Reviewing Global Liner Shipping

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MDS Transmodal

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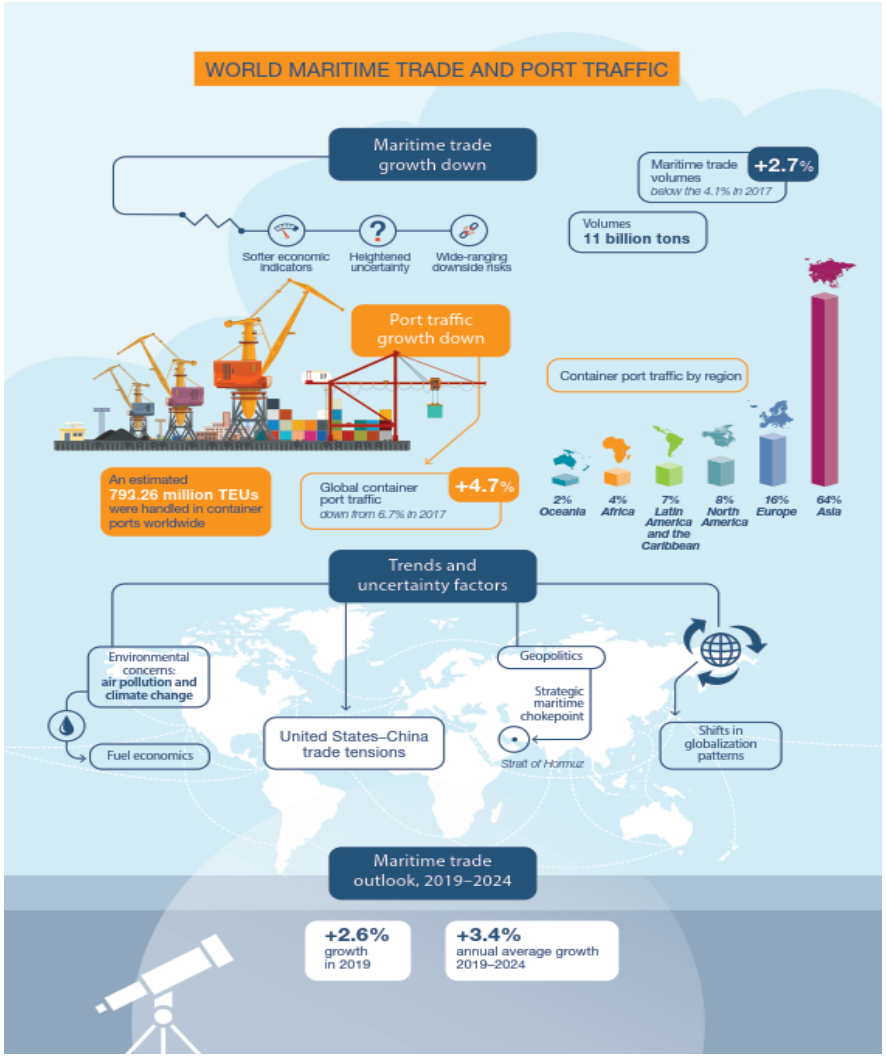
1. The case for reviewing Liner Shipping

- Liner shipping operates beyond the control of individual nation states
- It accounts for 25% value of world trade and carries 6% of global GDP
  - value of deep-sea containerised goods 2018: $5 trillion
- The connectivity it creates can define national competitiveness
- It accounts for 0.4% of global CO_2.: equivalent to 4% of the whole EU
  - the equivalent of all Austria + Greece
  - and trade is forecast to continue to grow
- Almost all in the hands of just 3 alliances transporting >100m TEU p.a.
  - already breaks general norms of market concentration
  - Alliances have > 30% share of many markets
  - EU still reviewing Consortium Block Exemption Regulation
  - further vertical integration in ports and forwarding evident
- Increasing vertical integration may further erode competitive forces
- Despite units costs and emissions/TEU falling and no profits modest
  - the need for review seems evident

2. But who should be responsible and how should it be assessed?

- How should such review be conducted and measured?
  - what should be the criteria?
  - how should measurements be made?
  - who should be responsible for determining public interest?
- And who should do the reviewing?
  - industry will not benefit from being answerable to bureaucratic authorities

3. And trade continues to grow: UNCTAD Review of Maritime Transport 2019



*"UNCTAD expects **international maritime trade to expand at an average annual growth rate of 3.5 per cent over the 2019–2024 period,** driven in particular by growth in containerized, dry bulk and gas cargoes. However, uncertainty remains an overriding theme in the current maritime transport environment, with risks tilted to the downside."*

Source: UNCTAD Review of Maritime Transport, 2019

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4. The opportunities for measurement

- Utilization
  - which determines negotiating ability
- Market concentration
  - Consortium Block Exemption Regulation
  - the trend towards vertical integration
- Bunker costs and IMO2020
  - how to negotiate where scrubbers are not universal
- Global warming
  - deep-sea maritime services account for 150m tonnes CO_2 p.a.
  - consumers increasingly aware of shippers' green credentials
- Port connectivity
  - efficient supply chains depend on well located distribution centres with respect to port
  - therefore liner behaviour will impact on shipper costs
- Performance
  - reliability and punctually crucial for keeping down inland costs
  - increasing transhipment driven by maritime economies of scale add to their importance

