

## Shipping - Global

## Shipping &amp; supply chain high frequency tracker #42

Industry Overview

## Tracking the high frequency shipping data

This report contains our favorite charts to track the shipping cycle. Container shipping reads remain negative with spot rates expected to still drift lower, but we are watching for signs of an inventory restock or industry discipline which could change the spot rate outlook. Dry bulk has seen a clear inflection in rates across both spot and time charter in the past few weeks given rebounding Chinese macro. And VLCC crude tanker rates are also back to profitable levels with an improving outlook for US exports.

**Container: Demand remains weak as rates drift lower**

We see no signs yet of an inventory restock with US container imports down -30% YoY and tracking 6% below 2019 levels for the first few weeks of February 2023. Also discipline remains elusive with idle rates only at 3% and spot rates are continuing to drift lower with limited pricing power to support rate hikes for now. Transpacific contracting is still in early days, but we think expectations of contracts being signed above spot might be overly optimistic. Lastly ILWU negotiations for US west coast workers appears to be nearing a conclusion (as widely reported in the media) which could prompt customers to shift demand back to the US west coast.

**Tanker: VLCC markets seeing broad based firming**

VLCC rates have seen a broad firming in recent weeks with VLCC spot rates up to US\$50k per day and time charter and forward curves suggesting rates can hold above US\$45k per day for the rest of this year. The US export outlook has brightened with strategic reserve releases in 2Q23, while US production growing ahead of domestic consumption is likely to support even more crude exports into 2023.

**Bulker: China macro driving a rate inflection**

Recovering China macro appears to be driving an inflection in dry bulk markets. Dry bulk spot rates have firmed in the past week with stronger exports seen out of Australia and Indonesia. And we think it is more than seasonality driving this recovery with one year time charter rates also moving off the bottom across all vessel types in the past weeks.

02 March 2023

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## Abbreviations

VLCC: Very Large Crude Carrier

ILWU: International Longshore and  
Warehouse Union

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**Refer to important disclosures on page 26 to 28.**

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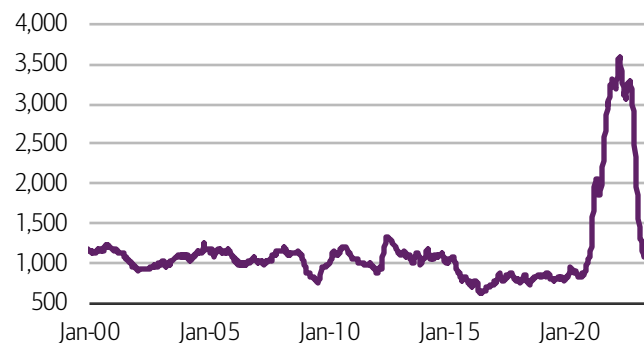
Timestamp: 02 March 2023 04:05AM EST

# Container shipping

## Blended freight rates

### Exhibit 1: China Containerized Freight Index, 2000-23

CCFI down to 1,078 vs P&L breakeven around 1,000



Source: Shanghai Shipping Exchange

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### Exhibit 2: CCFI quarterly average, 2021-23

CCFI down -67% QoQ so far in 1Q23

CCFI	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23
CCFI	3,266	3,444	3,157	2,950	1,615	1,148
CCFI Europe	5,275	5,526	5,060	4,738	2,497	1,509
CCFI USWC	2,318	2,596	2,502	2,331	1,079	829
CCFI USEC	2,527	2,682	2,796	2,844	1,746	1,231

#### % YoY

CCFI	161%	75%	46%	-1%	-51%	-67%
CCFI Europe	259%	77%	45%	-7%	-53%	-73%
CCFI USWC	102%	95%	69%	13%	-53%	-68%
CCFI USEC	98%	79%	59%	22%	-31%	-54%

#### % QoQ

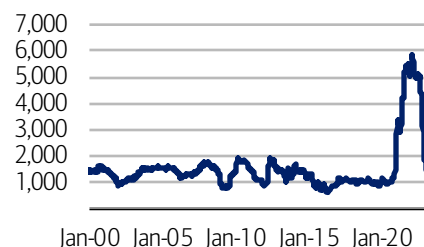
CCFI	9%	5%	-8%	-7%	-45%	-29%
CCFI Europe	3%	5%	-8%	-6%	-47%	-40%
CCFI USWC	12%	12%	-4%	-7%	-54%	-23%
CCFI USEC	8%	6%	4%	2%	-39%	-29%

Source: Shanghai Shipping Exchange

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### Exhibit 3: CCFI Europe, 2000-23

CCFI Europe at 1,395

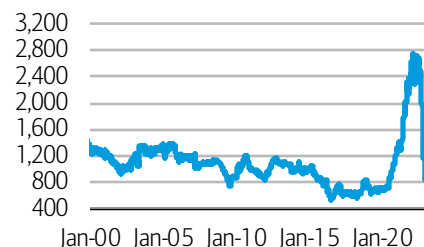


Source: Shanghai Shipping Exchange

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### Exhibit 4: CCFI, US west coast, 2000-23

CCFI US west coast at 780

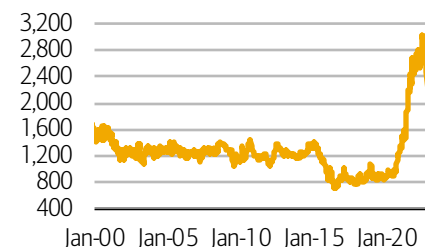


Source: Shanghai Shipping Exchange

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### Exhibit 5: CCFI US east coast, 2000-23

CCFI east coast tracking at 1,118

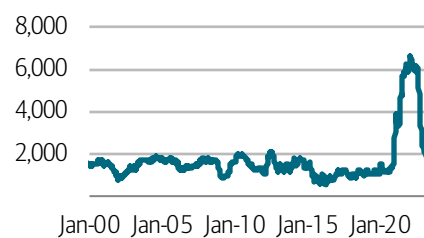


Source: Shanghai Shipping Exchange

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### Exhibit 6: CCFI Mediterranean, 2000-23

CCFI Med tracking at 1,863

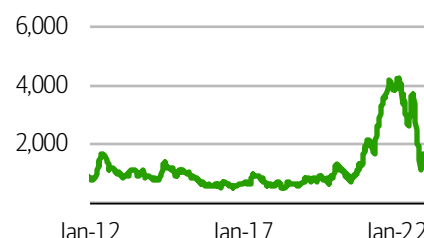


Source: Shanghai Shipping Exchange

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### Exhibit 7: CCFI Middle East, 2000-23

CCFI Middle East at 1,116

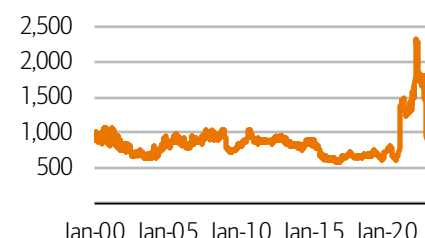


Source: Shanghai Shipping Exchange

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### Exhibit 8: CCFI Singapore, 2000-23

CCFI Singapore tracking at 635



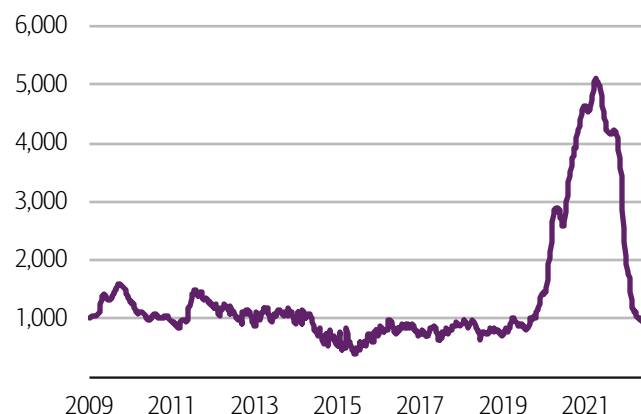
Source: Shanghai Shipping Exchange

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## Spot freight rates

### Exhibit 9: Shanghai Containerized Freight Index, 2009-23

SCFI down to 947 vs P&L breakeven of around 1,000



Source: Shanghai Shipping Exchange

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### Exhibit 10: SCFI quarterly average, 2021-23

SCFI down -79% QoQ so far in 1Q23

SCFI	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23
SCFI	4,698	4,851	4,211	3,279	1,375	1,006
SCFI Europe	7,636	7,435	5,959	4,656	1,490	966
SCFI USWC	6,835	8,032	7,773	5,278	1,627	1,337
SCFI USEC	10,758	11,008	10,409	8,557	4,126	2,657
% YoY						
SCFI	142%	74%	29%	-24%	-71%	-79%
SCFI Europe	279%	81%	15%	-36%	-80%	-87%
SCFI USWC	75%	100%	68%	-9%	-76%	-83%
SCFI USEC	129%	130%	47%	-20%	-62%	-76%
% QoQ						
SCFI	9%	3%	-13%	-22%	-58%	-27%
SCFI Europe	5%	-3%	-20%	-22%	-68%	-35%
SCFI USWC	18%	18%	-3%	-32%	-69%	-18%
SCFI USEC	1%	2%	-5%	-18%	-52%	-36%

Source: Shanghai Shipping Exchange

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### Exhibit 11: SCFI: Asia-Europe, 2009-23 (USD/TEU)

SCFI Europe at US\$882 /TEU

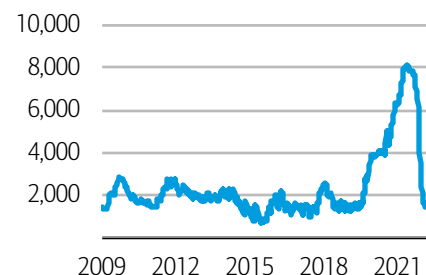


Source: Shanghai Shipping Exchange

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### Exhibit 12: SCFI: Asia to US west coast, 2009-22 (USD/FEU)

SCFI USWC at US\$1,234 /FEU

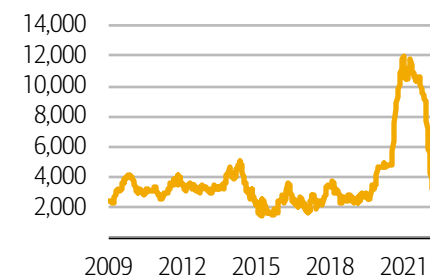


Source: Shanghai Shipping Exchange

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### Exhibit 13: SCFI: Asia to US east coast, 2009-22 (USD/FEU)

SCFI USEC at US\$2,391 /FEU

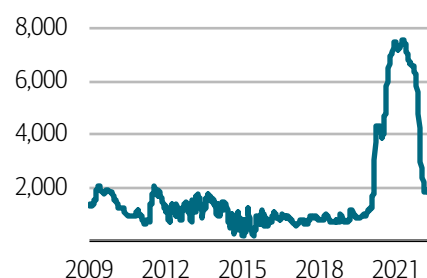


Source: Shanghai Shipping Exchange

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### Exhibit 14: Asia-Mediterranean, 2009-22 (USD/TEU)

SCFI Med at US\$1,605/TEU

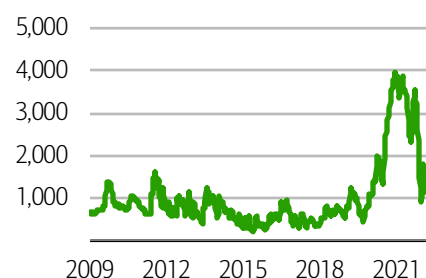


Source: Shanghai Shipping Exchange

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### Exhibit 15: SCFI: Asia-Middle East, 2009-22 (USD/TEU)

SCFI Middle East US\$1,029/TEU

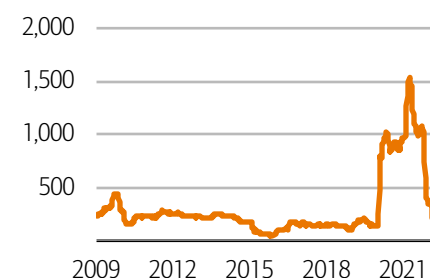


Source: Shanghai Shipping Exchange

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### Exhibit 16 SCFI: Asia-Singapore, 2009-22 (USD/TEU)

SCFI Singapore at US\$155/TEU



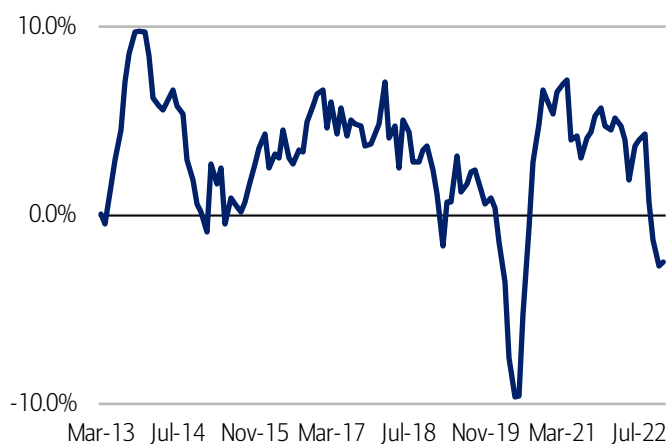
Source: Shanghai Shipping Exchange

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## World trade trends

**Exhibit 17: Global container volume growth (3MA YoY %) #**

World trade volume below 2019 levels in December 2022

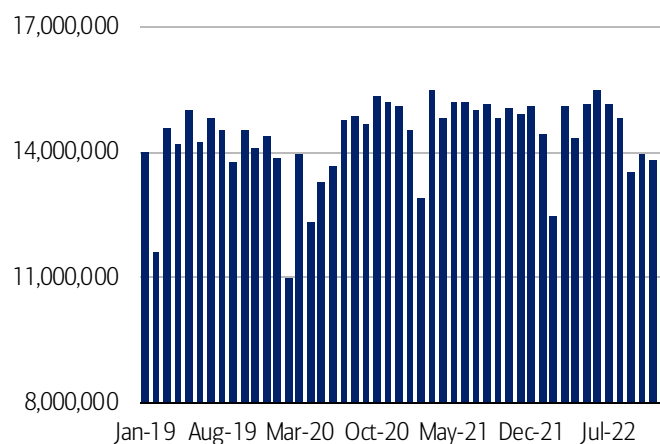


Source: CTS, BofA Global Research estimates, # 2021 data compared to 2019

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**Exhibit 18: Global monthly container volumes (TEU), 2019-22**

