



MDS Transmodal Container Shipping Bulletin

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Appendix A: ‘Deployed’ and ‘Allocated’ Capacity

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 second quarter of 2016 based upon data available at the beginning of May 2016, which combines actual trade data up to and including 2015Q4 for all countries and 2016Q1 data for Brazil, China, Hong Kong, Norway, South Africa, Switzerland and Turkey with our forecasts for 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 May, we project that in the second quarter of 2016 global trade of Non-Unitised cargo could exceed a level of 2.6 billion tonnes, reflecting a growth of approximately 3% compared to the same quarter last year and a growth of some 1% compared to the previous three months. The commodity groups anticipated to experience the biggest growth in percentage terms during the second quarter of 2016 are 'Agricultural' and 'Oils & fats', expected to see a growth of circa 6% and 4% respectively compared to the second quarter of 2015. On a quarter-on-quarter comparison we expect to see the highest growth rate for 'Forest products', anticipated to grow by approximately 2.5% between 2016Q1 and 2016Q2.

Our results are summarised in Table 1.

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

	2015Q2	2015Q3	2015Q4	2016Q1 (e)	2016Q2 (f)
Agricultural	178	188	193	190	189
Metals	11	10	10	11	11
Oils & fats	22	22	23	22	23
Chemicals	146	147	146	144	144
Ores	436	459	453	432	442
Forest products	99	95	97	97	99
Energy:					
- Coal	306	304	308	307	310
- Oil & gas	957	991	991	1,009	1,001
Other	421	427	420	421	434
Total Non-Unitised	2,576	2,643	2,642	2,632	2,653
Unitised	549	535	535	536	547
TOTAL Tonnes	3,125	3,178	3,177	3,168	3,200

Source: MDS Transmodal, World Cargo Database May 2016

Converting the unitised cargo into TEU, we anticipate a growth of more than 2% between 2016Q1 and 2016Q2 exceeding a level of 65m TEU. However, we project a low growth in 2016Q2 compared to the same quarter of 2015, with maritime flows expected to decline slightly, as shown in the following table.

Table 2: Global international trade, mTEU

	2015Q2	2015Q3	2015Q4	2016Q1 (e)	2016Q2 (f)
Maritime containers	34.5	34.2	33.8	33.4	34.3
Other (overland & ro-ro)	30.6	29.7	30.9	30.7	31.1
TOTAL TEU	65.1	63.9	64.6	64.0	65.4

Source: MDS Transmodal, World Cargo Database May 2016

Drilling down our analysis to the commodity level and comparing our projection for 2016Q2 with the same quarter of 2015, Table 3 shows our forecasts by those commodity groups that could

experience the biggest drop in percentage terms. 'Rubber Manufactures', down from some 2.6m TEU to 2.4m TEU, is forecast to show the greatest percentage decline.

Table 3: Top 10 SITC at 2-digit level, mTEU (ranked by volume 2016Q2)

	2015Q2	2016Q2 (f)	% change
Vegetables & Fruit, Nuts	3.9	3.8	-1.2%
Miscellaneous Manufactures	3.4	3.5	2.7%
Electrical Machinery	3.0	3.2	3.4%
Mineral Manufactures	3.1	3.0	-5.1%
Road Vehicles	2.6	2.6	0.3%
Rubber Manufactures	2.6	2.4	-9.8%
Textiles & Made-Up Articles	2.3	2.2	-3.6%
Furniture	2.1	2.2	3.8%
Metal Manufactures - Other	2.2	2.1	-4.0%
Cereals & Cereal Preparations	1.8	2.0	9.3%
Other	37.9	38.4	1.3%
Grand Total	65.1	65.4	0.5%

Source: MDS Transmodal, World Cargo Database May 2016

The commodity at 5-digit level expected to be the principal cause of this decline is 'Tyres, pneumatic, new, of a kind used on buses or lorries', down by approximately 4%. China, estimated to export more than 20% of the tyres worldwide, is expected to be the main driver for this decline, with their exports anticipated to suffer a contraction of some 12% between 2015Q2 and 2016Q2.

Table 4 shows the major five exporting countries of tyres in 2016Q2 compared to 2015Q2.

Table 4: Top 5 exporting countries of tyres in 2016Q2 compared to 2015Q2, mTEU (ranked by volume 2016Q2)

	2015Q2	2016Q2 (f)	% change
China	0.6	0.5	-12.3%
Germany	0.2	0.2	-1.6%
USA	0.2	0.2	2.7%
India	0.1	0.1	9.1%
Japan	0.1	0.1	-7.2%
Other	1.4	1.2	-12.8%
Grand Total	2.6	2.4	-9.8%

Source: MDS Transmodal, World Cargo Database May 2016

Similar analyses for any other commodities are available on request.

Analysing our forecasts for global trade by importing country, we anticipate that China could experience the biggest decline in the volume of cargo imported in 2016Q2 compared to 2015Q2. We anticipate a decline of more than 11% with volumes falling from 4.3m TEU in 2015Q2 to 3.8m TEU in 2016Q2 as shown in Table 5.

Table 5: Top 10 importing countries, mTEU (ranked by volume 2016Q2)

	2015Q2	2016Q2 (f)	% change
USA	7.1	7.1	0.1%
Germany	4.4	4.3	-2.4%
China	4.3	3.8	-11.4%
France	2.6	2.6	1.6%
Netherlands	2.3	2.3	0.2%
United Kingdom	2.2	2.3	3.7%
Italy	1.9	1.9	0.1%
Canada	1.9	1.9	-2.7%
Belgium	1.5	1.5	2.6%
Spain	1.5	1.5	-0.1%
Other	35.3	36.1	2.3%
Grand Total	65.1	65.4	0.5%

Source: MDS Transmodal, World Cargo Database May 2016

A detailed breakdown for Chinese imports is shown below.