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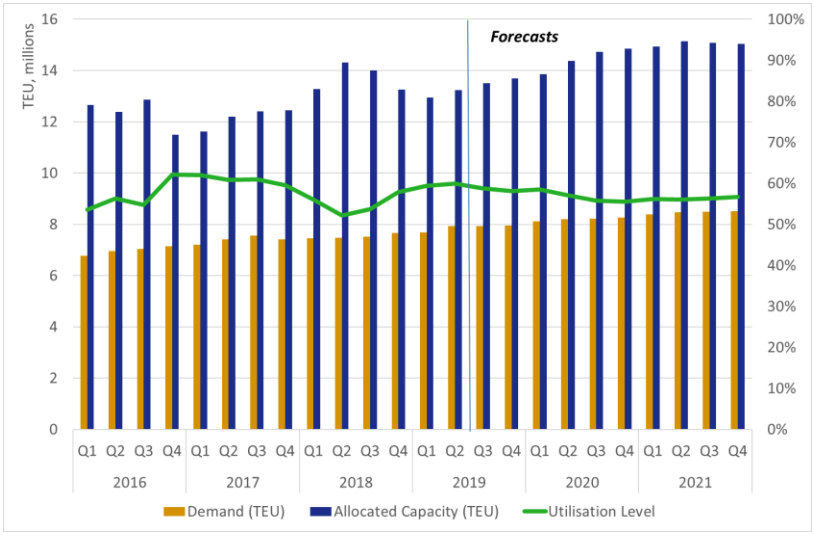
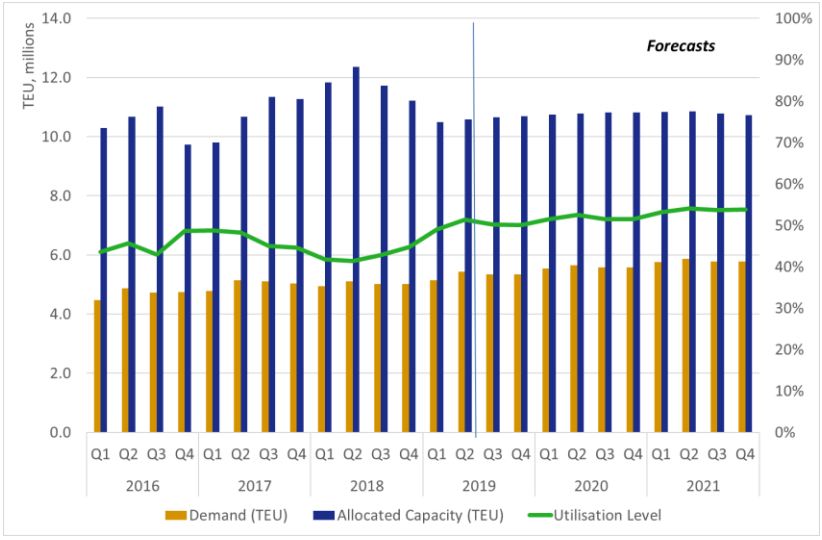
5. Utilization: generally stable

Asia-North Europe



Asia-Mediterranean



- The peak season for the Asia-North Europe routes has been characterised by changes in the services' features, termination of others but also by the cancellation of sailings. These strategies have been adopted to respond to the imbalance between demand and supply on this route.
- Despite the series of cancellation, however, lines have not succeeded in addressing the gap between demand and supply nor have they seen improvements in their freight rates. Over the period August-mid September, in fact, the Shanghai Containerized Freight Index (SCFI) has seen a decline of some 16% compared to the same period of last year.
- However we expect improvement in the load factor on the Asia-Med (see Figure 2) where the SCFI for the same period has been 3% higher than that of the same weeks of last year.

Source: MDS Transmodal, Container Business Model August 2019

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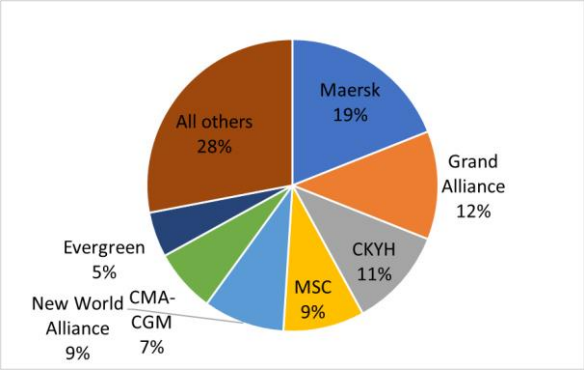
6. Deep-sea consolidation: reaching a limit!

% shares in deep-sea capacity*

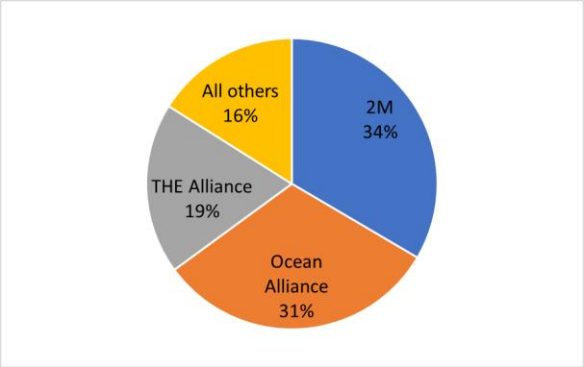
	2006		2019
Maersk	19%	2M	33%
Grand Alliance	12%	Ocean Alliance	31%
CKYH	11%	The Alliance	19%
MSC	9%		
New World Alliance	9%		
CMA-CGM	7%		
Evergreen	5%		
All others	28%	All others	16%

Source: MDS Transmodal, Containership Databank April 2019

** Excluding intra-regional services*



2006



2019

- In 2006 seven lines and the then 'alliances' controlled 72% of capacity
- Pressure to achieve cost competitiveness has now resulted in 3 Alliances controlling at least 84% of deep-sea capacity – indirectly much more
- Regulation a major challenge when 30% market share principle more or less unenforceable and at odds with maximising scale economies
- CBER remains to be determined in 2020

