



2017 – RESEARCH AND ANALYSIS: GREEK SHIPPING COMPANIES  
1ST PART OF 2017 PETROFIN RESEARCH ©

Petrofin Research© are pleased to announce the release of the first part of their 2017 Greek Shipping research. This year marks the 20<sup>th</sup> year of Petrofin Research into Greek shipping

*by Ted Petropoulos*

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## A. RESULTS AT A GLANCE

1. The number of companies has decreased most significantly in 2017. The total reduction amounts to 41 companies. Considering that there were some new entrants (11 companies) and in conjunction with the increase in vessels and in tonnage, we note that consolidation has progressed more this year than in any other in the last 20 years.
2. 25+ vessel fleets constitute 67.07% of the fleet of the Greek total in DWT terms, and the number of companies that run them has grown to 50 up from 46 in 2016, 41 in 2015, 40 in 2014 and 35 in 2013.
3. The large are getting larger and younger. The top category of 25+ vessel fleets aged 0-9 years keeps expanding significantly to DWT 199,833,358 from DWT 188,404,805 in 2016 and DWT 154,332,959 in 2015. The companies that run them are now 31, up from 30 in 2016, 24 in 2015, 22 in 2014 and to 14 in 2013.
4. Over 1m ton owners are now 75 compared to 68 last year and they own just below of 80% of the total Greek fleet (79.58%) from 77.47% in 2016, 76.7% in 2015, 74% in 2014 and 71.33% in 2013.
5. Overage fleets of 20 years+ are down to 200 from 235, accounting for a large portion of the reduction of companies.
6. Interestingly, the companies running very young fleets (0-9 years of age) of any size show a small reduction, from 187 in 2016 to 184 in 2017, reflecting the vigorous trend of acquiring younger second hand tonnage this year and relatively fewer newbuildings.
7. Smaller companies (with 1-2 vessel fleets) are down to 233 from 265 last year.
8. The overall age of the fleet has fallen further and it now stands at 11.8 from 12.19 years in 2016.



## B. GREEK SHIPPING COMPANIES AND THEIR NUMBERS

41 companies have either left shipping or have merged, leaving in operation 597 companies compared to 638 last year.

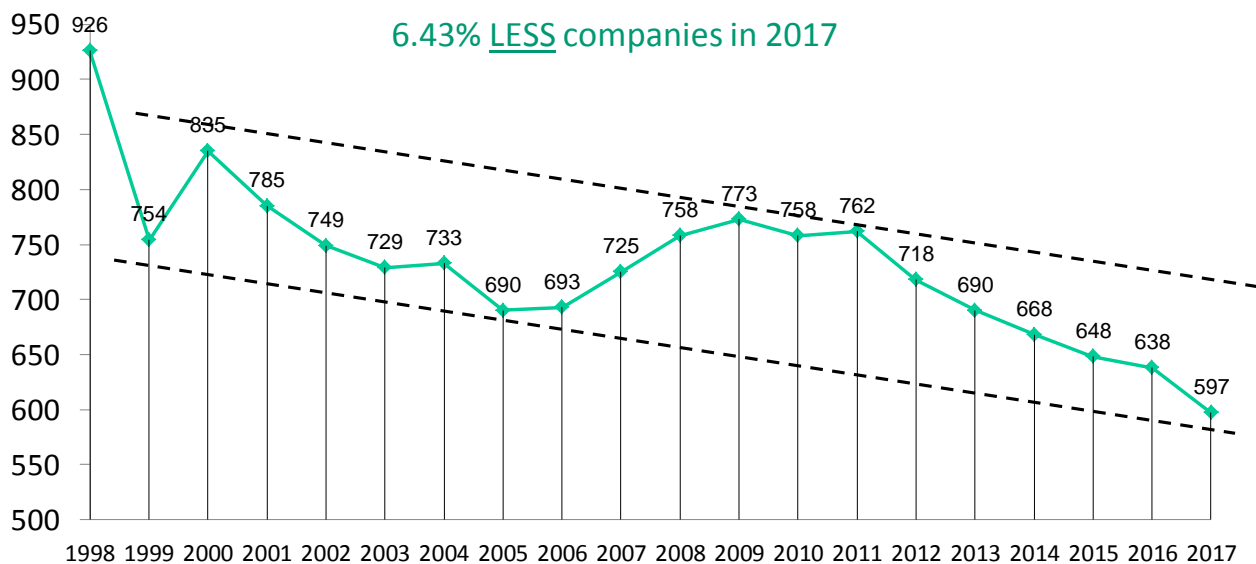
Graph 1



### Number of Greek Shipping Companies in operation – 1998 to 2017

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 December 2017

18.57% LESS companies	1999	4.55% MORE companies	2008
10.74% MORE companies	2000	2% MORE companies	2009
5.98% LESS companies	2001	2% LESS companies	2010
4.6% LESS companies	2002	0.5% MORE companies	2011
2.7% LESS companies	2003	5.77% LESS companies	2012
0.5% MORE companies	2004	3.9% LESS companies	2013
6.23% LESS companies	2005	3.2% LESS companies	2014
0.4% MORE companies	2006	3% LESS companies	2015
4.7% MORE companies	2007	1.54% LESS companies	2016



