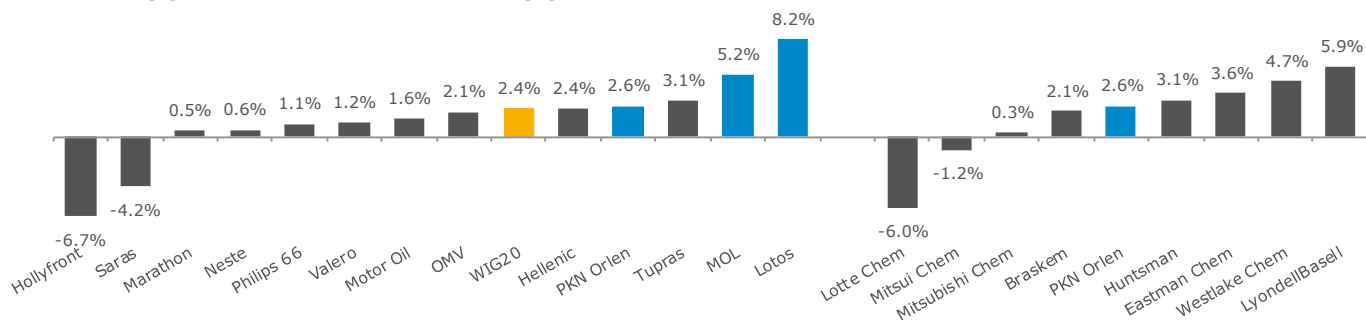
LNG Spot Rates vs. Estimated Qatargas rates



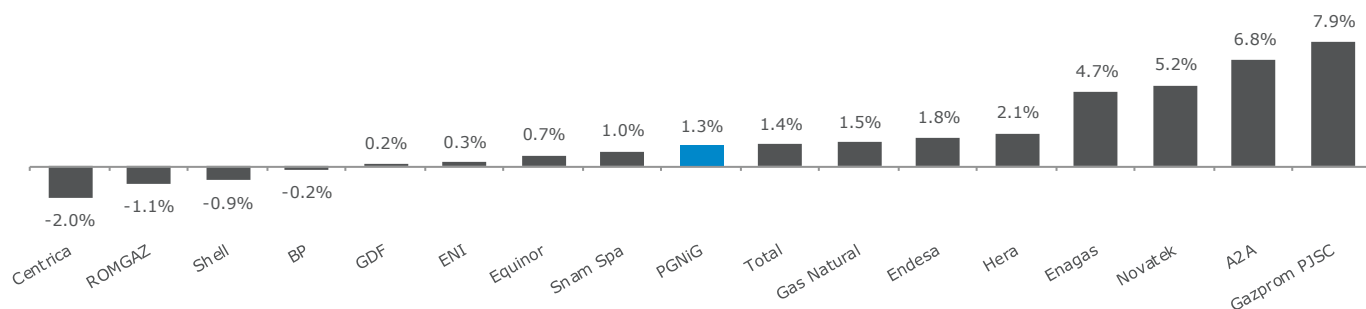
Source: Bloomberg, Dom Maklerski mBanku

Weekly Performance Charts

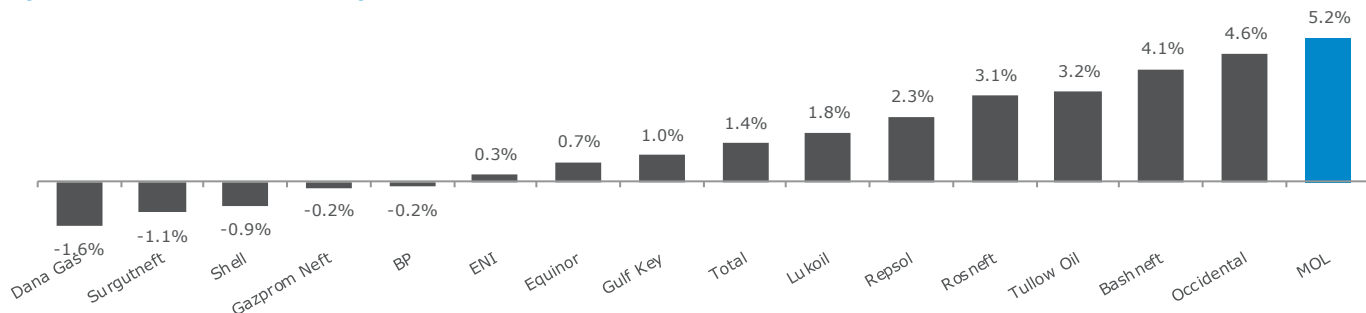
Oil Refiners (L) & Petrochemical Producers (R)



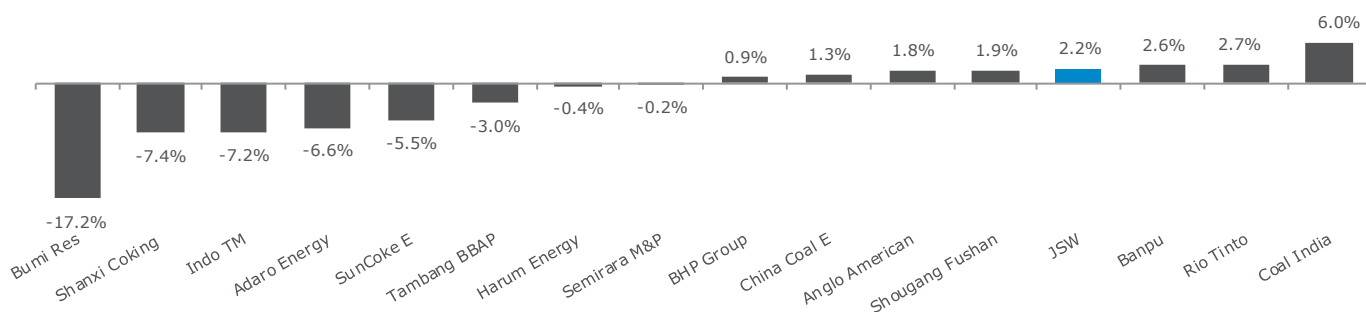
Natural Gas Companies



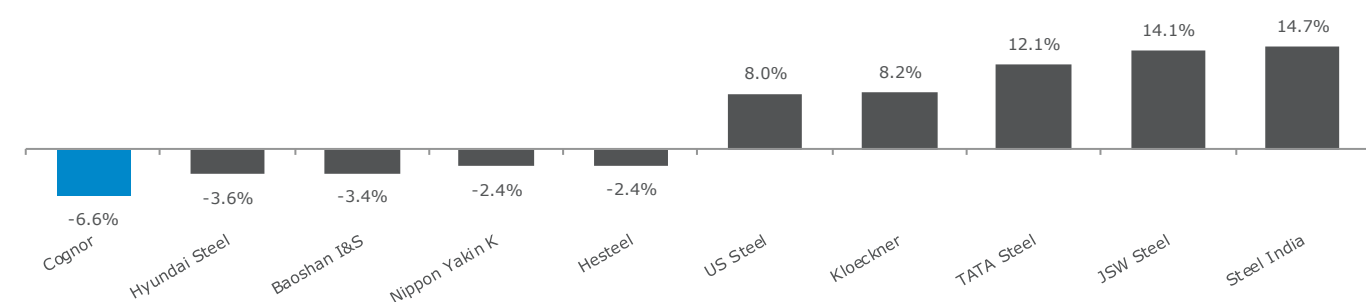
Exploration & Production Companies



Coal Producers



Steel Producers & Distributors

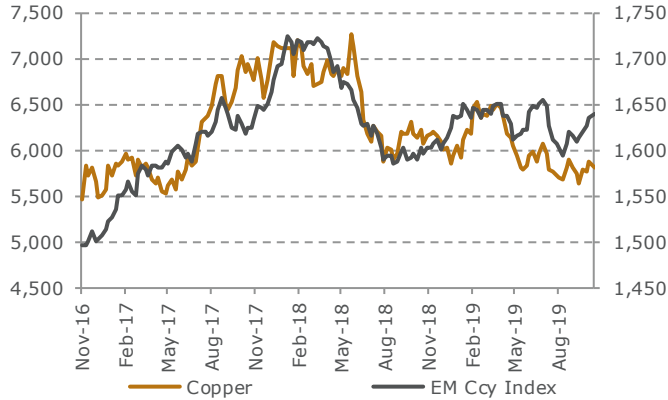


Source: Bloomberg, Dom Maklerski mBanku

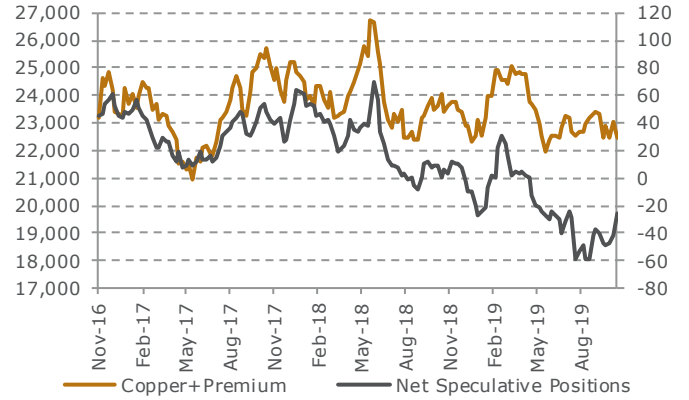


Copper Charts

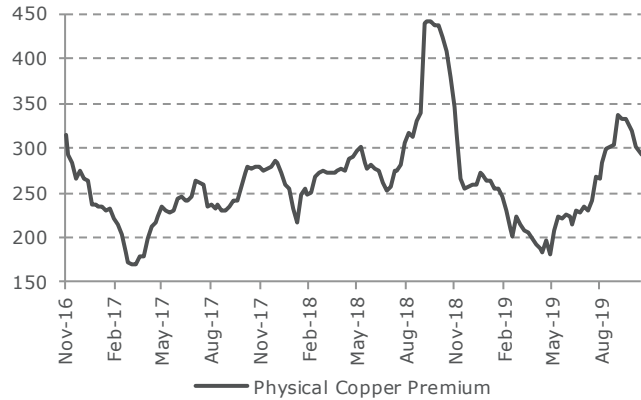
Cu Price (US\$/t) vs. EM Currencies (pts.; rhs)



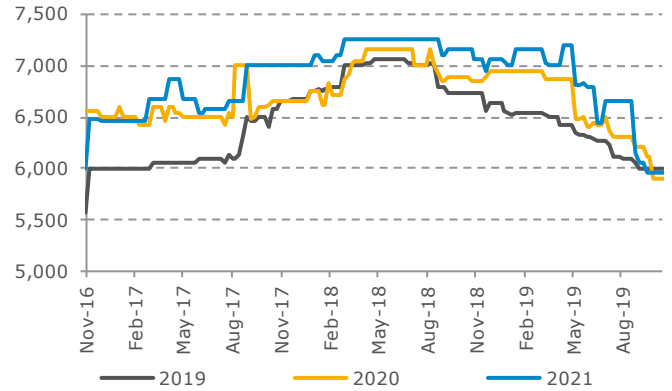
CU Price incl. Supplier Premium (PLN 1,000/t; lhs) vs. Net Speculative Positions (1,000, rhs)



Physical Copper Premiums (PLN/t)