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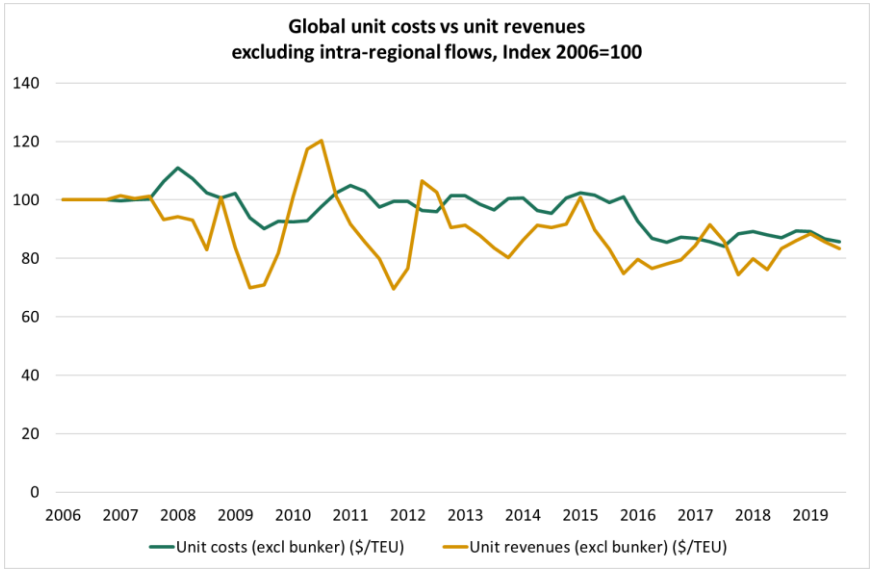
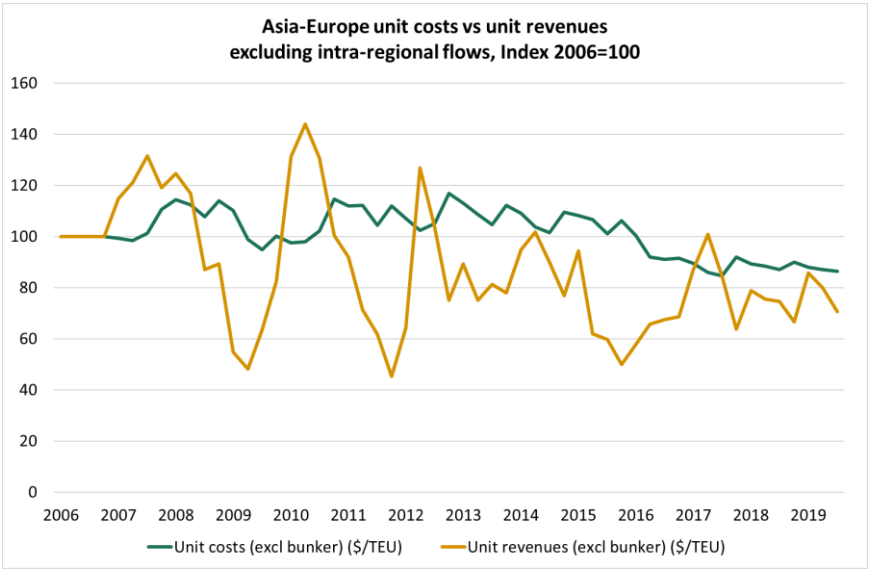
7. Costs & Revenues excluding bunkers: - gradually falling as scale grows





Source: MDS Transmodal, Container Business Model August 2019

- To date concentration has permitted scale to drive lower costs and rates
  - the solution is not to lose those scale economies
- Deducting bunker costs allows 'true' profitability of the industry to be tracked
- Costs and revenues track each other: albeit erratically
- Asia – Europe appears highly competitive
- Implication is shipping liner industry has derived no overall financial benefit
  - which leaves shippers to benefit from lower bunker costs

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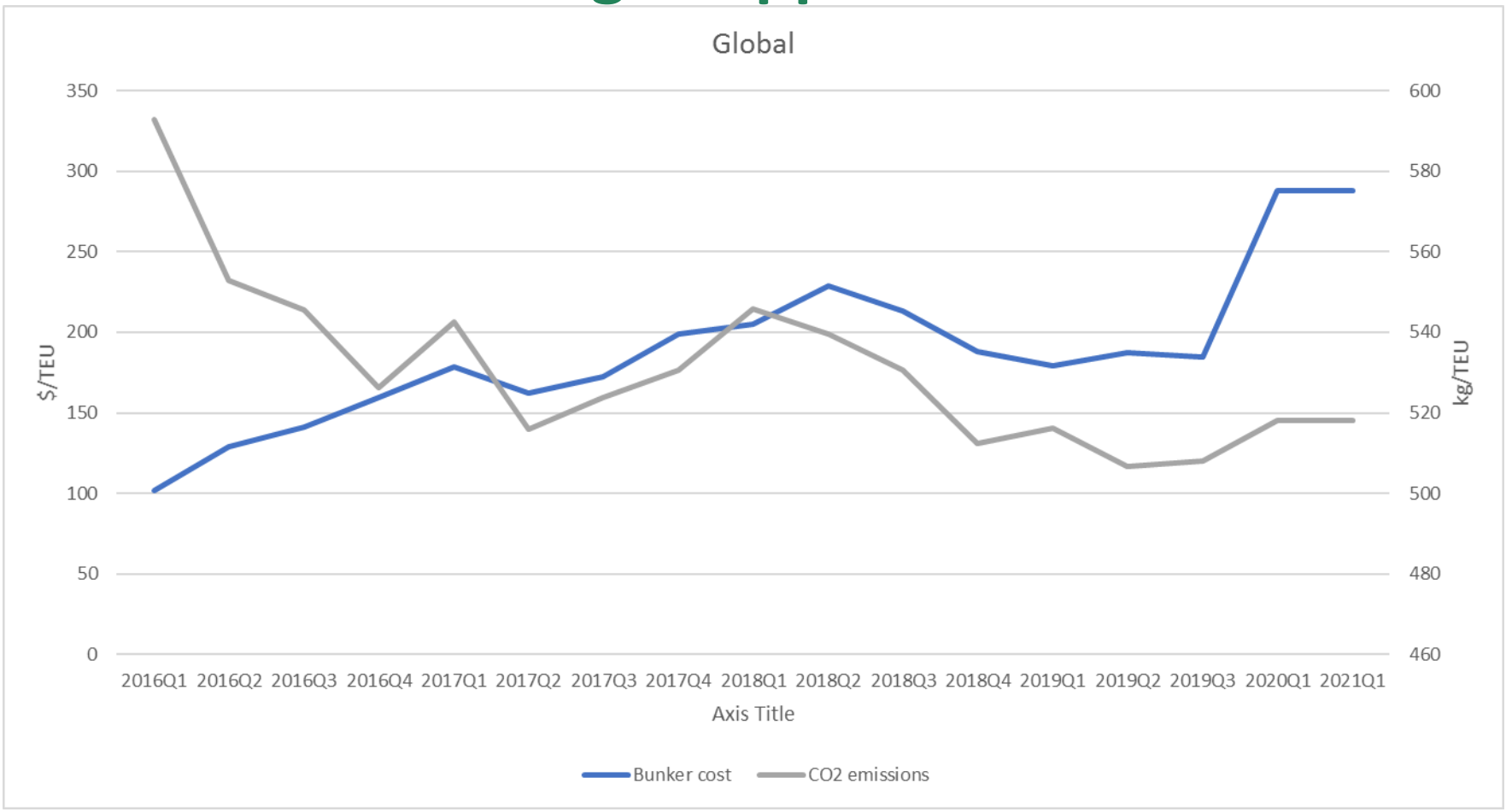
8. Global bunker costs & CO_2: - moving in opposite directions



