

Tuesday, November 19, 2019 | weekly publication

## Tuesday Espresso

### Weekly Commodity Roundup

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#### Utilities

EEX power contracts have declined to EUR 45m/MWh after another week on a gentle downward trend fueled by price slippage in the markets for coal (-1.4%) and carbon emissions (down by 2 euros w/w at EUR 23/t). Similarly, TGE power is down to PLN 254/MWh with cheaper EUAs now priced in, implying further narrowing of the model margin for a vertically-integrated power plant by about 1 zloty to PLN 164/MWh. Global utilities sentiment has improved during the past week.

#### Gas & Oil

Refining margins have dropped to \$2/bbl in line with shrinking cracking spreads on gasoline and diesel while HSFO margins remain at record lows. The Urals/Brent differential is still negative amid increased supply from Russian refineries even with reduced Urals loadings at the Primorsk port. Profits from petrochemicals remain squeezed by increasing global supply, and, in Europe, by relatively high prices compared to US and Asian markets. There has been no liftoff in the natural gas market so far with demand kept low by warm weather, reflected in a small weekly decline in the warehouse fill rate from 98% to 96%.

#### Soda Ash

Fastmarkets had a report last Friday on a downturn in Chinese soda ash prices vis-à-vis a rise in the European market, where producers are able to pass on increased production costs to the end-market (for the full story, go to Fastmarkets at <https://tinyurl.com/ve26d4g>). The upward price shift in European markets is a positive signal for Ciech.

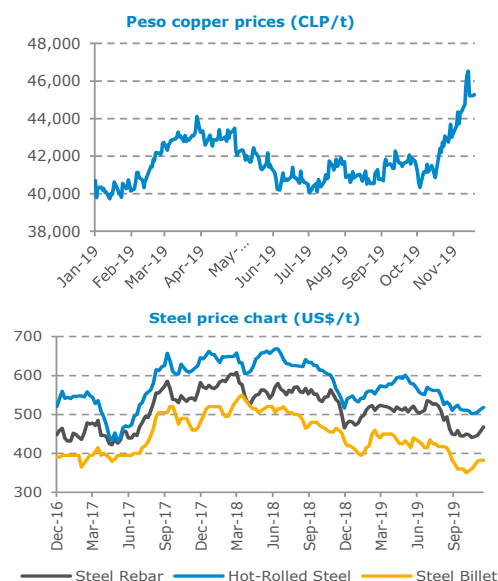
#### Metals

Speculative positions in copper have increased to -26,000 from -23,000 a week ago after five weeks of falls, a sign that speculators have stopped scaling back bearish bets for now, with no likelihood for a price rebound in the near future. Last week, exchange-monitored stocks decreased by 7% w/w, driven by LME (-7%) and SHFE (-9%).

#### Coking Coal

Steel inventories in China have dropped again from 8.7mmt a week ago to 8.1mmt versus a high of 12.7mmt. And at the same time, the coke inventories at local ports have also decreased to 4.3mmt from 4.5mmt the previous week. Coking coal prices have stabilized at \$135-143/t.

#### Charts of the Week



Source: Bloomberg, Dom Maklerski mBanku

#### 1-Week & YTD Performance

Company	1W	YTD
Astarta	-18.8%	-31%
ZCh Police	-10.4%	-14%
IMC	-8.1%	+16%
Enea	-8.0%	-12%
PGE	-7.7%	-12%
Lotos	-5.9%	+4%
Kruszwica	-4.9%	+20%
Grupa Azoty	-4.7%	+9%
PKN Orlen	-3.7%	-3%
Tarczyński	-3.7%	-10%
PGNiG	-3.0%	-28%
Energa	-2.9%	-27%
Tauron	-2.5%	-17%
Tupras	-2.5%	+19%
JSW	-2.1%	-68%
OMV	-2.0%	+44%
CEZ	-1.3%	+1%
KGHM	-1.2%	+7%
LW Bogdanka	-0.3%	-27%
Impexmetal	-0.2%	+35%
MOL	+0.5%	+3%
Boryszew	+0.6%	-11%
PCC Rokita	+0.6%	-33%
Kernel	+1.2%	-13%
ZA Puławy	+1.5%	+40%
Kęty	+1.6%	+5%
Ciech	+6.3%	-16%
ZE PAK	+6.7%	-2%
Orzeł Biały	+10.5%	+9%
WIG Indices	1W	YTD
WIG	-0.6%	+2%
Chemicals	-1.4%	-5%
Energy	-5.7%	-13%
Oil & Gas	-3.9%	-7%
Food Industry	-0.7%	-12%
Basic Material	-1.2%	-10%
Ukraine	-4.7%	-14%
Sector Indices	1W	YTD
Mining	-0.4%	+16%
Oil & Gas E&P	-2.6%	+0%
Refining EU	-1.4%	+9%
Refining US	-0.1%	+29%
Agri & Food	+0.0%	+31%
Rubber	-1.5%	+20%
Fertilizers	-4.6%	-1%
Chemicals EU	+1.0%	+22%
Industrials EU	+0.8%	+34%
Petchem World	-2.2%	+7%
Utilities EU	+1.6%	+27%
Utilities US	+1.8%	+21%

#### Protests boost Chilean copper prices

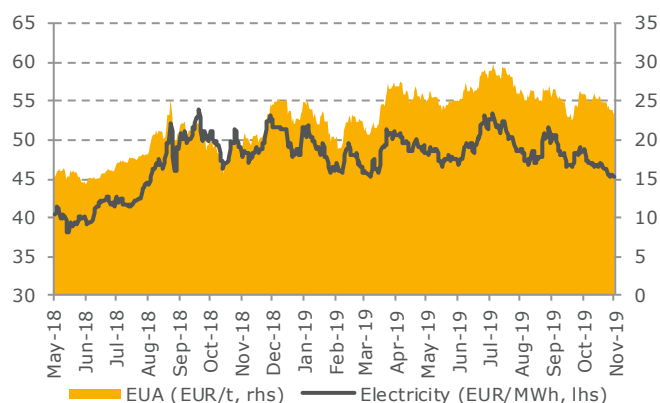
Peso-denominated copper prices in the Chilean market are up 12% since the beginning of October, providing a profit boost to local producers. This is a result of a weakening of the local currency amid ongoing anti-government protests. With no disruptions to supply, in the near term this could increase the pressure on copper prices.

#### A pickup in world steel prices

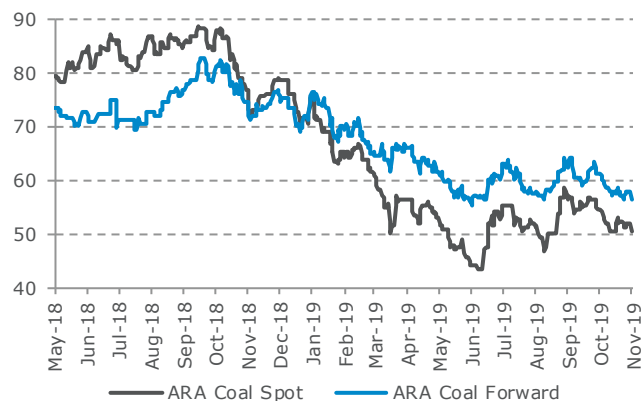
Prices of major steel products have been moving higher over the last few weeks, indicating improved profits for producers. This would be consistent with the view expressed by major steelmakers during recent earnings calls that prices might have bottomed out (a positive signal for ArcelorMittal, Cognor, Severstal, Voestalpine).

## Utilities

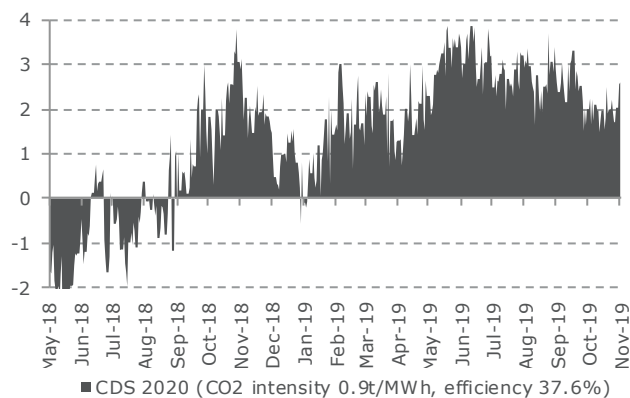
EU Prices of Electricity (EUR/MWh) & EUAs (EUR/t)



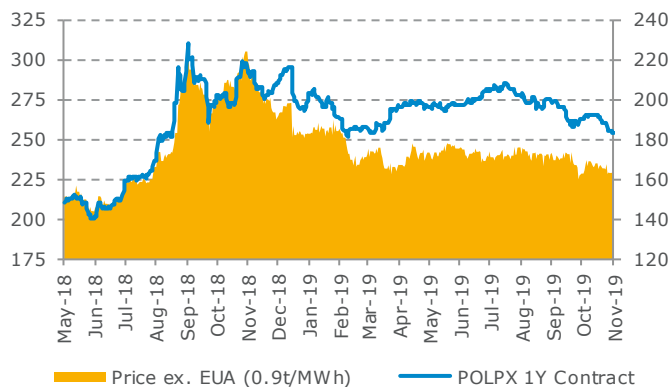
ARA Coal Spot and Forward Prices (EUR/t)



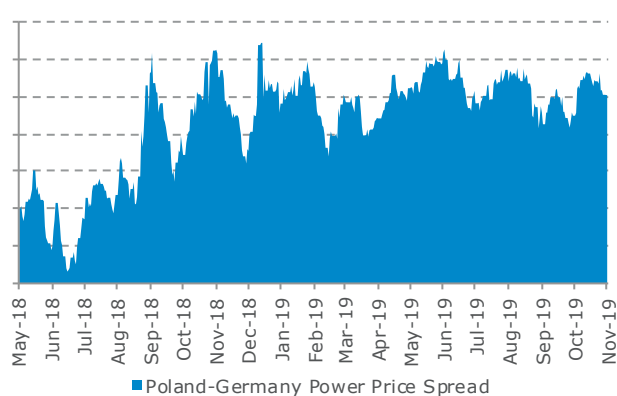
Clean-Dark Spread, Germany (EUR/MWh)



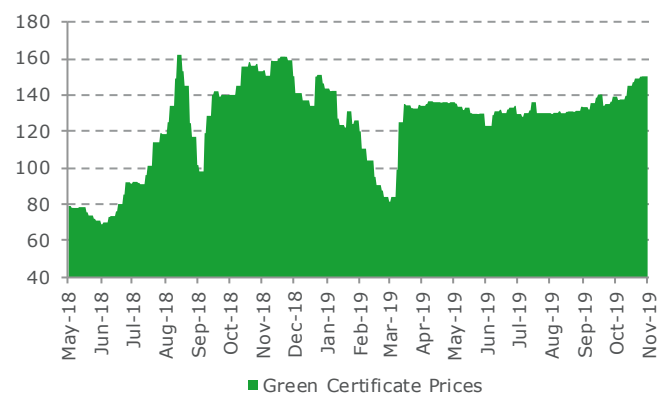
Polish Electricity Prices (1Y) (PLN/MWh)



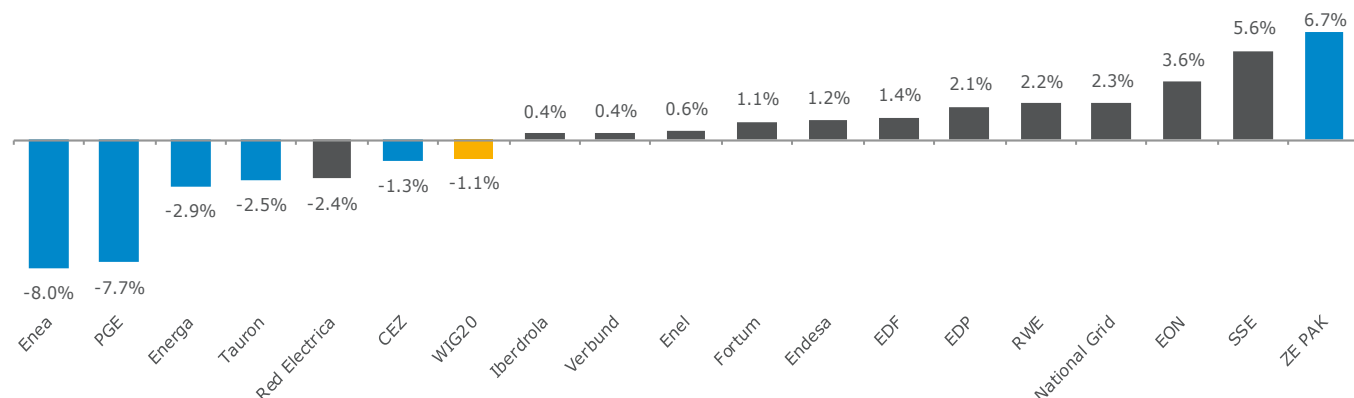
Poland-Germany Power Price Spread (PLN/MWh)



Polish Green Certificate Prices (PLN/MWh)



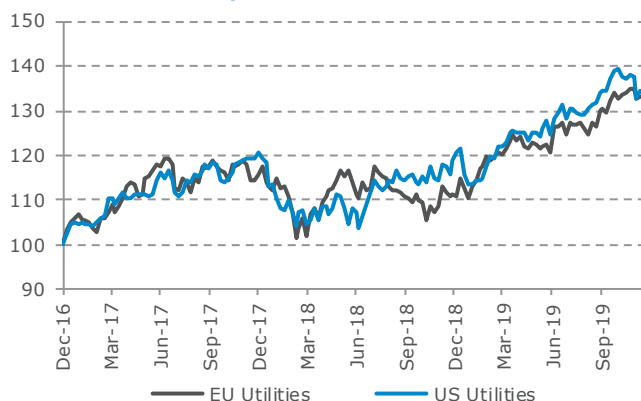
Weekly Returns of Utility Stocks



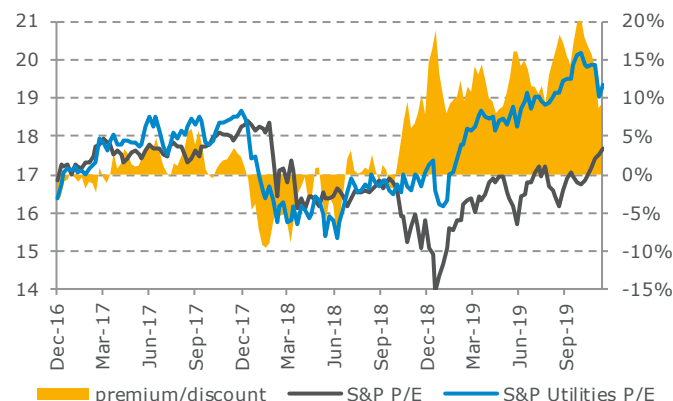
Source: Bloomberg, Dom Maklerski mBanku

## Utilities

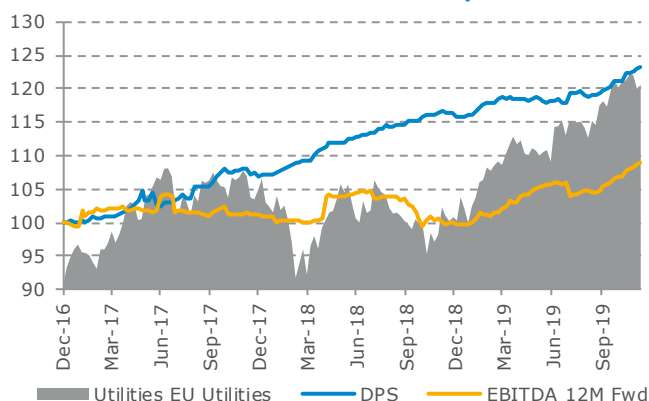
### MSCI Utilities Europe vs. S&P Utilities



