

Global Shippers Forum/ MDS Transmodal Container Shipping Market Quarterly Review

2020: Quarter 4

Reporting data published in March 2021



GSF/MDST Container Shipping Market Quarterly Review

MDS Transmodal overview

In association with Global Shippers Forum, MDS Transmodal has decided to produce a new quarterly review of the trends and performance of the global container shipping market for four main reasons:

1. We have over the last 35 years been developing a wide range of databases that describe global liner shipping; on the fleet and its deployment, on demand, performance, costs and revenues. Over the last 15 years we have brought these together using standard coding systems so that the industry could be readily described and modelled, largely to support our consultancy work. We felt it was time to now share these resources with a wider market so that decision making can be based on sound evidence.
2. Over the last 15 years, since the decision that was made by the EU to effectively bring an end to the conference system, the liner shipping sector, its suppliers and clients have been in flux as the size of ships, performance and levels of integration and consolidation have changed radically while its market has grown remorselessly. The need for sound regulation and informed investment has never been greater and is attracting the concern of global authorities such as OECD, UNCTAD and trade associations such as GSF, CLECAT and FEPORT.
3. The urgency for the liner shipping sector, its suppliers and clients to address the issue of climate change. The process whereby sustainable solutions are agreed upon and invested in will be complex and require a collaborative approach if global connectivity and prosperity are to be maintained.
4. Global Shippers Forum represents an ideal partner for our initiative because of its reach and membership. However, GSF will have its own perspectives and arguments which MDST will remain independent of. MDST's commentary will be limited to noting statistical change (comments in blue) while GSF will focus on the implications for its members (comments in brown).

In each edition a different trade lane will be examined in turn.

GSF/MDST Container Shipping Market Quarterly Review

GSF Overview

The Global Shippers' Forum represents the interests of importers and exporters as cargo owners in international supply chains. As such global shippers are the customers of the container shipping industry. The trends and performance of the container shipping market are crucial to the interests of shippers around the world who are reliant upon services for the safe, timely, cost-effective and sustainable movement of unitised world trade.

GSF's partnership with MDS Transmodal arose from a common interest in understanding better this fast-changing market and how it is responding to the multiple factors shaping its future. GSF's focus is on five key measures that monitor the outputs of the sector:

1. **Competitiveness:** is the regulatory environment and the ownership structure contributing to an open and responsive market where the benefits of scale are experienced fairly by customers?
2. **Capacity:** how is the availability and utilisation of shipping capacity responding to the external factors given the market structure and the legal permissions granted to competing entities to co-ordinate sailings and services?
3. **Costs:** how are the underlying and incidental costs of the industry affecting advertised spot rates and the high levels of surcharging experienced by customers?
4. **Service performance:** is the predictability, reliability and connectivity of services providing an offer that shippers can depend on in their supply chain planning and forecasting and in the commitments they make to their customers?
5. **Carbon emissions:** how is the response of the shipping industry to climate change affecting the greenhouse gas emissions attributable to the cargo that it carries?

The distinctive feature of these indicators is that they assess the market from a shipper's (customer's) perspective and offer a description based on experience of service rather than advertised performance. Over time these data will build into comprehensive and authoritative evidence bank to support our representations and advocacy. in support of global shippers

As well as Quarter-on-Quarter fluctuations, MDST's extensive data holdings also permit longer term trends to be observed. These will be presented to provide context for short-term changes and to assess the overall direction of the industry.

The GSF/MDST Container Shipping Market Review Indicators

1 Trade Volumes

- 1.1 Total trade, global
- 1.2 Unitised trade, global
- 1.3 Maritime Loaded TEU, routes
- 1.4 Maritime Loaded TEU, Far East to North America
- 1.5 Maritime Loaded TEU, North America to Far East

2 Shipping Capacity

- 2.1 Deployed capacity, global
- 2.2 Deployed capacity, routes
- 2.3 Deployed capacity, Far East - North America
- 2.4 Services on Far East - North America by alliance member

3 Capacity Utilisation

- 3.1 Utilisation through Suez & Far East - North America

4 Carrier Costs & Revenues

- 4.1 Costs & revenue, Global
- 4.2 Unit costs & unit revenue, Global

5 Market Competitiveness

- 5.1 Market shares based on capacity deployed on deep-sea routes
- 5.2 Market concentration - Transpacific

6 Port Connectivity (MDST/UNCTAD LSCI)

- 6.1 Top 10 container ports, global
- 6.2 Top 10 container ports, North America
- 6.3 Top 10 container ports, Far East

7 Services performance

- 7.1 Consistency, reliability & port calls, global
- 7.2 Consistency, reliability & port calls, Far East - North America WC
- 7.3 Consistency, reliability & port calls, Shanghai

8 Carbon Emission Factors

- 8.1 CO₂ emission tonnes/TEU, global & Far East - North America

Glossary

More about MDS Transmodal & contacts

More about Global Shippers Forum & contacts

Global Shippers' Dashboard

Quarter 4 2020

KPI	Indicator	Status & Overview
1	Trade volumes	Global trade recovered to pre-Covid levels and in Q4 and escalated beyond, especially in ex-Far East trades, as consumers replaced spending on services with physical goods. This was the busiest period in world trade, ever.
2	Shipping capacity	No greater capacity available at the end of 2020 than at the start. Container shipping has attempted to meet the unexpected growth in demand with the same headhaul capacity and number of vessels.
3	Capacity utilisation	Utilisation has reached 100% on key headhaul trades. Container vessels are full, driving up spot rates and the numbers of missed shipments (rolled cargoes).
4	Carrier costs & revenues	Unit revenues increased 25% on average during Q4 2020 whilst vessel operating costs showed only modest increase due to higher fuel and chartering costs. There are no underlying cost pressures on rates.
5	Market competitiveness	New analysis reveals that all shipping lines operating in Far East – North America corridors exceed 30% market share, the threshold above which anti-trust immunity provisions do not apply. The enforceability of this threshold must be addressed by Competition Authorities.
6	Port connectivity	The Top 10 best connected ports remain unchanged despite service frequency and destination fluctuations during 2020..
7	Service performance	Service predictability for shippers collapsed 2019 level during Q4 2020 and fewer port calls were made. Shippers are paying high prices for historically poor service and predictability levels.
8	Carbon dioxide emissions	CO ₂ emissions per container moved have remained broadly flat since 2016, awaiting new global measures to be adopted by IMO, probably from 2023.

Status colour code:

Red = adverse development or trend (from shippers' perspective)

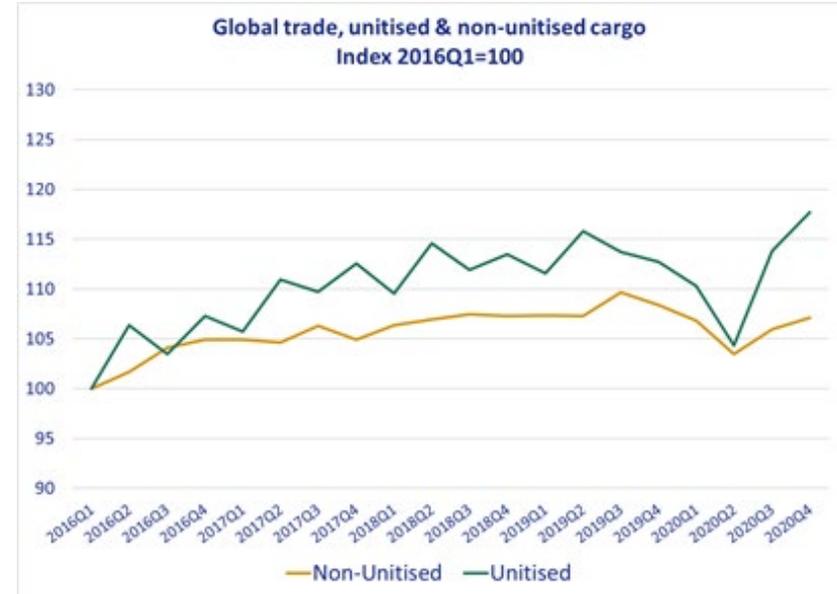
Amber = neutral or concerning trend (from shippers' perspective)

Green = improving development or trend (from shippers' perspective)

1. Trade Volumes

1.1 Total trade, global (mTonnes)

	2020Q4	Year To Date (YTD)	Previous Quarter (PQ)	Previous Year (PY)
Agricultural	207	798	-0.1%	7.1%
Metals	11	43	1.3%	2.2%
Oils & fats	24	95	1.1%	-1.6%
Chemicals	163	641	1.1%	-4.0%
Ores	514	1,981	-1.6%	0.9%
Forest products	103	405	0.6%	-1.6%
Energy:				
- Coal	288	1,185	2.5%	-2.2%
- Oil & gas	1,057	4,196	3.0%	-3.7%
Other	425	1,689	-0.2%	0.7%
Total Non-Unitised	2,792	11,034	1.1%	-1.2%
Unitised	608	2,306	3.4%	4.4%
TOTAL Tonnes	3,400	13,340	1.5%	-0.2%