Source: MDS Transmodal, Container Business Model August 2019

- Impact of IMO2020 severe, but how will alternative of scrubbers be factored in?

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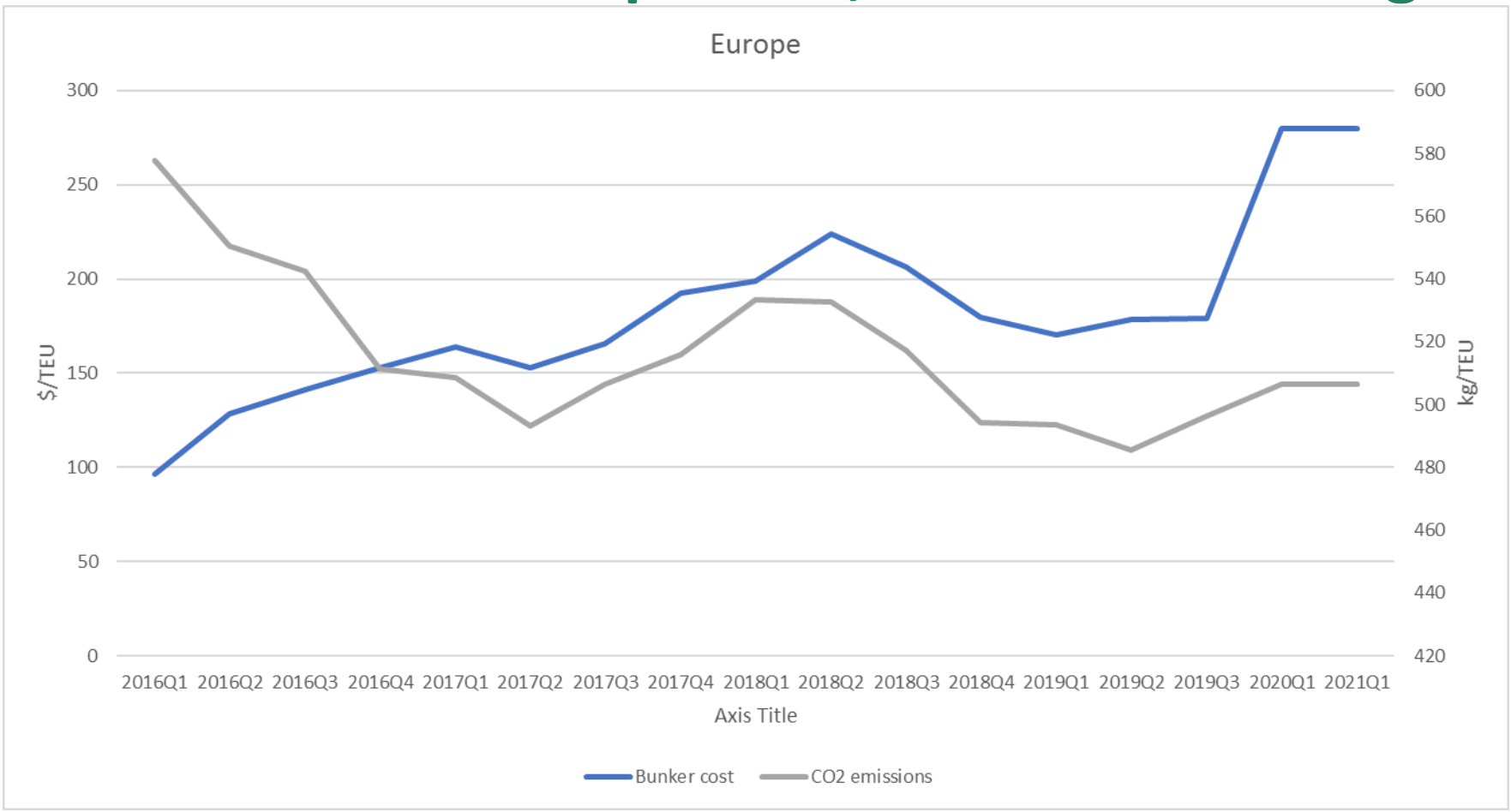
9. Bunker costs & CO_2 to Europe - similar pattern, costs accelerating