World trade volumes up a little MoM in December 2022

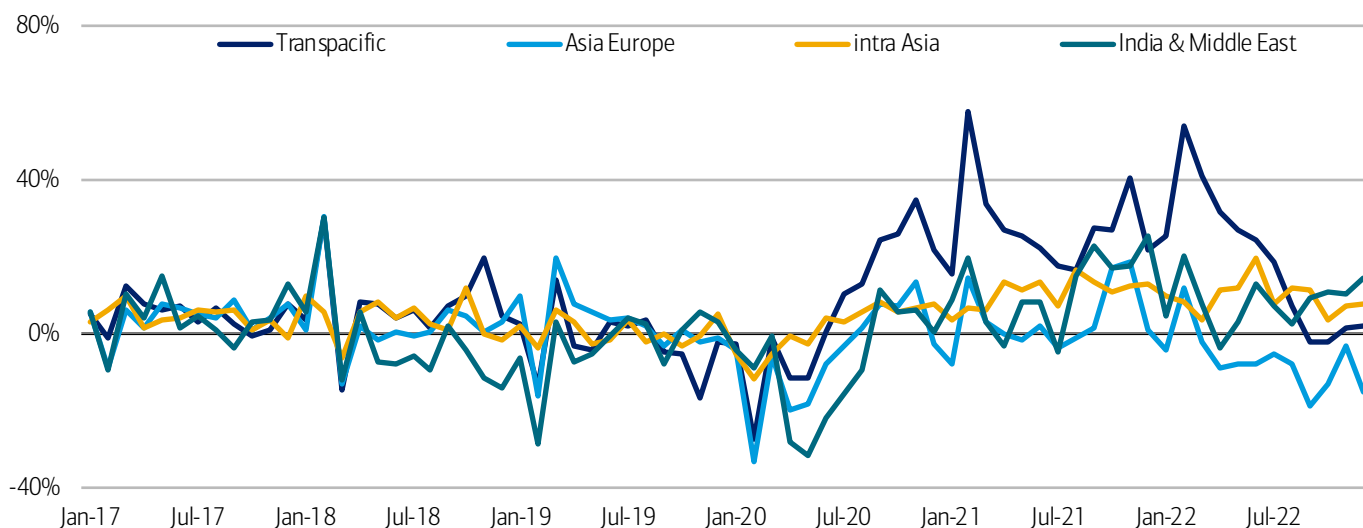


Source: CTS, BofA Global Research estimates

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**Exhibit 19: Container volumes by route (% YoY), 2017-22 #**

Transpacific volumes only just above 2019 levels now



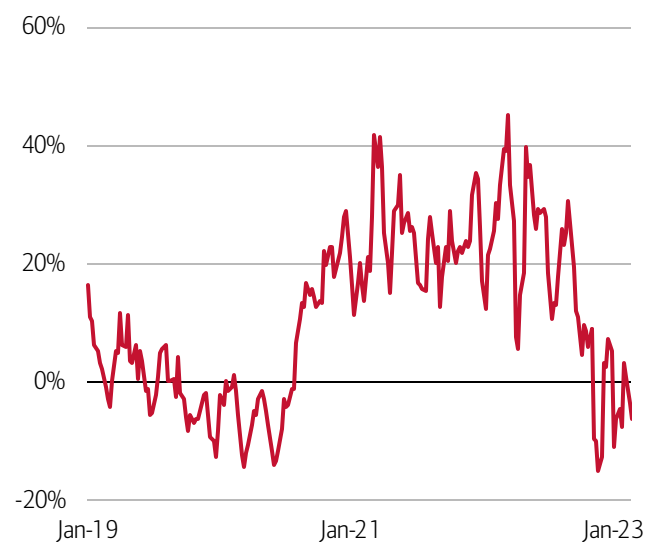
Source: CTS # 2021-22 relative to 2019 levels

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## US high frequency container volumes

### Exhibit 20: US weekly container imports (% YoY) #

US weekly container imports below 2019 levels in February 2023

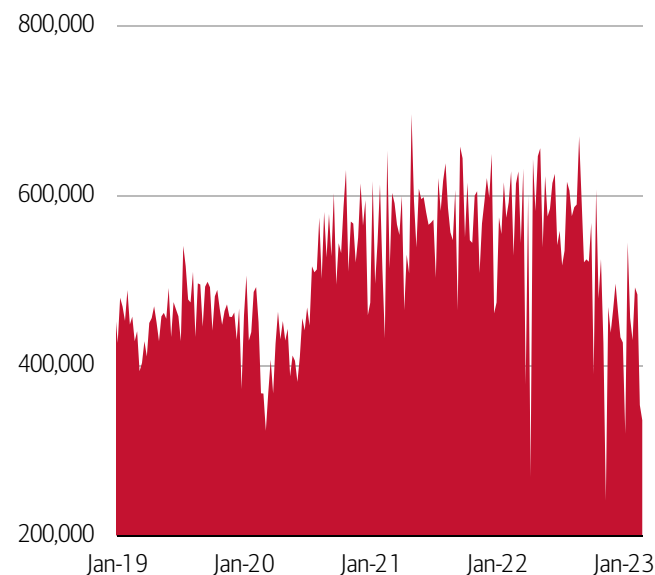


Source: PIERs

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### Exhibit 21: US weekly container imports (TEU), 2019-22

US weekly container imports down -30% YoY so far in February 2023



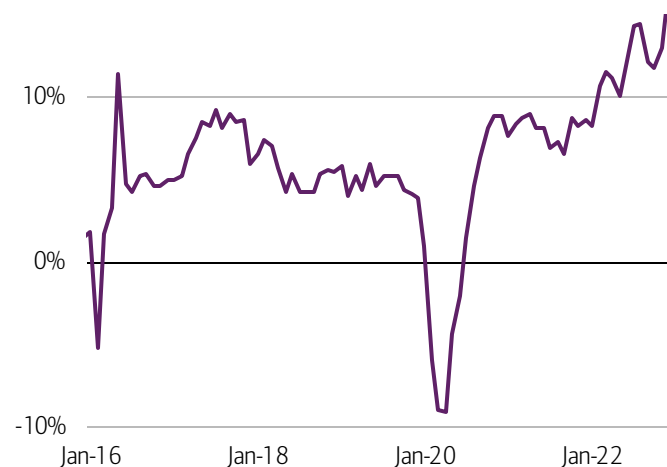
Source: PIERs

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## Chinese port container volumes

### Exhibit 22: Chinese sea port volume growth (3MA, % YoY) #

Chinese Dec container volumes +13% vs 2019 levels and +7% YoY

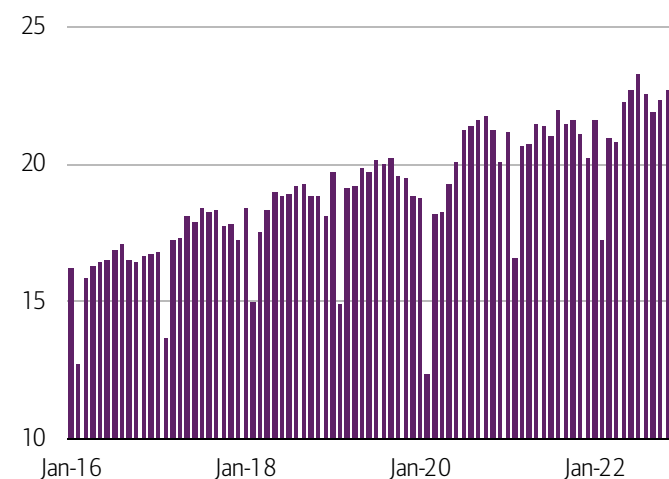


Source: Bloomberg, # 2021 data relative to 2019

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### Exhibit 23: Chinese sea port volumes (mn TEU), 2016-22

Chinese port volumes up +1.5% MoM in December 2022

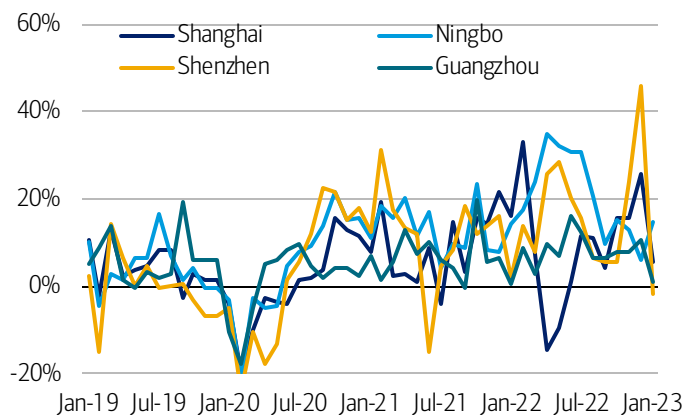


Source: Bloomberg

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**Exhibit 24: Chinese monthly port data (% YoY), 2019-23**

Strong Shenzhen January monthly port numbers

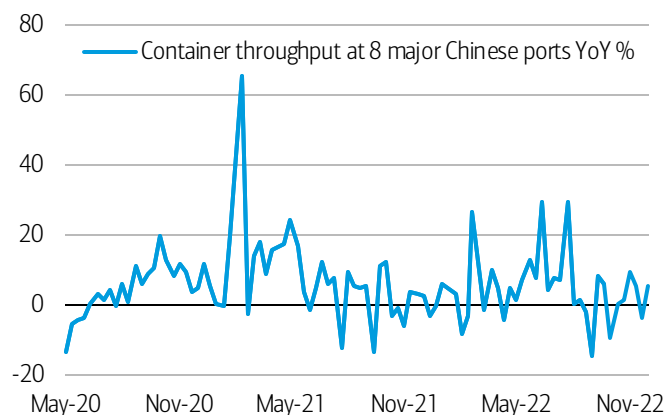


Source: Company reports

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**Exhibit 27: China import/export port volumes (% YoY), 2020-22**

Chinese port volumes up YoY in December 2022

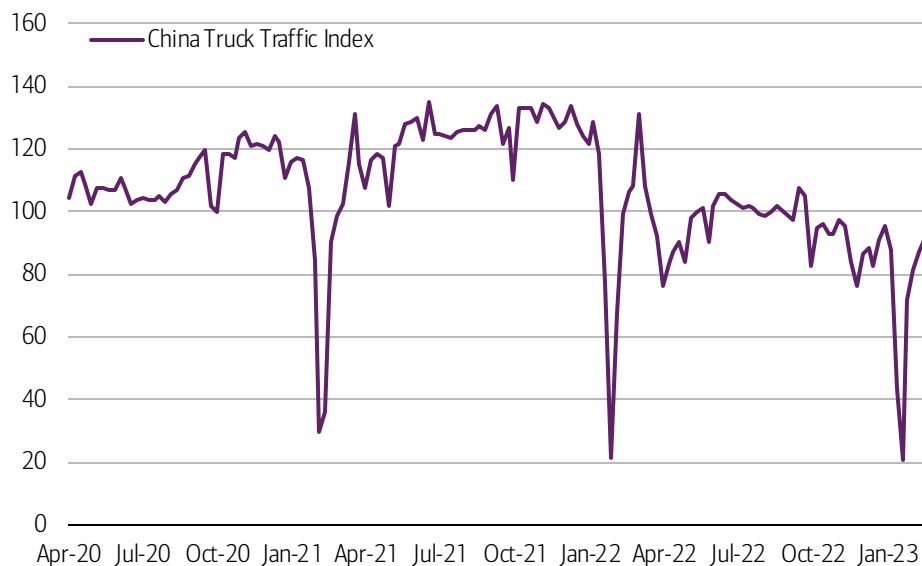


Source: China Ports Association

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**Chinese trucking traffic****Exhibit 26: China truck traffic index, 2020-23**

China trucking demand rebound in February



Source: G7

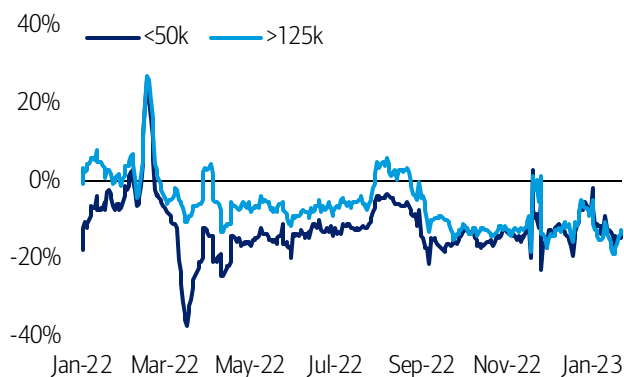
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## US consumer reads

For more on BAC US aggregated credit and debit card spending data (BAC US card data), and a detailed explanation of the methodology, disclaimers and limitations in connection with such data see our note: [BofA on USA: White-hot January on 13 February 2023](#).

