

Refining & Chemicals - Asia Pacific

Asia GRM up WoW on tight supply; thin trades for chemicals ahead of CNY holidays

Industry Overview

Asia GRM rose sharply WoW, supply tightness on a slew of outages

Last week, the Asia GRM rose to US\$10.4/bbl from US\$7.9/bbl a week earlier vs Quarter-to-date (QTD) US\$8.1/bbl (+47% QoQ), mainly driven by improved diesel cracks (US\$27/bbl; +US\$5/bbl WoW). The refining margin uptick was mainly due to supply tightness, particularly after a slew of unplanned outages in Russia (Tuapse refinery) on account of a Ukrainian drone attack and the US (BP Whiting and Phillips 66's Ponca City), according to Bloomberg and Reuters news. We see near-term GRM strength in Asia with the upside risks to naphtha price (feedback for downstream chemicals). QTD Naphtha crack loss narrowed to US\$6.9/bbl from US\$12.6/bbl in 4Q23.

S-Oil: Cautiously upbeat on jet fuel and PX spreads in 2024

During the 4Q earnings call, S-Oil's CFO remained cautiously upbeat on the APAC refining sector outlook, based on 1) the estimates of an incremental supply of 0.8-1.0mn bpd, shy of the incremental global demand of 1.1-2.0mn bpd in '24E; and 2) continued firm demand from jet fuel amid the current low inventory. In addition, he sees improving PX margin in the next 12 months with much moderated global supply growth (c.1.6mn MT in 2024E vs 9.6mn MT in 2023) vs c.4mn MT of global demand growth in 2024E (see S-Oil 4Q report).

Thin trades ahead of CNY holidays, MEG loss continues

Most chemical product prices were stable on WoW last week, except for BD/SM, given thin trades on limited buying interest during the Chinese New Year holidays. The QTD average plastic margin remained US\$273/MT (flat QoQ) while naphtha price rose to US\$668/MT (up 2% QoQ) with notable weakness in MEG spreads, which still hovers at below the cash-cost level (QTD: -US\$119/MT vs 4Q23's -US\$167/MT). Per Platts news on 9 Feb, the operating rates at polyester plants (downstream for MEG) in China fell to an estimated 77%-79% on the week, down from 80%-82% the previous week.

Red Sea disruption: naphtha cost pressure amid muted demand recovery

Lotte Chem's CFO maintained the APAC chemical sector outlook in the 4Q earnings call, given 1) the ongoing demand slump, and 2) mounting naphtha (feedstock) and freight costs as a result of the disruption in the Red Sea shipping route (~12% of global oil seaborne trade, see APAC Chemical sector report). Meanwhile, the company sees about 4.2mn MT of incremental ethylene supply worldwide – much moderated from about 1mn MT in 2023 but does not expect immediate demand recovery, particularly in China.

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Refer to important disclosures on page 25 to 27.

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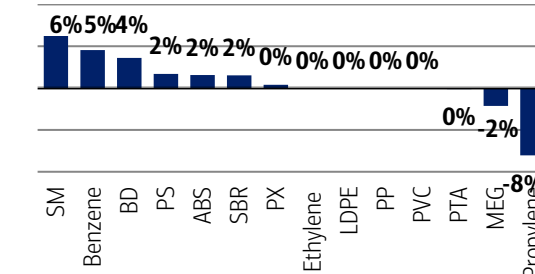
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Exhibit 1: Key product's price changes (%) WoW

Asia Chemical prices overall increased on a WoW basis



Source: Platts, BofA Global Research
BofA GLOBAL RESEARCH

GRM = gross refining margin

PX = paraxylene

MT = metric tonne

BD = butadiene

SM = styrene monomer

MEG = monoethylene glycol

CNY = Chinese New Year

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Asia Refining Margins

Exhibit 2: Asia GRM (Gross Refining Margin)

Asia GRM (Gross Refining Margin) increased 32% on a WoW basis to US\$10/bbl

BofA Asia GRM	Annual					Quarterly						Monthly				Weekly			
	2020	2021	2022	2023	24YTD	1Q-23	2Q-23	3Q-23	4Q-23	QTD	QoQ%	Nov-23	Dec-23	Jan-24	Feb-24	19/Jan/24	26/Jan/24	02/Feb/24	09/Feb/24
Brent Crude (US\$/bbl)	42.3	70.5	100.0	82.5	80.6	81.4	77.9	86.6	84.1	80.6	(4%)	83.1	77.9	80.1	82.2	80.8	83.3	83.1	84.2
Dubai Crude (US\$/bbl)	42.3	68.9	97.1	82.0	79.1	79.5	77.6	86.7	83.9	79.1	(6%)	83.5	77.2	79.0	79.3	80.2	81.4	79.2	82.1
Singapore Complex GRM (US\$/bbl)	1.3	2.2	10.0	6.6	8.1	10.2	2.9	7.9	5.5	8.1	47%	5.1	7.5	7.7	9.4	7.2	8.4	7.9	10.4
Singapore Simple GRM (US\$/bbl)	(1.7)	(2.4)	(1.1)	(1.0)	0.3	(0.5)	(2.4)	0.9	(2.1)	0.3	N.M	(1.9)	0.3	0.0	1.1	(0.8)	0.0	0.1	1.2
Singapore Complex GRM Adj. (US\$/bbl)	(0.3)	3.3	9.7	6.1	9.6	9.4	2.0	12.5	0.3	9.6	3323%	(1.9)	2.3	9.4	10.3	7.2	12.3	9.9	13.3
Singapore Gasoline cracks (US\$/bbl)	1.3	7.5	11.7	10.5	12.5	14.5	10.7	10.5	6.1	12.5	104%	7.2	10.0	11.9	14.3	11.9	15.6	13.0	14.8
Singapore Naphtha cracks (US\$/bbl)	(1.6)	1.2	(13.9)	(12.3)	(6.9)	(5.4)	(13.7)	(17.1)	(12.6)	(6.9)	N.M	(13.3)	(4.5)	(6.3)	(9.1)	(7.5)	(6.9)	(10.8)	(8.7)
Singapore Diesel cracks (US\$/bbl)	7.7	6.9	30.7	21.6	21.1	25.9	13.6	25.8	21.2	21.1	(1%)	19.7	19.6	20.2	23.9	20.1	21.3	22.0	27.0
Singapore Jet/Kero cracks (US\$/bbl)	3.9	4.7	26.5	21.8	22.5	26.0	14.2	23.9	23.3	22.5	(4%)	23.8	24.0	22.3	22.9	21.8	21.7	21.2	22.6
Singapore Heavy fuel cracks (US\$/bbl)	(4.1)	(7.7)	(18.3)	(12.4)	(11.6)	(16.9)	(10.5)	(9.3)	(13.1)	(11.6)	N.M	(12.6)	(9.9)	(11.5)	(11.9)	(13.4)	(13.0)	(12.5)	(12.7)
Arab light crude OSP (US\$/bbl)	(0.4)	1.7	5.8	3.0	3.5	2.4	2.6	3.2	3.9	3.5	(9%)	4.0	4.0	3.5	1.5	N.A.	N.A.	N.A.	N.A.
Arab medium crude OSP (US\$/bbl)	(0.8)	1.4	4.9	2.6	2.8	1.6	2.4	2.8	3.4	2.8	(20%)	3.5	3.4	2.8	0.8	N.A.	N.A.	N.A.	N.A.

Source: Bloomberg, BofA Global Research

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Asia Chemical Prices

Exhibit 3: BofA Asia Chemical prices

Most chemical product prices were stable on WoW last week, except for BD/SM

BofA Asia Chemical prices	Annual					Quarterly					Monthly				Weekly			
	2020	2021	2022	2023	2024	2Q-23	3Q-23	4Q23	QTD	QoQ %	Nov-23	Dec-23	Jan-24	Feb-24	19/Jan/24	26/Jan/24	02/Feb/24	09/Feb/24
Feedstock																		
Brent (US\$/bbl)	42	70	100	82	81	78	87	84	81	(4%)	83	78	80	82	81	83	79	84
Naphtha (US\$/ton)	385	645	786	653	668	599	656	656	668	2%	640	665	666	672	664	702	652	692
Intermediate products (US\$/ton)																		
Olefins																		
Ethylene	750	1,037	1,016	852	900	837	815	868	900	4%	861	860	880	940	880	910	940	940
Propylene	791	984	1,009	848	927	850	804	801	927	16%	801	801	913	955	940	995	995	915
Butadiene	703	1,034	1,089	923	1,077	824	813	985	1,077	9%	993	935	1,050	1,130	1,070	1,070	1,110	1,150
Downstream products (US\$/ton)																		
Polyolefin chain																		
HDPE (High Density Polyethylene)	820	1,068	1,008	922	890	922	915	888	890	0%	883	860	882	905	890	900	905	905
LDPE (Low Density Polyethylene)	985	1,422	1,298	993	1,019	957	965	970	1,019	5%	960	965	1,011	1,035	1,030	1,025	1,035	1,035
LLDPE (Linear Low Density Polyethylene)	840	1,110	1,077	949	943	938	948	913	943	3%	895	923	945	940	950	940	940	940
PP (Polypropylene)	910	1,147	1,035	881	867	867	848	865	867	0%	863	865	865	870	860	865	870	870
Aromatics chain (US\$/ton)																		
Benzene	488	908	1,026	898	966	864	906	888	966	9%	885	865	943	1,013	946	994	990	1,035
Toluene	439	728	959	888	872	863	957	852	872	2%	848	831	867	883	875	890	880	885
Xylene	470	747	1,021	934	920	923	990	878	920	5%	868	860	919	924	935	942	918	930
Styrenic chain (US\$/ton)																		
Styrene	746	1,171	1,216	1,059	1,097	1,010	1,049	1,053	1,097	4%	1,064	1,034	1,083	1,126	1,100	1,102	1,092	1,160
PS (Polystyrene)	1,021	1,376	1,344	1,178	1,172	1,155	1,141	1,177	1,172	(0%)	1,175	1,165	1,163	1,190	1,170	1,180	1,180	1,200
ABS (Acrylonitrile Butadiene Styrene)	1,524	2,262	1,614	1,303	1,267	1,287	1,292	1,275	1,267	(1%)	1,273	1,240	1,255	1,290	1,280	1,280	1,280	1,300
Vinyls chain (US\$/ton)																		
PVC (Polyvinyl Chloride)	872	1,365	1,061	812	755	778	828	762	755	(1%)	759	763	750	765	745	765	765	765
Caustic Soda	239	380	617	390	337	362	339	380	337	(11%)	378	345	340	330	335	335	330	330
Polyester chain (US\$/ton)																		
PX (Para-xylene)	561	838	1,080	1,015	1,002	999	1,054	989	1,002	1%	989	972	1,004	996	1,009	1,019	994	998
MEG (Mono-ethylene Glycol)	471	680	580	498	549	496	482	489	549	12%	489	505	546	557	541	564	563	551
PTA (Purified Terephthalic Acid)	480	705	880	795	780	803	807	770	780	1%	776	757	783	776	787	795	776	775
PET (Polyethylene Terephthalate)	716	993	1,131	951	917	989	929	908	917	1%	900	905	915	920	920	920	920	920
Rubber chain (US\$/ton)																		
SBR (Styrene-Butadiene Rubber)	1,246	2,030	1,912	1,627	1,588	1,605	1,551	1,672	1,588	(5%)	1,691	1,581	1,550	1,663	1,550	1,600	1,650	1,675
BR (Butadiene Rubber)	1,663	2,378	2,350	1,979	1,963	2,000	1,888	1,998	1,963	(2%)	2,000	1,988	1,931	2,025	1,925	2,000	2,000	2,050
Phenolic chain (US\$/ton)																		
Phenol	769	1,178	1,376	1,009	969	958	985	1,028	969	(6%)	1,009	985	965	979	950	979	979	979
BPA (Bisphenol A)	1,370	2,861	1,755	1,231	1,175	1,217	1,281	1,183	1,175	(1%)	1,138	1,181	1,175	1,175	1,175	1,175	1,175	1,175
PC (Polycarbonate)	2,195	3,845	2,950	2,286	2,203	2,197	2,236	2,240	2,203	(2%)	2,229	2,197	2,204	2,202	2,199	2,202	2,203	2,201
Others (US\$/ton)																		
TDI (Toluene Di-isocyanate)	1,732	2,196	2,696	2,536	2,326	2,538	2,480	2,355	2,326	(1%)	2,300	2,303	2,320	2,338	2,295	2,356	2,340	2,335
MDI (Methylene Diphenyl Diisocyanate)	2,076	3,039	2,545	2,222	2,182	2,192	2,282	2,152	2,182	1%	2,172	2,167	2,160	2,226	2,128	2,202	2,229	2,224

Source: Platts, OilChem, BofA Global Research

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Asia Chemical Margins

Exhibit 4: BofA Asia Chemical margins

Asia chemical margins overall trended down slightly on a week-on-week basis

BofA Asia Chemical margins	Annual										Monthly				Weekly			
	2020	2021	2022	2023	2024	2Q-23	3Q-23	4Q23	QTD	QoQ %	Nov-23	Dec-23	Jan-24	Feb-24	19/Jan/24	26/Jan/24	02/Feb/24	09/Feb/24
Olefins spread																		
Ethylene-Naphtha	365	392	231	198	232	238	159	212	232	9%	221	195	214	268	216	208	288	248
Propylene-Naphtha	406	339	223	195	259	251	148	145	259	78%	161	136	246	283	276	293	343	223
Butadiene-Naphtha	318	389	304	270	409	225	157	329	409	24%	352	270	384	458	406	368	458	458
Ethylene chain																		
HDPE-Naphtha	435	423	223	269	222	323	259	233	222	(5%)	242	195	216	233	226	198	253	213
LDPE-Naphtha	600	777	512	339	351	358	310	314	351	12%	320	300	345	363	366	323	383	343
LLDPE-Naphtha	455	465	291	296	275	339	293	258	275	7%	255	257	279	268	286	238	288	248
Propylene chain																		
PP-Naphtha	526	502	250	227	199	267	193	209	199	(5%)	222	200	199	198	196	163	218	178
PP-1.02*Propylene	104	144	6	15	-79	0	28	48	-79	N.M	45	48	-66	-104	-99	-150	-145	-63
Aromatic chain																		
Benzene-Naphtha	103	263	240	245	298	264	250	232	298	29%	244	199	277	340	282	292	338	343
Toluene-Naphtha	54	83	174	235	204	264	302	196	204	4%	208	165	201	210	211	188	228	193
Xylene-Naphtha	85	102	236	281	252	324	334	223	252	13%	228	194	253	252	271	240	266	238
Vinyls chain																		
PVC-0.29*1.62*1.03*Ethylene	510	864	569	400	319	373	434	342	319	(7%)	342	346	324	310	319	325	310	310
Styrenic chain																		
SM-0.79*BZ-0.29*C2	144	153	111	102	73	85	97	100	73	(27%)	116	101	82	54	97	53	37	70
PS-0.95*SM	312	264	189	172	129	196	144	176	129	(27%)	164	183	134	120	125	133	143	98
PS-0.95*(0.79+0.29)*Naphtha	627	715	538	508	486	541	468	504	486	(4%)	518	482	479	500	488	460	511	490
ABS-(1.1*0.25*Propylene+0.15*Butadiene+0.55*Styrene)	791	1,192	504	349	247	374	371	327	247	(25%)	318	311	251	239	256	240	239	238
Polyester chain																		
PX-Naphtha	176	193	294	362	333	400	399	334	333	(0%)	348	307	338	324	345	317	342	306
PTA-0.67*PX	104	143	156	115	109	133	101	107	109	2%	114	106	110	108	111	112	110	106
MEG-Naphtha	87	35	-206	-155	-119	-103	-173	-167	-119	N.M	-152	-161	-121	-115	-123	-138	-89	-141
MEG-0.6*Ethylene	21	58	-30	-13	9	-6	-7	-32	9	N.M	-28	-12	18	-7	13	18	-1	-13
PTA-Naphtha	95	60	94	142	112	203	152	114	112	(1%)	136	92	117	103	123	93	124	83
PET-0.86*PTA-0.35*MEG	138	149	171	92	53	125	66	74	53	(28%)	62	77	51	58	54	39	56	61
Rubber chain																		
SBR - SM x 0.24 - Butadiene x 0.78	518	942	770	653	484	720	665	651	484	(26%)	662	604	471	511	451	501	522	500
SBR - Butadiene	543	996	823	704	511	781	738	687	511	(26%)	699	646	500	533	480	530	540	525
BR - Butadiene	960	1,344	1,260	1,056	886	1,177	1,075	1,013	886	(13%)	1,008	1,053	881	895	855	930	890	900
Phenolic chain (US\$/ton)																		
Phenol - Benzene	281	270	351	111	3	94	78	140	3	(98%)	124	121	21	-34	4	-15	-11	-56
Phenol + Acetone x 0.61 - Benzene x 0.91 - Propylene x 0.48	396	498	477	312	207	300	307	379	207	(45%)	357	367	224	174	195	154	173	174
BPA - Phenol	603	1,667	391	220	203	255	300	156	203	30%	129	196	211	196	225	196	196	196
Polycarbonate - BPA x 0.91	949	1,241	1,352	1,165	1,134	1,090	1,071	1,163	1,134	(3%)	1,194	1,122	1,135	1,133	1,130	1,133	1,134	1,131
Others (US\$/ton)																		
TDI - Toluene	1,293	1,468	1,737	1,648	1,454	1,675	1,523	1,503	1,454	(3%)	1,452	1,473	1,454	1,455	1,420	1,466	1,460	1,450
MDI - Benzene	1,588	2,131	1,519	1,324	1,215	1,329	1,376	1,265	1,215	(4%)	1,287	1,302	1,216	1,214	1,182	1,208	1,239	1,189
Average plastic margin	523	603	352	302	273	337	285	273	273	(0%)	282	258	270	279	277	244	297	261
Adjusted Average plastic margin	514	624	345	303	284	271	352	254	284	12%	238	268	288	276	280	296	267	285