Table 6: Major commodities imported into China, mTEU (ranked by volume 2016Q2)

Top 5 SITC 2D	Top 3 SITC 5D	2015Q2	2016Q2 (f)	% change
Pulp & Waste Paper	Unbleached kraft paper or paperboard	0.26	0.25	-1.4%
	Other (including unsorted waste and scrap)	0.08	0.08	2.1%
	Paper or paperboard made mainly of mechanical pulp	0.09	0.07	-22.1%
	All others	0.16	0.15	-5.7%
Pulp & Waste Paper Total		0.59	0.56	-5.2%
Cork & Wood	Wood of coniferous species, in the rough or roughly squared	0.14	0.13	-5.7%
	Woods in the rough or roughly squared, n.e.s.	0.10	0.09	-6.1%
	Wood of coniferous species, sawn or chipped lengthwise	0.09	0.09	-5.8%
	All others	0.09	0.09	-2.9%
Cork & Wood Total		0.41	0.39	-5.2%
Vegetables & Fruit, Nuts	Manioc (cassava)	0.23	0.18	-24.8%
	Sugar beet, fresh or dried, whether or not ground	0.03	0.04	14.6%
	Other fresh fruit	0.03	0.02	-17.4%
	All others	0.06	0.05	-14.3%
Vegetables & Fruit, Nuts Total		0.36	0.29	-18.7%
Plastics In Primary Forms	Waste, parings and scrap	0.06	0.05	-13.5%
	Other polymers of ethylene, in primary forms	0.05	0.04	-8.5%
	Polypropylene	0.05	0.04	-13.8%
	All others	0.15	0.14	-6.0%
Plastics In Primary Forms Total		0.30	0.27	-9.1%
Ores & Scrap	Copper waste and scrap	0.05	0.05	-12.0%
	Aluminium ores and concentrates	0.02	0.04	52.8%
	Copper ores and concentrates	0.01	0.02	12.4%
	All others	0.05	0.05	-2.2%
Ores & Scrap Total		0.14	0.15	4.8%
All others		2.47	2.12	-14.1%
Grand Total		4.27	3.78	-11.4%

Source: MDS Transmodal, World Cargo Database May 2016

2. SUPPLY

While the container shipping industry was celebrating its 60th year, on 20th April, CMA CGM, China Cosco, OOCL and Evergreen signed a new memorandum of understanding to form a new alliance, the Ocean Alliance. This particular announcement is only the latest of numerous consolidation talks mentioned in the press in the last few weeks after the recent CMA-CGM acquisition and merger between Cosco and China Shipping Container Line (CSCL). The major announcement was made on the 12th May: virtually all the other global lines will come together to form a new third Alliance.

If shipping lines are determined to limit the number of Alliances to three, the latest ownership changes make it quite challenging for the biggest shipping lines to redefine their agreements in such a way that their aggregated market shares remain below 30% on the major routes. However, at the other end of the scale, lines that may be losing a large Alliance partner may find that to achieve a viable scale could be equally challenging.

In the following two sections we analyse the recent changes in deployed capacity and allocated capacity (the difference between 'deployed' and 'allocated' capacity is described in Appendix A) looking at the industry as a whole and by specific routes.

2.A Supply – deployed capacity

The global annual capacity deployed in services in 2016Q2 is estimated to have increased by 3% compared to the estimated capacity in 2015, now exceeding a level of 186m TEU. Not surprisingly, the group of ships which experienced the biggest increase are those of at least 12,500TEU, estimated to have increased by 18% compared to last year.

Extending the analysis back to 2006, we estimate that the drop of 15% reported in the number of ships over the last ten years has been accompanied by an increase of approximately 37% 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)	2006Q2	2015Q2	2016Q2
Deployed Capacity (TEU)	<5,000	117.0	122.2	122.4
	5,000-7,499	14.1	20.7	21.4
	7,500-9,999	5.1	21.4	23.1
	10,000-12,499		3.4	3.4
	12,500-14,999		9.7	11.2
	15,000+		3.4	4.5

	Ship size (TEU)	2006Q2	2015Q2	2016Q2
Total Deployed Capacity (mTEU)		136.2	180.8	186.0
No of vessels	<5,000	7,184	5,464	5,225
	5,000-7,499	317	505	474
	7,500-9,999	93	461	467
	10,000-12,499		48	48
	12,500-14,999		153	174
	15,000+		43	57
Total No of vessels		7,594	6,674	6,445

Source: MDS Transmodal, Containership Databank, May 2016

Based on the ships on order at the time of this analysis, and not taking into account those scrapped, we project that by 2020 the global fleet capacity could grow by almost 20% with capacity deployed in ships of 15,000 TEU or more expected to more than double during in the next few years.

Table 8: Fleet capacity (TEU)

	Ship size (TEU)	Current (2016Q2)	Additional Fleet capacity (TEU) by 2020
Deployed Capacity (TEU)	<5,000	8.8	0.5
	5,000-7,499	3.6	0.1
	7,500-9,999	4.2	0.3
	10,000-12,499	0.9	0.6
	12,500-14,999	2.4	1.0
	15,000+	1.1	1.5
Total Deployed Capacity (mTEU)		21.0	3.9
No of vessels	<5,000	5,831	239
	5,000-7,499	597	14
	7,500-9,999	482	32
	10,000-12,499	87	52
	12,500-14,999	178	71
	15,000+	64	75
Total No of vessels		7,239	483

Source: MDS Transmodal, Containership Databank, May 2016

Analysing the deployed capacity by trade lane, we estimate that the highest level of capacity has been deployed on the following three routes:

- Gulf & ISC - Far East
- Far East - North America
- Europe & Med - Gulf & ISC - Far East

The following tables (Table 9-11) summarise the capacity deployed on these three routes in 2016Q2 compared to the same quarter last year and to 2006Q2.

