

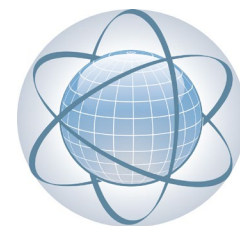
Global Shippers Forum/ MDS Transmodal Container Shipping Market Quarterly Review

2020: Quarter 3

Reporting data published in December 2020



MDS Transmodal Ltd.



global
shippers
forum

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, North Europe to Far East
- 1.5 Maritime Loaded TEU, Far East to North Europe

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- 2.1 Deployed capacity, global
- 2.2 Deployed capacity, routes
- 2.3 Deployed capacity, Far East - North Europe
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3 Capacity Utilisation

- 3.1 Utilisation through Suez & Far East - North Europe & Med

4 Carrier Costs & Revenues

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- 5.1 Top 10 operators market shares, global deep-sea market

6 Port Connectivity (MDST/UNCTAD LSCI)

- 6.1 Top 10 container ports, global
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7 Services performance

- 7.1 Consistency, reliability & port calls, global
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Glossary

More about MDS Transmodal & contacts

More about Global Shippers Forum & contacts

Global Shippers' Dashboard

Quarter 3 2020

KPI	Indicator	Status & Overview
1	Trade volumes	Global trade levels recovered strongly in Q3 but remained below 2019 levels for the quarter overall. Container shipping demand is weaker than a year ago.
2	Shipping capacity	Sharp increase in shipping capacity deployed during Q3 as production and consumption resumed but lagged overall growth in demand.
3	Capacity utilisation	Historically high levels of utilisation of deployed capacity were achieved in Q3.
4	Carrier costs & revenues	Unit operating costs continued to decline in Q3 due to lower fuel prices and higher utilisation of capacity. Unit revenues rose sharply from better capacity utilisation and increased volumes. Rate increases appear not to be driven by increases in unit operating costs.
5	Market competitiveness	The top ten shipping lines accounted for 90 per cent of deep-sea container movements in Q3.
6	Port connectivity	Many ports have seen service frequency and connections reinstated as more services have resumed. Global connectivity for imports and exports is being restored to pre-pandemic levels.
7	Service performance	Service predictability for shippers declined at many ports as vessels resumed intermediate calls at congested ports, delaying service arrivals and departures beyond their expected times.
8	Carbon dioxide emissions	CO ₂ emissions per TEU have remained broadly flat since 2016, awaiting new global measures to be adopted by IMO probably from 2023. This indicator can be used by shippers to report on the contribution of container shipping to their overall carbon footprint.

Status colour code:

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

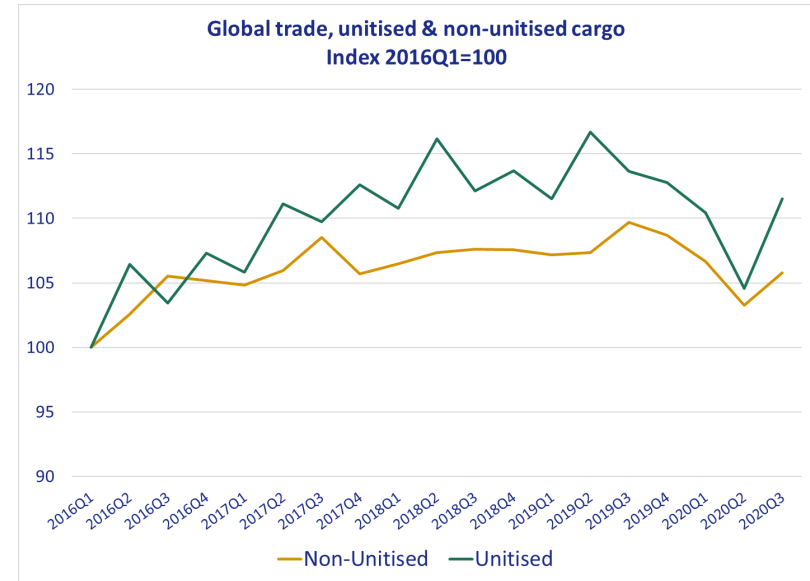
Amber = neutral or concerning trend (from shippers' perspective)

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

1. Trade Volumes

1.1 Total trade, global (mTonnes)

	2020Q3	Year To Date (YTD)	Previous Quarter (PQ)	Previous Year (PY)
Agricultural	208	588	6.6%	6.6%
Metals	11	32	6.3%	2.2%
Oils & fats	24	70	0.7%	3.1%
Chemicals	158	475	0.2%	7.4%
Ores	521	1,469	9.1%	0.8%
Forest products	109	302	3.8%	1.9%
Energy:				
- Coal	278	891	5.2%	6.9%
- Oil & gas	1,024	3,127	1.4%	4.5%
Other	420	1,259	1.0%	0.2%
Total Non-Unitised	2,752	8,214	2.4%	3.6%
Unitised	578	203	6.6%	1.9%
TOTAL Tonnes	3,330	8,417	3.1%	3.3%



Source: MDS Transmodal, World Cargo Database November 2020

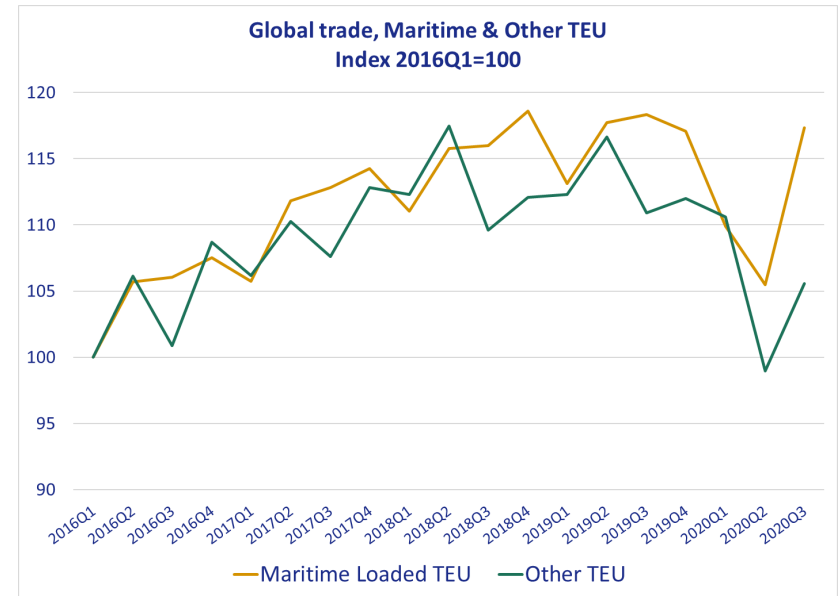
Conclusions & Commentary

- Measured when received at the importing country, global trade in Q3 recovered strongly, up 3.1% over Q2 - but, overall, still down by 1.9% as compared with pre-pandemic levels.
- Unitised traffic (including regional and overland international freight) grew by 6.6% over Q2 and was only 1.9% below the level of 2019.
- Strong output recovery in many exporting economies as consumer spending remains strong in importing nations where incomes have been protected by state support.
- Demand for container shipping recovering but remains below pre-pandemic levels.

