



MDS Transmodal Container Shipping Bulletin

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About MDS Transmodal

INTRODUCTION

MDS Transmodal is an independent consultancy specialising particularly in freight transport economics including shipping, ports, road and rail, logistics and distribution. We believe access to comprehensive and accurate data are the basis for good consultancy. For this purpose, we have developed and continue to maintain global trade and unit load shipping databases which we use to develop analyses for our clients. We have also built a series of integrated transport and financial models to examine strategic issues and undertake competition analyses.

Based upon these in-house databases, we now produce quarterly bulletins showing an overview of performance in the container shipping industry for the current quarter compared with the most recent. This bulletin shows our estimated and forecast/projected demand, supply, utilisation levels, profitability and market shares by major operator. More detailed bespoke analyses are available.

For this edition, we show our forecasts for the first quarter of 2017 based upon data available at the beginning of February 2017, which combines actual trade data up to and including 2016Q3 for all countries, 2016Q4 data for Argentina, Brazil, China, Hong Kong, Norway, South Korea and Switzerland, with our forecasts for all other countries.

The richness and intertwining of our models can also be explored through our web application, the Box Trade Analyser (BTA), which acts as a gateway to our trade data, container supply data and outputs from financial modelling of the global container industry. The BTA is freely accessible for two weeks after the release of the Bulletin. Link: <http://www.boxtradeanalyser.com>.

1. DEMAND

Based upon the most recent trade data available at the beginning of February, we project that in the first quarter of 2017 global trade of Non-Unitised cargo could exceed a level of 2.7 billion tonnes, reflecting a growth of approximately 6% compared to the same quarter last year and a growth of 0.3% compared to the previous three months. The commodity group anticipated to experience the biggest growth in percentage terms during the first quarter of 2017 compared to the same quarter of 2016 is 'Ores', which is expected to see a growth of circa 10%. On the other hand, 'Oils & fats' is the commodity group for we expect the biggest decline in percentage terms on a quarter-on-quarter comparison, down by 2.6%.

Our results are summarised in Table 1.

Table 1: Global international trade, recent and forecast, mTonnes

	2016Q1	2016Q2	2016Q3	2016Q4 (e)	2017Q1 (f)
Agricultural	194	189	196	190	190
Metals	11	12	11	11	11
Oils & fats	22	20	21	21	21
Chemicals	145	148	147	150	151
Ores	428	449	476	468	472
Forest products	97	101	98	99	99
Energy:					
- Coal	310	302	328	335	332
- Oil & gas	1,006	996	1,021	1,040	1,050
Other	394	442	438	440	435
Total Non-Unitised	2,607	2,660	2,735	2,755	2,762
Unitised	527	555	538	561	561
TOTAL Tonnes	3,133	3,215	3,273	3,316	3,323

Source: MDS Transmodal, World Cargo Database February 2017

Translating the unitised cargo into TEU, we anticipate a growth of approximately 7% between 2016Q1 and 2017Q1, almost reaching a level of 67m TEU, with maritime flows expected to increase at faster rate than overland & ro-ro traffic. Compared to 2016Q4, however, we project maritime flows to remain flat while overland & ro-ro traffics are expected to decline by some 1% as shown in the following table.

Table 2: Global international trade, mTEU

	2016Q1	2016Q2	2016Q3	2016Q4 (e)	2017Q1 (f)
Maritime containers	32.9	34.7	34.7	35.2	35.3
Other (overland & ro-ro)	29.9	31.3	29.4	31.9	31.6
TOTAL TEU	62.7	66.0	64.1	67.1	66.9

Source: MDS Transmodal, World Cargo Database February 2017

Drilling down our analysis to the commodity level and comparing our projection for 2017Q1 with the same quarter of 2016, Table 3 shows that ‘Mineral Manufactures’, up from some 2.8m TEU to 3.2m TEU (+14.5%), is the only commodity group for which we anticipate the highest growth in percentage terms during this period.

Table 3: Top 10 SITC at 2-digit level, mTEU (ranked by volume 2017Q1)

	2016Q1	2017Q1 (f)	% change
Miscellaneous Manufactures	3.41	3.76	10.5%
Vegetables & Fruit, Nuts	3.84	3.68	-4.3%
Electrical Machinery	2.96	3.24	9.4%
Mineral Manufactures	2.78	3.19	14.5%
Road Vehicles	2.46	2.51	1.9%
Rubber Manufactures	2.32	2.50	7.9%
Textiles & Made-Up Articles	2.21	2.33	5.7%
Furniture	2.23	2.31	3.2%
Metal Manufactures - Other	2.09	2.21	5.5%
Cereals & Cereal Preparations	1.84	2.02	9.3%
Other	36.59	39.15	7.0%
Grand Total	62.7	66.9	6.6%

Source: MDS Transmodal, World Cargo Database February 2017

Analysing the commodity group ‘Mineral Manufactures’ at 5-digit level, we estimate that this increase is spread amongst the commodities, with the main commodity to decline at the fastest rate being ‘Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing’, up by approximately 12% and anticipated to account for circa 15% of the total traffic of ‘Mineral Manufactures’ moved worldwide in 2017Q1.

Table 4 shows the major five exporting countries of ‘Mineral Manufactures’ in 2017Q1 compared to 2016Q1.

Table 4: Top 5 exporting countries of ‘Mineral Manufactures’ in 2016Q1 compared to 2016Q1, mTEU (ranked by volume 2017Q1)

	2016Q1	2017Q1 (f)	% change
China	0.63	0.75	19.3%
Germany	0.18	0.25	45.0%
Spain	0.17	0.17	2.3%
Italy	0.13	0.17	29.0%
USA	0.13	0.10	-19.7%
Other	1.56	1.74	12.0%
Grand Total	2.78	3.19	14.5%

Source: MDS Transmodal, World Cargo Database February 2017

Similar analyses for any other commodities are available on request.

Analysing our forecasts for global trade by importing country, we anticipate mixed fortunes for the top 10 countries during the first quarter of 2017 as compared to the same quarter last year, with China anticipated to see its imports up by more than 9% (from 3.6m TEU to 3.9m TEU) and Germany expected to see its imports down by 3.4% as shown in Table 5.