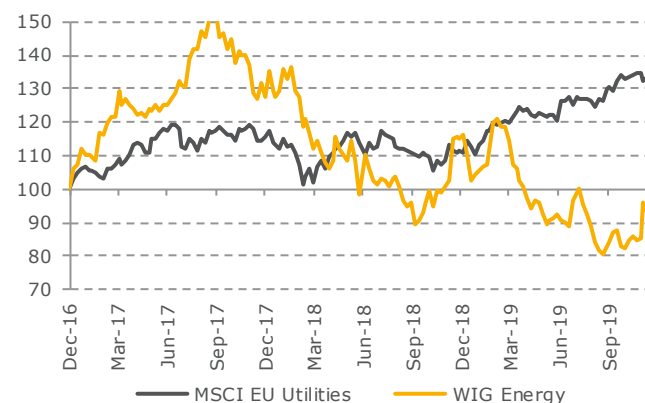
### S&P Utilities vs. S&P 500 P/E



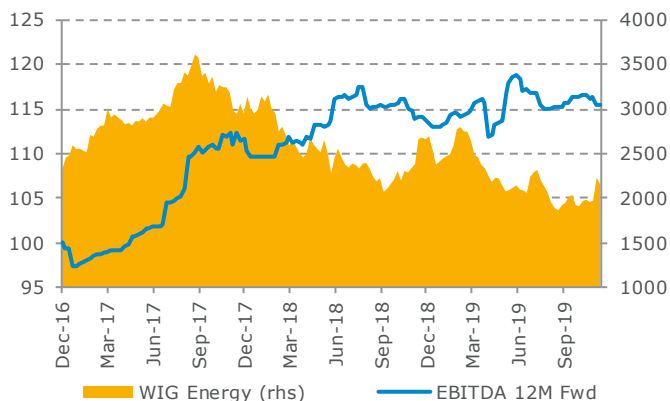
### MSCI Utilities EU vs. DPS & EBITDA Expectations



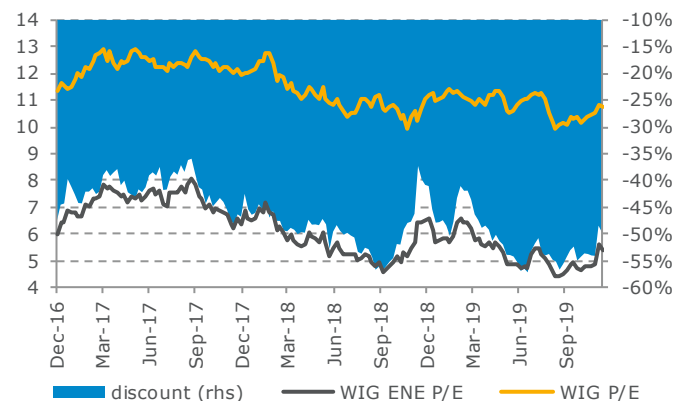
### MSCI Utilities EU vs. WIG-ENERGY



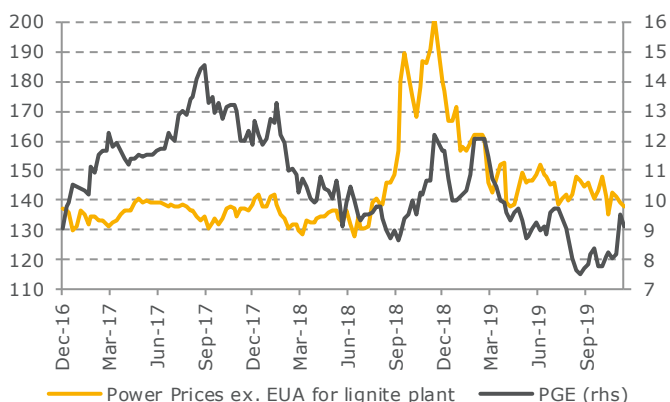
### WIG-ENERGY vs. EBITDA Expectations



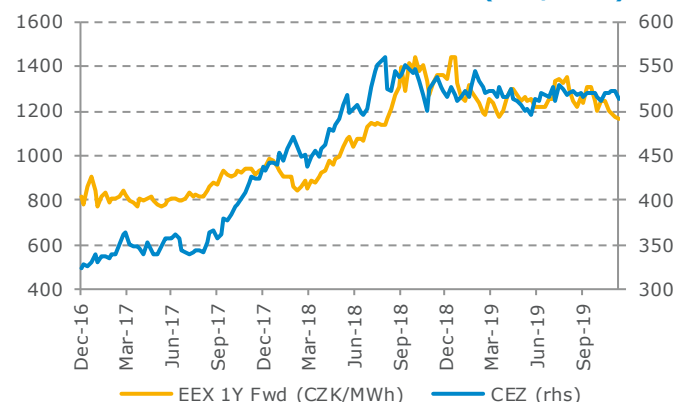
### WIG-ENERGY vs. WIG P/E



### PGE Performance vs. Power Prices ex. EUA



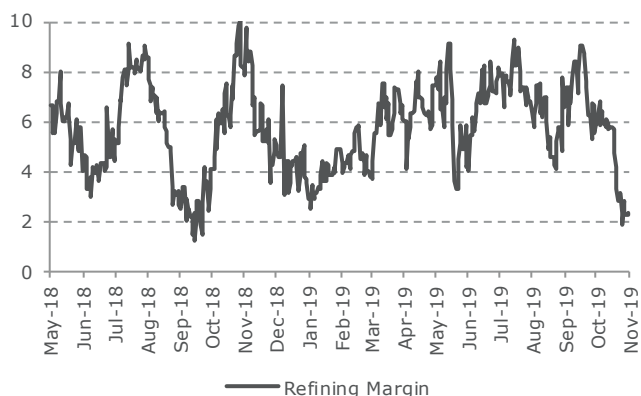
### CEZ Performance vs. EEX Power Prices (CZK/MWh)



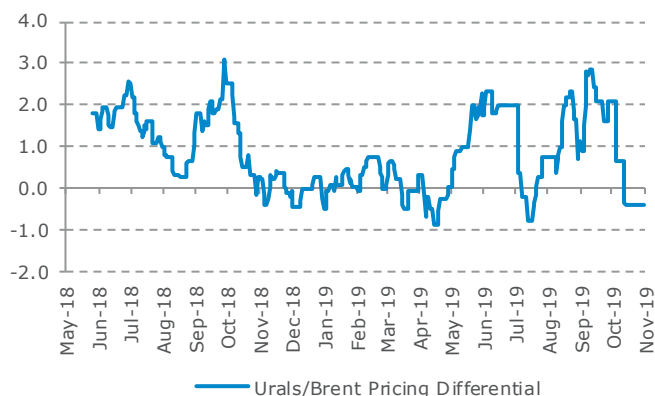
Source: Bloomberg, Dom Maklerski mBanku

## Gas & Oil

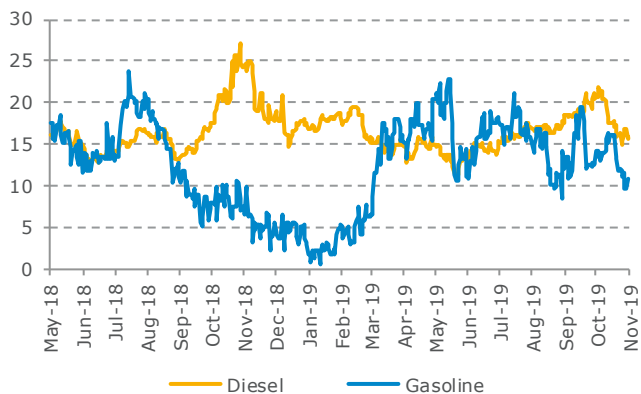
Refining Margins (US\$/bbl)



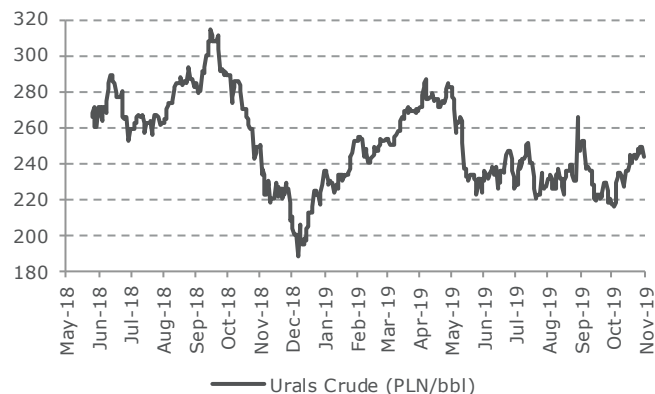
Urals/Brent Pricing Differential (US\$/bbl)



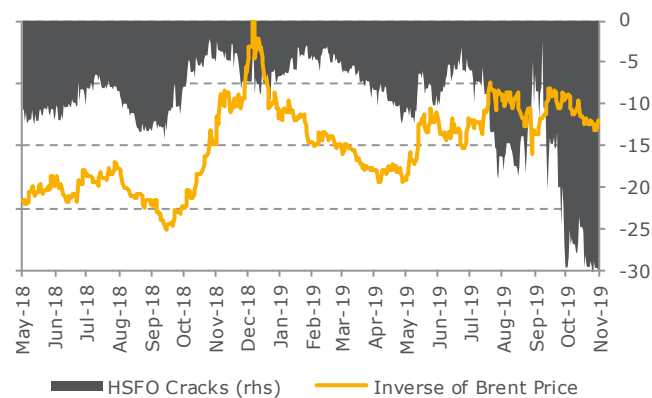
Cracking Margins on Diesel & Gasoline (US\$/bbl)



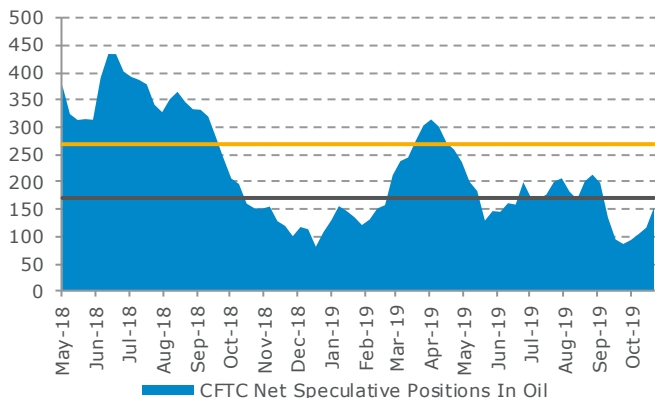
Price of Urals Crude (PLN/bbl)



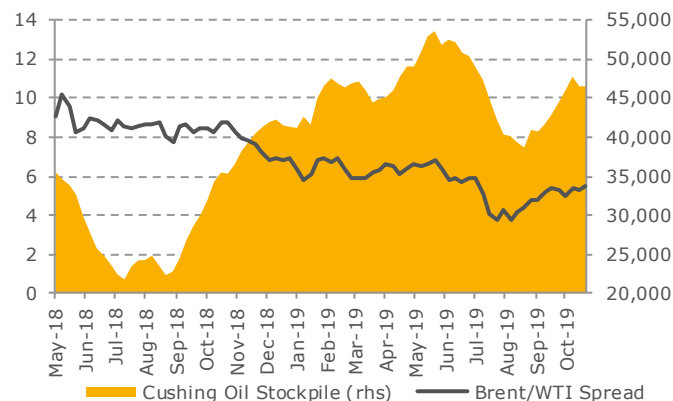
HSFO Cracks (US\$/bbl) vs. Inverse of Brent Price



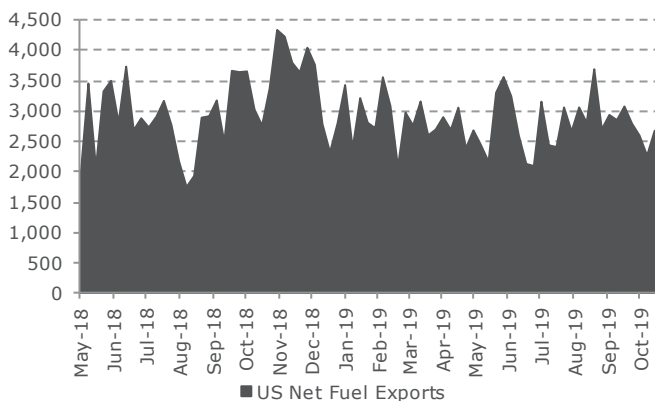
CFTC Net Speculative Positions In Oil



Brent/WTI Spread vs. Cushing Oil Stockpile



US Net Fuel Exports



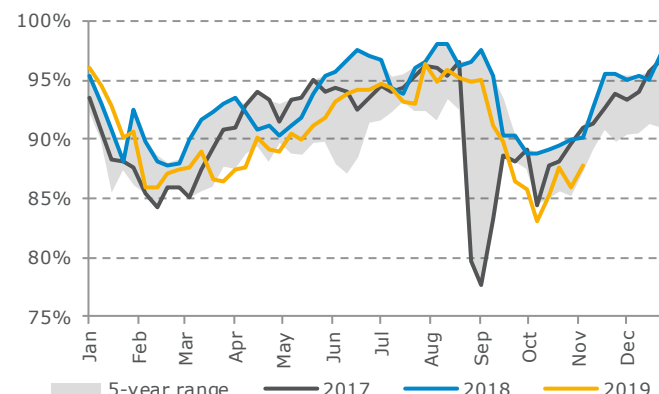
Source: Bloomberg, Dom Maklerski mBanku

## Gas & Oil

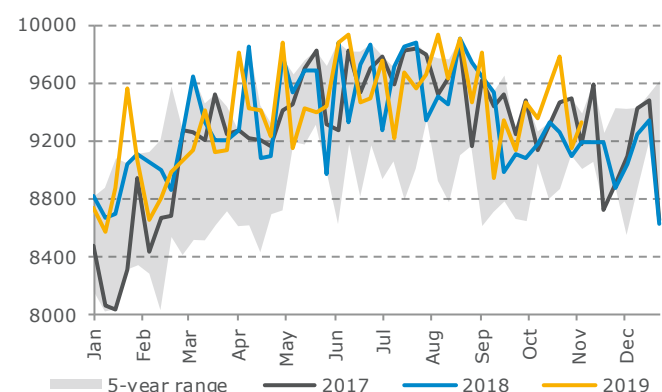
### Diesel Inventories @ARA



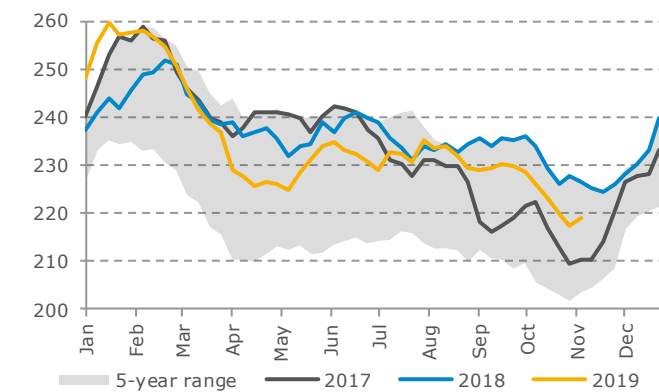
### US Refinery Utilization Rates



### US Gasoline Demand



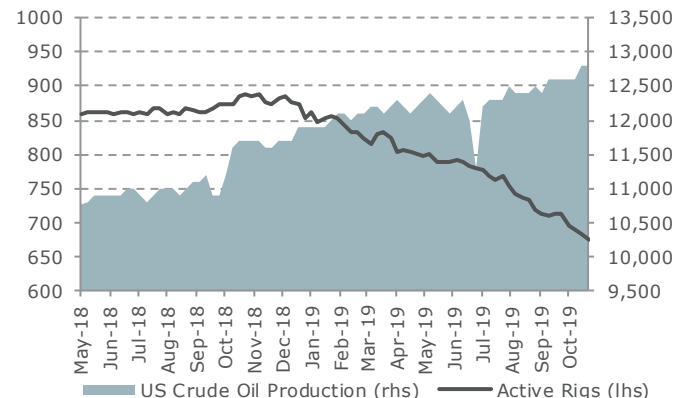
### US Gasoline Inventories



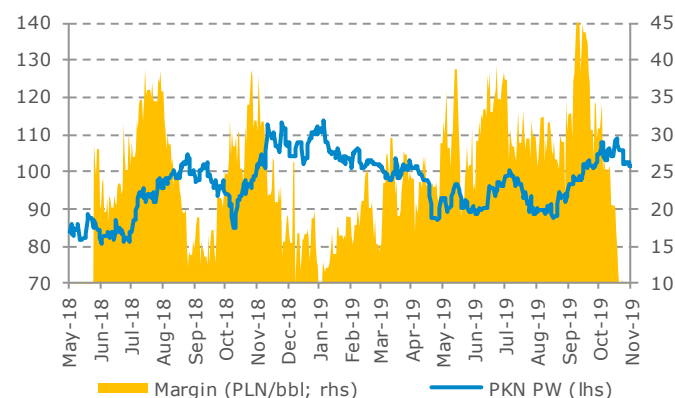
### Global Refinery Outages (mbbl/d)