Source: Platts, OilChem, BofA Global Research



Asia Chemical Prices forecast

Exhibit 5: Asia Chemical Prices forecast

Positive outlook for PS but negative to ethylene derivatives

Asia Chemical prices	2019	2020	2021	2022	2023	2024E	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24E	2Q24E	3Q24E	4Q24E
Feedstock																		
Brent (US\$/bbl)	64	42	70	100	82	90	100	113	100	88	81	78	87	84	90	90	90	90
Naphtha (US\$/MT)	518	385	645	786	653	675	879	888	714	675	702	599	656	656	675	675	675	675
Intermediate products (US\$/MT)	8.1	9.1	9.2	7.8	7.9	7.5	8.7	7.8	7.1	7.7	8.7	7.7	7.5	7.8	7.5	7.5	7.5	7.5
Light olefins																		
Ethylene	902	750	1,037	1,016	852	1,015	1,149	1,166	899	871	887	837	815	868	1,015	1,015	1,015	1,015
Propylene	857	791	984	1,009	847	925	1,134	1,152	906	862	935	850	804	801	925	925	925	925
Butadiene	1,055	703	1,034	1,089	925	955	1,050	1,468	1,069	769	1,076	824	813	985	955	955	955	955
BTX																		
Benzene	640	488	908	1,026	898	955	1,073	1,237	980	820	934	864	906	888	955	955	955	955
Toluene	644	439	728	959	888	925	892	1,107	973	860	878	863	957	852	925	925	925	925
Xylene	691	470	747	1,021	933	1,015	978	1,192	1,006	907	942	923	990	878	1,015	1,015	1,015	1,015
Downstream products (US\$/MT)																		
Polyolefin chain																		
HDPE	912	820	1,068	1,008	921	1,075	1,100	1,086	958	900	960	922	915	888	1,075	1,075	1,075	1,075
LDPE	973	985	1,422	1,298	992	1,125	1,535	1,479	1,167	1,038	1,076	957	965	970	1,125	1,125	1,125	1,125
LLDPE	926	840	1,110	1,077	948	1,075	1,225	1,180	985	934	993	938	948	913	1,075	1,075	1,075	1,075
PP	1,030	910	1,147	1,035	880	1,025	1,148	1,139	965	903	942	867	848	865	1,025	1,025	1,025	1,025
Styrenic chain (US\$/MT)																		
Styrene	1,010	746	1,171	1,216	1,058	1,179	1,273	1,392	1,177	1,031	1,122	1,010	1,049	1,053	1,179	1,179	1,179	1,179
PS	1,181	1,021	1,376	1,344	1,178	1,370	1,435	1,477	1,299	1,178	1,237	1,155	1,141	1,177	1,370	1,370	1,370	1,370
AN	1,664	1,183	2,254	1,704	1,331	1,600	1,843	1,882	1,553	1,559	1,524	1,364	1,199	1,238	1,600	1,600	1,600	1,600
ABS	1,438	1,524	2,262	1,614	1,302	1,496	1,872	1,818	1,472	1,323	1,357	1,287	1,292	1,275	1,496	1,496	1,496	1,496
Vinyls chain (US\$/MT)																		
EDC	338	306	734	532	289	444	852	658	402	249	288	315	263	289	444	444	444	444
VCM	701	699	1,186	912	658	920	1,187	1,121	745	628	718	628	670	619	920	920	920	920
PVC	861	872	1,365	1,061	811	991	1,305	1,270	913	787	875	778	828	762	991	991	991	991
Caustic soda	314	239	380	617	390	450	583	692	579	614	477	362	339	380	450	450	450	450
Polyester chain (US\$/MT)																		
PX	881	561	838	1,080	1,014	1,055	1,060	1,232	1,067	961	1,015	999	1,054	989	1,055	1,055	1,055	1,055
MEG	579	471	680	580	498	755	689	638	526	478	523	496	482	489	755	755	755	755
PTA	745	480	705	880	795	885	851	980	874	814	800	803	807	770	885	885	885	885
PET	957	716	993	1,131	950	1,155	1,157	1,265	1,150	953	973	989	929	908	1,155	1,155	1,155	1,155

Source: Platts, OilChem, BofA Global Research Estimates

Asia Chemical Margins forecast

Exhibit 6: Asia Chemical Prices forecast

Positive outlook for Styrene chains but negative to ethylene derivatives

Asia Chemical margins

	2019	2020	2021	2022	2023	2024E
Intermediate spread						
Ethylene-Naphtha	383	365	392	231	199	340
Butadiene-Naphtha	537	318	389	304	271	280
Benzene-Naphtha	121	103	263	240	245	280
Toluene-Naphtha	126	54	83	174	234	250
Xylene-Naphtha	173	85	102	236	280	340
Ethylene chain						
HDPE-1.05*Ethylene	(34)	32	(21)	(59)	27	9
LDPE-1.03*Ethylene	44	212	354	251	115	80
LLDPE-0.92*Ethylene	97	150	156	142	165	141
HDPE-Naphtha	394	435	423	223	268	400
LDPE-Naphtha	455	600	777	512	339	450
LLDPE-Naphtha	408	455	465	291	295	400
Propylene chain						
Propylene-Naphtha	339	406	339	223	194	250
PP-Naphtha	512	526	502	250	227	350
PP-1.02*Propylene	156	104	144	6	16	82
Vinyls chain						
VCM-1.62*EDC	153	204	(3)	50	191	200
EDC-0.29*Ethylene	77	88	433	237	42	150
PVC-1.03*VCM	139	152	144	122	133	44
PVC-1.62*1.03*EDC	296	362	141	174	329	250
PVC-0.29*1.62*1.03*Ethylene	424	510	864	569	399	500
Styrenic chain						
PS-0.95*SM	222	312	264	189	172	250
PS-0.79*0.95*BZ-0.95*0.29*Ethylene	453	449	409	295	269	374
PS-0.95*(0.79+0.29)*Naphtha	650	627	715	538	507	677
ABS-(1.1*0.25*Propylene+0.15*BD+0.55*Styrene)	488	791	1,192	504	349	450
ABS-(1.1*0.25*Propylene+0.15*BD+0.79*0.55*BZ+0.29*0.55*C2)	622	870	1,276	565	405	522
ABS-AN*0.23-BD*0.2-SM*0.473	366	758	983	428	311	379
Styrene-0.79*BZ-0.29*C2	243	144	153	111	102	130
Polyester chain						
PX-Naphtha	363	176	193	294	361	380
PTA-0.67*PX	155	104	143	156	115	178
MEG-Naphtha	60	87	35	(206)	(156)	80
MEG-0.6*Ethylene	38	21	58	(30)	(14)	146
PTA-Naphtha	227	95	60	94	142	210
PET-0.86*PTA-0.35*MEG	114	138	149	171	92	130

Source: Platts, OilChem, BofA Global Research Estimates

1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24E	3Q24E	4Q24E
271	278	185	196	185	238	159	212	340	340	340	340
171	579	355	95	374	225	157	329	280	280	280	280
194	348	266	146	232	264	250	232	280	280	280	280
13	219	259	185	176	264	302	196	250	250	250	250
99	304	292	232	240	324	334	223	340	340	340	340
(107)	(138)	14	(14)	28	43	59	(23)	9	9	9	9
351	278	242	142	162	94	126	76	80	80	80	80
168	108	158	133	177	168	199	115	141	141	141	141
221	198	244	225	258	323	259	233	400	400	400	400
656	591	453	364	374	358	310	314	450	450	450	450
346	292	271	260	291	339	293	258	400	400	400	400
256	264	192	187	232	251	148	145	250	250	250	250
270	251	251	228	239	267	193	209	350	350	350	350
(8)	(36)	42	24	(12)	(0)	28	48	82	82	82	82
(193)	54	94	225	252	118	243	151	200	200	200	200
519	320	141	(3)	30	72	27	37	150	150	150	150
82	116	146	140	136	132	138	125	44	44	44	44
(117)	171	242	371	395	253	388	280	250	250	250	250
749	706	478	366	446	373	434	342	500	500	500	500
225	155	180	199	172	196	144	176	250	250	250	250
313	228	316	322	292	277	236	272	374	374	374	374
533	566	566	486	517	541	468	504	677	677	677	677
702	516	415	404	322	374	371	327	450	450	450	450
753	558	494	475	391	420	425	382	522	522	522	522
636	433	344	323	261	330	357	295	379	379	379	379
93	77	143	130	126	85	97	100	130	130	130	130
182	344	353	286	312	400	399	334	380	380	380	380
140	154	159	170	120	133	101	107	178	178	178	178
(189)	(250)	(188)	(196)	(179)	(103)	(173)	(167)	80	80	80	80
(0)	(62)	(14)	(44)	(9)	(6)	(7)	(32)	146	146	146	146
(28)	91	160	139	98	203	152	114	210	210	210	210
184	199	214	86	102	125	66	74	130	130	130	130

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Valuation and share price performance.