Source: MDS Transmodal, World Cargo Database Feb 2021

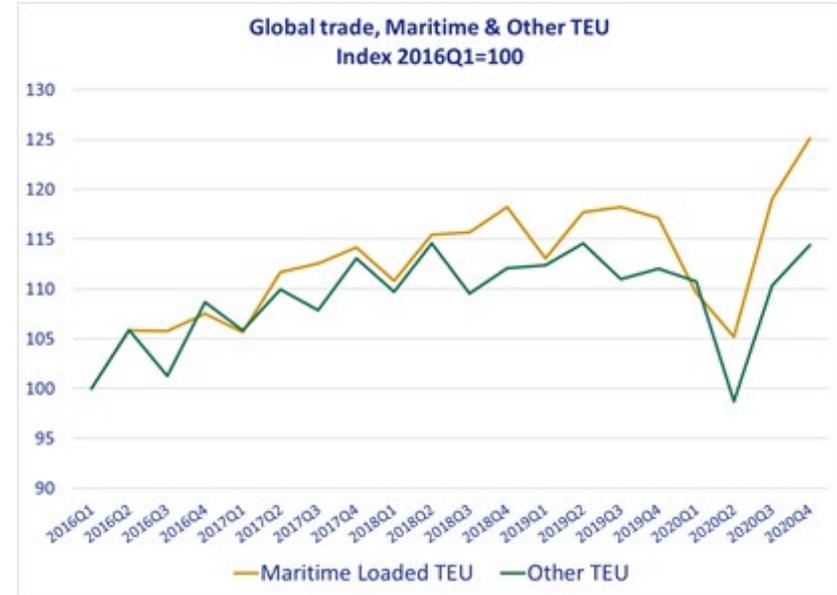
Conclusions & Commentary

- Measured when received at the importing country, global unitised trade in Q4 continued to grow to reach levels never seen before and 4.4% above the year before and 3.4% over Q3 - overall full year 2020 levels almost reached 2019 levels despite the pandemic.
- Taken together with all bulk and semi-bulk traffic, global trade in Q4 was just 0.2% less than a year earlier
- Importers struggled to meet sudden and unexpected demand for consumer goods in western economies as consumer spending switched from travel, vacations and sporting/entertainment events to physical goods, mainly bought on-line.

1. Trade Volumes

1.2 Unitised trade, global (mTEU)

	2020Q4	YTD	PQ	PY
Maritime containers	41	149	5.1%	6.8%
- of which deep-sea (inter-continental)	30	108	4.8%	8.9%
- of which short-sea (intra-regional)	11	41	5.9%	1.6%
Other (overland & ro-ro)	34	130	3.7%	2.2%
Total TEU	75	279	4.5%	4.6%



Source: MDS Transmodal, World Cargo Database November 2020

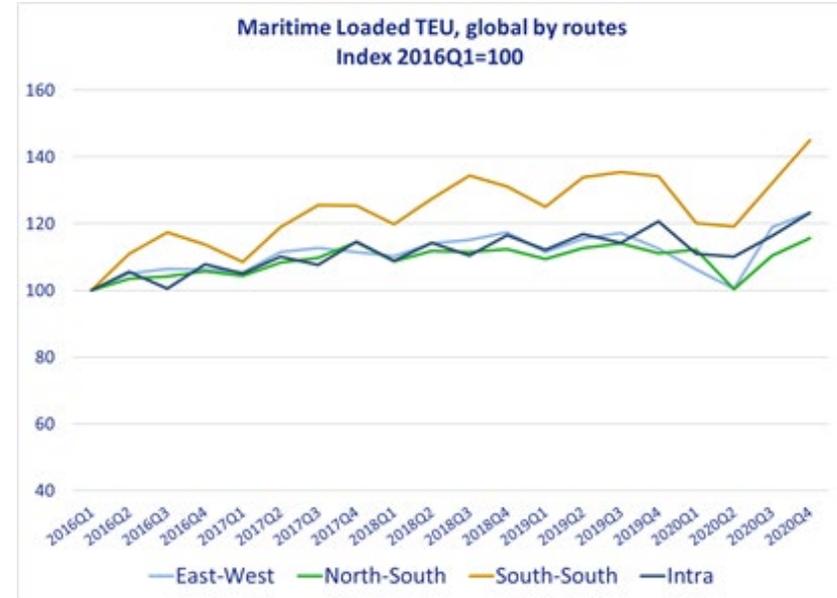
Conclusions & Commentary

- Total Q4 maritime TEU grew by 5.1% over the previous quarter and was 6.8% up over Q4 2019.
- Q4 deep-sea unit freight was 8.9% above 2019 levels and 4.8% up on Q3. Short-sea freight was also up; by 5.9% over Q3 and 1.6% above 2019 levels, still reflecting the higher elasticity of deep-sea traffic to consumer cash availability.
- Maritime deep-sea container volumes had recovered all 2020 losses by end Q3 and recorded the highest volumes in recent years during Q4 2020.

1. Trade Volumes

1.3 Maritime Loaded TEU, routes (mTEU)

	2020Q4	YTD	PQ	PY
East-West	21.3	77.5	3.7%	9.5%
North-South	3.1	11.7	4.6%	4.1%
South-South	5.3	18.9	9.8%	8.0%
Intra	10.9	40.6	5.9%	2.1%
Grand Total	40.5	148.7	5.1%	6.8%



Source: MDS Transmodal, World Cargo Database Feb 2021

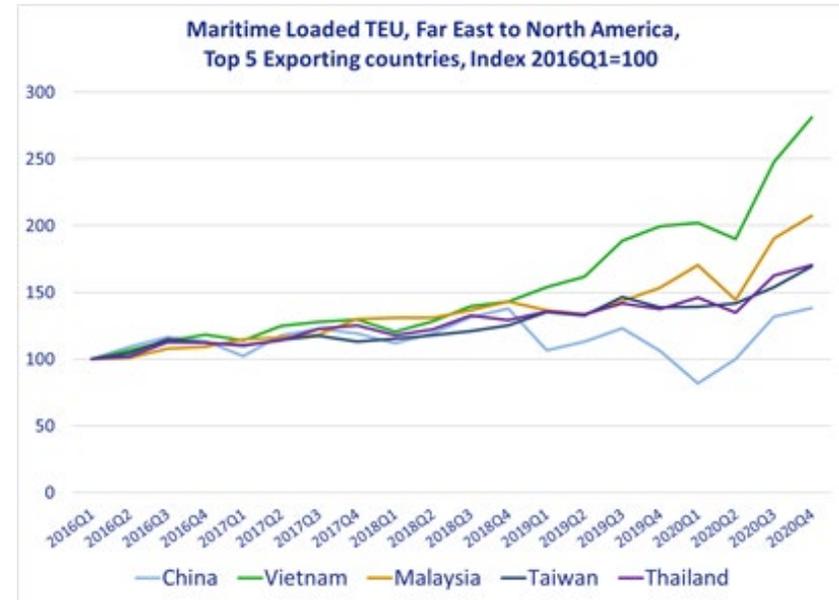
Conclusions & Commentary

- East-west routes continue to lead growth (mainly exports from the Far East) and, despite the pandemic, Q4 volumes were 9.5% above the previous year as compared with growth of 4.1% for north-south traffic.
- Lower levels of fiscal stimulus in developing countries are probably the main explanation.
- Intra-regional volumes grew least, reflecting a higher proportion of foodstuffs and other necessities.