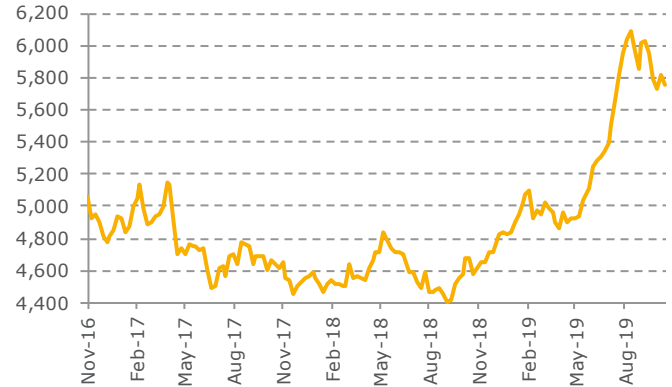
Copper Price Forecasts (median; US\$/t)



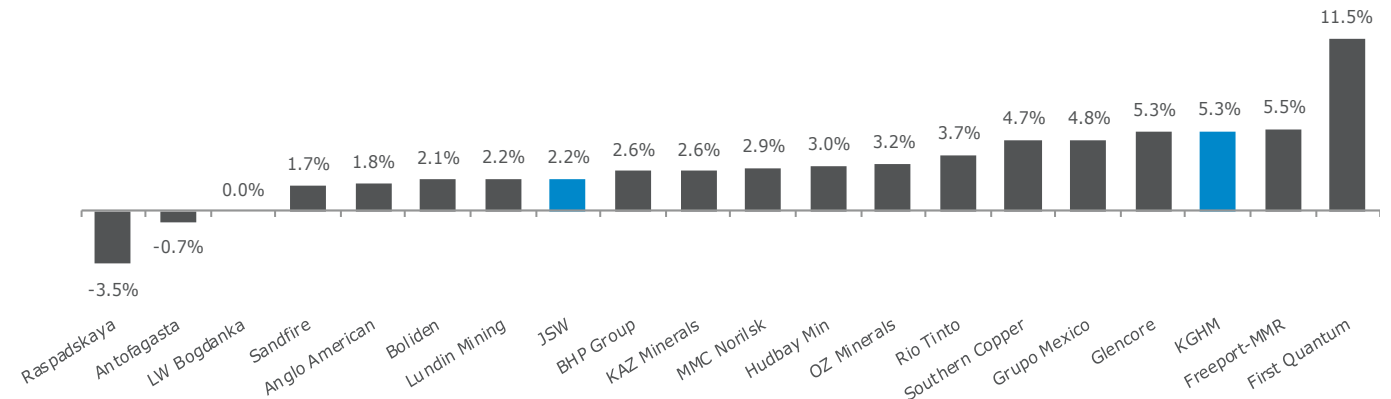
Silver prices (PLN/kg)



Prices of gold (PLN/oz)



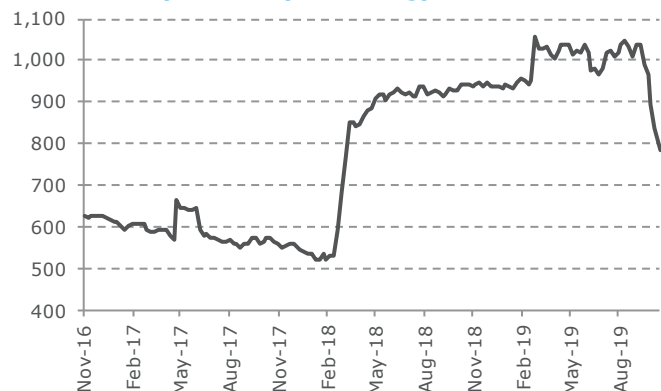
Weekly Returns of Metal & Mining Stocks



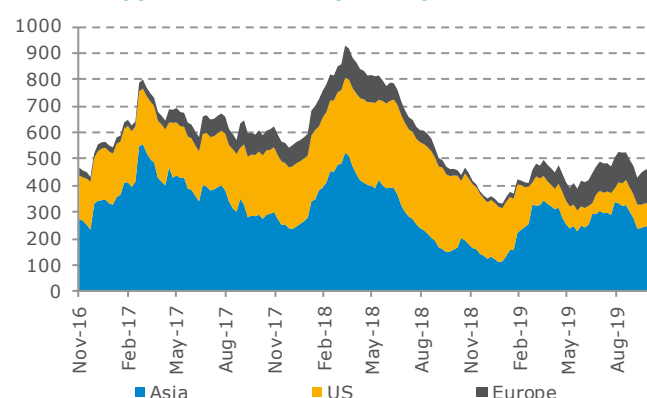
Source: Bloomberg, Dom Maklerski mBanku

More Copper Charts

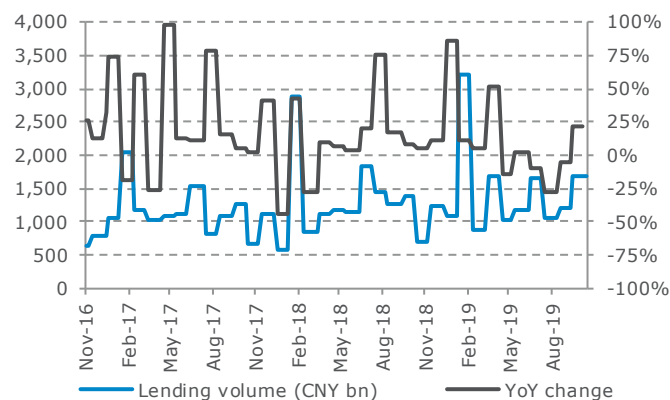
Prices of molybdenum (PLN/10 kg)



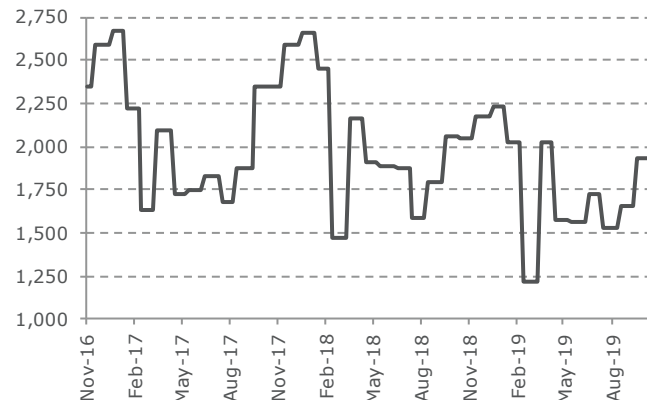
Global Copper Inventories (1,000t)



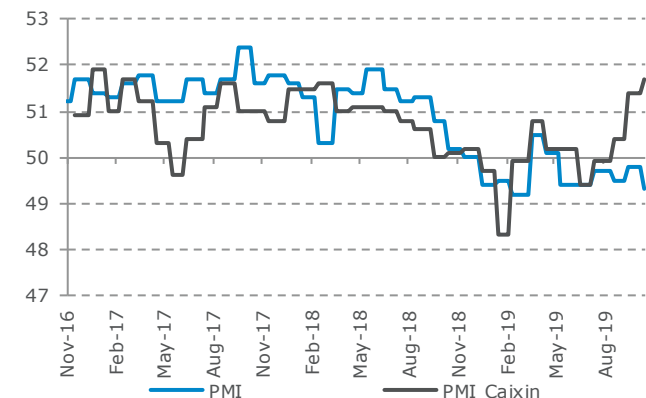
New Bank Lending in China (CNY bn)



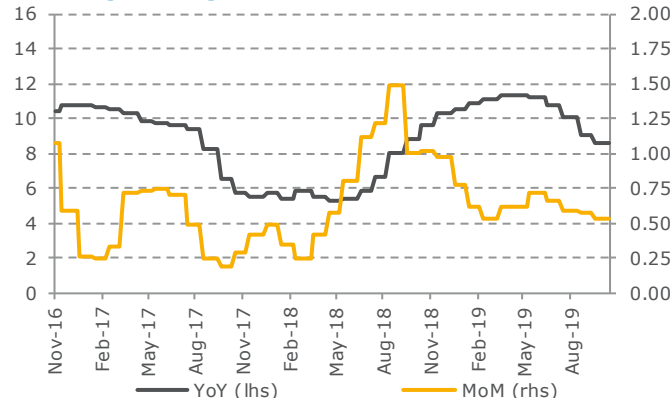
Car Sales in China (thousands)



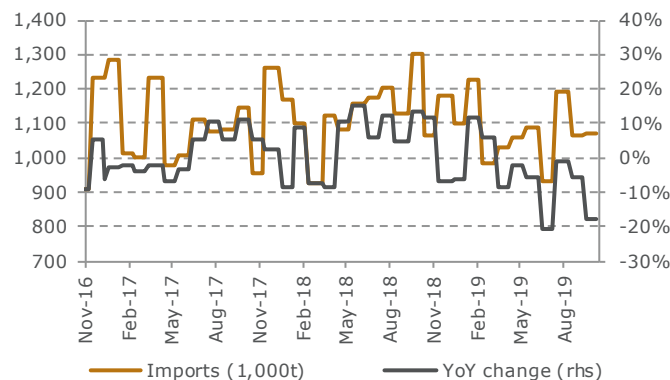
China PMI (points)



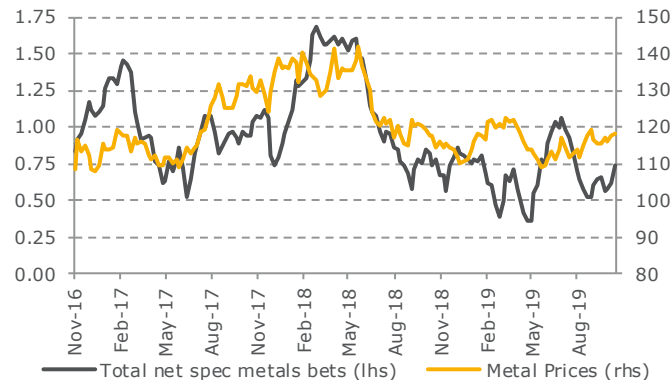
% Change In Avg. New Home Prices In 70 CN Cities



China Copper Imports (concentrates, refined metal, scrap)



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

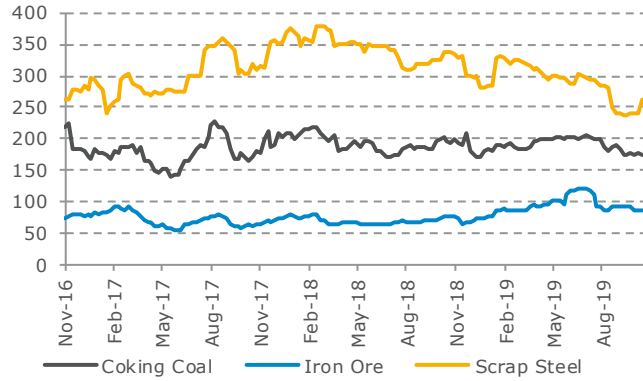


Source: Bloomberg, Dom Maklerski mBanku

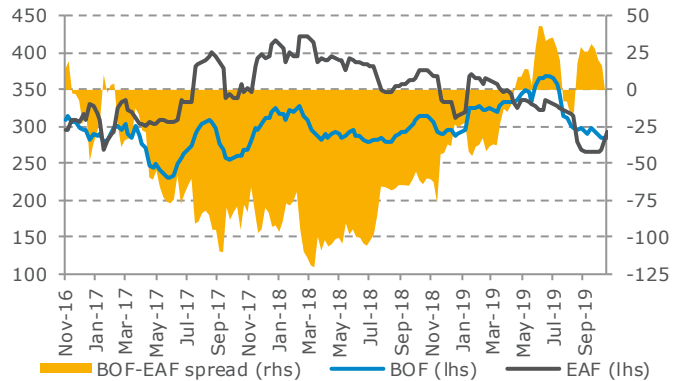


Steel Charts

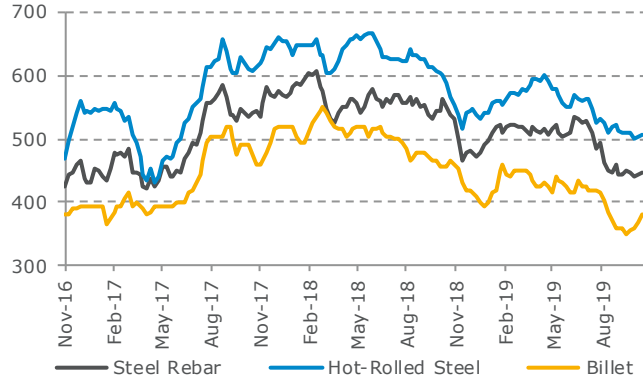
China Coking Coal & Iron Ore Prices, Rotterdam Scrap Steel Prices (US\$/t)