Table 9 shows that capacity deployed on the Gulf & ISC - Far East trade lane grew by 12% to reach 111% more than in 2006. These results are driven by the rapid expansion in ships of 5,000-9,999 TEU versus Panamax ships.

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

Ship size (TEU)	2006Q2	2015Q2	2016Q2
<5,000	6.4	6.0	5.1
5,000-7,499	0.3	3.6	5.1
7,500-9,999		2.2	3.2
12,500-14,999		0.7	0.7
Grand Total	6.7	12.5	14.0

Source: MDS Transmodal, Containership Databank, May 2016

On the Far East - North America trade lane we report an increase of 2% in 2016 compared to 2015, mainly driven by a replacement of 5,000-7,500 ships by 7,500-9,999 TEU ships as described in table 10.

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

Ship size (TEU)	2006Q2	2015Q2	2016Q2
<5,000	6.4	1.7	1.7
5,000-7,499	6.1	4.6	4.0
7,500-9,999	1.3	5.0	6.3
10,000-12,499		1.7	1.2
Grand Total	13.8	13.0	13.3

Source: MDS Transmodal, Containership Databank, May 2016

On the Europe & Med - Gulf & ISC - Far East trade lane there has been a very rapid expansion in ships bigger than 12,500 TEU at the expense of 7,500-9,999 TEU ships, ships cascading from Europe & Med - Far East 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)	2006Q2	2015Q2	2016Q2
<5,000	1.8	0.5	0.5
5,000-7,499	3.4		
7,500-9,999	0.9	2.5	1.4
10,000-12,499		1.1	1.1
12,500-14,999		4.9	6.4
15,000+		0.7	0.8
Grand Total	6.1	9.7	10.1

Source: MDS Transmodal, Containership Databank, May 2016

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 for the second quarter of 2016 we project a slight improvement in the utilisation level for the services passing through the Suez Canal compared to the same quarter of 2015 as well as to the previous three months. These results are driven by demand being expected to grow at a slight faster rate than supply.

For the services crossing the Atlantic our projection is for supply to grow by approximately 3.5% versus demand which is expected to grow by less than 2% compared to the previous three months, resulting in a lower utilisation level. However, compared to 2015Q2, supply is projected to remain substantially flat while demand is forecast to increase by some 2%, resulting in an improvement of approximately two percentage points in the utilisation level on an annual basis.

For the second quarter of 2016 we project Transpacific utilisation to go up by four percentage points compared to 2016Q1, reaching a level of 61%. However, comparing this projection to last year's result we anticipate a decline of some four percentage points mainly due to demand which is expected to shrink by more than 5%. At the time of this analysis, the contraction in demand is expected to be accompanied by a cut in allocated capacity of some 1%.

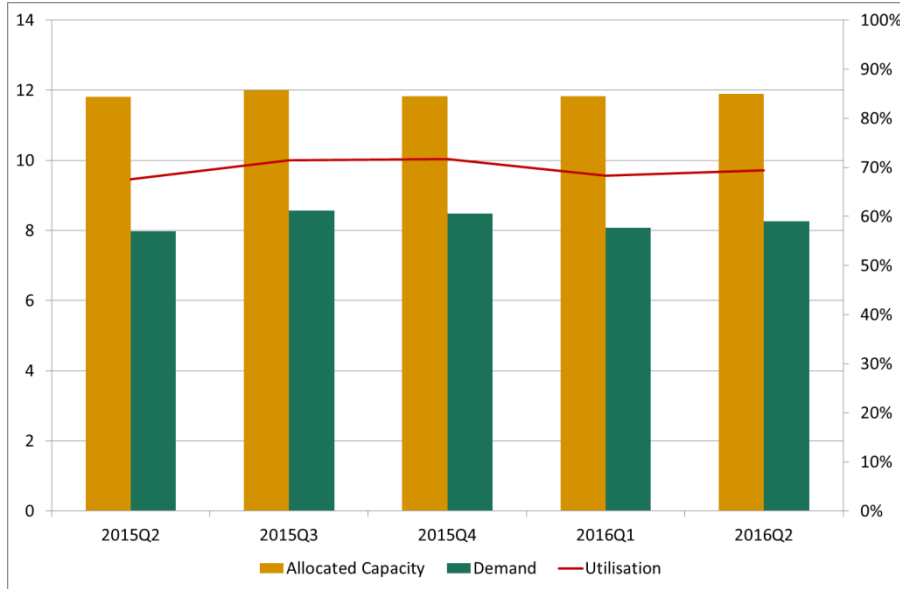
The overall results of our analysis are summarised in Table 12 and Figure 1-3, showing that utilisation levels are stable.