Source: MDS Transmodal, Container Business Model August 2019

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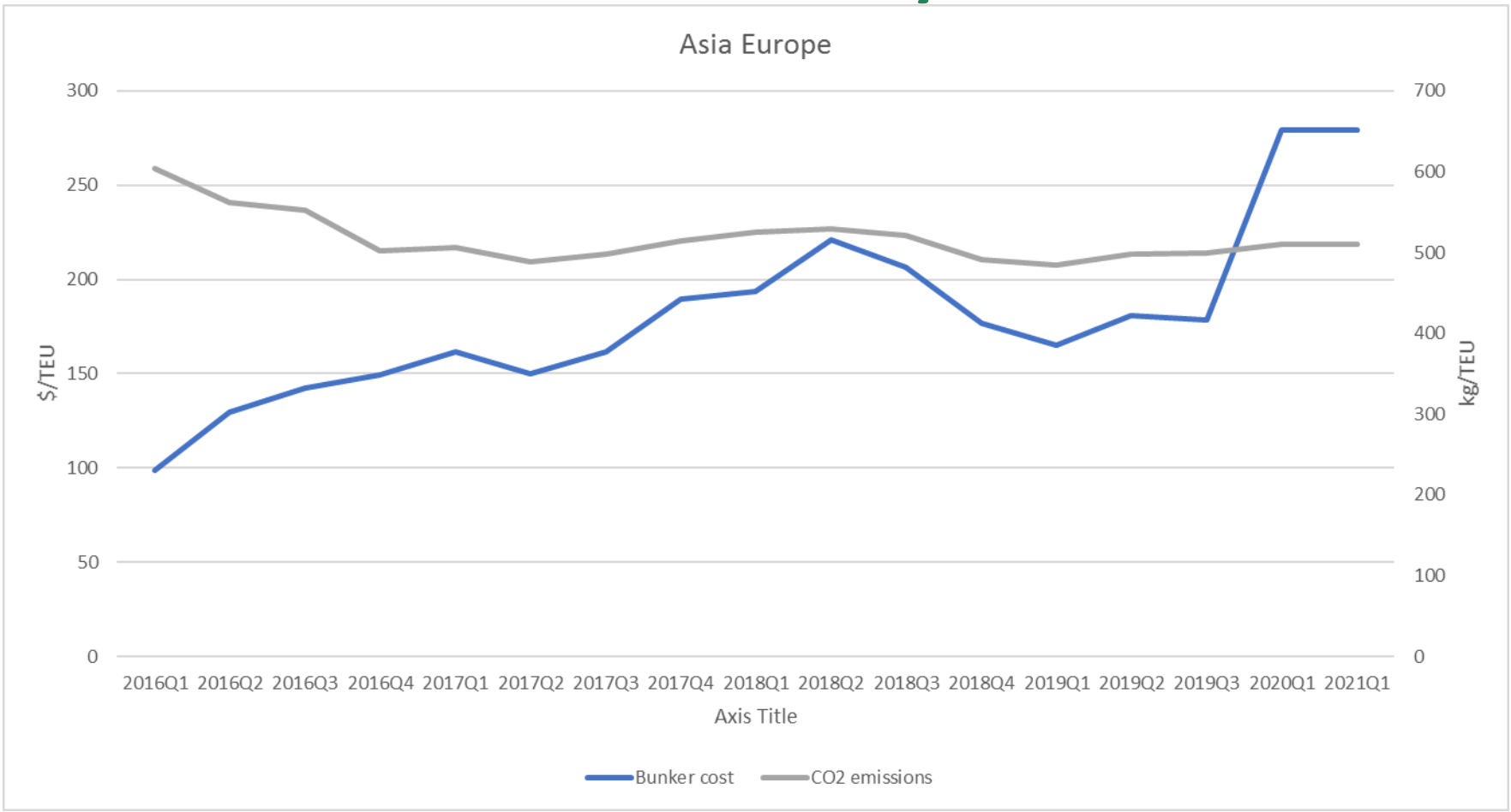
10. Bunker costs & CO_2: Far East – Europe: - emissions already flattened out



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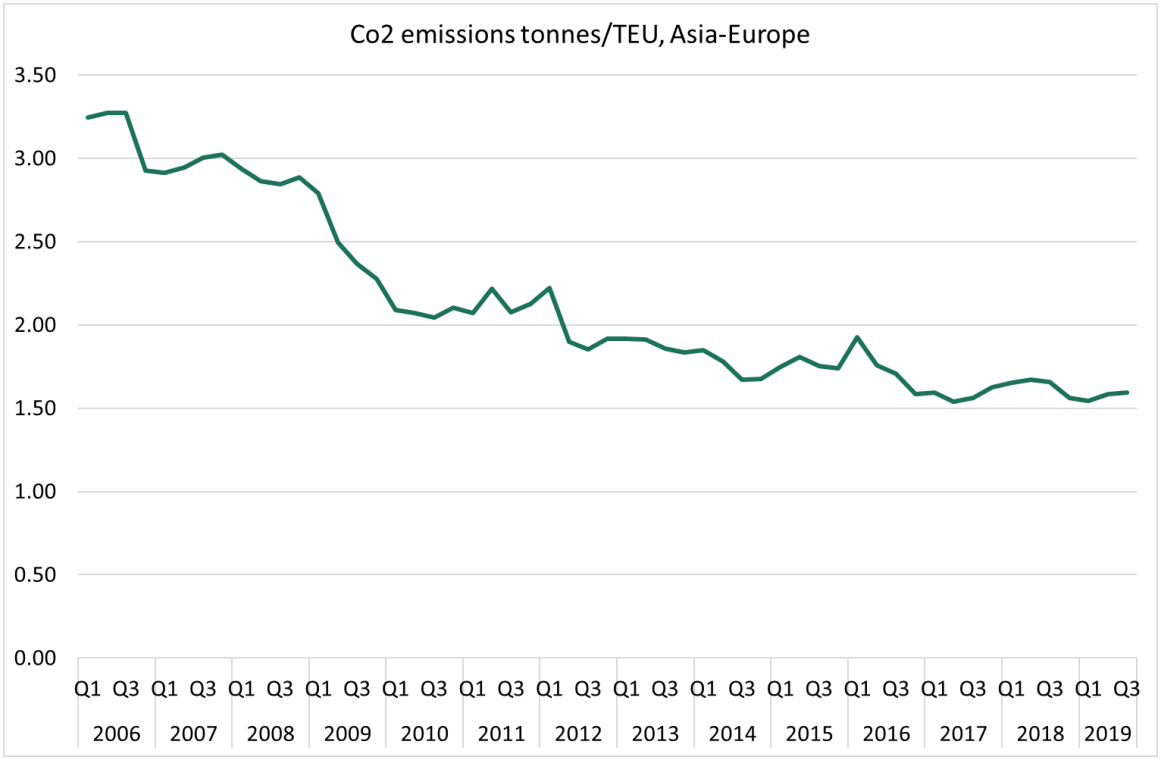
11. CO_2 tonnes/TEU: rapid fall, now stabilising



