Container markets: Fundamental shifts underpin 2023

June 2023

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Agenda

1. Market Recovery
   - Has the worst swept through the containers market?

2. Orderbook capacity
   - How much more is to come?

3. Alt. Fuel Orderbook
   - Maritime decarbonization and the containers market
Daily Global Container spot assessments

- A suite of daily rate assessments that reflect market value
- FAK rates on key container trade lanes
- Expressed in $/FEU or $/TEU
- Region-to-region assessments, rather than port-to-port
- Fully transparent methodology
- Allow for simpler contract negotiations and index-linked agreements against an independent benchmark
- Integrated with Platts Bunker Charges to provide full-range flexibility
- Assessed by an independent price reporting agency with extensive pricing experience, and existing benchmarks in other commodities
Platts Container Coverage – Container Rates

PCR 1 & 2  
North Asia / North Continent

PCR 3 & 4  
North Asia / Mediterranean

PCR 11 & 12  
North Asia / UK

PCR 5 & 6  
North Asia / EC North America

PCR 13 & 14  
North Asia / WC North America

PCR 29 & 30  
North Asia / WC South America

PCR 31 & 32  
North Asia / EC South America

PCR 9 & 10  
North Continent / EC North America

PCR 23 & 24  
Southeast Asia / WC North America

PCR 25 & 26  
Southeast Asia / EC North America

PCR 33 & 34  
West Coast India / Middle East

PCR 39 & 40  
Indian Subcontinent / EC North America

TCR 33 & 34  
West Coast India / Middle East (TEU)

PCR 41 & 42  
South America / US Gulf Coast*

*May 15, 2023
Freight rates plummet as import demand wanes

North American import rates return to near pre-pandemic levels

- North Asia-ECNA
- North Asia-WCNA
- Platts Container Index

**Initial covid-related demand drop-off**

- Peak season, port congestion propels rates to all-time highs

**Pre-Lunar New Year rush**

- Trans-Pacific demand begins to rebound

**EC/WC spread widens, weak demand pressure global rates**

**Rates and coastal spread stabilize near pre-pandemic levels**

Source: S&P Global Commodity Insights
Container spot rates fluctuate, inflationary pressures affect market

Box rates and inflation

US retail, manufacturing and wholesale: sales to inventory (BTS)
Ratio of US retail end-of-month inventories to monthly sales. A ratio of 2.5 indicates retail stores have enough merchandise on hand to cover 2.5 months of sales.

PCR0103  North Asia – North Continent (MAvg)
PCR0503  North Asia – East Coast North America (MAvg).
PCR2503  Southeast Asia – East Coast North America (MAvg)*
CPI – U  Consumer Price Index – Urban Consumers


Source: US Census Bureau © 2023 S&P Global

Footnotes:
*assessment launched Feb, 21
Spot prices fall below contract rates in 2022, uncertainties for 2023

![Graph showing spot prices falling below contract rates over time, with LTC range annotations for 2022 and 2023.]

- **PCR23 SOUTHEAST ASIA-WEST COAST NORTH AMERICA**
- **PCR 13 NORTH ASIA-WEST COAST NORTH AMERICA**

LTC range in 2022

2023 LTC range
Portion of bunker costs in container freight rates increase
Bunker costs returning to hold considerable share in overall freight

Source: S&P Global Commodity Insights

Platts Bunker Charge 01 North Asia – North Continent
Platts Container Rate 01 North Asia – North Continent
What are Platts Bunker Charges?

- Independent daily indexes which reflect bunker charges on key container trade lanes
- Expressed in $/FEU, standardizing bunker charge calculations
- Allow simpler contract negotiations against an independent benchmark
- Fed directly by Platts bunker prices on 0.5% Very low sulfur fuel oil (VLSFO) and Marine Gasoil (MGO)
Platts Bunker Charge calculations

**Distance calculator for ECA and non-ECA zones to determine VLSFO and MGO usage.**

**Calculate no. of days for both head haul and back haul journeys**

**Market survey of vessel size typically employed on the route, along with collating data on knot speeds for vessels on head haul and back haul**

**Factor in the expected sea margin (5%) in number of days**

**Market survey of bunker consumption rates aligned with vessel size and knot speeds**

**Calculation of voyage utilisation on both head haul and back haul (percentage)**

**Bunker cost average for all ports along the route (factoring in VLSFO and MGO).**

**Weighted average bunker cost derived from daily values of both VLSFO and MGO values.**

**Weighted calculation between ECA zone (MGO) and non-ECA zone (VLSFO) duration.**
➢ Supply side considerations in containers
Wave of larger vessels set to enter the market

