MOORE

MOORE MARITIME INDEX

SHIPPING TRENDS BASED ON THE FLEET SIZE

INDEX

Disclaimer

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INTRODUCTION

The Moore Maritime Index (MMI) report on “Shipping Trends based on Fleet Size” focuses on studying the possible trends and correlations between “fleet size” and other shipping factors, such as operating expenses, net income, vessel age and capacity. For the purposes of this report, fleet size is defined as the total number of vessels managed by a single management company.

Collected data comes from more than 150 management companies which manage more than 1,500 vessels globally. Data is grouped under four categories based on fleet size under management:
1-5 vessels, 6-10 vessels, 11-20 vessels, more than 20 vessels.

The study concentrates on the dry cargo and tanker shipping sectors aiming at identifying possible relationships between fleet size and vessel operational performance. The analysis is based on 2018 data.

Our report contains reliable data based on specific criteria that we believe are important and also ensure sufficient data depth on which to base our preliminary results. Our aspiration, however, is to act as a business companion, therefore we encourage our members to run their own data queries in Moore Maritime Index and seek information in order to obtain a more accurate view of the subject and gain further insights.
See more information at section 6, page 7.

1. FLEET SIZE AND AVERAGE AGE

As presented in Table 1, there appears to be a negative relationship between age and fleet size. Management companies with large fleets tend to manage younger vessels. Data analysis shows that for fleet sizes of above 20 vessels, the fleet average age falls significantly. More specifically, the average fleet age in companies with 1-5 vessels is 9.9 years, in companies with 6-10 vessels is 10.4 years, in companies with 11-20 vessels is 10.2 years while in companies with more than 20 vessels is 7.6 years.

Table 1: Average vessel age per fleet size

Fleet Size	Age (years)
1-5 vessels	9.87
6-10 vessels	10.39
11-20 vessels	10.24
> 20 vessels	7.56