1. Trade Volumes

1.4 Maritime Loaded TEU, Far East to North America (mTEU)

Top 5 Exporting countries	2020Q4	YTD	PQ	PY
China	3.76	12.28	5.0%	30.4%
Vietnam	0.53	1.73	13.6%	40.8%
Taiwan	0.31	1.09	10.4%	22.2%
Malaysia	0.30	1.04	8.8%	35.2%
Thailand	0.29	1.03	4.6%	23.9%
All others	0.76	2.70	9.4%	6.8%
Grand Total	5.94	19.87	6.7%	27.1%



Source: MDS Transmodal, World Cargo Database Feb 2021

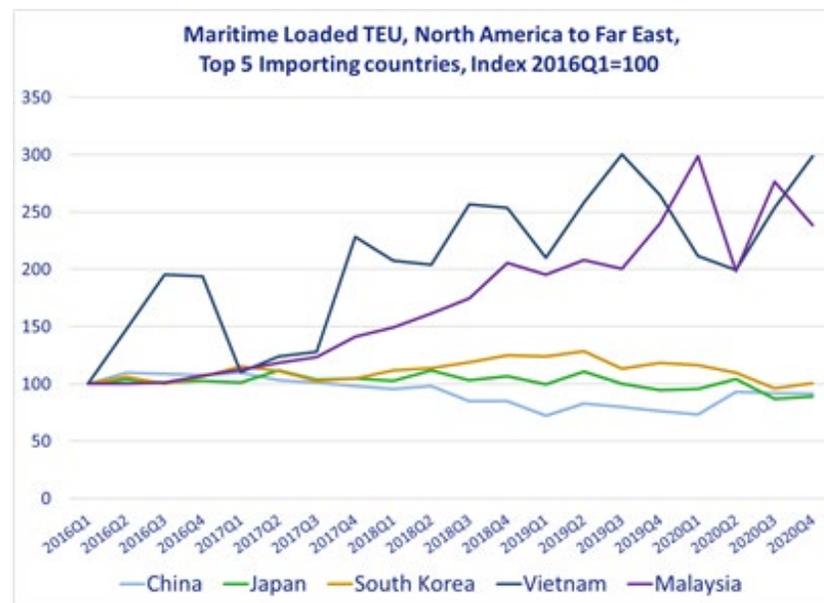
Conclusions & Commentary

- In Q4 Far East to North America volumes exceeded 2019 levels by 27.1%, led by Vietnam at +40.8%, reflecting growth in alternative sources of consumer goods manufacturing.

1. Trade Volumes

1.5 Maritime Loaded TEU, North America to Far East (mTEU)

Top 5 Importing countries	2020Q4	YTD	PQ	PY
China	0.80	3.06	-0.3%	20.0%
Japan	0.24	1.01	2.6%	-6.0%
South Korea	0.19	0.81	4.9%	-14.7%
Vietnam	0.14	0.44	17.7%	12.8%
Malaysia	0.08	0.32	-13.6%	-0.5%
All others	0.35	1.51	-6.5%	-19.6%
Grand Total	1.79	7.14	-0.2%	0.8%



Source: MDS Transmodal, World Cargo Database Feb 2021

Conclusions & Commentary

- Q4 Far East imports from North America grew only marginally versus 2019, with declines to both Japan and South Korea.

2. Capacity

2.1 Deployed capacity, global

	Ship size	2020Q4	PQ	PY
Deployed capacity (mTEU)	<5,000	28.1	2%	-2%
	5,000-7,499	5.5	-8%	-2%
	7,500-9,999	6.2	4%	-2%
	10,000-12,499	3.0	10%	41%
	12,500-14,999	3.9	8%	-2%
	15,000+	3.7	9%	29%
Total deployed capacity (mTEU)		50.4	2%	1%
No of vessels	<5,000	3,419	3%	-2%
	5,000-7,499	431	-16%	-8%
	7,500-9,999	488	6%	-2%
	10,000-12,499	185	3%	35%
	12,500-14,999	243	11%	9%
	15,000+	174	6%	30%
Total No of vessels		4,940	2%	0%

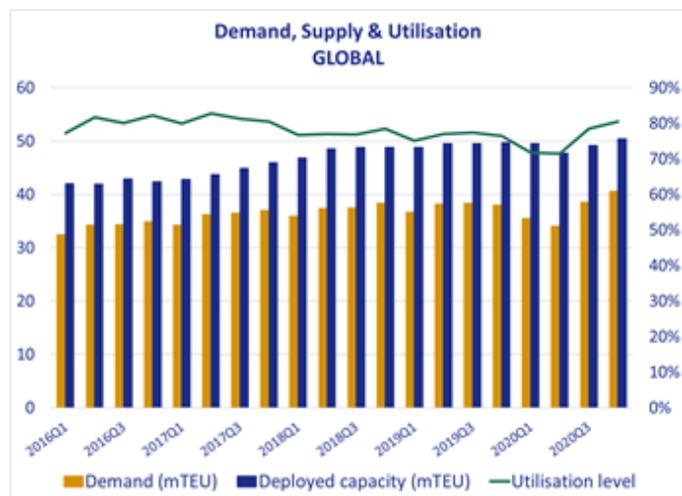
Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

- Global deployed capacity in Q4 was 1% more than in 2019, as compared with an 8.9% growth in deep-sea demand, employing the same number of vessels.
- At the end of 2020 there was effectively no greater overall capacity nor numbers of vessels deployed than at the beginning of the year. The global container shipping industry is servicing 2021 demand with 2019 capacity.
- The same number of vessels meant the number of sailings was unchanged, assuming same speed and frequency

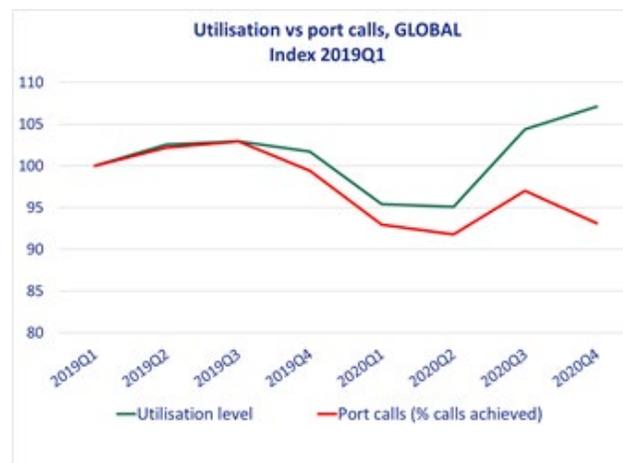
2. Capacity

2.2 Deployed capacity, routes (mTEU)



	2020Q4	PQ	PY
East-West	20.7	2.8%	4.0%
Intra	22.6	2.1%	-0.6%
North-South	3.9	1.1%	-1.1%
South-South	3.2	5.0%	3.6%
Grand Total	50.4	2.5%	1.4%

Source: MDS Transmodal, World Cargo Database & Containership Databank November 2020 November 2020



Conclusions & Commentary

- Q4 2020 overall capacity on EW routes was up by just 1.4% on 2019 while demand was up by 9.5%. As compared with Q3, capacity was up by 2.5% while demand grew by 3.7%. Globally, utilisation recovered strongly and matched any previous levels.
- Between 2019Q4 and 2020Q3, the proportion of anticipated port calls fell significantly as overall utilization rose. As we shall see reliability and punctuality also fell.
- Vessel deployments during Q4 2020 added only 4% extra capacity to East-West routes compared to Q4 2019. Growth in trade increased 9.5% over the same period.
- The 'capacity crunch' was met by greater utilisation of available space and a reduction in the number of port calls.

2. Capacity

2.3 Deployed capacity, Far East - North America

	Ship size	2020Q4	PQ	PY
Deployed capacity (mTEU)	<5,000	0.2	29%	-3%
	5,000-7,499	0.5	3%	-18%
	7,500-9,999	1.3	-5%	-5%
	10,000-12,499	0.8	20%	50%
	12,500-14,999	0.4	7%	3%
	15,000+			
Total deployed capacity (mTEU)		3.1	6%	4%
No of vessels	<5,000	36	16%	-8%
	5,000-7,499	36	0%	-14%
	7,500-9,999	68	-8%	-8%
	10,000-12,499	39	18%	50%
	12,500-14,999	13	8%	-7%
	15,000+			
Total No of vessels		192	3%	-2%

Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

- Deployed capacity between the Far East and North America grew by 6% as compared with Q3 while demand grew by 7%
- Capacity was 4% above Q4 2019, to be compared with a rise in demand of 27%.
- As compared with 2019, 2% less ships were employed as larger ships were employed, reducing effective frequency

2. Capacity

2.4 Services on all corridors on the Far East - N America trade lane by alliance member

Alliances	Members	Number of ships			Deployed capacity (mTEU)			Avg size of ship (TEU)			Number of services		
		2019Q4	2020Q4	% change	2019Q4	2020Q4	% change	2019Q4	2020Q4	% change	2019Q4	2020Q4	Change in abs terms
2M Alliance	Maersk	98	92	-6%	1.1	1.0	-3%	9,363	9,203	-2%	13	14	1
	MSC	37	55	49%	0.4	0.8	115%	11,416	12,427	9%	6	9	3
Ocean Alliance	CMA-CGM	78	81	4%	1.0	1.0	2%	9,545	10,151	6%	10	10	0
	COSCO	80	89	11%	1.2	1.2	3%	9,376	9,531	2%	14	12	-2
	Evergreen	53	54	2%	0.7	0.7	0%	8,396	8,499	1%	8	8	0
THE Alliance	Hapag-Lloyd	32	33	3%	0.4	0.5	7%	9,013	9,145	1%	11	11	0
	HMM	0	28		0.0	0.5		0	10,393		0	9	9
	ONE	97	92	-5%	1.0	0.9	-10%	7,749	9,047	17%	18	15	-3
	Yang Ming	29	29	0%	0.4	0.4	-1%	8,279	10,584	28%	10	11	1
Others		120	78	-35%	1.0	0.5	-45%	4,243	3,738	-12%	26	18	-8
TOTAL		624	631	1%	7.2	7.6	6%	8,315	9,093	9%	78	76	-2