Table 5: Top 10 importing countries, mTEU (ranked by volume 2017Q1)

	2016Q1	2017Q1 (f)	% change
USA	6.72	7.01	4.3%
Germany	4.55	4.40	-3.4%
China	3.60	3.93	9.2%
France	2.66	2.62	-1.3%
United Kingdom	2.34	2.34	-0.2%
Netherlands	2.36	2.29	-2.8%
Italy	1.98	1.99	0.4%
Canada	1.87	1.95	4.2%
Spain	1.47	1.48	1.2%
Japan	1.43	1.47	2.2%
Other	33.76	37.41	10.8%
Grand Total	62.7	66.9	6.6%

Source: MDS Transmodal, World Cargo Database February 2017

A detailed breakdown for the USA imports is shown below.

Table 6: Major commodities imported into China, '000s TEU (ranked by volume 2017Q1)

Top 5 SITC 2D	Top 3 SITC 5D	2015Q4	2016Q4 (f)	% change
Pulp & Waste Paper	Unbleached kraft paper or paperboard or of corrugated paper or paperboard.	248.6	261.6	5%
	Chemical wood pulp, soda or sulphate, other than dissolving grades, semi-bleached or bleached	68.7	78.6	14%
	Paper or paperboard made mainly of mechanical pulp (e.g., newspapers, journals and similar printed matter)	69.2	78.5	14%
	All others	155.8	166.1	7%
Pulp & Waste Paper Total		542.2	584.9	8%
Cork & Wood	Wood of coniferous species, in the rough (whether or not stripped of bark or sapwood) or roughly squared	122.0	136.0	11%
	Wood of coniferous species, sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness exceeding 6 mm	78.4	97.1	24%
	Woods in the rough or roughly squared, n.e.s.	85.5	82.2	-4%
	All others	81.8	93.0	14%
Cork & Wood Total		367.7	408.3	11%
Plastics in primary forms	Waste, parings and scrap, of Plastics; other	47.2	68.1	44%
	Other polymers of ethylene, in primary forms	43.4	57.5	33%
	Polypropylene	40.9	49.5	21%
	All others	136.6	157.9	16%
Plastics in primary forms Total		268.0	332.9	24%
Vegetables & Fruit,	Manioc (cassava)	178.8	144.3	-19%

Top 5 SITC 2D	Top 3 SITC 5D	2015Q4	2016Q4 (f)	% change
Nuts	Peas	13.0	20.8	60%
	Other fresh fruit	22.9	20.7	-10%
	All others	85.4	52.3	-39%
Vegetables & Fruit, Nuts Total		300.2	238.1	-21%
Ores & Scrap	Aluminium ores and concentrates	47.4	79.3	67%
	Copper waste and scrap	43.3	48.5	12%
	Copper ores and concentrates	13.7	20.6	50%
	All others	47.0	58.6	25%
Ores & Scrap Total		151.4	207.1	37%
All others		1,967.3	2,158.1	10%
Grand Total		3,596.8	3,929.4	9%

Source: MDS Transmodal, World Cargo Database February 2017

2. SUPPLY

Despite our initial forecasts for the global demand in 2017 suggesting that demand could grow at a similar rate to that estimated for 2016, namely the region of 3%, the orderbook shows that nominal fleet capacity in 2017 could exceed by 34% the level of fleet capacity on order this time last year. The deterioration in the gap between demand and supply is expected to be intensified by there being less scrapping of ships.

Analysing the key points at which supply and demand can be measured at a global level (i.e. services passing through the Suez Canal and crossing the Atlantic and the Pacific), we do not expect the load factors to recover in the immediate future. On the contrary, utilisation levels are expected either to remain stable (i.e. Transpacific) or see some contraction (i.e. Suez and Transatlantic) as 2017Q1 proceeds.

The results of our analysis are shown in the following two sections.

2.A Supply – deployed capacity

The global annual capacity deployed on services in 2017Q1 is estimated to have increased by some 1% compared to the estimated capacity in 2016, now estimated to have gone below 178m TEU. The number of deployed container vessels has gone down from 5,347 in 2016Q1 to 5,018 in 2017Q1. With the expansion of the Panama Canal, not surprisingly the group of ships which experienced the biggest decrease (around 10% compared to last year) is those of less than 5,000TEU.

Extending the analysis back to 2007, we estimate that the drop of more than 20% in the number of ships over the last ten years has been accompanied by an increase of approximately 35% in the overall capacity deployed. The following table shows estimated deployed capacity and the number of vessels by class of ships.

Table 7: Deployed capacity (mTEU) and number of vessels by ship size

	Ship size (TEU)	2007Q1	2016Q1	2017Q1
Deployed Capacity (TEU)	<5,000	108.9	112.6	110.3
	5,000-7,499	15.3	21.3	22.3
	7,500-9,999	6.9	23.6	24.1
	10,000-12,499	0.5	3.0	4.5
	12,500-14,999	0.0	11.1	11.3
	15,000+	0.0	4.6	5.5
Total Deployed Capacity (mTEU)		131.7	176.2	178.0
No of vessels	<5,000	5,897	4,140	3,748
	5,000-7,499	332	469	488
	7,500-9,999	128	465	471
	10,000-12,499	9	47	73

	Ship size (TEU)	2007Q1	2016Q1	2017Q1
	12,500-14,999	0	169	170
	15,000+	0	57	68
Total No of vessels		6,366	5,347	5,018

Source: MDS Transmodal, Container Business Model, February 2017

Based on the ships on order at the time of this analysis, and not taking into account those that will be scrapped, we project that by 2020 the global fleet capacity could grow by almost 17% with capacity deployed in ships of 15,000 TEU or more expected to double during the next few years.

Table 8: Fleet capacity (TEU)

	Ship size (TEU)	Current (2016Q3)	Additional Fleet capacity (TEU) by 2020
Deployed Capacity (TEU)	<5,000	8.6	0.5
	5,000-7,499	3.5	0.1
	7,500-9,999	4.3	0.2
	10,000-12,499	1.0	0.5
	12,500-14,999	2.5	0.9
	15,000+	1.3	1.3
Total Deployed Capacity (mTEU)		21.1	3.5
No of vessels	<5,000	5,735	261
	5,000-7,499	582	14
	7,500-9,999	491	25
	10,000-12,499	93	45
	12,500-14,999	187	65
	15,000+	71	64
Total No of vessels		7,159	474

Source: MDS Transmodal, Container Business Model, February 2017

The following tables (Tables 9-11) summarise the capacity deployed on the major three routes (i.e. Gulf & ISC - Far East, Far East - North America and Europe & Med - Gulf & ISC - Far East) in 2017Q1 compared to the same quarter last year and to 2007Q1. Table 9 shows that capacity deployed on the Gulf & ISC - Far East trade lane grew by 6.3% compared to 2016 and by 94% compared to 2007. These results are driven by the rapid expansion in ships of less than 5,000 TEU, up by 15% compared to last year.