1. Trade Volumes

1.2 Unitised trade, global (mTEU)

	2020Q3	YTD	PQ	PY
Maritime containers	38	108	11.3%	-0.8%
'- of which deep-sea (inter-continental)	28	79	14.4%	-0.7%
'- of which short-sea (intra-regional)	10	29	3.4%	-1.3%
Other (overland & ro-ro)	32	108	6.7%	-4.8%
Total TEU	70	108	9.2%	-2.7%



Source: MDS Transmodal, World Cargo Database November 2020

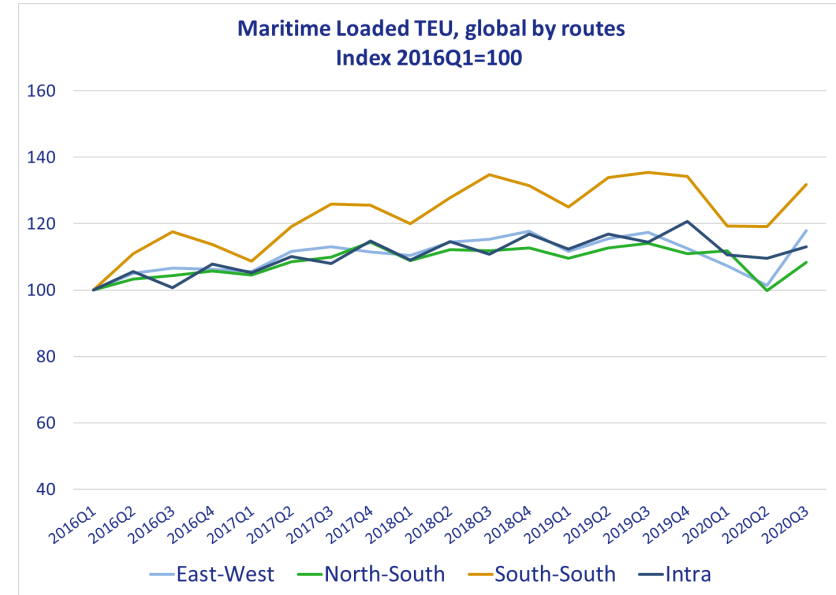
Conclusions & Commentary

- Total Q3 unitised grew by 9.2% over the previous quarter but was still 2.7% down over Q3 2019.
- Q3 deep-sea containerised freight was just 0.7% below 2019 levels and 14.4% up on Q2. By contrast, short-sea international freight was only 3.4% up on Q2 and 1.3% below 2019 levels, reflecting the higher elasticity of deep-sea traffic.

1. Trade Volumes

1.3 Maritime Loaded TEU, routes (mTEU)

	2020Q3	YTD	PQ	PY
East-West	20.5	56.7	16.3%	0.4%
North-South	2.9	8.6	8.5%	-5.1%
South-South	4.8	13.6	10.6%	-2.7%
Intra	10.0	29.5	3.2%	-1.1%
Grand Total	38.2	108.4	11.3%	-0.8%



Source: MDS Transmodal, World Cargo Database November 2020

Conclusions & Commentary

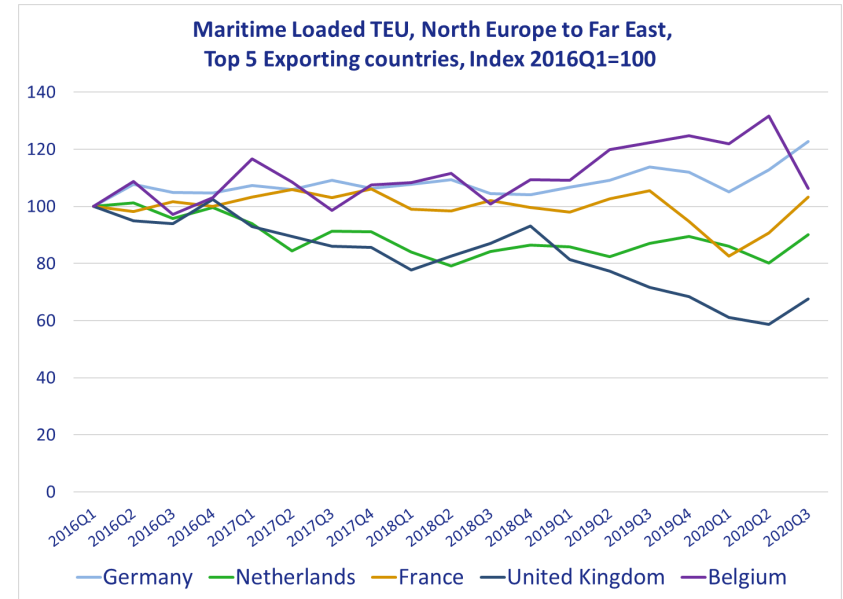
- East-west routes have recovered much more quickly (mainly exports from the Far East) and despite the pandemic had marginally exceeded 2019 levels by Q3 (timed at the point of importation).
- North-south routes remained 5.1% below 2019 levels because of lower levels of fiscal stimulus in developing countries.
- As compared with Q2 2020, total unitised demand grew by 11.3%.
- Chinese exports have led the global recovery in shipping demand driven by the re-stocking of inventory in importing nations to meet resurgent consumer demand and resumption of manufacturing.
- Demand remains depressed in the southern hemisphere reflecting the later arrival of the pandemic and subsequent restrictions.

1. Trade Volumes

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

Top 5 Exporting countries	2020Q3	YTD	PQ	PY
Germany	0.31	0.86	8.7%	7.8%
Netherlands	0.12	0.35	12.4%	8.6%
France	0.11	0.29	13.6%	-2.1%
Belgium	0.07	0.24	-19.3%	-18.1%
United Kingdom	0.09	0.24	15.0%	-5.7%
All others	0.36	1.02	3.0%	8.9%
Grand Total	1.05	2.99	5.6%	2.1%

NOTE: Russia excluded given long land border



Source: MDS Transmodal, World Cargo Database November 2020

Conclusions & Commentary

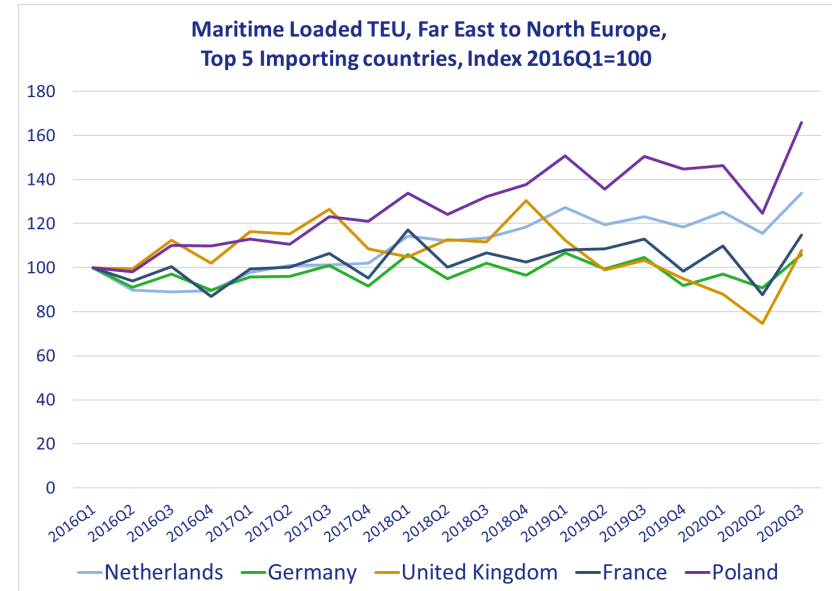
- In Q3 North Europe to the Far East levels recovered to exceed 2019 levels by 2.1%, with German exports growing by 7.8% but UK traffic falling by 5.7%.

1. Trade Volumes

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

Top 5 Importing countries	2020Q3	YTD	PQ	PY
Netherlands	0.57	1.60	15.7%	8.6%
Germany	0.53	1.48	16.6%	1.1%
United Kingdom	0.51	1.27	44.4%	4.2%
France	0.26	0.71	31.1%	1.7%
Poland	0.21	0.55	32.9%	10.1%
All others	0.64	1.85	13.1%	-5.5%
Grand Total	2.73	7.47	22.4%	2.2%

NOTE: Russia excluded given long land border



Source: MDS Transmodal, World Cargo Database November 2020

Conclusions & Commentary

- Q3 Far East exports to Europe were 2.2.% higher than in 2019, with the largest increase to Poland.