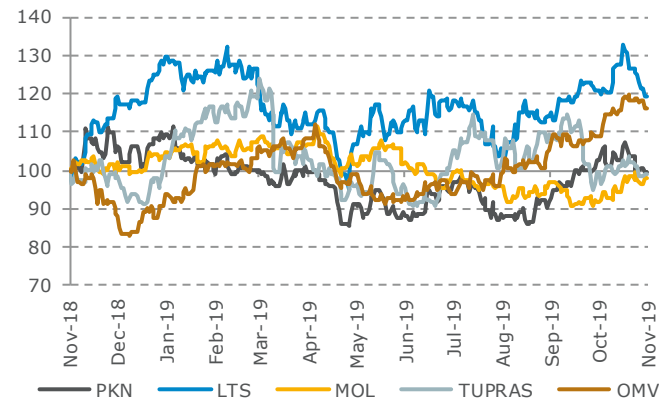
### US Crude Oil Production (mboe/d) vs. Active Rigs



### PKN Performance vs. Benchmark Margins



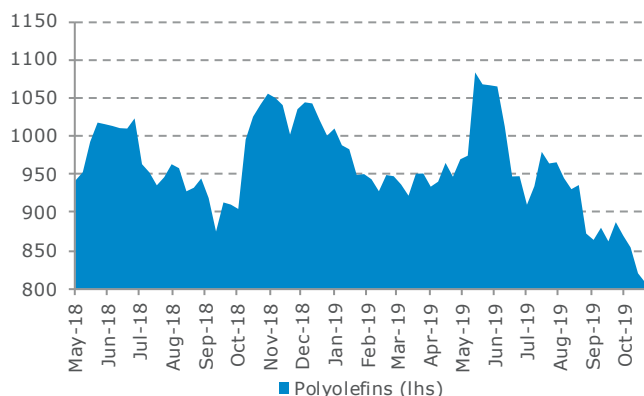
### Normalized Oil Stock Chart



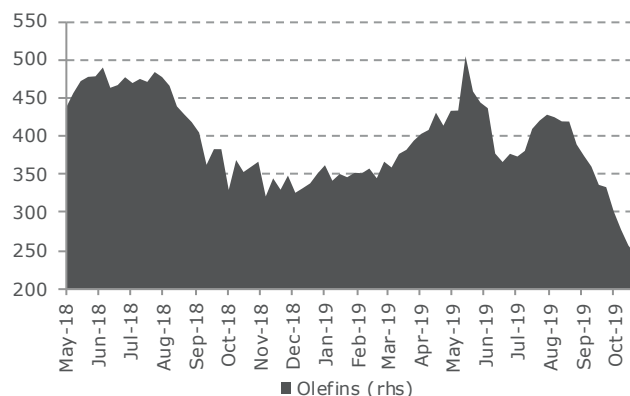
Source: Bloomberg, Dom Maklerski mBanku

## Petrochemicals & NatGas

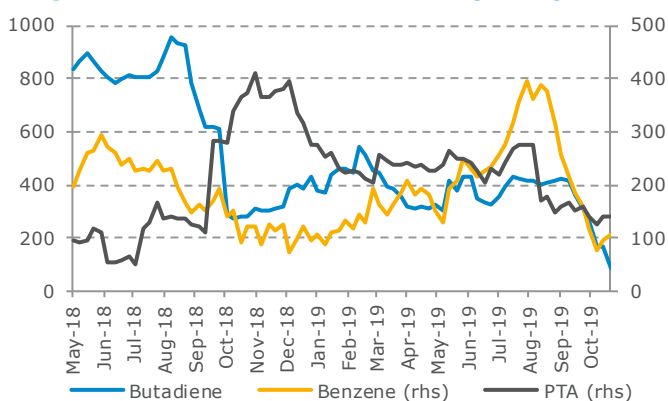
### Margins on Polyolefins



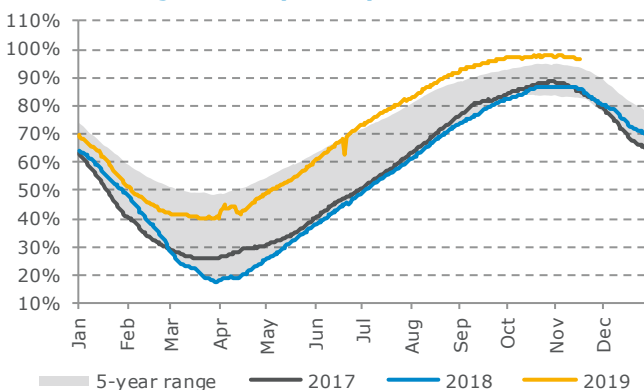
### Margins on Olefins



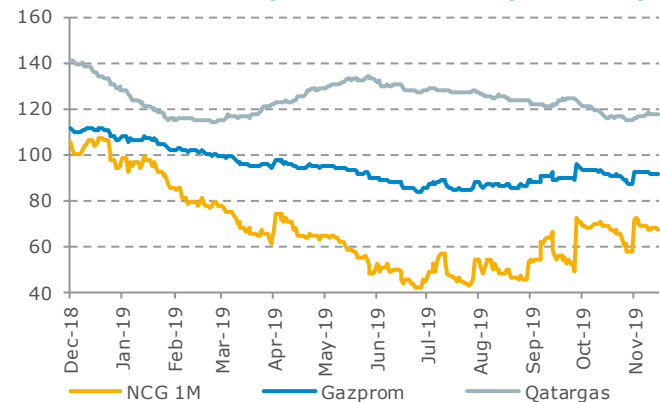
### Margins on Butadiene, Benzene & PTA (US\$/t)



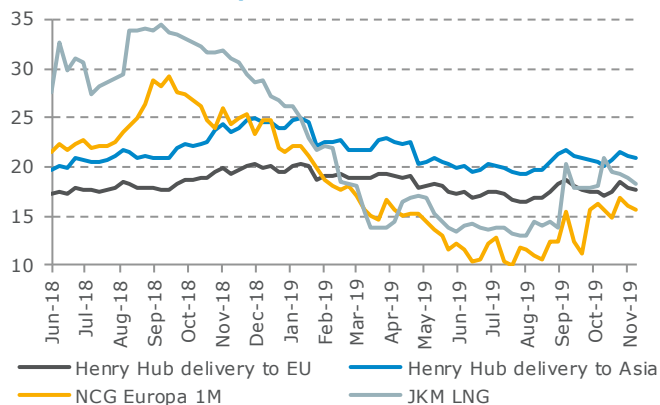
### EU Gas Storage Levels (% Full)



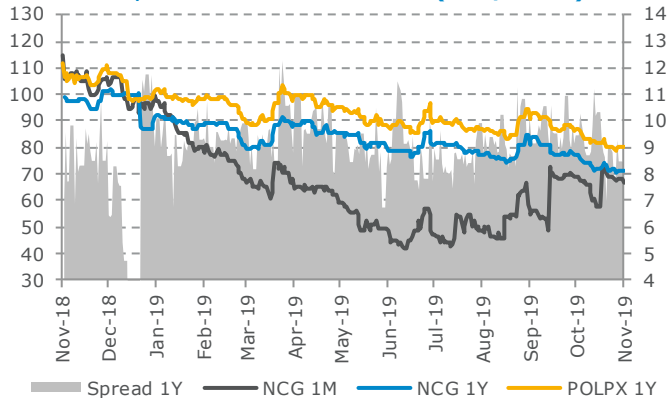
### Estimated Costs of Imported Natural Gas (PLN/MWh)



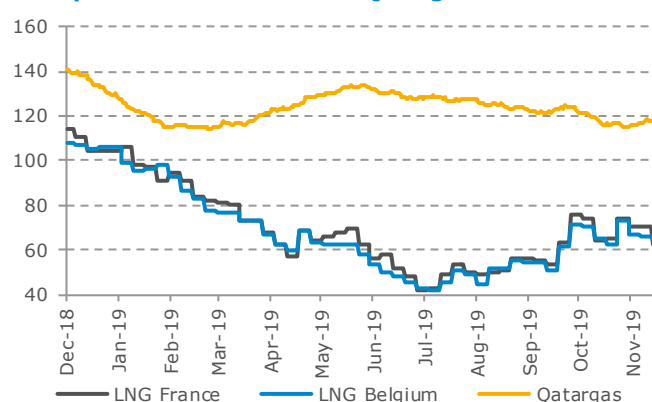
### Prices of US LNG Exports to EU and Asia



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



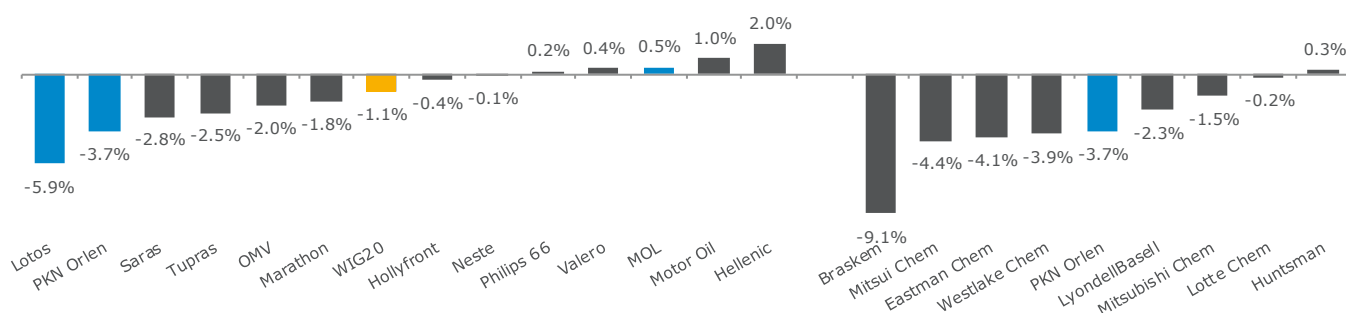
### LNG Spot Rates vs. Estimated Qatargas rates



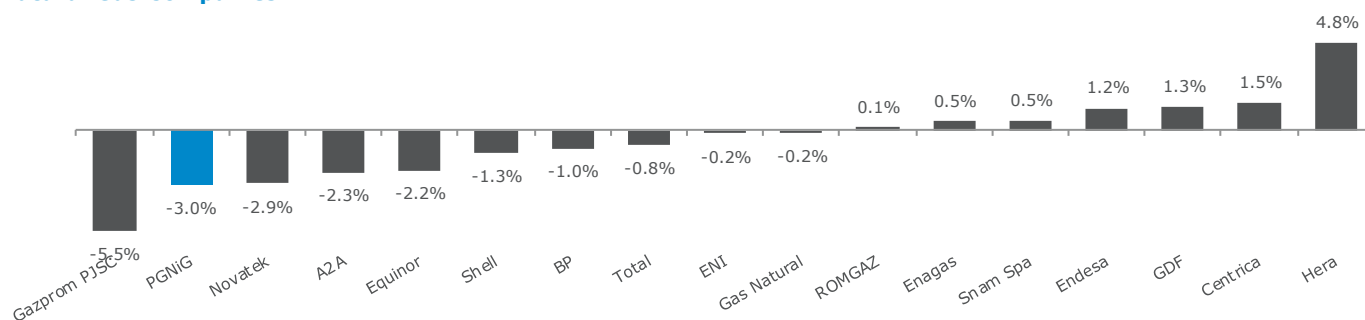
Source: Bloomberg, Dom Maklerski mBanku

## Weekly Performance Charts

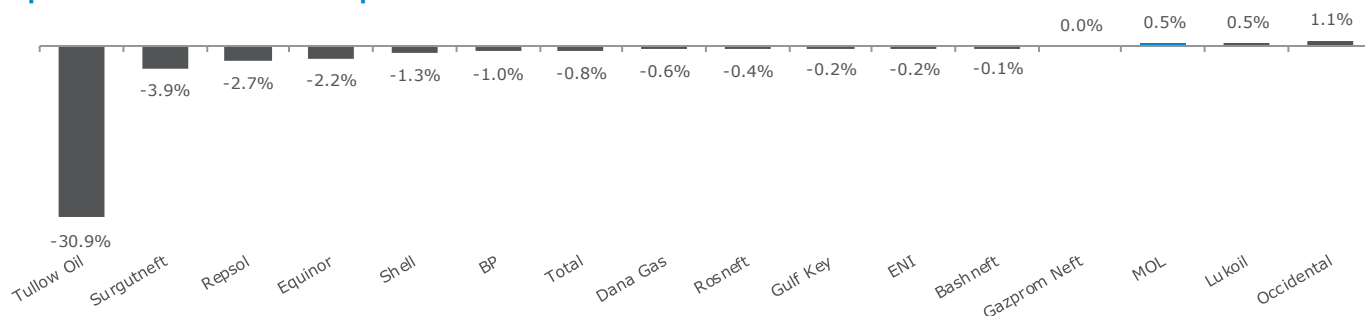
### Oil Refiners (L) & Petrochemical Producers (R)



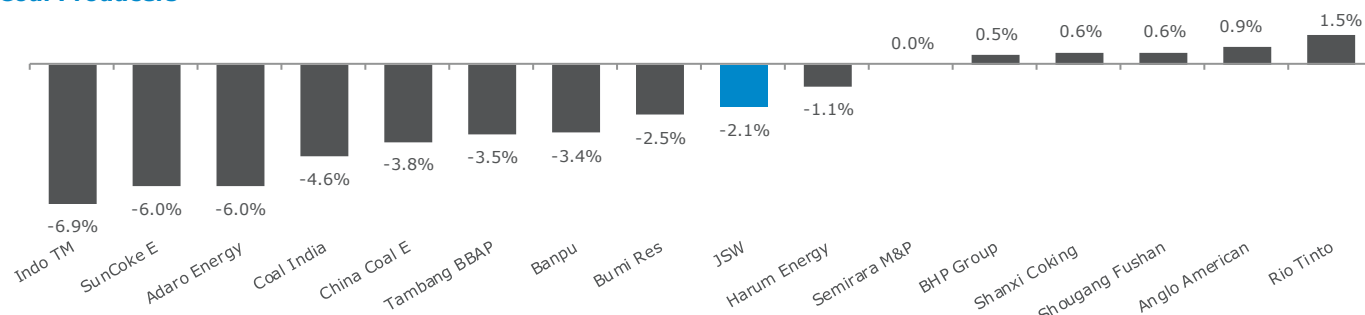
### Natural Gas Companies



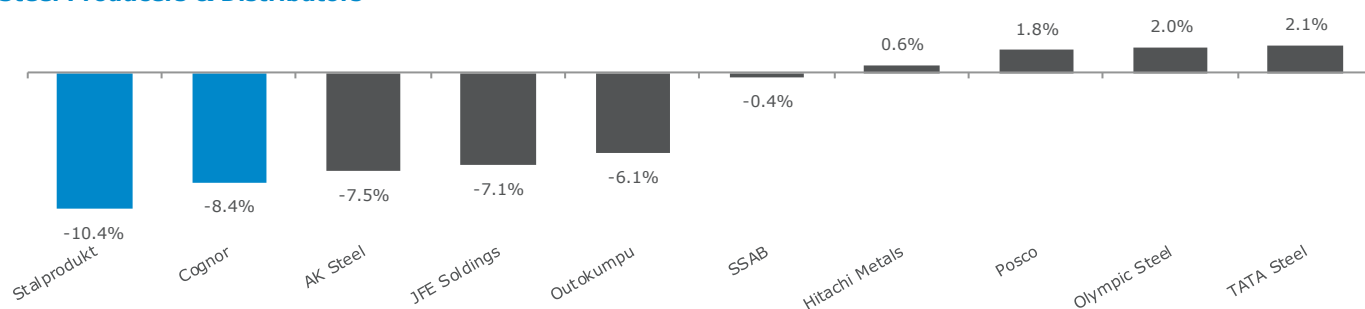
### Exploration & Production Companies



### Coal Producers



### Steel Producers & Distributors

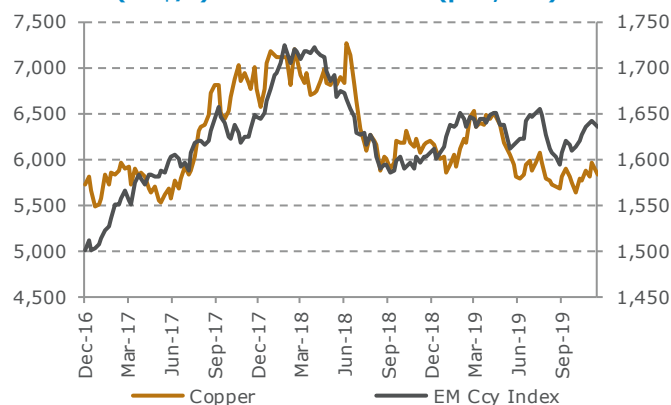


Source: Bloomberg, Dom Maklerski mBanku

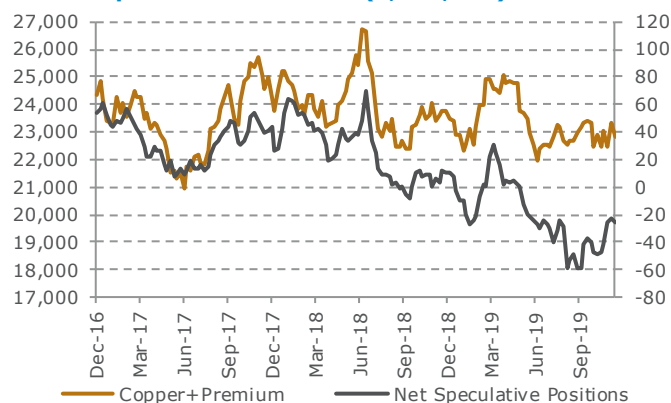


## Copper Charts

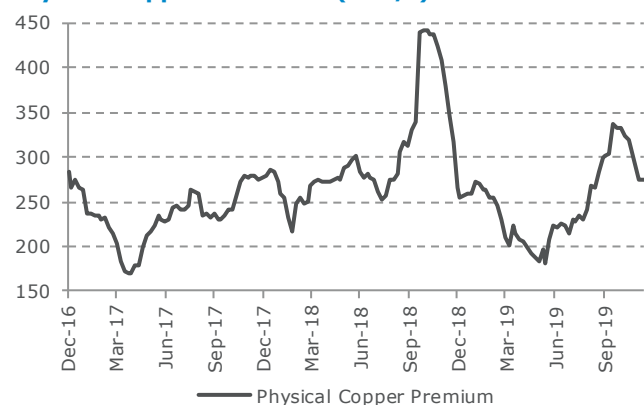
Cu Price (US\$/t) vs. EM Currencies (pts.; rhs)