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

	2015Q2	2015Q3	2015Q4	2016Q1 (e)	2016Q2 (f)
Suez	68%	71%	72%	68%	69%
Transatlantic	63%	64%	63%	66%	65%
Transpacific	63%	64%	60%	57%	61%

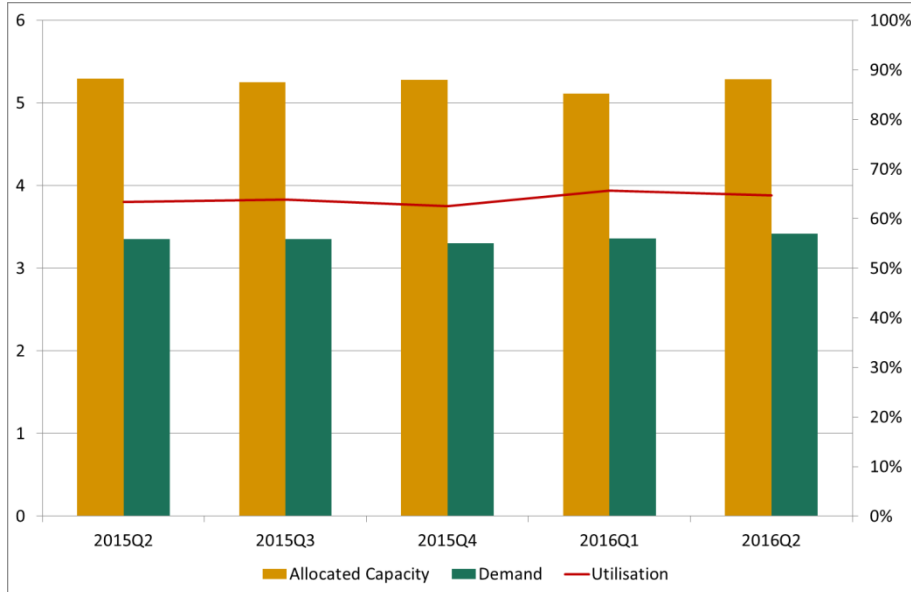
Source: MDS Transmodal, Container Business Model, May 2016

Figure 1: Allocated capacity (mTEU) vs Demand (mTEU) - services passing through the Suez Canal

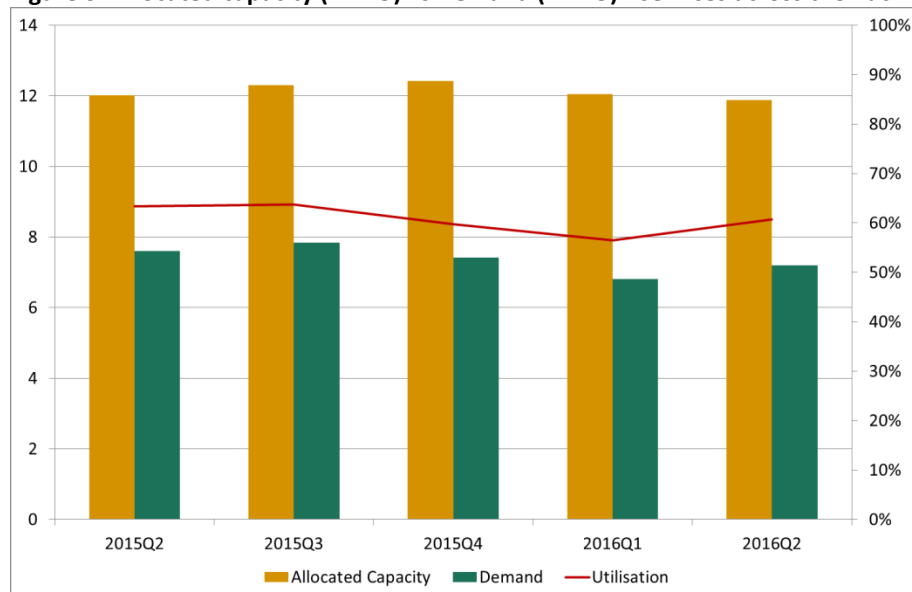


Source: MDS Transmodal, Container Business Model, May 2016

Figure 2: Allocated capacity (mTEU) vs Demand (mTEU) - services across the Atlantic



Source: MDS Transmodal, Container Business Model, May 2016

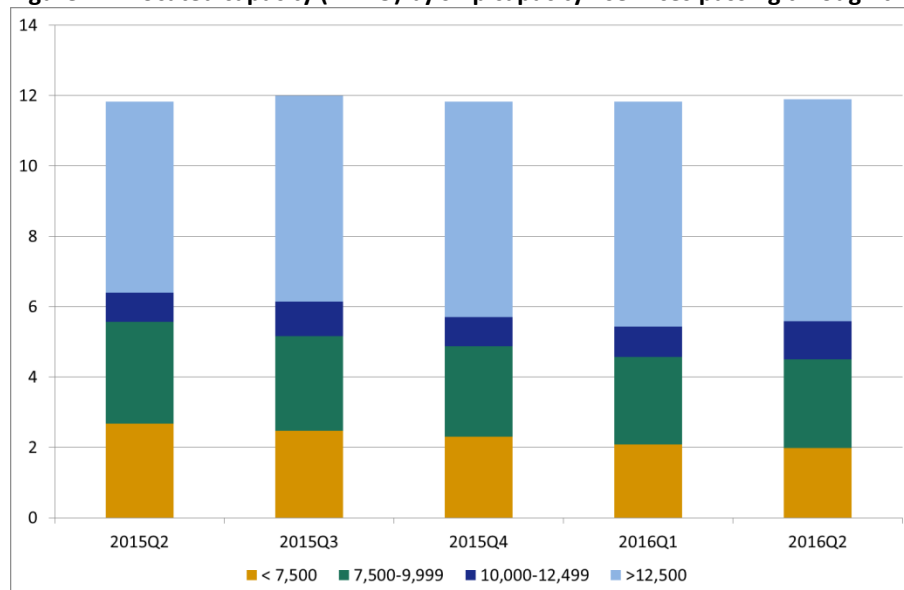
Figure 3: Allocated capacity (mTEU) vs Demand (mTEU) - services across the Pacific

Source: MDS Transmodal, Container Business Model, May 2016

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 by for the individual carriers without grouping them into Alliances.