Source: MDS Transmodal, Container Business Model August 2019

- Focusing on the Asia-Europe trade lane and on the 11 operators that account for 99% TEU currently carried
- Co2 emission tonnes/TEU for these lines is estimated to have decreased by more than 50% between 2006Q1 and 2019Q3: supporting the case for continuing CBER

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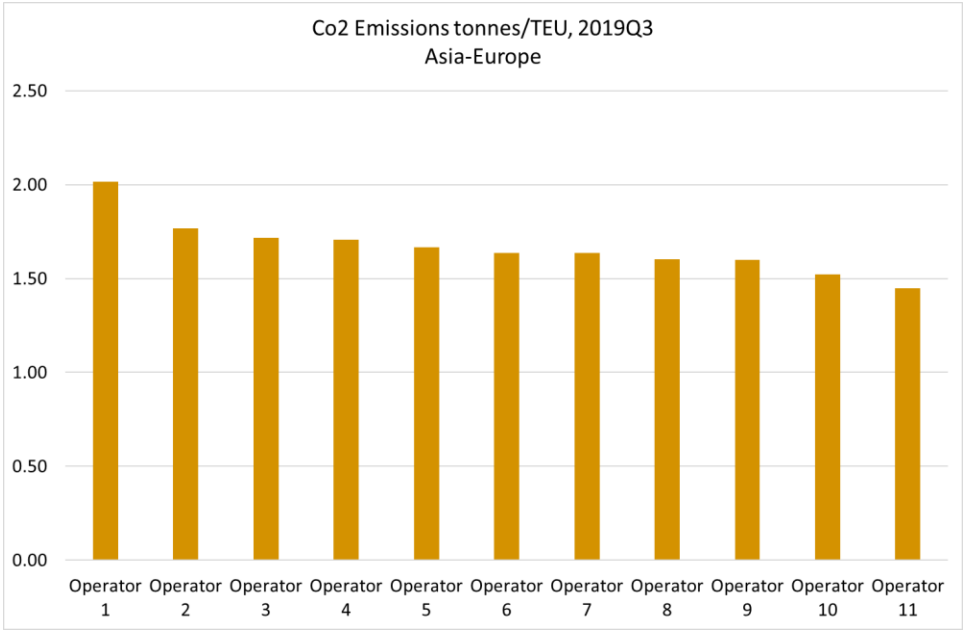
12. CO_2 by individual Far East – Europe strings

Bunkers and CO_2 can be analysed at the string level and take into account IMO2020



Source: MDS Transmodal, Container Business Model August 2019

- The CO_2 emission tonnes/TEU of these 11 operators is estimated to **be in the range of 1.45-2.01 CO_2 tonnes/TEU in 2019Q3: there is significant variation**
- Estimates based on ships employed and speeds operated

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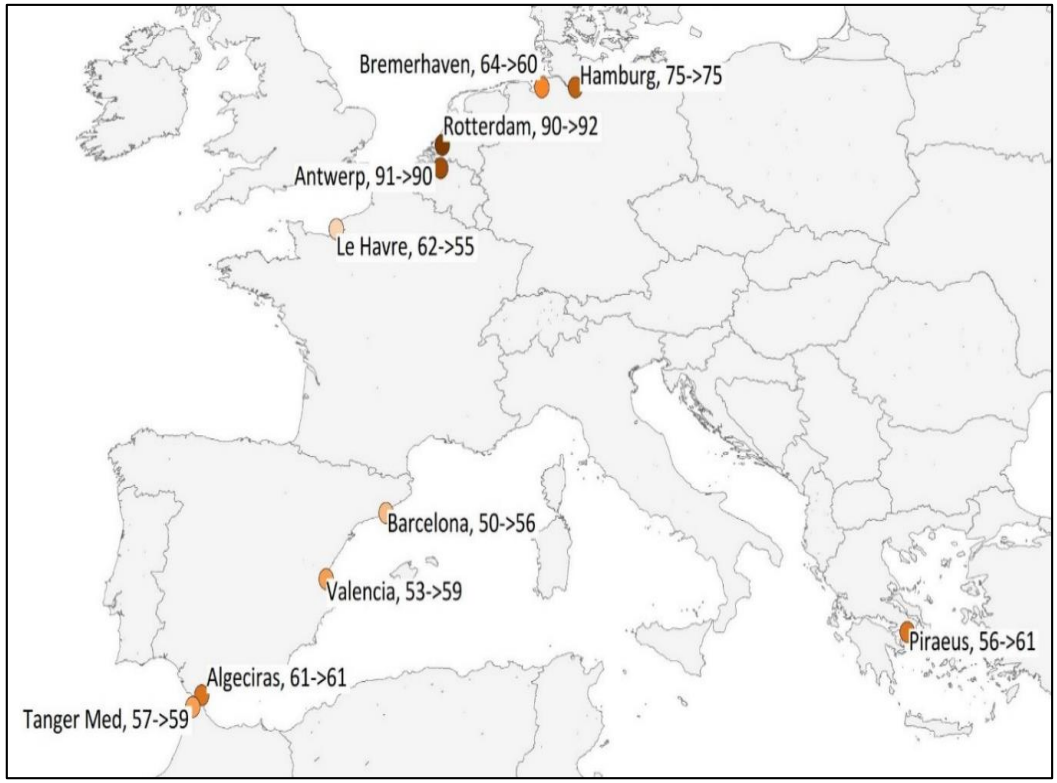
13. Port Connectivity: Port LSCI, Europe