Table 9: Deployed capacity (mTEU) on the Gulf & ISC - Far East

Ship size (TEU)	2007Q1	2016Q1	2017Q1
<5,000	7.3	5.4	6.2
5,000-7,499	0.3	4.7	4.7
7,500-9,999	0.0	3.1	3.1
12,500-14,999	0.0	0.7	0.7
Grand Total	7.6	13.9	14.7

Source: MDS Transmodal, Container Business Model, February 2017

On the Far East - North America trade lane we report a decrease of 2% in 2016 compared to 2016, with ships smaller than 10,000 TEU gradually replaced by bigger ships as described in table 10.

Table 10: Deployed capacity (mTEU) on the Far East - North America

Ship size (TEU)	2007Q1	2016Q1	2017Q1
<5,000	5.5	2.0	1.6
5,000-7,499	6.2	3.7	4.1
7,500-9,999	1.3	7.3	5.8
10,000-12,499	0.0	0.6	1.1
12,500-14,999	0.0	0.0	0.7
Grand Total	13.0	13.6	13.3

Source: MDS Transmodal, Container Business Model, February 2017

On the Europe & Med - Gulf & ISC - Far East trade lane we estimate an overall increase of more than 23% between 2016Q1 and 2017Q1 with a rapid expansion in ships bigger than 15,000 TEU at the expense of smaller ships, which have been cascading to other routes. These results are shown in Table 11.

Table 11: Deployed capacity (mTEU) on the Europe & Med - Gulf & ISC - Far East

Ship size (TEU)	2007Q1	2016Q1	2017Q1
<5,000	2.7	0.4	0.4
5,000-7,499	3.2	0.0	0.3
7,500-9,999	2.2	1.3	0.5
10,000-12,499	0.0	1.7	1.1
12,500-14,999	0.0	4.9	6.4
15,000+	0.0	0.8	2.7
Grand Total	8.1	9.2	11.4

Source: MDS Transmodal, Container Business Model, February 2017

Analysing the port rotation, it emerges that, although Saudi ports remain the main ports on this route, the capacity deployed on the services calling at Colombo, Sri Lanka, has almost doubled between 2016Q1 and 2017Q1, with all the Alliances apart from Ocean Three calling here in 2017Q1.

2.B Supply – allocated capacity and utilisation

The key points at which supply (allocated capacity as described in Appendix A) and demand can be measured at a global level are on services passing through the Suez Canal and crossing the Atlantic and the Pacific respectively.

Table 12 shows that comparing the first quarter of 2017 with the same quarter of 2016 we project an improvement in the utilisation level for the services passing through the Suez Canal and those crossing the Pacific while for the services crossing the Atlantic we expect a contraction.

For the services passing through the Suez Canal, we project supply to decline by 5% in 2017Q1 compared to 2016Q1 whereas we expect demand to grow at a slower rate of 4.5% during the same period.

For the services crossing the Atlantic our projection for the first quarter of 2017 is for supply to grow by approximately 13% versus demand expected to grow by 6% compared to the same quarter of 2016.

For the first quarter of 2017 we project Transpacific utilisation to reach a level of 60%, which means it will increase compared to 2016Q1 (up by five percentage points). This result is driven by demand growing by some 10% accompanied by supply growing only by 0.5%.

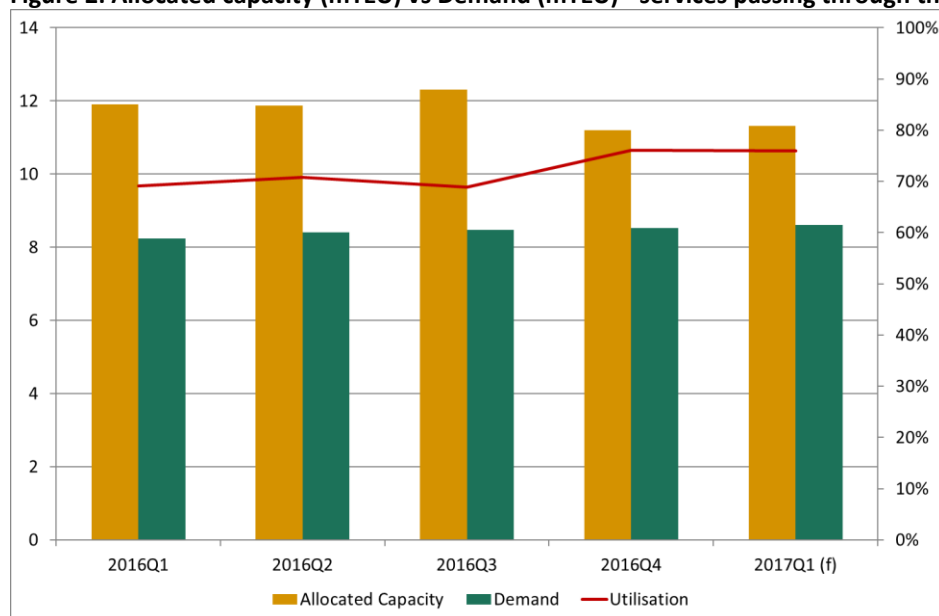
The overall results of our analysis are summarised in Table 12 and Figure 2-4.

Table 12: Utilisation level by major routes (sum of both directions)

	2016Q1	2016Q2	2016Q3	2016Q4 (e)	2017Q1 (f)
Suez	69%	71%	69%	76%	76%
Transatlantic	63%	63%	58%	62%	59%
Transpacific	55%	61%	62%	63%	60%

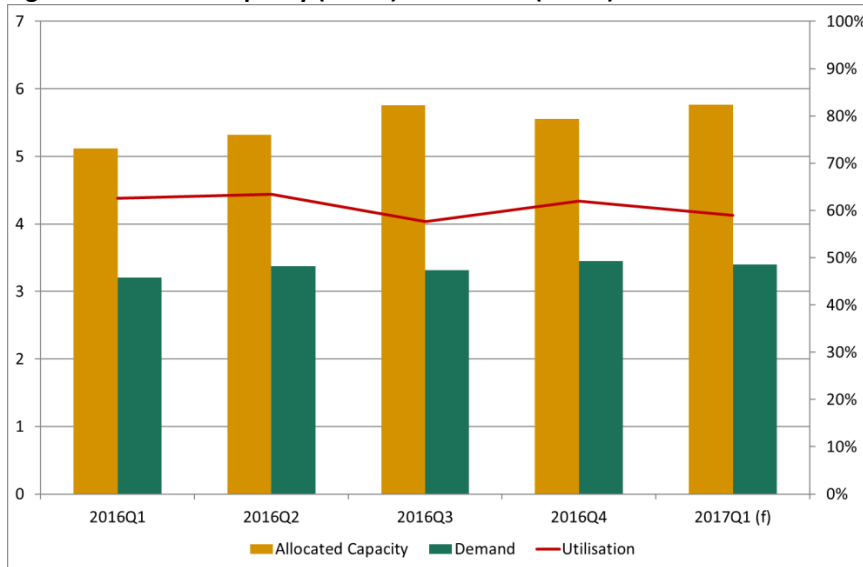
Source: MDS Transmodal, Container Business Model, February 2017