Source: Moore Maritime Index

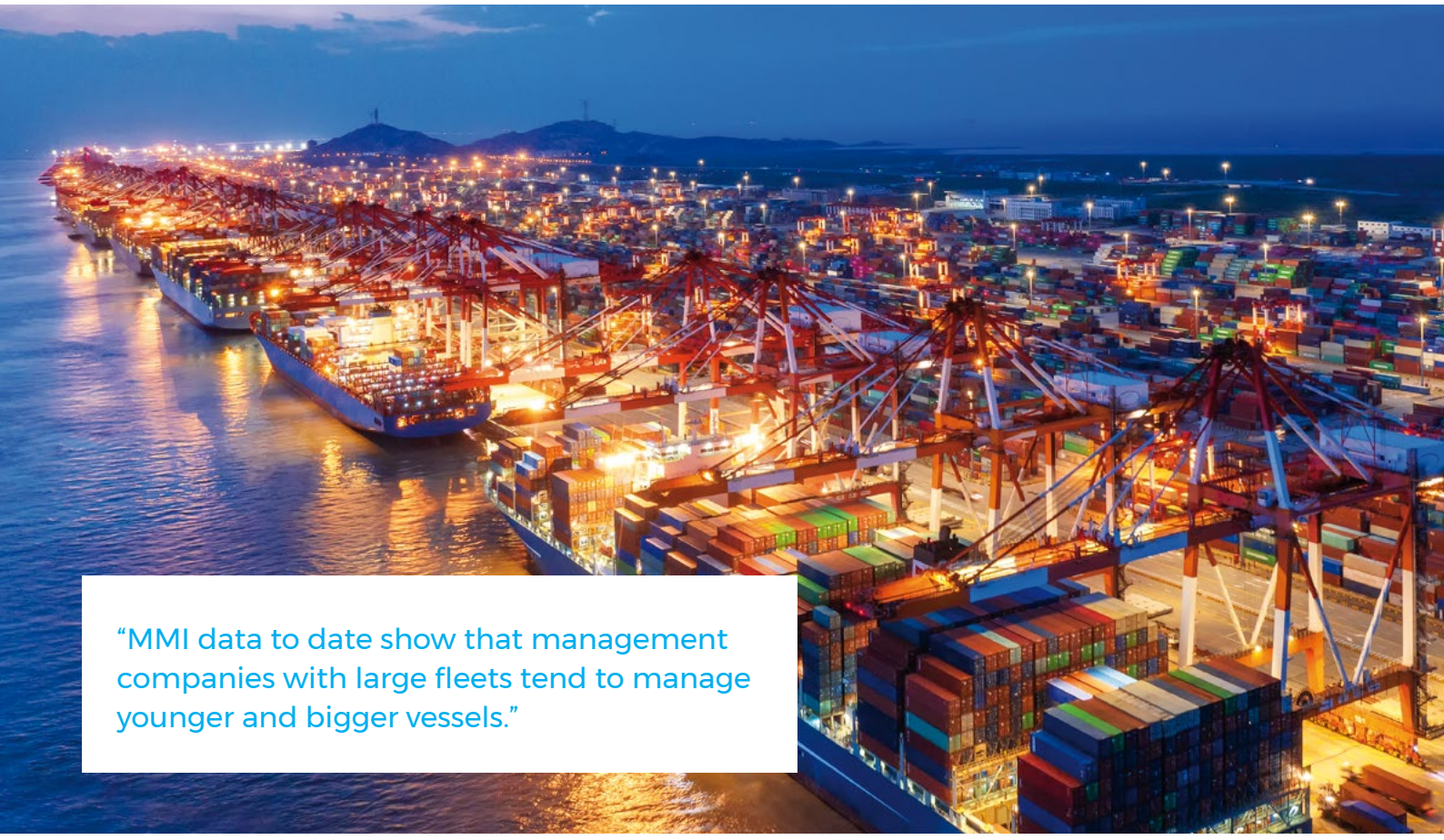
2. FLEET SIZE AND AVERAGE CAPACITY

Management companies with fleets of up to 20 vessels have an average vessel capacity of 60,000 – 70,000 dwt, but when the fleet is more than 20 vessels, the average capacity skyrockets to 105,000 dwt. Table 2 illustrates the concentration of large-capacity ships in management companies with large fleets.

Table 2: Average Capacity per Fleet Size

Fleet Size	Average Capacity (dwt)
1-5 vessels	62,737
6-10 vessels	62,156
11-20 vessels	69,630
> 20 vessels	105,063

Source: Moore Maritime Index



"MMI data to date show that management companies with large fleets tend to manage younger and bigger vessels."

3. DRY CARGO SECTOR

General Overview

Time Charter Equivalent (TCE) in the dry cargo sector increases, as fleet size increases. Fleets of up to 20 vessels earn on average between $9,700 and $10,800 per day, while in the case of fleets with more than 20 vessels the average daily TCE reaches $12,347 per day.

Operating Expenses (OpEx) in our sample decrease as fleet size increases, with companies managing 11-20 ships reporting the lowest average daily expenses of $5,062 per day. Management companies with more than 20 vessels however, report the highest average daily operating expenses of $5,836 per day.

The optimal TCE to OpEx ratio appears in management companies managing more than 10 vessels, achieving a score of 2.12. TCE to OpEx ratio shows how many times the time charter equivalent earned covers the operating expenses of the vessel.

Table 3:
Bulk Carriers Operating Performance per fleet size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Time Charter Equivalent (TCE)	9,753	10,667	10,719	12,347
Operating Expenses (OpEx)	5,608	5,355	5,062	5,836
TCE to OpEx ratio	1.74	1.99	2.12	2.12
Capacity (AVG)	60,698	68,867	63,412	94,765

Source: Moore Maritime Index

Exclusion of factors "age" and "capacity"

As age and size are two of the most important parameters for the cost and income behavior, in order to focus exclusively on the impact of fleet size on performance we excluded these factors and analyzed the data of dry bulk carriers with average age of 9 years and average capacity of 55,000 dwt.

The results are presented in Table 4.

Table 4:
Bulk Carrier_9 years old_55,000 dwt capacity - Operating Performance per fleet size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Time Charter Equivalent (TCE)	10,280	9,429	9,950	10,849
Operating Expenses (OpEx) (*)	6,062	5,637	5,607	5,713
TCE to OpEx ratio	1.70	1.67	1.77	1.90
Crew costs	3,040	2,730	2,821	2,944
Stores	752	667	695	672
R & M	857	862	949	685
Insurance	448	425	360	315
Administration	966	954	782	1,122
Age (AVG) at 2018	9.4	9.45	9.88	8.96
Capacity (AVG)	57,093	56,448	55,829	55,967

Source: Moore Maritime Index
(Filters: Year Built 2006-2010, Capacity: 40,000-70,000 dwt)

The highest daily operating expenses are reported in fleets of up to 5 vessels, amounting $6,062 per day, with crew expenses being the highest expense component. Fleets of 6-10 vessels present the lowest average TCE and operating expenses of $9,429 and $5,637 per day respectively.

Fleets with more than 20 vessels present the highest average TCE, amounted to $10,849 per day. It should also be noted that fleets of more than 20 vessels have the lowest daily repairs and maintenance and insurance expenses, while they also have the highest daily administration expenses.

"There is no clear evidence that operating expenses, in total, decrease as fleet size increases although we can observe trends in certain categories. Factors, such as human resources skills, unforeseen events and profit margin goals, have an effect on companies' operating cost performance"

4. TANKER SECTOR

General Overview

Table 5 summarizes the results on tanker vessels, based on fleet size.

The average daily TCE for tankers of different types varies between $8,700 and $13,600. The lowest TCE is reported by management companies with 6-10 vessels, amounted to $8,766 per day and the highest TCE is reported by companies with more than 20 vessels, amounted to $13,557 per day.