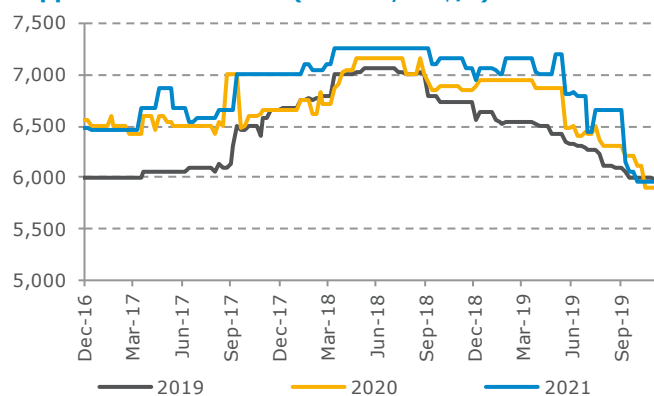
CU Price incl. Supplier Premium (PLN 1,000/t; lhs) vs. Net Speculative Positions (1,000, rhs)



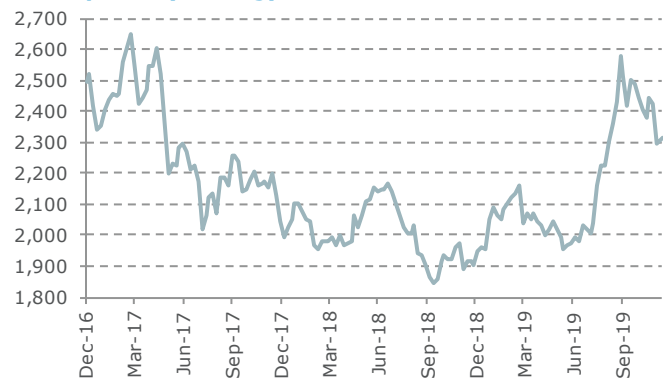
Physical Copper Premiums (PLN/t)



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



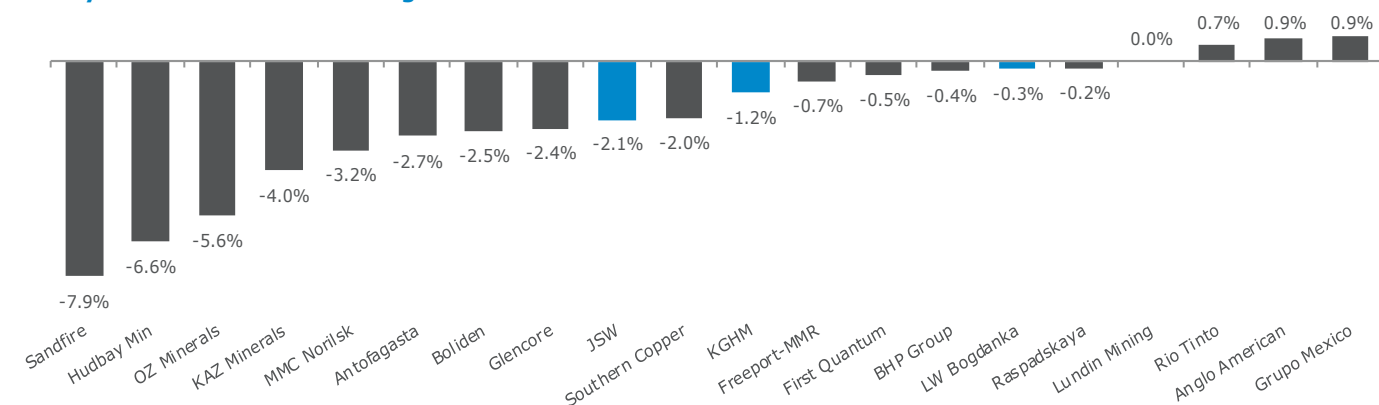
Silver prices (PLN/kg)



Prices of gold (PLN/oz)



Weekly Returns of Metal & Mining Stocks

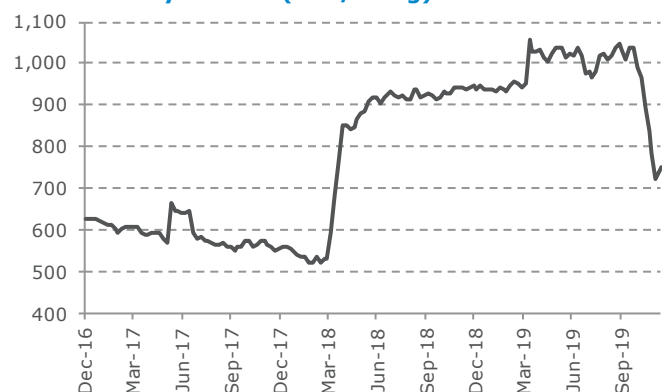


Source: Bloomberg, Dom Maklerski mBanku

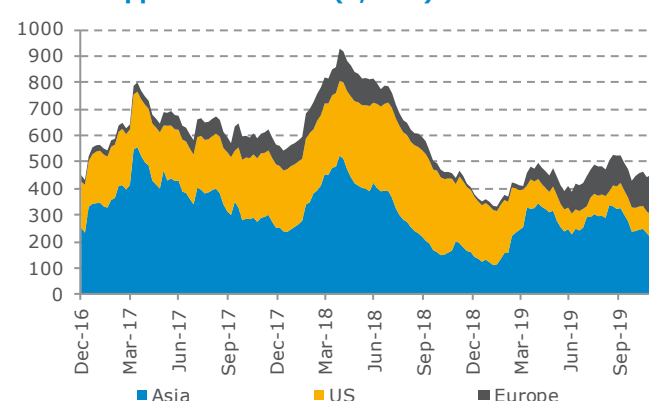


## More Copper Charts

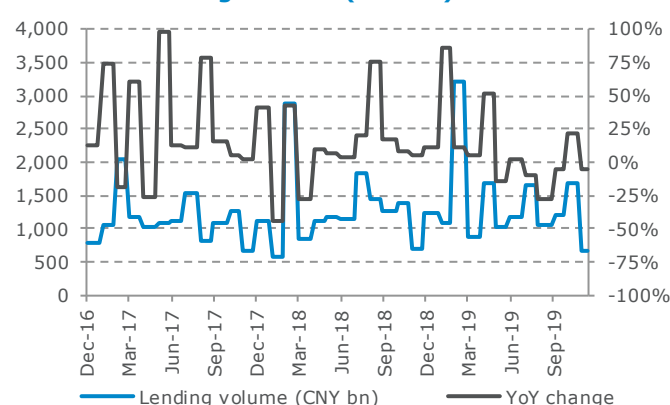
Prices of molybdenum (PLN/10 kg)



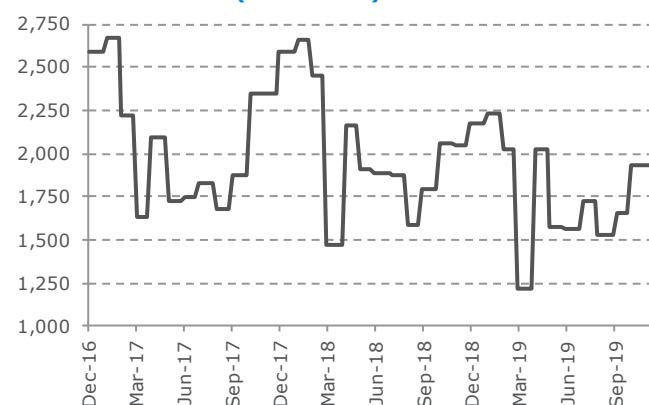
Global Copper Inventories (1,000t)



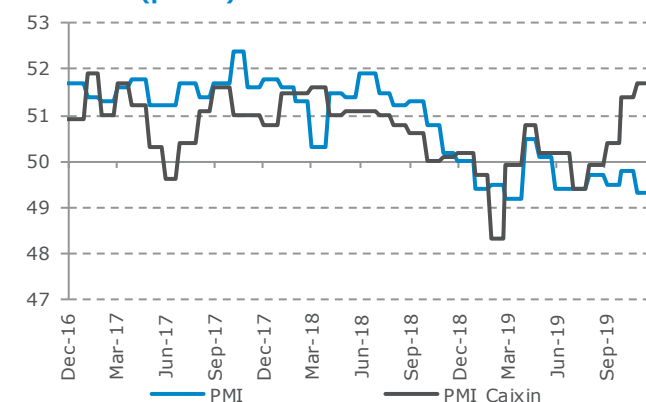
New Bank Lending in China (CNY bn)



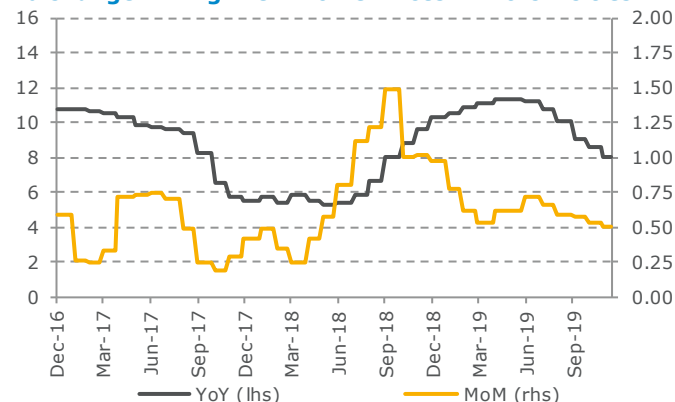
Car Sales in China (thousands)



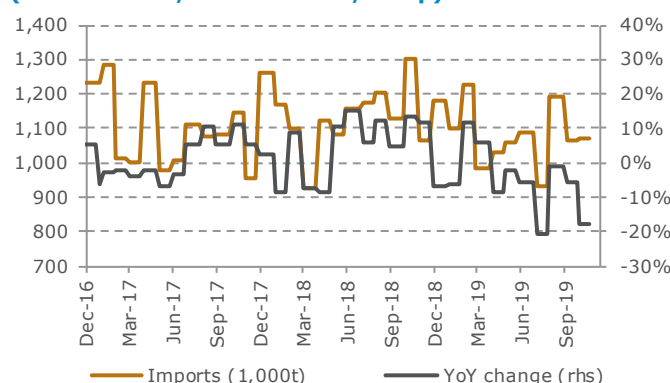
China PMI (points)



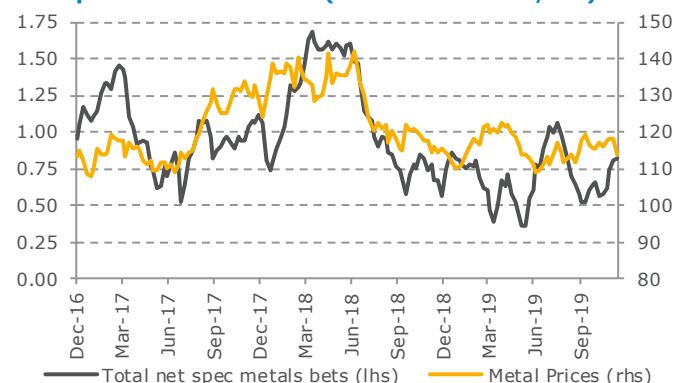
% Change In Avg. New Home Prices In 70 CN Cities



China Copper Imports (concentrates, refined metal, scrap)



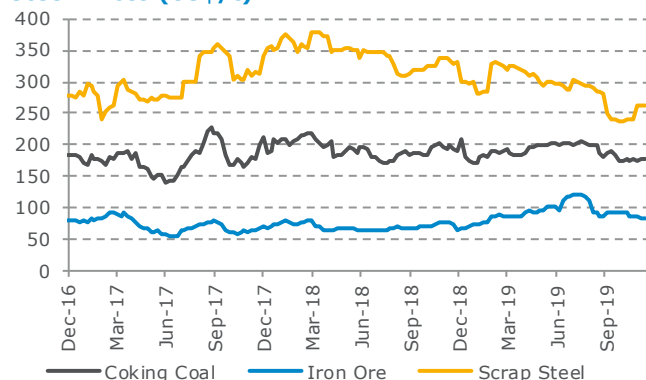
Metal Price Index (pts, rhs) vs. Net Speculative Positions (million contracts, lhs)



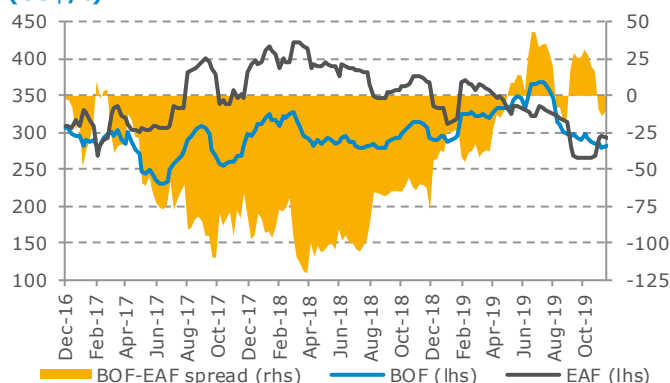
Source: Bloomberg, Dom Maklerski mBanku

## Steel Charts

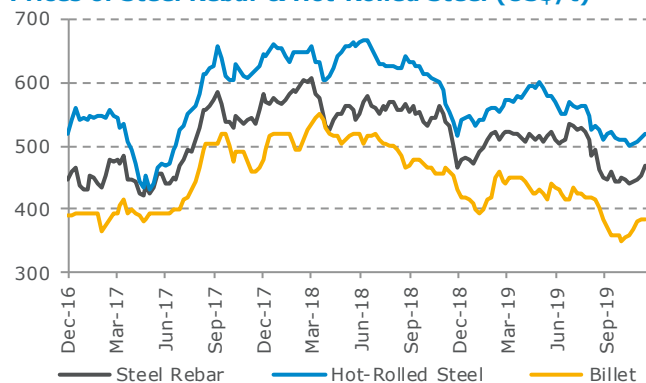
**China Coking Coal & Iron Ore Prices, Rotterdam Scrap Steel Prices (US\$/t)**



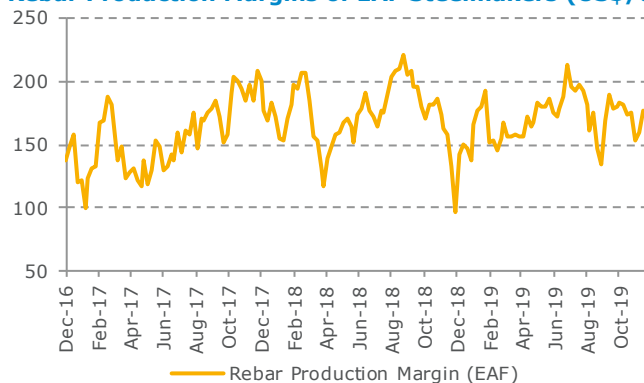
**Production Costs of BOF vs. EAF Steel Producers (US\$/t)**