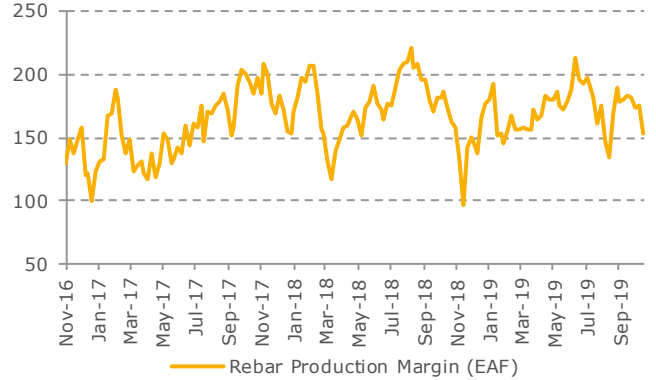
Production Costs of BOF vs. EAF Steel Producers (US\$/t)



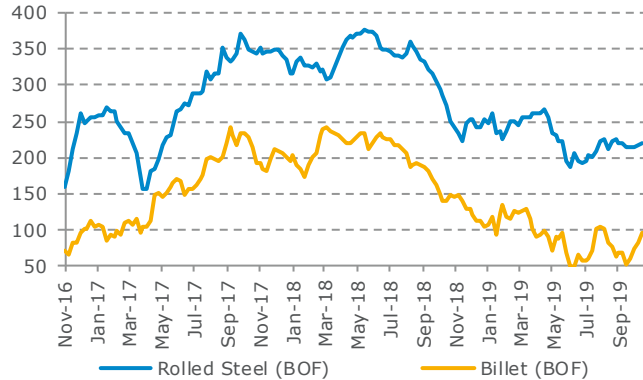
Prices of Steel Rebar & Hot-Rolled Steel (US\$/t)



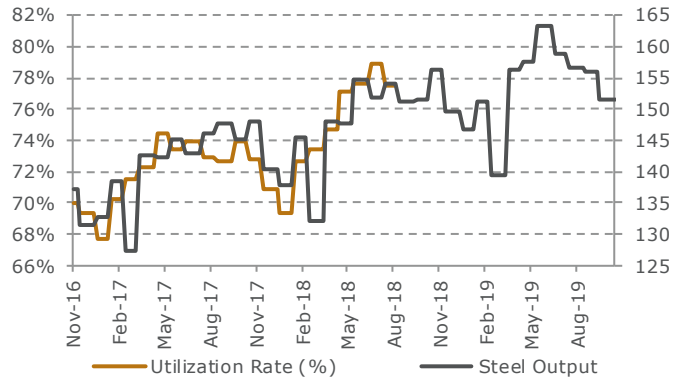
Rebar Production Margins of EAF Steelmakers (US\$/t)



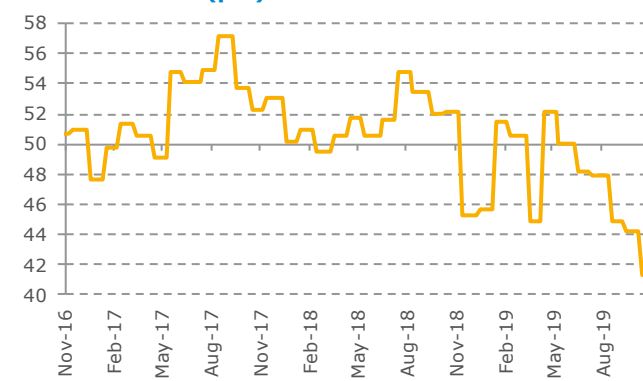
Rolled Steel & Billet Margins of BOF Steelmakers (US\$/t)



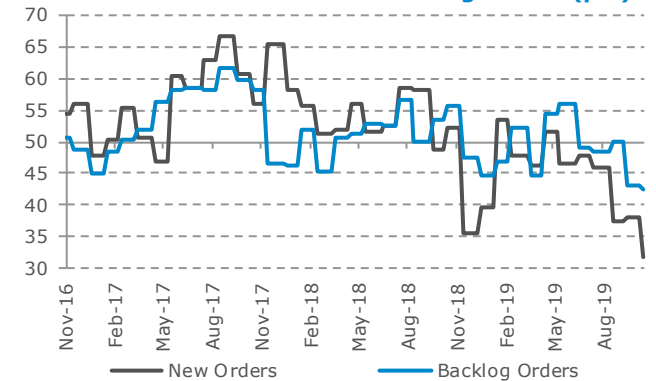
Global Steel Plant Capacity Utilization Rates & Output (Mt)



China Steel PMI (pts)



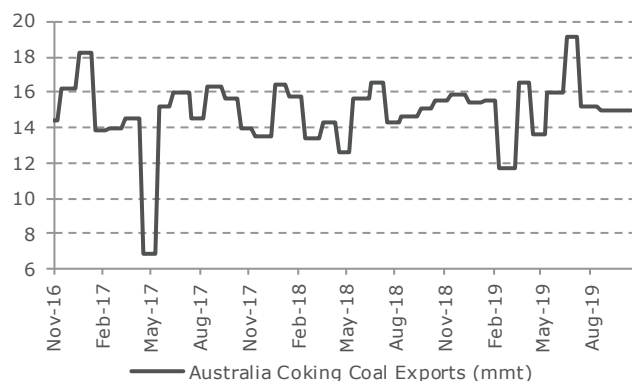
China Steel PMI New Orders & Backlog Orders (pts)



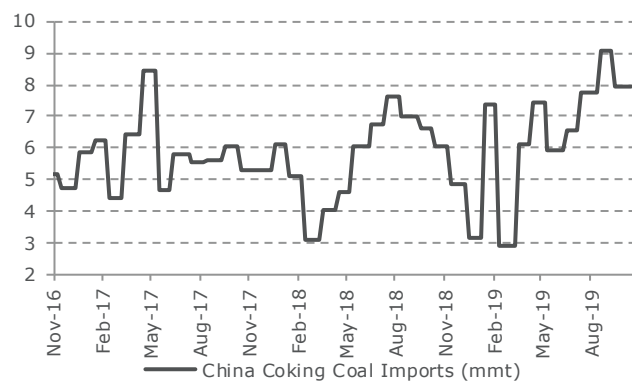
Source: Bloomberg, Dom Maklerski mBanku

More Steel Charts

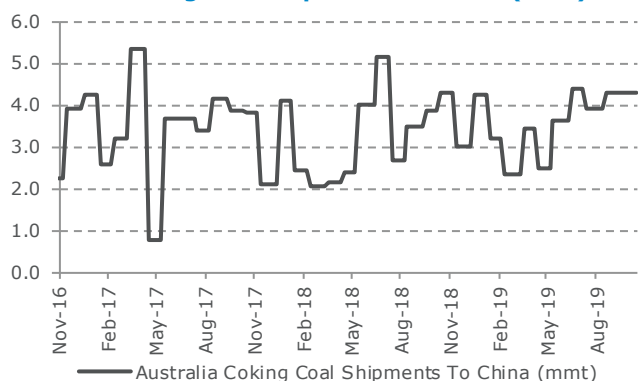
Australia Coking Coal Exports (mmt)



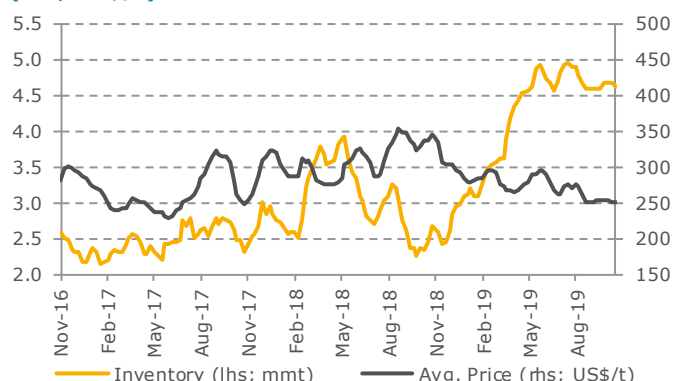
China Coking Coal Imports (mmt)



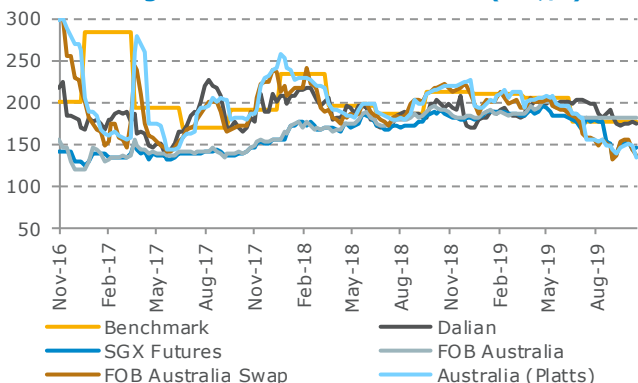
Australia Coking Coal Shipments To China (mmt)



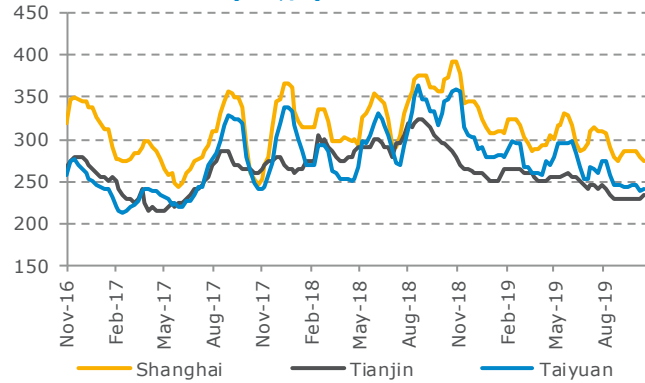
China Coke Inventories (lhs; mmt) & Average Prices (rhs; US\$/t)



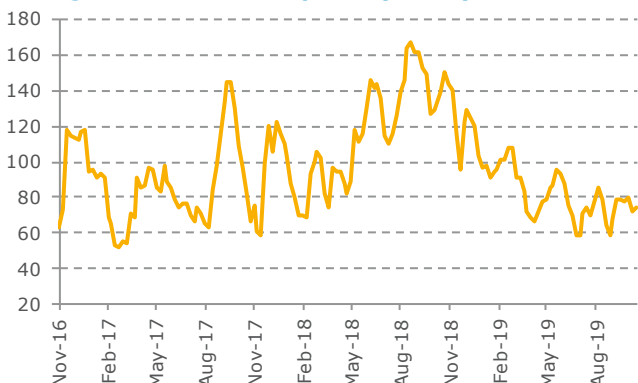
China Coking Coal Prices vs. Benchmark (US\$/t)