Exhibit 7: Valuation and share price performance

Valuation and share price performance

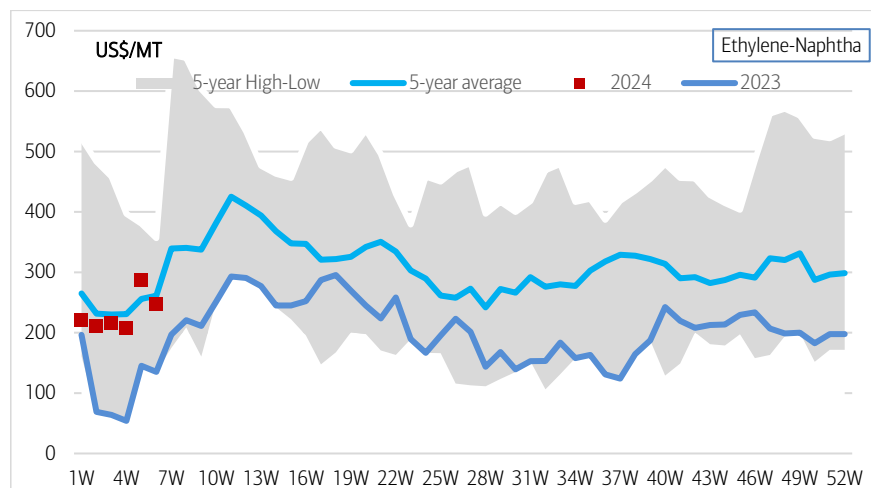
			Market	Price	12M	Absolute performance						Relative performance						
Country	Chemical Company	Ticker	Cap (bn)	9-Feb-24	High	Low	1W	1M	3M	6M	12M	YTD	1W	1M	3M	6M	12M	YTD
Korea (W)	LG Chem	051910 KS	33,214	470,500	825,000	387,000	2.1	1.3	2.8	(24.4)	(30.8)	(21.6)	1.9	(1.8)	(5.9)	(25.5)	(36.4)	(9.6)
	Lotte Chemical	011170 KS	5,762	134,700	190,800	116,600	1.7	(2.2)	(6.5)	(4.3)	(22.7)	(24.5)	1.5	(5.3)	(15.3)	(5.4)	(28.3)	(12.5)
	Hanwha Solutions	009830 KS	5,475	31,850	55,100	27,000	(8.2)	(17.4)	4.6	(17.1)	(40.1)	(33.4)	(8.4)	(20.5)	(4.1)	(18.2)	(45.7)	(21.4)
	Kumho Petrochemical	011780 KS	4,002	140,200	162,900	108,200	7.4	13.2	8.7	14.3	(3.9)	11.3	7.2	10.1	(0.1)	13.1	(9.5)	23.3
	Korea Petrochemical	006650 KS	909	139,900	189,900	111,800	1.4	(2.0)	(8.1)	5.6	(13.5)	(18.4)	1.2	(5.1)	(16.8)	4.5	(19.1)	(6.4)
	Hansol Chemicals	014680 KS	2,113	186,400	250,000	148,200	(2.7)	(11.7)	10.4	1.9	(13.9)	0.5	(2.9)	(14.7)	1.7	0.7	(19.5)	12.5
	Hyosung	004800 KS	1,327	63,000	70,500	56,700	(1.9)	2.3	0.3	(0.8)	(9.7)	(6.1)	(2.1)	(0.8)	(8.4)	(1.9)	(15.3)	5.9
	Hu-Chems	069260 KS	818	20,000	23,800	18,710	(4.8)	(2.9)	(6.1)	(10.9)	2.5	0.0	(5.0)	(6.0)	(14.8)	(12.0)	(3.1)	12.0
	SKC	011790 KS	3,151	83,200	116,300	68,500	7.2	(1.9)	(1.3)	(19.8)	(13.4)	(6.0)	7.0	(5.0)	(10.0)	(20.9)	(19.0)	6.0
	SK Materials	036490 KS	4,250	402,900	402,900	402,900	0.0	0.0	0.0	0.0	0.0	0.0	(0.2)	(3.1)	(8.7)	(1.1)	(5.6)	12.0
Taiwan (NTS)	Formosa Chem & Fibre	1326 TT	335	57.10	71.90	55.60	(1.4)	(5.3)	(8.8)	(13.1)	(19.5)	(19.0)	(1.6)	(8.9)	(17.3)	(22.1)	(35.5)	(18.3)
	Formosa Plastics	1301 TT	461	72.40	94.40	70.60	(1.5)	(6.0)	(6.8)	(13.8)	(19.1)	(16.6)	(1.7)	(9.6)	(15.3)	(22.8)	(35.1)	(15.9)
	Nan Ya Plastics	1303 TT	484	61.00	80.90	59.50	(2.2)	(5.4)	(6.0)	(12.4)	(18.4)	(14.1)	(2.4)	(9.0)	(14.5)	(21.4)	(34.5)	(13.4)
	Oriental Union Chemical	1710 TT	16	18.40	23.60	18.15	(1.3)	(3.4)	(2.6)	(14.8)	(2.4)	(1.1)	(1.5)	(7.0)	(11.1)	(23.8)	(18.4)	(0.4)
	Far Eastern New Century	1402 TT	164	30.65	33.55	28.15	(1.3)	(1.8)	1.3	3.9	(4.8)	(3.9)	(1.5)	(5.4)	(7.1)	(5.1)	(20.8)	(3.2)
	Taiwan Styrene Monomer	1310 TT	7	14.20	17.70	13.50	(1.4)	(5.6)	(9.0)	(11.8)	2.5	5.2	(1.6)	(9.3)	(17.4)	(20.8)	(13.5)	5.9
	TSRC	6575 TT	2	17.2	17.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0	(0.2)	(3.6)	(8.5)	(9.0)	(16.0)	0.7
	China General Plastics	1305 TT	12	20.4	28.6	20.2	(0.7)	(6.0)	(8.9)	(20.2)	(25.2)	(22.9)	(0.9)	(9.6)	(17.4)	(29.2)	(41.2)	(22.2)
	Grand Pacific Petrochemicals	1312 TT	16	14.3	20.8	14.1	(1.0)	(3.1)	(7.9)	(22.0)	(25.9)	(22.8)	(1.2)	(6.1)	(16.6)	(23.1)	(31.5)	(10.8)
	China (HKS)	Sinopec	386 HK	719	4.12	5.38	3.68	1.0	5.1	3.5	(7.4)	(2.1)	9.3	(0.4)	7.3	12.0	10.0	25.0
Sinopec Shanghai Petrochem		338 HK	26	1.06	1.51	1.00	0.0	(7.0)	(3.6)	(9.4)	(24.8)	(19.7)	(1.4)	(4.8)	4.8	8.0	2.4	13.0
Kingboard Chem		148 HK	17	14.94	32.20	13.94	4.5	(15.9)	(18.7)	(26.8)	(53.6)	(39.9)	3.1	(13.7)	(10.2)	(9.3)	(26.4)	(7.2)
Kingboard Laminates		1888 HK	15	4.89	10.60	4.70	0.0	(17.5)	(33.3)	(35.0)	(53.0)	(43.0)	(1.4)	(15.4)	(24.8)	(17.5)	(25.8)	(10.3)
China BlueChem		3983 HK	10	2.16	2.23	1.71	1.4	6.4	19.3	13.1	6.9	16.8	1.2	4.9	5.8	(1.3)	(18.2)	(12.0)
Sinofer		297 HK	5	0.77	1.17	0.75	0.0	(11.5)	(11.5)	(24.5)	(25.2)	(18.9)	(0.2)	(13.0)	(25.1)	(38.9)	(50.4)	(47.7)
Thailand (Bt)	Indorama Ventures	INT TB	136	24.30	40.75	23.00	(1.6)	(7.4)	(2.8)	(26.4)	(40.4)	(40.4)	(1.9)	(5.6)	(2.7)	(16.8)	(23.5)	(24.1)
	PTT Global Chemical	PTTGC TB	160	35.50	50.50	32.50	2.2	(3.4)	(1.4)	(10.1)	(29.7)	(24.9)	1.8	(1.6)	(1.3)	(0.6)	(12.9)	(8.6)
Japan (JPY)	Shin-Etsu Chem	4063 JP	11,816	5,903	5,945	3,794	(0.6)	6.3	21.8	28.3	52.1	81.9	(1.3)	1.7	12.4	17.2	23.2	53.5
	SUMCO	3436 JP	814	2,326	2,470	1,846	3.2	10.3	13.1	19.6	16.7	32.4	2.5	5.7	3.6	8.6	(12.1)	4.0
	JSR	4185 JP	830	3,982	4,215	2,982	(0.3)	(1.8)	0.5	(2.1)	28.0	53.9	(1.0)	(6.4)	(8.9)	(13.2)	(0.8)	25.5
	Hitachi Chemical	4217 JP	964	4,625	4,625	4,625	0.0	0.0	0.0	0.0	0.0	0.0	(0.7)	(4.6)	(9.5)	(11.0)	(28.9)	(28.4)
	ShinEtsu Polymer	7970 JP	133	1,610	1,799	1,259	(3.0)	(1.6)	16.2	17.0	22.2	42.2	(3.7)	(6.3)	6.8	6.0	(6.7)	13.8
	Sumitomo Chem	4005 JP	502	303	486	301	(8.9)	(14.8)	(19.8)	(26.3)	(34.1)	(36.1)	(9.6)	(19.5)	(29.3)	(37.4)	(63.0)	(64.5)
	Asahi Kasei	3407 JP	1,434	1,029	1,123	898	(7.3)	(4.9)	2.0	10.0	9.2	9.3	(8.0)	(9.5)	(7.4)	(1.1)	(19.7)	(19.1)
	Mitsubishi Chem	4188 JP	1,262	838	981	746	(5.9)	(6.1)	(13.0)	(4.0)	12.2	22.3	(6.7)	(10.7)	(22.4)	(15.0)	(16.6)	(6.1)
	Mitsui Chemicals	4183 JP	794	3,952	4,463	3,120	(9.0)	(8.4)	(0.8)	(0.3)	24.5	32.8	(9.7)	(13.1)	(10.3)	(11.4)	(4.4)	4.5
	Tosoh	4042 JP	624	1,918	2,029	1,605	(0.3)	0.4	2.3	5.4	11.7	22.2	(1.0)	(4.3)	(7.2)	(5.6)	(17.2)	(6.2)
Malaysia (RM)	Petronas Chem	PCHM MK	54	6.71	8.36	5.97	(1.0)	(4.1)	(6.7)	(2.0)	(18.6)	(22.0)	(0.7)	(5.9)	(11.3)	(5.8)	(21.8)	(18.5)
	Lotte Titan Chem	TTNP MK	3	1.19	1.53	1.11	0.0	(21.2)	1.7	2.6	(12.5)	(16.2)	(0.2)	(22.7)	(11.9)	(11.8)	(37.7)	(45.0)
Refining Company				9-Feb-24	High	Low	1W	1M	3M	6M	12M	YTD	1W	1M	3M	6M	12M	YTD
Korea (W)	SK Innovation	096770 KS	12,179	121,000	212,534	108,300	(2.7)	(6.1)	(7.8)	(36.5)	(27.1)	(20.1)	(2.9)	(9.2)	(16.6)	(37.6)	(32.7)	(8.1)
	S-Oil	010950 KS	7,813	69,400	87,100	63,400	0.9	3.6	3.7	(10.7)	(18.1)	(16.8)	0.7	0.5	(5.0)	(11.8)	(23.7)	(4.8)
	GS Holdings	078930 KS	4,832	52,000	52,200	35,000	3.4	26.8	23.4	34.2	23.7	18.7	3.2	23.7	14.6	33.1	18.1	30.7
	Hyundai Heavy Industries	267250 KS	5,656	71,600	73,600	56,000	1.7	14.0	21.2	15.9	19.5	25.4	1.5	12.5	7.6	1.5	(5.6)	(3.4)
Japan (¥)	Eneos Holdings	5020 JP	1,893	624	638	453	4.1	5.8	14.6	13.6	33.7	39.4	3.4	1.2	5.1	2.5	4.8	11.0
	Idemitsu Kosan	5019 JP	1,223	821	847	542	(0.1)	2.7	21.4	33.3	28.7	33.8	(0.8)	(2.0)	12.0	22.3	(0.1)	5.4
	Cosmo Oil	5021 JP	542	6,137	6,324	3,545	0.0	1.0	5.6	32.7	69.1	75.8	(0.2)	(0.5)	(8.0)	18.3	43.9	47.1
Taiwan (NTS)	Formosa Petrochemical	6505 TT	708	74.30	89.80	72.20	(2.2)	(6.1)	(7.5)	(9.3)	(10.5)	(7.5)	(2.4)	(9.7)	(15.9)	(18.3)	(26.5)	(6.8)
Thailand (Bt)	Bangchak Petroleum	BCP TB	62	43.25	44.50	29.25	3.0	4.8	4.2	12.3	22.7	37.3	2.7	6.6	4.3	21.9	39.5	53.5
	Thai Oil	TOP TB	126	56.50	57.50	42.75	3.7	6.1	19.6	4.6	0.0	0.4	3.4	7.9	19.7	14.2	16.8	16.7
India (Rs)	Star Petroleum	SPRC TB	36	8.40	11.70	7.35	(1.2)	(0.6)	8.4	(10.6)	(26.3)	(21.5)	(1.5)	1.2	8.5	(1.1)	(9.5)	(5.3)
	BPCL	BPCL IN	1,333	614	621	316	10.0	36.1	60.0	71.8	84.1	85.9	9.8	34.6	46.4	57.4	58.9	57.1
	HPCL	HPCL IN	724	510	536	214	4.4	18.5	70.3	91.3	119.9	117.0	4.1	16.9	56.7	77.0	94.7	88.2

Source: Bloomberg, BoFA Research



Exhibit 8: Ethylene-naphtha spreads

Ethylene over naphtha spreads decreased WoW

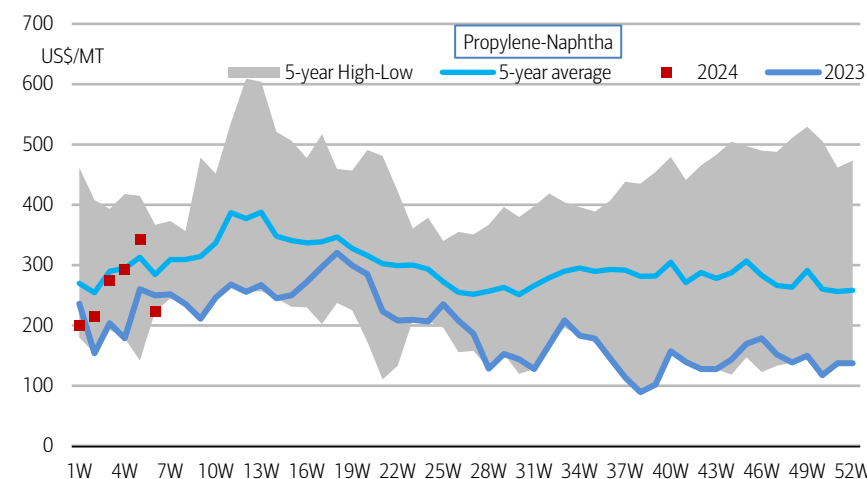


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 9: Propylene-naphtha spreads

Propylene over naphtha spreads decreased WoW

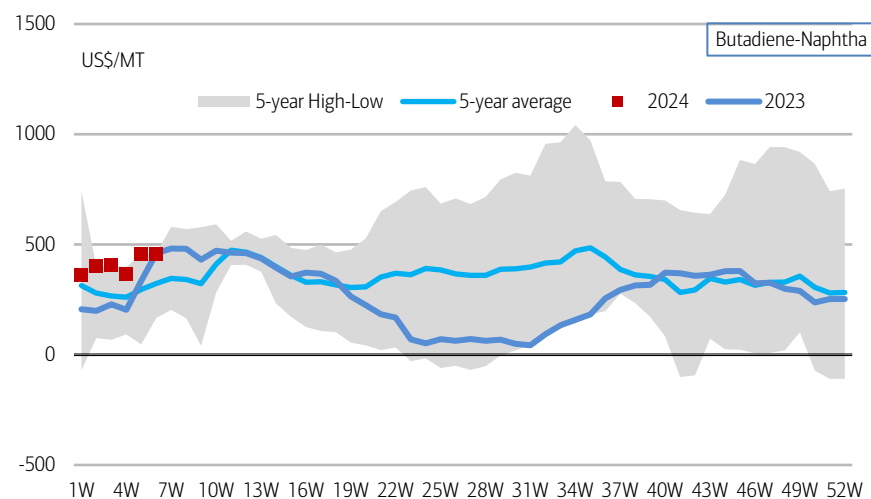


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 10: East China MEG inventory

BD over naphtha spreads remained at the upper end of five-year range

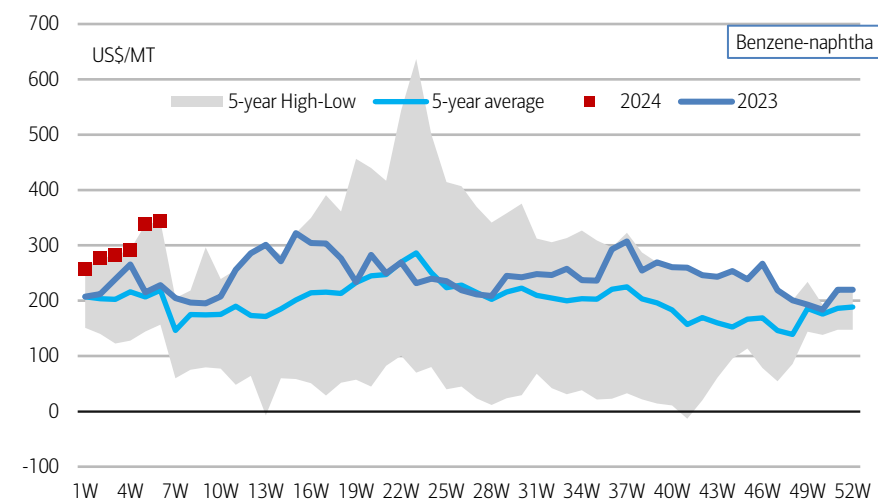


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 11: Benzene-naphtha spreads

Benzene over naphtha spreads increased slightly WoW

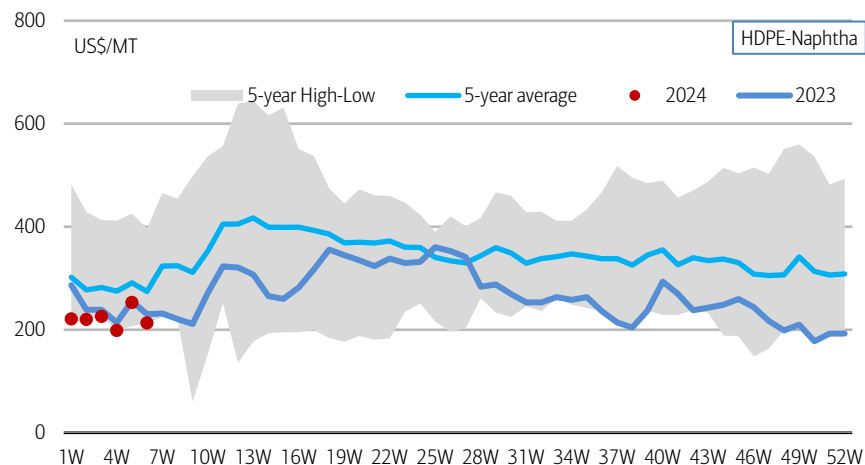


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 12: HDPE-naphtha spreads

HDPE over naphtha spreads decreased slightly WoW

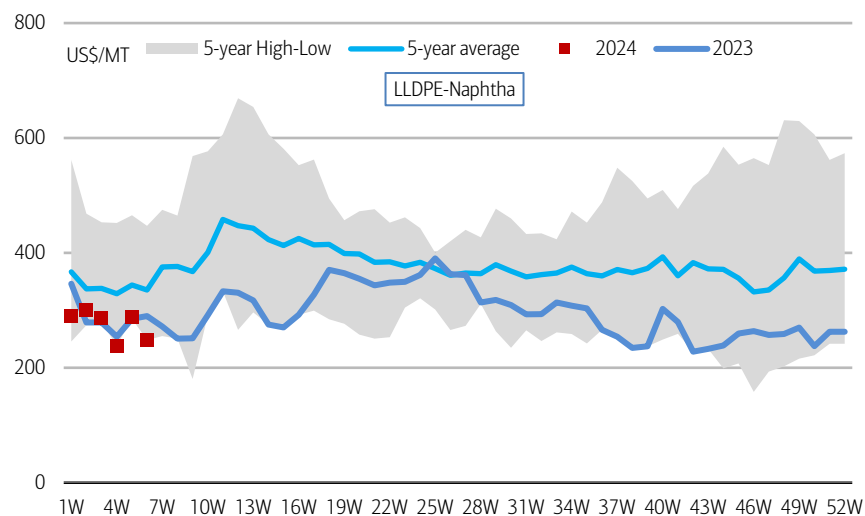


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 14: LLDPE-naphtha spreads

LLDPE over naphtha spreads remained close to 2023 levels

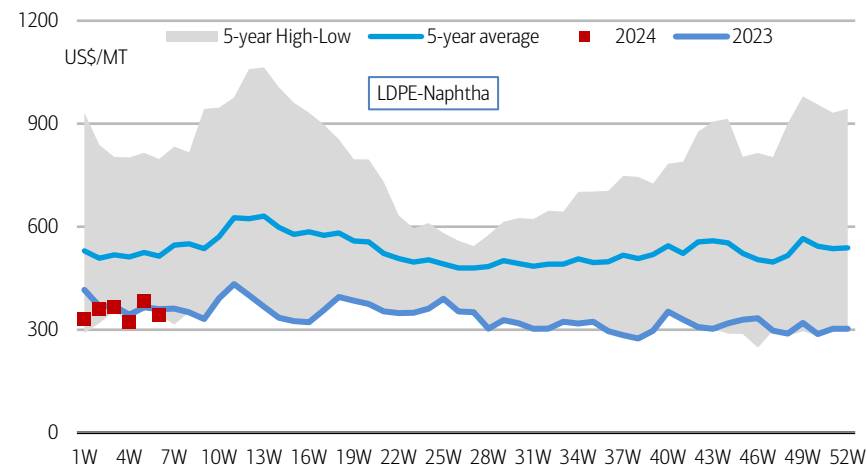


Source: Platts, Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 13: LDPE-naphtha spreads

