

China Oil & Gas

Weekly Theme: Russia boosts gas supply; 2024 oil import quota; Dec GRM concern

Industry Overview

Russia boosts gas supply to China despite sanctions

According to *Reuters* report, Russia is increasingly exporting gas to China despite sanctions, to offset reduced sales in Europe. It is reported that Russia's energy giant Gazprom set a new daily record for gas supplies to China through the Power of Siberia pipeline last week. The total gas exports to China through the pipeline are estimated to be 22.7bcm in 2023 vs. 15.4bcm in 2022, up by 47% YoY and are about 700mcm more than the contracted amount. Meanwhile, the company's gas supplies to Europe has collapsed to 28.3bcm in 2023, down by 56% YoY according to Reuter's calculation. The continuing sanctions from Europe and the US since the war with Ukraine has made Russia acceleratively re-routing its gas exports to alternative destinations. With the aim to double its gas export to China, Russia is also planning to construct a new pipeline Power of Siberia II, which is expected to carry 50bcm of gas per year from Yamal region in northern Russia to China via Mongolia.

China released near-full-year crude import quota in Jan

According to *S&P Global Commodity* report, China has issued FY24 crude oil import quota of 183.69mnt in total up to Jan 2024, comprising of a preliminary allocation of 4.68mnt issued in mid-Dec 2023 and the recently announced quotas of 179.01mnt. Notably, the total granted allowance in 2023 was 183.64mnt, the level that has already been reached at the start of this year. That's to say, China, for the first time, has awarded almost the full-year quotas in one go instead of releasing all quotas in at least three batches. The change in the distribution practice suggests the government is providing more flexibility for private refineries and thus enabling them to better plan their quota usage with total volume still effectively under control. According to industrial consultancy *JLC*, the total granted quotas include 40mnt for Zhejiang Petroleum & Chemical Co., 20mnt for Hengli Petrochemical Co., 17.12mnt for China National Chemical Co. and 16mnt for Shenghong Group. It is still likely that additional quotas will be issued later this year, as the Yulong mega refinery in Shandong is not a part of this batch.

What went wrong with China oil refining in Dec 2023?

In Dec, China's GRM (gross refining margin, one-month crude price lag) ended in negative territory and reached a yearly low of negative US\$0.7/b vs. positive US\$1.2/b in Dec. In FY23, the GRM annual average was US\$8.1/b, nearly flat compared with US\$8.2/b in 2022. We attribute the deterioration in the recent month to: 1) potential inventory loss on oil price slump (Brent price down by 6% MoM in Dec); 2) still muted fuel demand amid off-peak season; and 3) weakening margins of major byproducts with prices of asphalt, sulphur and naphtha down by 3%, 4%, and 4% MoM respectively. For refined oil export, our tracked diesel and gasoline arbitrage spread between Singapore and China exhibited widened diesel spread (positive US\$13.8/b in Dec vs. positive US\$5.6/b in Nov) and widened gasoline spread (positive US\$10.2/b in Nov vs. negative US\$3.7/b in Oct) on sluggish domestic GRM and lukewarm demand.

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Abbreviations in appendix

More charts in following pages

Weekly updates

Oil prices: Brent oil price increased 2.2% WoW to US\$78.8/b and WTI oil price increased 3.0% WoW to US\$73.8/b in the week ended 5 Jan 2024. WTI discount to Brent narrowed to US\$5.0/b.