Source: https://www.portlsci.com

- Rotterdam placed at the top of the European container shipping connectivity league in 201Q3, as its port LSCI improved from 90 to 92 over the last twelve months. By contrast Antwerp lost the top spot after its LSCI declined from 91 to 90.
- Antwerp not the only N European port to have experienced a decline in its LSCI between 2018Q3 and 2019Q3. Bremerhaven and Le Havre, for instance, have slipped from 4th to 6th and 5th to 10th place as their LSCI decided from 64 to 60 and from 62 to 55 respectively.
- By contrast, the top 5 Mediterranean ports generally fared better over the last year due to the wider shipping line strategy of switching capacity towards the Mediterranean ports at the expense of the Northern Range ports.

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14. Measuring punctuality & reliability

- Shipping lines have an interest in being reliable and punctual
  - to satisfy their clients
  - to minimise costs through maximising efficiency
- However over-estimating demand leads to service cancellations to cut costs
- Weather, port inefficiencies and misjudgement reduce punctuality with impacts on shipper supply chains
- Cross referencing ships allocated to strings with vessel arrival data allows actual service schedules to be constructed over several months
  - and then compared with individual port calls
- Results show:
  - % sailings arriving within 6 hours of mean performance
  - % sailings that arrive at all by port (i.e. not blanked)

15. Reliability & punctuality: merging MarineTraffic AIS & MDST data

	A	B	C	D	E	F	G	H	I	J
1	Service	Port	Prev. port	Occurrences	Arrival day/time	% on arrival day	% within 6h of mean	% of weeks vessel calls	Max hours early	Max hours late
2	2M ALLIANCE - ALBATROSS/AE5	DALIAN	SHANGHAI	21	Saturday 15:00	76%	62%	95%	5	36.6
3	2M ALLIANCE - ALBATROSS/AE5	BUSAN NEW PORT	TIANJIN	22	Friday 11:56	73%	50%	100%	7.5	36.7
4	2M ALLIANCE - ALBATROSS/AE5	ROTTERDAM MAASVLAKTE	TANJUNG PELEPAS	20	Friday 11:27	65%	40%	91%	42.9	15.8
5	2M ALLIANCE - ALBATROSS/AE5	AARHUS	GOTEBORG	21	Wednesday 02:17	57%	57%	95%	1.8	63
6	2M ALLIANCE - ALBATROSS/AE5	SHANGHAI	SINGAPORE	21	Thursday 08:40	57%	33%	95%	39.1	26.8
7	2M ALLIANCE - ALBATROSS/AE5	TIANJIN	DALIAN	22	Monday 20:22	55%	55%	100%	6.8	31.2
8	2M ALLIANCE - ALBATROSS/AE5	TANJUNG PELEPAS	SHANGHAI	17	Thursday 17:09	53%	41%	77%	12.1	31.4
9	2M ALLIANCE - ALBATROSS/AE5	BREMERHAVEN	AARHUS	20	Friday 12:06	50%	45%	91%	5.5	73.2
10	2M ALLIANCE - ALBATROSS/AE5	SHANGHAI	NINGBO	21	Friday 08:40	48%	43%	95%	23.4	33.1
11	2M ALLIANCE - ALBATROSS/AE5	BREMERHAVEN	ROTTERDAM MAASVLAKTE	21	Monday 06:18	43%	38%	95%	40.4	19.6
12	2M ALLIANCE - ALBATROSS/AE5	NINGBO	BUSAN NEW PORT	22	Monday 09:23	41%	32%	100%	7.5	72
13	2M ALLIANCE - ALBATROSS/AE5	GOTEBORG	BREMERHAVEN	20	Monday 02:34	40%	50%	91%	48.3	56
14	2M ALLIANCE - ALBATROSS/AE5	WILHELMSHAVEN	BREMERHAVEN	21	Tuesday 12:13	33%	19%	95%	60.2	29.4
15	2M ALLIANCE - SILK/AE10	BREMERHAVEN	ALGECIRAS	12	Monday 12:09	83%	83%	55%	3.7	15.1
16	2M ALLIANCE - SILK/AE10	GWANGYANG	QINGDAO	16	Saturday 20:42	69%	75%	73%	2.7	30.3
17	2M ALLIANCE - SILK/AE10	QINGDAO	TIANJIN	19	Thursday 09:08	63%	47%	86%	40.7	38.2
18	2M ALLIANCE - SILK/AE10	GDANSK	BREMERHAVEN	20	Friday 15:55	60%	55%	91%	2.3	36.1
19	2M ALLIANCE - SILK/AE10	YANTIAN	SHANGHAI	17	Tuesday 06:20	59%	47%	77%	7.6	48.3
20	2M ALLIANCE - SILK/AE10	ROTTERDAM MAASVLAKTE	BREMERHAVEN	19	Tuesday 13:41	58%	42%	86%	36.9	31.8
21	2M ALLIANCE - SILK/AE10	ALGECIRAS	TANJUNG PELEPAS	14	Wednesday 07:49	57%	36%	64%	9	14.8
22	2M ALLIANCE - SILK/AE10	TANJUNG PELEPAS	YANTIAN	18	Saturday 09:49	56%	44%	82%	10.5	43.8
23	2M ALLIANCE - SILK/AE10	BREMERHAVEN	GDANSK	20	Saturday 06:17	45%	40%	91%	43.8	27.1
24	2M ALLIANCE - SILK/AE10	TIANJIN	SHANGHAI	18	Sunday 15:45	44%	39%	82%	35.8	67
25	2M ALLIANCE - SILK/AE10	SHANGHAI	TANJUNG PELEPAS	14	Tuesday 16:23	43%	36%	64%	4.2	70.8
26	2M ALLIANCE - SILK/AE10	SHANGHAI	NINGBO	15	Saturday 09:42	33%	20%	68%	81.8	29.5
27	2M ALLIANCE - SILK/AE10	NINGBO	GWANGYANG	13	Friday 07:51	31%	23%	59%	41.8	70.2
28	2M ALLIANCE - SWAN/AE2	TANJUNG PELEPAS	YANTIAN	16	Thursday 07:17	81%	69%	73%	8.8	27.2
29	2M ALLIANCE - SWAN/AE2	ALGECIRAS	ROTTERDAM MAASVLAKTE	15	Friday 13:11	73%	40%	68%	61.2	20.4
30	2M ALLIANCE - SWAN/AE2	YANTIAN	NINGBO	17	Saturday 19:47	65%	71%	77%	5.6	30
31	2M ALLIANCE - SWAN/AE2	FELIXSTOWE	ROTTERDAM MAASVLAKTE	17	Saturday 09:37	59%	24%	77%	45.9	36
32	2M ALLIANCE - SWAN/AE2	ANTWERP	FELIXSTOWE	14	Wednesday 18:11	57%	43%	64%	7.6	32
33	2M ALLIANCE - SWAN/AE2	NINGBO	BUSAN NEW PORT	18	Wednesday 11:55	56%	22%	82%	25.9	39.6
34	2M ALLIANCE - SWAN/AE2	BUSAN NEW PORT	QINGDAO	20	Saturday 12:08	50%	40%	91%	9.7	44.5
35	2M ALLIANCE - SWAN/AE2	HONG KONG	SINGAPORE	14	Sunday 10:30	50%	36%	64%	83.8	79.5
36	2M ALLIANCE - SWAN/AE2	ROTTERDAM MAASVLAKTE	ANTWERP	16	Sunday 13:21	50%	25%	73%	46	16.6
37	2M ALLIANCE - SWAN/AE2	SINGAPORE	ALGECIRAS	15	Friday 04:59	27%	40%	68%	83.8	84