2. Capacity

2.1 Deployed capacity, global

	Ship size	2020Q3	PQ	PY
Deployed capacity (mTEU)	<5,000	27.5	-1%	-4%
	5,000-7,499	6.0	5%	6%
	7,500-9,999	6.0	12%	-6%
	10,000-12,499	2.7	1%	36%
	12,500-14,999	3.6	12%	-5%
	15,000+	3.4	10%	11%
Total deployed capacity (mTEU)		49.2	3%	-1%
No of vessels	<5,000	3,317	-2%	-5%
	5,000-7,499	512	12%	7%
	7,500-9,999	462	11%	-8%
	10,000-12,499	179	-3%	44%
	12,500-14,999	218	10%	2%
	15,000+	164	10%	12%
Total No of vessels		4,852	1%	-2%

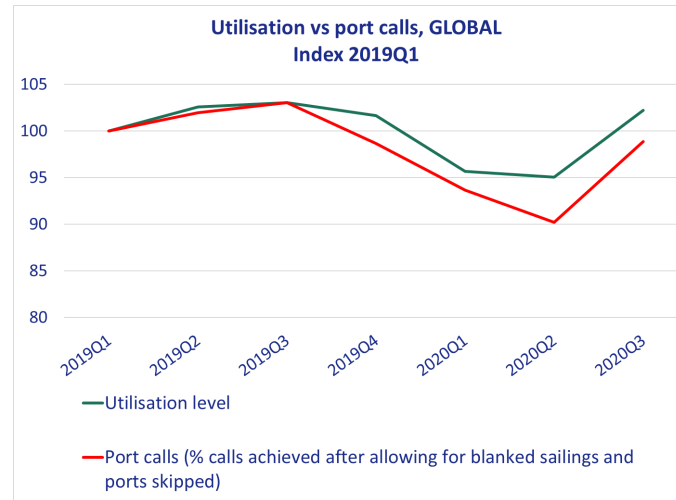
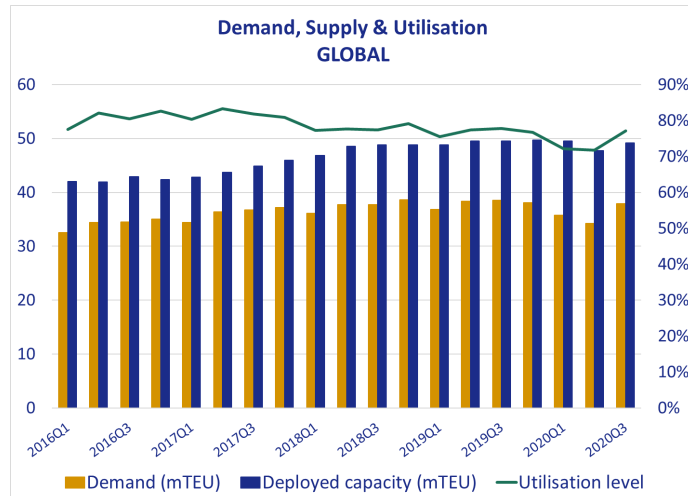
Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

- Global deployed capacity in Q3 was 1% less than in 2019, as compared with a 0.7% fall in deep-sea demand, employing 2% fewer vessels.
- Total capacity deployed grew by 3% from Q2 to Q3 compared with the 14.4% growth in deep-sea demand.
- Shipping capacity was cut quickly in Q1 and Q2 by idling vessels and cancelling sailings to match the fall in demand as world trade slumped. But loaded capacity does not appear to be returning to the market as quickly as trade (demand) is recovering.

2. Capacity

2.2 Deployed capacity, routes (mTEU)



	2020Q3	PQ	PY
East-West	20.1	9.0%	0.0%
North-South	3.9	-2.5%	-3.0%
South-South	3.0	3.8%	5.0%
Intra	22.1	-0.9%	-1.7%
Grand Total	49.2	3.1%	-0.7%

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

Conclusions & Commentary

- Q3 2020 overall capacity on EW routes was effectively identical to that in 2019 while demand was down by just 0.4%. As compared with Q2 capacity was up by 9% while demand grew by 16.3%. Globally, utilisation recovered strongly but remained marginally less than 3 years ago.
- Between 2019Q3 and 2020Q2, the improvement in actual port calls has matched the rise in utilisation. As we shall see this has been at the expense of reliability and punctuality.
- The Quarter-on-Quarter dip in deployed capacity through 2020 records carriers' response to the Covid pandemic but utilisation is improving faster than capacity is returning to the market signifying a tighten of space relative to demand, and reducing unit costs of operation.

2. Capacity

2.3 Deployed capacity, Far East - North Europe

	Ship size	2020Q3	PQ	PY
Deployed capacity (mTEU)	<5,000	0.0	-47%	-83%
	5,000-7,499			
	7,500-9,999	0.3	50%	202%
	10,000-12,499			
	12,500-14,999	1.0	-7%	-19%
	15,000+	2.5	11%	1%
Total deployed capacity (mTEU)		3.8	8%	-6%
No of vessels	<5,000	17	-35%	-59%
	5,000-7,499			
	7,500-9,999	40	38%	167%
	10,000-12,499			
	12,500-14,999	78	-5%	-7%
	15,000+	123	14%	5%
Total No of vessels		258	5%	-10%

Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

- Deployed capacity between the Far East and N Europe grew by 8% as compared with Q2 while demand grew by 22.4%
- Capacity was still 6% less than in Q3 2019, to be compared with a rise in demand of 2.2%.
- As compared with 2019, 10% less ships were employed as larger ships were employed, reducing effective frequency
- Deployed capacity continued to lag demand creating space shortages and pressure on spot rates.

2. Capacity

2.4 Services on Far East - North Europe by alliance member

Alliances	Members	Number of ships			Deployed capacity (mTEU)			Avg size of ship (TEU)			Number of services		
		2019Q3	2020Q3	% change	2019Q3	2020Q3	% change	2019Q3	2020Q3	% change	2019Q3	2020Q3	Change in abs terms
2M Alliance	Maersk	28	26	-7%	2.1	2.0	-8%	19,157	18,951	-1%	3	3	0
	MSC	11	9	-18%	0.9	0.4	-53%	19,568	14,872	-24%	3	2	-1
Ocean Alliance	CMA-CGM	13	12	-8%	0.9	0.9	-1%	18,000	17,820	-1%	1	1	0
	COSCO	32	32	0%	2.8	2.8	-1%	18,257	18,332	0%	3	3	0
The Alliance	Hapag-Lloyd	12	9	-25%	0.8	0.7	-21%	14,558	15,827	9%	2	2	0
	HMM	0	6		0.0	0.4		0	18,169		0	2	2
	ONE	4	5	25%	0.3	0.3	32%	14,000	20,170	44%	1	1	0
	Yang Ming	6	1	-83%	0.4	0.1	-73%	14,037	10,000	-29%	1	1	0
TOTAL		106	100	-6%	8.3	7.6	-8%	17,781	17,894	1%	9	9	0

Note: only table above includes only alliances and services calling at Far East – North Europe trade lane