Factors supporting oil prices include:

- *Bloomberg* reports that local protests have disrupted oil production at Libya's largest oil field Sharara, which could produce 300,000 barrels per day before;
- *Bloomberg* reports that Iran's dispatch of warship to Red Sea has sharpened tensions and raised further concerns on trade disruptions;
- *Bloomberg* reports that US is seeking to purchase up to 3mb of crude oil for April delivery to help refill the Strategic Petroleum Reserve;
- The US rigs count decreased to 619 rigs (oil rigs +1 WoW to 501 and gas rigs -2 WoW to 118) through the week ended 5 Jan 2024;
- US commercial crude oil inventory dropped 6mb WoW to 431mb through the week ended 29 Dec 2023;
- US crude output (one-week lag) decreased 0.1mbd WoW to 13.2mbd through the week ended 29 Dec 2023;

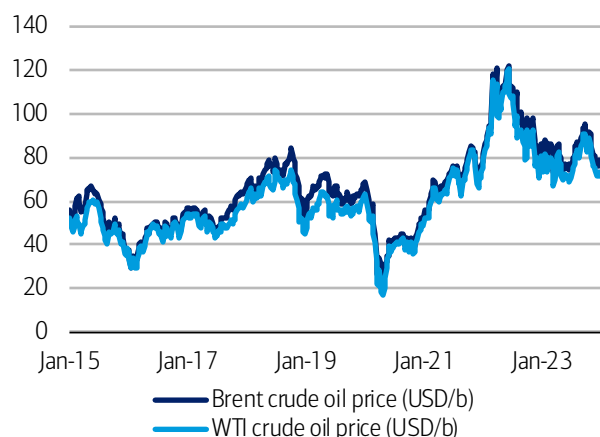
Factors suppressing oil prices include:

- *Reuters* reports that EIA's latest data exhibited massive weekly fuel stock builds amid sluggish demand, with gasoline stocks having the largest one-week build since 1993 and weekly distillate consumption slumped to lowest since 1999;
- *Reuters* reports that Saudi Arabia could cut official selling prices for crude grades sold to Asia in February amid expectations of less supply tightness in the near term;

Reuters reports that ExxonMobil formally exited the West Qurna 1 oilfield in Iraq and handed over its operations to PetroChina, who will become the lead contractor then.

Exhibit 1: Brent and WTI weekly prices

Brent oil price increased 2.2% WoW to US\$78.8/b and WTI oil price increased 3.0% WoW to US\$73.8/b in the week ended 5 Jan 2024

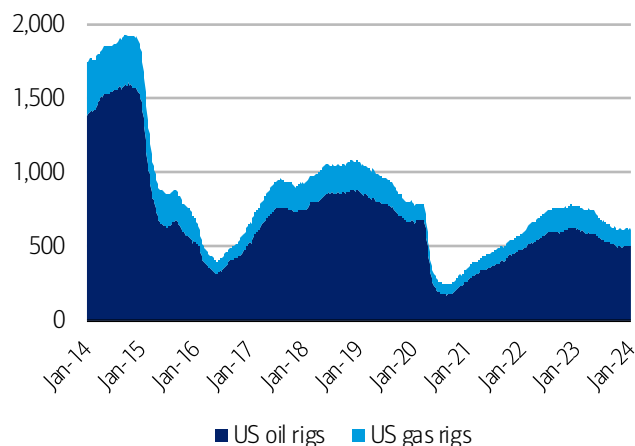


Source: Bloomberg, BofA Global Research

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Exhibit 2: US weekly oil and gas rig count

Oil rigs +1 and gas rigs -2 WoW

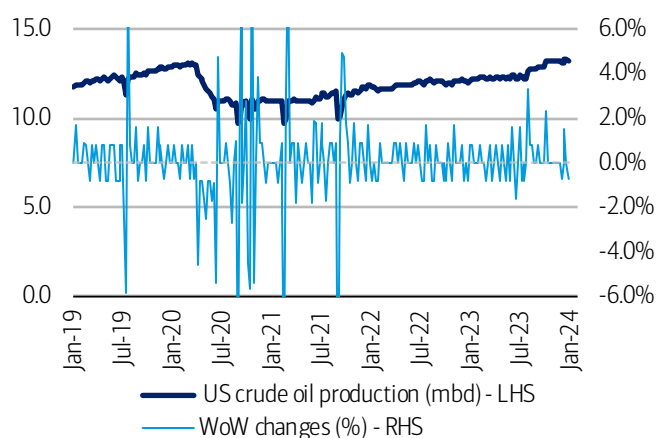


Source: Baker Hughes, Bloomberg, BofA Global Research

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Exhibit 3: US crude oil production