Initially based on Greek Shipping Directory, Clarksons' WFR, Newsfront Greek Shipping Intelligence & market sources 20 year anniversary of Greek fleet analysis by PETROFIN RESEARCH ©

The consolidation of Greek shipping companies continues unabated with 41 fewer companies or 6.43% less in 2017. This has to be evaluated in conjunction with the rapid expansion of the fleet and the number of new entrants amounting to 11 companies. It becomes evident that the picture of Greek shipping that emerges shows an extensive internal reshuffle. Hardly any company remained unchanged in terms of tonnage. Practically all companies removed or added at least one vessel in their fleet. Notably, most of the companies, i.e. the smaller ones, added vessels without bank ship finance. The main overall trend is one of fewer but larger companies with bigger fleets.

As has been the case throughout the 20 years that we have been researching Greek shipping, although at first glance this looks like a decline in Greek shipping because of the fall in company numbers, the fleet itself is expanding fast, is getting younger and the larger owners are becoming even larger. These developments will be mostly discussed in our second part of our Petrofin Research ©, which analyses the Greek fleet in depth.

### C. GREEK SHIPPING COMPANIES AND THEIR FLEET SIZE

To facilitate the analysis, please note that Greek companies are divided into the following fleet SIZE groups:

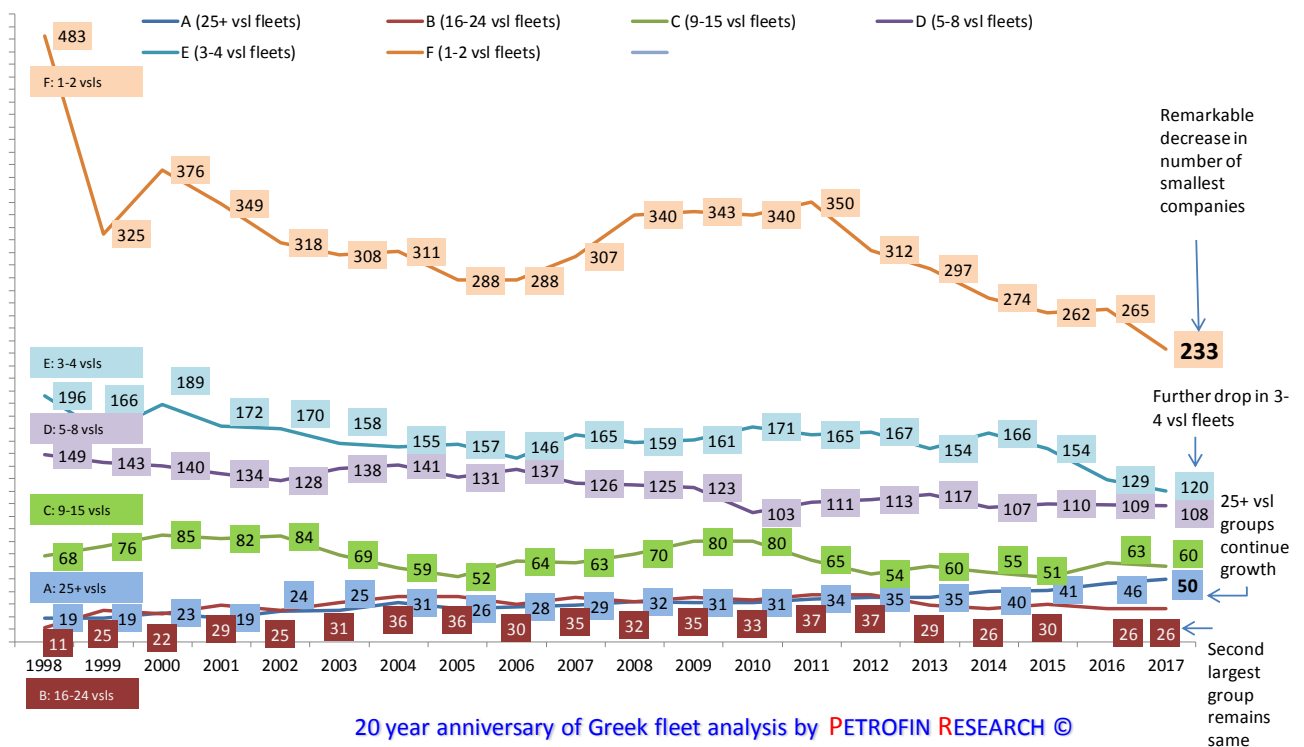
Group A (25+ vessels fleets), Group B (16-24 vessels fleets), Group C (9-15 vessels fleets), Group D (5-8 vessels fleets), Group E (3-4 vessels fleets), Group F (1-2 vessels fleets)