Figure 2: Allocated capacity (mTEU) vs Demand (mTEU) - services passing through the Suez Canal



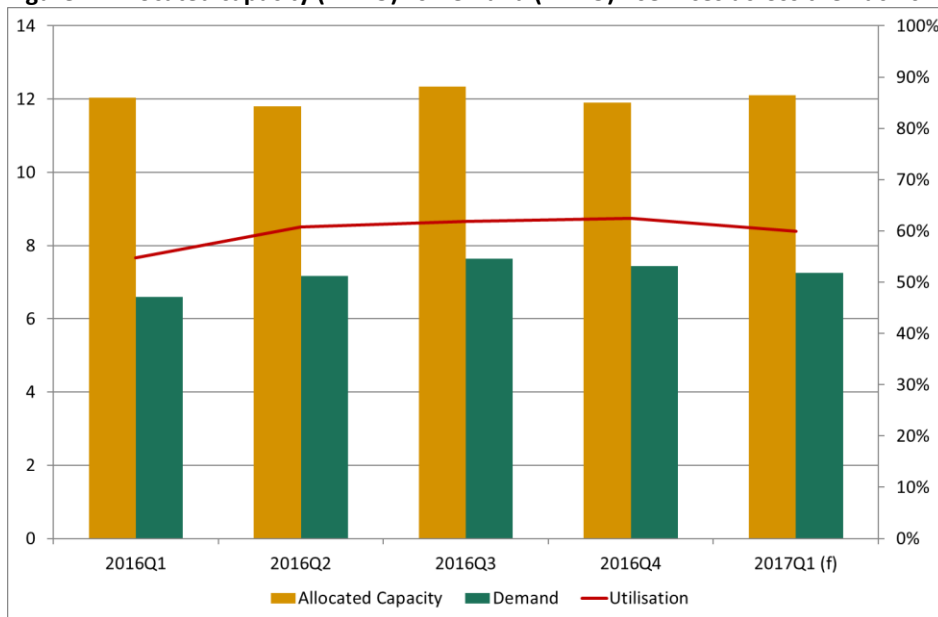
Source: MDS Transmodal, Container Business Model, February 2017

Figure 3: Allocated capacity (mTEU) vs Demand (mTEU) - services across the Atlantic



Source: MDS Transmodal, Container Business Model, February 2017

Figure 4: Allocated capacity (mTEU) vs Demand (mTEU) - services across the Pacific



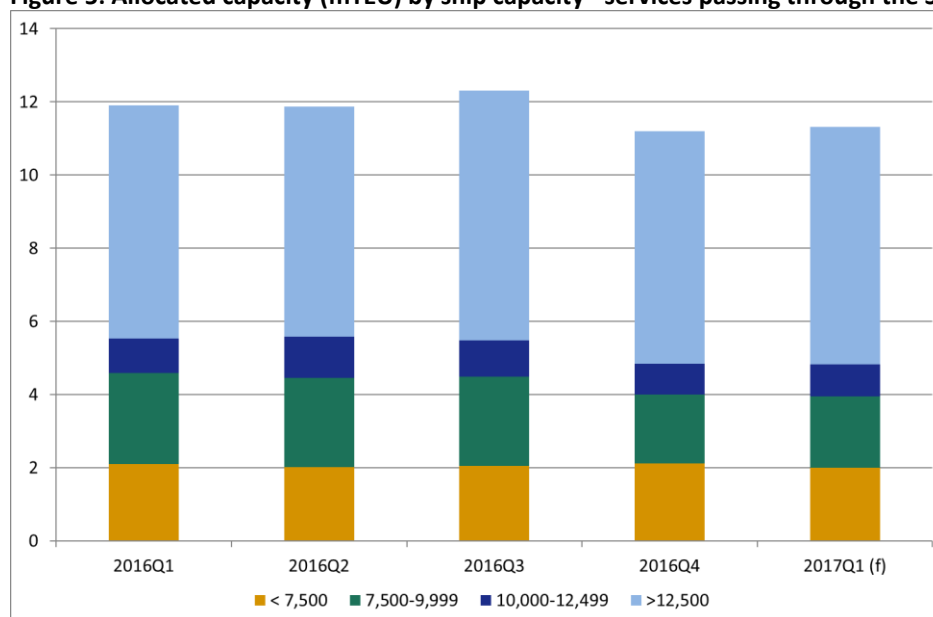
Source: MDS Transmodal, Container Business Model, February 2017

For each of these three markets, in the following three sections we analyse the allocated capacity by class of ship and by shipping line. Given the shake-up affecting the container shipping industry, we show the market shares for the individual carriers without grouping them into Alliances.

2.B.1 Services passing through the Suez Canal

In 2017Q1 the capacity allocated on the services passing through the Suez Canal is projected to decline by some 5% compared to 2016Q1 and to increase by circa 1% compared to 2016Q4. We anticipate that between 2016Q1 and 2017Q1 ships of at least 12,500 TEU could experience a growth of some 2% while ships smaller than 7,500TEU could see a reduction of some 5%.

Figure 5: Allocated capacity (mTEU) by ship capacity - services passing through the Suez Canal



Source: MDS Transmodal, Container Business Model, February 2017

Looking at the major shipping lines operating on these services we estimate that the top 10 operators account for approximately 86% of the total capacity allocated on these routes. This percentage has remained unchanged compared to 2016Q4, but is down by five percentage points compared to the same quarter of 2016. As shown in the following table, the 2M Alliance's members play a dominant role on these services, with Maersk and MSC both offering approximately 20% of the total capacity in 2017Q1. However, while MSC is projected to see an increase of some 4% between 2016Q1 and 2017Q1, Maersk is expected to increase by a smaller percentage of 1.5%. Compared to the previous three months, MSC and Maersk are expected to increase by 1.4% and 2.1% respectively.