As has been the case for bulk carriers, our sample data does not show a direct inverse relationship between fleet size and operating expenses. Management companies with more than 20 vessels under their management have the highest daily operating expenses reported around $7,236 per day.

Table 5:
Tanker Operating Performance per Fleet Size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Time Charter Equivalent (TCE)	11,861	8,766	12,840	13,557
Operating Expenses (OpEx)	6,399	6,864	6,486	7,236
TCE to OpEx ratio	1.85	1.28	1.98	1.87
Capacity (AVG)	66,851	44,261	81,072	112,075

Source: Moore Maritime Index

Fleets of 11-20 tankers achieve the best financial performance, while companies with 6-10 tankers score the lowest "TCE to OpEx" ratio.

Exclusion of factors "age" and "capacity"

Tankers with an average age of 10-11 years and average capacity of 45,000-55,000 dwt are presented here, in order to exclude the effect of age and capacity on financial performance and focus more closely on the impact of only fleet size on the financial performance of vessels.

The results are illustrated in Table 6.

Table 6:
Tanker_10-11 years old_45-50,000 dwt capacity - Operating Performance per fleet size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Time Charter Equivalent (TCE)	10,358	10,794	11,547	10,109
Operating Expenses (OpEx) (*)	6,103	6,679	6,424	6,804
TCE to OpEx ratio	1.70	1.62	1.80	1.49
Crew costs	3,633	3,578	3,790	3,904
Stores	498	777	590	683
R & M	542	1,278	825	979
Insurance	595	373	256	291
Administration	834	673	962	1,050
Age (AVG) at 2018	10.71	10	11.2	10.74
Capacity (AVG)	45,172	50,058	46,693	46,993

Source: Moore Maritime Index
(Filters: Year Built 2006-2008, Capacity: 40,000-60,000 dwt)

The operating expenses of the vessels vary without any straight-line trend. Ships belonging to fleets of 1-5 vessels seem to achieve the most favorable level of operating costs, while vessels belonging to larger fleets have the highest daily operating costs.

Fleets of 11-20 tankers achieve the best combination between net income and operating expenses, with "TCE to OpEx ratio" reaching 1.80, while companies with more than 20 tankers score the lowest "TCE to OpEx" ratio, reaching 1.49.

(*) Total Opex does not equal to the sum of the sub-categories. All values have been calculated independently for each sub-category, based on the data we hold. Therefore, the calculations for each sub-category and the total Opex category are based on their independent samples.

5. OBSERVATIONS

Although our dataset is comprehensive and accurate, operating expenses and income depend on many variables, we are not able, at this stage to make solid conclusions as we will need to analyse further these variables. However, the following observations are applicable for our dataset which provide an insight on how expenses and income behave as fleet size varies.

In conclusion, our data to date indicates the following:

- Management companies with large fleets tend to manage younger vessels.
- Rather similarly, average managed capacity appears to be significantly higher in fleets of more than 20 vessels.
- Larger fleets seem to be able to earn a higher TCE.
- There is no indication that operating expenses, in total, decrease as fleet size increases although we can observe trends in certain categories.
- Administrative expenses seem to be higher in fleets of more than 20 vessels.
- Costs for scaling-up operations do not move in a linear manner.

We will be closely monitoring how these preliminary observations evolve over time and share our updates with you. We would be delighted to receive your feedback and requests which we hope to incorporate in our future reports.

6. VISIT MOORE MARITIME INDEX TO INVESTIGATE MORE AND SHARE YOUR MMI EXPERIENCE

Moore Maritime Index (MMI) is a statistical and analytics tool on shipping operating costs and revenues of more than 1,500 vessels. We extract our data from the financial statements of ship-owning companies audited by Moore Global member firms, as well as from verifiable independent submissions from all around the world.

Analysis on Operating Expenses and Revenues per Fleet Size is available on the Moore Maritime Index platform. You are welcome to investigate further this analysis on the following link:

https://www.moore-index.com/insights/byFleetSize

We also encourage our members to run their own data queries, look for interesting themes and share them with us at **mmi@moore.gr**

ABOUT MOORE GREECE

Moore Greece, an independent member of Moore Global, is an accounting and consulting firm specialising in the shipping, media and hotel sectors. Our wide range of services covers audit and assurance, tax consulting, governance - risk and compliance, IT consulting, transaction and outsourcing for the family owned businesses and entrepreneurs we serve. With over 120 professionals, deep knowledge and award winning proprietary tools, we can help clients improve efficiency and maximise profitability. By being the first international accounting firm in Greece with over 55 years of presence in the local market, we remain one of the most historic and important firms in our industry.

ABOUT MOORE GLOBAL NETWORK

At Moore, our purpose is to help people thrive – our clients, our people and the communities they live and work in. We're a global accounting and advisory family of over 30,000 people across more than 260 independent firms and 110 countries, connecting and collaborating to take care of your needs – local, national and international.

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