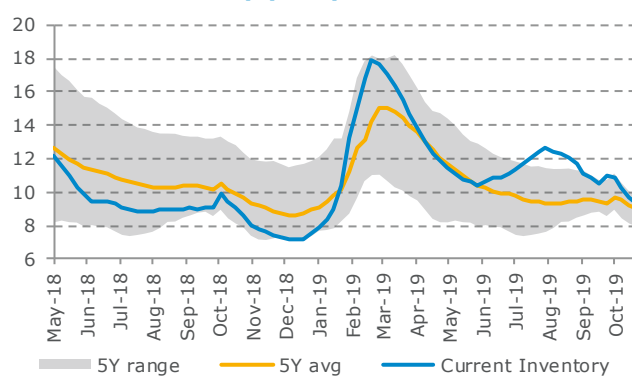
China Coke Prices (US\$/t)



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



China Steel Inventory (mmt)

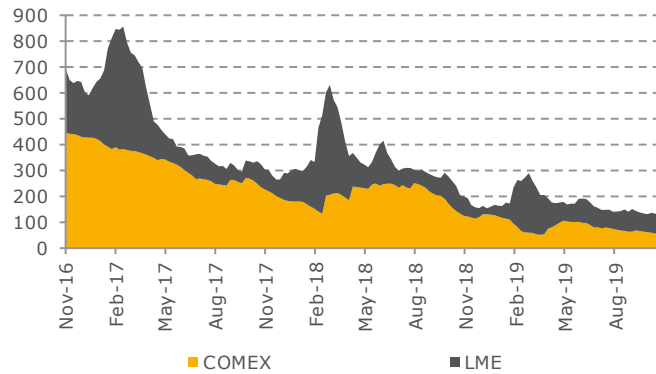


Source: Bloomberg, Dom Maklerski mBanku

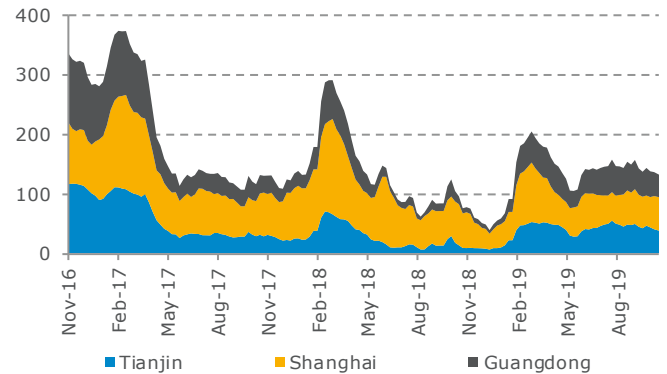


Zinc and Electrical Steel Charts

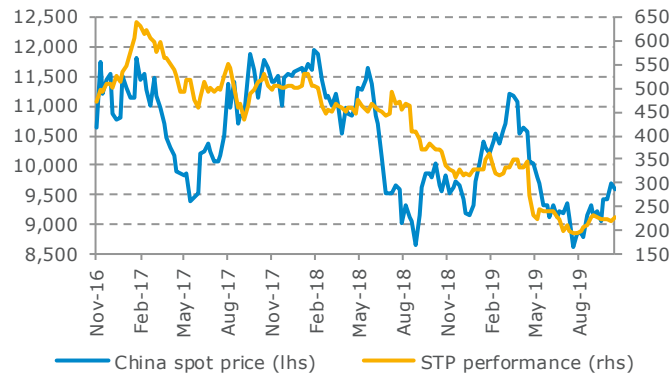
Exchange-Monitored Zinc Inventories (1,000t)



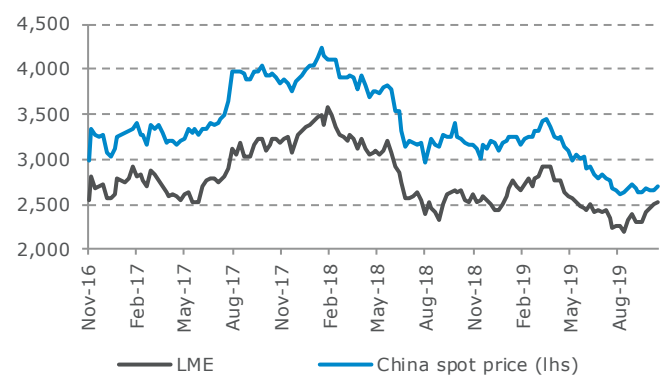
Zinc Inventories in Three Chinese Regions (1,000t)



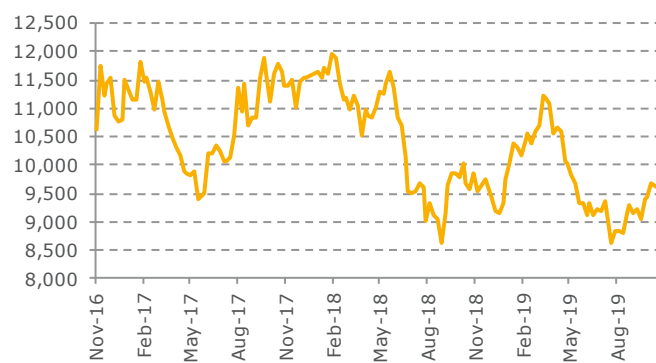
Zinc Prices vs. Stalprodukt Stock Performance (PLN)



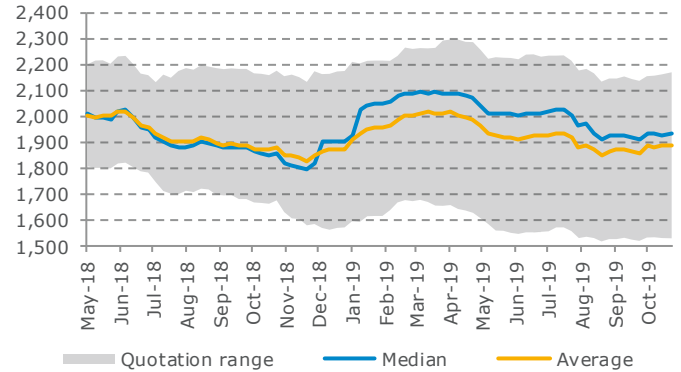
US Dollar Zinc Prices (US\$/t)



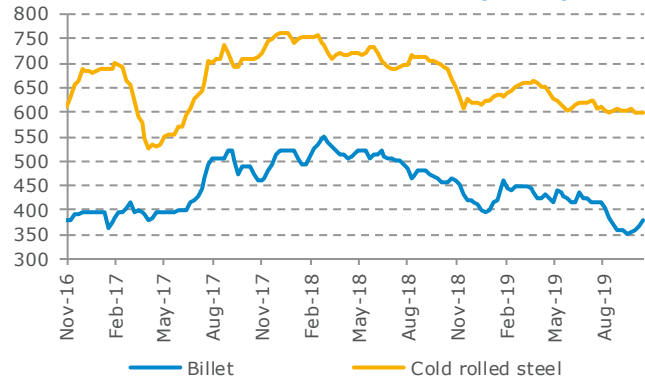
Polish Zloty Zinc Prices (PLN/t)



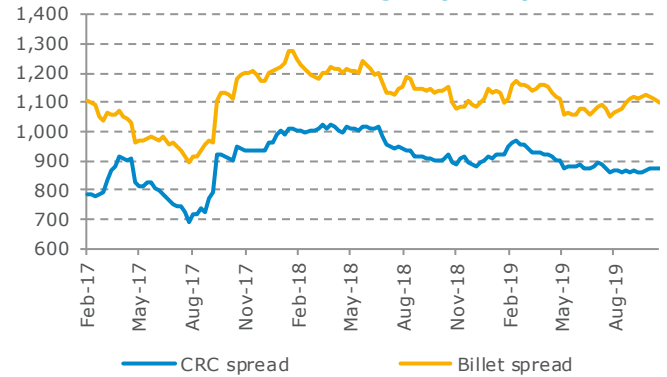
China Electrical Steel Prices (US\$/t)



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



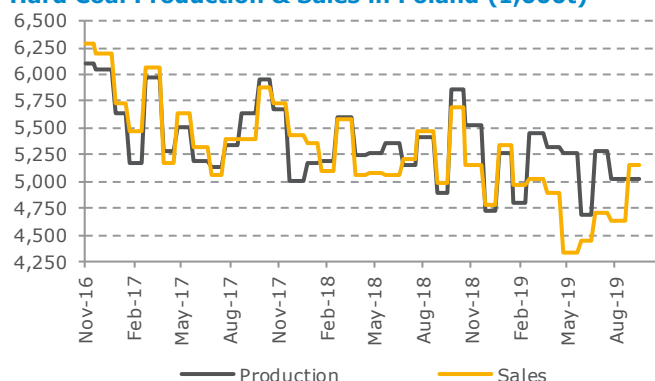
Electrical Steel Production Margins (US\$/t)



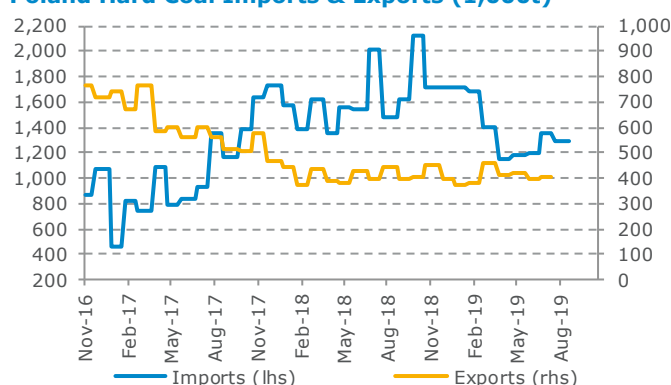
Source: Bloomberg, Dom Maklerski mBanku

Thermal Coal Charts

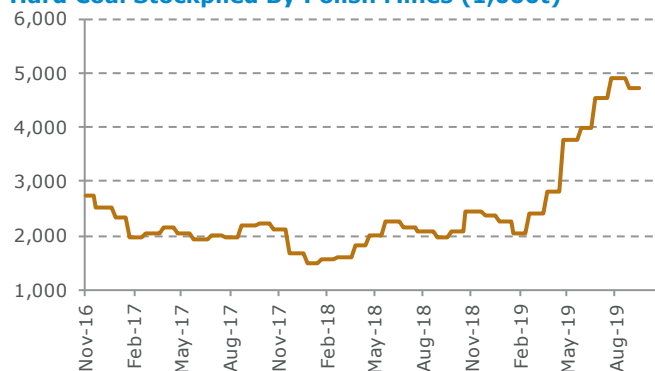
Hard Coal Production & Sales in Poland (1,000t)



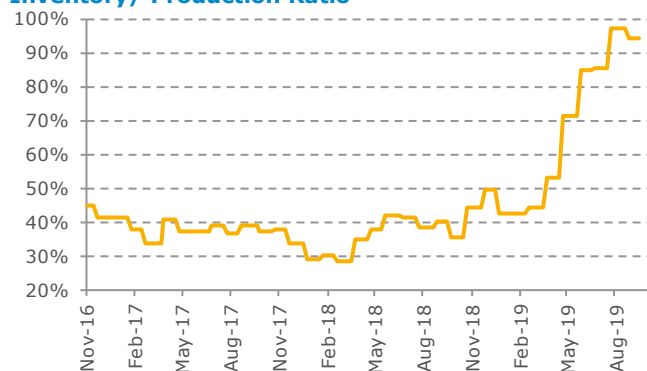
Poland Hard Coal Imports & Exports (1,000t)