Table 13: Market share by Alliance and their members - services passing through the Suez Canal

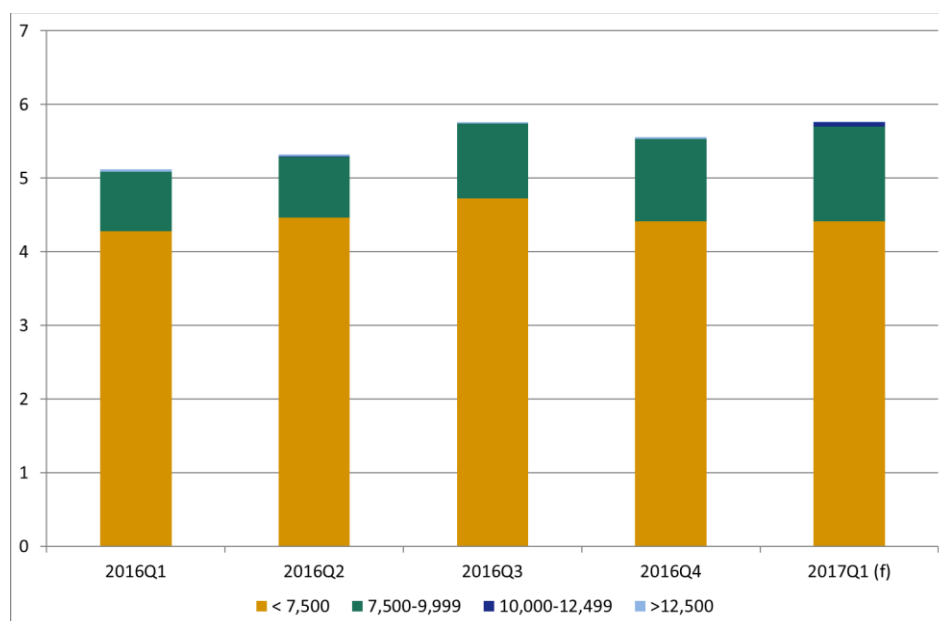
Top 10 Operators	2017Q1	2016Q4	2016Q1	Allocated capacity % change	
				2017Q1 vs 2016Q1	2017Q1 vs 2016Q4
MSC	20%	20%	18%	3.9%	1.4%
Maersk Line	19%	18%	17%	1.5%	2.1%
CMA-CGM	10%	10%	11%	-10.7%	-0.4%
Cosco & CSCL*	10%	9%	10%	-7.2%	6.0%
UASC	7%	7%	6%	3.1%	-4.7%
Evergreen	6%	6%	6%	1.9%	3.3%
Hapag-Lloyd	5%	5%	5%	-2.8%	-1.7%
Yang Ming	4%	4%	3%	17.9%	13.3%
OOCL	3%	3%	3%	2.3%	-6.4%
NYK	3%	3%	2%	34.3%	1.8%
All others	14%	14%	19%	-30.4%	-1.5%
Grand Total	100%	100%	100%	-5.0%	1.1%

*merged from 2016Q3; Source: MDS Transmodal, Container Business Model, February 2017

2.B.2 Services passing across the Atlantic

In 2017Q1 the capacity allocated on the services passing through the Atlantic is projected to increase by 13% compared to 2016Q1 and by 4% compared to 2016Q4. Analysing the allocated capacity by class of ship, we anticipate that between 2016Q1 and 2017Q1 ships of at least 10,000 TEU could more than double. These ships, however, are estimated to account for less than 1% of the total allocated capacity in 2017Q1 with the relevant class of ship for these routes expected to remain those of less of 7,500TEU, projected to account for 77% of the total capacity (down from 84% in 2016Q1 and from 79% in 2016Q4).

Figure 6: Allocated capacity (mTEU) by ship capacity - services passing through the Atlantic



Source: MDS Transmodal, Container Business Model, February 2017

With a combined market share of almost 50%, we project the 2M Alliance's members will retain their strong position on the Atlantic routes (27% for MSC and 21% for Maersk Line), widening the gap between them and the other lines. Double-digit market shares are also anticipated for Hapag-Lloyd (13%) and CMA-CGM (11%).

Table 14: Market share by Alliance and their members - services passing across the Atlantic

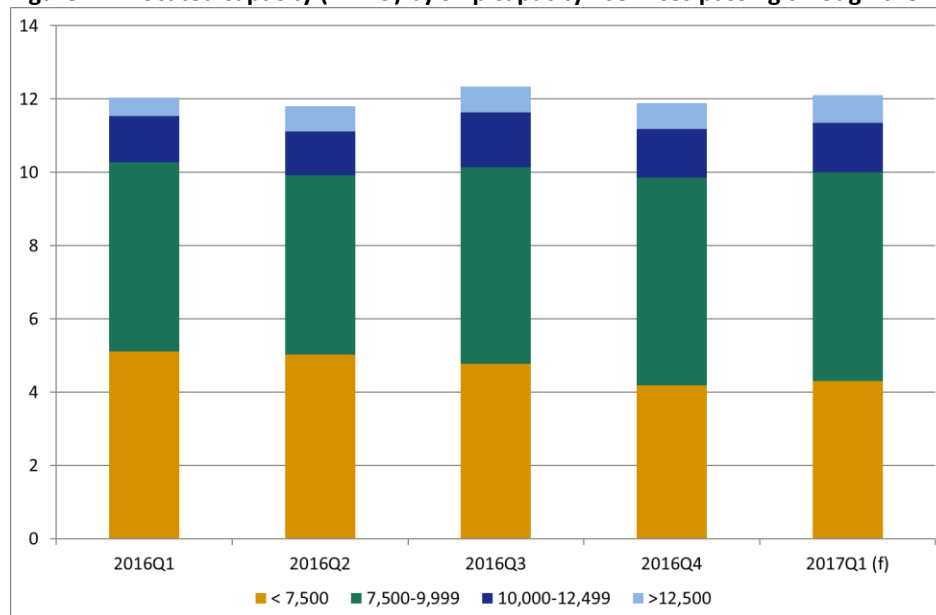
Top 10 Operators	2017Q1 (f)	2016Q4	2016Q1	Allocated capacity % change	
				2017Q1 vs 2016Q1	2017Q1 vs 2016Q4
MSC	27%	26%	25%	23.0%	7.1%
Maersk Line	21%	21%	22%	4.9%	4.8%
Hapag-Lloyd	13%	14%	13%	13.0%	3.5%
CMA-CGM	11%	11%	11%	13.8%	1.7%
Hamburg-Sud	7%	6%	7%	10.5%	9.2%
Grimaldi Lines	2%	2%	1%	21.9%	-9.3%
ZIM	2%	2%	2%	3.8%	3.3%
ACL	1%	1%	1%	37.1%	18.9%
OOCL	1%	1%	2%	-51.6%	-9.2%
NileDutch	1%	1%	1%	31.1%	-9.6%
All others	14%	15%	14%	12.0%	-1.8%
Grand Total	100%	100%	100%	12.7%	3.8%