LDPE over naphtha spreads remained close to lower end of five-year range

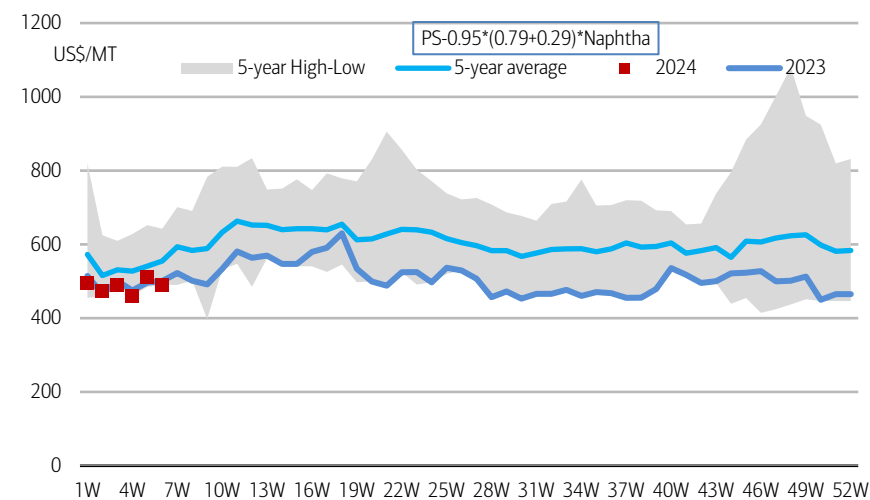


Source: Platts, Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 15: PS-naphtha spreads

PS over naphtha spreads remained close to lower end of five-year range

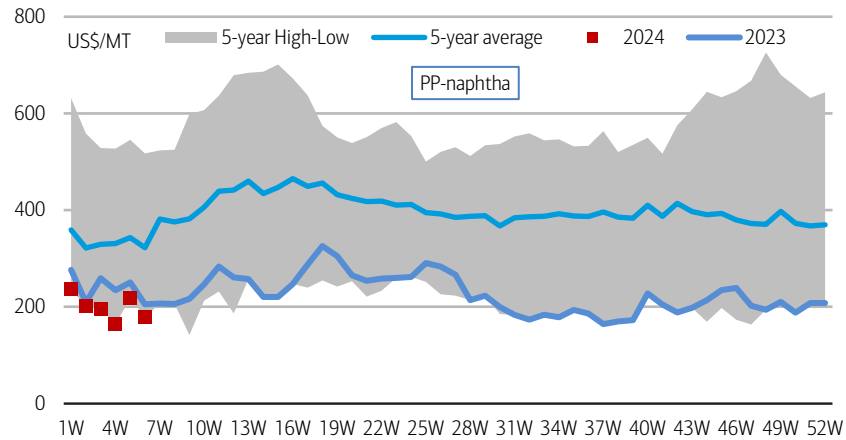


Source: Platts, Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 16: PP-naphtha spreads