2.B.1 Services passing through the Suez Canal

In 2016Q2 the capacity allocated on the services passing through the Suez Canal is projected to grow by some 1% compared to both 2015Q2 and 2016Q1. Drilling down the analysis to the class of ships, we anticipate that between 2015Q2 and 2016Q2 ships of 10,000-12,499 TEU could experience a growth of some 30% (with ships of at least 15,000 TEU anticipated to increase by some 44%) and ships smaller than 7,500TEU to see a reduction of some 26%. Comparing our forecasts for 2016Q2 to the previous quarter, however, we report more uniform growth rates among the different classes of ship.

Figure 4: Allocated capacity (mTEU) by ship capacity - services passing through the Suez Canal

Source: MDS Transmodal, Container Business Model, May 2016

Looking at the major shipping lines operating on these services we project that the top 10 operators now account for approximately 83% of the total capacity allocated on these routes, up from 81% estimated during the same quarter of 2015.

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 2016Q2. However, while Maersk is projected to see a contraction of some 14% in 2016Q2 compared to 2015Q2, MSC is expected to see an increase of 10% during the same period.

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

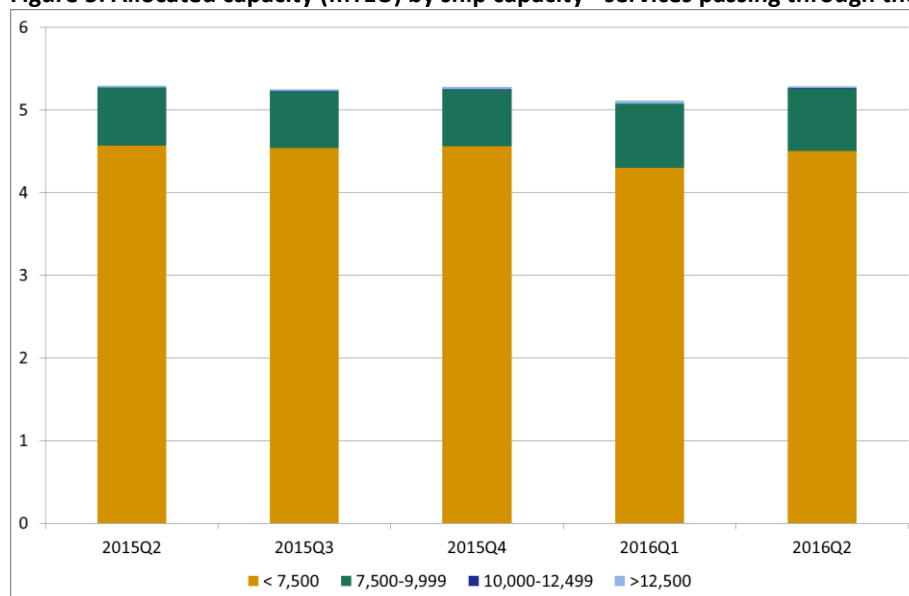
Top 10 Operators	2016Q2	2016Q1	2015Q2	Allocated capacity % change	
				2016 Q2 vs 2015 Q2	2016 Q2 vs 2016 Q1
MSC	19%	18%	18%	10.0%	6.6%
Maersk Line	18%	17%	20%	-13.5%	2.9%
CMA-CGM	11%	11%	11%	0.2%	-2.2%
UASC	7%	6%	4%	62.6%	13.8%
Evergreen	6%	6%	5%	11.8%	0.3%
CSCL	5%	5%	6%	-22.0%	2.7%
Cosco	5%	5%	5%	-0.8%	-1.4%
Hapag-Lloyd	5%	5%	5%	3.0%	1.4%
Hanjin	4%	4%	4%	9.3%	17.7%
Yang Ming	3%	3%	3%	13.0%	-2.2%
All others	17%	20%	19%	-6.0%	-12.2%
Grand Total	100%	100%	100%	0.7%	0.6%

Source: MDS Transmodal, Container Business Model, May 2016

2.B.2 Services passing across the Atlantic

In 2016Q2 the capacity allocated on the services passing through the Atlantic is projected to remain substantially flat compared to 2015Q2 and to grow by some 3% compared to 2016Q1. Analysing the allocated capacity by class of ship, we anticipate that between 2015Q2 and 2016Q2 ships of at least 10,000 TEU could experience a growth of some 24%. These ships, however, are estimated to account for less than 1% of the total allocated capacity in 2016Q2 with the relevant class of ship for these routes expected to remain that of less of 7,500TEU, accounting for some 85% of the total capacity.

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



Source: MDS Transmodal, Container Business Model, May 2016

With a market share of more than 20%, we project the 2M Alliance's members to retain their strong position on the Atlantic routes, widening the gap between them and the other lines. Double digit market shares are also anticipated for Hapag-Lloyd (13%) and CMA-CGM (of 12%); however, these shares are approximately two percentage points down on those estimated in 2015Q2.