Therefore, between 1998 and 2017, the breakdown of the actual numbers per Fleet Size Group has been as follows:

GRAPH 2



Numbers of Greek shipping companies in terms of fleet size



20 year anniversary of Greek fleet analysis by PETROFIN RESEARCH ©

Initially based on Greek Shipping Directory, Clarkson's World Fleet Register, Newsfront Greek Shipping Intelligence & market sources

December 2017

- The 16-24 vessel segment remains unchanged (26). As this is not a static segment, the growth of the 25+ vessel group (from 46 to 50) shows that some 16-24 vessel fleets moved upwards and so did some 9-15 vessel fleets (from 63 to 60).
- On the other end of the spectrum, the 1-2 vessel group of companies is down substantially by 32 companies (from 265 to 233). This is the largest change in support of consolidation recorded this year. Their neighbouring 3-4 vessel fleets are also down (from 129 to 120) and so are the 5-8 vessel fleets (from 109 to 108).



In Table 1 below, we record the percentage of the Greek fleet held by shipping companies in terms of the number of vessels they own.

**TABLE 1: GREEK FLEET PERCENTAGE HELD BY EACH SIZE GROUP IN TERMS OF NUMBER OF VESSELS**

Year	Group F 1-2 vessel companies	Group E 3-4 vessel companies	Group D 5-8 vessel companies	Group C 9-15 vessel companies	Group B 16-24 vessel companies	Group A 25+ vessel companies
1998	52.16%	21.17%	16.09%	7.34%	1.19%	2.05%
1999	43.1%	22%	18.9%	10.1%	3.4%	2.5%
2000	45%	22.6%	16.8%	10.2%	2.6%	2.8%
2001	44.45%	22%	17%	10.45%	3.7%	2.4%
2002	42.45%	22.69%	17.08%	11.21%	3.37%	3.2%
2003	42.24%	21.66%	18.92%	9.45%	4.25%	3.48%
2004	42.43%	21.14%	19.24%	8.06%	4.9%	4.23%
2005	41.73%	22.75%	18.99%	7.54%	5.22%	3.77%
2006	41.55%	21.07%	19.77%	9.24%	4.33%	4.04%
2007	42.34%	22.76%	17.38%	8.69%	4.83%	4%
2008	44.85%	20.98%	16.49%	9.23%	4.22%	4.22%
2009	44.37%	20.83%	15.91%	10.35%	4.53%	4.01%
2010	44.85%	22.55%	13.6%	10.55%	4.35%	4.1%
2011	45.93%	21.66%	14.57%	8.53%	4.85%	4.46%
2012	43.4%	23.2%	15.7%	7.5%	5.1%	4.8%
2013	42.75%	22.32%	16.95%	8.69%	4.2%	5.07%
2014	41.02%	24.85%	16.02%	8.23%	3.89%	5.99%
2015	40.43%	23.76%	16.97%	7.87%	4.62%	6.32%
2016	41.54%	20.22%	17.08%	9.87%	4.08%	7.21%
2017	39.03%	20.1%	18.09%	10.05%	4.36%	8.38%

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The smallest companies, the so called backbone of Greek shipping, now represent less than 40% of the total number of vessels for the first time. The steady growth in shares of the biggest fleets continues.

#### COMPANY FLEETS IN TERMS OF TONNAGE

The real increase in the Greek fleet is, of course, in DWT terms. Here the picture is both more dramatic and interesting. The total DWT of the entire Greek fleet in 2017 is 387,256,616, compared to 361,934,047 tons DWT in 2016, 328,254,495 in 2015, 303,579,176 in 2014 and 281,467,983 in 2013. This increase by 25.3 million tons DWT or **7%** is significant. This growth has come from adding mainly good quality young second hand tonnage, as well as newbuildings of increasing vessel size on average.



In Table 2 we breakdown the DWT fluctuation by company group size.