Container size bands for 2023 delivery

- **Feeder (Up to 3,000 TEU)**
- **Post-Panamax (4,500-8,500 TEU)**
- **Neo-Panamax (10,000-16,000 TEU)**
- **ULCS (16,000 + TEU)**

Source: S&P Global Sea-web
MSC, CMA CGM lead with new build orders

Orderbook as a share of global container capacity (Sea-Web)

Fleet and orderbook by major carrier (Sea-Web)

Notes: as of Jan. 2023

Current state of container alliances

The route to capacity management (million TEU)*

Platts | CERaweek | Chemical Week
S&P Global
Commodity Insights
The 2M dissolution in 2025

HMM
Hapag Lloyd
Yang Ming Line
ONE
THE
Maersk
MSC
Ocean
CMA CGM
COSCO
Evergreen
OOCL
Maritime decarbonization and the containers market
Marine fuels of the future: Existing Platts bunker assessments

METHANOL
- Methanol Bunker Rotterdam $/mt
- Methanol Bunker Rotterdam (LNG) $/mt
- Methanol Bunker Rotterdam (Oil) $/mt

LNG
- Singapore LNG Bunker Fuel $/MMBtu ($/mt)
- Singapore LNG Bunker Fuel $/mt (Oil)
- Rotterdam LNG Bunker Fuel Eur/MWh
- Rotterdam LNG Bunker Fuel $/mt (Oil)
- LNG Bunker Rotterdam $/MMBtu ($/mt)
- LNG Bunker Rotterdam Eur/mt
- LNG Bunker US SE Coast $/MMBtu ($/mt)
- LNG Bunker US SE Coast $/mt (Oil)

$/Gj assessments in methanol, LNG, MGO, marine fuel oil

Hydrogen
- Product assessments

Ammonia
- Product assessments

Biofuels
- Product assessments
## Alternative fuels: overview of pros and cons

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNG</td>
<td>Infrastructure already in place</td>
<td>Large capital cost</td>
</tr>
<tr>
<td></td>
<td>Possible to use as fuel through current boil-off techniques</td>
<td>Need to store LNG at very cold temperatures</td>
</tr>
<tr>
<td></td>
<td>Possible to use as fuel through current boil-off techniques</td>
<td>CO2 reduction not enough for IMO 2050</td>
</tr>
<tr>
<td>Methanol</td>
<td>Proven marine fuel</td>
<td>Still a fossil fuel</td>
</tr>
<tr>
<td></td>
<td>Fast-growing supply chain</td>
<td>High feedstock and production costs</td>
</tr>
<tr>
<td></td>
<td>Low storage tank costs</td>
<td>Poorer fuel economy</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Clean burning</td>
<td>No infrastructure in place, large capital cost needed</td>
</tr>
<tr>
<td></td>
<td>Can be produced using renewable energy (green hydrogen)</td>
<td>Ships need new fuel cells for power, so only viable for newbuilds</td>
</tr>
<tr>
<td></td>
<td>Can be produced using renewable energy (green hydrogen)</td>
<td>Requires extremely cold storage temperatures of -253°C, much below LNG</td>
</tr>
<tr>
<td>Ammonia</td>
<td>Readily used in internal combustion engines</td>
<td>Commercial viability for bunker infrastructure still unclear</td>
</tr>
<tr>
<td></td>
<td>No carbon in ammonia, so no CO2 emissions</td>
<td>No infrastructure in place for at ports</td>
</tr>
<tr>
<td></td>
<td>Technology for use as fuel in engines already available</td>
<td>High capital cost</td>
</tr>
<tr>
<td>Biofuels</td>
<td>Already well-developed market globally</td>
<td>Current road/air demand outstrips supply</td>
</tr>
<tr>
<td></td>
<td>Better green credentials as HVO made from fatty-based feedstock</td>
<td>Prohibitively expensive at this point</td>
</tr>
<tr>
<td></td>
<td>Can be used as a drop-in fuel with current marine fuels</td>
<td>CO2 benefits locked in at point of origin (transportation creates emissions)</td>
</tr>
</tbody>
</table>
When looking at prices from a $/mt perspective, fuels such as methanol appear quite attractively priced compared to the alternatives, especially under the currently high energy price environment.

However, when incorporating the relevant energy density factor (in order to create a level playing field and be able to compare the different fuels like-for-like), HSFO becomes the cheapest fuel in our example.

