MOORE

MOORE MARITIME INDEX 2024

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 about 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 2023 data.

Our report contains reliable data based on specific criteria we consider of importance and ensure sufficient data depth on which our preliminary results are based. Our aspiration, however, is to act as a business companion, therefore we encourage our members to run their own data queries in the Moore Maritime Index and seek information to obtain a more accurate view on the topic and gain further insights. See more information on how to access MMI at section 6, page 10.

1. FLEET SIZE AND AVERAGE AGE

Table 1 presents the average age of vessels per fleet size as of December 31st, 2023.

In the bulk carrier sector, average age of the fleets in our database is 10-12 years.

In the tanker sector, vessels managed by a) companies of 1-5 vessels have average age of 14 years, b) companies of 6-10 vessels have average age of 9 years, c) companies of 11-20 vessels have average age of 10 years and d) companies of more than 20 vessels have average age of 9 years.

Table 1: Average vessel age per fleet size

Fleet Size	Average Age Bulk Carriers	Average Age Tankers
1-5 vessels	11 years	14 years
6-10 vessels	11 years	9 years
11-20 vessels	10 years	10 years
>20 vessels	12 years	9 years

Source: Moore Maritime Index

2. FLEET SIZE AND AVERAGE CAPACITY

Table 2 presents the average vessel capacity per fleet size illustrating the concentration of large-capacity ships in management companies with large fleets.

In the bulk carrier sector, management companies with fleets of up to 20 vessels have an average vessel capacity between 57,000 dwt and 81,000 dwt, but when the fleet exceeds 20 vessels, the average capacity increases to 103,582 dwt.

In the tanker sector, management companies with fleets of up to 20 vessels have an average vessel capacity between 46,000 dwt and 61,000 dwt, but when the fleet exceeds 20 vessels, the average capacity increases to 81,181 dwt.

Table 2: Average vessel capacity per fleet size

Fleet Size	Aver. Capacity Bulk Carriers	Aver. Capacity Tankers
1-5 vessels	57,030 dwt	46,056 dwt
6-10 vessels	80,898 dwt	69,712 dwt
11-20 vessels	68,589 dwt	60,163 dwt
>20 vessels	103,582 dwt	81,181 dwt

Source: Moore Maritime Index

Management companies with fleets of more than 20 vessels tend to manage larger vessels.

3. DRY CARGO SECTOR

General Overview

The highest Time Charter Equivalent (TCE) in the dry cargo sector is observed in fleets of more than 20 vessels, with a TCE of $14,380 per day. Fleets of 1-5 vessels earned on average $11,699 per day, fleets of 6-10 vessels $12,360 per day and fleets of 11-20 vessels $13,588 per day.

As far as Operating Expenses (OpEx) are concerned, companies managing between 11 and 20 vessels report the lowest average daily expenses of $6,233 per day. Management companies with more than 20 vessels under management, however, report the highest average daily operating expenses of $7,335 per day.

The optimal TCE to OpEx ratio appears in management companies managing 11-20 vessels, achieving a ratio of 2.18. 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)	$11,699	$12,360	$13,588	$14,380
Operating Expenses (OpEx)	$6,236	$6,679	$6,233	$7,335
TCE to OpEx ratio	1.88	1.85	2.18	1.96

Source: Moore Maritime Index

Filtering data based on "age" and "capacity"

Since age and size are two of the most important parameters for the cost and income behaviour, to focus exclusively on the impact of fleet size on performance we filter these factors and analysed the data on specific vessel types.

i) Vessels with capacity between 40,000 dwt and 70,000 dwt built between 2007 and 2011

We have focused on the vessels with capacity between 40,000 dwt and 70,000 dwt and built between 2007 and 2011, to examine the category with similar characteristics with our studies of prior years. The relevant results are presented in Table 4.