Source: MDST elaboration on MarineTraffic data

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16. Reliability and punctuality: ships>3000 TEU by geography

- **All liner services are covered including feeder and short sea services**
- If **only taking into account ships with a capacity of at least 3,000TEU** ships where **ports called at on minimum 80% sailings***, we derive the following key performances:

Global	Reliability: 92% Punctuality: 51%	Europe - L America	Reliability: 90% Punctuality: 56%
Total Europe	Reliability: 91% Punctuality: 52%	Europe - MEGISC	Reliability: 90% Punctuality: 67%
Far East - Europe	Reliability: 91% Punctuality: 44%	Europe - Africa	Reliability: 91% Punctuality: 51%
Europe - N America	Reliability: 92% Punctuality: 47%		

Source: MDST elaboration on MarineTraffic data

* i.e. only ports that are generally served on individual strings

17. Reliability and punctuality: ships>3000 TEU by sample routes

HAPAG-LLOYD - MGX	Reliability: 92% Punctuality: 54%	Ocean Alliance/The Alliance – Amerigo/AL6	Reliability: 92% Punctuality: 36%	CMA-CGM/COSCO/MSC - INDIAMED/GEM2/IMED	Reliability: 88% Punctuality: 33%
MSC - EUR/W AF	Reliability: 87% Punctuality: 26%	HAPAG-LLOYD/MSC - ECX/NWC-SAEC	Reliability: 91% Punctuality: 51%	MSC - NWC/S AF	Reliability: 82% Punctuality: 33%
2M Alliance – Albatross/AE5	Reliability: 95% Punctuality: 44%				

Source: MDST elaboration on MarineTraffic data

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18. Reliability and punctuality: ships>3000 TEU by sample operators

Maersk Line	Reliability: 92% Punctuality: 57%	MSC	Reliability: 89% Punctuality: 52%	CMA-CGM	Reliability: 91% Punctuality: 53%

Source: MDST elaboration on MarineTraffic data

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19. So can the industry be self-regulating?

- Together with rate benchmarking data is available to measure liner performance.
- Regulation by public sector or global authorities probably too slow to respond
  - and can then deliver shock change s rather than gradual transition
- End of conference in 2008 and IMO 2020 both disruptive
  - not ideal with respect to risk management and investment and not to be recommended
- Ideally efficiency and environmental gains will come from shipper pressure
  - requiring shippers and shipper organizations themselves to be well informed
  - not straightforward given the thousands of shippers and just 3 alliances
- One option is for shippers' business to be consolidated through large forwarders who can provide countervailing pressure
  - but vulnerable to liner shipping vertical integration!
- Another is for gateway port communities to reflect shipper interests
  - but also vulnerable to liner vertical integration and would be highly political!
- A third is for shipper organizations themselves to have access to transparent and uncontroversial data to inform constructive and granular market pressure
  - but not to re-create the pre 2008 high cost 'cartel' environment
- **We recommend this third option if the industry is to retain its independence**

Thank you!

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