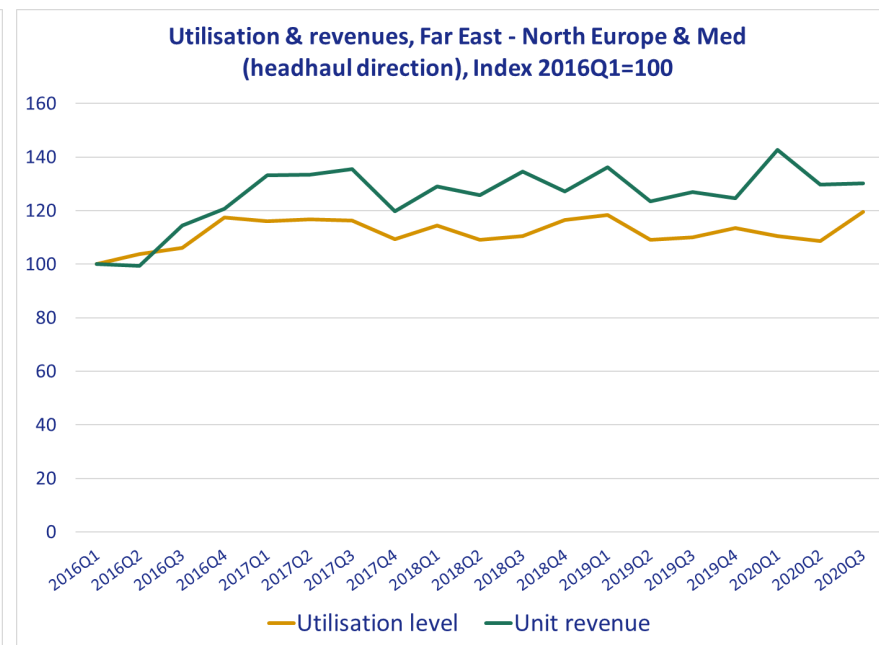
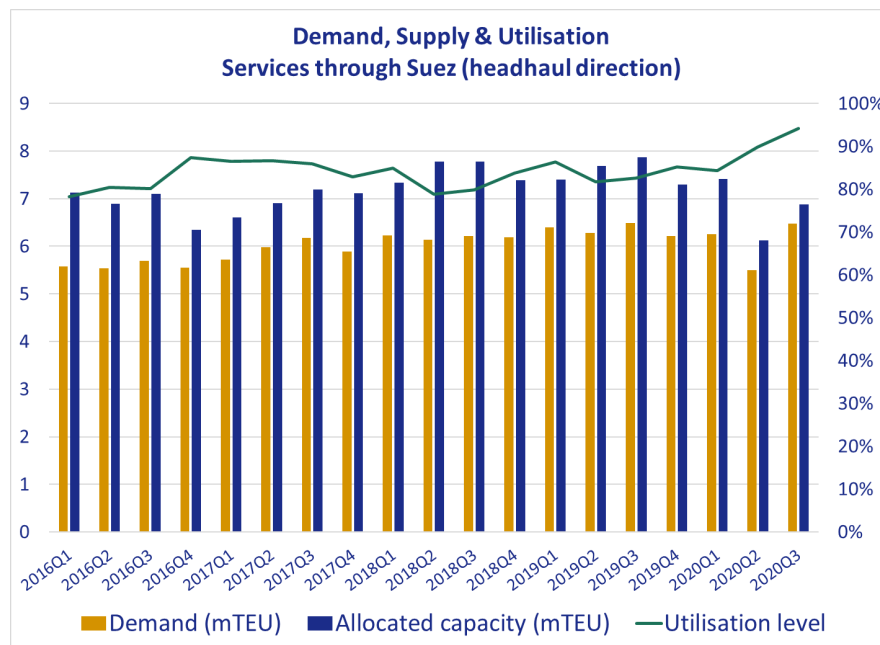
Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

- Overall capacity fell by 6% between Q3 2020 and Q3 2019.
- The reduction in the capacity deployed by MSC is mainly driven by repositioning of ships between 2M Alliance services with some of those deployed on the pure Far East - Europe & Med route being redeployed onto the Europe & Med - Gulf & ISC - Far East or Europe & Med - Far East - North America trade.

3. Utilisation

3.1 Utilisation through Suez & Far East - North Europe & Med



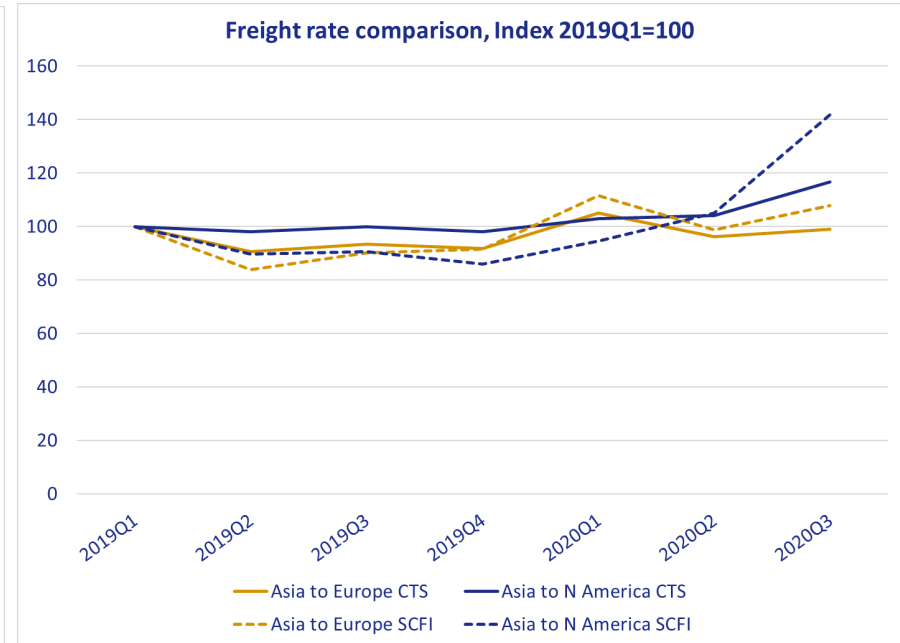
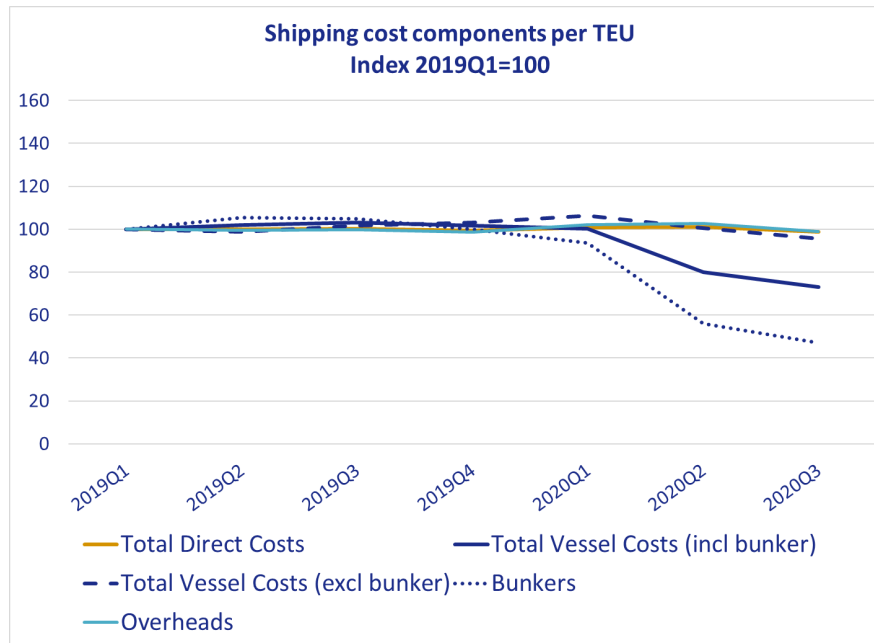
Source: MDS Transmodal, Container Business Model November 2020

Conclusions & Commentary

- Westbound traffic through the Suez Canal provides an opportunity to assess fleet utilisation.
- Utilisation levels reached their highest levels for several years in Q3 2020.
- Revenues (as recorded by CTS) increased in Q1 2020 despite a fall in demand and remained above 2019 levels to Q3 2020.
- High levels of utilization are crucial to achieving the economies of scale offered by larger vessels. The observed improvement may be the result of fewer sailings being made (reduced capacity) and the deployment of larger vessels on services that are made.