Decreased 0.1mbd WoW to 13.2mbd

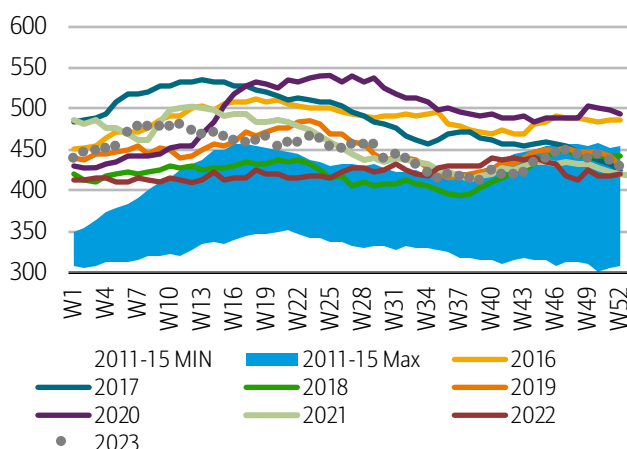


Source: EIA, Bloomberg, BofA Global Research

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Exhibit 4: US weekly crude oil inventory (mb)

Decreased 6mb WoW to 431mb

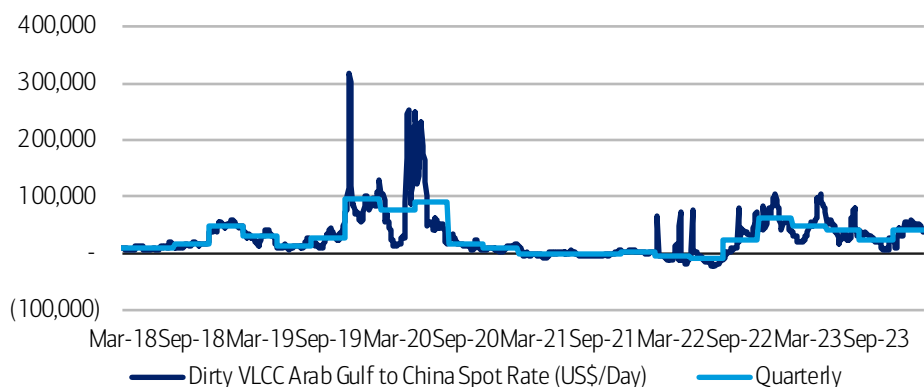


Source: EIA, Bloomberg, BofA Global Research

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Exhibit 5: Dirty VLCC Arab Gulf to China spot rate (US\$/day)

Crude oil shipping cost from Arab Gulf to China



Source: Bloomberg, BofA Global Research

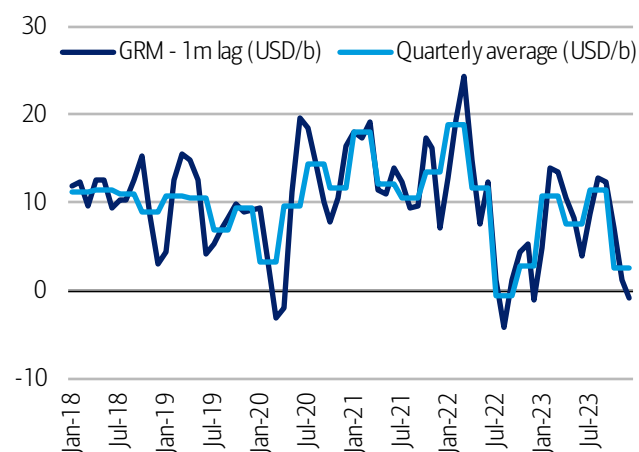
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Refining