PP over naphtha spreads remained close to lower end of 5-yr range

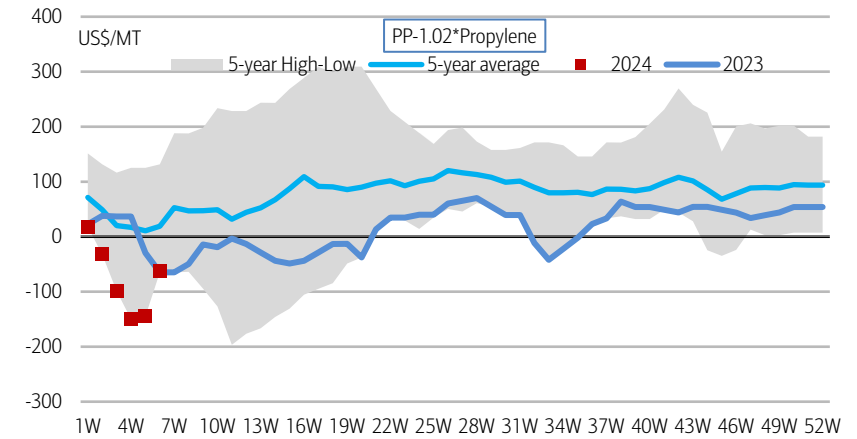


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 17: PP-propylene spreads

PP over propylene spreads remained close to lower end of 5 yr range

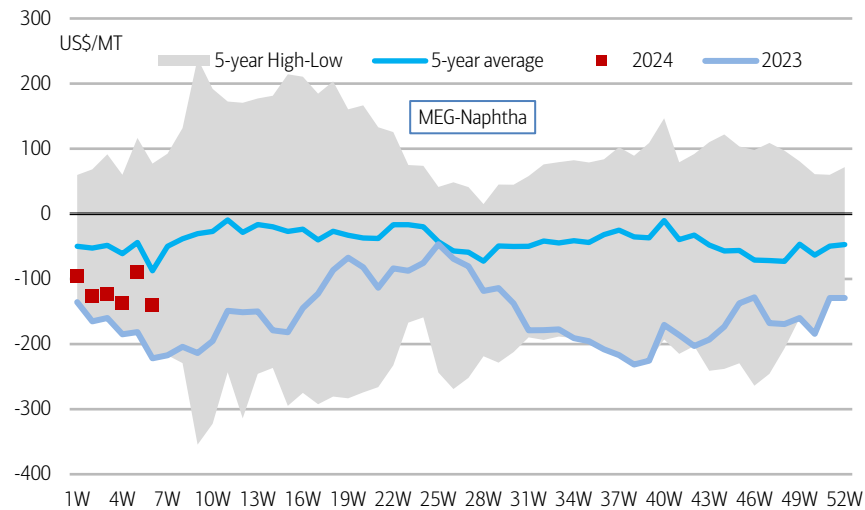


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 18: MEG-naphtha spreads

MEG over naphtha spreads decreased slightly WoW

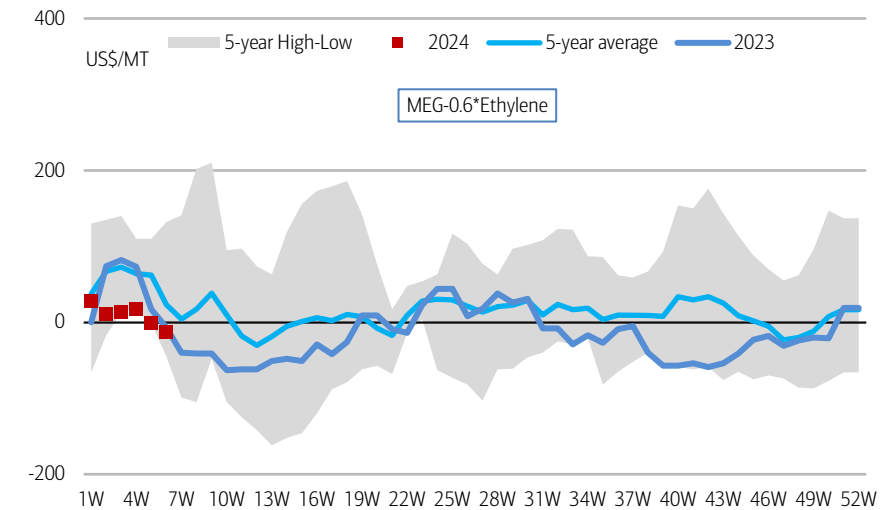


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 19: MEG-Ethylene spread

MEG over ethylene remained close to 2023 average levels

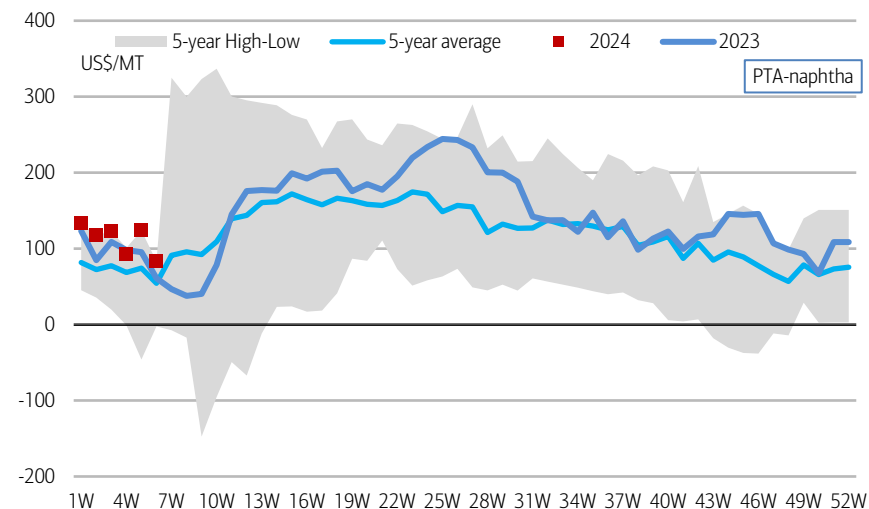


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 20: PTA-naphtha spreads

PTA over naphtha spreads remained at upper end of 5 yr average levels

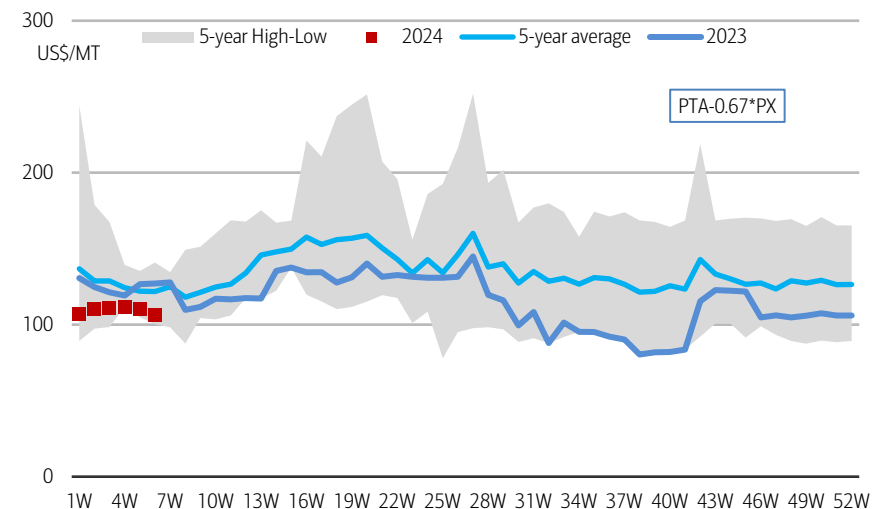


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 21: PTA-PX spreads

PTA over PX spreads remained at lower end of 5 yr average levels

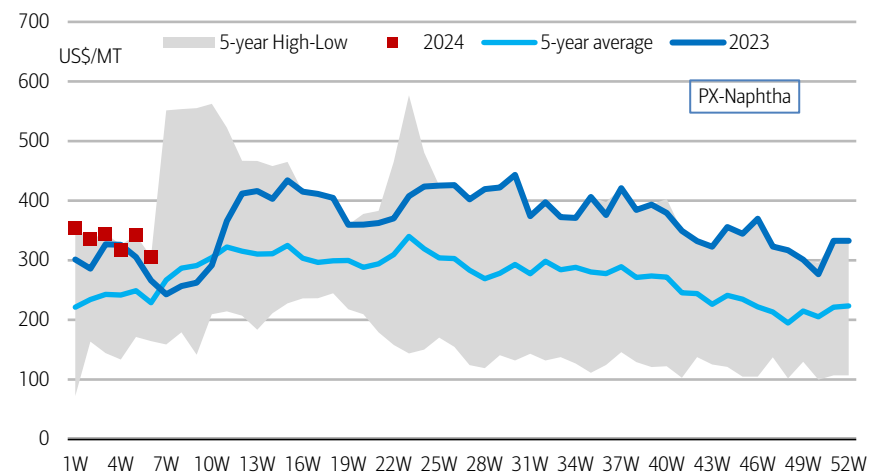


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 22: PX-naphtha spreads

PX over naphtha spreads decreased WoW

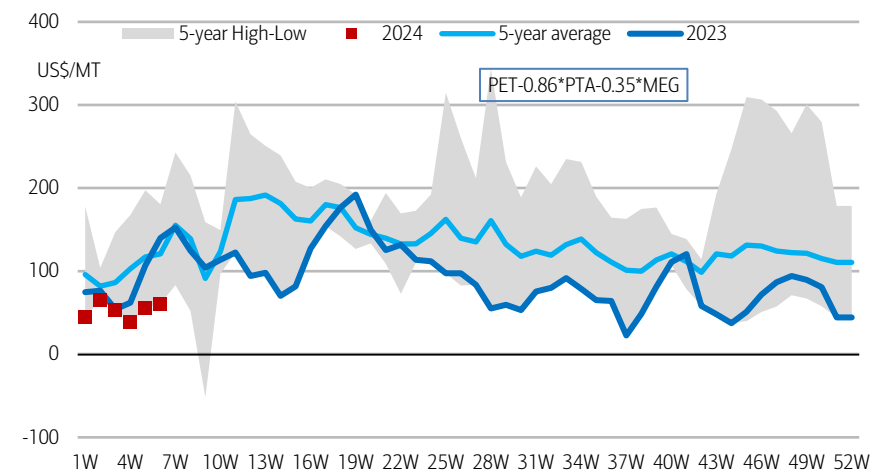


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 23: PET-PTA-MEG spreads

PET spreads remained close to lower end of 5-yr range

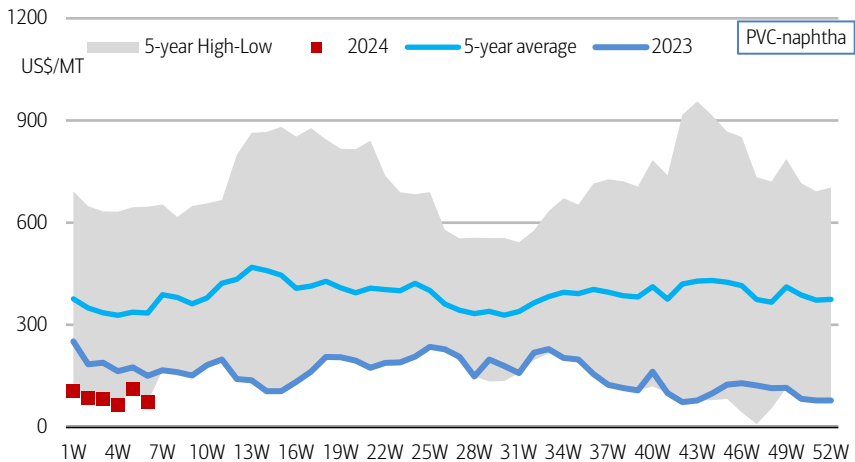


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 24: PVC-naphtha spreads

PVC over naphtha spreads remained close to lower end of 5-yr range

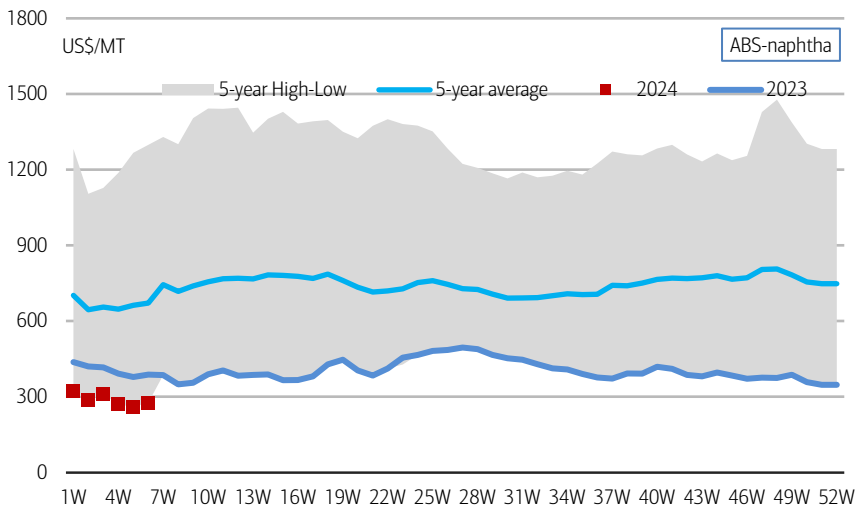


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 26: ABS-naphtha spreads

ABS over naphtha spreads remained at lower end of 5-yr range

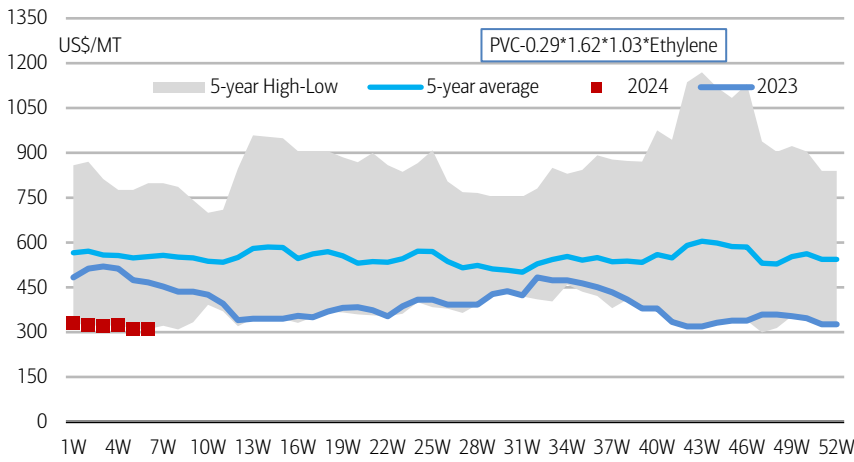


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 25: PVC-ethylene spreads

PVC over ethylene spreads remained close to lower end of 5-yr average levels

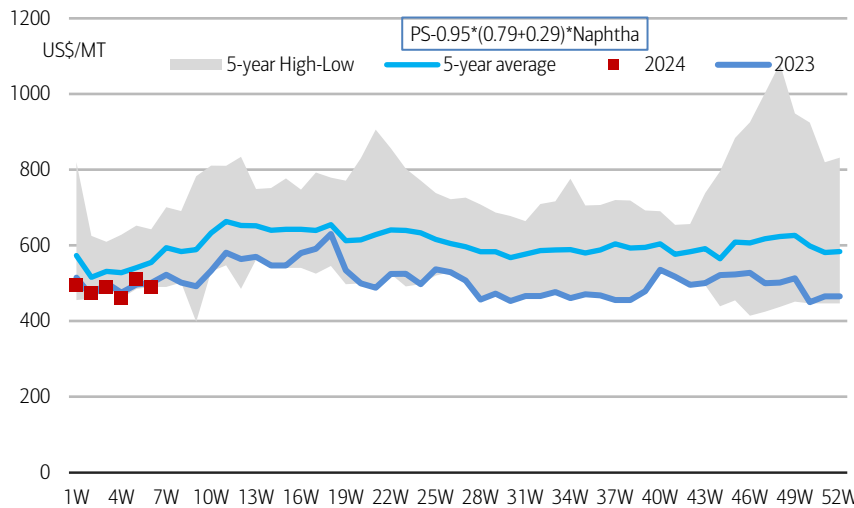


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 27: PS-naphtha spreads

PS over naphtha spreads remained close to 2023 levels



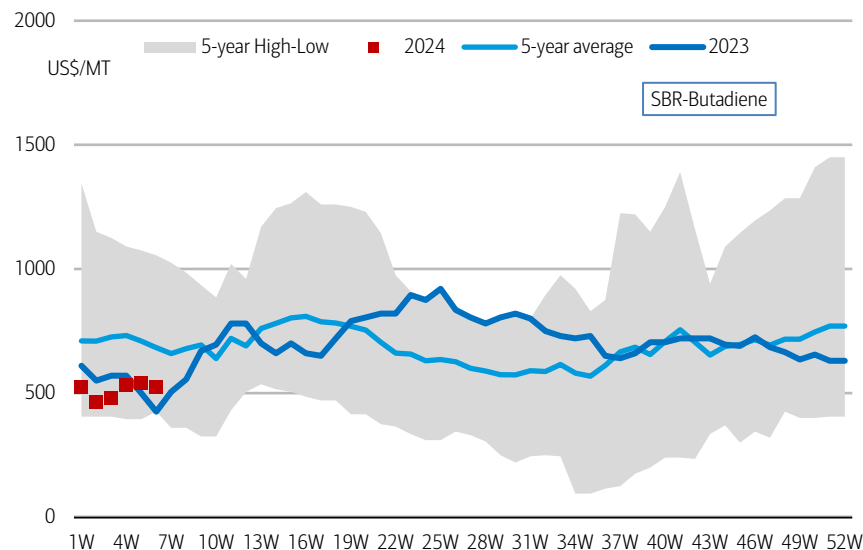
Source: Platts, Bloomberg, BofA Global Research

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Exhibit 28: SBR-Butadiene spreads

SBR over Butadiene spreads remained close to 2023 levels

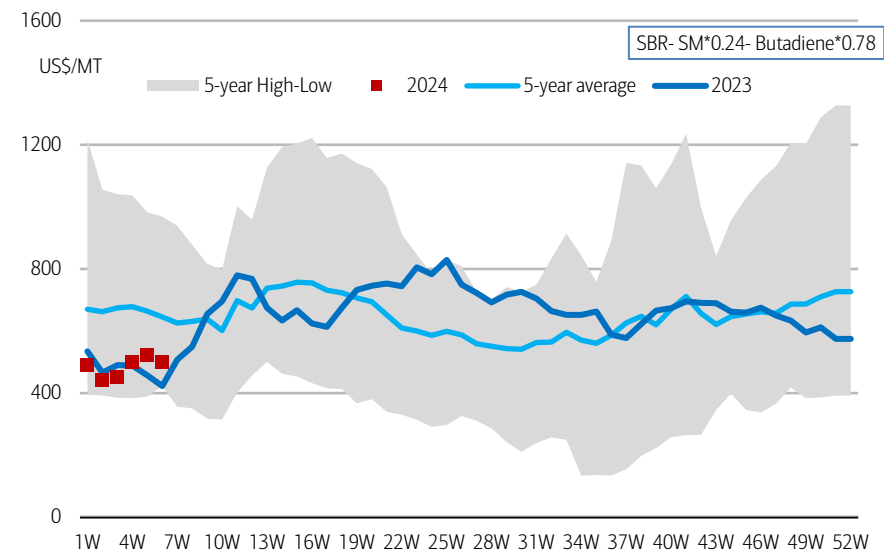


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 29: SBR- SM*0.24- Butadiene*0.78

SBR over SM and Butadiene spreads decreased slightly WoW

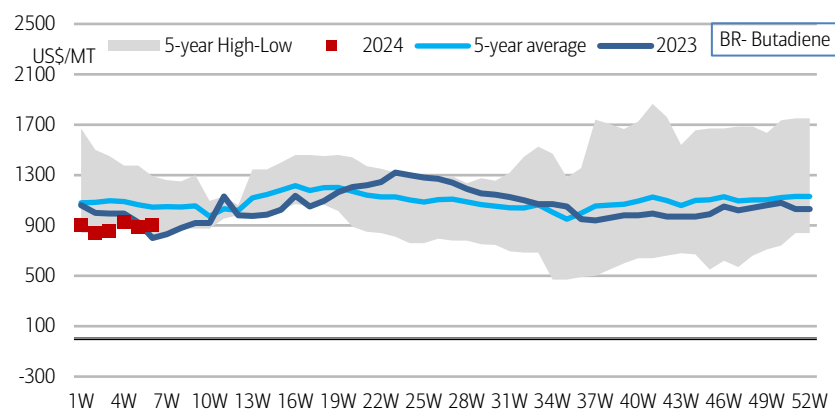


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 30: BR- Butadiene

BR over Butadiene spreads remained flat WoW

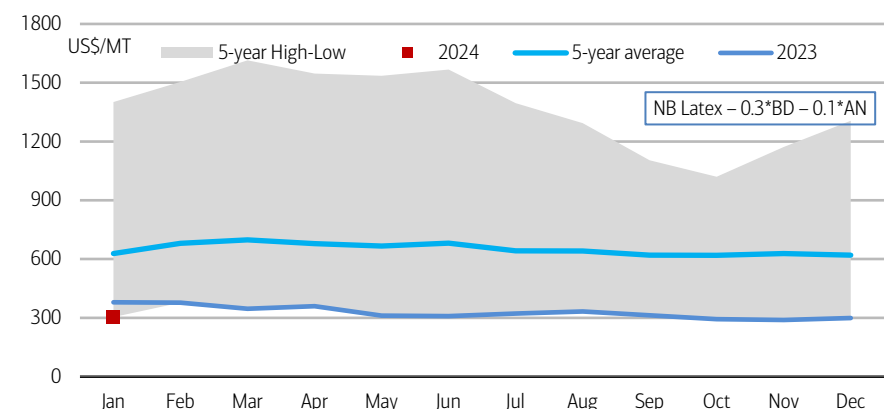


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 31: NB Latex – 0.3*BD – 0.1*AN 1-month lag

NB Latex spreads remained at lower end of 5-yr range

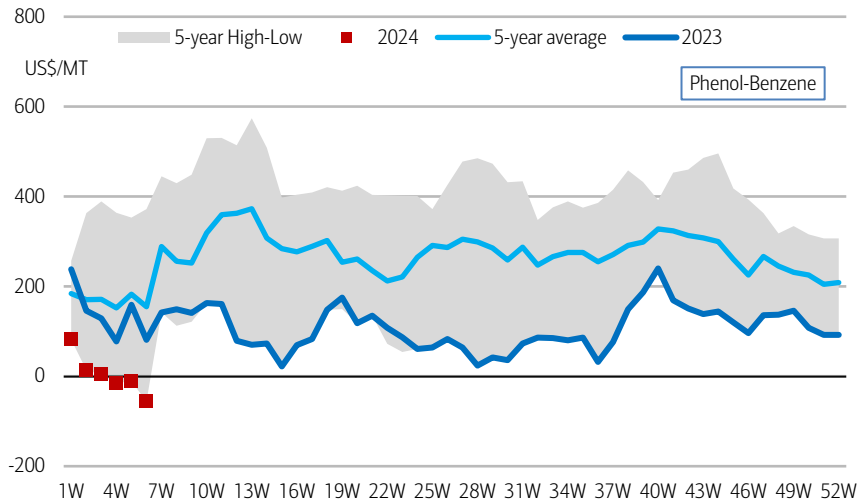


Source: KITA, Platts BofA Global Research

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Exhibit 32: Phenol- Benzene

Phenol over Benzene spreads remained at lower end of 5-yr range

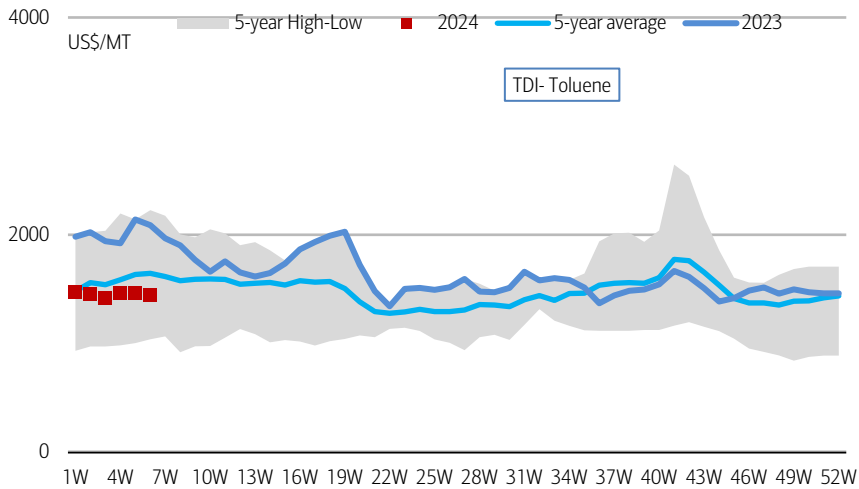


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 34: TDI- Toluene

TDI over Toluene spreads remained at avg of 5 yr levels

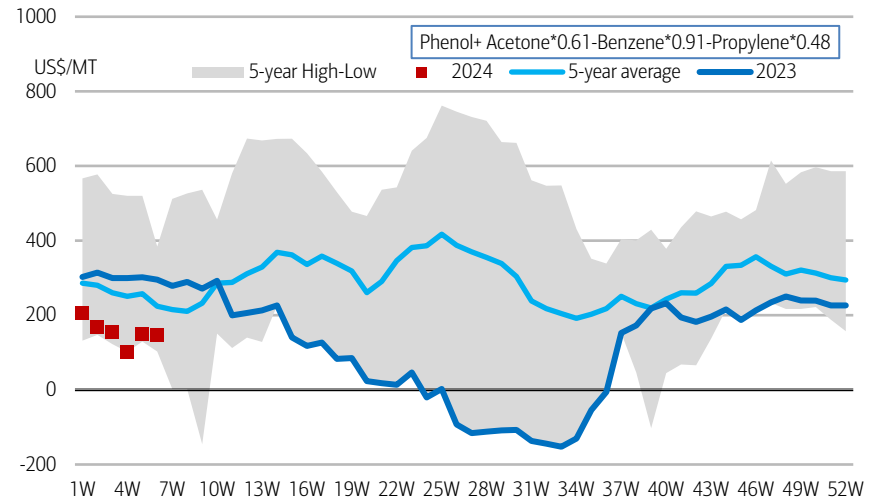


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 33: Phenol+ Acetone*0.61-Benzene*0.91-Propylene*0.48

Phenol spreads remain close to lower end of 5-yr range

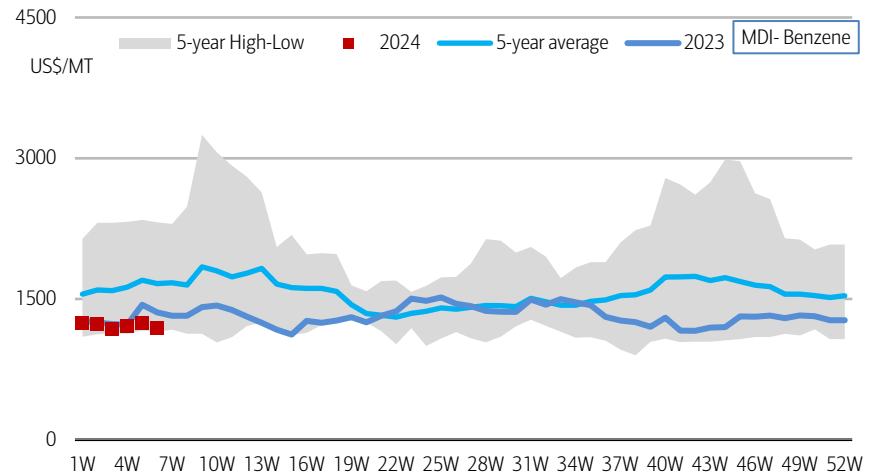


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 35: MDI- Benzene

MDI over Benzene spreads remained at 2023 levels



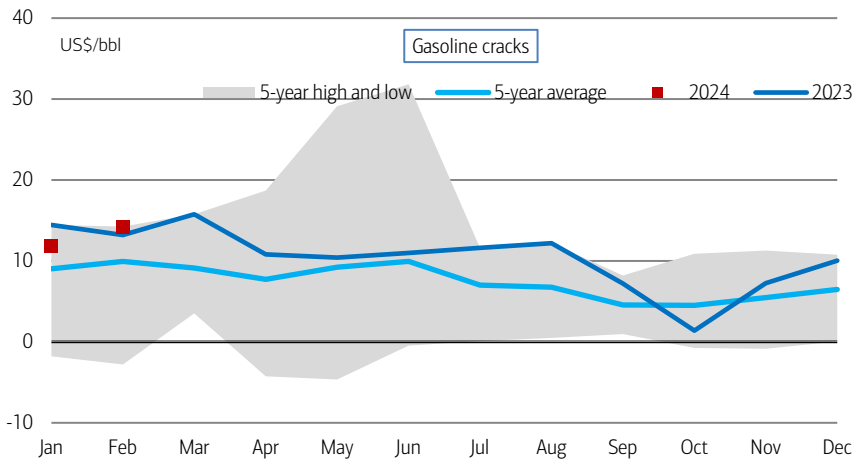
Source: Platts, Bloomberg, BofA Global Research