### Exhibit 27: Furniture spending per HH by income group (y/y % change of the 7-day ma of spending levels) as per BAC US card data

Furniture spending growth has been largely negative on a y/y basis for both income groups since late Aug

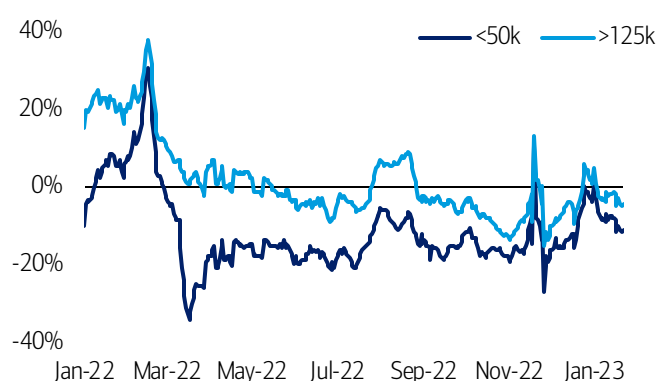


Source: BAC internal data

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### Exhibit 28: Clothing spending per HH by income groups (y/y % change of the 7-day ma of spending levels) as per BAC US card data

Y/y clothing spending growth continues to be negative for both lower and upper income HHs



Source: BAC internal data

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### Exhibit 31: Aggregated monthly card spending per HH by major category in 2022 (%m/m, SA) as per BAC US card data

Spending growth in January was broad based

	Jan-23	Dec-22	Nov-22	Oct-22	Sep-22	Aug-22
Gas	0.9%	-4.2%	-2.9%	2.4%	0.8%	-5.7%
Furniture	1.1%	-6.1%	2.6%	-1.8%	-2.4%	0.1%
Home improvement	-0.3%	-0.8%	-1.7%	0.9%	-1.9%	1.1%
Clothing	4.4%	-5.6%	2.5%	-0.2%	-1.0%	0.6%
Grocery	-0.2%	-0.9%	0.2%	-0.1%	0.5%	0.7%
General Merchandise	5.2%	-2.1%	-1.0%	0.2%	-0.9%	1.0%
Department Store	0.9%	-1.4%	-1.6%	1.0%	-0.5%	-2.8%
Restaurants	1.8%	0.6%	-0.7%	1.6%	0.0%	2.0%
Lodging	-1.7%	2.5%	1.8%	-1.0%	0.4%	-0.9%
Airlines	3.5%	0.6%	-1.0%	1.7%	2.1%	-0.3%
Total online retail (card not present)	0.2%	-1.3%	-2.2%	1.4%	-0.1%	-0.5%

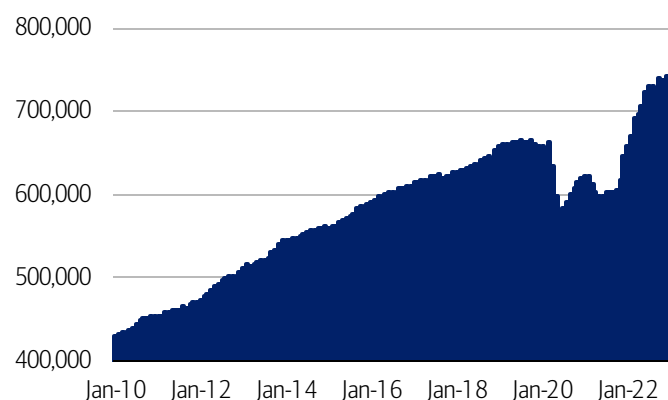
Source: BAC internal data. Card not present is largely online but could include purchases made over the phone

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## US retail inventory levels

### Exhibit 30: US retail inventories (US\$mn), 2010-22

Retail inventories are above pre COVID levels

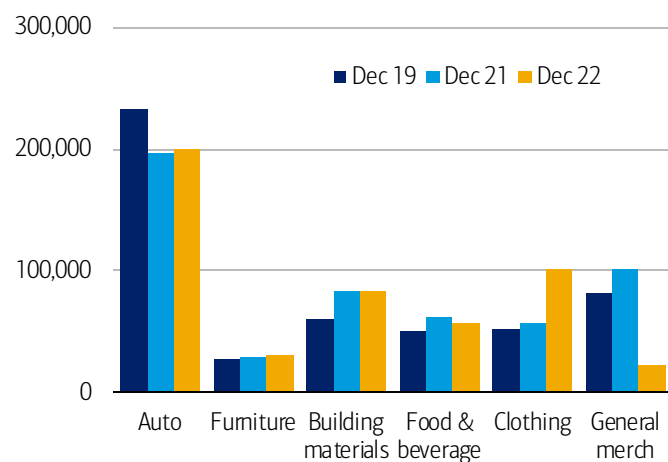


Source: US Census Bureau

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### Exhibit 32: US retail inventories (US\$mn), 2019-22

Auto inventories remain below pre-COVID levels



Source: US Census Bureau

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### Exhibit 34: Clothing – adjusted inventory to sales, 2018-22

Clothing adjusted inventory to sales at 2.19x



Source: US Census Bureau

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### Exhibit 31: US retail inventory to sales ratio, 2010-22

Retail adjusted inventories to sales at 1.24x below averages of 1.4x

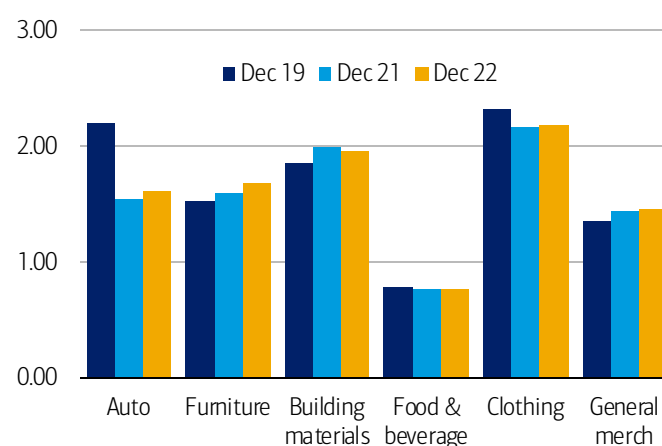


Source: US Census Bureau

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### Exhibit 33: US retail inventory to sales (x), 2019-22

Auto and clothing inventory to sales are below pre-COVID

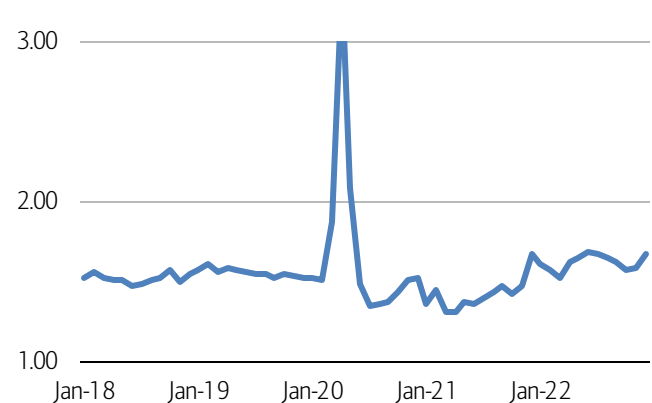


Source: US Census Bureau

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### Exhibit 35: Furniture – adjusted inventory to sales, 2018-22

Furniture adjusted inventory to sales at 1.68x



Source: US Census Bureau

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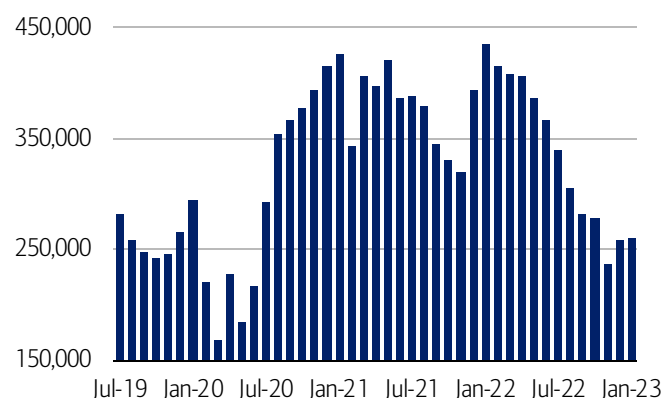
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## US container imports by category

### Exhibit 36: US furniture monthly imports (TEU), 2019-23

US furniture imports around 260k TEU/month in January

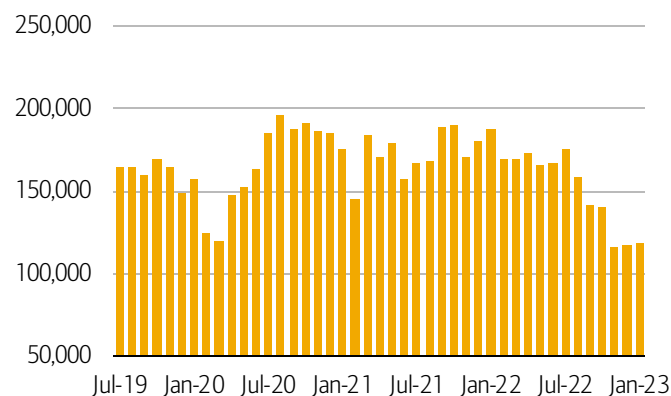


Source: PIERs

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### Exhibit 38: US electronic monthly imports (TEU), 2019-23

US electronics imports trending at 118k TEU/month in January

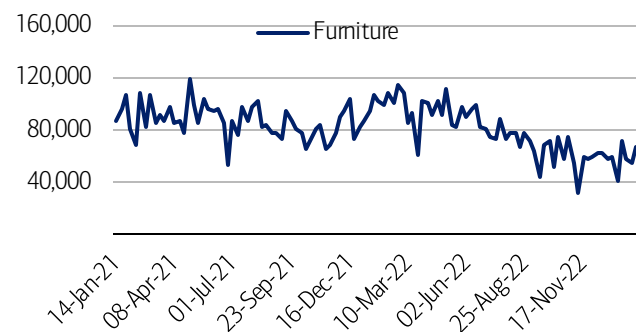


Source: PIERs

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### Exhibit 40: US weekly furniture imports (TEU), 2021-23

Weekly furniture imports stabilizing in early February 2023

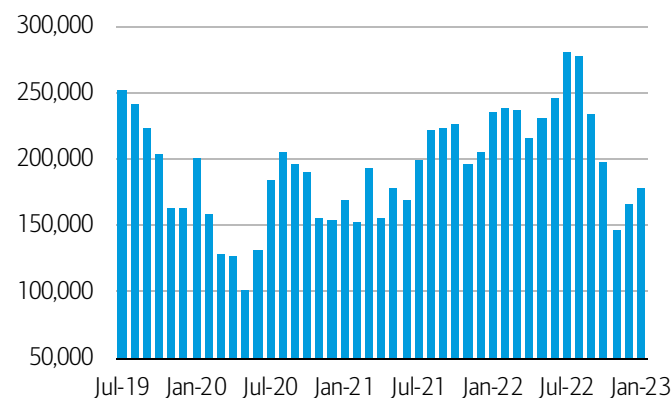


Source: PIERs

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### Exhibit 37: US apparel & footwear imports (TEU), 2019-23

US apparel & footwear imports at 177k TEU in January

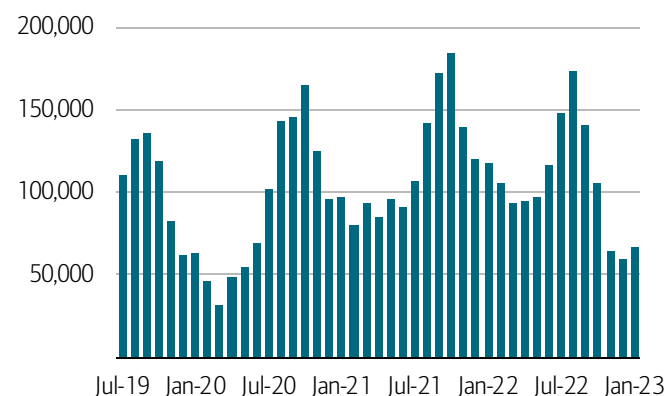


Source: PIERs

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### Exhibit 39: US toy & leisure monthly imports (TEU), 2019-23

US toy & leisure imports up to 67k TEU in January

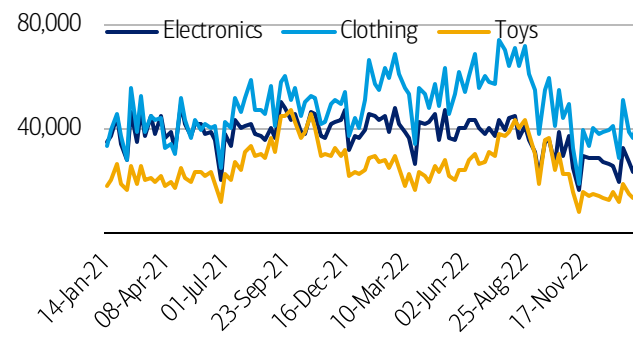


Source: PIERs

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### Exhibit 41: US weekly imports (electronics, clothing, toys), 2021-23

Toy and clothes imports stabilizing in early February 2023



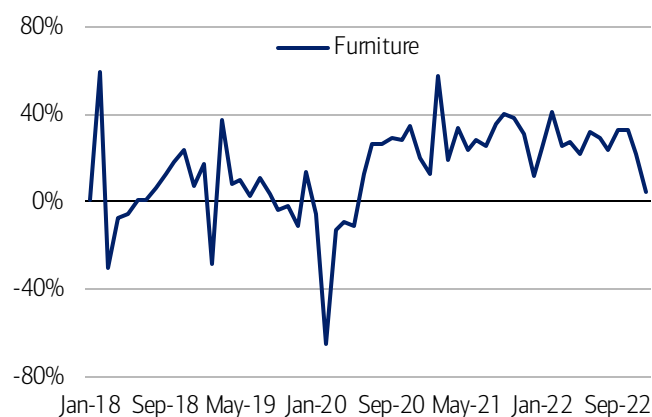
Source: PIERs

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## Chinese exports by category