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

4.1 Costs & revenue, Global



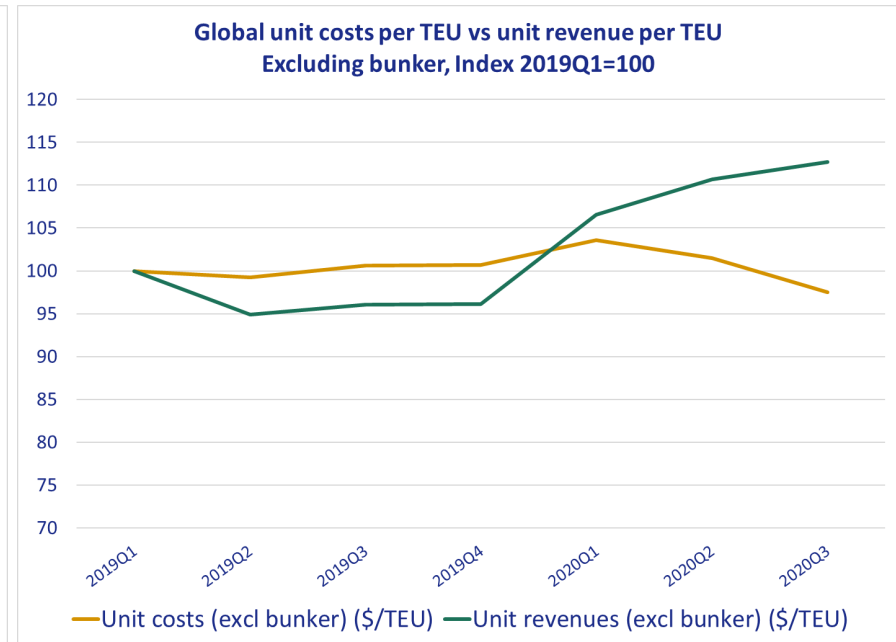
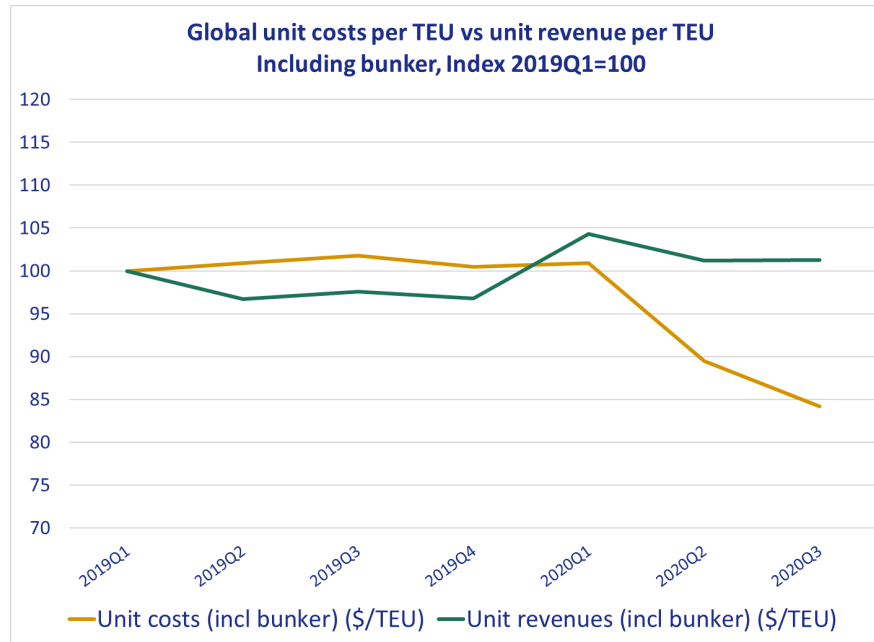
Source: Costs: MDS Transmodal, Container Business Model November 2020; freight rates: MDS Transmodal elaboration on various sources

Conclusions & Commentary

- Overall shipping costs remained stable to 2019 Q4 but the fall in bunker costs consequent of the pandemic reduced costs in 2020.
- Mean revenues, however, have grown marginally while spot rates rose rapidly in Q3, reflecting an apparent shortfall of capacity versus demand.
- Total vessel operating unit costs fell for the second consecutive quarter mainly due to a fall in fuel costs due to the drop in crude oil prices.
- The growth in rates in Q3 is not being driven by increases in operating costs.

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

4.2 Unit costs & unit revenue, Global



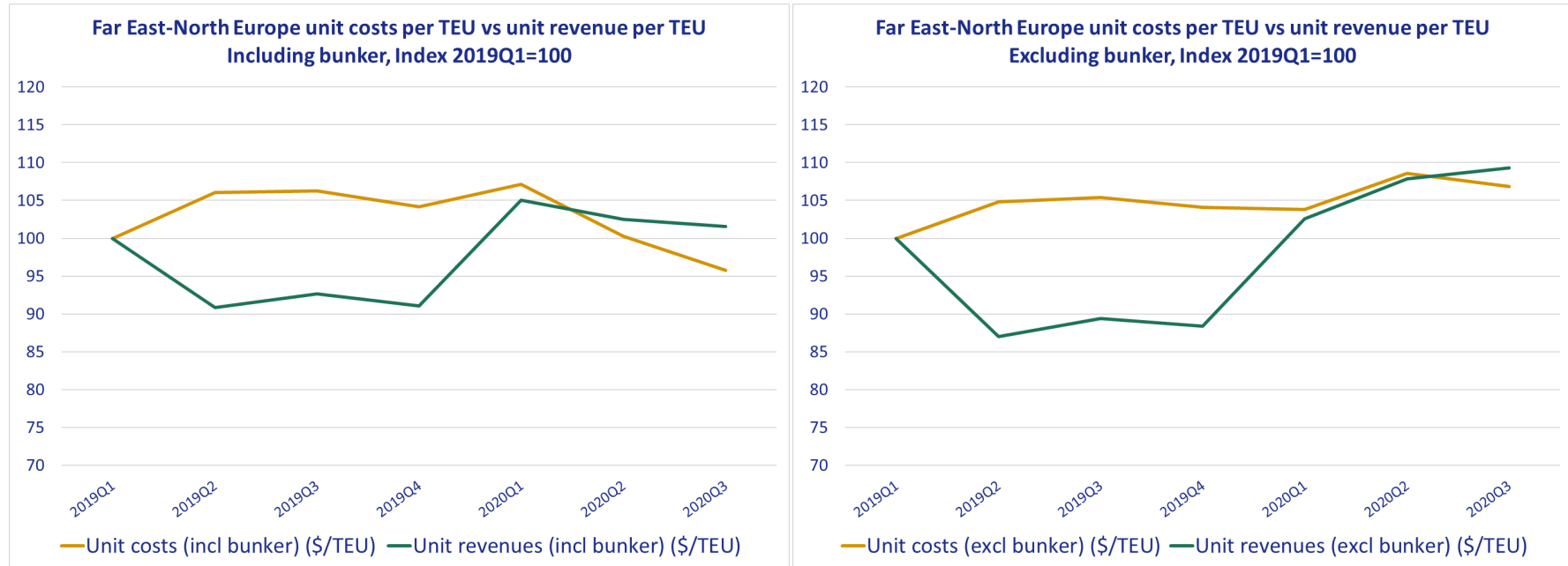
Source: MDS Transmodal, Container Business Model November 2020

Conclusions & Commentary

- Taking Q1 2019 as '100', global unit costs fell during 2020 as bunker costs declined.
- Excluding bunkers, costs decline (as utilisation improved) whereas revenues net of bunker costs jumped in Q1 2020 and that gap over costs has continued to grow.
- Unit revenues (\$/TEU) started rising during Q1 ahead of the Covid pandemic, reflecting increased in utilisation of deployed capacity and possibly due to surcharges added for use of Low Sulphur Fuel (LSFO).
- But there is no evidence of a cost spike. In fact unit costs including bunkers barely moved in Q1 2020 and fell by 15 points by the end of Q3. Revenue increases are not being driven by higher costs.