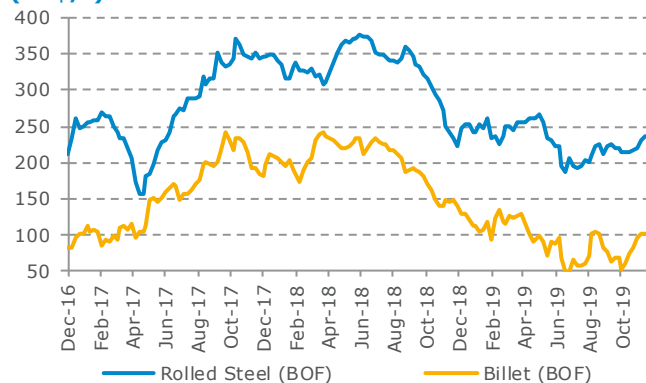
**Prices of Steel Rebar & Hot-Rolled Steel (US\$/t)**



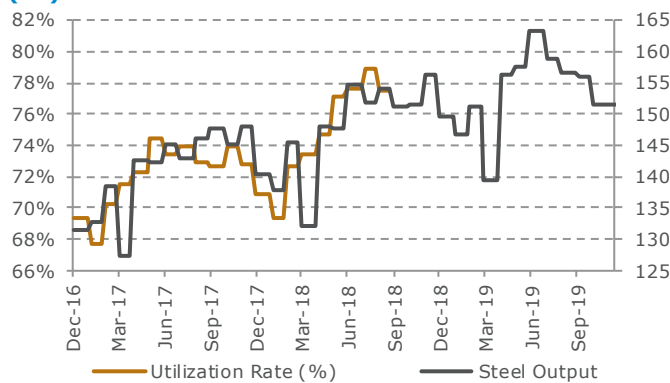
**Rebar Production Margins of EAF Steelmakers (US\$/t)**



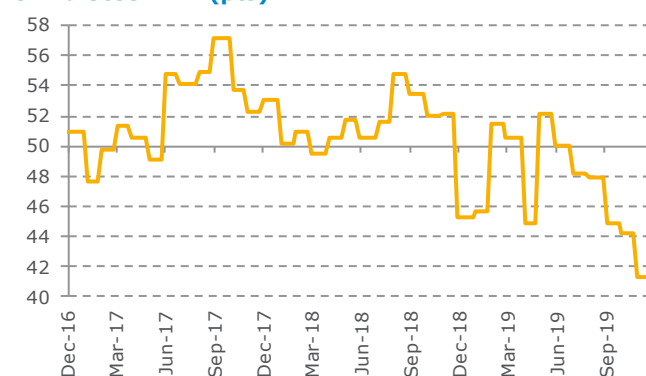
**Rolled Steel & Billet Margins of BOF Steelmakers (US\$/t)**



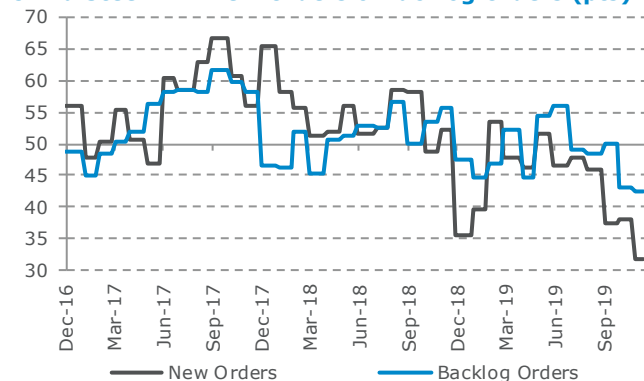
**Global Steel Plant Capacity Utilization Rates & Output (Mt)**



**China Steel PMI (pts)**

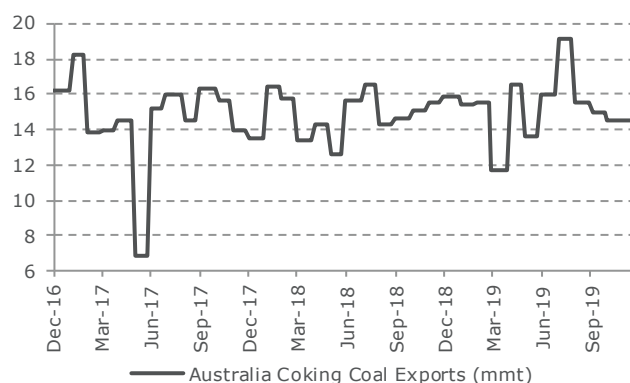


**China Steel PMI New Orders & Backlog Orders (pts)**

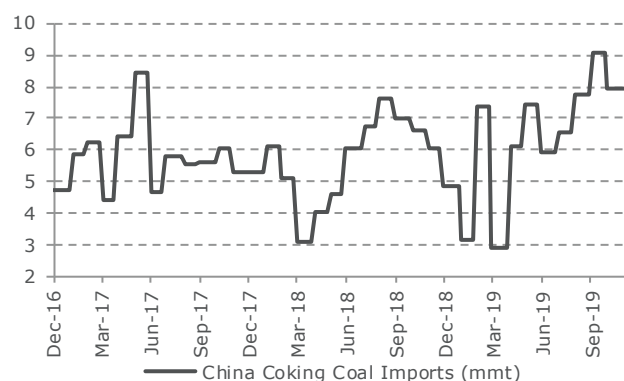


## More Steel Charts

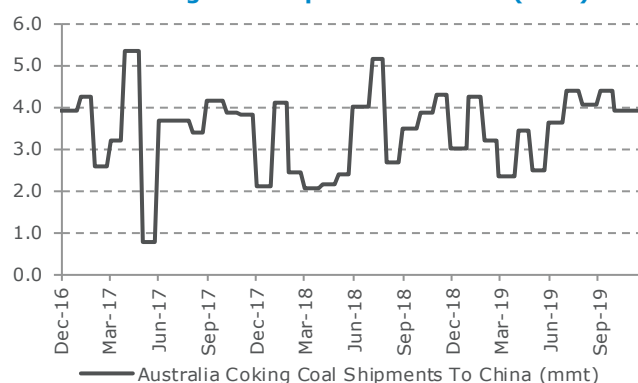
### Australia Coking Coal Exports (mmt)



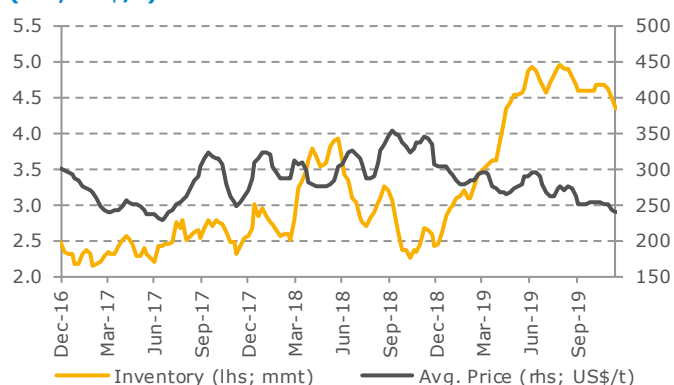
### China Coking Coal Imports (mmt)



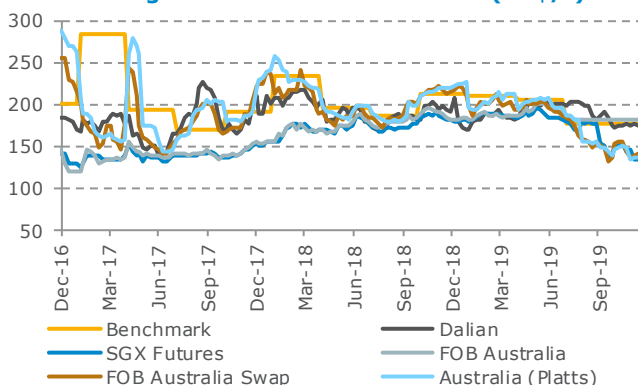
### Australia Coking Coal Shipments To China (mmt)



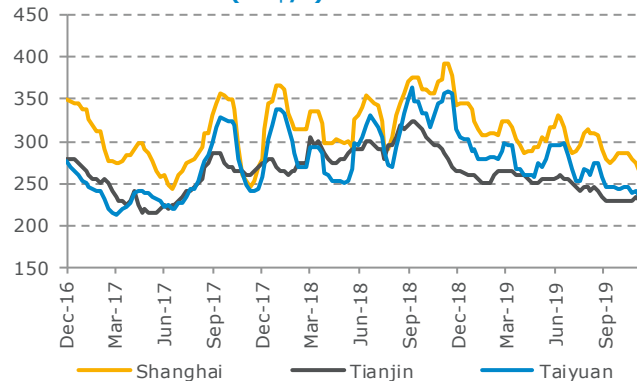
### China Coke Inventories (lhs; mmt) & Average Prices (rhs; US\$/t)



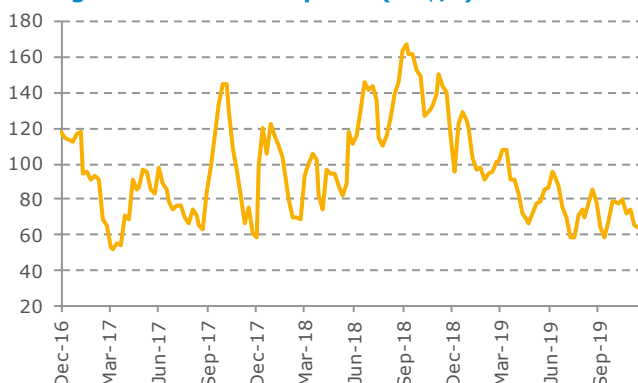
### China Coking Coal Prices vs. Benchmark (US\$/t)



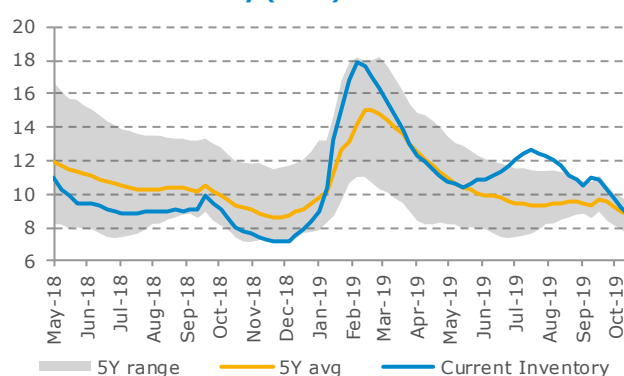
### China Coke Prices (US\$/t)



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



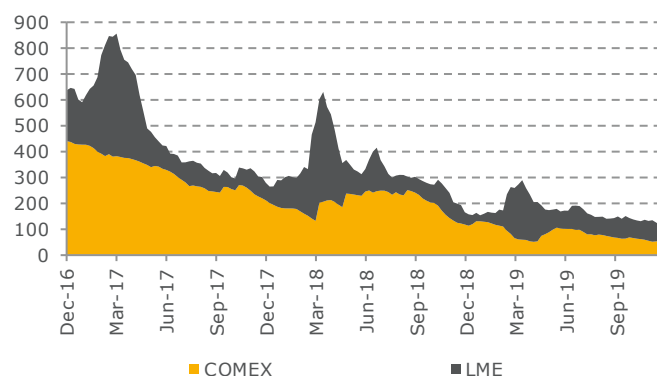
### China Steel Inventory (mmt)



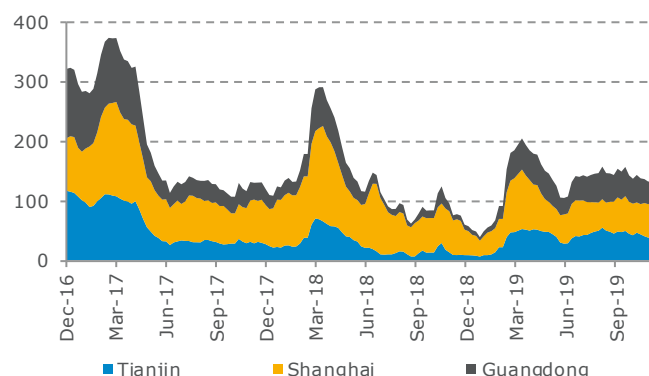
Source: Bloomberg, Dom Maklerski mBanku

## Zinc and Electrical Steel Charts

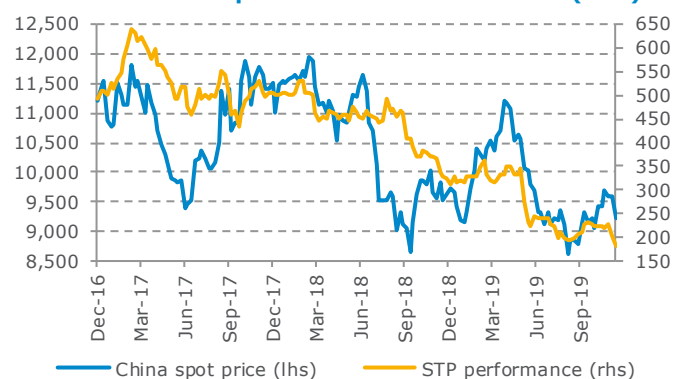
Exchange-Monitored Zinc Inventories (1,000t)



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



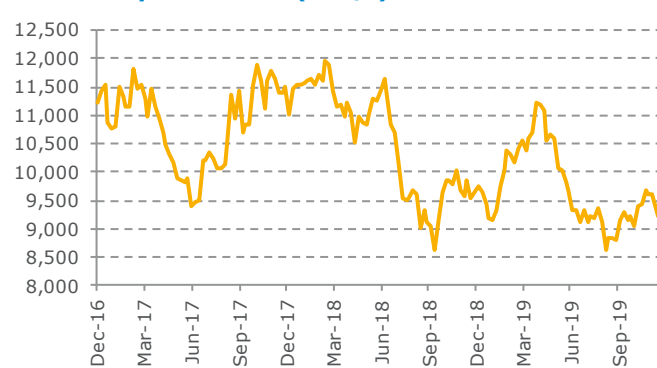
Zinc Prices vs. Stalprodukt Stock Performance (PLN)



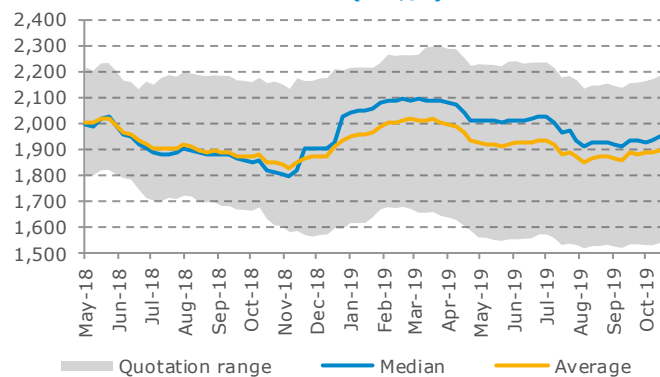
US Dollar Zinc Prices (US\$/t)



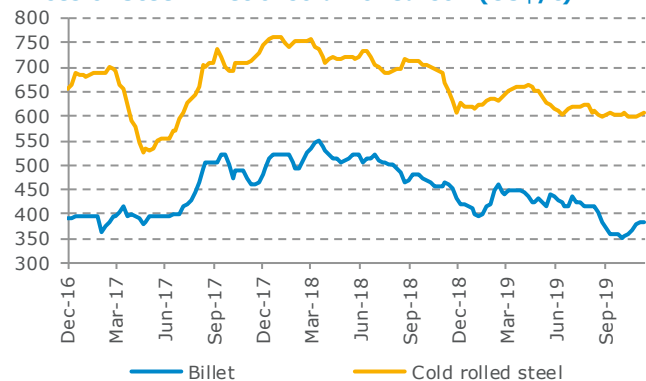
Polish Zloty Zinc Prices (PLN/t)



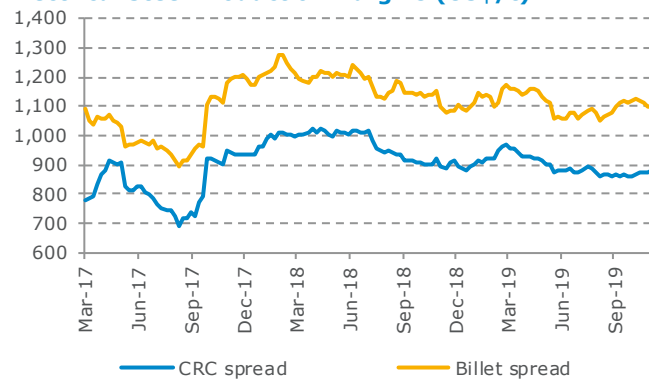
China Electrical Steel Prices (US\$/t)