**Exhibit 42: Chinese furniture exports - % YoY growth #**

Dec 2022 furniture exports 5% above 2019 levels

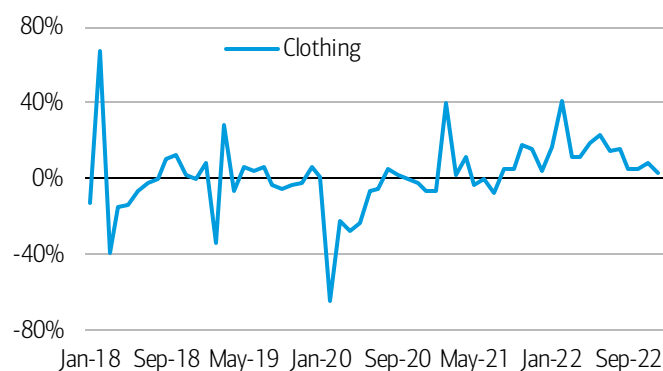


**Source:** WIND # 2021-22 data relative to 2019 baseline

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**Exhibit 44: Chinese clothing exports, % YoY growth #**

Dec 2022 clothing exports were 3% above 2019

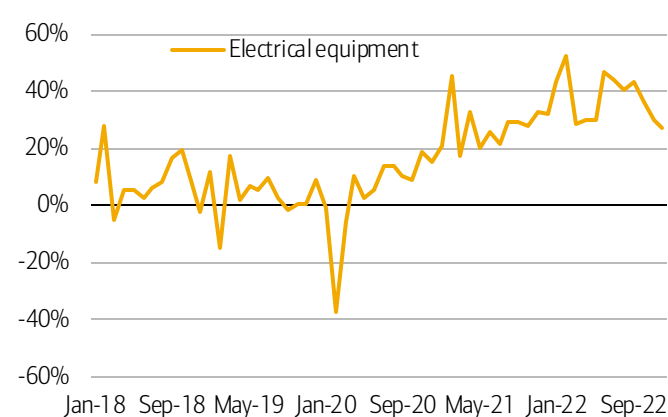


**Source:** WIND # 2021-22 data relative to 2019 baseline

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**Exhibit 43: Chinese electronic exports, % YoY growth #**

Dec 2022 electronic exports 27% above 2019

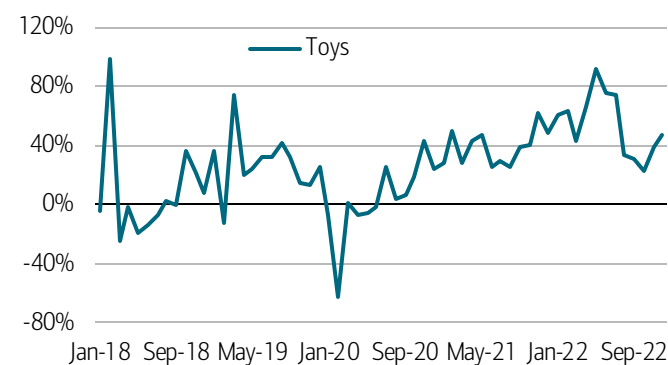


**Source:** WIND # 2021-22 data relative to 2019 baseline

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**Exhibit 45: Chinese toy exports, % YoY growth #**

Dec 2022 toy exports 47% above 2019



**Source:** WIND # 2021-22 data relative to 2019 baseline

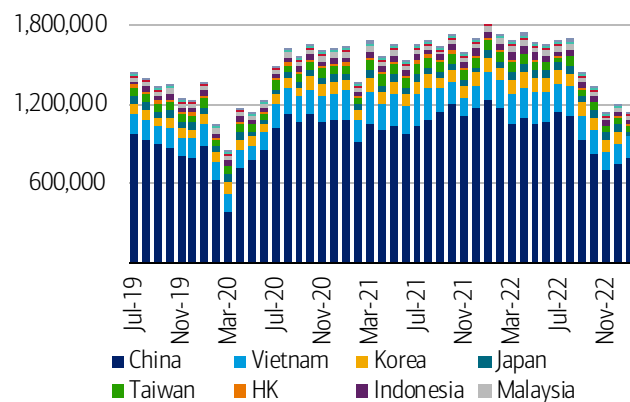
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## Container trade flow by geography

Below shows US container imports by Asian export destination, as well as Chinese container exports by destination.

**Exhibit 46: US container imports by Asian exporter, 2019-23**

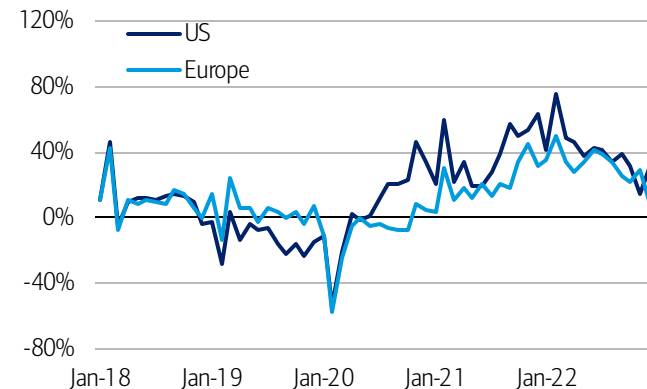
China at 65% of US imports from Asia in January 2023



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**Exhibit 47: Chinese exports by destination, 2018-22**

China-US exports remain at +31% above 2019 levels in dollar terms



**Source:** Wind

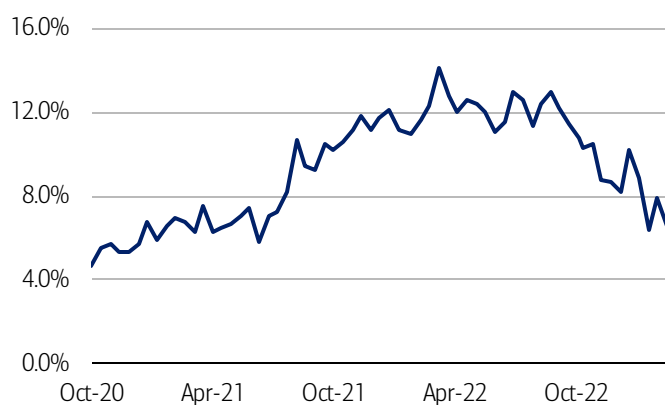
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## Port congestion

Below charts show port congestion measures globally:

### Exhibit 48: Port congestion - % of fleet, 2020-23

Port congestion back to 6.6% of fleet

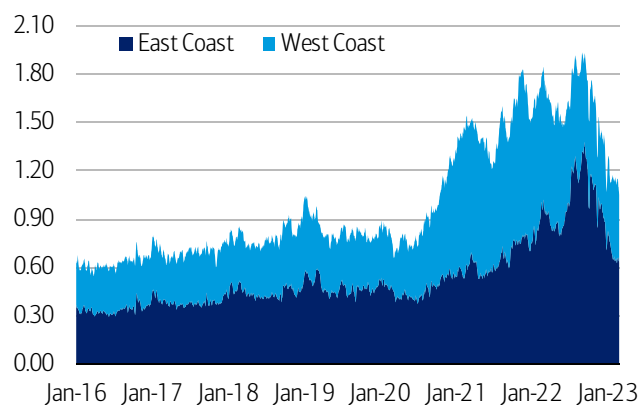


Source: Linerlytica

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### Exhibit 50: Vessel capacity in port (berth & anchor)– USA (mn TEU)

US congestion easing fading on softer demand

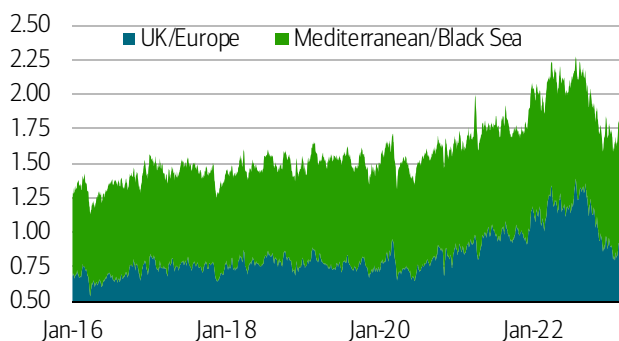


Source: Clarksons

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### Exhibit 52: Vessel capacity at berth & anchor - Europe & Med (mn TEU)

Europe congestion is down from peaks

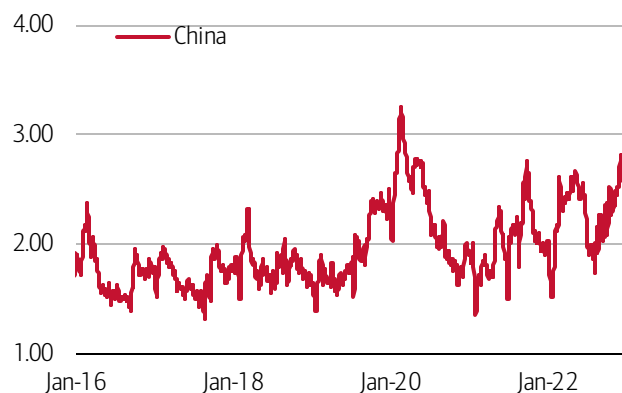


Source: Clarksons

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### Exhibit 49: Vessel capacity in berth & anchor – China (mn TEU)

China congestion easing, but building congestion in eastern China

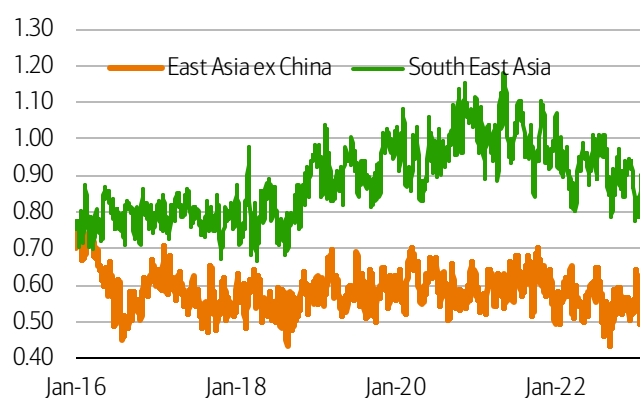


Source: Clarksons

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### Exhibit 51: Vessel capacity at berth & anchor –SE Asia (mn TEU)

ASEAN port congestion picking up again

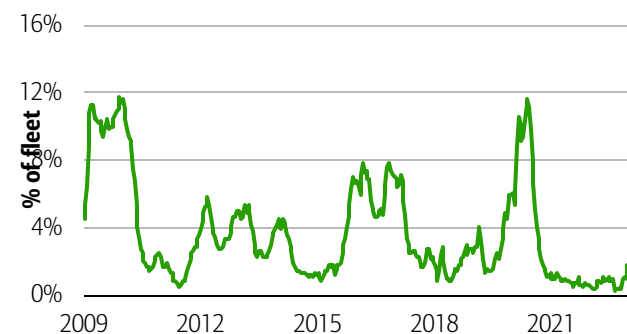


Source: Clarksons

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### Exhibit 53: Container vessel idling rate (%),

Container vessel idling rate up to 2.2%



Source: Alphaliner, Limerlytica

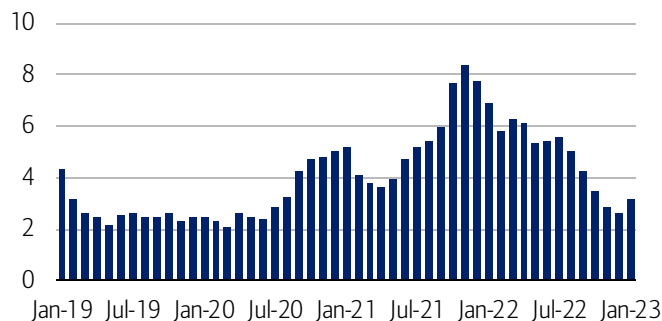
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## US inland congestion trackers

Below shows how quickly container boxes move from the terminal yard to inland transport at Port of LA/Long Beach. Overall inland congestion appears to be easing including on the Midwest US rail networks:

### Exhibit 54: US West Coast ports – average box dwell time (days)

Boxes are waiting at terminal yards for 3.1 days before pickup

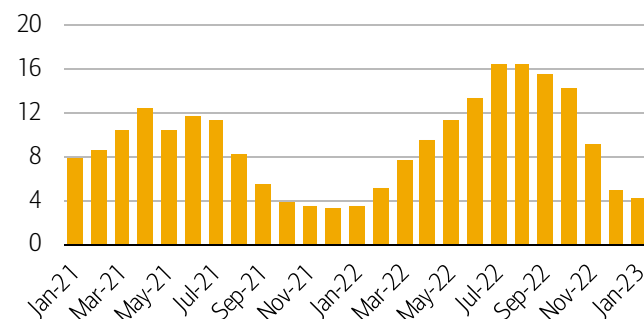


Source: PMSA

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### Exhibit 55: US West Coast ports – average rail box dwell time (days)

Boxes are waiting at terminal yards for 4.3 days before rail pickup up



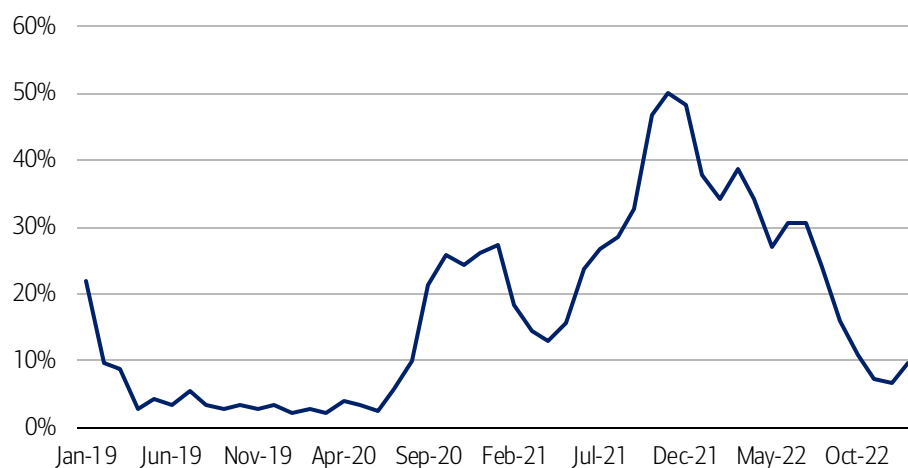
Source: PMSA

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Below shows % of boxes waiting for more than 5 days showing congestion has sharply eased in recent months:

### Exhibit 56: US west coast ports - % of boxes waiting more than 5 days

Only 9.8% of boxes are waiting more than 5 days for pickup now



Source: PMSA

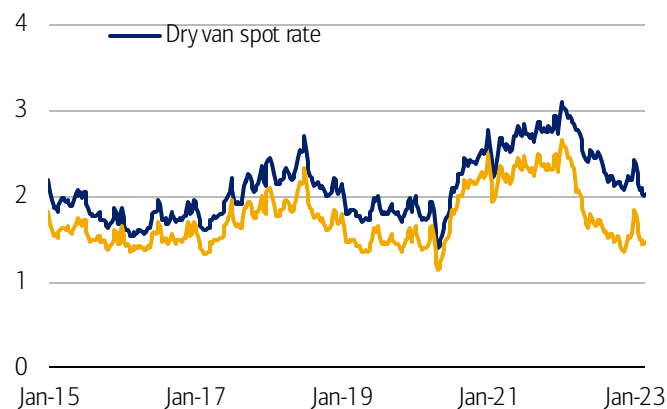
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## US trucking spot rates

Below shows US spot trucking rates as well as number of employees employed in the US trucking industry per St Louis Fed data:

### Exhibit 57: Spot trucking rates (US\$/mile), 2015-23

Spot trucking rates dipping again into February



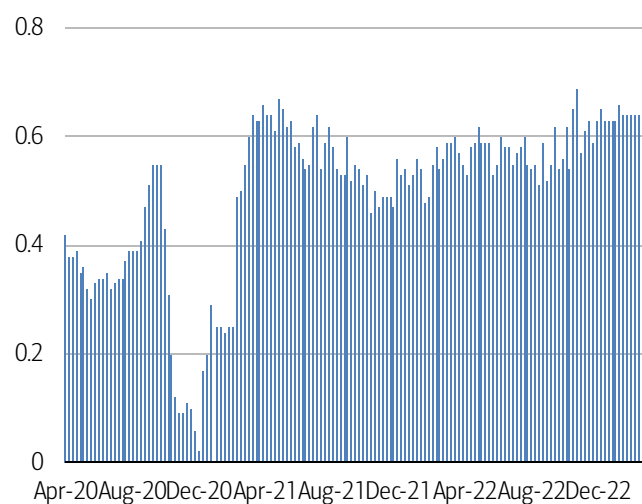
Source: Truckstop.com

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## Container box availability

### Exhibit 59: Shanghai – box availability (CAx)

Container box availability holding above 0.6 in Shanghai

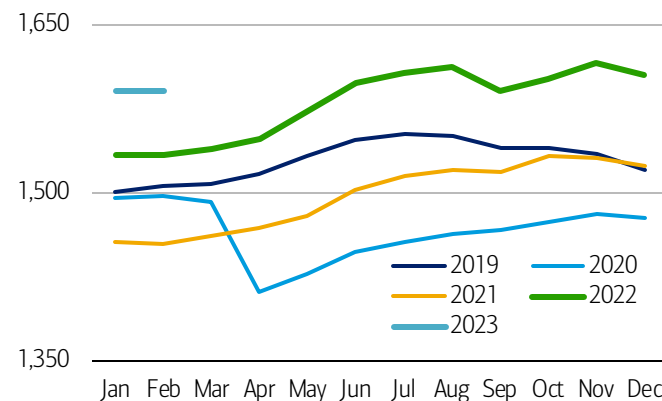


Source: Bloomberg

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### Exhibit 58: US truck driver employees (thousands), 2019-22

US employees in truck transport are above pre-COVID levels

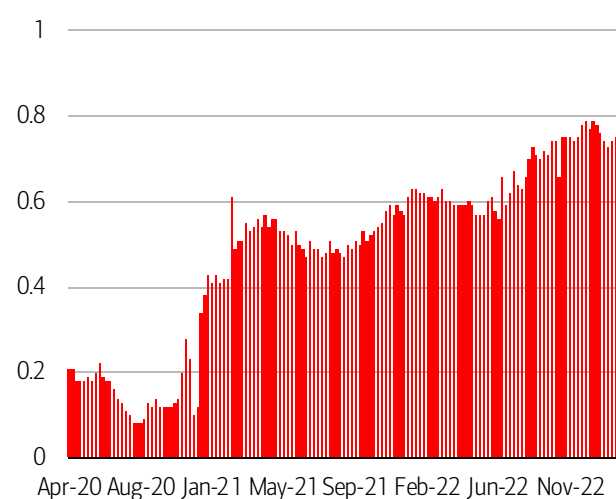


Source: St Louis Fed

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### Exhibit 60: Singapore – box availability (CAx)

Container box availability holding above 0.7 in Singapore



Source: Bloomberg

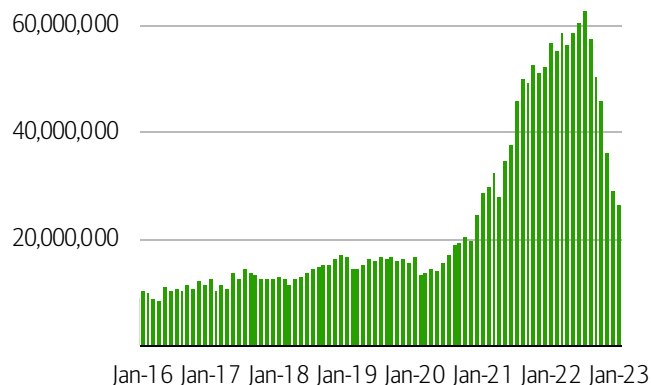
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## Container liner monthly revenue

Taiwan monthly revenues fading more aggressively in November 2022:

### Exhibit 61: Evergreen – monthly revenue (NT\$K)

Evergreen Jan monthly revenues: -54% YoY, -10% MoM

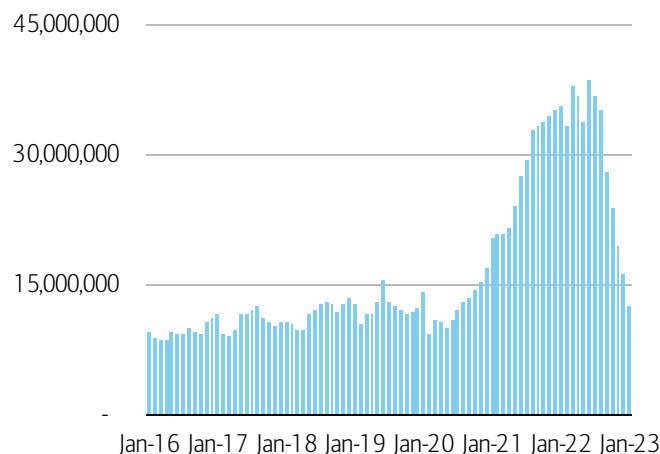


Source: Company reports

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### Exhibit 62: Yang Ming – monthly revenue (NT\$K)

Yang Ming Jan monthly revenues: -64% YoY, -22% MoM



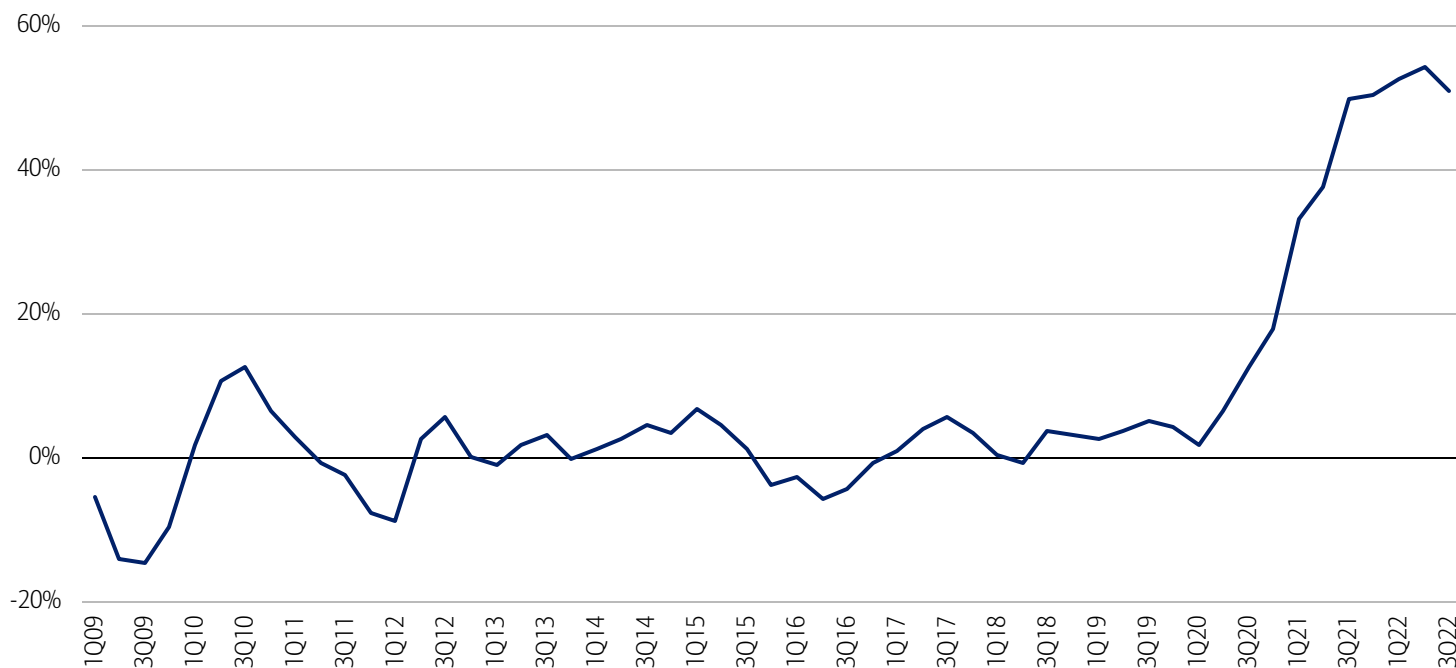
Source: Company reports

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## Container liner average EBIT margins

### Exhibit 63: Container liner average quarterly EBIT margin, 2009-22

3Q22 average EBIT margins at ~50%



Source: Linerlytica

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## Vessel supply-side trends

### Exhibit 64: Container shipping orderbook to fleet, 1996-2023

Container shipping orderbook stands at around 28-29% of fleet right now

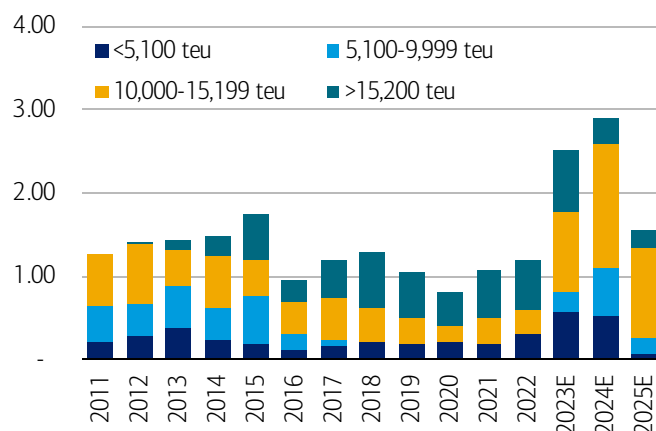


Source: Clarksons

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### Exhibit 65: Delivery by vessel size (mn TEU), 2011-2023E

Deliveries to ramp again in 2023 with ~ 2.4mn TEU for delivery

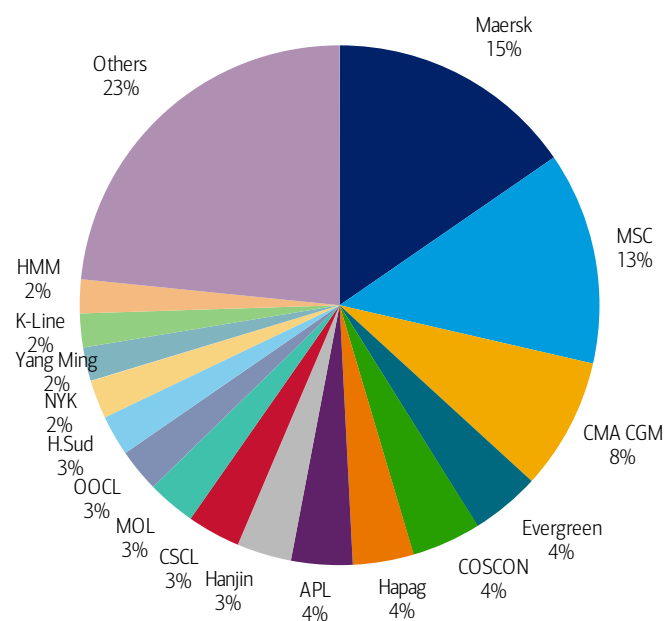


Source: Alphaliner

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### Exhibit 66: Container liner capacity share in 2013

Top 16 carriers in 2013 = 77% market share

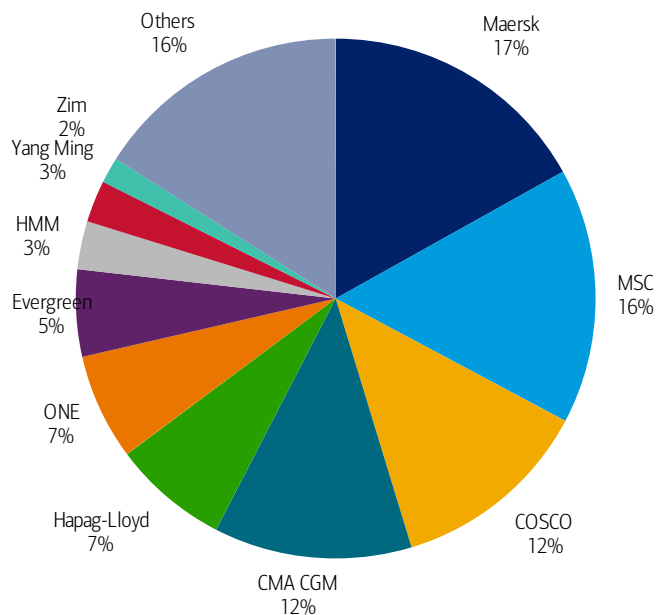


Source: Alphaliner

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### Exhibit 67: Container liner capacity share in 2021