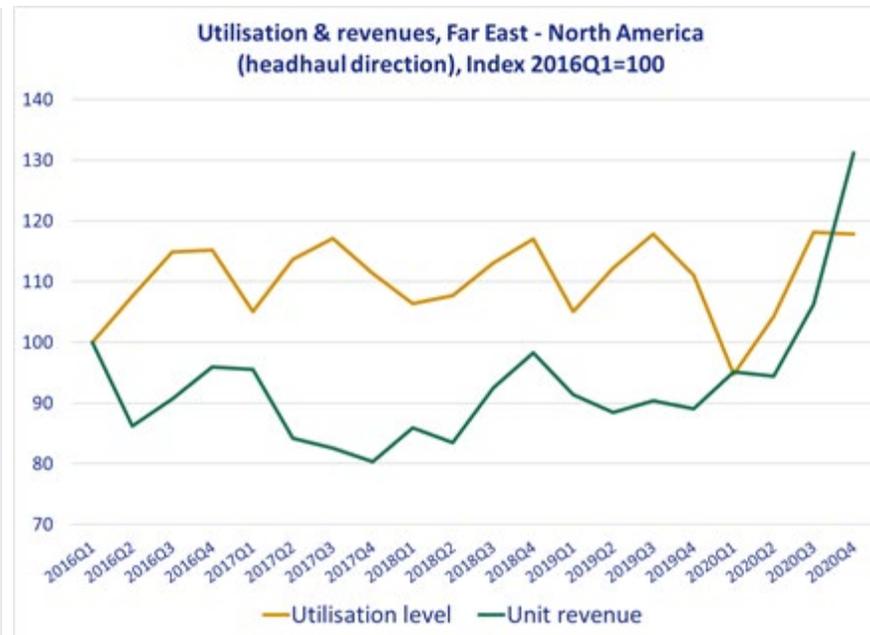
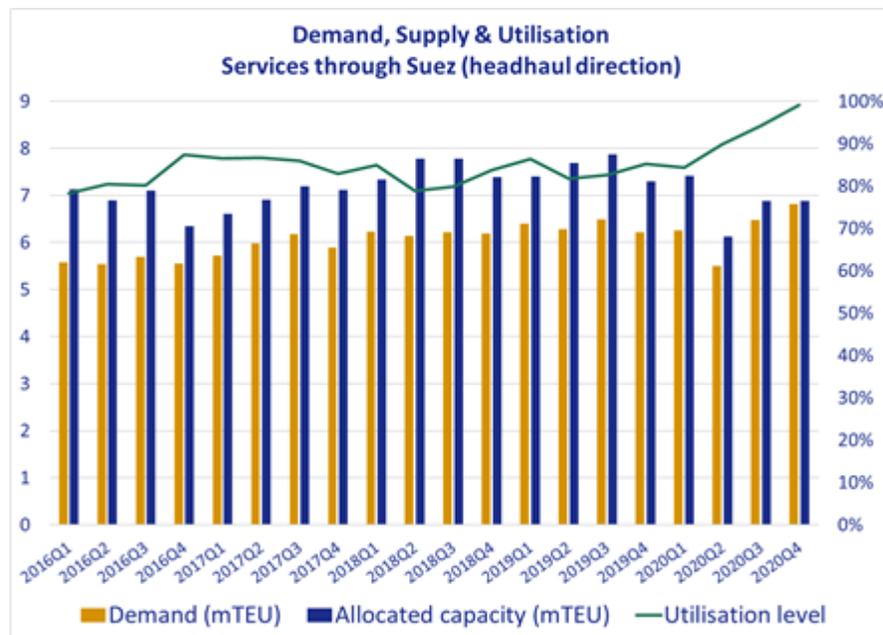
Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

- Overall capacity grew by 6% between Q4 2020 and Q4 2019.
- The mean capacity of ships grew by 9% over the year, Yang Ming's mean ship capacity growing particularly highly. There were significant changes in the shares of capacity supplied by the different lines.

3. Utilisation

3.1 Utilisation through Suez & Far East - North America



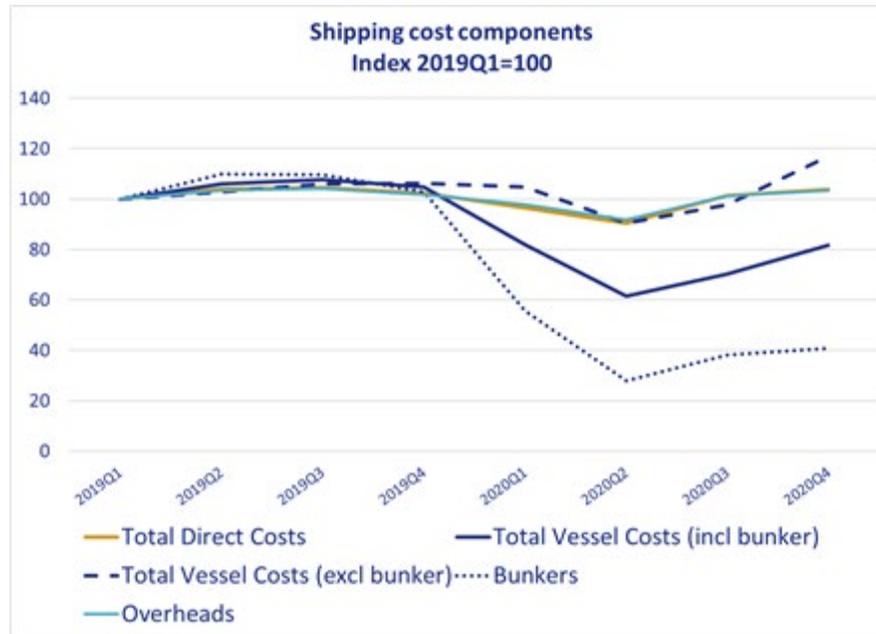
Source: MDS Transmodal, Container Business Model Feb21

Conclusions & Commentary

- Westbound traffic through the Suez Canal provides an opportunity to assess fleet utilisation.
- Utilisation levels reached their highest ever levels in Q4 2020.
- Revenues per unit on the Transpacific market (as recorded by CTS) increased strongly throughout 2020, rising initially despite falling demand and accelerating rapidly in Q3 and Q4 as utilization reached record levels.
- Capacity utilisation reached 100% on headhaul services as growth in demand was absorbed by existing capacity.
- Average revenue per container on Far East - North America trades soared by 20% as capacity shortage drove up rates.
- Global container shipping is maxed out!