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Exhibit 36: Gasoline cracks

QTD Gasoline cracks have increased sharply QoQ

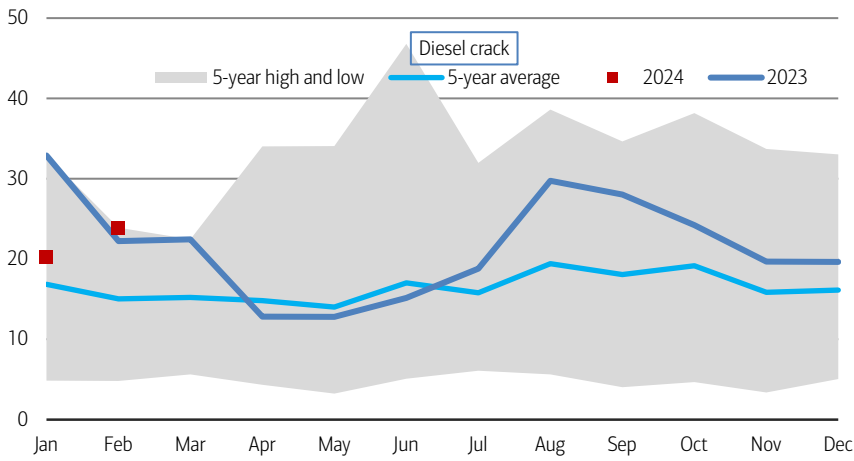


Source: Bloomberg, BofA Global Research

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Exhibit 37: Diesel cracks

Diesel cracks remained flat QTD

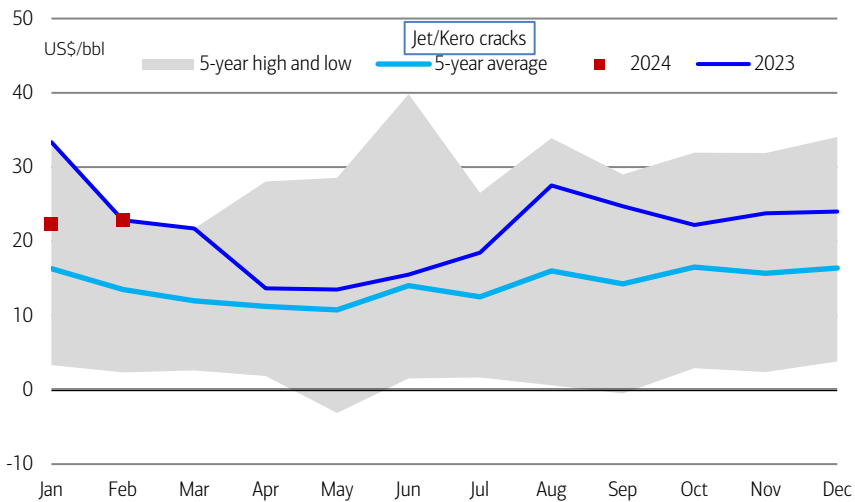


Source: Bloomberg, BofA Global Research

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Exhibit 38: Jet/Kero cracks

Jet/kero cracks slightly decreased QTD

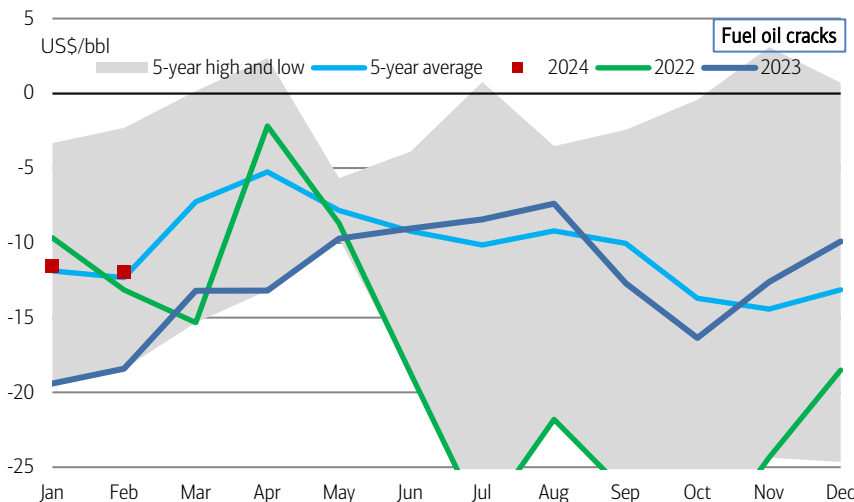


Source: Bloomberg, BofA Global Research

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Exhibit 39: Fuel oil cracks

Fuel oil cracks decreased slightly MoM



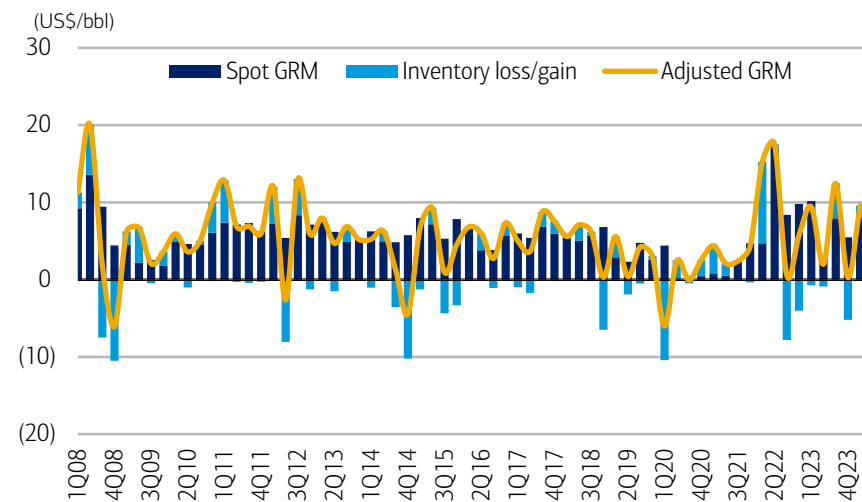
Source: Bloomberg, BofA Global Research

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Exhibit 40: Asia Quarterly GRM

Asia GRM increased QoQ

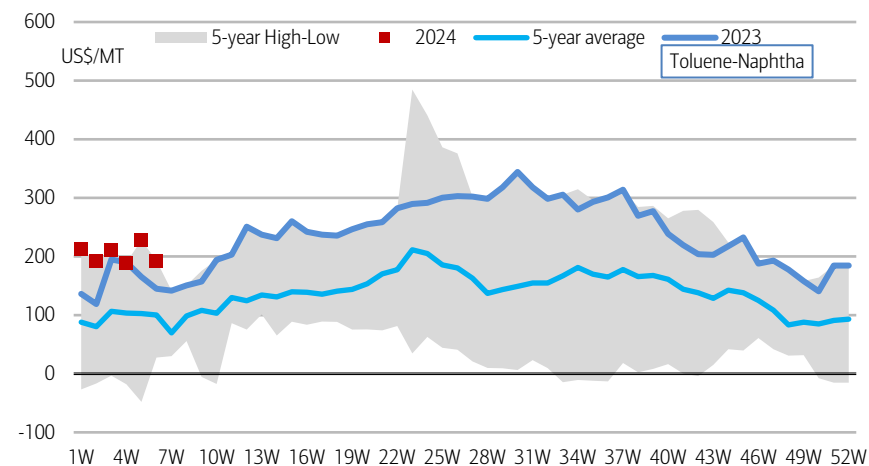


Source: Bloomberg, BofA Global Research

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Exhibit 42: Toluene-naphtha spreads

Toluene spreads remained close to upper end of 5-yr range

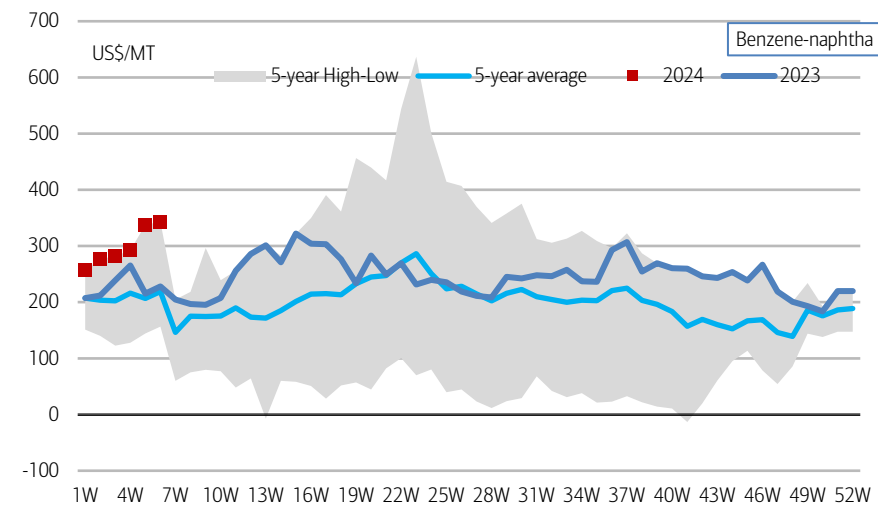


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 41: Benzene-naphtha spreads

Benzene over naphtha spreads remained on upper end of 5 yr range

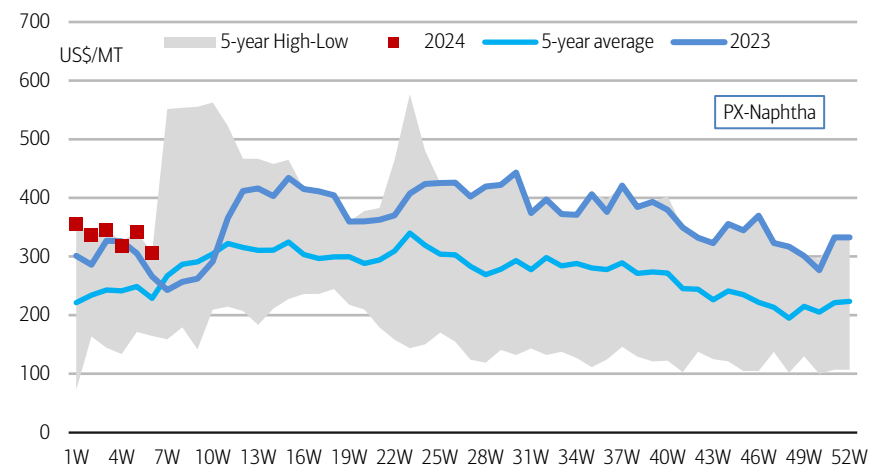


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 43: PX-naphtha spreads

PX spreads decreased WoW

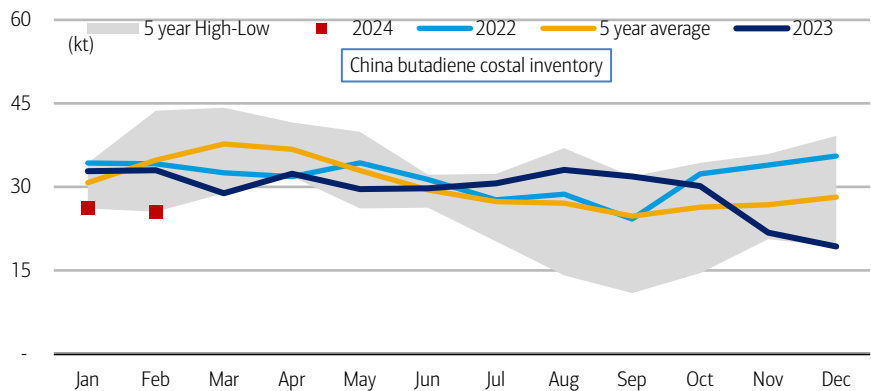


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 44: China butadiene costal inventory

China BD inventory decreased slightly MoM

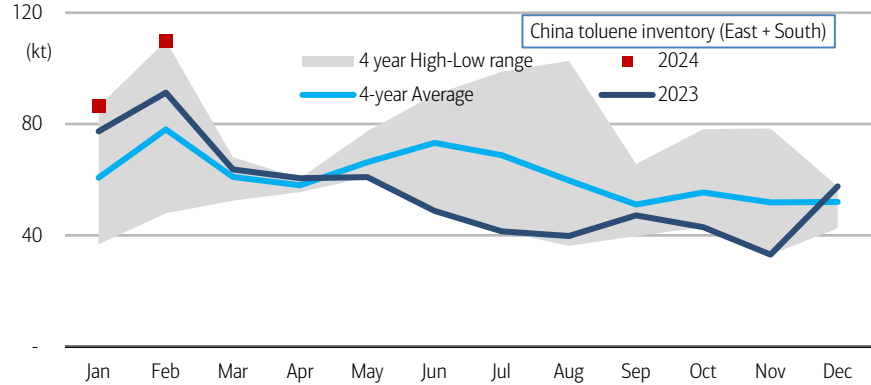


Source: Platts, BofA Global Research

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Exhibit 45: East and South China toluene inventory

Toluene inventory increased slightly MoM

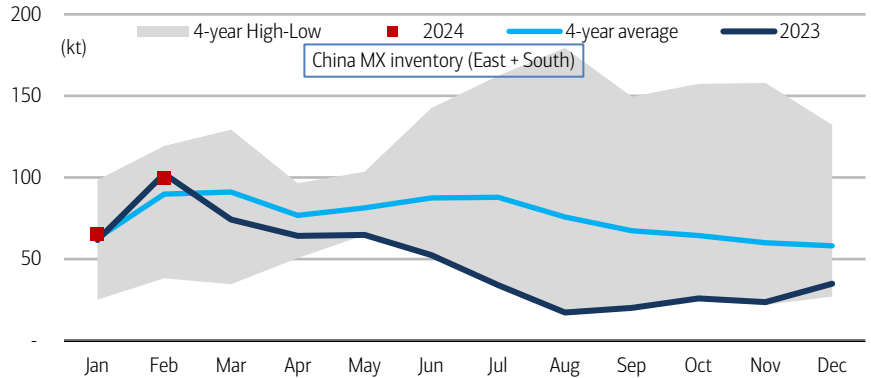


Source: Platts, BofA Global Research

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Exhibit 46: East and South China MX inventory

China MX inventory increased slightly MoM

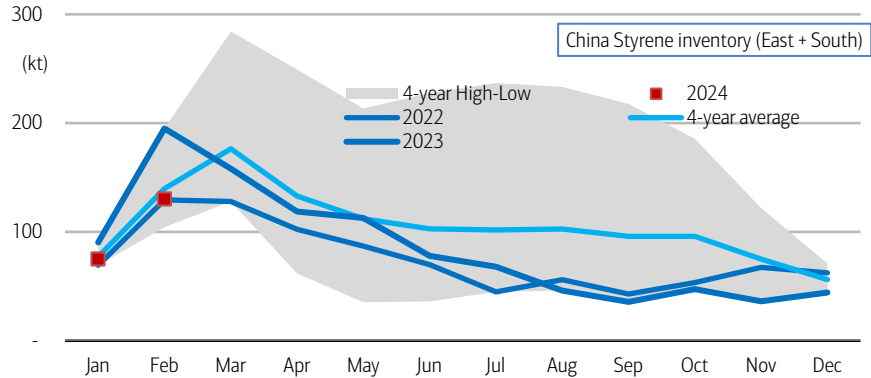


Source: Platts, BofA Global Research

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Exhibit 47: East and South China Styrene inventory