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

Top 10 Operators	2016Q2	2016Q1	2015Q2	Allocated capacity % change	
				2016 Q2 vs 2015 Q2	2016 Q2 vs 2016 Q1
MSC	25%	25%	24%	0.9%	0.0%
Maersk Line	22%	22%	21%	2.7%	2.4%
Hapag-Lloyd	13%	13%	15%	-18.5%	-2.6%
CMA-CGM	12%	11%	10%	13.8%	12.0%
Hamburg-Sud	6%	7%	6%	2.2%	-6.3%
OOCL	2%	2%	1%	62.3%	38.3%

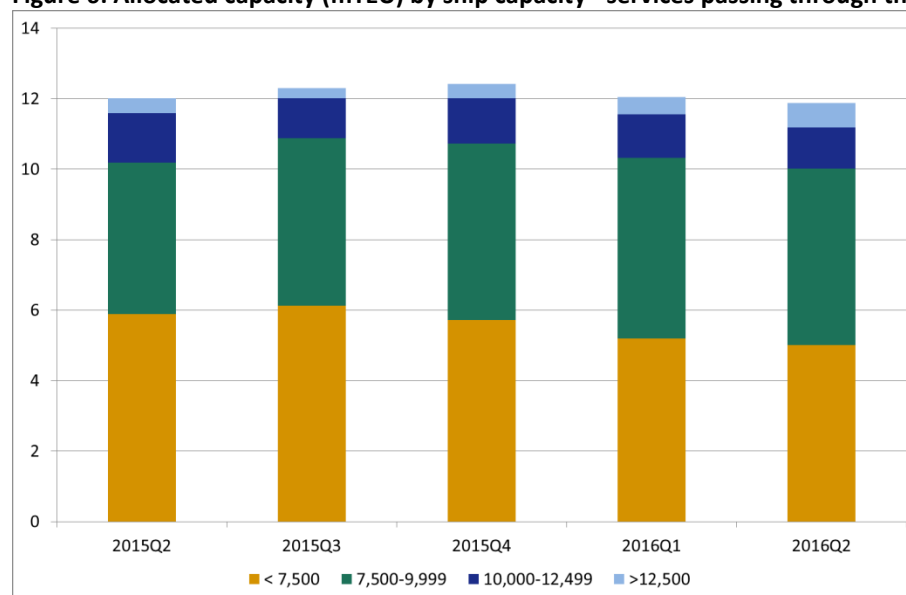
Top 10 Operators	2016Q2	2016Q1	2015Q2	Allocated capacity % change	
				2016 Q2 vs 2015 Q2	2016 Q2 vs 2016 Q1
ZIM	2%	2%	2%	-16.3%	-4.7%
Grimaldi Lines	2%	1%	1%	28.6%	33.4%
NileDutch	1%	1%	1%	7.0%	58.5%
ACL	1%	1%	1%	15.6%	11.0%
All others	15%	14%	15%	-5.4%	4.3%
Grand Total	100%	100%	100%	-0.1%	3.4%

Source: MDS Transmodal, Container Business Model, May 2016

2.B.3 Services passing across the Pacific

In 2016Q2 the capacity allocated on the services passing through the Pacific is projected to decrease by approximately 1% compared to both 2015Q2 and to 2016Q1, with ships of at least 12,500TEU expected to growth by more than 60% compared to 2015Q2 and by some 40% compared to 2016Q1. This class of ships are now projected to account for some 6% of the total capacity in 2016Q2, up from a share of 4% estimated in 2015Q2 and 2016Q1.

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



Source: MDS Transmodal, Container Business Model, May 2016

The capacity allocated on these routes is expected to see a contraction of approximately 1% during the second quarter of 2016 compared to the same quarter last year, with all the major shipping lines operating in this market expected to cut their capacity. The only two main lines for which we do not expect a contraction are Maersk and K-Line, with Maersk estimated to remain the main shipping line operating on these routes.

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

Top 10 Operators	2016Q2	2016Q1	2015Q2	Allocated capacity % change	
				2016 Q2 vs 2015 Q2	2016 Q2 vs 2016 Q1
Maersk Line	12%	11%	10%	18.5%	2.6%
Evergreen	9%	9%	9%	-5.2%	-4.6%
CMA-CGM	8%	8%	9%	-7.5%	2.4%
Cosco	8%	7%	8%	-5.4%	17.5%
MSC	7%	7%	7%	-0.2%	-4.1%
Hanjin	5%	6%	6%	-14.7%	-13.5%
K-Line	5%	5%	5%	11.5%	7.0%
Hapag-Lloyd	5%	5%	5%	-13.5%	-2.4%
MOL	4%	5%	5%	-9.2%	-13.8%
NOL	4%	4%	6%	-25.8%	1.3%
All others	33%	33%	31%	5.3%	-3.6%
Grand Total	100%	100%	100%	-1.1%	-1.5%