Fuels with lower density levels are expected to require greater storage capacity onboard the vessel, potentially eating into the space of the cargo and requiring more frequent bunkering.
LNG expected to be leading alternative bunker fuel for containers in the near term

2030 Alt. Fuel Bunker Demand for Leading Sectors

Source: S&P Global Commodity Insights aligned with GIEM trade data
Ammonia and methanol expected to gain ground in the long term

2050 Alt. Fuel Bunker Demand for Leading Sectors

Source: S&P Global Commodity Insights aligned with GiEM trade data
Carbon-Accounted Container Freight

What is carbon-accounted freight?

• Assessments that reflect the additional cost ($/FEU) to offset tank-to-wake carbon dioxide emissions for typical container trade flows.
• S&P Global Commodity Insights has decided to launch ten daily carbon-accounted container freight Platts price assessments on five key routes in the European shipping market.

What routes does Platts assess?
The assessed routes are:
• North Asia-North Continent
• North Continent-North Asia
• North Continent-EC North America
• EC North America-North Continent
• Europe-WC Africa
• WC Africa-Europe
• Indian Subcontinent-North Continent
• North Continent-Indian Subcontinent
• North Continent-EC South America
• EC South America-North Continent
Calculating total emissions and subsequent Emissions Charge

1. Calculate distances for both ECA and Non-ECA zone in the voyage
2. Daily bunker consumption (mt/d) of MGO and VLSFO multiplied by average duration of trip in ECA & Non-ECA zones equals total fuel consumption.
3. Total fuel consumption multiplied by carbon conversion factors equals total emissions per voyage
4. Total emissions multiplied by EU Emission Allowance price in US$ equals total carbon cost
5. Total carbon cost divided by the vessel size (e.g., 18,000 TEUs) equals carbon emissions charge per 20-foot Equivalent Unit.
6. This can further be multiplied (by 2) to derive carbon emissions charge per 40-foot Equivalent Unit

<table>
<thead>
<tr>
<th>Type of fuel</th>
<th>Reference</th>
<th>Emissions factor (t-CO2/t-fuel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel/Crude oil</td>
<td>ISO 8217 Grades DM1 through DMB</td>
<td>3.206</td>
</tr>
<tr>
<td>Light fuel oil (LFO)</td>
<td>ISO 8217 Grades RMA through RMD</td>
<td>3.151</td>
</tr>
<tr>
<td>Heavy fuel oil (HFO)</td>
<td>ISO 8217 Grades RME through RME</td>
<td>3.114</td>
</tr>
<tr>
<td>Liquefied petroleum gas (LPG)</td>
<td>Propane</td>
<td>3.000</td>
</tr>
<tr>
<td>Liquefied natural gas (LNG)</td>
<td>Butane</td>
<td>3.030</td>
</tr>
<tr>
<td>Methanol</td>
<td></td>
<td>2.750</td>
</tr>
<tr>
<td>Ethanol</td>
<td></td>
<td>1.375</td>
</tr>
</tbody>
</table>

S&P Global Commodity Insights

Platts | CERAWeek | Chemical Week
Containers market: Key takeaways

Current situation

• Container is expected to face supply side pressure with heavy investment in new buildings. Newbuilding contracts in 2021 reached the highest since 2015 mainly owing to container vessels and will keep major shipyards occupied until at least 2024 (some into 2025).

• Fresh contracts were limited in 2022 in other sectors, including dry and tanker with high prices and limited capacity in major yards; many owners triggered the options of existing contracts with lower contract prices.

Next 2-3 months

• Container sector is expected to face further pressure from supply side with heavy investment in new buildings.

• Congestion has declined with lower import demand and easing supply chain issue.

• While global container trade growth reduced with high inflation and weaker economy, US container imports will continue to grow albeit at a much slower pace.

Bearish market fundamentals

• With limited orderbook, annual dry bulk fleet growth will slow to 2.8% in 2022, 2.5% in 2023, and 2.1% in 2024, compared with 3.4% in 2021 while container fleet growth will increase to 7.3% in 2023 and 8.0% in 2024, downgraded from previous expectation with higher scrap and slippage owing to reduced earning expectation.

• Carriers competed on volumes by offering discounted rates.

Bullish market fundamentals

• IMO2023 regulations could reduce effective vessel capacity as carriers focus on compliance with emissions protocols.

• Labor issues across USWC and at intermodal networks could produce bottlenecks.

• Continued acquisition of terminals and logistics providers by carriers to increase competitiveness of vertically integrated providers.
Thank you!

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