China SM inventory increased slightly MoM



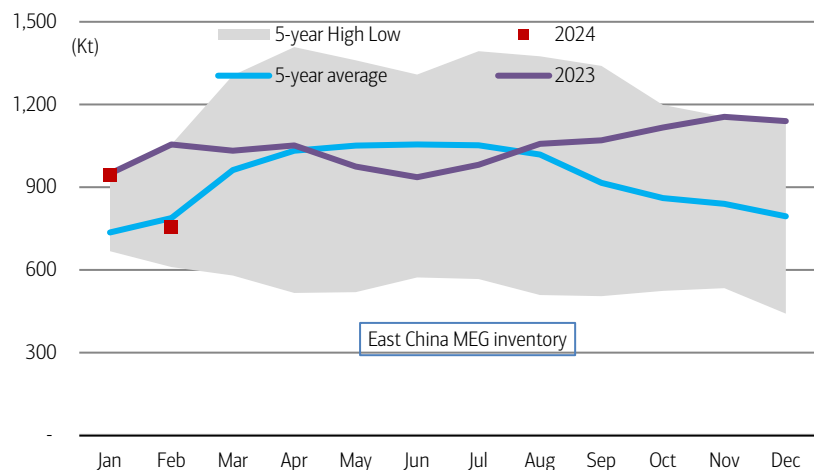
Source: Platts, BofA Global Research

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Exhibit 48: East China MEG inventory

East China MEG inventory decreased slightly MoM

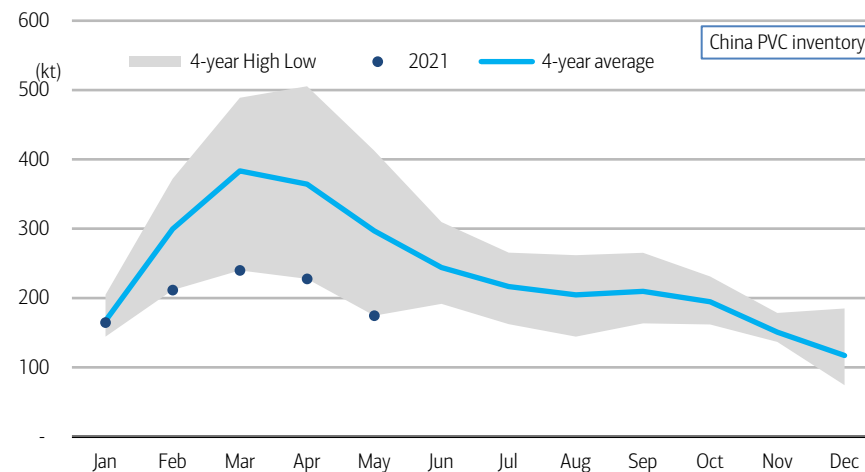


Source: OilChem, BofA Global Research

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Exhibit 49: China PVC Inventory

China PVC inventory is at the low-end of four-year range

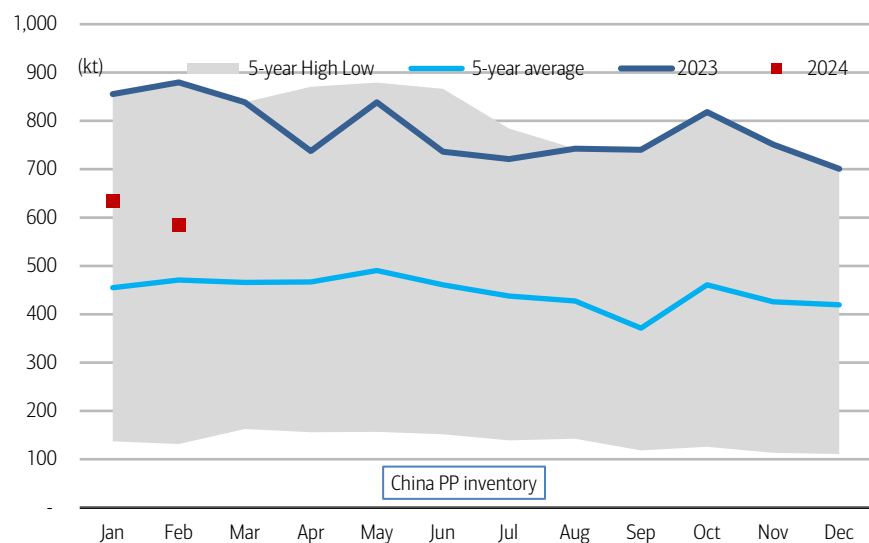


Source: OilChem, BofA Global Research

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Exhibit 50: China PP Inventory

China PP inventory decreased MoM

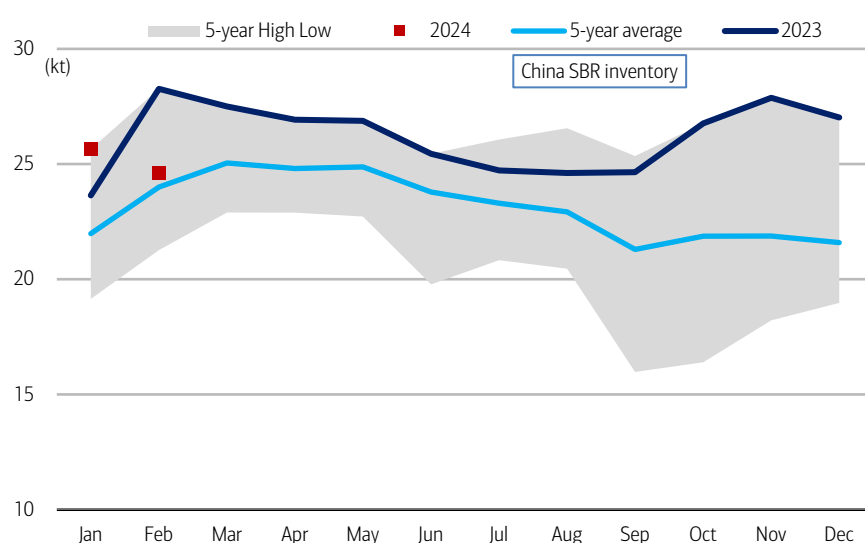


Source: OilChem, BofA Global Research

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Exhibit 51: China SBR Inventory

China SBR inventory decreased slightly MoM

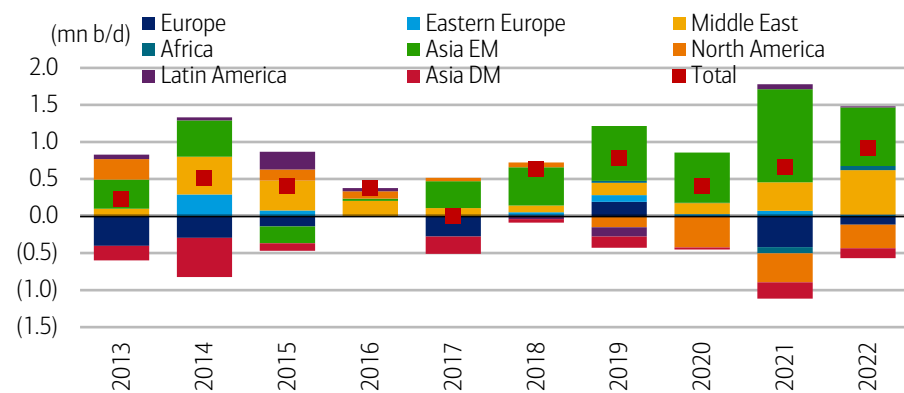


Source: OilChem, BofA Global Research

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Exhibit 52: Global Net CDU increase

Multi-year high refinery retirements in North America and EM Asia have cut net additions for 2021-23 to an annual average of 1.2mn b/d

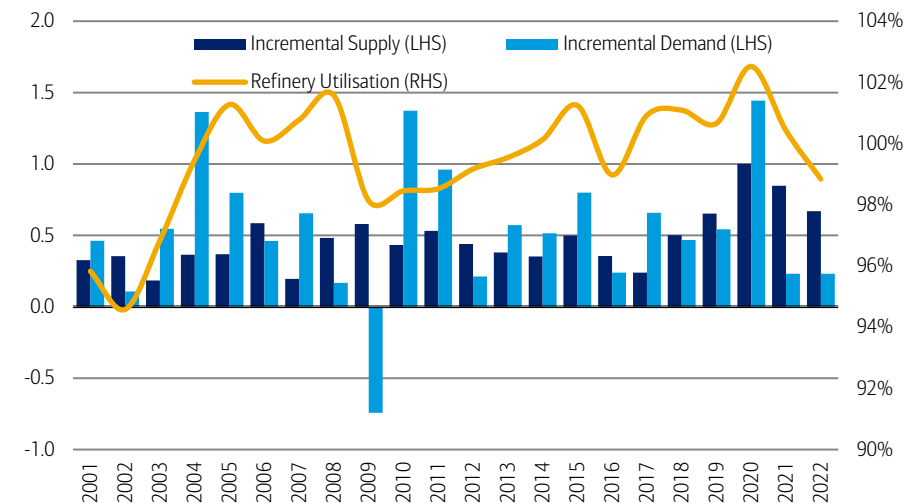


Source: BP, IEA, ICIS C1 Energy, Company data, BofA Global Research

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Exhibit 54: Middle distillate S&D growth and refinery utilization (mb/d)

Global refinery utilization rates expected to decline in 2021/22

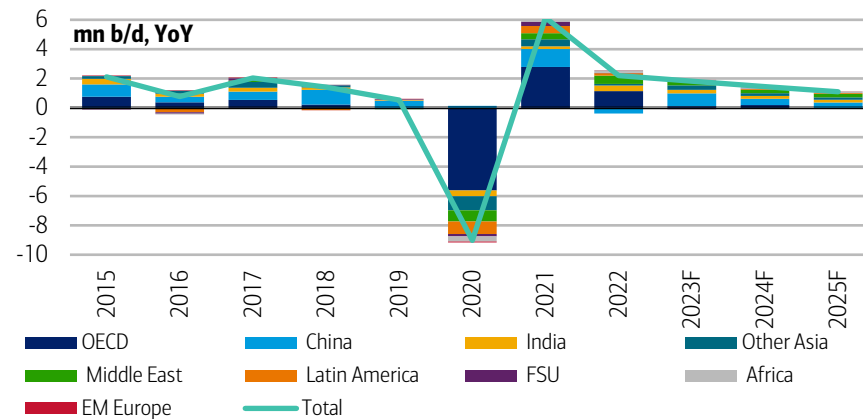


Source: CEIC, Petronet, BofA Global Research estimates

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Exhibit 53: Global oil demand growth

We expect emerging markets, led by China, to push global oil demand up 1.8mn b/d YoY in 2023

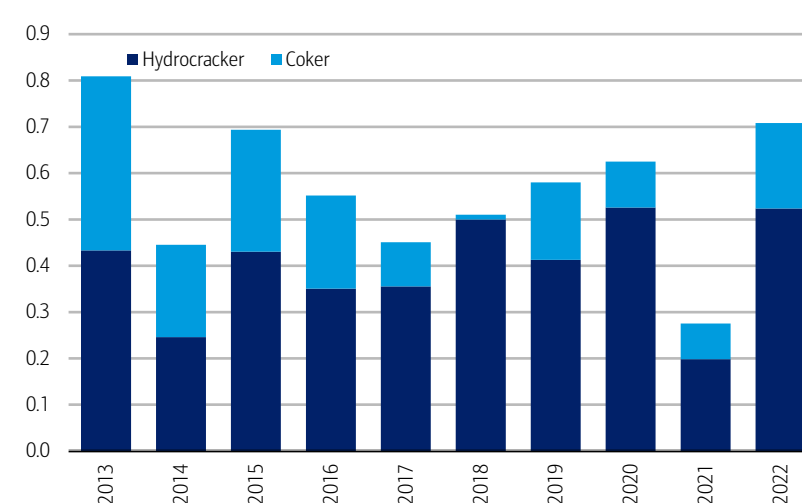


Source: IEA, BofA Global Research

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Exhibit 55: Net diesel geared refinery upgrading capacity growth globally (mb/d)

Net diesel capacity additions remain high

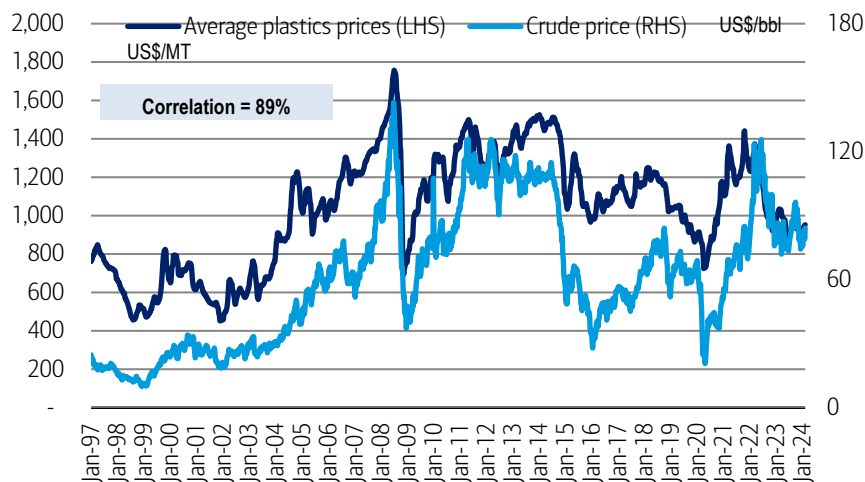


Source: CEIC, Petronet, BofA Global Research estimates

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Exhibit 56: Correlation between plastics prices and crude prices

Correlation between plastics prices and crude prices almost 90%

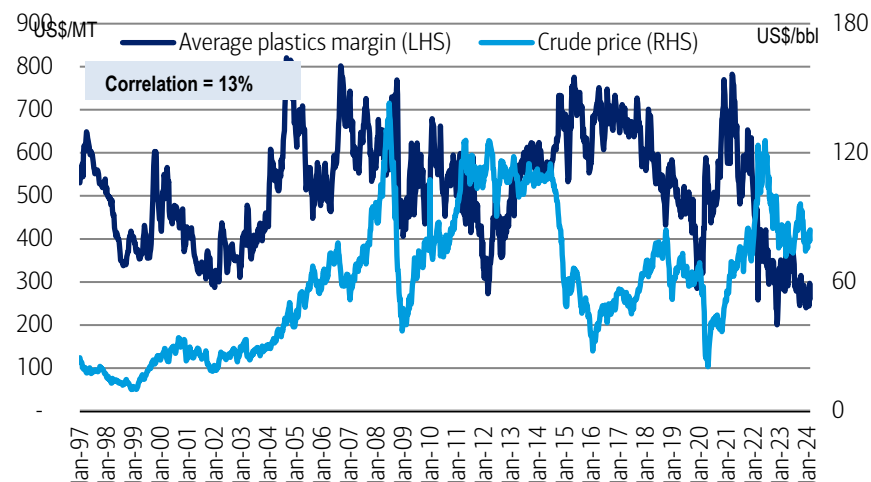


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 57: Correlation between plastics margins and crude prices

Correlation between plastics margins and crude prices remains relatively low

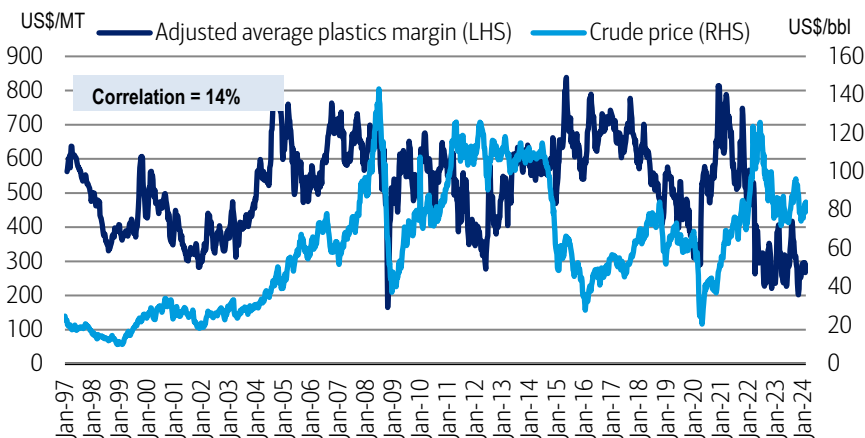


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 58: Correlation between plastics margins and crude prices