Source: MDS Transmodal, Container Business Model, May 2016

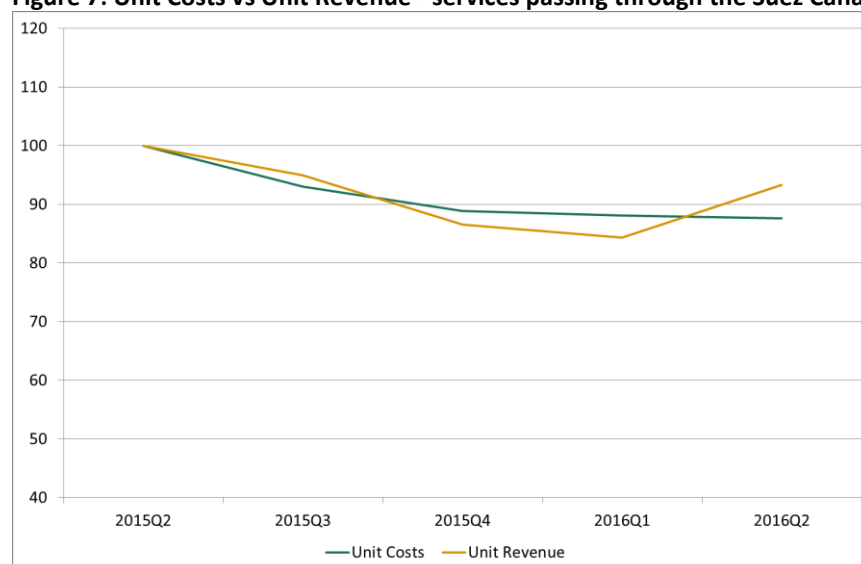
3. PROFITABILITY

3.B.1 Services passing through the Suez Canal

Based upon the data available at the beginning of May, for the services passing through the Suez Canal we estimate that unit revenues have been falling at a faster rate than unit costs in 2015Q4 and 2016Q1; however, with a slight improvement in forecast utilisation levels, we project this trend to reverse during the second quarter of 2016. The improvement expected in unit revenues, however, is only partial, as we do not expect them to reach the levels estimated during the same quarter of 2015. These forecasts are based on our projection of capacity growing at a slower rate than demand during this period, encouraging rates to recover.

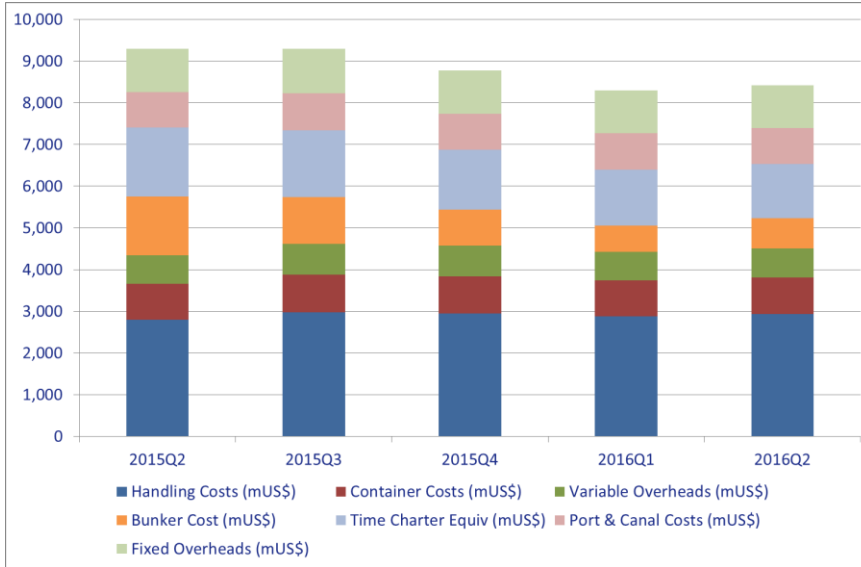
The following figures show the results of our analysis with Figure 8 illustrating our estimated costs by component.

Figure 7: Unit Costs vs Unit Revenue - services passing through the Suez Canal



Source: MDS Transmodal, Container Business Model, May 2016

Figure 8: Cost components (US\$ '000s) - services passing through the Suez Canal



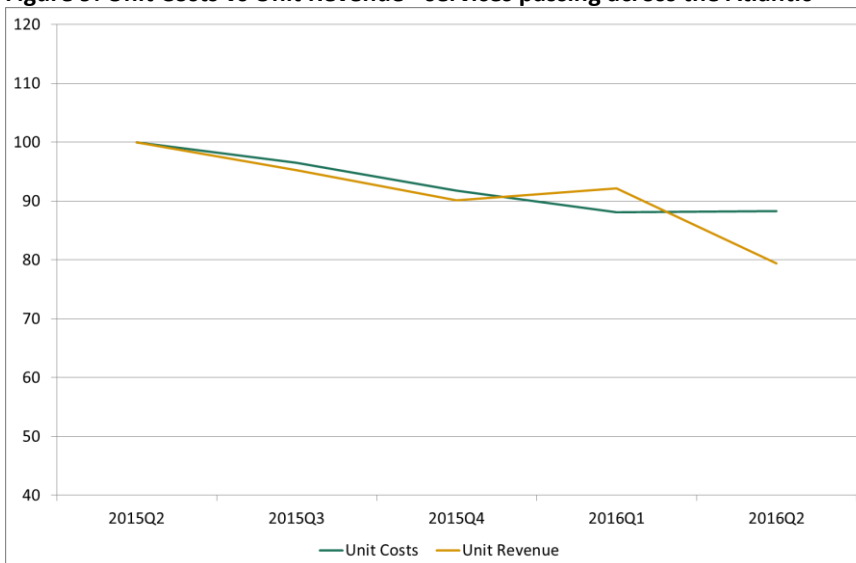
Source: MDS Transmodal, Container Business Model, May 2016

3.B.2 Services passing across the Atlantic

For the services passing across the Atlantic, after an improvement estimated in 2016Q1, we project unit revenue to decline in 2016Q2 while unit costs are forecast to remain more or less at the same level estimated for the previous three months.