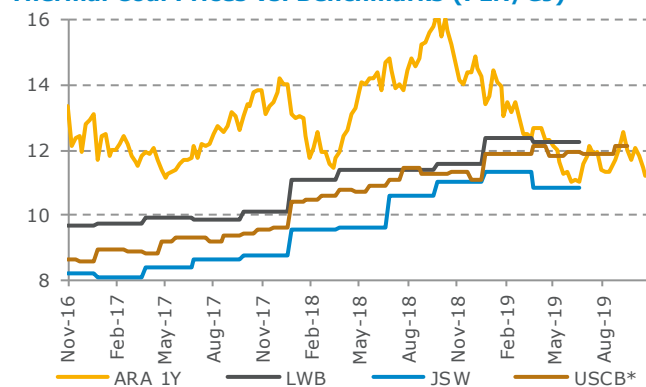
Hard Coal Stockpiled By Polish Mines (1,000t)



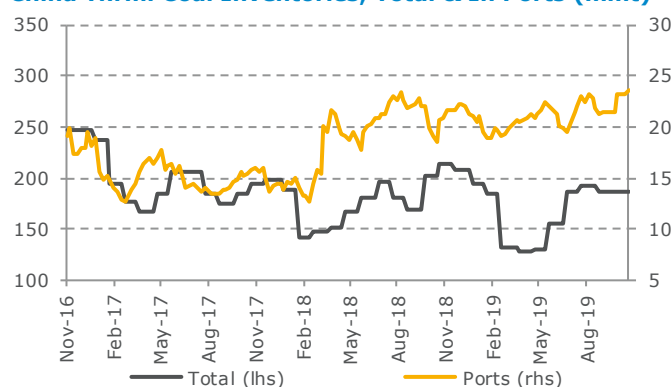
Inventory/ Production Ratio



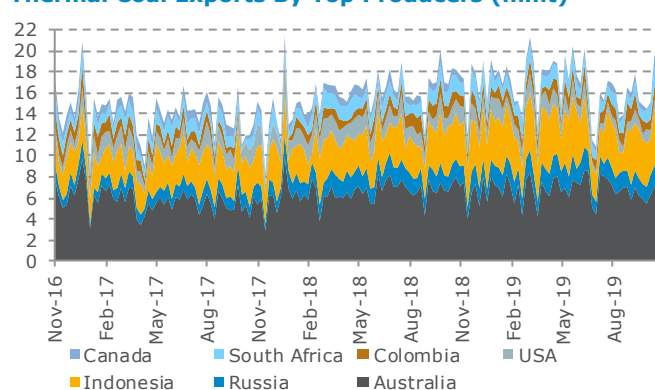
Thermal Coal Prices vs. Benchmarks (PLN/GJ)



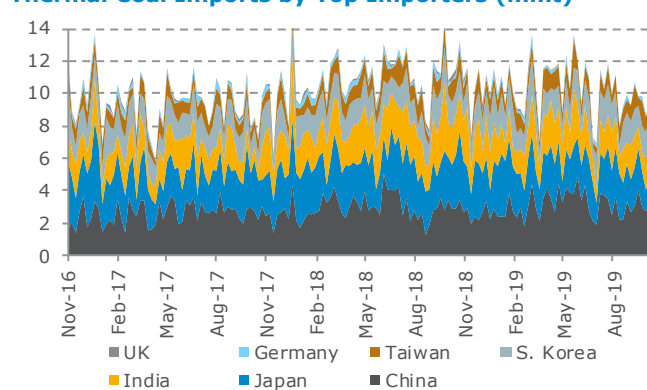
China Thrml Coal Inventories, Total & In Ports (mmt)



Thermal Coal Exports By Top Producers (mmt)



Thermal Coal Imports by Top Importers (mmt)

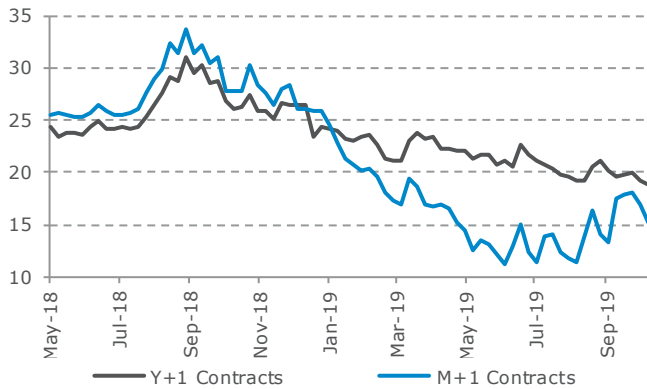


Source: Bloomberg, ARP, Eurostat, Dom Maklerski mBanku *Upper Silesian Coal Basin

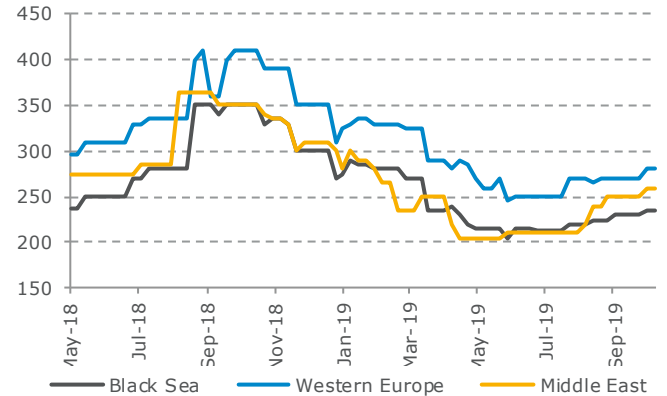


Fertilizer Charts

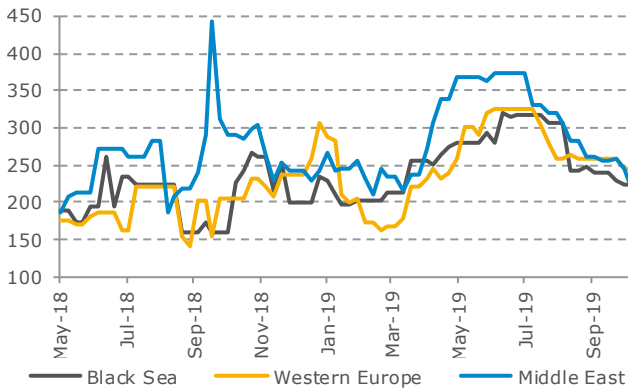
German NatGas Prices (US\$/MWh)



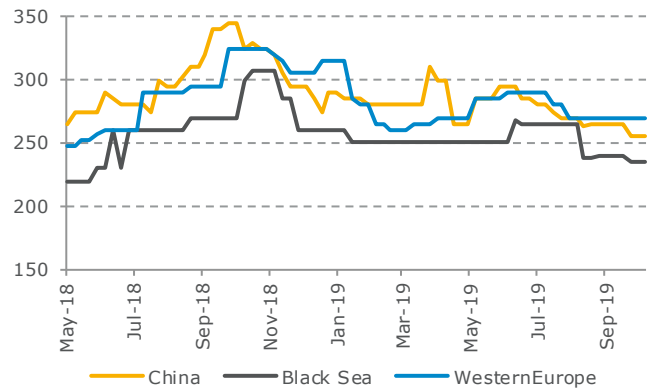
World Ammonia Prices (US\$/t)



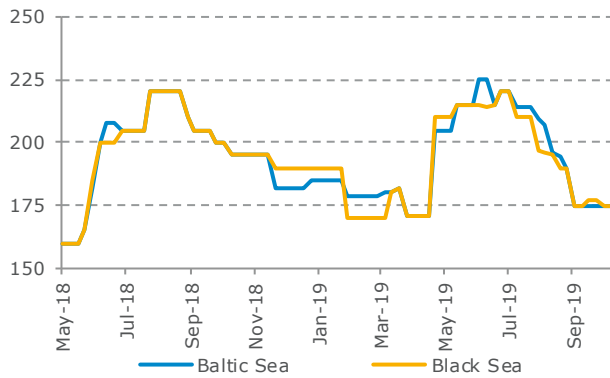
Urea-Ammonia Price Difference



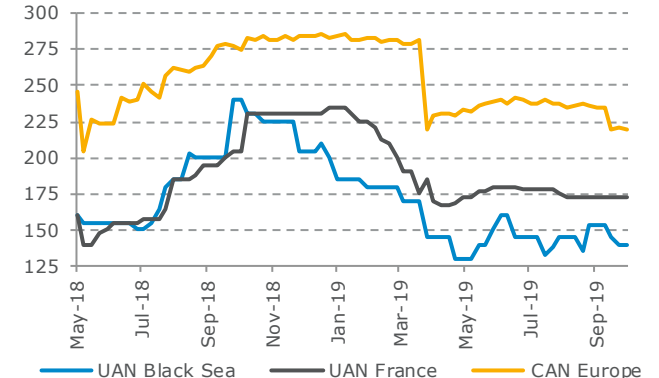
World Urea Prices (US\$/t)



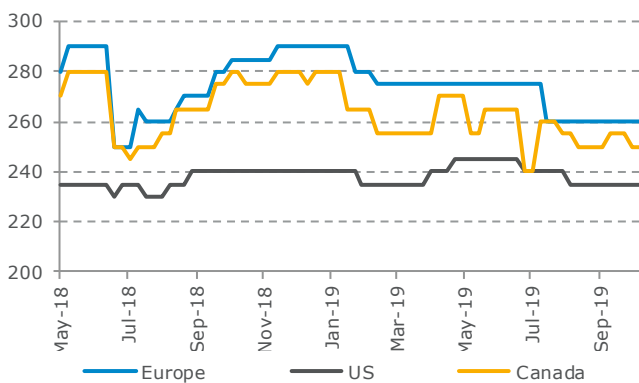
World Ammonium Nitrate Prices (US\$/t)



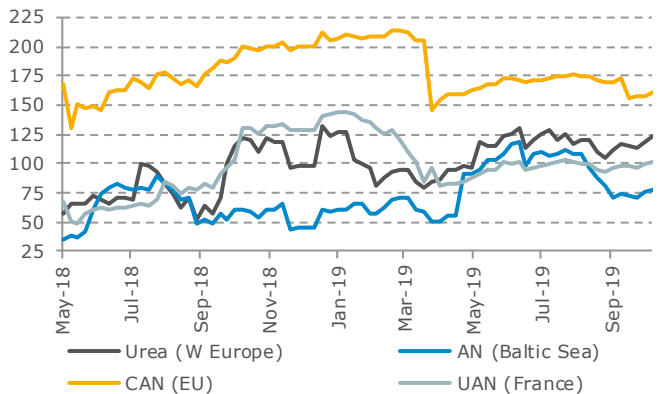
CAN & UAN prices (US\$/t)



World Ammonium Sulfate Prices (US\$/t)



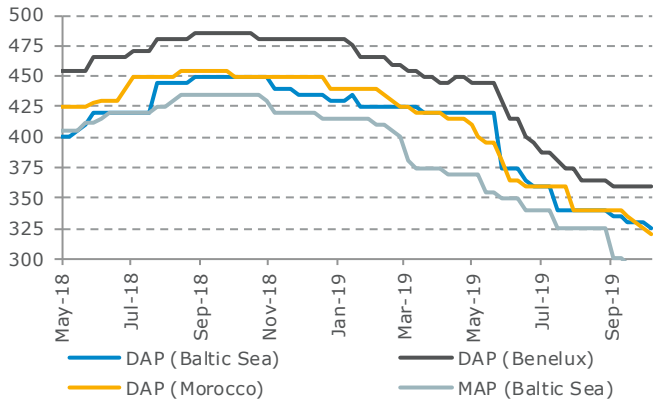
Production Margins On Nitrogen Fertilizers (US\$/t)