Source: MDS Transmodal, Container Business Model, February 2017

2.B.3 Services passing across the Pacific

For the first quarter of 2017, we project that the level of capacity allocated on the services passing through the Pacific could increase by less than 1% compared to the same quarter last year and increase by 1.7% compared to the previous three months, with ships of at least 12,500TEU expected

to increase by some 50% compared to 2016Q1. This class of ship is now projected to account for some 18% of the total capacity (2017Q1), up from a share of 15% estimated last year.

Figure 7: Allocated capacity (mTEU) by ship capacity - services passing through the Pacific

Source: MDS Transmodal, Container Business Model, February 2017

Analysing the shipping lines operating on these routes, we expect Maersk to lead the group, with a market share of 17%. Compared to 2016Q1, we estimate that Maersk could report an increase of some 47% in 2017Q1. Scrolling down to the list of the major 10 shipping lines in 2017Q1, we project Cosco & CSCL* and Evergreen to follow Maersk with a market share of 13% and 10% respectively as shown in the following table.

Table 15: Market share by Alliance and their members - services across through the Pacific

Top 10 Operators	2017Q1 (f)	2016Q4	2016Q1	Allocated capacity % change	
				2017Q1 vs 2016Q1	2017Q1 vs 2016Q4
Maersk Line	17%	15%	12%	47.0%	15.8%
Cosco & CSCL	13%	12%	11%	14.2%	11.1%
Evergreen	10%	10%	9%	6.9%	-0.6%
CMA-CGM	6%	7%	8%	-16.5%	-5.3%
MSC	5%	7%	7%	-20.0%	-20.0%
NOL	6%	6%	4%	59.7%	1.6%
MOL	5%	5%	5%	1.5%	-3.4%
Hapag-Lloyd	5%	5%	5%	-2.5%	0.7%
K-Line	5%	4%	5%	-3.8%	10.4%
NYK	5%	5%	5%	1.6%	2.3%
All others	23%	24%	30%	-22.5%	-2.5%
Grand Total	100%	100%	100%	0.5%	1.7%

*merged from 2016Q3; Source: MDS Transmodal, Container Business Model, February 2017

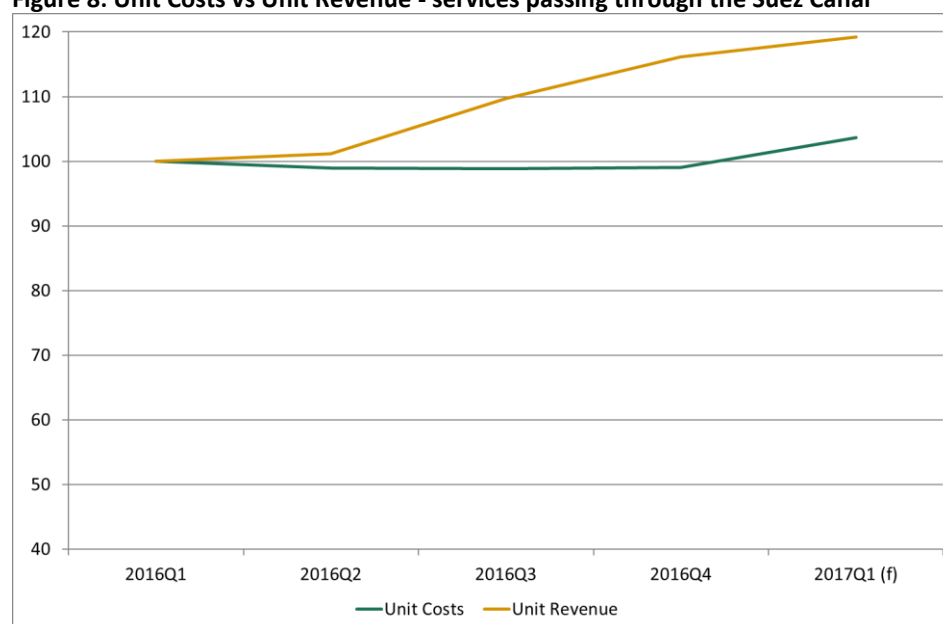
3. PROFITABILITY

3.B.1 Services passing through the Suez Canal

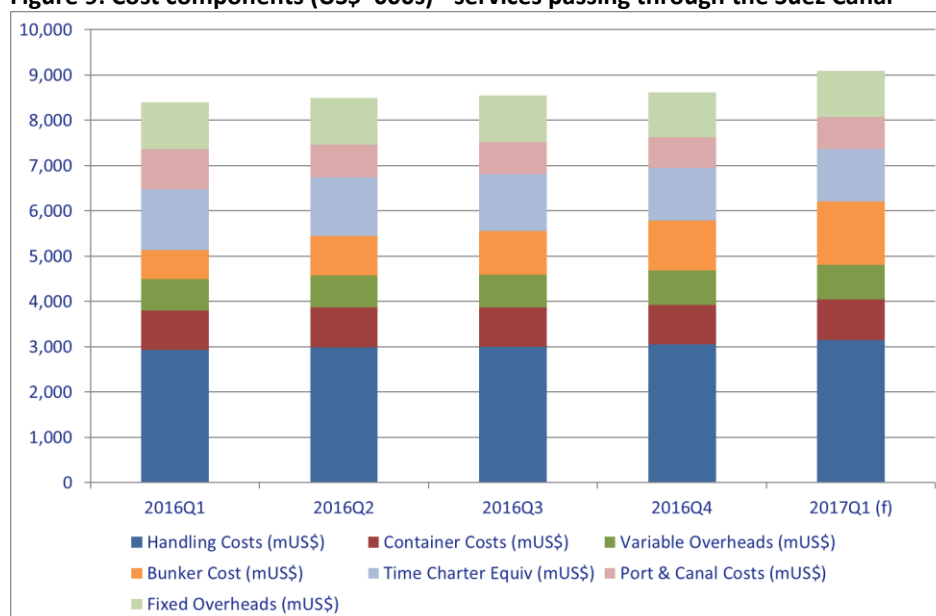
Based upon the data available at the beginning of February, for the services passing through the Suez Canal we project that in 2017Q1 unit costs could go up by four and five percentage points compared to the same quarter of last year and to the last three months, while unit revenue is expected to increase by three point percentages compared to last quarter and by 20 percentage points compared to last year, resulting in an improvement in the profitability for the services in this market.