Top 10 carriers in 2021 = 85% market share

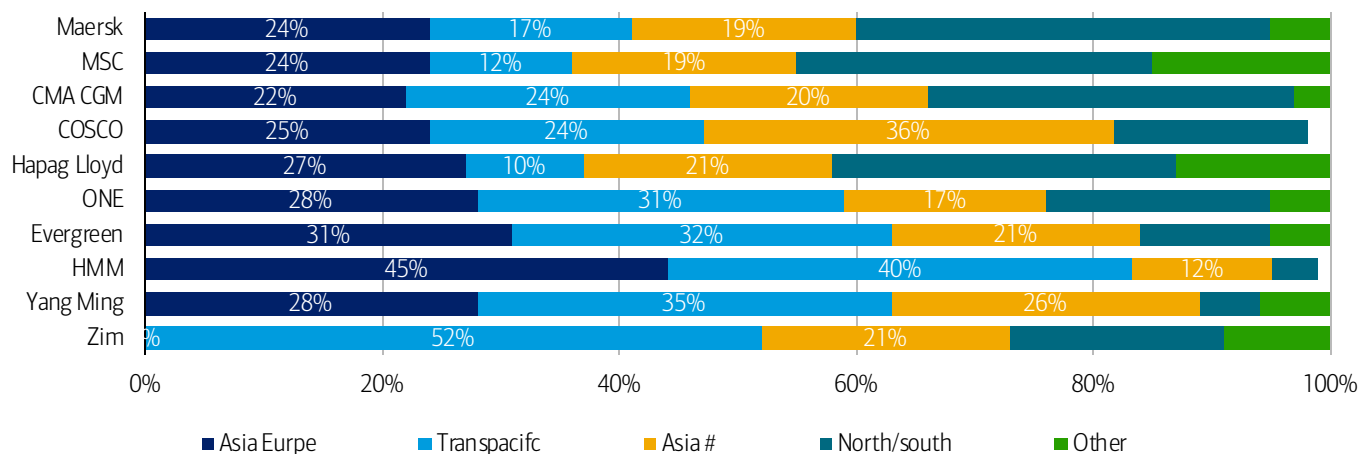


Source: Alphaliner

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**Exhibit 68: Container liner capacity by route**

Container liner capacity deployment by route

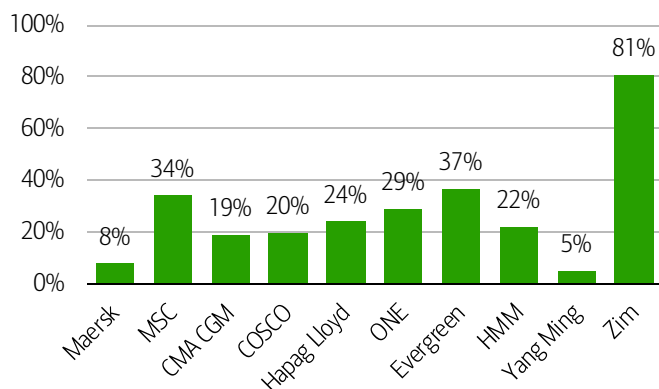


Source: Alphaliner # Asia includes Middle East, India, Australia

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**Exhibit 71: Container liners – orderbook to fleet**

Larger orderbooks for Zim, Evergreen and MSC, as of Feb 2023

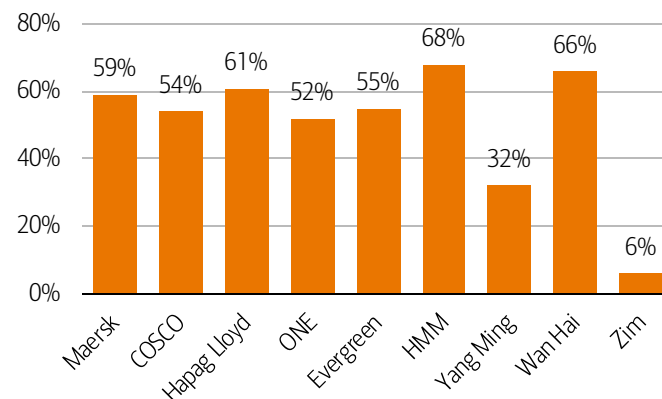


Source: Alphaliner

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**Exhibit 72: Container liners - % of fleet which is owned**

Liners own on average ~ 50% of their fleet, as of Feb 2023



Source: Alphaliner

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## Container shipping costs

**Exhibit 71: Average containership charter rate (US\$/day), 2008-22**  
Average charter rates down MoM again in February 2023



Source: Clarksons

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## Container vessel sailing speeds

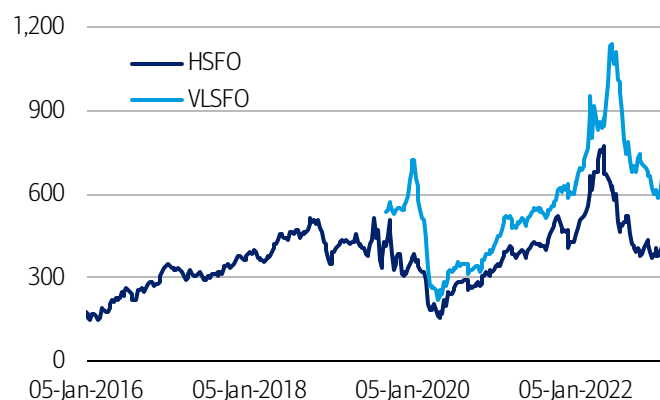
**Exhibit 73: Container vessel average sailing speed (knots), 2012-23**  
Container vessels now sailing below 14 knots



Source: Clarksons

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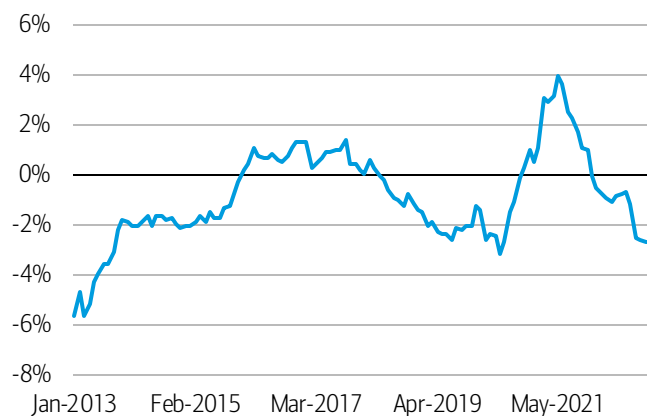
**Exhibit 72: Singapore bunker price (US\$/tonne), 2016-22**  
VLSFO is at ~US\$595/tonne



Source: Clarksons

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**Exhibit 74: Container vessel speeds (% YoY growth), 2013-23**  
Vessel speed now slower YoY



Source: Clarksons

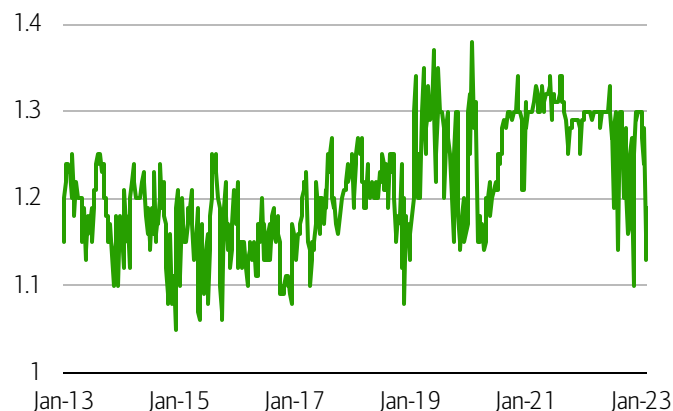
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# Tanker shipping

## Freight rates

### Exhibit 75: VLCC supply vs demand in Middle East #

VLCC supply vs demand in Middle East #



Source: Bloomberg

# 1 indicates equal number of VLCC supply vs demand for next 30 days, 1.1 indicates 10% surplus of VLCC relative to demand in coming 30 days,

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### Exhibit 78: Tanker quarterly rate average (US\$/day), 2022-23

VLCC average rates trending QoQ lower in 1Q23

Date	2Q22	3Q22	4Q22	1Q23
VLCC	-21,670	9,747	42,823	15,025
Suezmax	35,793	50,411	88,602	74,249
Aframax	35,668	46,440	78,728	61,425
MR	33,746	39,878	41,411	28,132
LR2	27,038	33,821	46,192	55,000
% YoY				
VLCC	185%	-199%	nm	-185%
Suezmax	-10658%	-1959%	nm	242%
Aframax	1418%	7427%	nm	181%
MR	390%	586%	nm	189%
LR2	32%	67%	nm	171%
% QoQ				
VLCC	22%	-145%	339%	-65%
Suezmax	65%	41%	76%	-16%
Aframax	63%	30%	70%	-22%
MR	246%	18%	4%	-32%
LR2	33%	25%	37%	19%

Source: Clarksons

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### Exhibit 77: VLCC freight rates (US\$/day), 2008-23

Baltic VLCC rates ramping higher through February

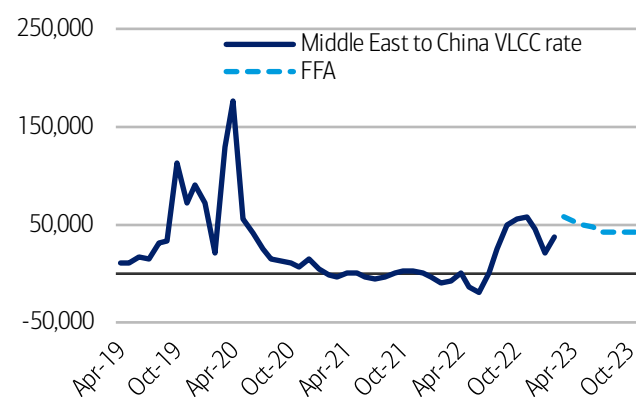


Source: Clarksons

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### Exhibit 78: VLCC freight forward agreement rates (US\$/day)

Near term forward curve at between US\$42-54k/day

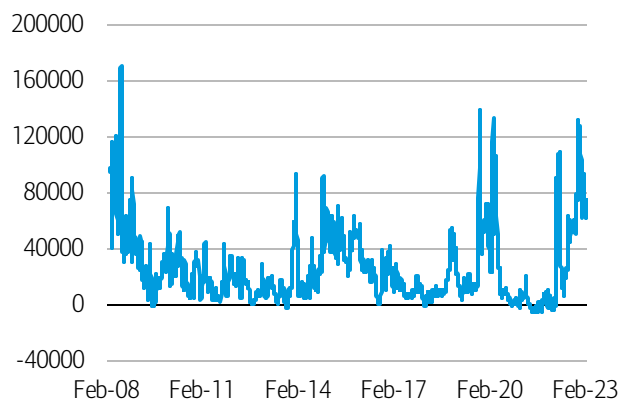


Source: Clarksons, Baltic Exchange

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**Exhibit 79: Suezmax freight rates (US\$/day), 2008-2023**

Baltic Suezmax rates staying firm

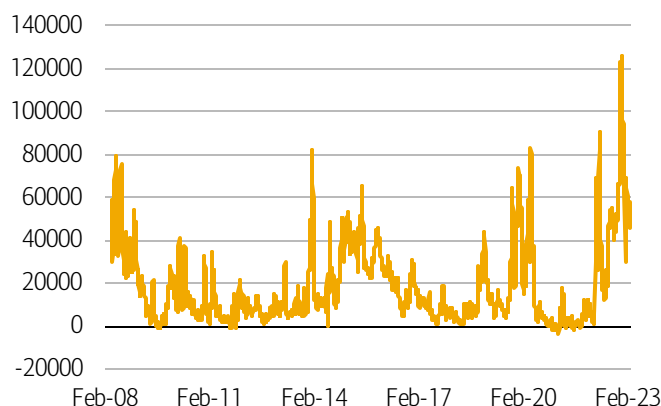


Source: Clarksons

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**Exhibit 80: Aframax freight rates (US\$/day), 2008-23**

Aframax rates staying firm in early February 2023

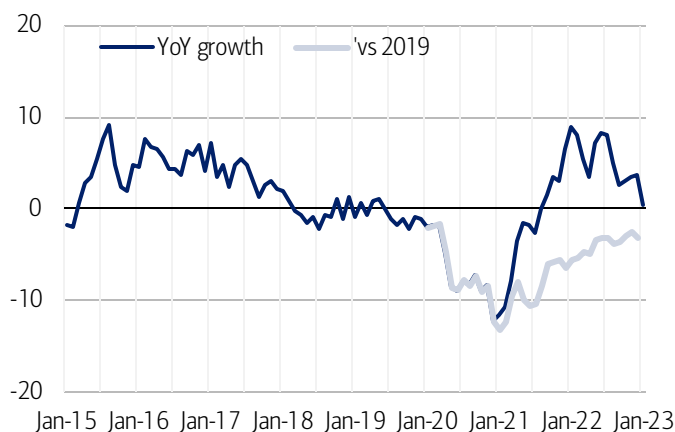


Source: Clarksons

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**Crude tanker demand****Exhibit 81: Seaborne crude oil volumes (% YoY), 2015-22**

Seaborne crude tanker volumes remain ~5% below pre COVID levels



Source: Clarksons

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**Exhibit 82: Crude tanker barrels on the water (mn bbl), 2016-22**