- China's refining margin (one-month crude price lag) in Dec 2023 decreased to negative US\$0.7/b, from US\$1.2/b in Nov 2023. YTD, average GRM came in at US\$8.1/b;
- National Development and Reform Commission (NDRC) raised gasoline and diesel retail prices by RMB200/ton and RMB190/ton in the latest round of price adjustment on 3 Jan 2024; prices are now RMB8,830/ton and RMB7,795/ton, respectively. The next round of price adjustment is scheduled for 17 Jan;
- The run rate of independent refineries in Shandong in the week ended 5 Jan 2024 rose to 60.2% vs. 58.1% in Dec 2023. The YTD rate averaged 60.2% in 2024, vs 61.9% in 2023;
- Based on one-month lag crude price, China diesel crack margin increased WoW to US\$8.8/b and gasoline crack margin increased WoW to US\$2.3/b in the week ended 5 Jan 2024;
- Compared with Singapore Dubai Crack margin, the export arbitrage spread for diesel narrowed WoW to a positive US\$15.2/b (-US\$1.5/b WoW) and for gasoline it narrowed WoW to positive US\$11.0/b (-US\$4.1/b WoW) in the week ended 5 Jan 2024;
- Bloomberg reports China's Rongsheng has signed a MOU with Saudi Arabian Oil Company to acquire 50% stake of Saudi Aramco Jubail Refinery Company.

Exhibit 6: China gross refining margin (GRM) with 1 month lag in crude prices

Profit of -US\$0.7/b in Dec 2023, vs. US\$1.2/b in the previous month

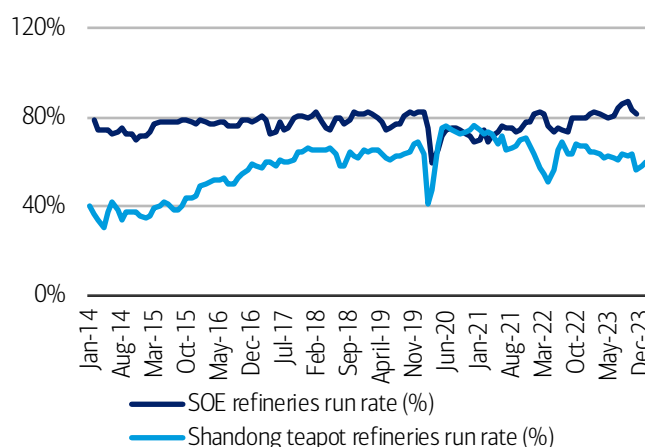


Source: Wind, BofA Global Research estimates

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Exhibit 7: Shandong teapots refinery run rates (%)

Average run rate of teapots rose to 60.2% vs. 58.1% in Dec for the week ended 5 Jan

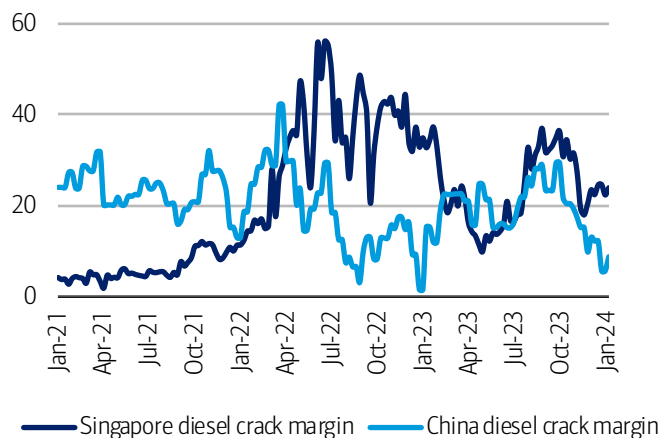


Source: Bloomberg, S&P Global, BofA Global Research

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Exhibit 8: Diesel crack margin in China vs. Singapore (US\$/b)