4. Costs & Revenues (Index 2019Q1=100)

4.1 Costs & revenue, Global



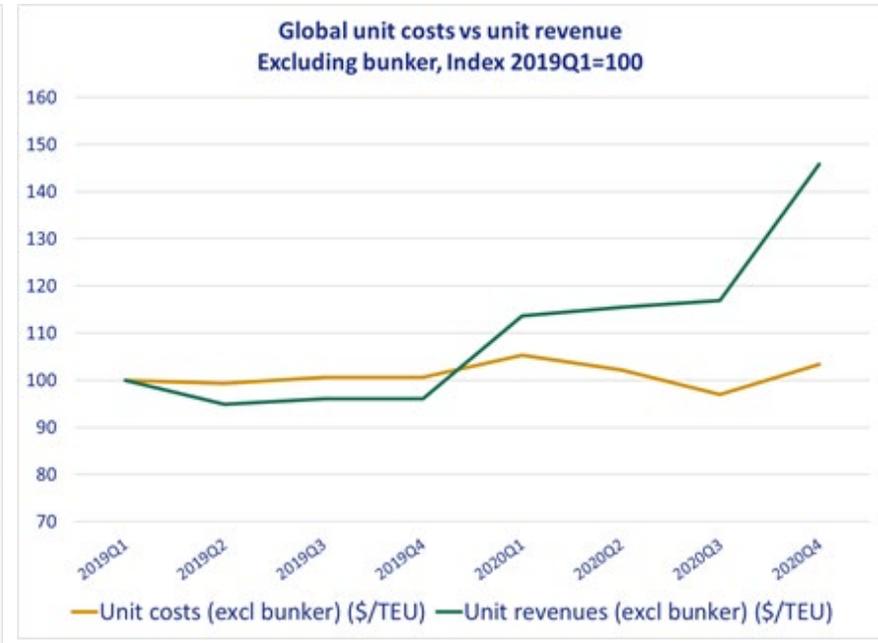
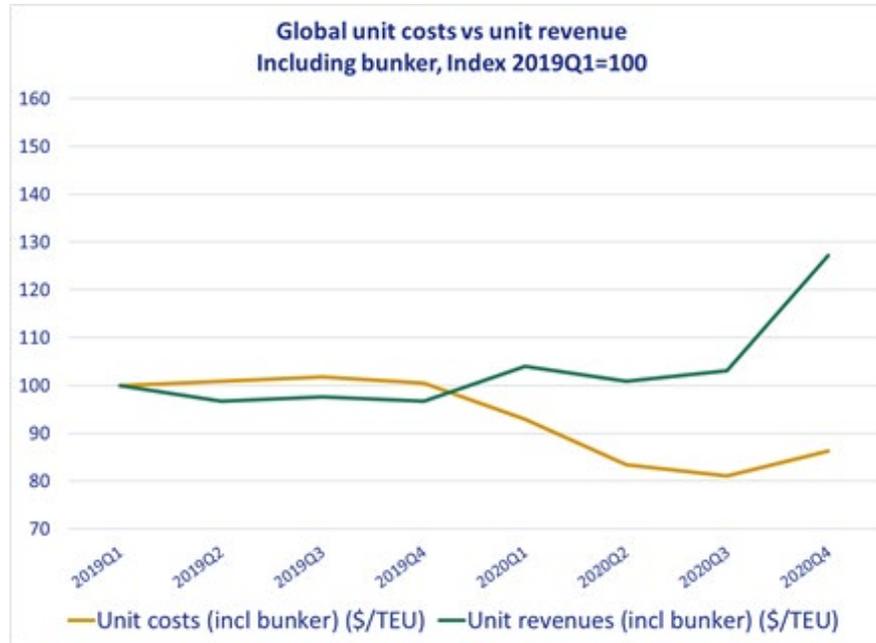
Source: Costs: MDS Transmodal, Container Business Model November 2020; freight rates: MDS Transmodal elaboration on various sources

Conclusions & Commentary

- Overall shipping costs increased in 2020Q4 mainly due to increase in bunker costs and charter rates
- Both mean revenues and spot rates increasing substantially, reflecting an apparent shortfall of capacity versus demand.
- Cost pressures on carriers remained subdued, and arose mainly from higher charter rates. Fuel cost increases subsided.
- The growth in unit revenues are driven by the low marginal operating costs of carrying containers on fully occupied vessels. This can be expected to be high yield business.

4. Costs & Revenues (Index 2019Q1=100)

4.2 Unit costs & unit revenue, Global



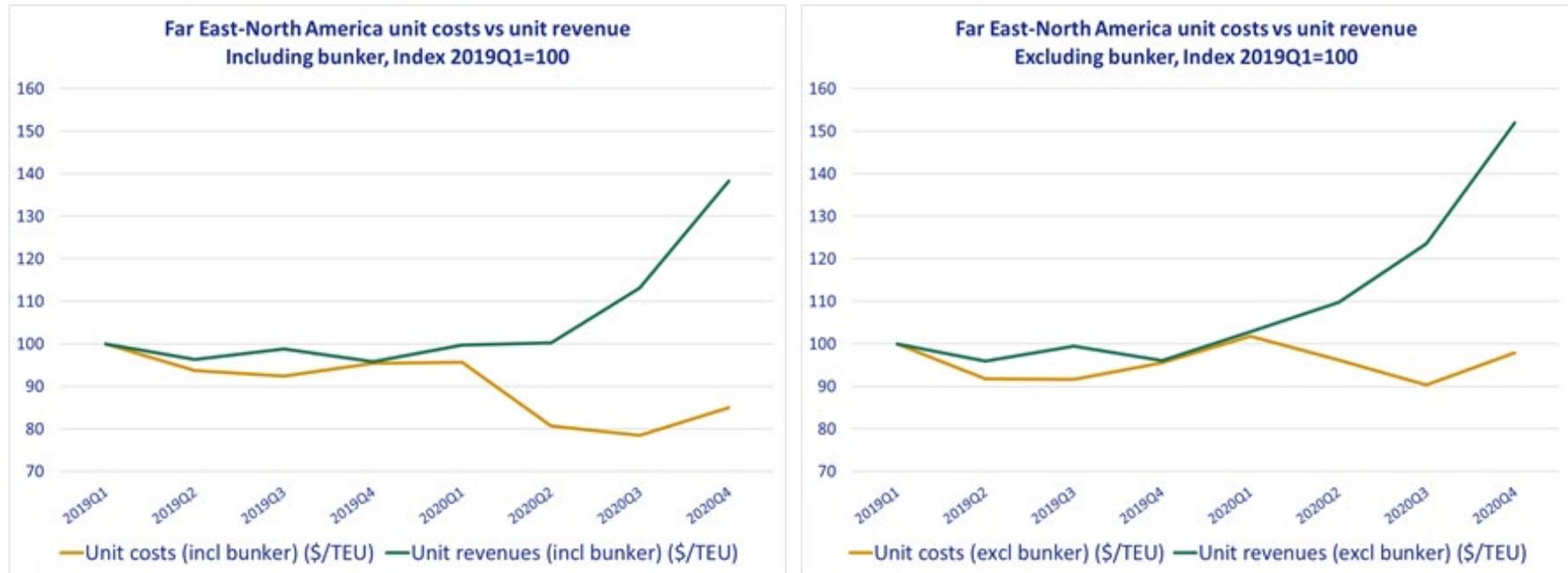
Source: MDS Transmodal, Container Business Model Feb21

Conclusions & Commentary

- Taking Q1 2019 as '100', global unit costs fell during 2020 as bunker costs declined.
- Excluding bunkers, costs decline (as utilisation improved) to Q3 whereas revenues net of bunker costs jumped in Q1 2020 and that gap over costs has continued to grow. In Q4, modelled non-bunker costs rose, reflecting increases in underlying charter rates but the gap between costs and revenues continued to grow.
- On average, shipping lines earned 1¼ times more revenue per container moved in Q4 2020 than they did in Q3.
- Operating costs per container rose just 5%age point, mainly in spot charter rates which are not incurred at all by vessel owners or long-term charter parties.

4. Costs & Revenues (Index 2019Q1=100)

4.3 Unit costs & unit revenue, Far East - North America



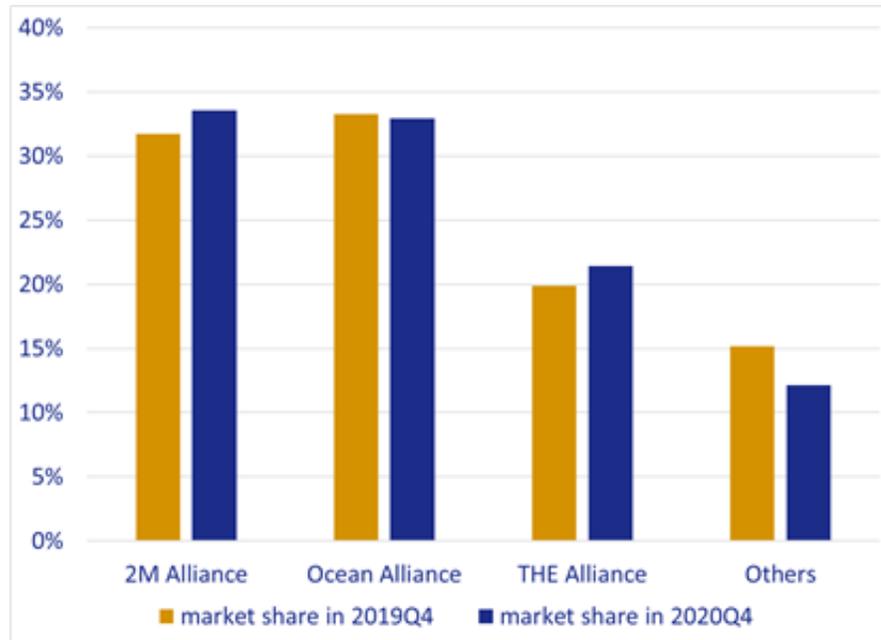
Source: MDS Transmodal, Container Business Model Feb21

Conclusions & Commentary

- Our focus on Far East to North America demonstrates a similar pattern to the global picture, except that the lines probably made smaller (relative) losses in 2019 followed by stronger gains in 2020, particularly in Q4.

5. Competitiveness

5.1 Market shares based on capacity deployed on deep-sea routes, 2019Q4 vs 2020Q4



Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

- With the exception on Ocean Alliance, both THE Alliance and 2M Alliance have seen their market shares increased between 2019Q4 and 2020Q4 with 'Others' now offering c. 12% of the total capacity deployed on the deep-sea trade lanes.
- The increase of c. two percentage points for 2M is driven by the increase in the capacity deployed by MSC, up by more than 20% compared to the previous year.