Table 4: Bulk Carrier built 2007-2011 with capacity 40,000 dwt - 70,000 dwt - Operating Performance per Fleet Size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Time Charter Equivalent (TCE)	$10,416	$12,486	$10,558	$11,858
Operating Expenses (OpEx)(*)	$6,234	$6,587	$6,364	$7,310
TCE to OpEx ratio	1.67	1.90	1.66	1.62
Crew costs	$2,989	$3,239	$2,870	$3,372
Stores	$855	$790	$566	$970
R & M	$969	$779	$1,072	$1,132
Insurance	$550	$469	$518	$505
Administration	$871	$1,310	$1,338	$1,351
Age (AVG) at 2023	12.80	13.06	13.42	13.21
Capacity (AVG)	56,786	56,449	56,381	55,905

Source: Moore Maritime Index
(Filters: Year Built 2007-2011, Capacity 40,000-70,000 dwt)

The highest daily operating expenses are reported in fleets managing more than 20 vessels, amounting $7,310 per day, while fleets of 1-5 vessels, present the lowest average operating expenses, namely $6,234 per day.

Fleets of 6-10 vessels present the highest average TCE, amounting to $12,486 per day while fleets of 1-5 vessels reported the lowest average TCE of $10,416.

Vessels belonging in fleets of 6-10 vessels present the best TCE to OpEx ratio, achieving a score of 1.90.

Operating expenses do not necessarily decrease as fleet size increases, as traditionally hypothesised. Additionally, fleets of more than 20 vessels report the highest crew expenses. Fleets of more than 6 vessels have administration expenses of more than $1,000 per day.

ii) Vessels with capacity between 60,000 dwt and 120,000 dwt built between 2010 and 2017

Here we analyse vessels with capacity between 60,000 dwt and 120,000 dwt built between 2010 and 2017, to extend our research in a query where the MMI database encapsulates more than 200 vessels.

The relevant results are presented in Table 5.

Table 5: Panamax Bulk Carrier Operating Performance built between 2010 and 2017

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Time Charter Equivalent (TCE)	$12,516	$12,062	$14,295	$13,972
Operating Expenses (OpEx) (*)	$6,418	$6,738	$6,409	$7,087
TCE to OpEx ratio	1.95	1.79	2.23	1.97
Crew costs	$3,177	$3,186	$3,206	$3,357
Stores	$694	$897	$743	$853
R & M	$771	$986	$836	$1,257
Insurance	$528	$588	$421	$379
Administration	$1,247	$1,081	$1,204	$1,241
Age (AVG) at 2023	10.18	10.46	9.45	8.93
Capacity (AVG)	75,716	77,591	76,612	78,872

Source: Moore Maritime Index
(Filters: Year Built 2010-2017, Capacity 60,000-120,000 dwt)

The optimum TCE to OpEx ratio is achieved by vessels belonging in fleets of 11-20 vessels.

These fleets present the highest average TCE, reaching $14,295 per day, while fleets between 6 to 10 vessels present the lowest TCE, in the range of $12,062 per day.

Again, it can be clearly observed that operating expenses do not necessarily decrease as fleet size increases and there is not a linear relationship between the two.

Fleets of more than 20 vessels report the highest crew expenses.

The lowest daily insurance costs are reported in larger fleets, while the highest Repairs and Maintenance and Spare expenses are presented in fleets of more than 20 vessels.

"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 capital skills, unforeseen events and profit margin goals, influence companies' operating cost performance".

COMPARISON WITH PRIOR YEARS IN THE DRY CARGO SECTOR

This study concentrates on identifying trends based on the fleet size that are applicable over the last five years.

Tables 6, 7 and 8, present OpEx related figures between 2019 and 2023:

Table 6: 5-year comparison Bulk Carrier built 2010-2017 with capacity 60,000 dwt - 120,000 dwt - Operating Expenses per Fleet Size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
OpEx 2023	$6,418	$6,738	$6,409	$7,087
OpEx 2022	$6,339	$6,033	$6,394	$6,798
OpEx 2021	$5,605	$6,109	$6,181	$5,979
OpEx 2020	$5,790	$5,569	$5,573	$5,600
OpEx 2019	$5,374	$5,253	$5,394	$5,521

Source: Moore Maritime Index

In the five-year comparison, it can be observed that operating expenses do not necessarily decrease as fleet size increases.