China diesel crack margin was US\$8.75/b for the week ended 5 Jan

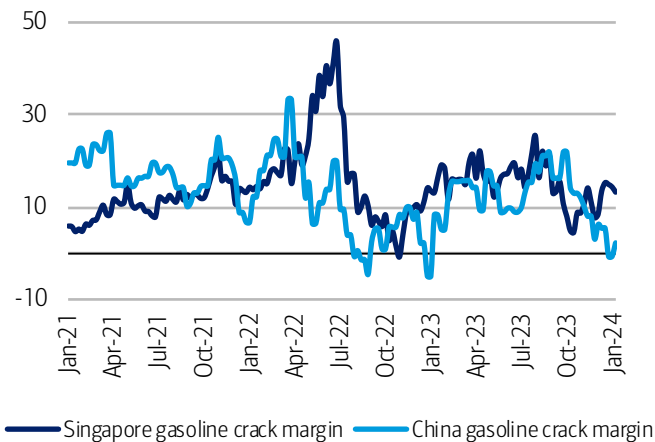


Source: Bloomberg, Wind, BofA Global Research

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Exhibit 9: Gasoline crack margin in China vs. Singapore (US\$/b)

China gasoline crack margin was US\$2.25/b for the week ended 5 Jan

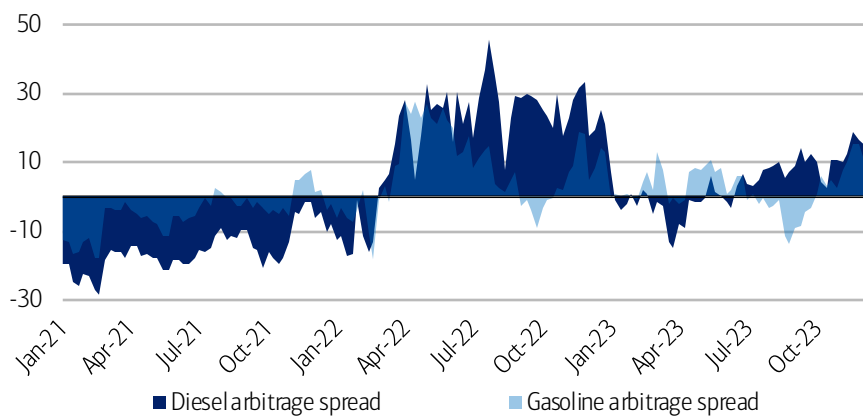


Source: Bloomberg, Wind, BofA Global Research

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Exhibit 10: Diesel/gasoline export arbitrage spread

Export arbitrage spread for diesel and gasoline narrowed WoW to positive US\$15.2/b (-US\$1.5/b WoW) and positive US\$11.0/b (-US\$4.1/b WoW), respectively, for the week ended 5 Jan



Source: Bloomberg, Wind, BofA Global Research

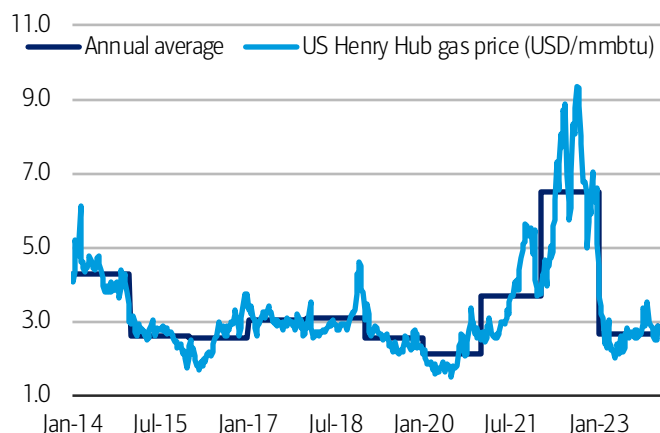
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Natural gas