5. Competitiveness

5.2 Market concentration - Transpacific

Number of trade corridors on the transpacific trade lane with at least one consortium exceeds 30% and 50% thresholds

	Corridors with consortium > 30%	Corridors with consortium > 50%
2006Q2	4 out of 10 (48% of total demand)	0 out of 10 (0%)
2016Q2	8 out of 10 (82% of total demand)	0 out of 10 (0%)
2019Q2	10 out of 10 (100%)	2 out of 10 (11%)
2020Q2	10 out of 10 (100%)	1 out of 10 (8%)

Number of trade corridors on the transpacific trade lane where share of independent operators exceeds 5%

	Corridors with independent operators > 5%
2006Q2	10 out of 10 (100% of total demand)
2016Q2	2 out of 10 (17%)
2019Q2	4 out of 10 (37%)
2020Q2	2 out of 10 (14%)

Source: MDS Transmodal Consortia & Alliances Database, Feb21

Conclusions & Commentary

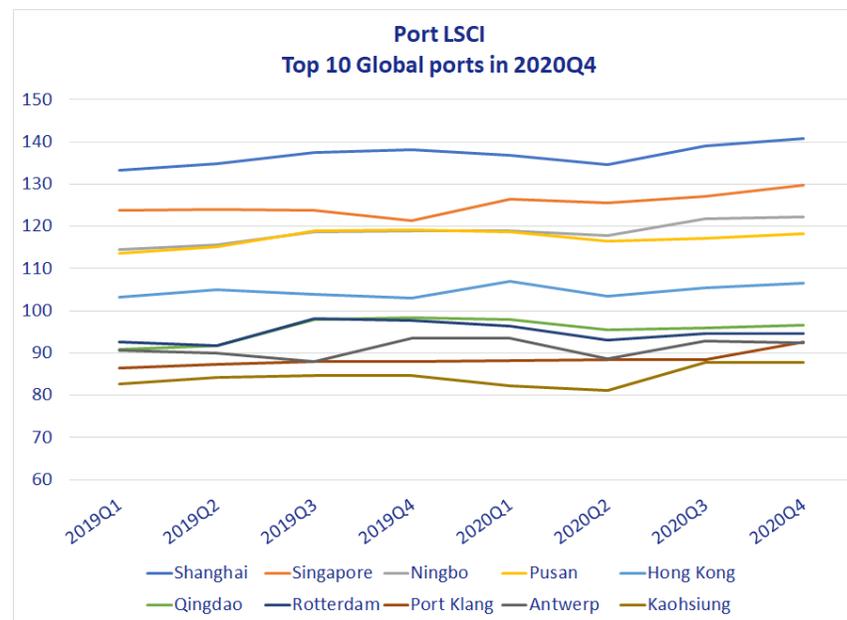
- Via vessel sharing agreements or consortia, global carriers have created a web-like structure of interlinkages that could constitute market power that competition authorities have so far ignored, writes Olaf Merk (International Transport Forum), based upon the new MDST Consortia Market Shares Database. (“Is there still competition in liner shipping?”, <https://lloydslist.maritimeintelligence.informa.com/LL1135476/Is-there-still-competition-in-liner-shipping>)
- In 2020, 10 out of 10 corridors on the transpacific were operated by one or more consortia/alliances with combined market shares higher than 30%, up from 8 in 2016 and 2 in 2006. By contrast, the number of lines not operating in consortia/alliance, has been decreasing, with market share less of 5% in 2 out of 10 corridors, down from 10 in 2006.
- **The enforceability of market share thresholds must be addressed by competition authorities, given the effect of co-ordinated capacity management on spot rates and service quality during 2020.**

6. Port Connectivity (MDST/UNCTAD LSCI)

6.1 Top 10 container ports, global

Liner Shipping Connectivity Index, Hong Kong 2006Q1=100

	2020Q4	PQ	PY
Shanghai	138.9	1.8	2.6
Singapore	125.5	2.6	8.4
Ningbo	117.9	0.5	3.2
Pusan	116.4	1.3	-0.7
Hong Kong	103.5	1.0	3.5
Qingdao	95.5	0.5	-1.9
Rotterdam	93.1	0.1	-3.1
Port Klang	88.4	4.2	4.7
Antwerp	88.8	-0.5	-1.1
Kaohsiung	81.2	-0.2	3.0



Source: MDS Transmodal, Containership Databank November 2020 (www.portlsci.com)

Conclusions & Commentary

- Increases in blank sailings witnessed in 2020Q2 impacted negatively on port connectivity worldwide, but signs of improvements started to emerge in the third and fourth quarter with Singapore amongst the ports to experience higher improvements in its LSCI as deployed capacity increase.
- However, Rotterdam and Antwerp, only two European ports in the top 10, have both experienced a contraction in their LSCI in 2020Q4 as compared to the previous year, mainly driven by a reduction in the number of services

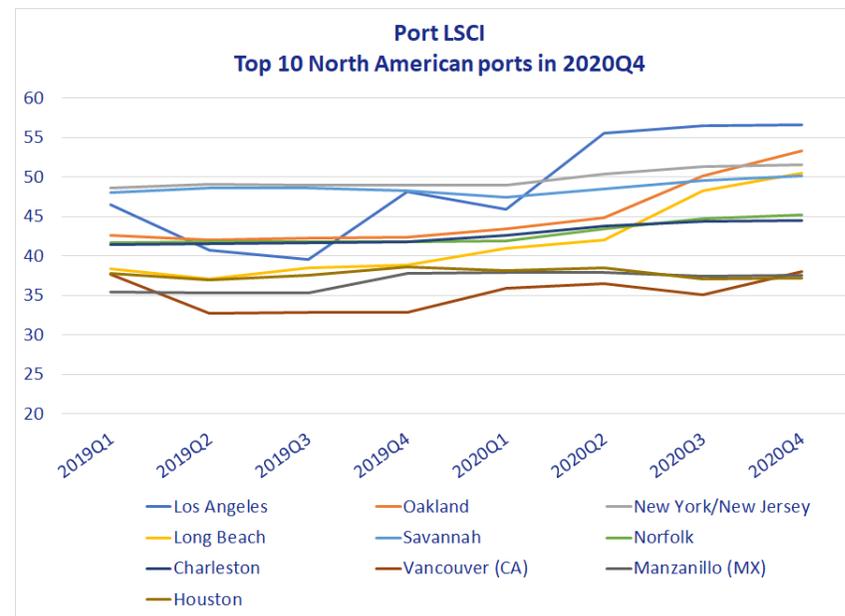
6. Port Connectivity (MDST/UNCTAD LSCI)

6.2 Top 10 container ports, North America

Liner Shipping Connectivity Index, Hong Kong 2006Q1=100

Los Angeles

	2020Q4	PQ	PY
Port LSCI	141	1.3%	1.9%
Number of services	269	2.7%	2.7%
Number of port calls	265	3.0%	3.4%
Max ship capacity (TEU)	23,964	0.0%	0.9%
Number of operators	63	-6.0%	-7.4%
Deployed annual capacity (mTEU)	70.9	3.7%	6.1%
Number of direct calls	295	2.1%	0.7%



Source: MDS Transmodal, Containership Databank November 2020 (www.portlsci.com)

Conclusions & Commentary

- Los Angeles, the best connected Northern American port, has seen an increase in all the components underpinning the LSCI except the number of operators
- The improvement in the level of connectivity, however, has not coincided with an improvement in service performance, with consistency (% within 6 hours of mean arrival time) down by c. 20 % points, reliability (% arriving on day most often achieved) down by c. 23% points and port calls (% calls achieved) down by c. 14 % points in 2020Q4 as compared to 2019Q4.