TABLE 2: FLEET PERCENTAGE HELD BY EACH SIZE GROUP IN DWT TERMS

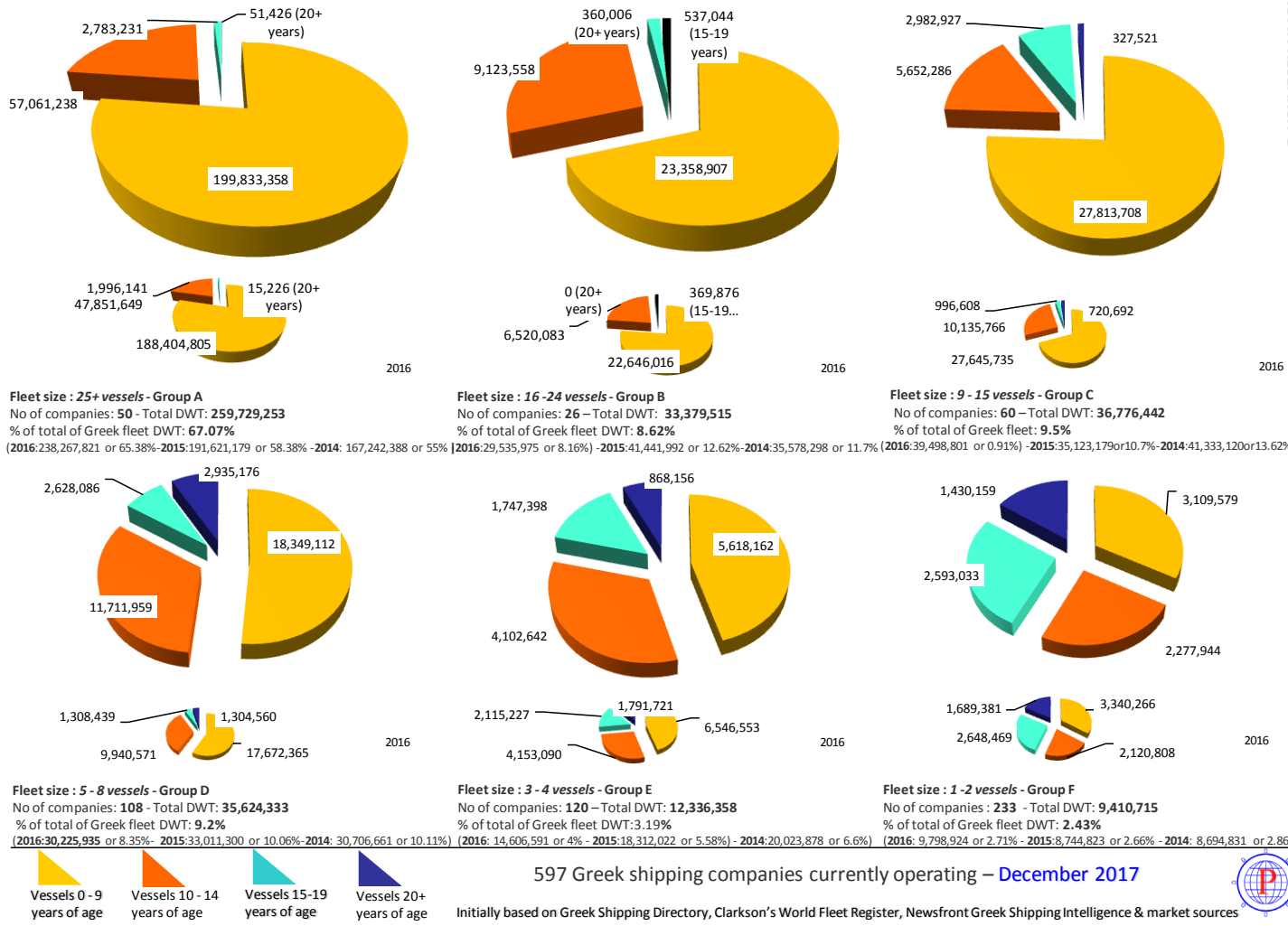
	1-4 vessel fleets	5-8 vessel fleets	9-15 vessel fleets	16-24 vessels fleets	25+ vessel fleets
2010	11.67%	10.15%	16.96%	18.96%	42.27%
2011	11.17%	10.35%	12.76%	20.68%	45.04%
2012	10.67%	12.19%	12.17%	18.37%	46.6%
2013	9.27%	13.5%	13.7%	14.6%	49%
2014	9.46%	10.11%	13.62%	11.72%	55%
2015	8.24%	10.06%	10.7%	<b>12.62%</b>	<b>58.38%</b>
2016	6.75%	8.35%	<b>10.91%</b>	8.16%	<b>65.38%</b>
2017	5.62%	<b>9.20%</b>	9.5%	<b>8.62%</b>	<b>67.07%</b>
		Petrofin Research ©		December 2017	

The 50 companies running 25+ vessel fleets hold a substantial 67.07% of the whole of the Greek fleet in terms of tonnage. 1-4 vessel fleets are down tonnage wise, as well as showing the most significant consolidation in terms of company numbers.