The following figures show the results of our analysis with Figure 8 illustrating our estimated costs by component.

Figure 8: Unit Costs vs Unit Revenue - services passing through the Suez Canal



Source: MDS Transmodal, Container Business Model, February 2017

Figure 9: Cost components (US\$ '000s) - services passing through the Suez Canal

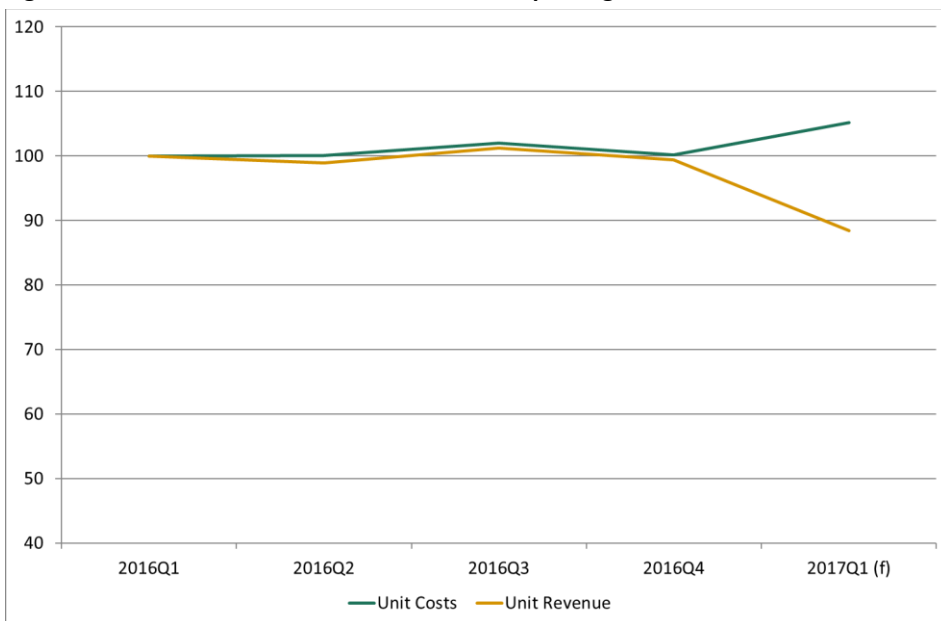
Source: MDS Transmodal, Container Business Model, February 2017

3.B.2 Services passing across the Atlantic

For the services passing across the Atlantic, we project that unit revenues could see a decline in the region of eleven percentage points during the first quarter of 2017 compared to both the previous three months and to the same quarter of 2016. The decline in unit revenue is expected to be accompanied by an increase in unit costs, which would translate in a deterioration of the profitability for this trade lane.

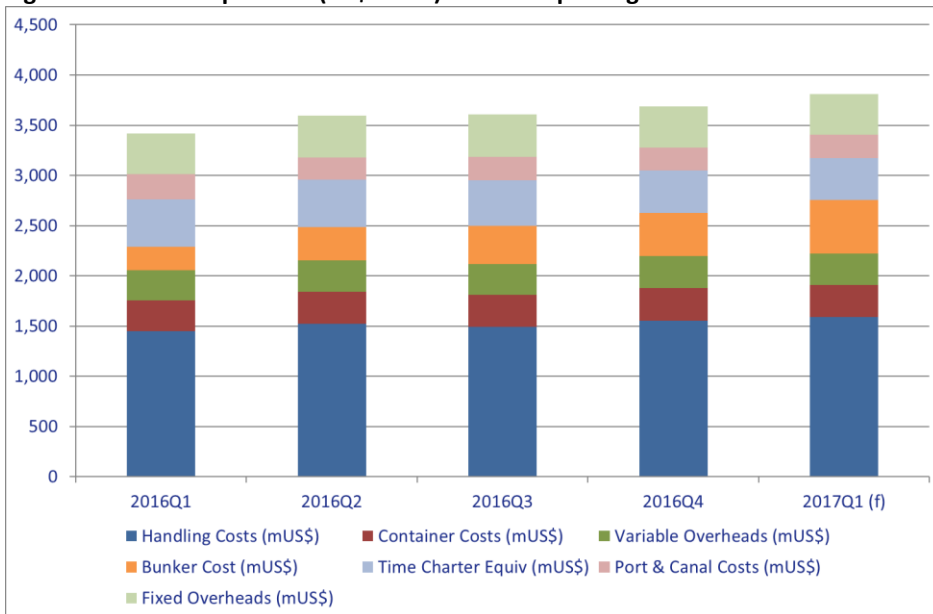
The following figures show the results of this analysis with Figure 11, illustrating our estimated costs by component, showing bunker costs doubled in 2017Q1 compared to the same quarter of 2016 and now estimated to account for some 14% of the overall costs projected for 2017Q1.