When the fleet size increases to more than 20 vessels, the operating expenses increase.

Additionally, if we compare the operating expenses of 2023 compared to 2019, fleets of 1 to 5 vessels show an increase of 20%, fleets of 6 to 10 an increase of 28%, fleets of 11 to 20 an increase of 19%, while fleets of more than 20 vessels present an increase of 28%.

Table 7: 5 year comparison Bulk Carrier built 2010-2017_with capacity 60,000-120,000 dwt – TCE to OpEx per Fleet Size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
TCE to OpEx 2023	1.95	1.79	2.23	1.97
TCE to OpEx 2022	3.30	3.62	4.02	3.60
TCE to OpEx 2021	3.61	3.70	3.72	3.91
TCE to OpEx 2020	1.46	1.72	1.69	1.64
TCE to OpEx 2019	1.95	2.07	2.08	2.01

Source: Moore Maritime Index

Table 8: 5-year comparison Bulk Carrier_built in 2010-2017_average capacity 60,000-120,000 dwt – OpEx Categories per Fleet Size

By fleet size (Daily)		1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Crew costs	**2023**	$3,177	$3,186	$3,206	$3,357
	2022	$3,114	$2,858	$3,313	$3,319
	2021	$2,956	$3,164	$3,262	$3,185
	2020	$3,046	$2,869	$3,047	$3,050
	2019	$2,797	$2,683	$2,891	$3,016
Stores	**2023**	$694	$897	$743	$853
	2022	$733	$758	$799	$903
	2021	$635	$636	$652	$564
	2020	$607	$537	$568	$573
	2019	$566	$568	$625	$589
R & M	**2023**	$771	$986	$836	$1,257
	2022	$810	$831	$799	$903
	2021	$627	$728	$704	$801
	2020	$595	$616	$639	$655
	2019	$629	$630	$570	$679
Insurance	**2023**	$528	$588	$421	$379
	2022	$521	$562	$390	$350
	2021	$472	$467	$367	$334
	2020	$431	$426	$316	$273
	2019	$389	$371	$333	$273
Administra-tion	**2023**	$1,247	$1,081	$1,204	$1,241
	2022	$1,161	$1,025	$1,174	$1,219
	2021	$915	$1,115	$1,196	$1,100
	2020	$1,110	$1,122	$1,001	$1,048
	2019	$994	$1,001	$975	$963

Source: Moore Maritime Index

Large fleets tend to have the highest Repairs and Maintenance and Spare expenses.

At the same time large fleets tend to have lower insurance expenses.

4. TANKER SECTOR

General Overview

Table 9 summarizes the results on tanker vessels, based on fleet size.

The average daily TCE for tankers, regardless of the sector they operate in, is reported to be between $23,000 and $41,000. The lowest TCE is reported by management companies managing fleets between 1 and 5 vessels, averaging $23,341 per day and the highest TCE is reported by companies of more than 20 vessels, reaching $40,239.

The lowest daily operating expenses are reported by fleets between 11 and 20 vessels and the highest operating expenses are reported by fleets between 6 and 10 vessels.

Table 9: 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)	$23,341	$30,857	$30,428	$40,239
Operating Expenses (OpEx)	$7,426	$7,607	$7,128	$7,583
TCE to OpEx ratio	3.14	4.06	4.27	5.31

Source: Moore Maritime Index

Fleets of more than 20 tankers achieve the best financial performance based on the TCE to OpEx ratio (5.31), while companies managing 1-5 tankers achieve the lowest "TCE to OpEx" ratio (3.14).

In the following analysis, we have filtered the data based on age and size to study how operating cost and income behaviour interrelate with fleet size.