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



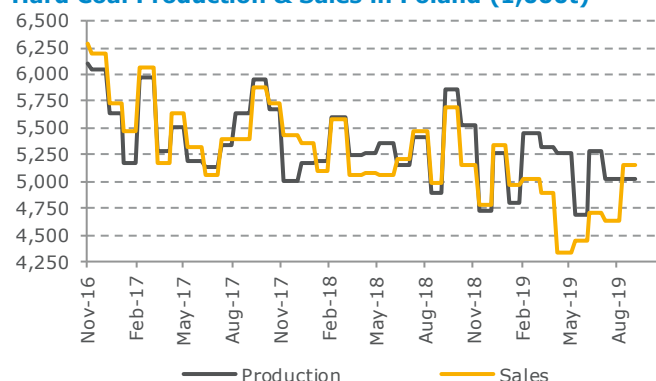
Electrical Steel Production Margins (US\$/t)



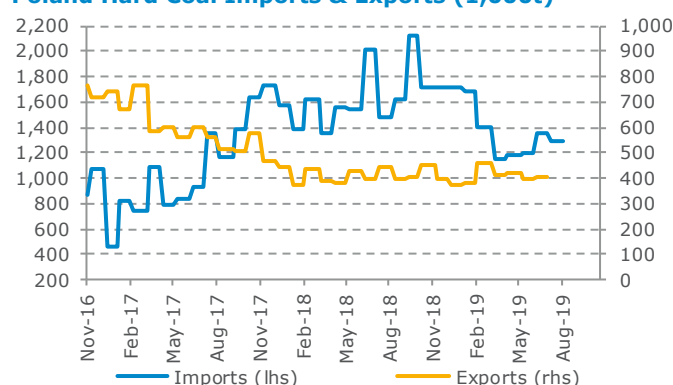
Source: Bloomberg, Dom Maklerski mBanku

## Thermal Coal Charts

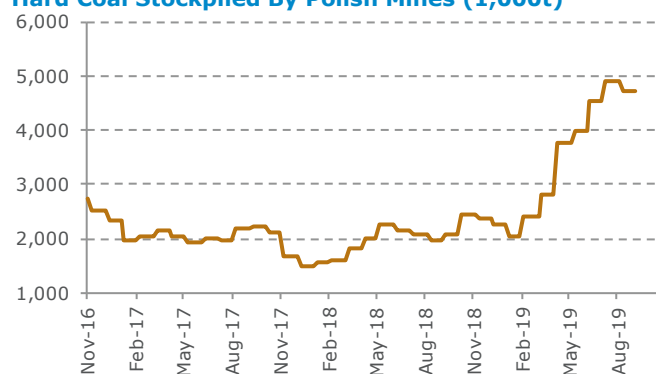
### Hard Coal Production & Sales in Poland (1,000t)



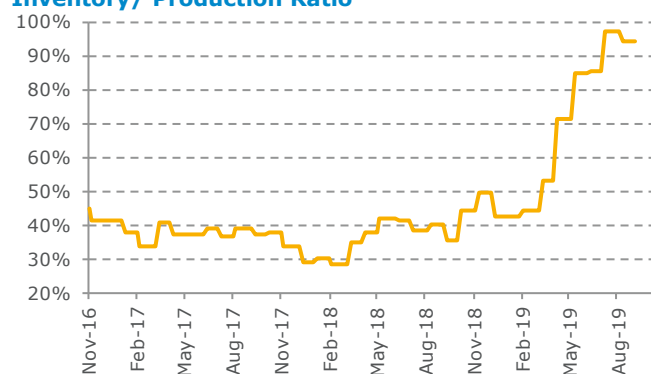
### Poland Hard Coal Imports & Exports (1,000t)



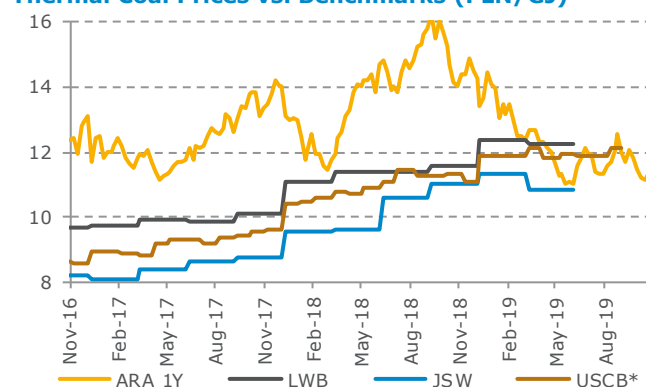
### Hard Coal Stockpiled By Polish Mines (1,000t)



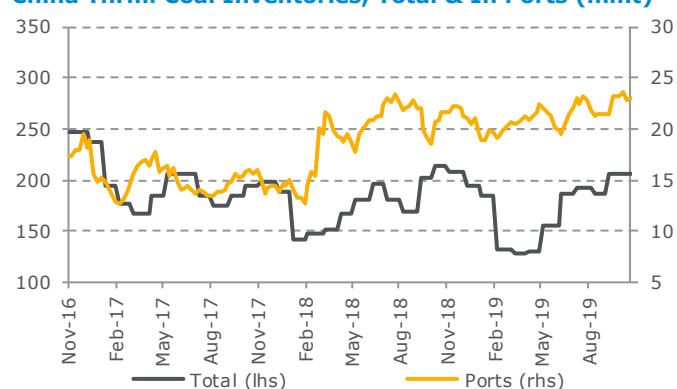
### Inventory/ Production Ratio



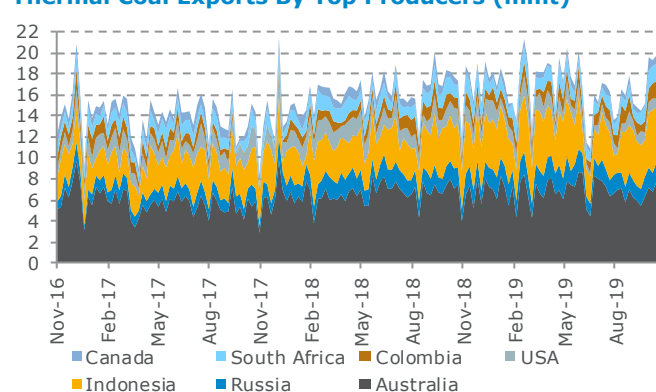
### Thermal Coal Prices vs. Benchmarks (PLN/GJ)



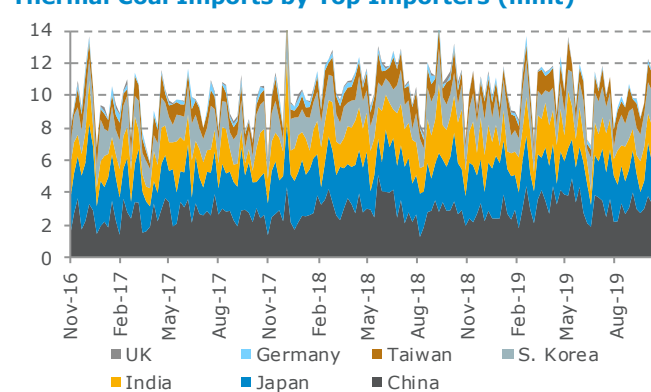
### China Thrml Coal Inventories, Total & In Ports (mmt)



### Thermal Coal Exports By Top Producers (mmt)



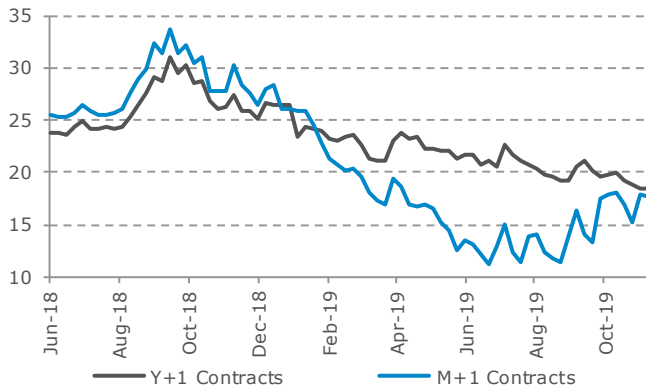
### Thermal Coal Imports by Top Importers (mmt)



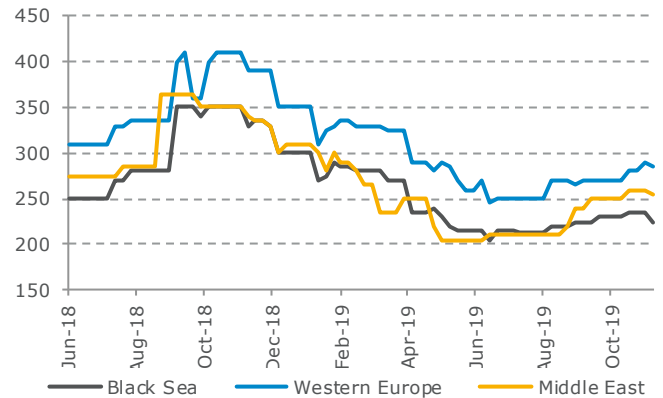
Source: Bloomberg, ARP, Eurostat, Dom Maklerski mBanku \*Upper Silesian Coal Basin

## Fertilizer Charts

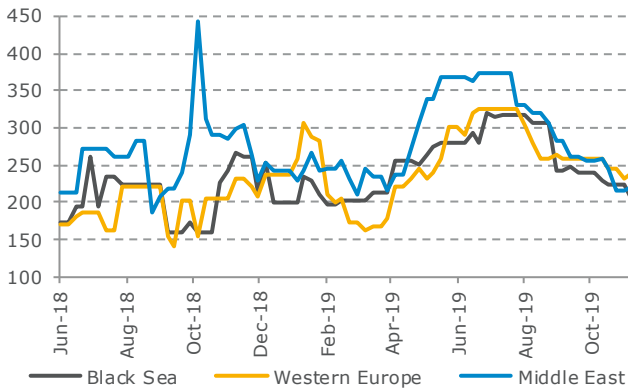
**German NatGas Prices (US\$/MWh)**



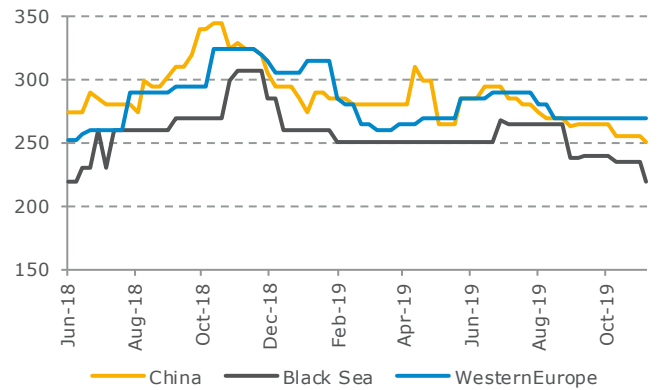
**World Ammonia Prices (US\$/t)**



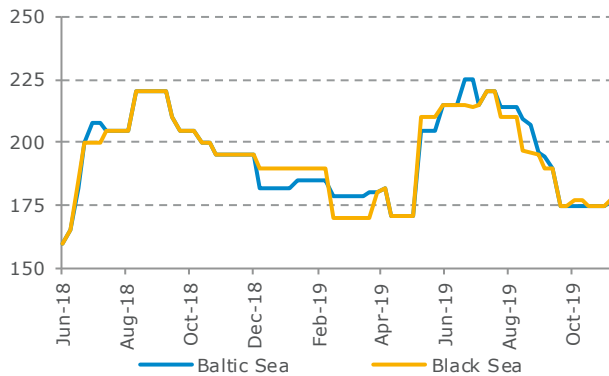
**Urea-Ammonia Price Difference**



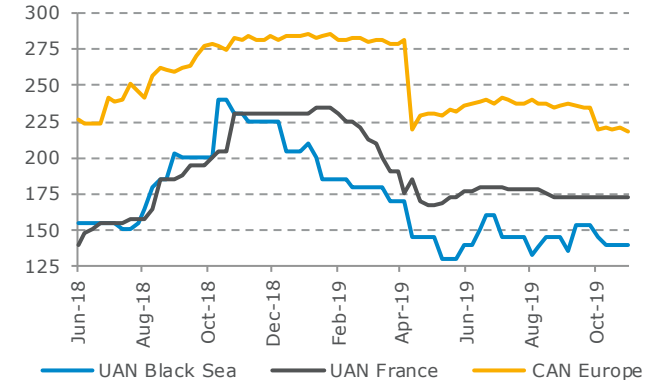
**World Urea Prices (US\$/t)**



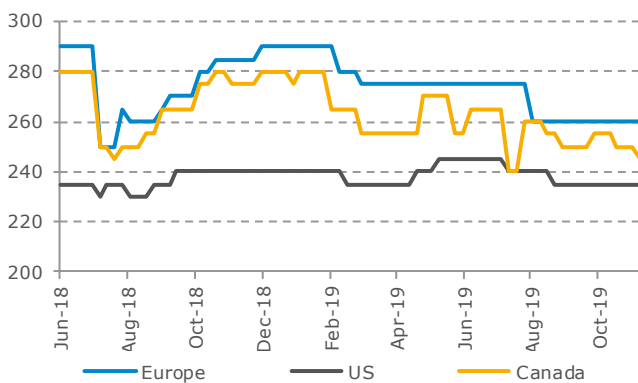
**World Ammonium Nitrate Prices (US\$/t)**



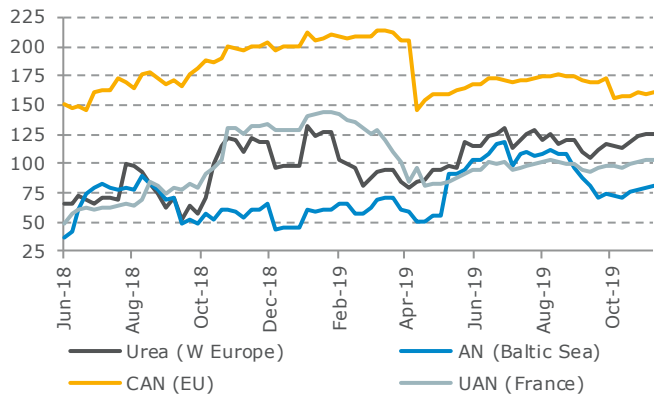
**CAN & UAN prices (US\$/t)**



**World Ammonium Sulfate Prices (US\$/t)**



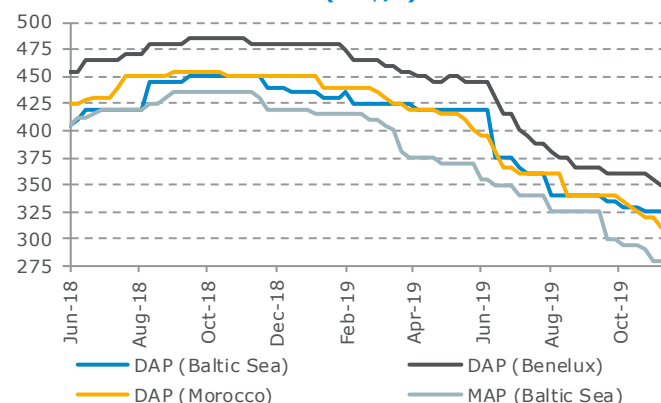
**Production Margins On Nitrogen Fertilizers (US\$/t)**



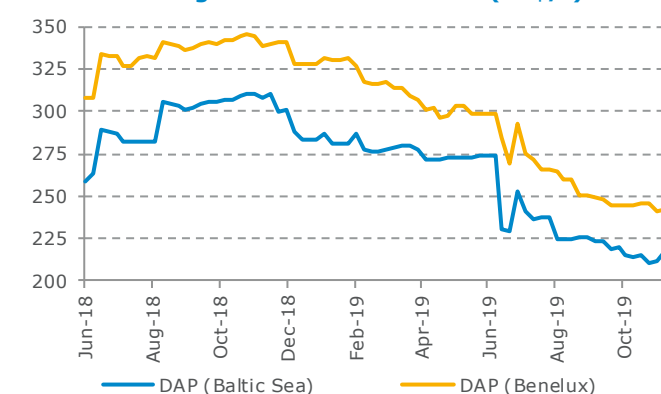
Source: Bloomberg, Dom Maklerski mBanku

## Fertilizer Charts

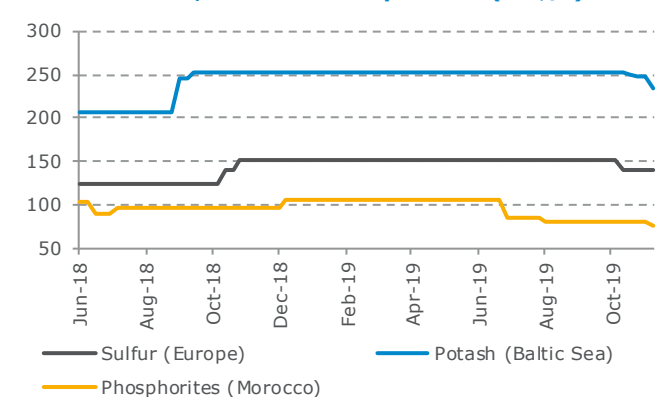
### Prices of P & K Fertilizers (US\$/t)