Demand for tankers remains firm given longer distance sailings

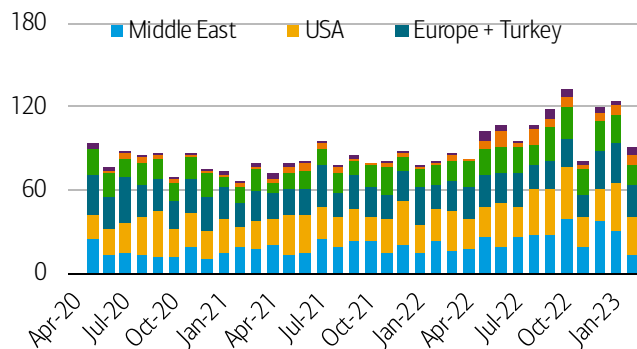


Source: Bloomberg

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**Exhibit 83: Western Europe seaborne monthly crude imports from non-Russian producers (mn bbl per month)**

European imports from non-Russia have ramped in recent months

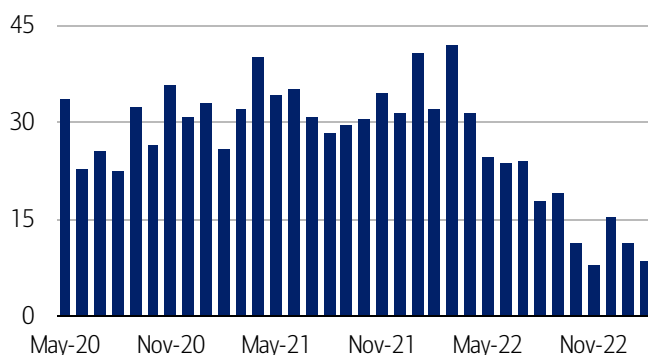


Source: Bloomberg

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**Exhibit 84: Western Europe seaborne crude imports from Russia (mn bbl per month)**

European imports from Russia trending lower

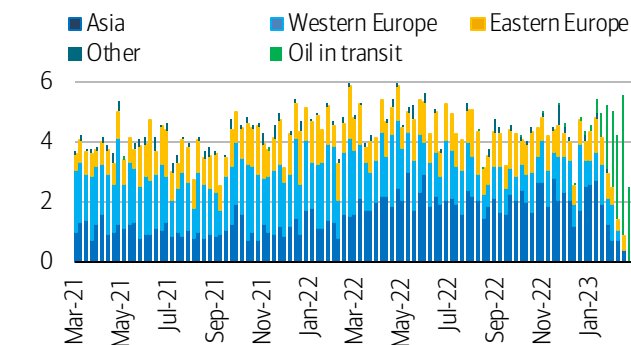


Source: Bloomberg

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**Exhibit 85: Russian seaborne crude exports (k b/d), 2023**

Decrease in total Russian crude exports for now

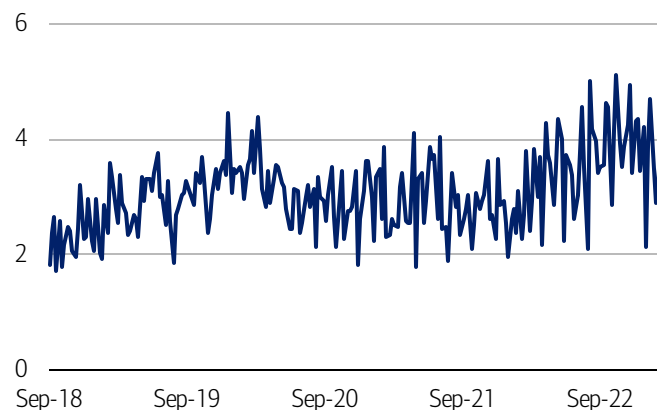


Source: Bloomberg

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**Exhibit 87: US crude exports (mn b/d)**

US crude exports remain robust in early February 2023

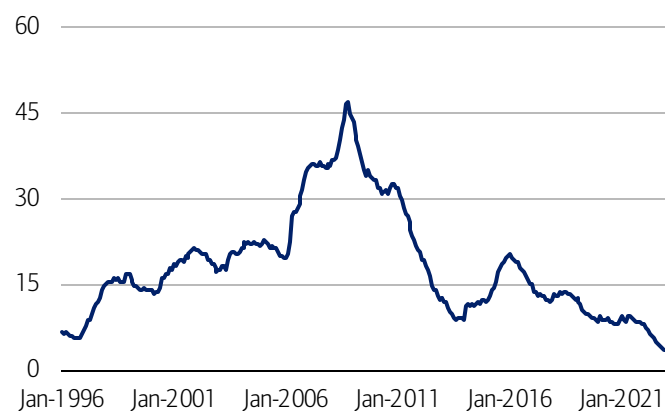


Source: Bloomberg

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**Tanker supply****Exhibit 89: Crude tanker orderbook as % of fleet, 1996-23**

Crude tanker orderbook to fleet down below 3.5%

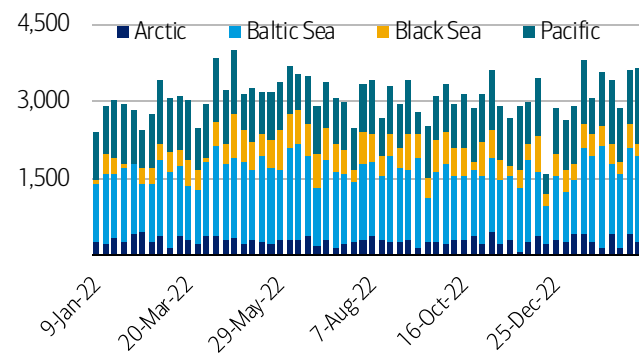


Source: Clarksons

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**Exhibit 86: Russian crude by port (k b/d), 2023**

Russian exports broadly holding for now

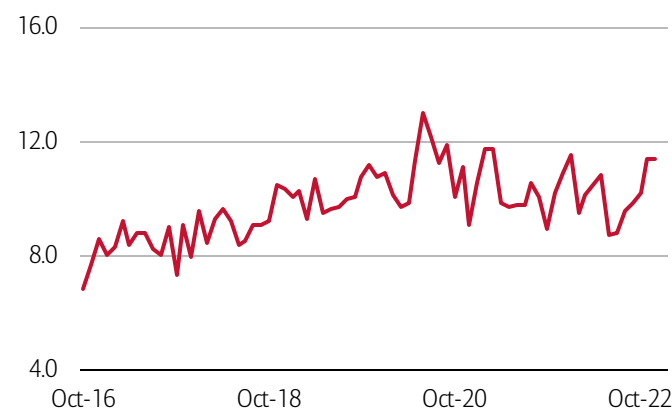


Source: Bloomberg

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**Exhibit 88: Chinese crude imports (mn b/d)**

China crude imports rebounded in late 2022

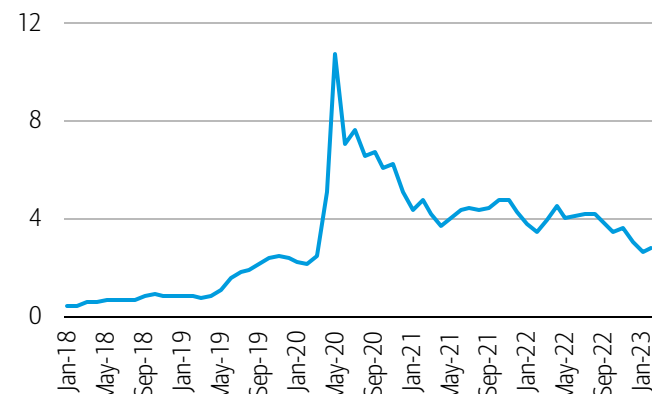


Source: Bloomberg

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**Exhibit 90: Crude tanker storage as % of fleet, 2018-23**

Tanker storage down to around 2.8% of fleet



Source: Clarksons

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# Dry bulk shipping

## Freight rates

**Exhibit 91: Baltic Dry Index, 1999-2023**

BDI return to 935



Source: Clarksons

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**Exhibit 94: Quarterly average dry bulk rates (US\$/day), 2022-23**

Average 1Q23 freight rates lower on seasonality

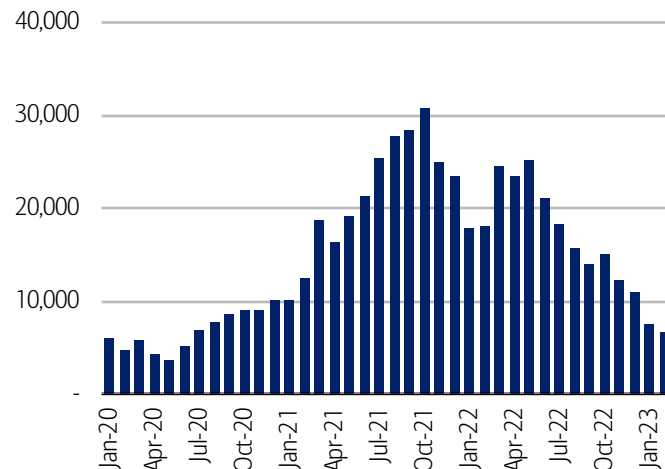
Date	1Q22	2Q22	3Q22	4Q22	1Q23
BDI	1,977	2,530	1,870	1,523	804
Capesize	14,746	21,599	16,906	14,906	7,214
Panamax 82	23,218	28,901	18,402	16,050	9,479
Supramax 58	25,156	27,566	21,396	14,837	7,716
Handysize 38	24,084	26,618	21,514	15,028	8,469
% YoY					
BDI	14%	-9%	-50%	-56%	-60%
Capesize	-14%	-31%	-60%	-65%	-56%
Panamax 82	27%	12%	-45%	-45%	-60%
Supramax 58	51%	8%	-38%	-51%	-68%
Handysize 38	45%	18%	-33%	-52%	-65%
% QoQ					
BDI	-43%	28%	-26%	-19%	-49%
Capesize	-65%	46%	-22%	-12%	-57%
Panamax 82	-20%	24%	-36%	-13%	-42%
Supramax 58	-17%	10%	-22%	-31%	-46%
Handysize 38	-23%	11%	-19%	-30%	-44%

Source: Clarksons

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**Exhibit 93: Handysize spot monthly average (US\$/day), 2020-22 #**

Spot handysize averaged US\$6.6k/day in Feb 2023



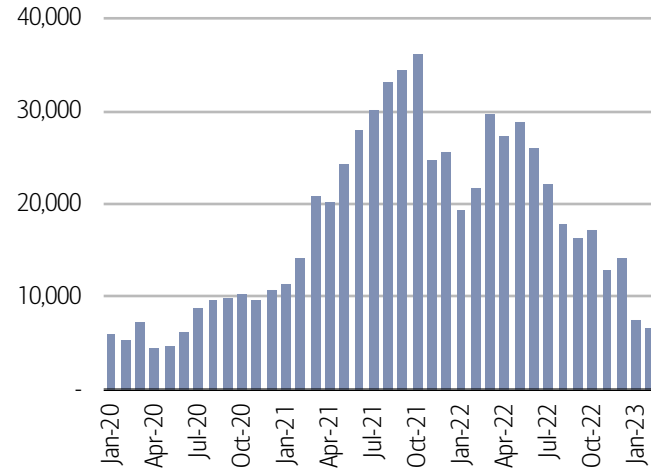
Source: Clarksons, BofA Global Research estimates

# Size and commission adjusted to be comparable to PacBasin average handy rates

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**Exhibit 94: Supramax spot monthly average (US\$/day), 2020-22 \***

Spot supramax averaged US\$6.8k/day in Feb 2023



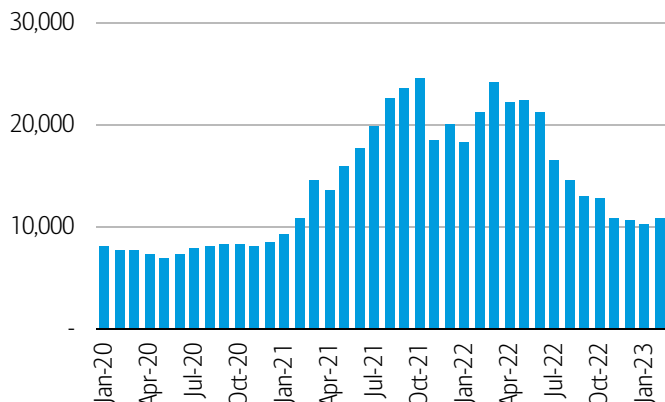
Source: Clarksons, BofA Global Research estimates

\* Commission adjusted to be comparable to PacBasin achieved rates

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**Exhibit 95: Handysize 1yr TC monthly average (US\$/day), 2020-22 #**

1yr time charter handysize averaged US\$10.8k/day in Feb 2023



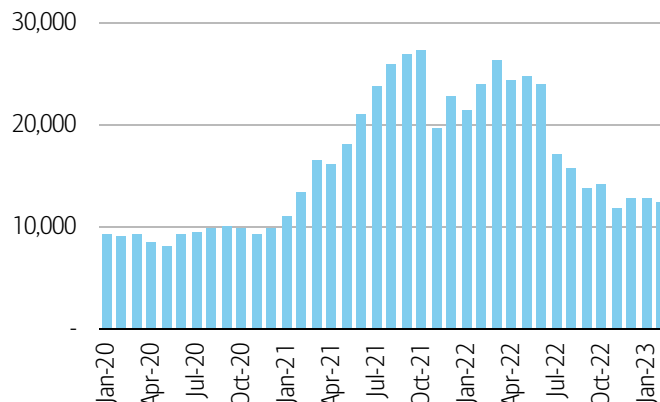
Source: Clarksons, BofA Global Research estimates

# Size and commission adjusted to be comparable to PacBasin average handy rates

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**Exhibit 96: Supramax 1yr TC monthly average (US\$/day), 2020-22 \***