Filtering data based on "age" and "capacity"

We have focused on vessels with average capacity between 30,000 dwt and 80,000 dwt built between 2009 and 2015, since this is the largest category within the MMI database for 2023. The goal is to examine the financial performance for different fleet sizes based on specific age and capacity characteristics.

The results are illustrated in Table 10.

Table 10: Operating Performance for Tankers of 30,000dwt - 80,000dwt and built in 2009-2015

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Time Charter Equivalent (TCE)	$24,295	$21,806	$30,453	$38,529
Operating Expenses (OpEx)(*)	$7,742	$8,254	$7,473	$7,269
TCE to OpEx ratio	3.14	2.64	4.08	5.30
Crew costs	$4,021	$4,206	$4,210	$4,160
Stores	$890	$1,017	$771	$655
R & M	$712	$1,179	$1,041	$1,078
Insurance	$653	$414	$427	$325
Administration	$1,466	$1,439	$1,023	$1,069
Age (AVG) at 2022	13.43	11.56	11.96	9.78
Capacity (AVG)	46,256	48,474	55,334	47,862

Source: Moore Maritime Index
(Filters: Year Built 2009-2015, Capacity 30,000-80,000 dwt)

Tankers belonging to fleets of more than 20 vessels achieved the most favourable level of operating costs, while vessels belonging to fleets of 6-10 vessels had the highest daily operating costs.

Fleets of more than 20 vessels achieved the best average TCE, reaching $38,529, while companies managing 6-10 tankers achieved the lowest average TCE, reaching $21,806.

Operating expenses do not necessarily decrease as fleet size increases, as traditionally hypothesised. Certain trends can be identified, such as that the larger fleets report the lowest daily insurance expenses. Repairs and Maintenance and Spare expenses appear to be relatively high in fleets between 6 and 10 vessels.

(*) Total OpEx does not equal to the sum of the OpEx 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.

COMPARISON WITH PRIOR YEARS IN TANKER SECTOR

This section concentrates on identifying trends based on the fleet size for the tanker sector which are applicable over the last five years.

We summarise the results for tankers built between 2006 and 2012(**) with average capacity between 40,000 dwt and 60,000 dwt, since this is the category studied in prior years. For this category of tankers, there are not sufficient data in 2021, so the figures in the below analysis are stated as not applicable (n/a).

Table 11: 5-year comparison Tanker built in 2006-2012(**)_average capacity 40,000-60,000 dwt - Operating Expenses per Fleet Size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
OpEx 2023	$7,638	$8,331	$7,647	$7,407
OpEx 2022	$7,109	$8,790	$7,395	$7,461
OpEx 2021	$7,027	n/a	$7,432	$7,929
OpEx 2020	$6,433	$6,621	$6,384	$6,636
OpEx 2019	$6,343	$6,741	$5,755	$6,650

Source: Moore Maritime Index

In 2023 the fleets of 6-10 vessels reported higher operating expenses compared to other fleets. Additionally, if we compare the operating expenses of 2023 with 2019, fleets of 1 to 5 vessels show an increase of 20%, fleets of 6 to 10 an increase of 24%, fleets of 11 to 20 an increase of 33%, while fleets of more than 20 vessels present an increase of 11%.

Table 12: 5-year comparison for Tankers built 2006-2012(**) with capacity 40,000 dwt - 60,000 dwt – TCE to OpEx per Fleet Size

By fleet size (Daily)	1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
TCE to OpEx 2023	3.51	2.70	3.97	3.93
TCE to OpEx 2022	3.45	3.56	3.02	3.11
TCE to OpEx 2021	1.56	n/a	1.54	1.17
TCE to OpEx 2020	1.80	2.12	1.61	2.13
TCE to OpEx 2019	1.89	1.97	2.30	1.97

Source: Moore Maritime Index

In 2023 the best performing TCE to OpEx ratio was reported in fleets of 11-20 vessels. In 2022 the best performing TCE to OpEx ratio was reported in fleets of 6-10 vessels. Interestingly in 2021, the best TCE to OpEx ratio was reported in fleets of 1-5 vessels, in 2020, the best TCE to OpEx ratio was achieved by vessels belonging to fleets of more than 20 vessels, whereas in 2019 the best performing fleets were those of 11 to 20 vessels.