- The US Henry Hub natural gas price increased by 15.1% WoW to US\$2.89/mmbtu in the week ended 5 Jan 2024, 22.0% lower YoY;
- The Netherlands TTF natural gas price increased by 6.4% WoW to US\$11.01/mmbtu in the week ended 5 Jan 2024, 49.3% lower YoY;
- The JKM swap future increased by 0.4% WoW to USD11.57/mmbtu (US\$0.56/mmbtu premium over TTF) in the week ended 5 Jan 2024;
- *Bloomberg* reports that US has become the world's biggest LNG exporter with a record export volume of 91.2mnt in 2023, surpassing Australia and Qatar.

Exhibit 11: US Henry Hub natural gas price (US\$/mmbtu)

Increased by 15.1% WoW to US\$2.89/mmbtu

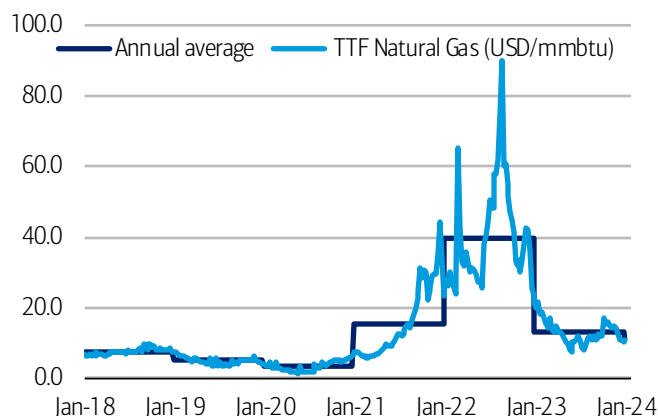


Source: Bloomberg, BofA Global Research

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Exhibit 12: Netherlands TTF Natural gas price (US\$/mmbtu)

Increased by 6.4% WoW to US\$11.01/mmbtu

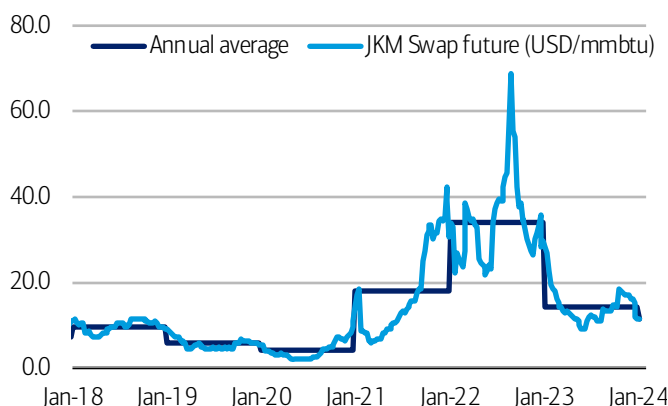


Source: Bloomberg, BofA Global Research

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Exhibit 13: Northern Asia LNG-JKM swap future (US\$/mmbtu)

Increased by 0.4% WoW to US\$11.57/mmbtu



Source: Bloomberg, BofA Global Research

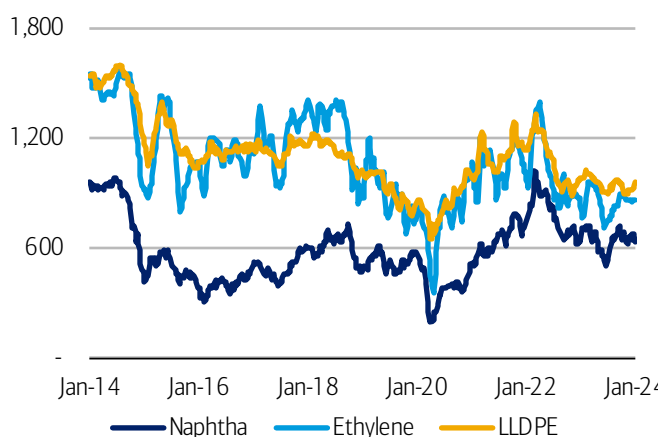
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Chemicals