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

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



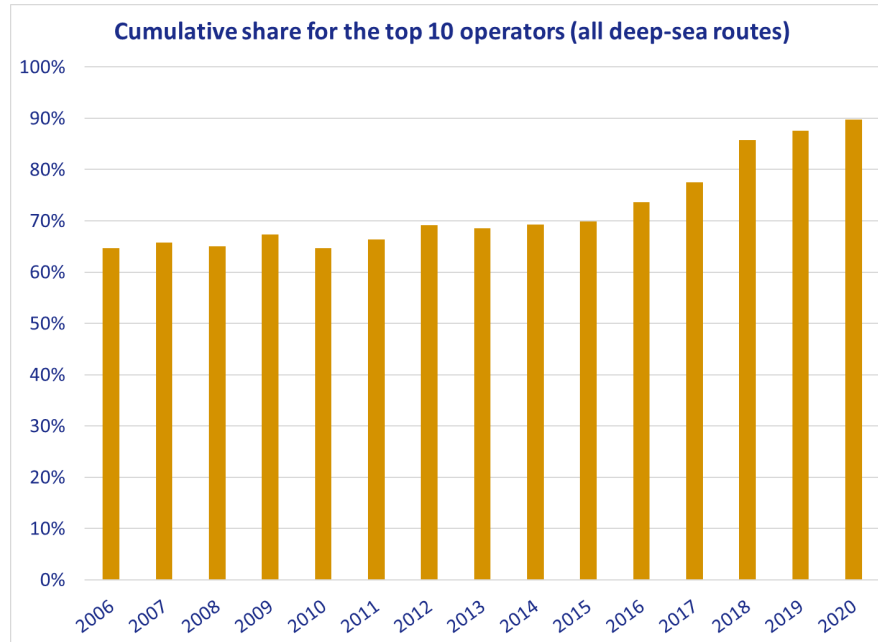
Source: MDS Transmodal, Container Business Model November 2020

Conclusions & Commentary

- A focus on Far East to North Europe demonstrates a similar pattern to the global picture, except that the lines probably made larger (relative) losses in 2019 followed by smaller gains in 2020.
- The unit revenue jump in Q1 2020 is more dramatic in this trade (+15 points) and is not accounted for by BAFs. Unit revenue growth sustained despite fall in fuel costs in Q2 and Q3 and higher number of units being moved in Q3.

5. Competitiveness

5.1 Top 10 operators market shares, global deep-sea market



Source: MDS Transmodal, Containership Databank November 2020

Conclusions & Commentary

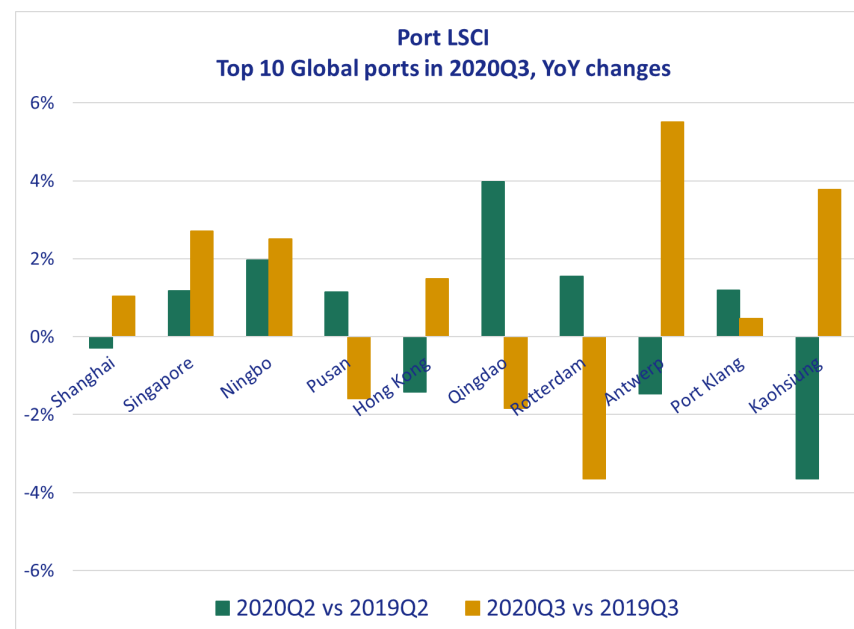
- The concentration in the top 10 lines is mainly driven by them gaining market shares over time as other lines left the market. CMA-CGM increased its share from less than 6% in 2006Q3 to more than 12% in 2020Q3.
- The concentration of market share since the formation of the Alliances in 2016 is evident. The top ten shipping lines accounted for 90 per cent of deep-sea container movements in Q3 2020.
- Shippers have fewer choices as smaller lines leave the market and new entrants are deterred by high and risky costs of entry. This concentration of market power should justify closer regulatory scrutiny, especially where exemptions from normal competition rules (anti-trust immunity) are granted.

6. Port Connectivity (MDST/UNCTAD LSCI)

6.1 Top 10 container ports, global

Liner Shipping Connectivity Index, 2006Q1=100

	2020Q3	PQ	PY
Shanghai	138.9	4.4	1.4
Singapore	125.5	1.5	3.4
Ningbo	117.9	3.9	3.0
Pusan	116.4	0.7	-1.9
Hong Kong	103.5	2.0	1.5
Qingdao	95.5	0.5	-1.8
Rotterdam	93.1	1.4	-3.6
Antwerp	88.8	4.1	4.8
Port Klang	88.4	0.1	0.4
Kaohsiung	81.2	6.6	3.2



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

Conclusions & Commentary

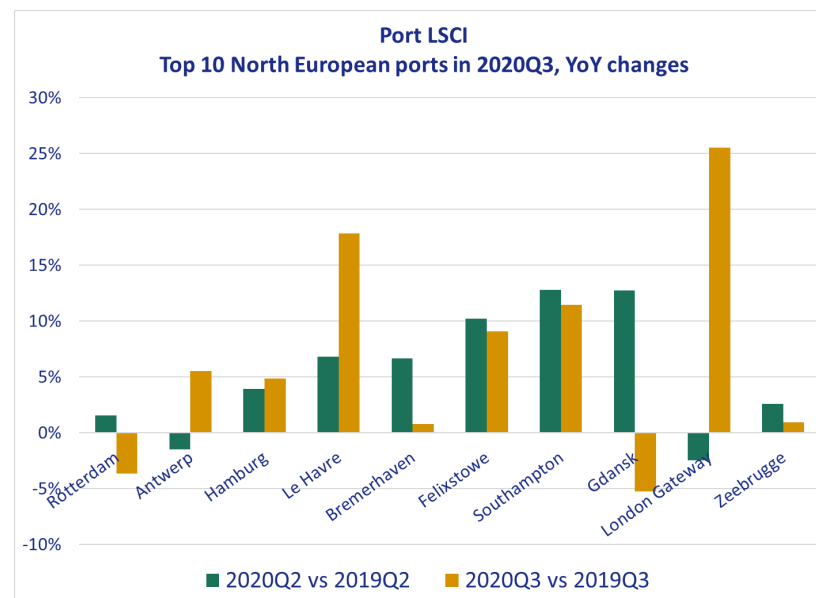
- Increase in blank sailings witnessed in 2020Q2 impacted negatively on port connectivity worldwide, but signs of improvements emerging in the third quarter with Antwerp amongst the ports to experience higher improvements in its LSCI as deployed capacity increase.
- Container space, availability of services and direct connections to other ports improved in Q3 as capacity and services were reinstated. Most ports showed improvements in connectivity over 2019.