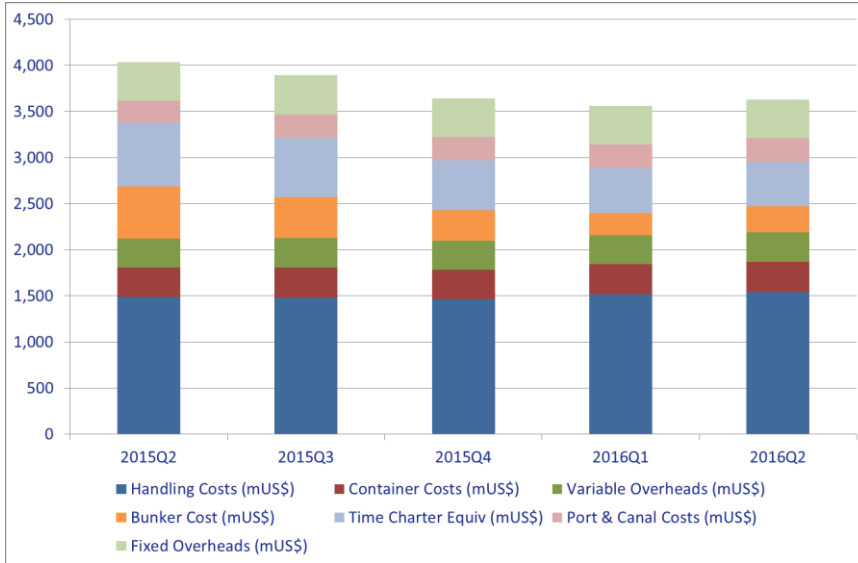
The following figures show the results of this analysis and Figure 10 illustrates our estimated costs by component. As shown in Figure 10, we project bunker costs to halve in 2016Q2 compared to the same quarter of 2015 and charter costs to decline by some 30% during the same period.

Figure 9: Unit Costs vs Unit Revenue - services passing across the Atlantic



Source: MDS Transmodal, Container Business Model, May 2016

Figure 10: Cost components (US\$ '000s) - services passing across the Atlantic



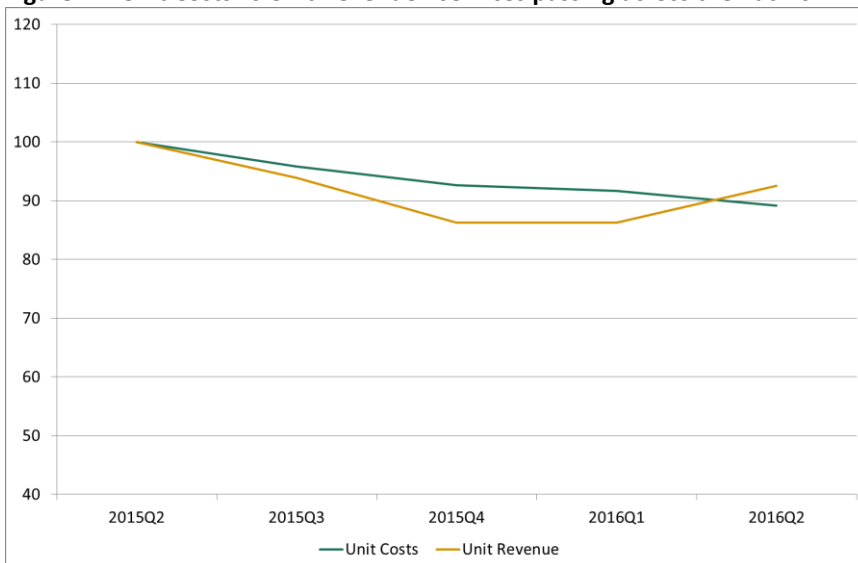
Source: MDS Transmodal, Container Business Model, May 2016

3.B.3 Services passing across the Pacific

For the services passing through the Pacific, we project unit revenue to improve marginally compared to 2016Q1, but to remain lower than the level estimated for 2015Q2 while unit costs are expected to see a further reduction during the same period.

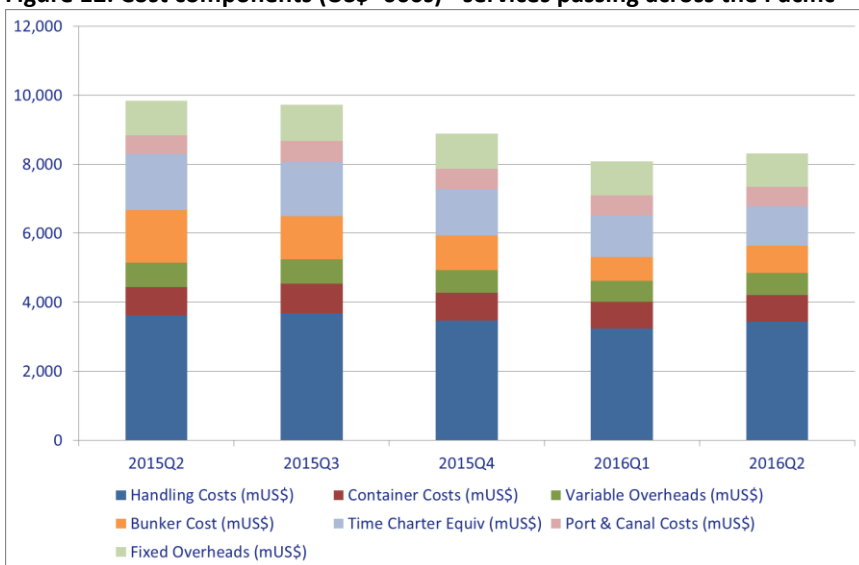
The results of our analysis are shown in the following two figures with Figure 12 showing the unit costs by cost component. The major change emerging from this figure is bunker costs which are expected to see a reduction of some 50% compared to 2015Q2 (but up 12% compared to 2016Q1).

Figure 11: Unit Costs vs Unit Revenue - services passing across the Pacific



Source: MDS Transmodal, Container Business Model, May 2016

Figure 12: Cost components (US\$ '000s) - services passing across the Pacific



Source: MDS Transmodal, Container Business Model, May 2016

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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