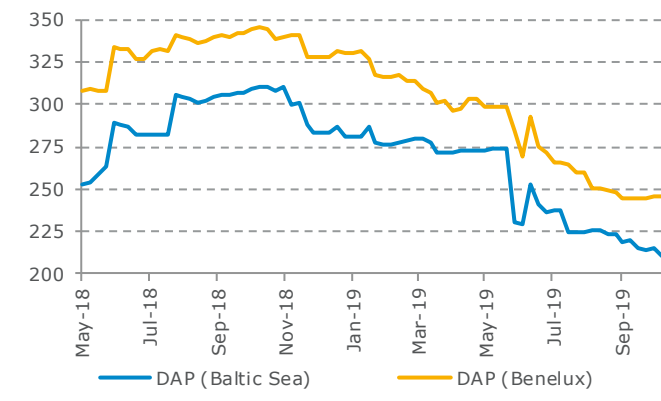
Source: Bloomberg, Dom Maklerski mBanku

Fertilizer Charts

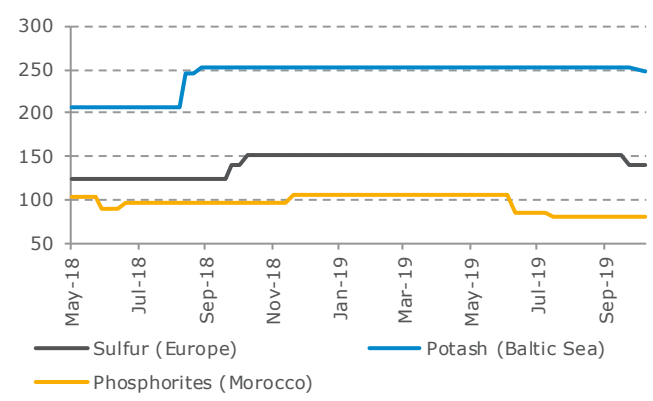
Prices of P & K Fertilizers (US\$/t)



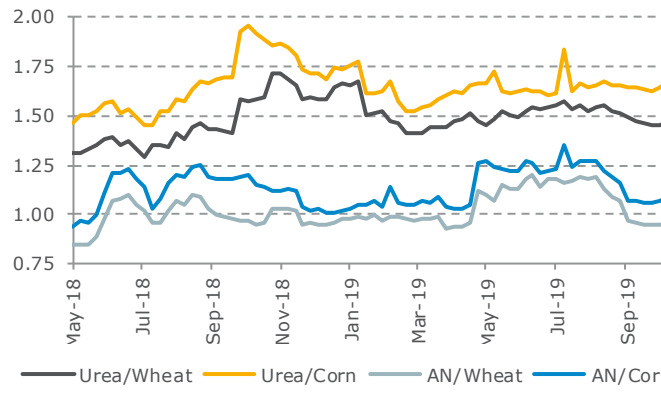
Production Margins on P & K Fertilizers (US\$/t)



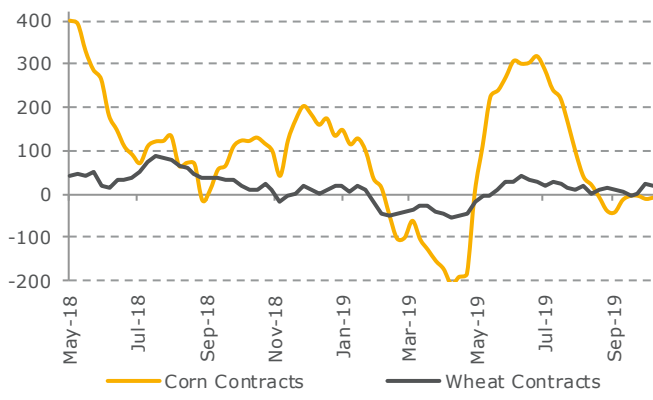
Prices of Sulfur, Potash & Phosphorites (US\$/t)



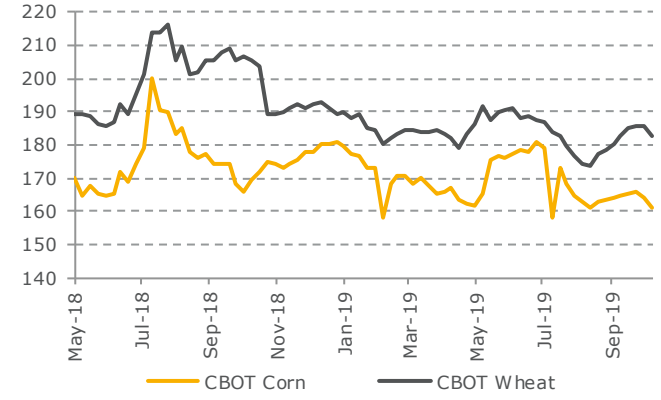
Fertilizer-to-Crop Price Ratios



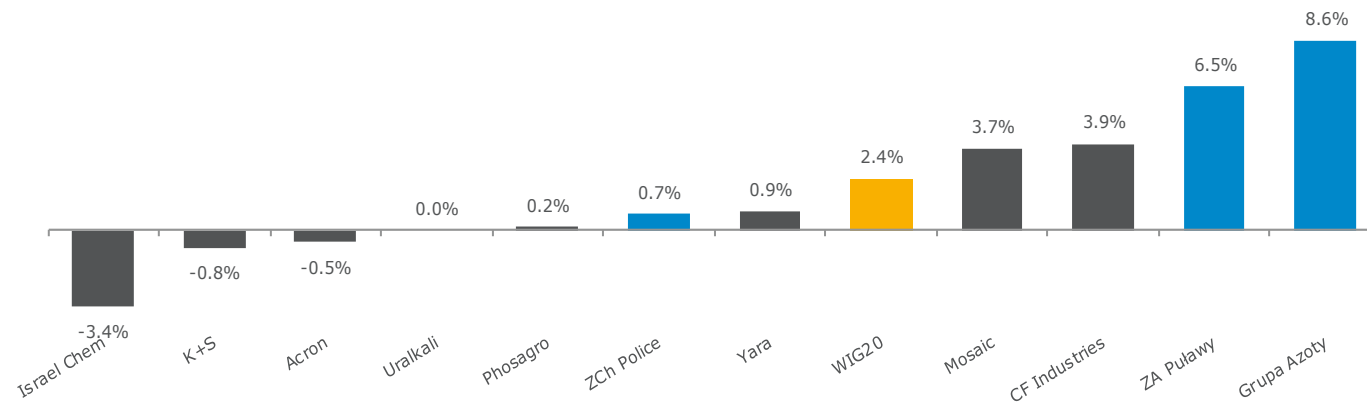
CBOT Open Positions In Corn and Wheat CBT



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



Weekly Returns of Fertilizer Stocks

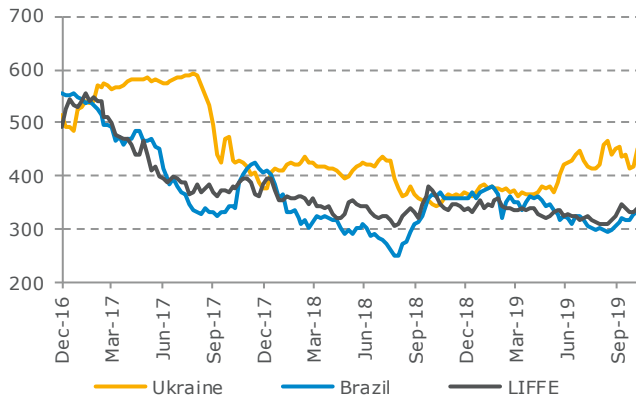


Source: Bloomberg, Dom Maklerski mBanku

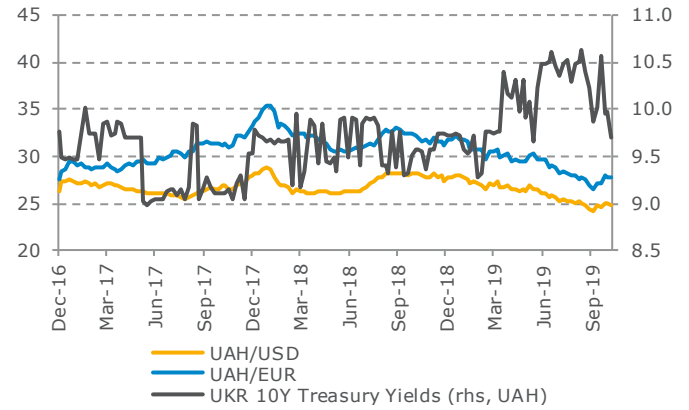


Agricultural Commodities

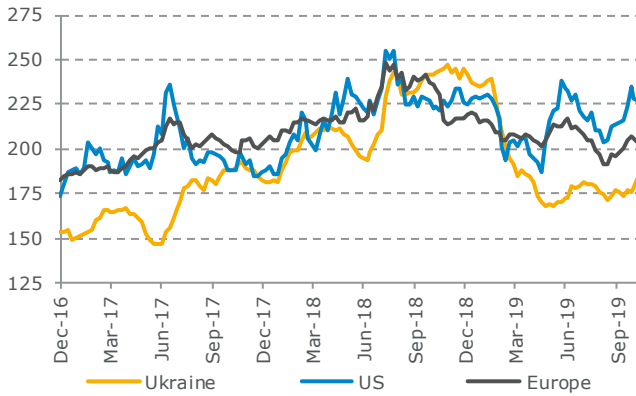
Sugar Prices (US\$/Mt)



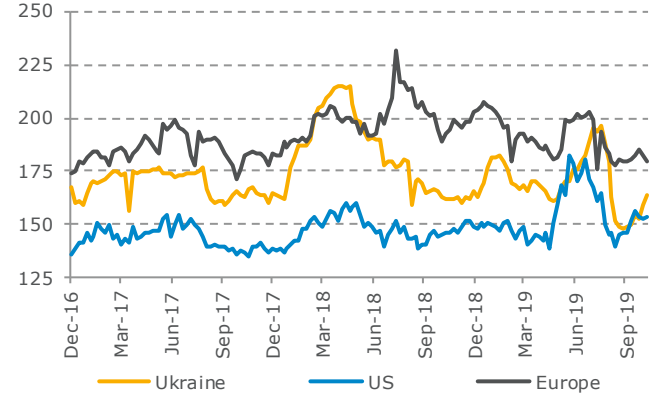
UAH Exchange Rates & Ukraine 10Y Treasury Yields



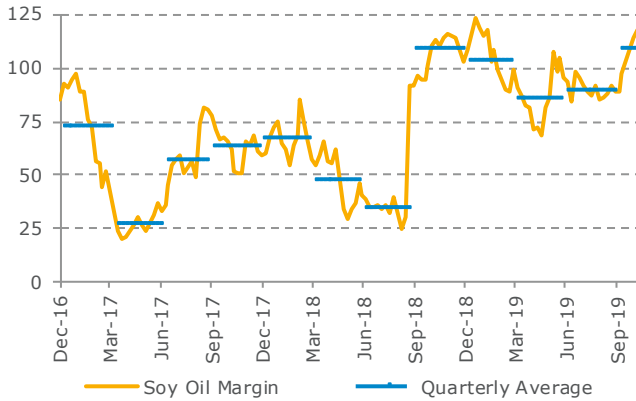
Wheat Prices (US\$/Mt)



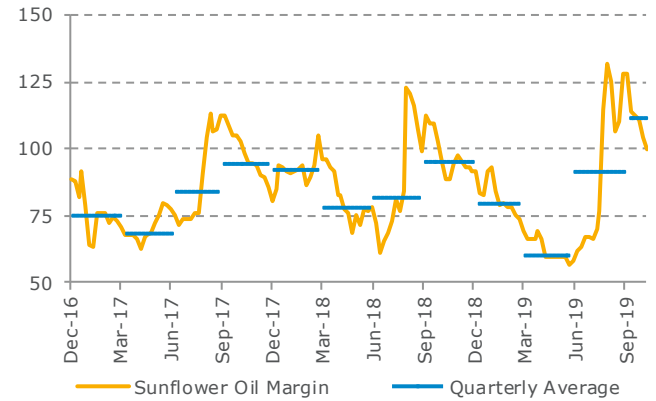
Corn Prices (US\$/Mt)