6. Port Connectivity (MDST/UNCTAD LSCI)

6.2 Top 10 container ports, North Europe

Liner Shipping Connectivity Index, 2006Q1=100 - Rotterdam

	2020Q3	PQ	PY
Port LSCI	95	1.5%	-3.7%
Number of services	119	3.5%	-11.2%
Number of port calls	116	1.9%	-22.0%
Max ship capacity (TEU)	23,964	0.0%	4.2%
Number of operators	41	5.1%	-6.8%
Deployed annual capacity (mTEU)	26.6	3.9%	-9.4%
Number of direct calls	267	1.1%	-3.6%



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

Conclusions & Commentary

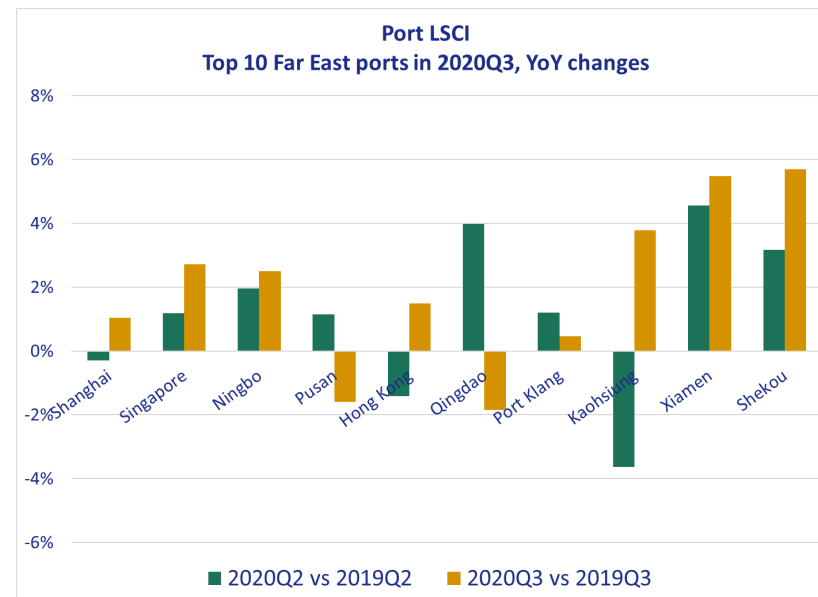
- Rotterdam, the best connected Northern European port which experienced an improvement in its LSCI in 2020Q2, saw a contraction in 2020Q3 as all the LSCI components except ship size contracted.
- London Gateway experienced the biggest improvement mainly thanks to the increase of the size of the ships now calling at the port.

6. Port Connectivity (MDST/UNCTAD LSCI)

6.3 Top 10 container ports, Far East

Liner Shipping Connectivity Index, 2006Q1=100 - Shanghai

	2020Q3	PQ	PY
Port LSCI	139	3.3%	1.0%
Number of services	262	4.8%	-1.1%
Number of port calls	258	5.1%	-0.5%
Max ship capacity (TEU)	23,964	0.0%	4.2%
Number of operators	67	0.0%	-1.5%
Deployed annual capacity (mTEU)	68.3	9.0%	1.1%
Number of direct calls	289	0.3%	-2.0%



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

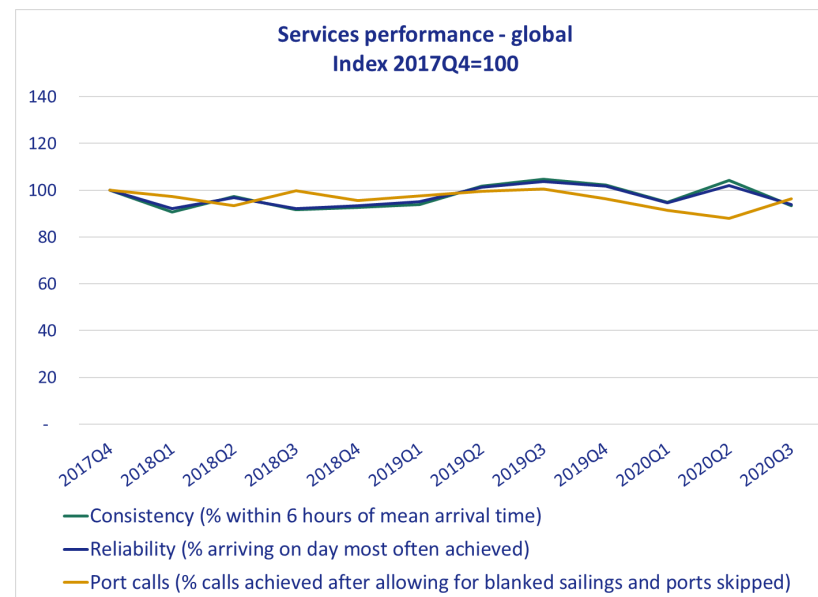
Conclusions & Commentary

- LSCI generally improved for Far East container ports during the third quarter of 2020 with Shanghai, the best connected port, achieving an increase both on the quarter on quarter comparison as well as on the year on year comparison.

7. Services performance

7.1 Consistency, reliability & port calls, global

	2020Q3	YTD	PQ (% points)	PY (% points)
Consistency (% within 6 hours of mean arrival time)	52%	55%	-6.1	-6.4
Reliability (% arriving on day most often achieved)	61%	63%	-5.4	-6.4
Port calls (% calls achieved after allowing for blanked sailings and ports skipped)	77%	74%	6.8	-3.3



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

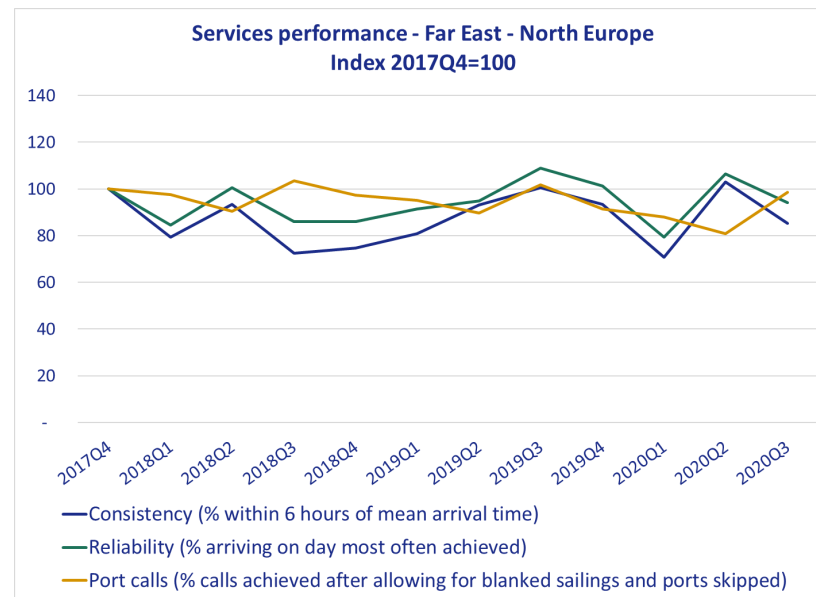
Conclusions & Commentary

- Q32020 timetabling consistency and reliability both deteriorated significantly as compared with Q2 as the proportion of blanked sailing and skipped ports was reduced. However, as compared with Q32019 performance fell by all 3 metrics.
- The reinstatement of calls at ports that are working close to capacity reduced time-keeping and shippers experienced less predictable collection and delivery of containers and reduced availability of services at many ports.