GRAPH 3

2017 - NUMBER OF GREEK SHIPPING COMPANIES IN TERMS OF THEIR FLEET AGE AND SIZE IN DWT TERMS



PETROFIN RESEARCH ©

Comments:

In the biggest 25+ vessel fleets, 0-9 year old fleets have gone up by 6%, which translates into an additional 11.4m tons DWT. Also, there were increases across the age board of these fleets, which overall added 21.46 tons DWT to their tonnage.

The 16-24 vessel groups gained 3.8m tons DWT. 2.6m of this tonnage was added in the 10-14 year old fleets.

The 9-15 vessel fleets lost overall 2.7m tons. Biggest losses in 20+ and 10-14 year old fleets.

The 5-8 vessel strong owners have gained 5.3m tons. Biggest gain in the 15-19 and 20+ year old fleets.

The smallest 1-2 and 3-4 vessel fleets have lost 2.6m tons.

Overall, the largest and most significant fleets of 0-9 years of age account for the clear majority of all fleets.

Even in the smallest companies, in contrast to our research findings over the last 20 years, modern vessels are increasingly being focused upon by small owners who are seeking to grow.

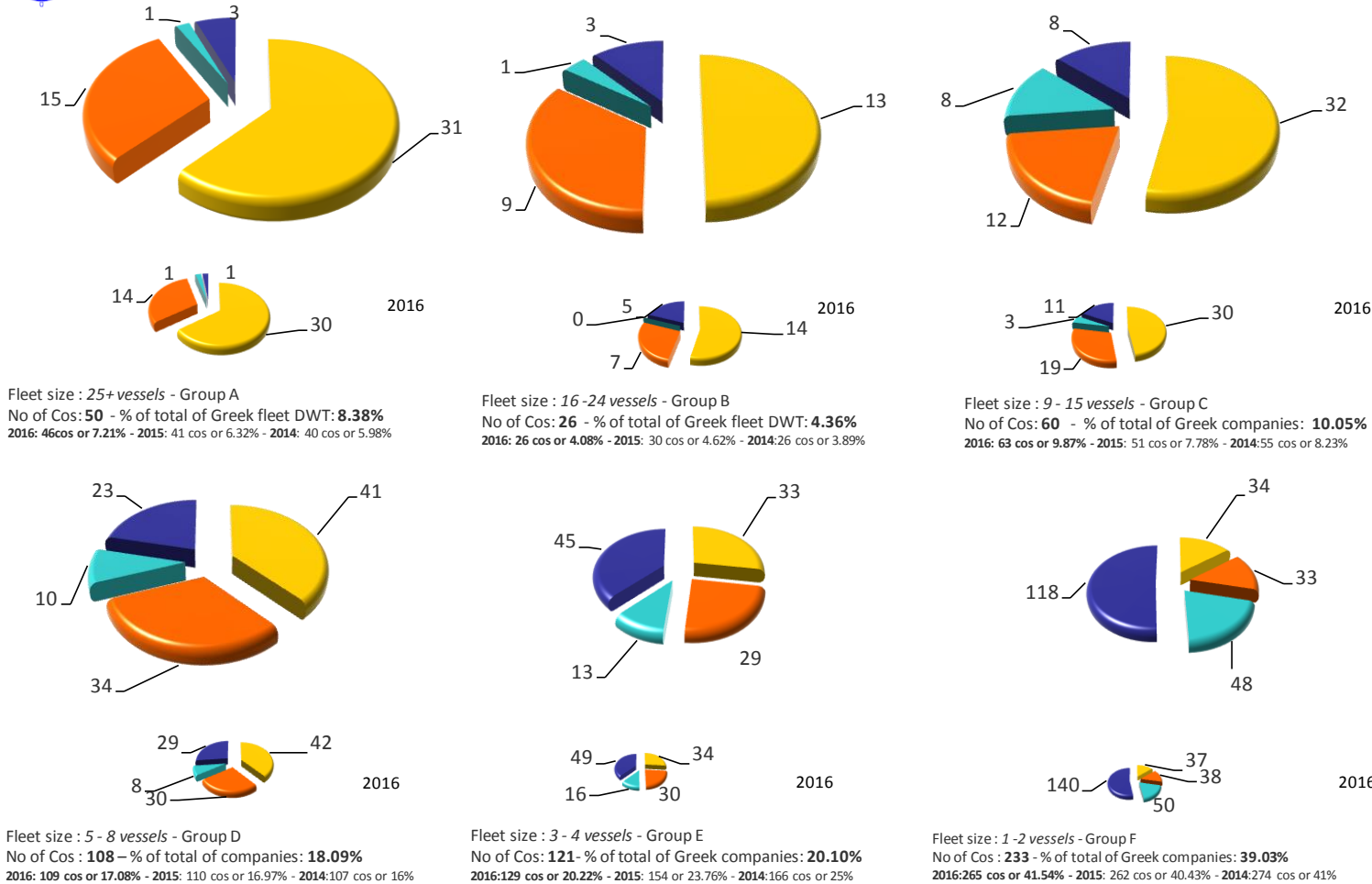


GRAPH 4



2017 – Greek shipping companies in terms of their Fleet Age and Number of Vessels

PETROFIN RESEARCH ©



Comments:

For the first time very small companies of 1-2 vessels are less than 40% of the total. The major loss of companies has occurred in that sector with a drop from 265 to 233 companies.