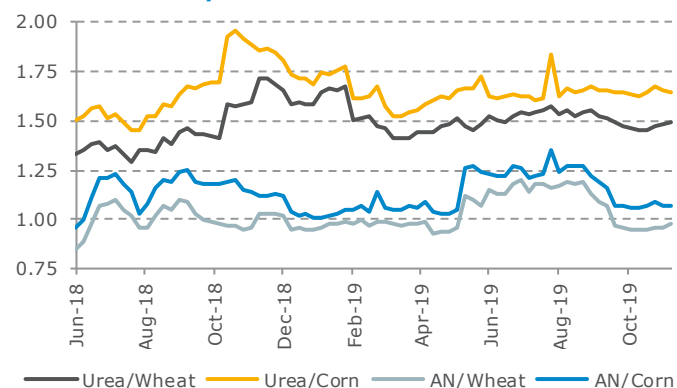
### Production Margins on P & K Fertilizers (US\$/t)



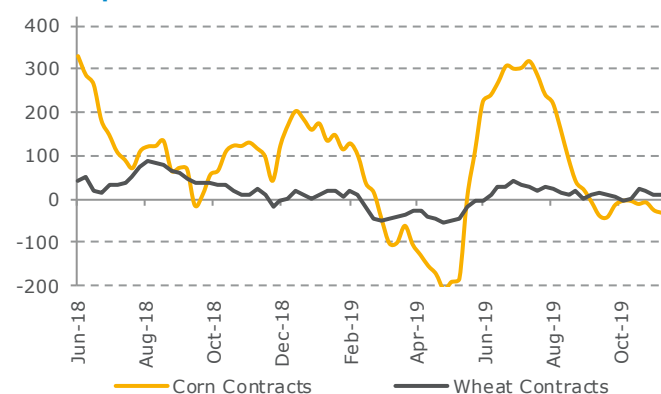
### Prices of Sulfur, Potash & Phosphorites (US\$/t)



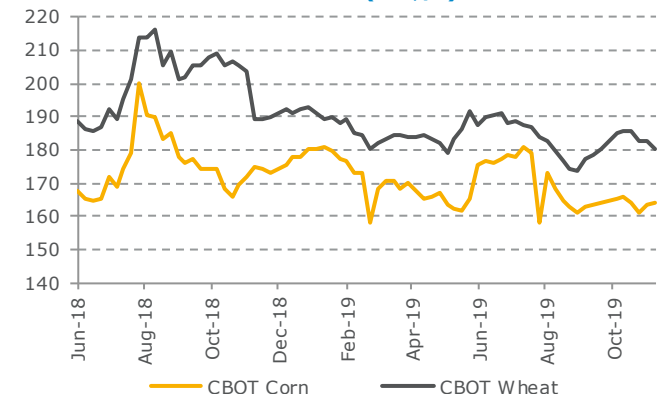
### Fertilizer-to-Crop Price Ratios



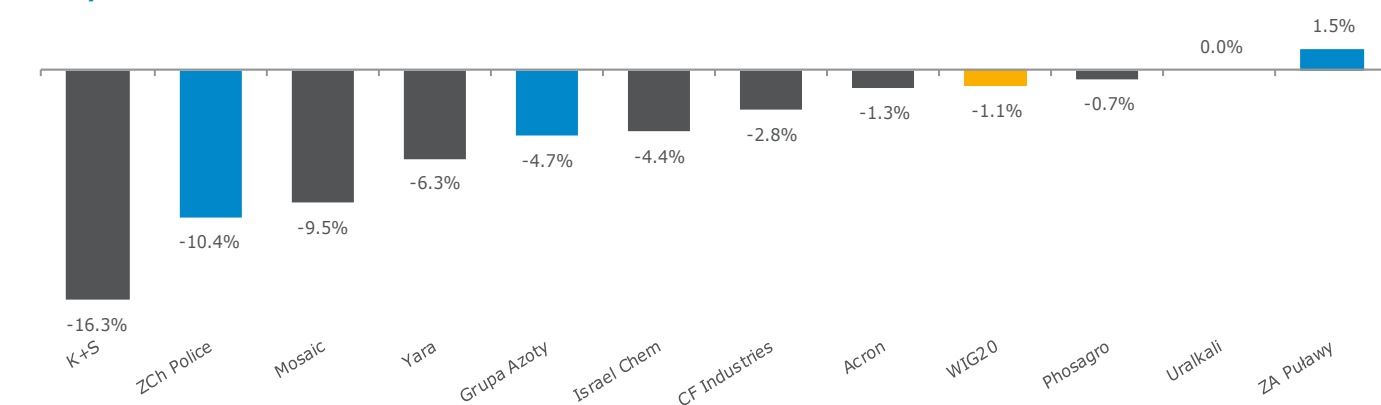
### CBOT Open Positions In Corn and Wheat CBT



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



### Weekly Returns of Fertilizer Stocks

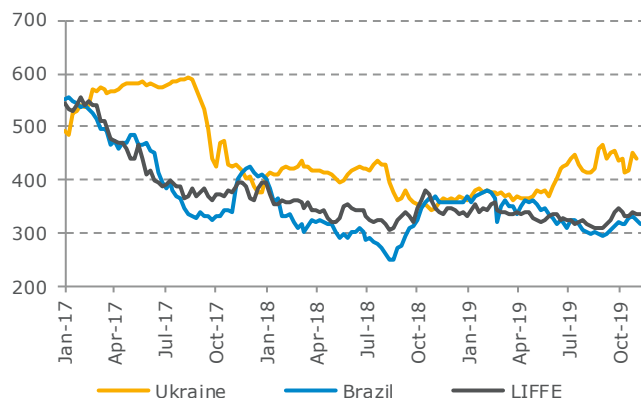


Source: Bloomberg, Dom Maklerski mBanku

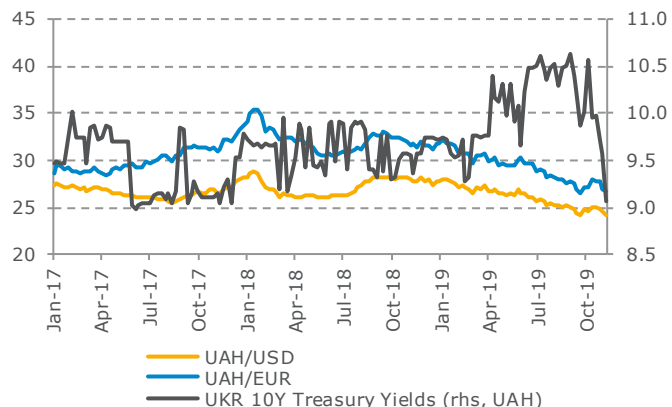


## Agricultural Commodities

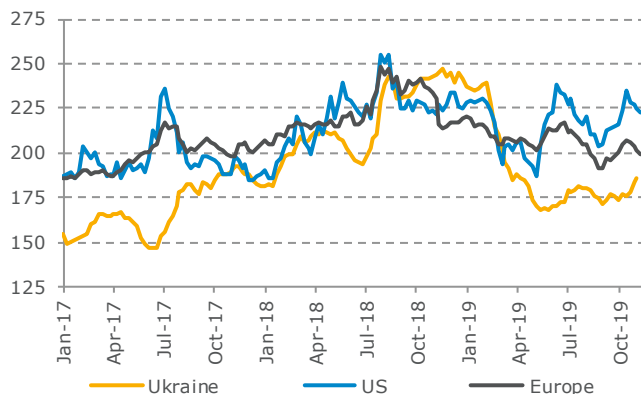
Sugar Prices (US\$/Mt)



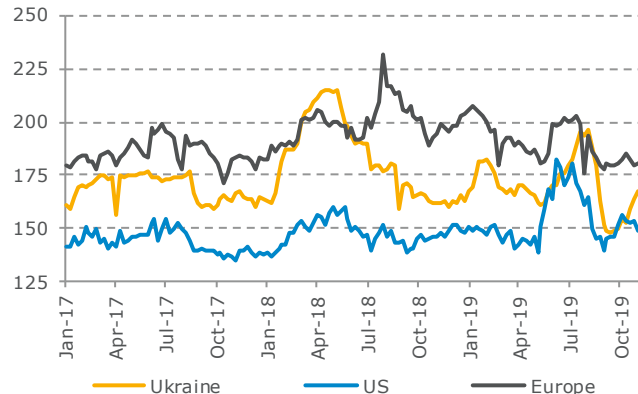
UAH Exchange Rates & Ukraine 10Y Treasury Yields



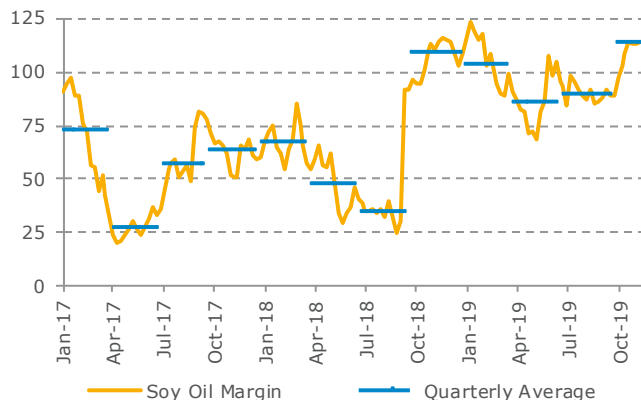
Wheat Prices (US\$/Mt)



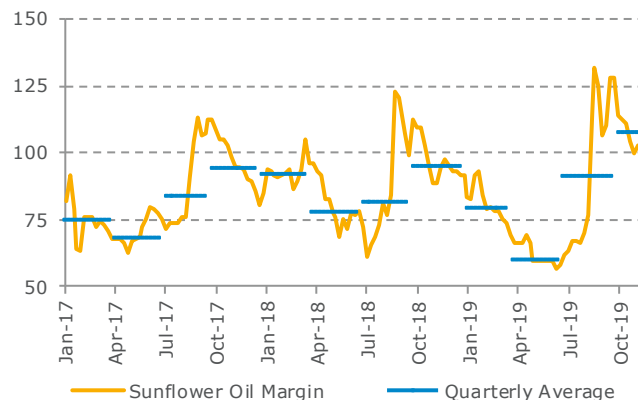
Corn Prices (US\$/Mt)



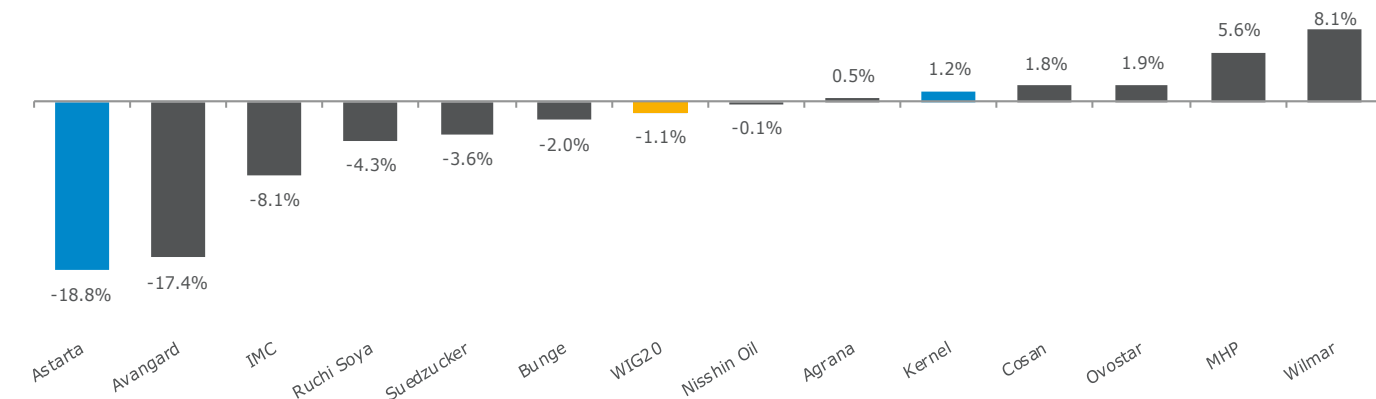
Model Margins on Soy Oil (US\$/Mt)



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	515.0	7.4	6.8	6.7	2.1	1.9	1.8	15.4	13.3	13.4	29%	28%	27%	4.7%	5.9%	6.7%
Enea	8.7	3.3	3.2	2.9	0.7	0.6	0.6	3.7	3.6	2.8	20%	18%	21%	0.0%	0.0%	2.8%
Energa	6.5	3.5	4.1	4.4	0.7	0.7	0.8	5.1	4.9	4.4	19%	17%	17%	0.0%	0.0%	0.0%
PGE	8.8	3.5	3.9	3.0	0.7	0.7	0.7	5.9	7.6	4.8	21%	17%	22%	0.0%	4.2%	3.3%
Tauron	1.8	4.2	3.9	3.4	0.7	0.7	0.6	3.5	2.9	2.3	18%	17%	19%	0.0%	0.0%	0.0%
ZE PAK*	7.3	0.8	0.9	0.6	0.1	0.1	0.1	4.6	5.2	1.6	11%	11%	17%	-	6.7%	5.6%
EDF	9.4	4.1	3.8	3.7	1.0	0.9	0.9	13.6	11.5	11.2	23%	24%	24%	3.5%	4.1%	4.3%
EDP	3.8	9.3	8.9	8.6	2.0	2.0	2.0	17.3	15.8	14.7	22%	23%	24%	5.0%	5.1%	5.4%
Endesa	24.2	8.5	8.4	8.2	1.5	1.5	1.5	16.7	16.4	15.9	18%	18%	18%	5.9%	6.1%	5.2%
Enel	6.9	7.7	7.4	7.1	1.7	1.7	1.6	14.6	13.3	12.5	22%	23%	23%	4.8%	5.3%	5.6%
EON	9.2	6.4	4.8	4.7	1.0	0.5	0.5	13.7	14.6	13.4	16%	11%	10%	5.0%	5.2%	5.3%
Fortum	21.4	14.3	10.8	9.9	4.3	4.2	2.1	14.8	13.9	12.8	30%	39%	21%	5.1%	5.2%	5.2%
Iberdola	8.9	10.7	10.0	9.5	2.9	2.7	2.7	16.9	15.7	15.0	27%	27%	28%	4.2%	4.5%	4.8%
National Grid	9.1	13.3	11.1	10.5	4.0	3.8	3.7	20.3	15.5	14.7	30%	34%	35%	5.1%	5.4%	5.5%
Red Electrica	17.3	9.4	9.4	9.5	7.3	7.3	7.3	13.1	13.9	14.2	78%	78%	77%	6.1%	5.9%	5.8%
RWE	26.6	8.6	5.0	4.4	1.2	0.8	0.7	19.6	15.0	11.4	14%	16%	17%	3.0%	3.6%	4.2%
SSE	13.4	10.8	12.1	11.1	1.0	3.3	3.2	9.7	15.6	13.5	9%	27%	29%	7.3%	6.0%	6.2%
Verbund	45.1	14.8	12.5	11.8	5.2	4.7	4.5	27.9	22.3	20.9	35%	37%	38%	1.6%	2.0%	2.6%
Median		8.1	7.1	6.9	1.4	1.6	1.6	14.1	13.9	13.1	22%	23%	23%	4.7%	5.2%	5.2%