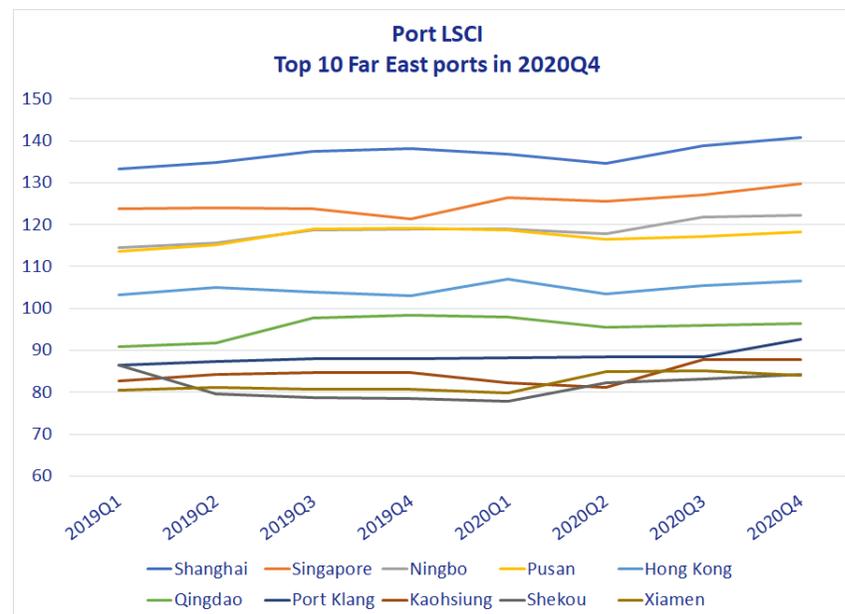
6. Port Connectivity (MDST/UNCTAD LSCI)

6.3 Top 10 container ports, Far East

Liner Shipping Connectivity Index, Hong Kong 2006Q1=100

Shanghai

	2020Q4	PQ	PY
Port LSCI	57	0.2%	17.6%
Number of services	21	5.0%	0.0%
Number of port calls	19	5.4%	2.6%
Max ship capacity (TEU)	23,656	0.0%	23.2%
Number of operators	12	0.0%	-7.7%
Deployed annual capacity (mTEU)	7.4	0.4%	-0.2%
Number of direct calls	73	0.0%	7.4%



Source: MDS Transmodal, Containership Databank November 2020 (www.portlsci.com)

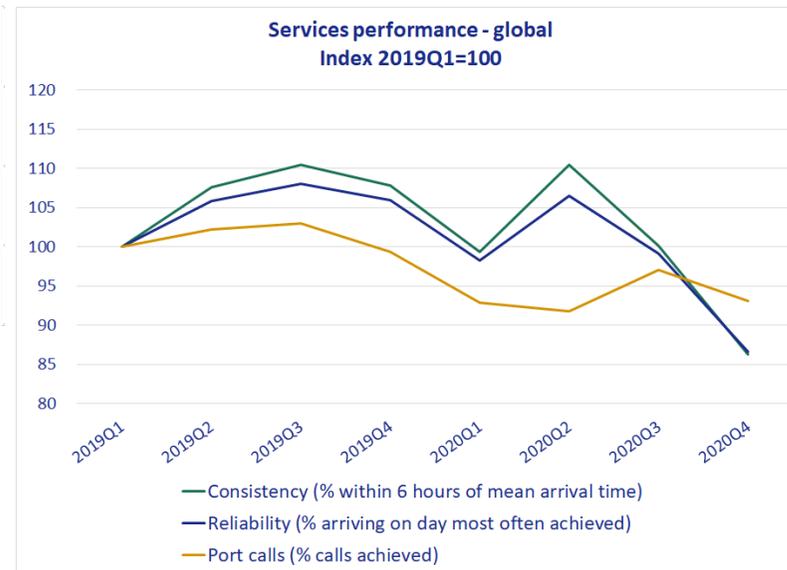
Conclusions & Commentary

- LSCI generally improved for Far East container ports during the fourth quarter of 2020 with Shanghai, the best-connected port, achieving a substantial increase on the year-on-year comparison.

7. Services performance

7.1 Consistency, reliability & port calls, global

	2020Q4	YTD	PQ (% points)	PY (% points)
Consistency (% within 6 hours of mean arrival time)	33%	44%	-10.5	-15.1
Reliability (% arriving on day most often achieved)	42%	52%	-8.3	-13.5
Port calls (% calls achieved)	79%	80%	-5.6	-6.9



Source: MDS Transmodal based on AIS (Automatic Identification System) data

Conclusions & Commentary

- Q42020 timetabling consistency and reliability both deteriorated significantly as compared with Q3 but in contrast to the previous quarter the proportion of blanked sailing and skipped ports also deteriorated. As compared with Q42019 performance fell by all 3 metrics.
- Both measures of the predictability of vessel arrival (Consistency and Reliability) and the number of arrivals fell further due mainly to port congestion, both landside and seaward.
- Service quality has deteriorated as quickly as spot rates have risen. Shippers are paying record high prices for record low levels of service performance. The benefits of consortia operations are not being experienced by shippers.

7. Services performance

7.2 Consistency, reliability & port calls, Far East - North America West Coast

	2020Q4	YTD	PQ (% points)	PY (% points)
Consistency (% within 6 hours of mean arrival time)	33%	44%	-10.5	-15.1
Reliability (% arriving on day most often achieved)	42%	52%	-8.3	-13.5
Port calls (% calls achieved)	79%	80%	-5.6	-6.9



Source: MDS Transmodal based on AIS (Automatic Identification System) data

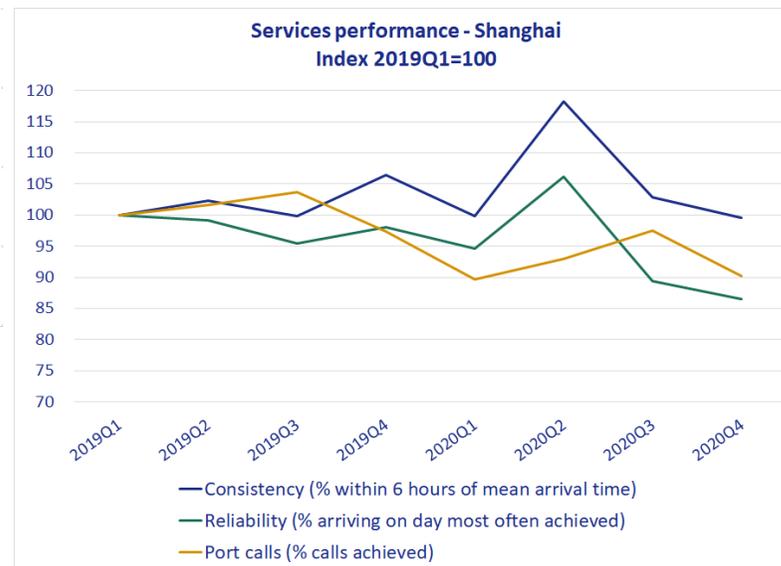
Conclusions & Commentary

- The number of skipped ports and blank sailings deteriorated markedly from Q3 and as compared with Q4 2019, as did consistency and reliability.

7. Services performance

7.3 Consistency, reliability & port calls, Shanghai

	2020Q4	YTD	PQ (% points)	PY (% points)
Consistency (% within 6 hours of mean arrival time)	39%	42%	-1.3	-2.7
Reliability (% arriving on day most often achieved)	47%	51%	-1.6	-6.3
Port calls (% calls achieved)	71%	74%	-5.8	-5.7



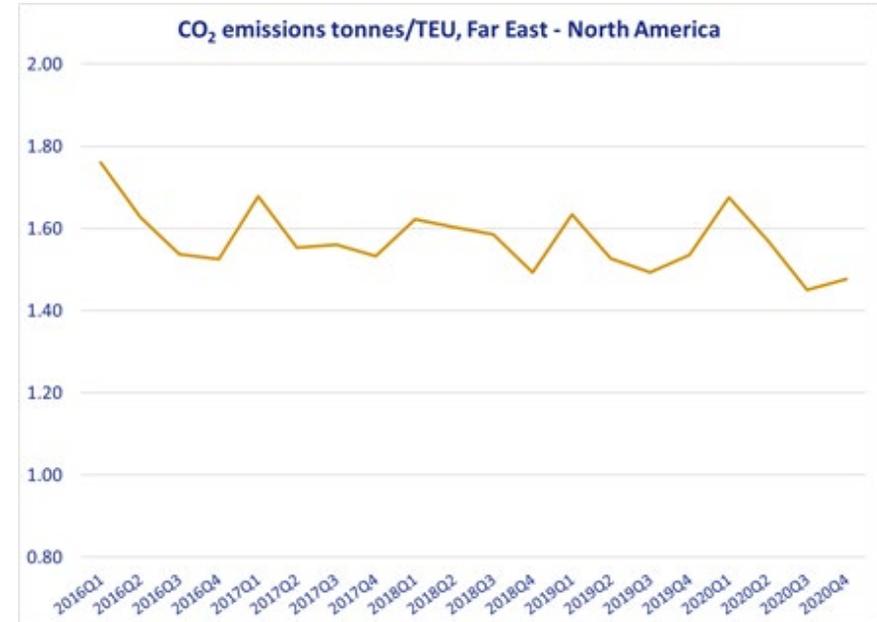
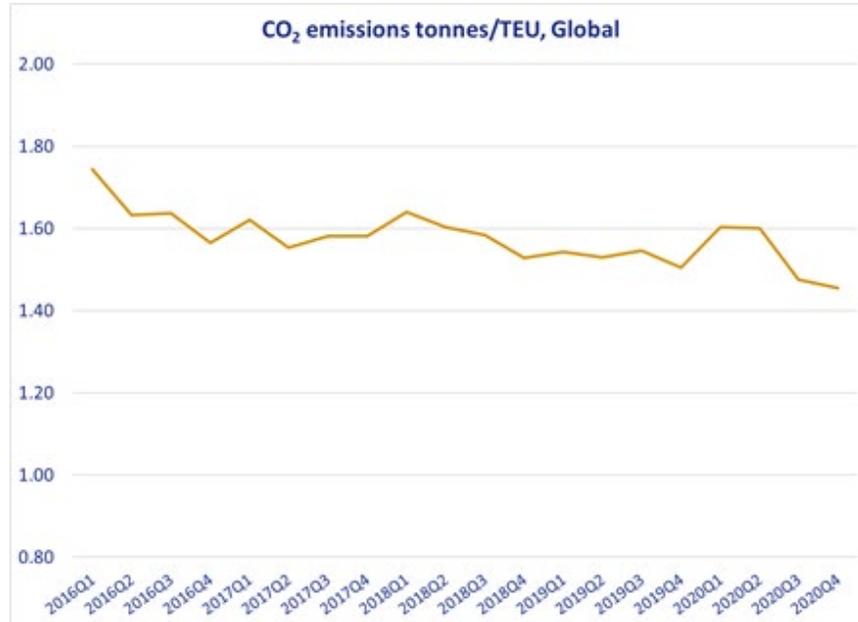
Source: MDS Transmodal based on AIS (Automatic Identification System) data