The middle ranges show small changes.

The biggest owners have increased by 4.

As tonnage wise the Greek fleet showed yet again a substantial increase, we can attribute the loss of companies to both mergers, as well as withdrawals. 11 new companies were added this year.

597 Greek shipping companies currently operating – December 2017

Fleets 0 - 9 years of age  
 Fleets 10 - 14 years of age  
 Fleets 15-19 years of age  
 Fleets 20+ years of age

Initially based on Greek Shipping Directory, Clarkson's World Fleet Register, Newsfront Greek Shipping Intelligence & market sources



D. TOP 30, TOP 50, TOP 70 FLEETS AND 1M TON COMPANIES

TABLE 3

	Top 30 fleets' total DWT	Top 50 fleets' total DWT	Top 70 fleets' total DWT	Total Greek fleet DWT
2007	104,049,575	106,551,097	147,429,915	208,001,159
	50.02%	51.23%	70.88%	
2008	111,643,505	139,772,288	157,349,073	222,368,331
	50.21%	62.86%	70.76%	
2009	118,473,829	147,699,624	166,380,212	237,288,216
	49.93%	62.24%	70.12%	
2010	123,195,698	157,247,298	175,831,037	242,802,092
	50.74%	64.76%	72.42%	
2011	133,219,034	164,584,202	185,644,178	256,174,041
	52.00%	64.25%	72.47%	
2012	139,088,078	172,621,328	193,407,761	263,635,420
	52.8%	65.5%	73.4%	
2013	155,066,892	188,918,600	209,510,387	281,467,983
	55.09%	67.12%	74.3%	
2014	170,144,932	207,716,808	231,300,786	303,579,176
	56.05%	68.42%	76.19%	
2015	189,561,161	230,548,857	253,689,568	328,254,495
	57.75%	70.23%	77.28%	
2016	213,201,433	257,196,460	280,378,070	361,934,047
	58.91%	71.06%	77.47%	
2017	<b>227,809,802</b>	<b>276,021,712</b>	<b>302,752,301</b>	387,256,616
% of Greek fleet	<b>58.83%</b>	<b>71.28%</b>	<b>78.18%</b>	
	Petrofin Research ©		December 2017	

The big owners are acquiring more tonnage and their percentage hold of an ever increasing fleet remains firm. The intense race for acquisition becomes obvious by the fact that the top 30 fleets are not increasing their grip of the Greek fleet as fast as the ones immediately preceding them.



## 1M TON DWT COMPANIES

This year, the owners with over 1m DWT have shown a significant rise to 75. Their characteristics are shown in the following Table:

TABLE 4:

	Number of companies owning over 1 million ton DWT	Number of vessels	No of vessels added	Total DWT tonnage owned by these companies	DWT added	Average Vessel DWT	Average vessel age	% of the Greek fleet
2011	62	1764		178,495,577		100,617	8.56	69.7%
2012	60	1769	5	184,692,854	6,197,277	104,405	8.7	70%
2013	61	1848	79	201,305,030	16,612,176	108,931	8.6	71.33%
2014	63	2121	273	224,538,613	23,233,583	104,388	8.6	73.96%
2015	68	2434	313	251,757,001	27,218,388	103,443	8.3	76.7%
2016	68	2715	281	280,378,070	28,621,069	103,270	7.9	77.53%
2017	75	2986	271	308,139,328	27,761,258	103,195	8.2	79.57%

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## OBSERVATIONS

- a. This year, a most remarkable leap in tonnage increase has been observed in this 'Jumbo Group', with 7 more owners crossing the 1m ton DWT threshold.
- b. The 1-ton millionaires' tonnage was increased by 9.9% adding another 27.8 tons DWT
- c. The age shows a small increase to 8.2 years (from 7.9) and the vessels' average DWT is almost the same (0.07% decrease). This reflects a slight switch to second hand vessels, as opposed to newbuildings. With second hand prices still at significant lows combined with a generally agreed positive future prospect for the market, it is no wonder that second hand good quality vessels are exchanging hands at remarkable speed.
- d. Ton millionaires now own just below 80% of Greek shipping.