Figure 10: Unit Costs vs Unit Revenue - services passing across the Atlantic



Source: MDS Transmodal, Container Business Model, February 2017

Figure 11: Cost components (US\$ '000s) - services passing across the Atlantic



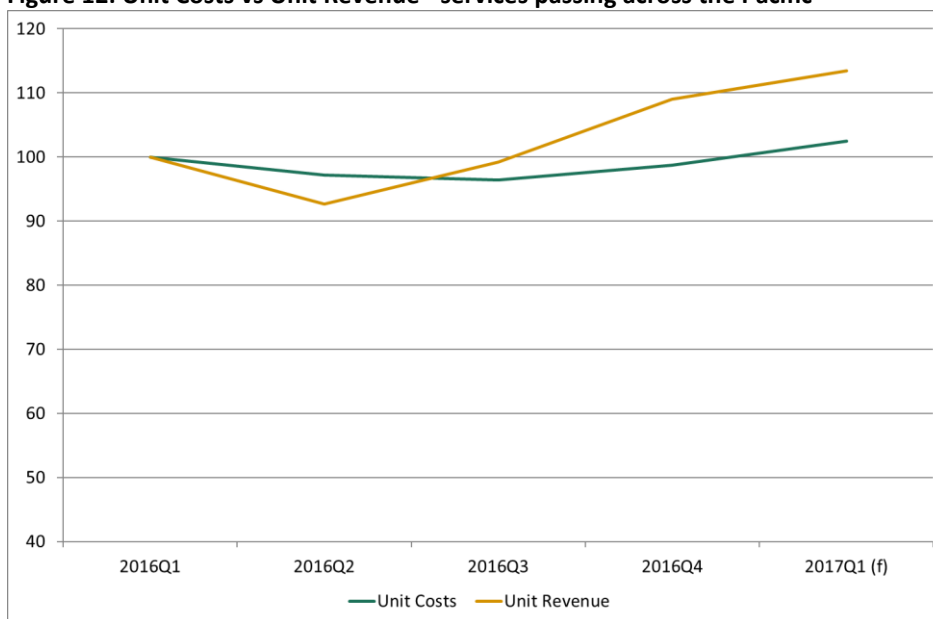
Source: MDS Transmodal, Container Business Model, February 2017

3.B.3 Services passing across the Pacific

For the services passing through the Pacific, we project unit revenues to improve in 2017Q1 compared to both last quarter and to last year. This increase, accompanied by unit costs being expected to increase at a lower rate, could translated into an improvement in the profitability for the services on these routes.

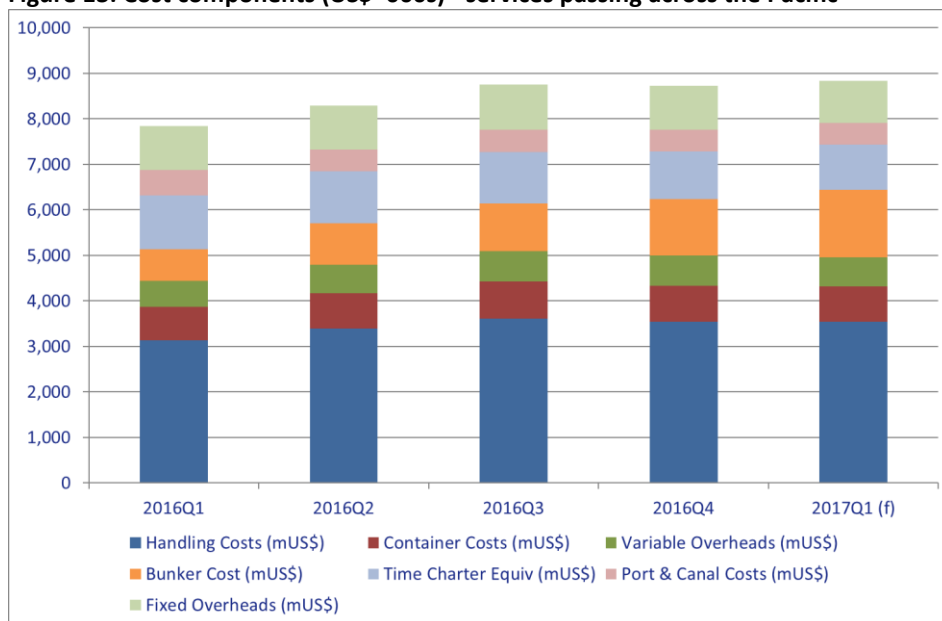
The results of our analysis are shown in the following two figures with Figure 13, the unit costs by cost component, showing bunker costs could more than double in 2017Q1 compared to 2016Q1.

Figure 12: Unit Costs vs Unit Revenue - services passing across the Pacific



Source: MDS Transmodal, Container Business Model, February 2017

Figure 13: Cost components (US\$ '000s) - services passing across the Pacific



Source: MDS Transmodal, Container Business Model, February 2017

Appendix A: 'Deployed' and 'Allocated' Capacity

We offer two measures of capacity, termed 'deployed' and 'allocated'. Deployed capacity is simply the nominal capacity of the vessel between any two ports/countries/regions called in on its service. With this measure, there arises the issue of double-counting: a 5,000 TEU vessel leaving Asia for Europe calling in the Middle East would offer 5,000 TEU deployed capacity from Asia to Europe, 5,000 TEU from Asia to the Middle East and 5,000 TEU from the Middle East to Europe.

To avoid this double-counting we have developed the 'allocated' capacity measure whereby the nominal TEU capacity of the vessel is allocated to the region to region routes that are connected by the vessel's service. This allocation is done using a formula that considers both the distance and the amount of unitised trade between the regions so that vessels on longer voyages are assumed to be more likely to carry a higher proportion of longer distance cargo, regardless of the intermediate ports of call. We believe that this reflects shipping line behaviour. Currently we perform this analysis on a global network broken down into 19 regions that match shipping and trade regions, (e.g. Asia is split into 5 regions; 3 covering China, North Asia and South East Asia) and we intend to disaggregate this further in the future.

There are additional controls in this modelling that ensure that the longer haul is only favoured where it makes economic sense. For example, a westbound round-the-world service would not carry traffic from America to Europe, and traffic solely within one of the 19 regions would only be carried by services that similarly only operate within that one region.

About MDS Transmodal

MDS Transmodal is a consultancy founded in 1983, which provides analysis and advice on strategic, commercial and economic issues mainly related to freight transport and logistics. The consultancy has completed hundreds of projects involving research for, and providing advice to, private and public sector clients worldwide. In the container shipping sector, the consultancy works for shippers, shipping lines, port and terminal operators, trade associations and financial institutions, providing the following main services:

- Container trade forecasts at a global, national and trade lane level.
- Monitoring of global container shipping supply, the supply-demand balance and global container port demand.
- Modelling of the revenues, costs and profitability of the global container shipping industry as a whole and at a trade lane level.
- Market and feasibility studies, business cases and business plans for container terminals and related port infrastructure throughout the world.
- Assessment of the container shipping market, competition and market share analyses.
- Commercial due diligence services for buyers or vendors of container terminals.

High level analysis of global containerized trade, global container shipping supply and the supply-demand balance is published each month in Containerisation International. Our forecasts and analyses on the most topical issues of the global container shipping sector are covered in Lloyds List and trade data has also been used by the BBC when it was tracking an individual container around the world.

We crosscheck the outcomes of our financial model to the financial performances reported by the major shipping lines. For 2015, for instance, aligned to what is reported by the industry for 2015FY, we estimate a global mean revenue rate of approximately \$1,100/TEU with a total turnover estimated to equate to some \$158bn (up by less than 1%).

For more information

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