Correlation between plastics margins and crude prices remain low

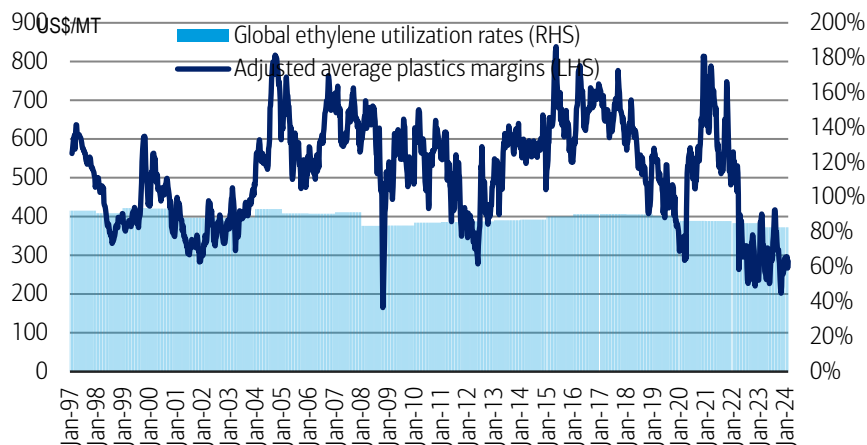


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 59: Correlation between plastics margins and Global ethylene utilizations

Correlation between plastics margins and Global ethylene utilizations remains low

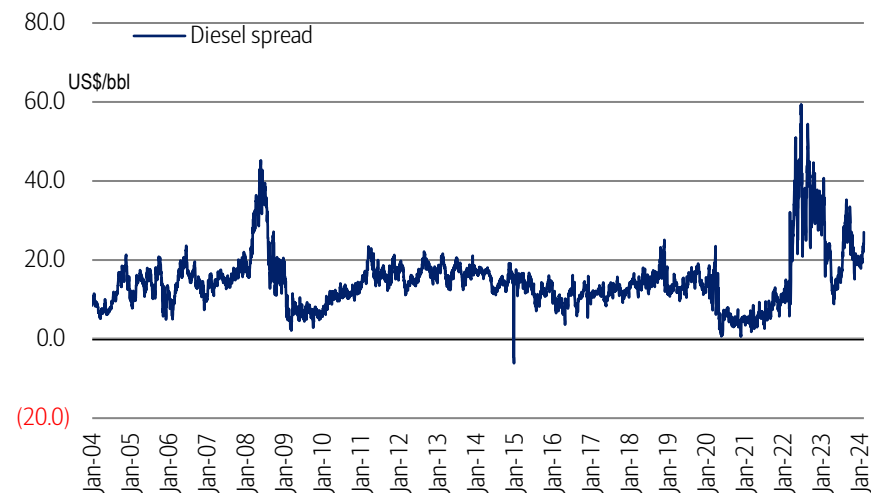


Source: Platts, Bloomberg, BofA Global Research

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Exhibit 60: Diesel spreads

Diesel spreads decreased YTD from 2023 levels

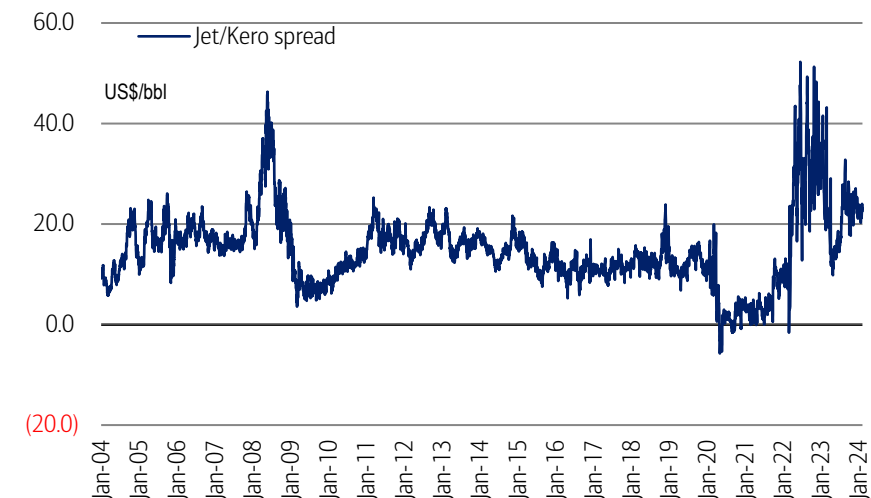


Source: Bloomberg, BofA Global Research

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Exhibit 61: Jet/Kero spread

Jet/kero spreads increased slightly YTD

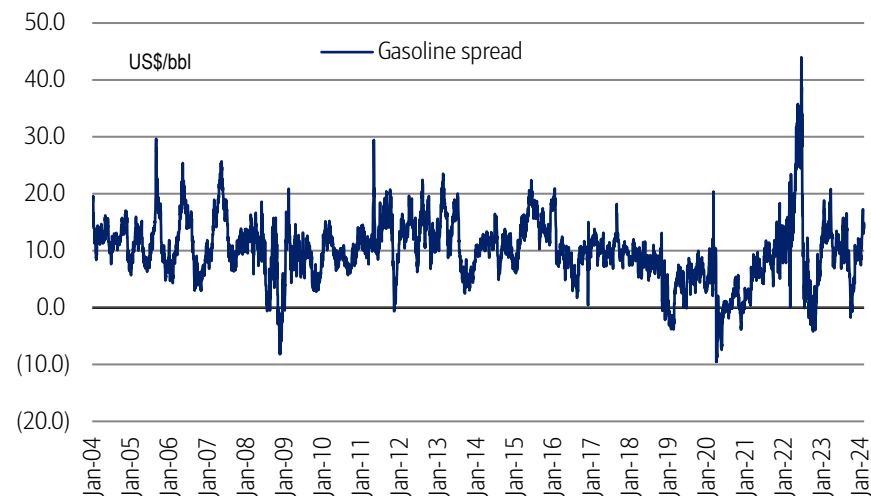


Source: Bloomberg, BofA Global Research

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Exhibit 62: Gasoline spread

Gasoline spreads increased slightly YTD

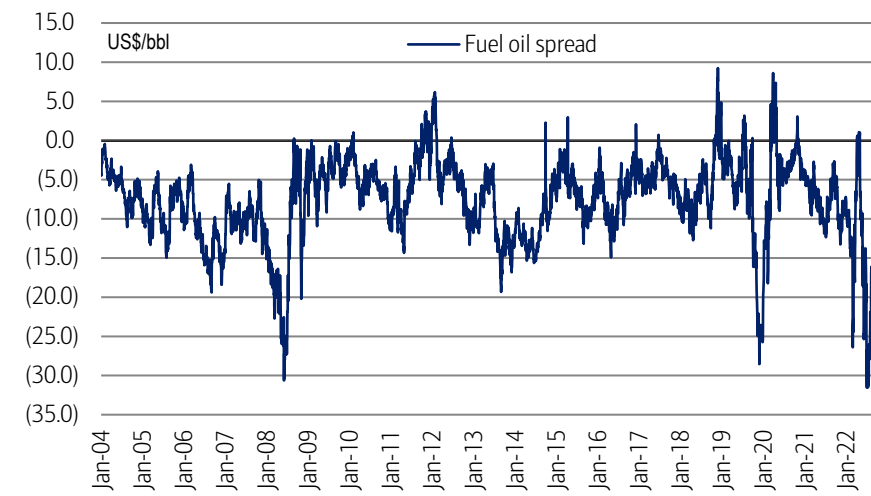


Source: Bloomberg, BofA Global Research

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Exhibit 63: Fuel Oil spread

Fuel oil spread increased YTD

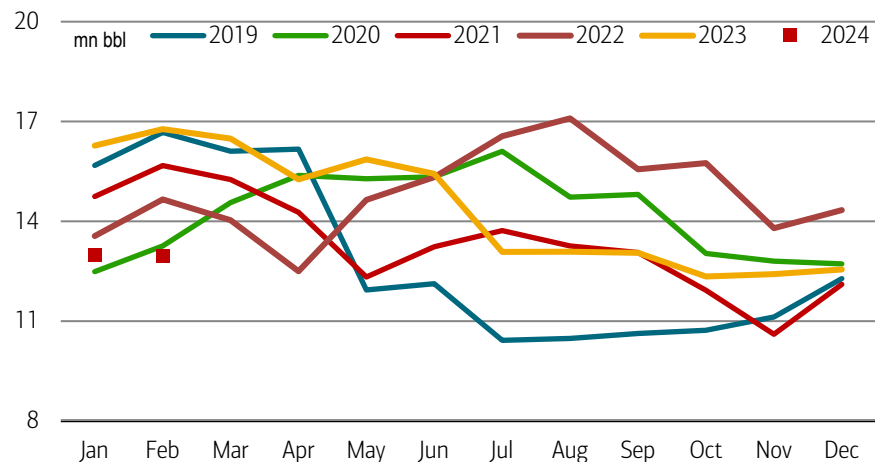


Source: Bloomberg, BofA Global Research

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Exhibit 64: Singapore- Light distillate stocks

Singapore- Light distillate stocks remained flat MoM

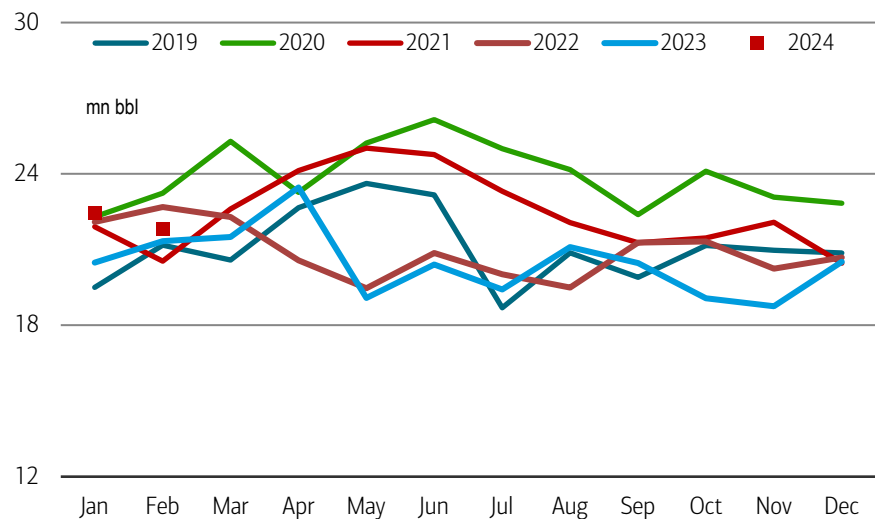


Source: IE Singapore, Bloomberg, BofA Global Research

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Exhibit 66: Singapore- Heavy distillate stocks

Singapore- Heavy distillate stocks decreased MoM

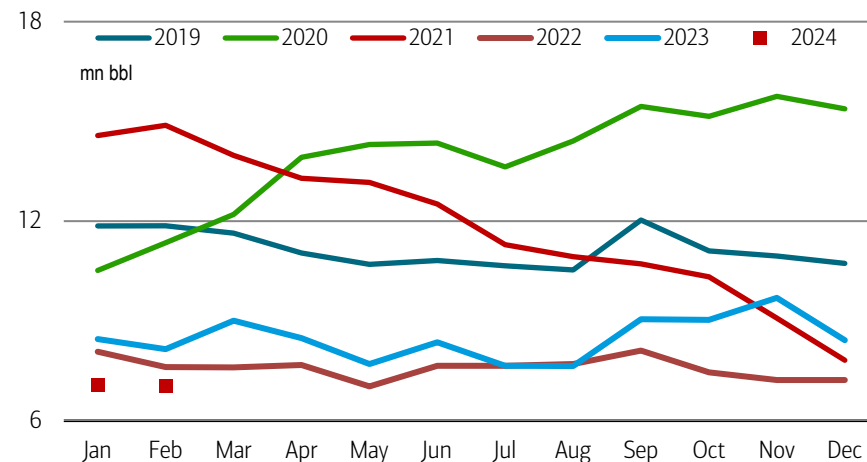


Source: IE Singapore, Bloomberg, BofA Global Research

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Exhibit 65: Singapore- Mid distillate stocks

Singapore- Mid distillate stock decreased slightly MoM

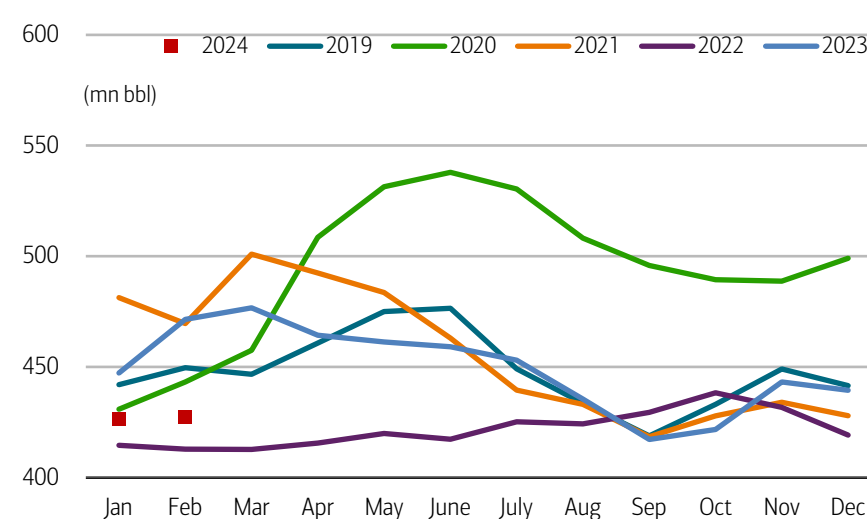


Source: IE Singapore, Bloomberg, BofA Global Research

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Exhibit 67: US crude oil stocks

US crude oil stocks increased MoM



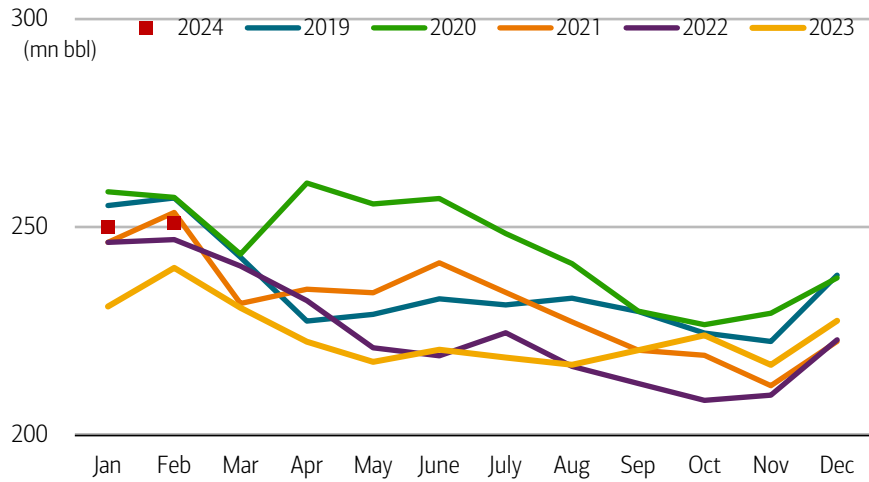
Source: US department of energy, BofA Global Research

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Exhibit 68: US gasoline stocks

US gasoline stocks increased MoM in Feb

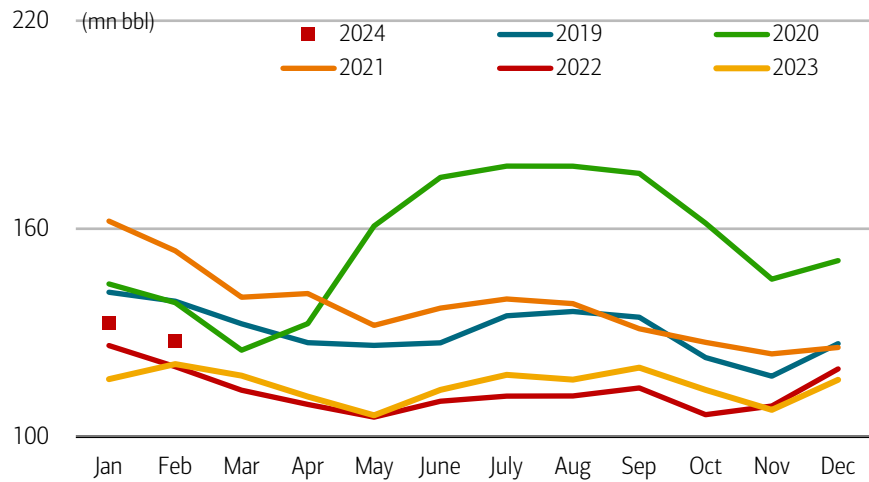


Source: US department of energy, BofA Global Research

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Exhibit 69: US distillate oil stocks

US distillate oil stocks decreased MoM in Feb



Source: US department of energy, BofA Global Research

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