Conclusions & Commentary

- Consistency and reliability both deteriorated in Q4 2020 as compared with both Q3 and Q4 2019.
- The proportion of expected port calls that were actually made also fell.

8. Carbon Emission Factors

8.1 CO₂ emission tonnes/TEU, global & Far East - North America



Source: MDS Transmodal, Container Business Model Feb21

Conclusions & Commentary

- Emissions per unit of cargo (tonnes/TEU) reduced as the twin policies of slower vessel speeds ('slow steaming') and the introduction of larger vessels (VLCCs) took effect. The decreases was most marked on Far East- North Europe route where these policies had greatest impact.
- A package of measures, targeting ship design and vessel operation could be adopted in June 2021 for implementation from 2023.
- The European Commission is consulting on incorporation of deep-sea shipping into its Emissions Trading Scheme (ETS).
- GSF will use this indicator to assess the cost-effectiveness of these measures as and when they take effect.

The indicators explained (1)

- 1.1 Total trade:** Total goods exported and imported by all countries measured in millions of tonnes and distinguished between 'not unitised' and 'unitised'.
- 1.2. Unitised trade:** Cargo moved in units, measured in TEU and distinguished between Maritime containers (loaded containers shipped by sea, excluding RoRo) and Other (RoRo containers by sea, containers and road trailers across land borders).
Unitised maritime trade represents the total demand for container shipping services by cargo owners (shippers).
- 2.1 Deployed capacity:** Capacity offered on container-carrying vessels (containerships) deployed on services as scheduled by the shipping lines (mTEU).
Deployed capacity is the total supply of scheduled container-carrying capacity made available to shippers to meet the demand for unitised freight.
- 3.1 Allocated capacity:** Capacity estimated in the MDST model to calculate the level of utilisation; it represents, effectively, the available TEU capacity modelled on a global basis but taking each string and its precise port calls into account. MDST then allocates this capacity by taking into account the demand (region-to-region) making assumptions on direct services versus transshipment. In effect this is acknowledging the fact of way-port cargoes but at a region-to-region level rather than port-to-port level.
- 3.1 Utilisation:** Ratio of estimated cargo moved on identified routes to capacity allocated to those routes (e.g. services transiting the Suez Canal northbound – busiest location for the global container shipping industry)

Numbers refer to sections in which the term is used

The indicators explained (2)

4.2 Costs & Revenues: Estimated operating costs and estimated revenues measured with and without fuel

5.1 Market concertation: this analysis has been carried out using the MDST Consortia & Alliances Database, a subproduct of the MDST Containership Databank, which contains detailed information of the world's container carrying fleet also used by UNCTAD for the Liner Shipping Connectivity Index (LSCI) and by the World Bank for the Logistics Performance Index (LPI). The MDST Consortia & Alliances Database, developed in collaboration with Olaf Merk (International Transport Forum), is a dataset in which we have grouped the port pairs into trade corridors (e.g. a service calling, amongst other, at the port of Shanghai and at the port of Rotterdam, has been allocated to the East China Sea-North Europe trade corridor) and identified, for each vessel deployed on any given service, the shipping lines that operate them. This information has allowed us to identify the services operated by consortia and their members, by alliances and their members, by independent carriers.

6.1 Port LCSI: Liner Shipping Connectivity Index produced in collaboration with UNCTAD and generated from the following 6 components: number of scheduled ship calls/week in the port; total scheduled container shipping capacity calling at the port; number of regular services calling at the port; number of carriers that provide services to/from the port; maximum average size of the ships deployed by the scheduled service; number of other ports that are connected to the port through direct services (more on www.portlsci.com)
The LSCI is a proxy for the frequency, reliability and direct access to markets experienced by shippers through that port and is a measure of the quality of service experienced by users of the ports services.

Numbers refer to sections in which the term is used

The indicators explained (3)

7.1 Services' performance indicators: Consistency (% within 6 hours of mean arrival time); **Reliability** (% arriving on day most often achieved); **Port calls** (% calls achieved after allowing for blanked sailings and ports skipped).

For shippers, Consistency is a measure of on-time arrival of vessels (will goods become available when they have normally been in the past?); Reliability is a measure of the regularity of service (same day of the week); Port Calls is a measure of whether the vessel arrives at all or the cargo is 'rolled' on to the next service. These are key factors in determining on-time delivery of exports to customers or availability of imports for domestic distribution.

8.1 Carbon Emission factors: Average amount of CO₂ emitted by each loaded container shipped by sea measured for the whole deep-sea shipping industry and selected trade lane (tonnes CO₂ /TEU).

Carbon emissions per cargo unit moved are the required inputs for manufacturers, retailers and other shippers to calculate the contributions that third parties make to the carbon footprint of their products and businesses (Scope 3 emissions). The shipping industry is under public pressure to deliver meaningful reductions in greenhouse gas emissions in the short and medium term. Current proposals target improvements through better ship design and maintenance and more efficient operation. Other actions include Emissions Trading Schemes, carbon taxes and the use of low-carbon fuels. Regardless of the means employed, this measure will track their net effectiveness on the carbon footprint of container shipping as experienced by users of its services.

Numbers refer to sections in which the term is used

The indicators explained (4)

Countries included in the two maritime regions indicated in this report:

North America: USA, Canada, Mexico

Far East: Brunei, Cambodia, China, Hong Kong, Indonesia, Japan, Laos, Macau, Malaysia, Mongolia, Myanmar, North Korea, Philippines, Singapore, South Korea, Taiwan, Thailand, Timor-Leste, Vietnam

More about MDS Transmodal & contacts

MDS Transmodal (MDST, www.mdst.co.uk) is a firm of transport economists based in Chester (UK) which specialises in maritime and all other modes of freight transport. MDST works with senior management in the public and private sectors to provide strategic advice based on quantitative analysis, modelling and sectoral expertise. MDST's approach is based on being:

- Innovative – Constantly developing new ways to analyse strategic issues and opportunities
- Quantitative – Analysis based on best in class maritime databases and models
- Independent – More than 35-year track record of providing objective advice
- Expert – Consultants with an average of 20 years' consultancy experience
- Specialist – Focused on the economics of maritime transport and other freight modes.

MDST data, modelling and industry expertise can be applied to analyse strategic issues and opportunities wherever the client is based in the world. Clients include UNCTAD, the World Bank, the European Commission, government at all levels, ports and terminal operators, developers of distribution parks, financial institutions, global shippers and shipping lines and a wide range of professional services companies.

All of the data presented in tables and graphs can be provided at a more detailed level, e.g. trade data by country pairs as well as individual commodities, capacity and services performances by service and operator, etc.

Contacts:

Tel : +44 (0) 1244 348301

antonella.teodoro@mdst.co.uk

More about Global Shippers Forum & contacts

Global Shippers Forum (GSF) is the international business organisation speaking up for exporters and importers as cargo owners in international supply chains and trade procedures. Its members are national and regional shippers' associations representing manufacturing, wholesaling and retailing businesses in over 20 countries across five continents.

Shippers own the goods that others carry, and ultimately pay the costs of transport. GSF works to achieve safe, competitively efficient and environmentally sustainable global trade and logistics on behalf of its members.

www.globalshippersforum.com; secretariat@globalshippersforum.com

Contacts:

Tel: + 44 (0) 1580 754523

secretariat@globalshippersforum.com