1yr time charter supramax averaging US\$12.4k/day in Feb 2023



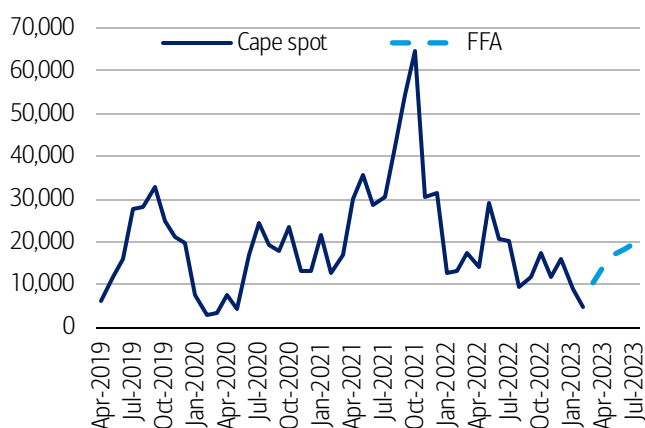
Source: Clarksons, BofA Global Research estimates

\* Commission adjusted to be comparable to PacBasin achieved rates

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**Handysize & Capesize FFA outlook****Exhibit 97: Capesize - Freight Forward Agreement, 2019-23**

Capesize forward curves suggest a recovery through 2023

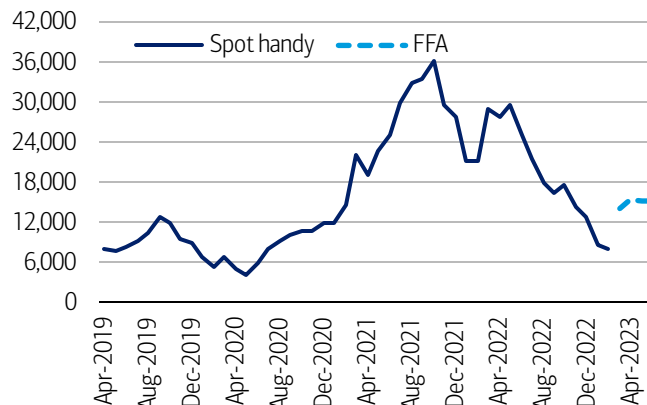


Source: Bloomberg

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**Exhibit 98: Handysize - Freight Forward Agreement, 2019-23**

Handy forward curves point to a recovery into 2Q23

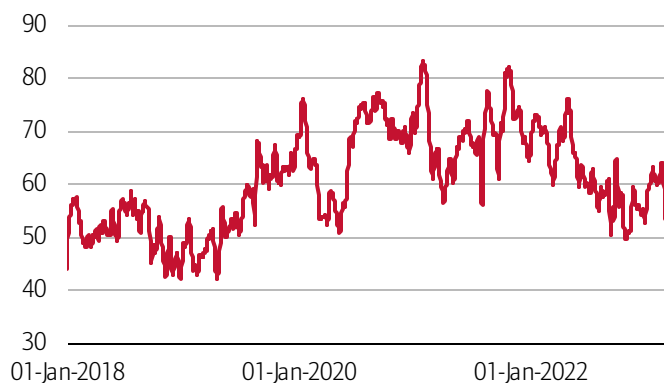


Source: Bloomberg

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**Port congestion****Exhibit 99: Dry bulk fleet at port in China (anchor or berth), mn dwt**

Vessels waiting at Chinese ports have rebounded off the bottom

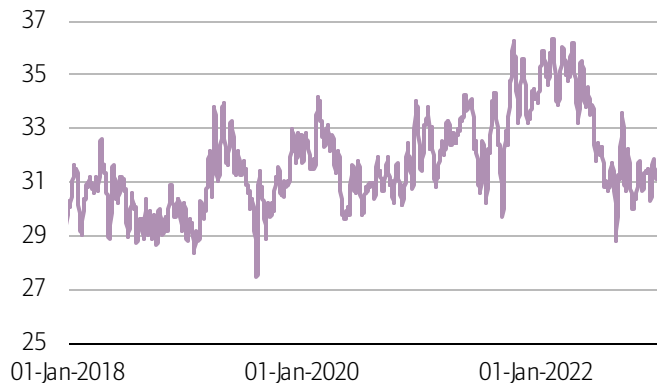


Source: Clarksons

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**Exhibit 100: Daily dry bulk fleet at port (anchor or berth) (%)**

~32.5% of dry bulk fleet at port



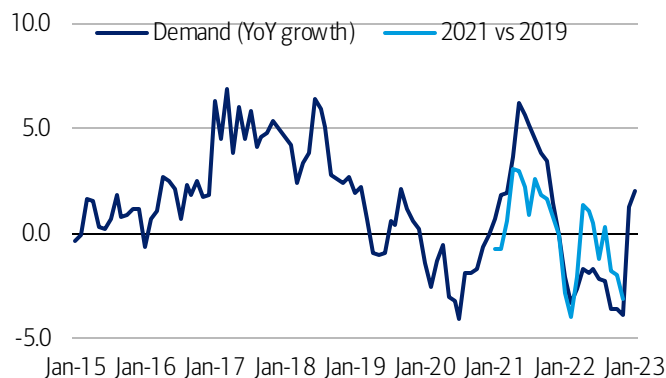
Source: Clarksons

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## Dry bulk demand reads

### Exhibit 101: Dry bulk demand growth (% YoY), 2015-22

Dry bulk demand slightly below 2019 levels in Jan 2023

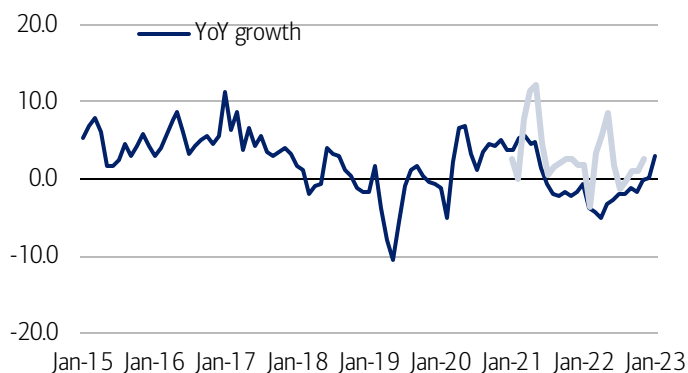


Source: Clarksons

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### Exhibit 103: Iron ore demand growth (% YoY), 2015-22

Iron ore demand trending at 2.5% above 2019 levels in Dec 2022

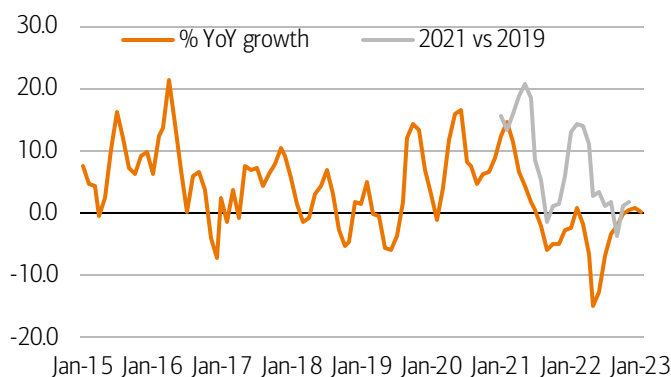


Source: Clarksons

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### Exhibit 105: Grain demand growth (% YoY), 2015-23

Grain demand at 1.9% above 2019 levels in Jan 2023

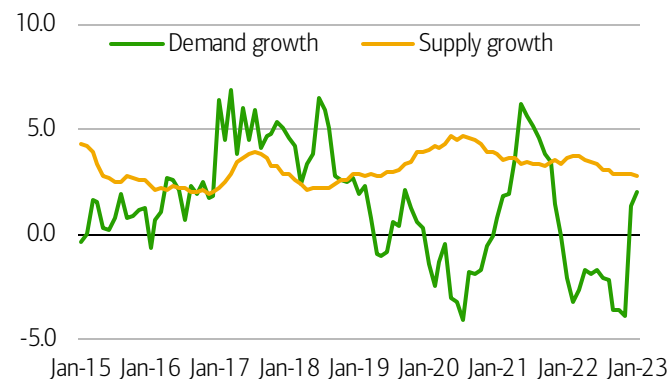


Source: Clarksons

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### Exhibit 102: Bulk monthly demand & supply growth (% YoY), 2015-22

Bulk demand growth rebound vs supply growth of +2.8% YoY

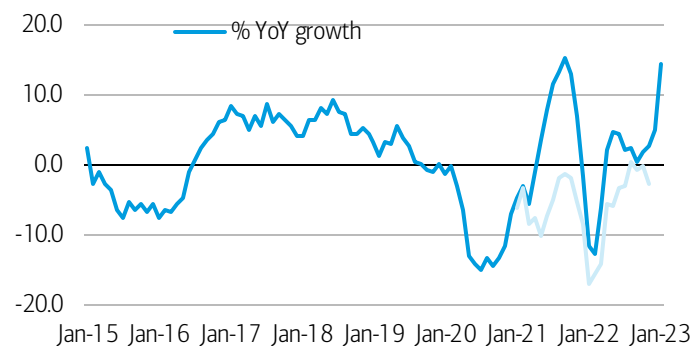


Source: Clarksons

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### Exhibit 104: Coal demand growth (% YoY), 2015-22

Coal demand growth trending at +14.3% above 2019 levels

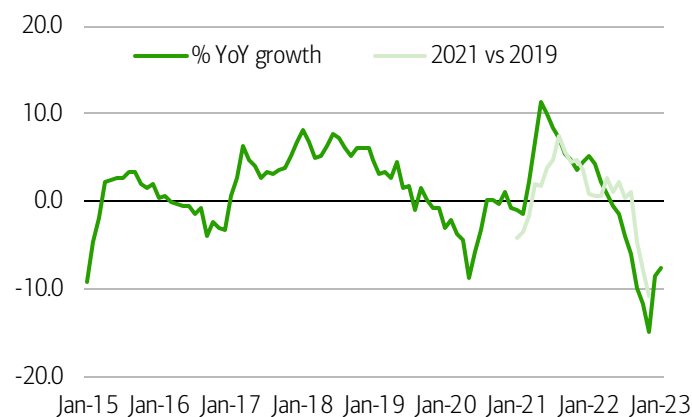


Source: Clarksons

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### Exhibit 106: Minor bulk demand growth (% YoY), 2015-23

Minor bulk demand growth trending at -10.9% below 2019 levels in Jan 2023

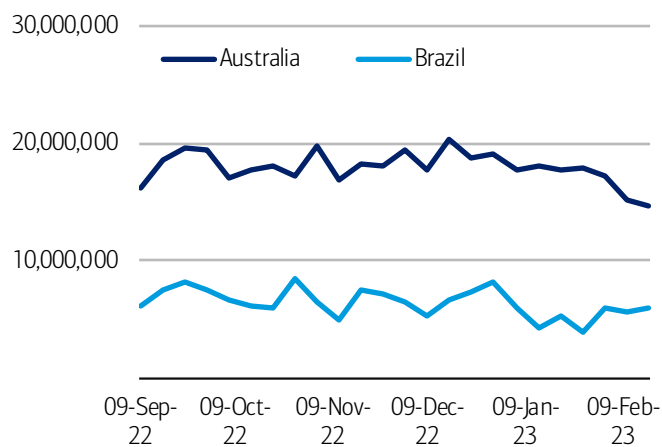


Source: Clarksons

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**Exhibit 107: Iron ore weekly exports (tonnes), 2022-23**

Iron ore export volumes have dipped into 1 Q23

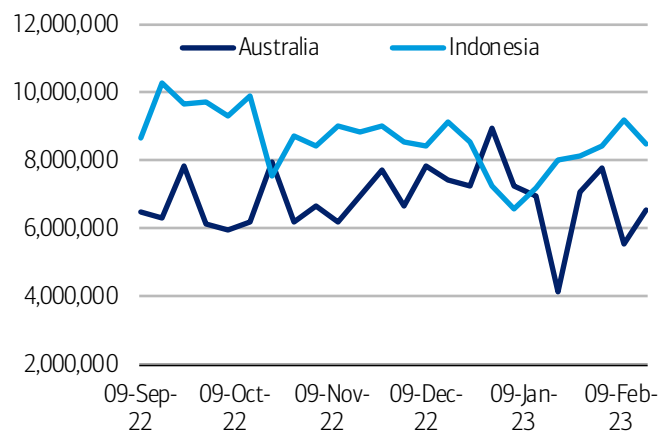


Source: Bloomberg

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**Exhibit 108: Coal weekly exports (tonnes), 2022-23**

Coal export loadings trending lower in 1 Q23



Source: Bloomberg

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## Methodology explained

Readers should be aware that although the BAC datasets utilized in our analysis represent a significant number of data points, they nevertheless present a degree of selection bias, including but not limited to income levels and geographies. In addition, the data is limited to debit and credit cards and does not include other payment methods such as cash or checks.

Data regarding merchants who receive payments are identified and classified by the Merchant Categorization Code (MCC) defined by financial services companies. The data are mapped using proprietary methods from the MCCs to the North American Industry Classification System (NAICS), which is also used by the Census Bureau, in order to classify spending data by subsector. Spending data may also be classified by other proprietary methods not using MCCs.

BAC data used in this report include spending from active US households only. Spending from corporate cards are excluded.

Our methodology for calculating the growth rates for daily data: we calculate the %yoy growth, the 2-year and 3-year %change by matching calendar days (Jan 1 '22 matched to Jan 1 '21, Jan 1, 2020 and Jan 1, 2019, respectively). The % change is be calculated based on the 7-day moving average of spending levels.

Unless otherwise noted, the monthly subsector data are adjusted to control for seasonality and other factors.

The payroll and tax direct deposit data based on the BAC internal data is derived by anonymizing and aggregating direct deposit data from Bank of America consumer deposit accounts in the US and analyzing that data at a highly aggregated level. Additional information about the methodology used to aggregate the data is available upon request.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster <sup>R1</sup>
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Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

<sup>R1</sup> Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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