## E. GREEK SHIPPING COMPANIES AND THEIR FLEET AGE

The overall age of the fleet is down to **11.85** years.

Since 2005, the fleet is younger by 11.15 years. The downward trend has been as follows: 11.85 years in 2017, 12.2 in 2016, 12.72 in 2015, 13.25 in 2014, 14.05 in 2013, 14.7 in 2012, 15.9 in 2011, 16.64 in 2010, 17.6 in 2009, 18.4 in 2008, 18.71 in 2007, 19.14 in 2006 and 23 years in 2005.

More specifically, the development on the Greek company fleets in terms of age during the last 4 years is as follows:

TABLE 5

	0-9 year old fleets	10-14 year old fleets	15-19 year old fleets	20+ year old fleets	0-9 year old fleets	10-14 year old fleets	15-19 year old fleets	20+ year old fleets
	% of the whole of the Greek fleet DWT				in DWT terms			
2017	71.81%	<b>23.22%</b>	<b>3.43%</b>	1.54%	278,082,826	89,929,627	13,271,719	5,972,444
2016	<b>73.56%</b>	<b>22.30%</b>	2.50%	1.63%	266,255,740	80,721,967	9,064,884	5,891,456
2015	<b>73.47%</b>	20.10%	4.23%	2.20%	241,156,799	65,989,794	13,891,639	7,216,263
2014	<b>65.93%</b>	27.11%	4.47%	2.50%	200,134,897	82,291,171	13,572,804	7,580,304
2013	58.62%	27.43%	9.02%	4.94%	164,989,480	77,203,529	25,376,563	13,898,411
Petrofin Research ©					December 2017			

Although numerically all categories are up, their percentage of the Greek fleet shows some interesting trends. The youngest fleets show a decrease in their positioning in the Greek fleet for the first time in the last few years, as more second hand tonnage was purchased than newbuildings added. In tonnage terms, however, they are up by 11.83m tons DWT. The middle categories have gone up reflecting the addition of lot of second hand tonnage (13.37m tons approx.), whereas the oldest fleets continue their downward trend in terms of percentage of the fleet while showing a very marginal increase in tonnage.

### THE OVERAGE FLEET

The percentage of vessels of 30 years and above has reduced further to 6% (in terms of units) this year from 8.43% in 2016. In 2011 they held 24.54% of the Greek fleet.

TABLE 6

	Vessels over 30 years	Tonnage over 30 years of age	% of whole fleet in units	% of whole fleet in tonnage terms
2017	359	1,039,197	6%	0.27%
2016	441	1,307,701	8.43%	0.36%
2015	469	1,729,744	9.55%	0.53%
2014	512	2,592,493	10.88%	0.85%
2013	534	2,778,276	11.68%	0.99%
Petrofin Research ©		December 2017		



In Graph 4 we see a collective graph of the above results.