- Northeast Asia LLDPE price increased WoW to US\$961/ton and PP price was flat WoW at US\$874/ton in the week ended 5 Jan 2024;
- LLDPE-ethylene spread expanded WoW to US\$100/ton;
- PP-propylene spread expanded WoW to US\$73/ton;
- East China m-MDI price decreased by 1.0% WoW to RMB19,600/ton and p-MDI price decreased by 0.3% WoW to RMB15,350/ton in the week ended 5 Jan 2024.

Exhibit 14: Northeast Asia naphtha, ethylene and LLDPE prices (US\$/ton)

Ethylene price flat and LLDPE price increased WoW

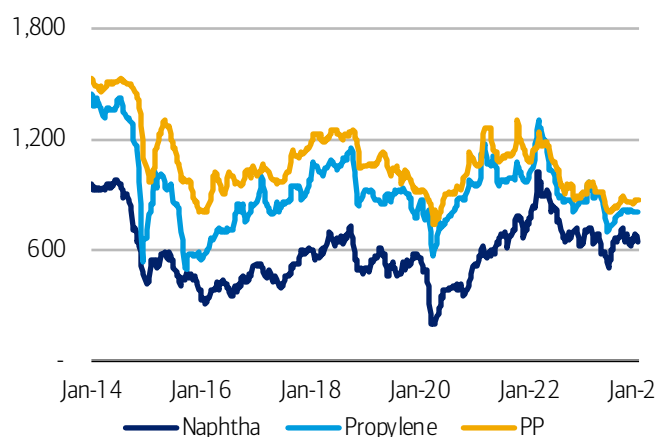


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Exhibit 15: Northeast Asia naphtha, propylene and PP prices (US\$/ton)

Propylene price decreased and PP price flat WoW

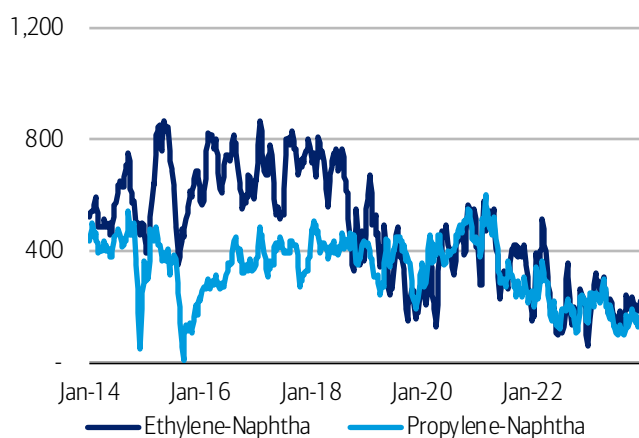


Source: Wind, BofA Global Research

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Exhibit 16: Northeast Asia ethylene/propylene-naphtha spread (US\$/ton)

Ethylene-naphtha spread and propylene-naphtha spread expanded WoW

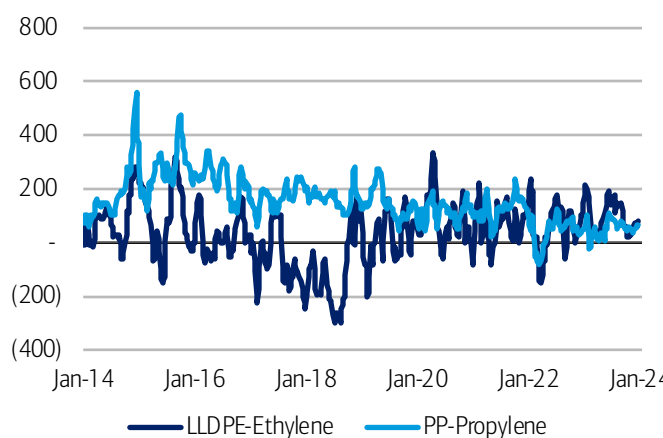


Source: Wind, BofA Global Research

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Exhibit 17: Northeast Asia LLDPE-ethylene and PP-propylene spread (US\$/ton)