7. Services performance

7.2 Consistency, reliability & port calls, Far East - North Europe

	2020Q3	YTD	PQ (% points)	PY (% points)
Consistency (% within 6 hours of mean arrival time)	49%	50%	-10.3	-8.8
Reliability (% arriving on day most often achieved)	63%	62%	-8.3	-9.9
Port calls (% calls achieved after allowing for blanked sailings and ports skipped)	92%	83%	16.7	-3.0



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

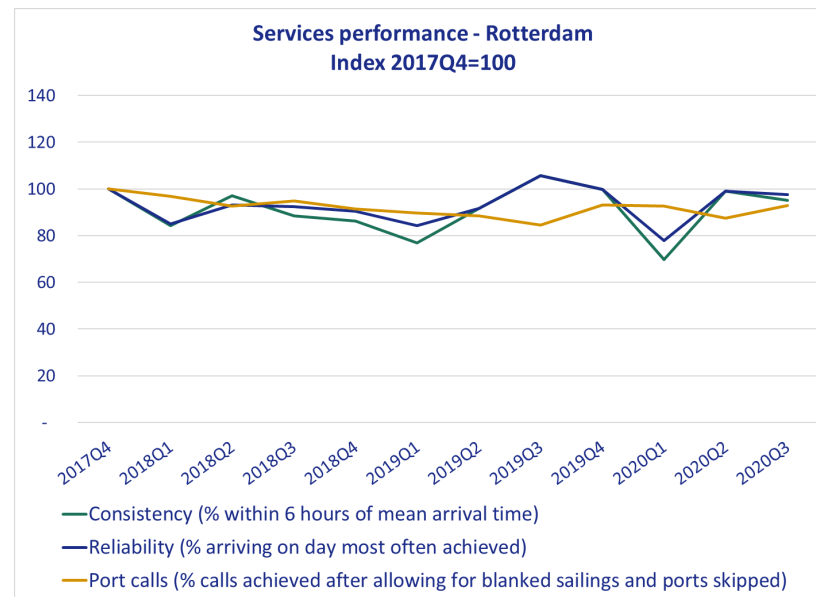
Conclusions & Commentary

- While the number of skipped ports and blank sailings improved markedly from Q2 as compared with Q3 2019 consistency, reliability and port calls achieved all fell.
- In practical terms falls in service consistency and reliability during Q3 meant vessels arrived on different days and at different times to those that had come to be expected. These vessels also made more port calls on route.

7. Services performance

7.3 Consistency, reliability & port calls, Rotterdam

	2020Q3	YTD	PQ (% points)	PY (% points)
Consistency (% within 6 hours of mean arrival time)	50%	46%	-2.0	-5.6
Reliability (% arriving on day most often achieved)	62%	58%	-1.0	-5.1
Port calls (% calls achieved after allowing for blanked sailings and ports skipped)	81%	80%	4.6	7.3



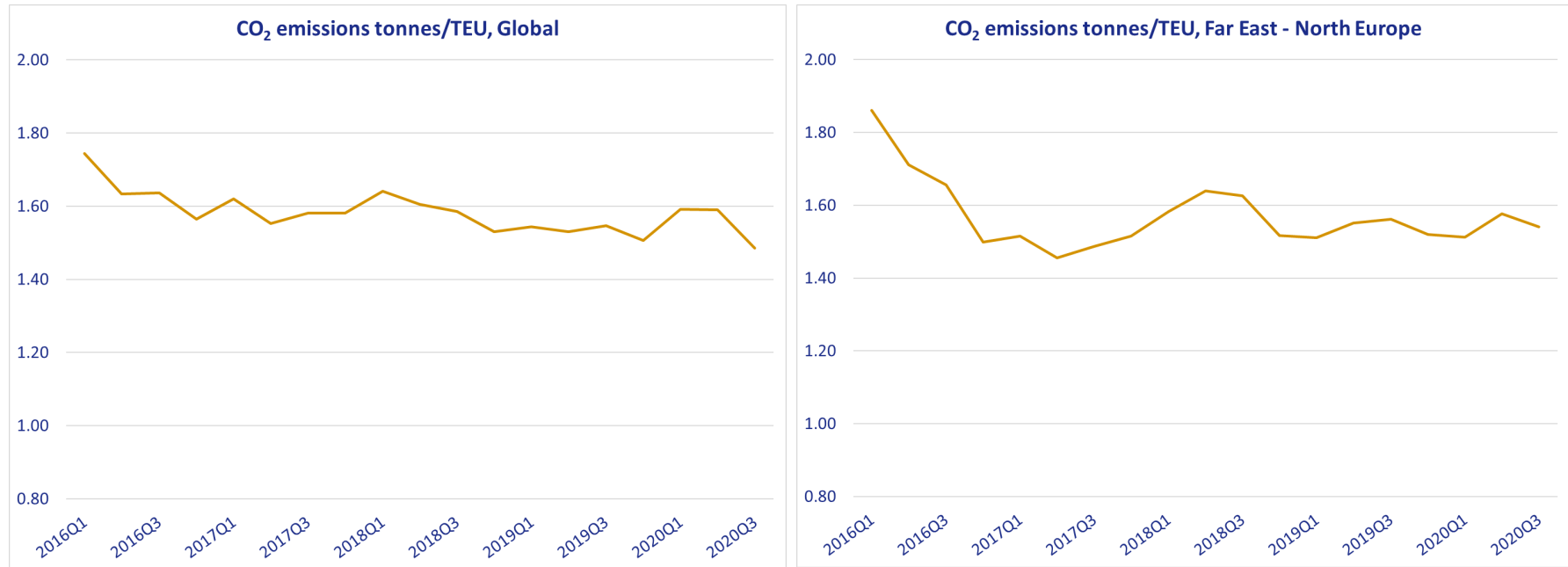
Source: MDS Transmodal based on AIS (Automatic Identification System) data

Conclusions & Commentary

- Consistency and reliability both deteriorated in Q3 2020 as compared with both Q2 and Q3 2019.
- However, the proportion of expected port calls that were actually made improved, reflecting the importance lines place on ensuring major ports are reliably served even if punctuality deteriorates.
- Rotterdam maintained predictability of services during Q3 but for fewer vessels (see Section 6.2).

8. Carbon Emission Factors

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



Source: MDS Transmodal, Container Business Model November 2020

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 was agreed by IMO In November and could be adopted in June 2021 for implementation from 2023. The impact of these measures on the emissions per unit of cargo will determine how soon shippers can report reductions emissions attributable to the movement of cargo.

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 Consolidation:** Number of operators on the deep-sea market
- 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 of cargo 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 Europe: Austria, Belarus, Belgium, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Germany, Hungary, Iceland, Irish Republic, Latvia, Liechtenstein, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Svalbard Archipelago, Sweden, Switzerland, UK

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.

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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 they incur. GSF works to achieve safe, competitively efficient and environmentally sustainable global trade and logistics on behalf of its members.

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