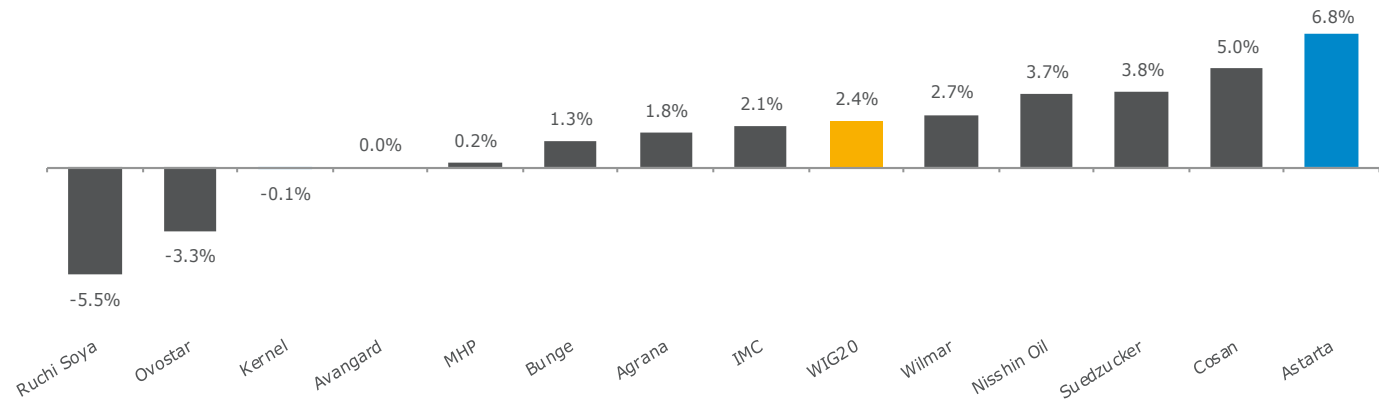
Model Margins on Soy Oil (US\$/Mt)



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



Weekly Returns of Agricultural Stocks



Source: Bloomberg, Dom Maklerski mBanku

Comparison of Utility Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
UTILITIES																
CEZ	525.0	7.5	6.9	6.8	2.1	1.9	1.8	15.7	13.6	13.7	29%	28%	27%	4.6%	5.7%	6.6%
Enea	8.6	3.2	3.2	2.9	0.6	0.6	0.6	3.6	3.5	2.7	20%	18%	21%	0.0%	0.0%	2.8%
Energa	6.2	3.5	4.0	4.3	0.7	0.7	0.8	4.9	4.7	4.2	19%	17%	17%	0.0%	0.0%	0.0%
PGE	8.4	3.4	3.8	2.9	0.7	0.7	0.6	5.6	7.2	4.6	21%	17%	22%	0.0%	4.4%	3.5%
Tauron	1.7	4.2	3.8	3.3	0.7	0.7	0.6	3.3	2.7	2.2	18%	17%	19%	0.0%	0.0%	0.0%
ZE PAK*	6.8	1.7	1.8	1.3	0.2	0.2	0.2	4.3	4.9	1.5	11%	11%	17%	-	7.2%	6.0%
EDF	9.2	4.1	3.8	3.7	0.9	0.9	0.9	13.4	11.2	10.8	23%	24%	24%	3.5%	4.2%	4.3%
EDP	3.7	9.2	8.8	8.5	2.0	2.0	2.0	17.1	15.5	14.4	22%	23%	23%	5.1%	5.2%	5.4%
Endesa	24.3	8.3	8.3	8.1	1.5	1.5	1.5	16.9	16.6	16.1	18%	18%	18%	5.9%	6.0%	5.1%
Enel	7.0	8.0	7.6	7.3	1.8	1.7	1.7	14.8	13.5	12.8	22%	23%	23%	4.7%	5.2%	5.5%
EON	9.0	6.3	4.7	4.6	1.0	0.5	0.5	13.4	14.4	13.1	16%	11%	10%	5.1%	5.3%	5.4%
Fortum	21.5	14.3	11.3	10.3	4.4	4.3	2.1	14.8	14.1	12.9	30%	37%	20%	5.1%	5.1%	5.2%
Iberdola	9.1	10.9	10.2	9.7	2.9	2.8	2.7	17.3	16.1	15.4	27%	27%	28%	4.1%	4.4%	4.7%
National Grid	9.0	13.0	10.8	10.2	3.9	3.7	3.6	20.1	15.3	14.6	30%	34%	35%	5.2%	5.5%	5.6%
Red Electrica	18.0	9.3	9.4	9.5	7.3	7.3	7.3	13.6	14.4	14.8	78%	77%	77%	5.8%	5.6%	5.5%
RWE	27.5	11.1	6.7	5.7	1.5	1.0	0.9	23.2	15.6	11.8	14%	15%	16%	2.9%	3.5%	4.0%
SSE	12.8	10.1	11.4	10.4	0.9	3.1	3.0	9.3	14.9	12.7	9%	27%	29%	7.6%	6.2%	6.4%
Verbund	48.2	15.8	13.2	12.6	5.6	5.1	4.9	29.6	23.1	21.8	36%	38%	39%	1.5%	2.0%	2.4%
Median		8.2	7.3	7.1	1.5	1.6	1.6	14.2	14.2	12.8	21%	23%	22%	4.6%	5.2%	5.1%

Comparison of Gas & Oil Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
OIL REFINERS																
Lotos	99.46	7.6	6.4	5.6	0.8	0.7	0.7	15.1	14.0	12.7	10%	11%	12%	3.0%	2.0%	2.1%
MOL	3004.00	4.5	4.2	3.8	0.6	0.6	0.6	10.9	9.6	8.3	15%	15%	15%	4.7%	5.0%	5.2%
PKN Orlen	108.35	6.0	6.3	6.1	0.5	0.5	0.5	10.3	12.1	12.4	9%	8%	7%	3.2%	2.8%	2.8%
Hellenic Petroleum	8.59	6.5	5.0	5.3	0.5	0.5	0.4	11.3	6.6	6.9	7%	9%	8%	5.8%	6.6%	6.4%
HollyFrontier	54.32	6.3	6.3	6.8	0.7	0.7	0.7	10.7	10.3	11.7	11%	11%	10%	2.5%	2.5%	2.5%
Marathon Petroleum	67.94	7.5	5.8	6.0	0.6	0.5	0.5	16.0	9.1	10.5	8%	9%	9%	3.1%	3.5%	3.9%
Motor Oil	22.08	5.2	4.5	4.9	0.3	0.3	0.3	8.8	7.0	7.8	6%	7%	7%	6.0%	6.3%	6.5%
Neste Oil	32.99	12.4	11.8	11.0	1.7	1.8	1.6	20.8	18.2	16.6	13%	15%	15%	2.6%	2.9%	3.1%
OMV	54.04	4.9	4.6	4.5	1.2	1.2	1.2	10.0	9.6	9.1	25%	26%	27%	3.6%	4.0%	4.3%
Phillips 66	118.54	9.0	7.7	7.8	0.6	0.6	0.6	13.6	11.3	11.3	7%	8%	8%	2.9%	3.2%	3.5%
Saras	1.69	4.4	2.8	3.8	0.2	0.2	0.2	16.1	5.7	9.4	4%	6%	5%	3.9%	8.8%	5.3%
Tupras	128.30	7.2	4.6	4.9	0.4	0.4	0.4	12.6	5.8	5.6	6%	8%	8%	7.7%	15.4%	15.3%
Valero Energy	101.24	9.2	6.3	6.9	0.5	0.4	0.4	20.3	10.4	11.4	5%	7%	6%	3.6%	3.9%	4.1%
Median		6.5	5.8	5.6	0.6	0.5	0.5	12.6	9.6	10.5	8%	9%	8%	3.6%	3.9%	4.1%

Comparison of Petrochemical Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
PETROCHEMICALS																
PKN Orlen	108.35	6.0	6.3	6.1	0.5	0.5	0.5	10.3	12.1	12.4	9%	8%	7%	3.2%	2.8%	2.8%
Axiall	68.35	8.1	7.2	6.9	1.4	1.4	1.3	18.9	14.0	13.1	18%	19%	19%	1.5%	1.5%	1.6%
Braskem	28.53	6.1	5.7	5.1	1.0	0.9	0.9	22.2	22.7	17.9	16%	16%	17%	1.8%	0.9%	1.7%
Eastman Chemical	81.00	8.5	8.1	7.8	1.9	1.8	1.8	11.3	10.1	9.0	22%	22%	23%	3.0%	3.3%	3.6%
Huntsman Corp	23.41	8.7	8.6	7.9	1.1	1.1	1.1	13.6	12.0	10.2	12%	13%	14%	2.8%	2.9%	3.1%
Lotte Chemicals	220,000	4.9	4.5	4.1	0.6	0.6	0.6	7.8	6.7	6.1	13%	13%	14%	4.1%	4.4%	4.6%
LyondellBasell	96.72	7.5	7.0	6.8	1.3	1.2	1.2	9.5	8.2	7.7	17%	18%	18%	4.4%	4.7%	5.0%
Mitsubishi Chemical	826.60	7.4	6.9	6.6	0.9	0.9	0.9	6.9	8.1	7.8	12%	13%	13%	4.8%	4.7%	4.8%
Mitsui Chemicals	2551.00	6.9	7.0	6.5	0.7	0.7	0.7	6.6	7.9	7.3	10%	10%	10%	3.9%	3.9%	4.1%
Westlake Chemical	68.35	8.1	7.2	6.9	1.4	1.4	1.3	18.9	14.0	13.1	18%	19%	19%	1.5%	1.5%	1.6%
Median		7.5	7.0	6.7	1.0	1.0	1.0	10.8	11.0	9.6	14%	15%	15%	3.1%	3.1%	3.3%

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

Comparison of NatGas Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
GAS COMPANIES																
PGNIG	4.94	5.4	4.1	3.6	0.7	0.7	0.7	14.8	9.7	8.6	14%	17%	18%	2.2%	2.7%	4.1%
A2A	1.80	7.8	7.2	6.9	1.4	1.4	1.3	17.4	14.8	14.1	18%	19%	19%	4.3%	4.5%	4.6%
BG Group	23.09	5.7	5.3	5.0	0.9	0.9	0.8	13.0	10.7	9.7	16%	17%	17%	6.3%	6.3%	6.5%
BP	5.11	5.3	4.9	4.9	0.7	0.7	0.7	13.3	11.7	11.1	13%	14%	14%	6.2%	6.3%	6.6%
Centrica	0.72	4.5	4.2	4.5	0.3	0.3	0.3	10.4	7.6	7.3	7%	7%	7%	7.0%	7.1%	7.1%
Enagas	21.98	9.7	9.6	10.6	7.9	8.0	8.8	12.2	11.5	12.8	81%	84%	83%	7.3%	7.5%	7.5%
Endesa	24.27	8.3	8.3	8.1	1.5	1.5	1.5	16.9	16.6	16.1	18%	18%	18%	5.9%	6.0%	5.1%
Engie	14.89	6.8	6.5	6.1	1.1	1.0	1.0	14.4	12.9	11.7	16%	16%	16%	5.2%	5.6%	6.1%
Eni	13.97	4.0	3.8	3.6	1.0	0.9	1.0	14.2	11.5	10.5	24%	25%	27%	6.1%	6.3%	6.4%
Equinor	176.00	3.2	2.9	2.7	1.1	1.0	1.0	12.7	10.8	9.9	35%	36%	38%	5.4%	5.7%	6.0%
Gas Natural SDG	23.92	9.3	8.9	8.8	1.5	1.5	1.6	17.5	16.0	15.3	17%	17%	18%	5.7%	6.0%	6.3%
Gazprom	263.79	3.9	3.8	3.6	1.1	1.1	1.0	4.2	4.6	4.3	28%	28%	28%	6.3%	6.9%	9.0%
Hera	3.85	8.2	7.8	7.6	1.4	1.3	1.3	18.9	18.3	18.3	17%	17%	17%	2.7%	2.9%	2.9%
NovaTek	219.80	13.0	13.2	13.5	4.9	4.8	4.4	9.6	14.4	12.7	38%	37%	33%	2.1%	2.5%	2.7%
ROMGAZ	37.00	5.5	5.6	5.2	2.7	2.6	2.5	9.7	9.7	9.1	49%	47%	48%	9.0%	9.0%	10.3%
Shell	26.76	5.7	5.2	5.0	0.9	0.9	0.8	13.0	10.7	9.7	16%	17%	17%	6.3%	6.3%	6.4%
Snam	4.65	12.7	12.4	12.0	10.2	10.0	9.8	14.5	14.3	13.7	81%	81%	81%	5.2%	5.4%	5.6%
Total	48.52	5.3	4.9	4.7	0.9	0.9	0.8	11.9	10.4	9.8	17%	18%	18%	5.4%	5.7%	6.1%
Median		5.7	5.4	5.1	1.1	1.1	1.0	13.2	11.5	10.8	18%	18%	18%	5.8%	6.0%	6.2%