LLDPE-ethylene spread and PP-propylene spread expanded WoW

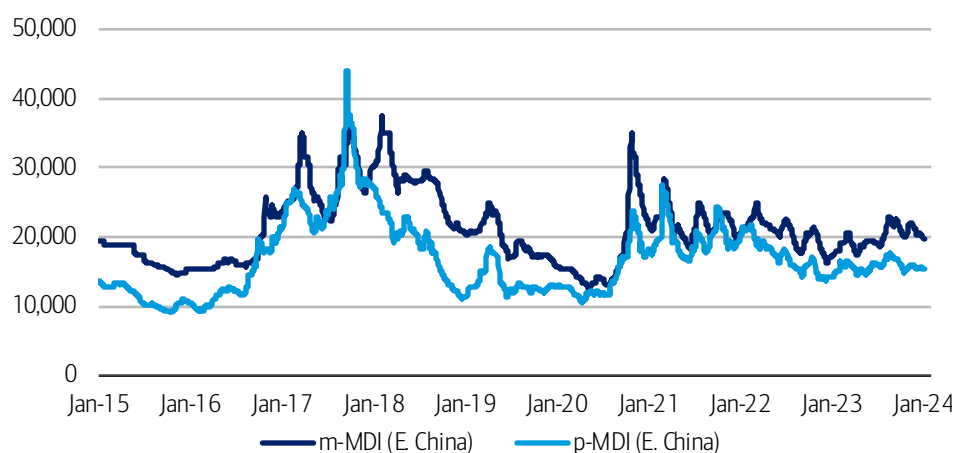


Source: Wind, BofA Global Research

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Exhibit 18: East China m-MDI and p-MDI price (RMB/ton)

East China m-MDI price decreased by 1.0% WoW to RMB19,600/ton and p-MDI price decreased by 0.3% WoW to RMB15,350/ton in the week ended 5 Jan



Source: Wind, BofA Global Research

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Appendix

Exhibit 19: Abbreviations

Abbreviations used in the report

Abbreviation	Full name	Abbreviation	Full name
bbl/b	Barrel(s)	m-MDI	Monomeric methylene diphenyl isocyanate
bnt	Billion tons	mntpa	Million tons per year
CCS	Carbon capture and storage	MoM	Month on month
CDU	Crude distillation unit	mnt	Million tons
cm	Cubic meters	MTBE	Methyl tert-butyl ether
CNPC	China national petroleum corporation	NBS	National bureau of statistics
EOR	Enhanced oil recovery	NDRC	National Development and Reform Commission
EVA	Ethylene vinyl acetate	PTR	PetroChina
FDPE	Full density polyethylene	p-MDI	Polymeric methylene diphenyl isocyanate
GRM	Gross refining margin	PP	Polypropylene
HDPE	High density polyethylene	SNP	Sinopec
JKM	Japan/Korea Marker (Northeast Asian spot price index for LNG delivered ex-ship to Japan and Korea)	SOE	State owned enterprise
ktpa	Thousand tons per year	t	Ton(s)
LLDPE	Linear low-density polyethylene	TTF	Title transfer facility
LNG	Liquefied natural gas	UHMWPE	Ultra-high molecular weight polyethylene
mb	Million barrels	VLCC	Very large crude carrier
mbd	Million barrels per day	WoW	Week on week
mmbtu	Metric million British thermal unit	WTI	West Texas Intermediate
mmt	Million metric tons	YoY	Year on year
MDI	Methylene diphenyl isocyanate	YTD	Year to date

Source: BofA Global Research

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