Costs for scaling-up operations do not show a linear trend. Certain trends can be observed throughout the years. Vessels belonging in fleets of more than 20 vessels presented the lowest insurance expenses.

Repairs and Maintenance and Spare expenses also increase as the fleet size increases from 11-20 vessels to more than 20 vessels.

Table 13: 5-year comparison Tanker built 2006-2012(**) with capacity 40,000 dwt - 60,000 dwt - OpEx categories per Fleet Size

By fleet size (Daily)		1-5 vessels	6-10 vessels	11-20 vessels	>20 vessels
Crew costs	**2023**	$4,091	$4,133	$4,176	$3,995
	2022	$4,005	$4,817	$3,918	$4,240
	2021	$3,833	n/a	$4,140	$4,428
	2020	$3,678	$3,841	$3,425	$3,790
	2019	$3,611	$3,796	$3,490	$3,715
Stores	**2023**	$843	$932	$846	$790
	2022	$726	$953	$842	$824
	2021	$635	n/a	$871	$805
	2020	$547	$635	$529	$663
	2019	$486	$783	$473	$664
R & M	**2023**	$888	$1,036	$1,015	$1,138
	2022	$861	$1,472	$1,108	$1,094
	2021	$853	n/a	$867	$1,279
	2020	$725	$737	$1,163	$897
	2019	$749	$714	$846	$944
Insurance	**2023**	$612	$467	$454	$365
	2022	$571	$423	$408	$290
	2021	$566	n/a	$401	$268
	2020	$456	$329	$438	$307
	2019	$522	$300	$373	$293
Admini-stration	**2023**	$1,205	$1,762	$1,156	$1,147
	2022	$946	$1,125	$1,120	$1,046
	2021	$1,139	n/a	$1,152	$1,170
	2020	$1,026	$1,079	$829	$999
	2019	$976	$1,147	$573	$1,034

Source: Moore Maritime Index

(*) Total OpEx does not equal to the sum of the OpEx 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
(**) For 2022 only, we used the filters: year built 2005-2012 instead of 2006-2012 as year of built, in order to have sufficient data for our results.

5. INSIGHTS

The following observations are applicable for our dataset which provide insights on how expenses and income behave as fleet size varies.

MMI data to date indicate the following:

- **Average managed capacity appears to be significantly higher in fleets of more than 20 vessels.**
- **There is no indication that operating expenses, decrease as fleet size increases.**
- **TCE to OpEX ratio has limited to no correlation to fleet size.**
- **We can observe trends in certain cost categories. For example, in large fleets insurance expenses tend to be lower and at the same time Repairs and Maintenance and Spare expenses appear to be relatively high.**
- **Costs for scaling-up operations do not move in a linear manner.**

We will be closely monitoring how these 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 shipping and other industries. We provide audit and assurance, tax, governance – risk and compliance, IT consulting, transactions, accounting outsourcing and ESG assurance and advisory, and innovative solutions such as financial reporting & accounting software and executive e-learning to a wide range of clients, from big corporations to family owned businesses and private individuals. With over 120 professionals, deep knowledge and award winning proprietary tools, we can help clients thrive on their journey to sustainable business success. By being the first international accounting firm in Greece with over 60 years of presence in the local market, we remain one of the most important and trustworthy firms in our industry.

ABOUT MOORE GLOBAL NETWORK

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CONTACT US

Costas Constantinou
Global Head of Shipping
+30 213 0186 100
costas.constantinou@moore.gr

Athina Maggiorou
Audit and Assurance Manager
+30 213 0186 100
athina.maggiorou@moore.gr

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For more information please visit:
www.moore-index.com