Comparison of E&P Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
E&P COMPANIES																
MOL	3004.00	5.0	4.6	4.7	0.7	0.7	0.7	8.1	7.1	7.5	14%	15%	14%	4.3%	4.6%	4.9%
Bashneft	1952.50	2.0	2.0	1.7	0.5	0.5	0.4	3.0	2.9	2.4	24%	24%	25%	13.1%	11.7%	12.6%
BP	5.11	5.3	4.9	4.9	0.7	0.7	0.7	13.3	11.7	11.1	13%	14%	14%	6.2%	6.3%	6.6%
Dana Gas	0.92	7.0	6.5	-	3.4	3.2	3.0	24.9	12.6	12.6	49%	49%	-	6.4%	6.4%	7.6%
Eni	13.97	4.0	3.8	3.6	1.0	0.9	1.0	14.2	11.5	10.5	24%	25%	27%	6.1%	6.3%	6.4%
Equinor	176.00	3.2	2.9	2.7	1.1	1.0	1.0	12.7	10.8	9.9	35%	36%	38%	5.4%	5.7%	6.0%
Gazprom Neft	416.60	4.1	4.1	3.9	1.0	1.0	1.0	4.8	5.1	4.7	25%	25%	25%	8.4%	9.4%	10.7%
Gulf Keystone	2.11	3.0	1.9	1.4	1.8	1.3	1.0	12.1	6.8	5.4	59%	66%	70%	7.2%	5.2%	6.4%
Lukoil	6021.00	3.8	3.8	3.7	0.6	0.6	0.6	6.8	6.9	6.9	15%	16%	16%	5.1%	7.3%	7.7%
Occidental Petroleum	44.23	5.1	3.8	3.5	2.5	2.0	1.8	18.4	29.0	18.0	49%	53%	52%	7.0%	7.2%	7.3%
Repsol	15.47	5.1	4.5	4.6	0.7	0.7	0.7	10.1	8.3	8.3	15%	16%	16%	6.2%	6.5%	6.6%
Rosneft Oil	434.40	4.1	3.9	3.7	1.0	1.0	0.9	6.7	5.5	5.2	24%	25%	25%	6.6%	8.5%	9.5%
Shell	26.76	5.7	5.2	5.0	0.9	0.9	0.8	13.0	10.7	9.7	16%	17%	17%	6.3%	6.3%	6.4%
Surgutneftgas	37.99	-	-	-	-	-	-	5.2	4.5	3.8	-	-	-	9.8%	6.1%	3.1%
Total	48.52	5.3	4.9	4.7	0.9	0.9	0.8	11.9	10.4	9.8	17%	18%	18%	5.4%	5.7%	6.1%
Tullow Oil	2.17	5.7	5.7	5.5	4.3	4.0	4.0	16.3	13.6	13.3	75%	71%	72%	2.7%	2.7%	2.9%
Median		5.0	4.1	3.8	1.0	0.9	0.9	12.0	9.4	9.0	24%	25%	25%	6.3%	6.3%	6.5%

Comparison of Mining Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
MINING COMPANIES																
JSW	20.56	0.2	1.4	1.1	0.0	0.2	0.2	3.5	-	17.8	19%	12%	16%	8.3%	0.0%	0.0%
KGHM	88.92	4.1	4.5	4.1	1.0	1.0	0.9	7.3	9.4	8.7	23%	21%	22%	0.0%	1.7%	3.2%
LW Bogdanka*	36.70	1.3	1.4	1.6	0.5	0.5	0.5	4.3	5.2	6.6	36%	33%	31%	3.2%	4.7%	4.6%
Anglo American	20.80	4.6	5.0	5.2	1.6	1.6	1.6	9.1	10.0	10.8	35%	33%	31%	4.3%	4.0%	3.9%
Antofagasta	8.99	5.8	6.0	5.4	2.8	2.9	2.7	19.7	21.3	17.3	49%	47%	50%	2.4%	2.2%	2.8%
BHP Group	17.23	6.1	5.7	6.2	3.1	3.0	3.1	13.9	11.1	12.4	50%	53%	51%	6.0%	6.3%	5.9%
Freeport-McMoRan	10.80	12.8	8.7	5.1	2.2	2.1	1.7	100+	22.8	8.5	17%	24%	34%	1.9%	2.7%	3.4%
Glencore	2.52	6.8	5.9	5.5	0.4	0.4	0.4	17.5	12.6	10.0	5%	6%	7%	5.4%	4.8%	5.5%
Grupo Mexico	52.54	6.0	5.7	5.3	2.7	2.6	2.4	12.1	11.4	10.8	46%	45%	46%	5.1%	4.8%	7.5%
Kazakhmys	5.00	4.9	5.0	4.7	2.7	2.6	2.5	6.6	6.6	6.0	55%	53%	54%	1.5%	1.7%	1.3%
Rio Tinto	42.94	4.9	5.6	6.3	2.4	2.6	2.7	8.7	10.2	12.3	49%	46%	43%	7.9%	6.4%	5.4%
Southern CC	38.13	10.1	9.9	9.2	4.9	4.8	4.5	19.2	18.9	17.4	49%	48%	49%	4.0%	3.7%	3.7%
Median		5.4	5.6	5.2	2.3	2.3	2.1	9.1	11.1	10.8	41%	39%	39%	4.2%	3.8%	3.8%
ALUMINUM PRODUCERS																
Grupa Kęty	318.00	7.8	8.4	8.6	1.2	1.3	1.3	10.8	12.4	12.6	16%	15%	15%	7.5%	7.4%	6.1%
Alcoa	22.91	4.4	4.3	3.9	0.7	0.7	0.7	-	21.7	16.5	16%	16%	17%	-	0.1%	0.2%
Constellium	14.18	7.0	6.4	5.9	0.7	0.7	0.7	30.7	12.9	9.5	10%	10%	11%	-	-	-
Kaiser Aluminum	111.33	9.1	8.2	8.2	1.3	1.3	1.3	17.1	14.3	13.6	14%	15%	15%	2.2%	2.3%	2.3%
Norsk Hydro	35.05	8.1	5.6	4.8	0.6	0.6	0.6	40.5	15.3	11.3	7%	10%	12%	3.6%	3.5%	4.0%
Rusal	3.57	13.4	10.1	8.5	1.5	1.4	1.4	5.3	4.3	3.9	11%	14%	16%	1.7%	4.3%	5.3%
Median		7.9	7.3	7.1	1.0	1.0	1.0	17.1	13.6	11.9	13%	15%	15%	2.9%	3.5%	4.0%

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

Comparison of Fertilizer Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
FERTILIZER PRODUCERS																
Grupa Azoty	36.00	4.4	7.9	8.3	0.6	0.7	0.8	6.8	30.7	18.7	13%	9%	9%	0.0%	0.0%	1.0%
ZA Police*	13.50	4.7	3.8	3.8	1.0	0.9	0.9	1.6	1.2	1.2	21%	24%	24%	61.6%	66.7%	74.1%
Acron	4960.00	8.6	7.5	7.3	2.6	2.4	2.2	11.0	9.8	9.7	31%	32%	30%	6.6%	6.7%	7.1%
CF Industries	47.62	10.0	9.3	9.0	3.6	3.5	3.5	21.5	17.7	15.5	36%	38%	38%	2.5%	2.5%	2.6%
Israel Chemicals	15.65	6.7	6.5	6.3	1.5	1.5	1.4	10.9	10.0	9.5	23%	22%	22%	4.8%	4.9%	5.2%
K+S	13.18	8.0	7.0	6.3	1.4	1.3	1.3	15.8	11.5	9.1	17%	19%	20%	2.6%	3.5%	4.2%
Phosagro	2422.00	5.6	5.5	5.2	1.7	1.7	1.6	8.2	8.8	8.6	31%	31%	31%	7.5%	5.8%	5.9%
The Mosaic Company	21.34	7.6	6.4	5.6	1.4	1.3	1.2	22.3	12.7	9.5	18%	20%	22%	0.9%	1.0%	1.3%
Yara International	363.70	7.0	6.1	5.7	1.1	1.0	1.0	12.7	10.4	9.4	16%	17%	18%	3.2%	6.5%	5.5%
Median		7.0	6.5	6.3	1.4	1.3	1.3	11.0	10.4	9.5	21%	22%	22%	3.2%	4.9%	5.2%

Comparison of Agricultural Company Valuations

	Price	EV/EBITDA			EV/S			P/E			EBITDA Margin			DY		
		2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
AGRI PRODUCERS																
Astarta*	18.00	4.4	3.2	3.3	0.8	0.7	0.7	37.2	3.4	2.1	18%	23%	21%	-	-	4.4%
Kemel	42.55	4.6	5.7	5.1	0.4	0.4	0.4	5.2	8.0	7.1	9%	7%	7%	2.1%	2.2%	3.0%
Agrana Beteiligungs	17.30	10.4	8.6	8.1	0.6	0.6	0.6	42.2	23.1	18.4	6%	7%	8%	5.8%	5.8%	5.8%
Bunge Limited	56.26	10.4	9.8	9.0	0.4	0.3	0.3	19.8	15.8	12.9	3%	4%	4%	3.6%	3.8%	4.2%
Cosan	60.00	5.6	5.3	4.9	0.5	0.5	0.4	14.3	12.7	12.3	8%	8%	9%	2.7%	3.2%	3.2%
MHP	8.54	5.2	4.9	4.5	1.2	1.2	1.1	5.9	6.3	4.7	23%	23%	24%	8.8%	8.8%	8.8%
Nisshin Oilio	3770.00	8.8	8.3	7.9	0.5	0.5	0.5	14.2	14.6	14.0	6%	6%	6%	2.1%	2.1%	2.1%
Suedzucker	12.99	-	11.0	6.7	0.7	0.7	0.7	-	-	15.1	-	6%	10%	1.5%	1.5%	2.1%
Wilmar Int.	3.81	14.5	13.2	12.5	0.8	0.7	0.7	15.4	13.5	12.6	6%	6%	6%	2.6%	2.8%	3.0%
Median		7.2	8.3	6.7	0.6	0.6	0.6	14.9	13.1	12.6	7%	7%	8%	2.6%	3.0%	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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Economic profits – discounting of future economic profits; the weak point is high sensitivity to changes in the assumptions made in the valuation model.

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