## Comparison of Gas &amp; 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	89.20	6.9	5.8	5.1	0.7	0.7	0.6	13.6	12.5	11.4	10%	11%	12%	3.4%	2.2%	2.4%
MOL	3034.00	4.5	4.3	3.8	0.7	0.6	0.6	11.0	9.7	8.4	15%	15%	15%	4.7%	4.9%	5.2%
PKN Orlen	101.55	5.3	5.8	6.3	0.5	0.5	0.5	9.0	11.3	14.1	9%	8%	7%	3.4%	3.4%	3.4%
Hellenic Petroleum	8.65	7.0	5.5	5.7	0.5	0.5	0.5	12.0	7.0	6.9	7%	9%	8%	5.4%	5.6%	5.8%
HollyFrontier	53.91	6.2	6.3	6.8	0.7	0.7	0.7	10.4	10.1	11.3	11%	11%	10%	2.5%	2.5%	2.6%
Marathon Petroleum	64.54	8.4	6.4	6.8	0.7	0.6	0.6	14.5	8.6	10.3	8%	9%	9%	3.3%	3.7%	4.0%
Motor Oil	21.68	5.1	4.4	4.8	0.3	0.3	0.3	8.6	6.9	7.7	6%	7%	7%	6.1%	6.4%	6.6%
Neste Oil	31.56	11.8	11.3	10.5	1.6	1.7	1.6	20.0	17.3	15.9	13%	15%	15%	2.7%	3.0%	3.3%
OMV	52.90	4.8	4.5	4.4	1.2	1.2	1.2	9.8	9.4	8.9	25%	26%	28%	3.7%	4.1%	4.4%
Phillips 66	118.65	9.0	7.7	7.8	0.6	0.6	0.6	13.3	11.2	11.1	7%	8%	8%	2.9%	3.2%	3.5%
Saras	1.57	4.1	2.6	3.6	0.2	0.2	0.2	14.3	5.3	8.6	4%	7%	5%	4.3%	9.3%	5.8%
Tupras	123.80	7.7	4.7	5.1	0.4	0.4	0.4	15.5	6.1	6.0	5%	8%	8%	6.1%	14.4%	14.3%
Valero Energy	101.06	9.4	6.5	7.2	0.5	0.4	0.5	20.0	10.3	11.4	5%	7%	6%	3.6%	3.9%	4.1%
Median		6.9	5.8	5.7	0.6	0.6	0.6	13.3	9.7	10.3	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	101.55	5.3	5.8	6.3	0.5	0.5	0.5	9.0	11.3	14.1	9%	8%	7%	3.4%	3.4%	3.4%
Axiall	70.87	8.0	7.2	7.0	1.5	1.4	1.4	18.7	14.9	13.4	18%	19%	19%	1.4%	1.5%	1.6%
Braskem	28.53	6.7	6.1	5.4	1.0	1.0	0.9	30.3	22.4	18.9	15%	16%	17%	1.8%	0.9%	1.7%
Eastman Chemical	79.27	8.4	8.1	7.7	1.8	1.8	1.7	11.1	10.0	8.8	22%	22%	22%	3.0%	3.3%	3.7%
Huntsman Corp	23.55	8.7	8.8	8.0	1.1	1.1	1.1	13.4	12.1	10.3	12%	13%	13%	2.8%	2.9%	3.0%
Lotte Chemicals	225,500	4.8	4.6	4.2	0.6	0.6	0.6	8.2	7.2	6.6	12%	13%	14%	3.9%	4.2%	4.4%
LyondellBasell	94.92	7.5	6.9	6.7	1.3	1.2	1.2	9.3	8.1	7.7	17%	18%	18%	4.5%	4.7%	4.9%
Mitsubishi Chemical	864.30	7.5	7.1	6.8	0.9	0.9	0.9	7.2	8.6	8.2	12%	13%	13%	4.6%	4.6%	4.7%
Mitsui Chemicals	2679.00	6.9	7.0	6.5	0.7	0.7	0.7	6.9	9.2	8.2	10%	10%	10%	3.7%	3.7%	3.9%
Westlake Chemical	70.87	8.0	7.2	7.0	1.5	1.4	1.4	18.7	14.9	13.4	18%	19%	19%	1.4%	1.5%	1.6%
Median		7.5	7.1	6.8	1.0	1.0	1.0	10.2	10.6	9.5	14%	14%	15%	3.2%	3.4%	3.6%

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	4.85	5.3	4.1	3.6	0.7	0.7	0.6	14.6	9.5	8.4	14%	17%	18%	2.3%	2.7%	4.2%
A2A	1.76	7.5	7.2	6.9	1.4	1.4	1.3	15.6	14.9	14.3	19%	19%	19%	4.4%	4.5%	4.7%
BG Group	22.94	5.6	5.2	4.9	0.9	0.9	0.8	13.2	11.0	10.1	16%	17%	17%	6.3%	6.3%	6.5%
BP	5.02	5.2	4.9	4.8	0.7	0.7	0.7	13.2	11.6	11.0	13%	14%	14%	6.3%	6.4%	6.7%
Centrica	0.75	4.5	4.3	4.6	0.3	0.3	0.3	11.0	7.8	7.5	7%	8%	7%	6.7%	6.8%	6.8%
Enagas	23.08	10.0	9.9	10.6	8.2	8.4	9.1	12.8	12.1	12.7	82%	84%	85%	6.9%	7.3%	7.3%
Endesa	24.19	8.5	8.4	8.2	1.5	1.5	1.5	16.7	16.4	15.9	18%	18%	18%	5.9%	6.1%	5.2%
Engie	14.34	6.7	6.4	6.0	1.0	1.0	1.0	13.9	12.4	11.2	16%	16%	16%	5.4%	5.8%	6.4%
Eni	14.11	4.0	3.8	3.6	1.0	1.0	1.0	14.4	11.7	10.6	25%	25%	27%	6.1%	6.2%	6.4%
Equinor	174.30	3.2	2.9	2.6	1.1	1.0	1.0	12.7	10.8	9.8	34%	36%	37%	5.5%	5.8%	6.0%
Gas Natural SDG	24.06	9.4	9.0	8.8	1.6	1.5	1.6	17.6	16.1	15.4	17%	17%	18%	5.7%	6.0%	6.3%
Gazprom	246.15	3.7	3.6	3.4	1.0	1.0	1.0	3.9	4.3	4.0	28%	28%	28%	6.7%	7.4%	9.7%
Hera	4.01	8.3	8.0	7.8	1.4	1.3	1.3	19.4	18.8	18.8	17%	16%	16%	2.6%	2.7%	2.8%
NovaTek	205.60	13.1	12.5	12.7	4.6	4.6	4.1	8.6	13.6	12.0	36%	37%	32%	2.2%	2.7%	3.0%
ROMGAZ	37.45	5.4	5.5	5.2	2.7	2.6	2.5	9.8	9.8	9.2	49%	47%	48%	8.9%	8.9%	10.2%
Shell	26.86	5.6	5.2	4.9	0.9	0.9	0.8	13.2	11.0	10.1	16%	17%	17%	6.3%	6.3%	6.5%
Snam	4.62	12.8	12.6	12.2	10.3	10.2	9.9	14.3	14.3	13.6	81%	81%	81%	5.2%	5.4%	5.7%
Total	49.03	5.4	4.9	4.7	0.9	0.9	0.9	12.0	10.5	10.0	17%	18%	18%	5.5%	5.8%	6.1%
Median		5.6	5.4	5.1	1.1	1.0	1.0	13.2	11.7	10.8	18%	18%	18%	5.8%	6.0%	6.3%

## 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	3034.00	5.0	4.6	4.6	0.7	0.7	0.7	8.2	7.1	7.2	14%	15%	14%	4.3%	4.6%	5.0%
Bashneft	1942.00	2.0	2.0	1.7	0.5	0.5	0.4	3.0	2.9	2.4	24%	24%	25%	11.2%	11.0%	12.0%
BP	5.02	5.2	4.9	4.8	0.7	0.7	0.7	13.2	11.6	11.0	13%	14%	14%	6.3%	6.4%	6.7%
Dana Gas	0.89	6.8	6.3	-	3.3	3.1	2.9	23.9	12.1	12.1	49%	49%	-	6.7%	6.7%	7.9%
Eni	14.11	4.0	3.8	3.6	1.0	1.0	1.0	14.4	11.7	10.6	25%	25%	27%	6.1%	6.2%	6.4%
Equinor	174.30	3.2	2.9	2.6	1.1	1.0	1.0	12.7	10.8	9.8	34%	36%	37%	5.5%	5.8%	6.0%
Gazprom Neft	423.00	4.2	4.2	3.9	1.1	1.0	1.0	4.9	5.1	4.8	25%	25%	25%	8.2%	9.3%	10.6%
Gulf Keystone	2.20	3.2	2.1	1.5	1.9	1.3	1.0	12.6	7.1	5.7	59%	66%	70%	6.9%	5.0%	6.1%
Lukoil	6077.00	3.8	3.9	3.8	0.6	0.6	0.6	6.9	6.9	7.0	15%	16%	16%	5.7%	8.4%	8.7%
Occidental Petroleum	39.30	9.9	7.6	7.0	4.7	3.7	3.6	20.5	37.0	18.3	47%	49%	51%	7.9%	8.1%	8.2%
Repsol	14.63	4.9	4.4	4.3	0.7	0.7	0.7	9.6	7.8	7.8	15%	16%	16%	6.6%	6.9%	7.0%
Rosneft Oil	451.00	4.3	4.1	3.8	1.0	1.0	1.0	6.7	5.7	5.4	24%	25%	26%	6.7%	8.4%	9.5%
Shell	26.86	5.6	5.2	4.9	0.9	0.9	0.8	13.2	11.0	10.1	16%	17%	17%	6.3%	6.3%	6.5%
Surgutneftegas	37.45	-	-	-	-	-	-	5.1	4.4	3.8	-	-	-	9.5%	6.2%	3.7%
Total	49.03	5.4	4.9	4.7	0.9	0.9	0.9	12.0	10.5	10.0	17%	18%	18%	5.5%	5.8%	6.1%
Tullow Oil	1.44	4.9	5.0	4.7	3.7	3.5	3.4	11.2	10.7	10.0	75%	71%	72%	4.2%	4.1%	4.4%
Median		4.9	4.4	4.1	1.0	1.0	1.0	11.6	9.2	8.8	24%	25%	25%	6.5%	6.4%	6.6%

## 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	20.36	0.2	1.4	1.1	0.0	0.2	0.2	3.4	-	17.7	19%	12%	16%	8.4%	0.0%	0.0%
KGHM	95.28	4.4	4.7	4.3	1.0	1.0	0.9	7.9	9.7	9.0	23%	21%	22%	0.0%	1.6%	3.1%
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	20.27	4.3	4.6	4.8	1.5	1.5	1.5	8.9	9.8	10.6	35%	33%	31%	4.4%	3.8%	3.8%
Antofagasta	8.80	5.7	5.9	5.3	2.8	2.8	2.7	19.3	20.5	16.8	49%	48%	50%	2.4%	2.3%	2.9%
BHP Group	16.86	6.0	5.7	6.2	3.0	3.0	3.1	13.6	11.0	12.3	50%	53%	51%	6.1%	6.4%	6.0%
Freeport-McMoRan	11.01	13.0	8.3	5.1	2.2	2.1	1.8	100+	20.9	8.4	17%	25%	35%	1.8%	2.7%	3.2%
Glencore	2.40	6.8	5.8	5.4	0.4	0.4	0.4	18.6	12.2	9.5	5%	6%	7%	5.6%	5.1%	5.9%
Grupo Mexico	53.07	6.0	5.7	5.3	2.8	2.6	2.4	12.3	11.5	11.1	46%	46%	46%	5.2%	5.0%	7.4%
Kazakhmys	4.88	4.8	4.9	4.6	2.6	2.6	2.5	6.4	6.4	5.8	55%	53%	54%	1.5%	1.7%	1.3%
Rio Tinto	41.67	4.9	5.5	6.2	2.4	2.5	2.7	8.5	9.9	11.9	49%	46%	43%	8.1%	6.6%	5.3%
Southern CC	37.30	9.8	9.5	8.9	4.8	4.6	4.4	18.5	18.1	16.7	49%	49%	49%	4.2%	3.9%	4.0%
Median		5.3	5.6	5.2	2.3	2.3	2.1	8.9	11.0	10.9	41%	40%	39%	4.3%	3.9%	3.9%
ALUMINUM PRODUCERS																
Grupa Kęty	320.50	7.8	8.4	8.6	1.3	1.3	1.3	10.8	12.5	12.7	16%	15%	15%	7.5%	7.4%	6.0%
Alcoa	20.76	4.2	4.1	3.8	0.7	0.6	0.6	-	20.0	15.8	16%	16%	17%	-	0.1%	0.2%
Constellium	14.25	7.0	6.5	6.0	0.7	0.7	0.7	31.0	13.0	9.6	10%	10%	11%	-	-	-
Kaiser Aluminum	109.90	9.0	8.1	8.1	1.3	1.2	1.2	16.8	14.1	13.4	14%	15%	15%	2.2%	2.3%	2.3%
Norsk Hydro	33.22	7.7	5.4	4.6	0.6	0.6	0.5	38.4	14.6	10.7	8%	10%	12%	3.6%	3.8%	4.2%
Rusal	3.49	12.6	9.6	8.0	1.4	1.4	1.3	5.2	4.2	3.8	11%	14%	16%	1.3%	4.4%	5.5%
Median		7.8	7.3	7.0	1.0	1.0	1.0	16.8	13.5	11.7	13%	15%	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

	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	34.14	4.2	7.7	8.1	0.6	0.7	0.8	6.4	29.1	17.7	13%	9%	9%	0.0%	0.0%	1.0%
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	4878.00	8.5	7.5	7.2	2.6	2.4	2.2	10.8	9.6	9.5	31%	32%	30%	6.6%	6.8%	7.0%
CF Industries	45.13	9.7	9.1	8.7	3.5	3.5	3.3	20.6	17.1	14.8	37%	38%	38%	2.7%	2.7%	2.7%
Israel Chemicals	15.65	6.6	6.5	6.2	1.5	1.5	1.4	10.9	10.3	9.8	23%	23%	22%	4.7%	4.7%	5.0%
K+S	10.84	8.0	6.8	6.1	1.3	1.3	1.2	15.9	10.1	7.8	16%	18%	20%	2.8%	3.9%	4.8%
Phosagro	2430.00	5.6	5.5	5.2	1.7	1.7	1.6	8.2	8.8	8.7	31%	31%	31%	7.5%	5.8%	5.9%
The Mosaic Company	18.95	8.0	6.4	5.5	1.3	1.3	1.2	33.3	13.5	9.1	16%	19%	22%	1.1%	1.2%	1.4%
Yara International	343.10	6.7	5.9	5.6	1.1	1.0	1.0	12.1	10.0	9.0	16%	17%	18%	4.5%	6.8%	5.8%
Median		7.6	6.5	6.1	1.3	1.3	1.2	12.1	10.3	9.5	16%	19%	22%	3.7%	4.3%	4.9%

## 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*	15.80	4.4	3.2	3.3	0.8	0.7	0.7	32.4	3.0	1.8	18%	23%	21%	-	-	5.0%
Kemel	41.70	4.6	5.6	5.0	0.4	0.4	0.4	5.1	7.9	7.0	9%	7%	7%	2.1%	2.2%	3.0%
Agrana Beteiligungs	17.46	10.5	8.7	8.2	0.6	0.6	0.6	42.6	23.3	18.6	6%	7%	8%	5.7%	5.7%	5.7%
Bunge Limited	54.68	10.4	9.9	9.0	0.3	0.3	0.3	19.4	15.7	12.8	3%	3%	4%	3.7%	4.0%	4.4%
Cosan	61.70	5.6	5.4	5.0	0.5	0.5	0.4	13.9	12.8	12.6	8%	9%	9%	2.6%	3.1%	3.2%
MHP	9.04	5.3	5.0	4.6	1.2	1.2	1.1	6.2	6.6	5.0	23%	23%	24%	8.3%	8.3%	8.3%
Nisshin Oillio	4030.00	9.2	8.7	8.3	0.5	0.5	0.5	15.2	15.6	15.0	6%	6%	6%	2.0%	2.0%	2.0%
Suedzucker	12.64	-	10.8	6.7	0.7	0.7	0.7	-	-	15.2	-	6%	10%	1.6%	1.6%	2.1%
Wilmar Int.	4.14	14.4	13.4	12.7	0.8	0.8	0.7	16.4	14.6	13.7	6%	6%	6%	2.4%	2.5%	2.7%
Median		7.4	8.7	6.7	0.6	0.6	0.6	15.8	13.7	12.8	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%  
Recommendations are updated at least once every nine months.

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## Strong and weak points of valuation methods used in recommendations:

**DCF** – acknowledged as the most methodologically correct method of valuation; it consists in discounting financial flows generated by a company; its weak point is the significant susceptibility to a change of forecast assumptions in the model.

**Relative** – based on a comparison of valuation multipliers of companies from a given sector; simple in construction, reflects the current state of the market better than DCF; weak points include substantial variability (fluctuations together with market indices) as well as difficulty in the selection of the group of comparable companies.

**Economic profits** – discounting of future economic profits; the weak point is high sensitivity to changes in the assumptions made in the valuation model.

Discounted Dividends (DDM) – discounting of future dividends; the weak point is high sensitivity to changes in the assumptions as to future dividends made in the valuation model.

**NAV** – valuation based on equity value, one of the most frequently used method in case of developing companies; the weak point of the method is that it does not factor in future changes in revenue/profits of a company.

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