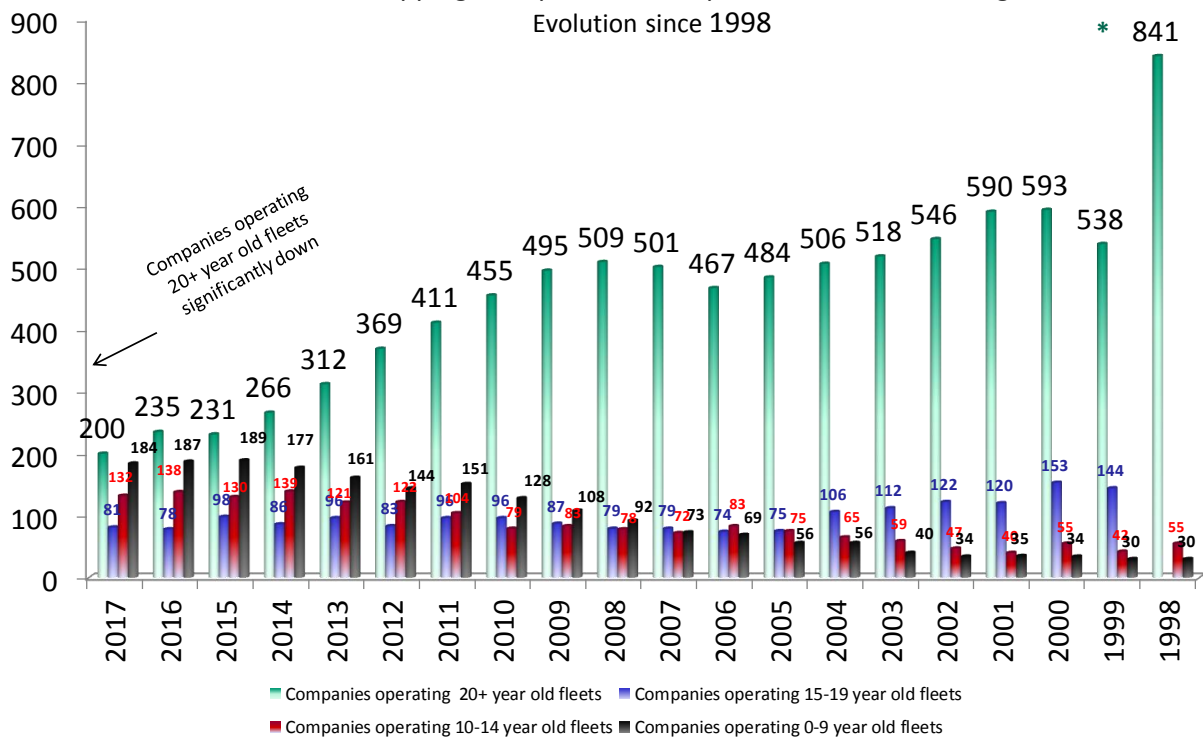
GRAPH 4



20 year anniversary of Greek fleet analysis by PETROFIN RESEARCH ©

\*1998: NB. In 1998  
 15-19 and 20+ year old vessels were  
 calculated together.

Greek Shipping Companies - Grouped in terms of Fleet Age  
 Evolution since 1998



Initially based on Greek Shipping Directory, Clarkson's World Fleet Register, Newsfront Greek Shipping Intelligence & market sources

December 2017

This year we witnessed a concerted effort, on a wide scale, to renew the fleet. However, ordering newbuilding tonnage was not chosen as the prime method to do so. Old tonnage was replaced by younger quality second hand vessels, whose prices still remain alluring. The Greek fleet is positioning itself in a strategic, competitive way without having, thus far, resorted to flooding the market with newbuildings.



## F. TRENDS AND PROSPECTS

GREEK SHIPPING POWERS FORWARD DESPITE THE HEAD WINDS.

Bank ship finance continues to be challenging to obtain with alternative ship finance and leasing available, albeit expensive. This is not reflected, however, in the growth of the Greek fleet. Greek owners have increased yet again their share of the world fleet (Source UNCTAD) to 16.72%, from 16.36% in 2016, 16.05% in 2015 and 15.41% in 2014.

TABLE 7

Nationalities owning over 1% of World Fleet	2017	2016	2015	2014	Annual Rate of Growth 2014 - 2017
<b>Greece</b>	<b>16.72%</b>	<b>16.36%</b>	<b>16.05%</b>	<b>15.41%</b>	<b>2.76%</b>
<b>Japan</b>	12.12%	12.78%	13.19%	13.46%	-3.45%
<b>China</b>	8.95%	8.87%	8.74%	9.47%	-1.87%
<b>Germany</b>	6.06%	6.65%	7.13%	7.56%	-7.10%
<b>Singapore</b>	5.65%	5.32%	4.97%	4.75%	5.96%
<b>China, Hong Kong SAR</b>	5.07%	4.88%	4.63%	4.15%	6.89%
<b>Korea, Republic of</b>	4.38%	4.40%	4.60%	4.60%	-1.62%
<b>United States</b>	3.63%	3.36%	3.45%	3.35%	2.70%
<b>United Kingdom</b>	2.8%	2.88%	2.85%	2.73%	0.79%
<b>Bermuda</b>	2.6%	2.70%	2.43%	2.24%	5.09%
<b>Norway</b>	2.8%	2.69%	2.69%	2.55%	3.11%
<b>China, Taiwan Province of</b>	2.54%	2.58%	2.51%	2.87%	-3.99%
<b>France</b>	2.36%	2.35%	1.99%	1.68%	11.89%
<b>Denmark</b>	1.97%	2.14%	2.12%	2.33%	-5.48%
<b>Turkey</b>	1.5%	1.56%	1.61%	1.71%	-4.35%
<b>Italy</b>	1.12%	1.27%	1.33%	1.44%	-8.08%
<b>Belgium</b>	1.27%	1.23%	1.21%	0.85%	14.26%
<b>India</b>	1.23%	1.21%	1.23%	1.30%	-1.94%
<b>Switzerland</b>	1.28%	1.14%	1.04%	1.05%	6.72%
<b>Russian Federation</b>	1.19%	1.01%	1.06%	1.11%	2.24%
<b>Iran</b>	1.02%				
<b>Indonesia</b>	1.02%				

Japan has fallen slightly, China has gone up and there are two additions in the 1% and above Group, those of Iran and Indonesia.



This growth story continues to entail distress for the smaller owners, as it did last year, albeit at a much larger scale this year.

In the practically permanent absence of bank finance for the majority of small to medium owners, growth ventures have relied on a number of sources:

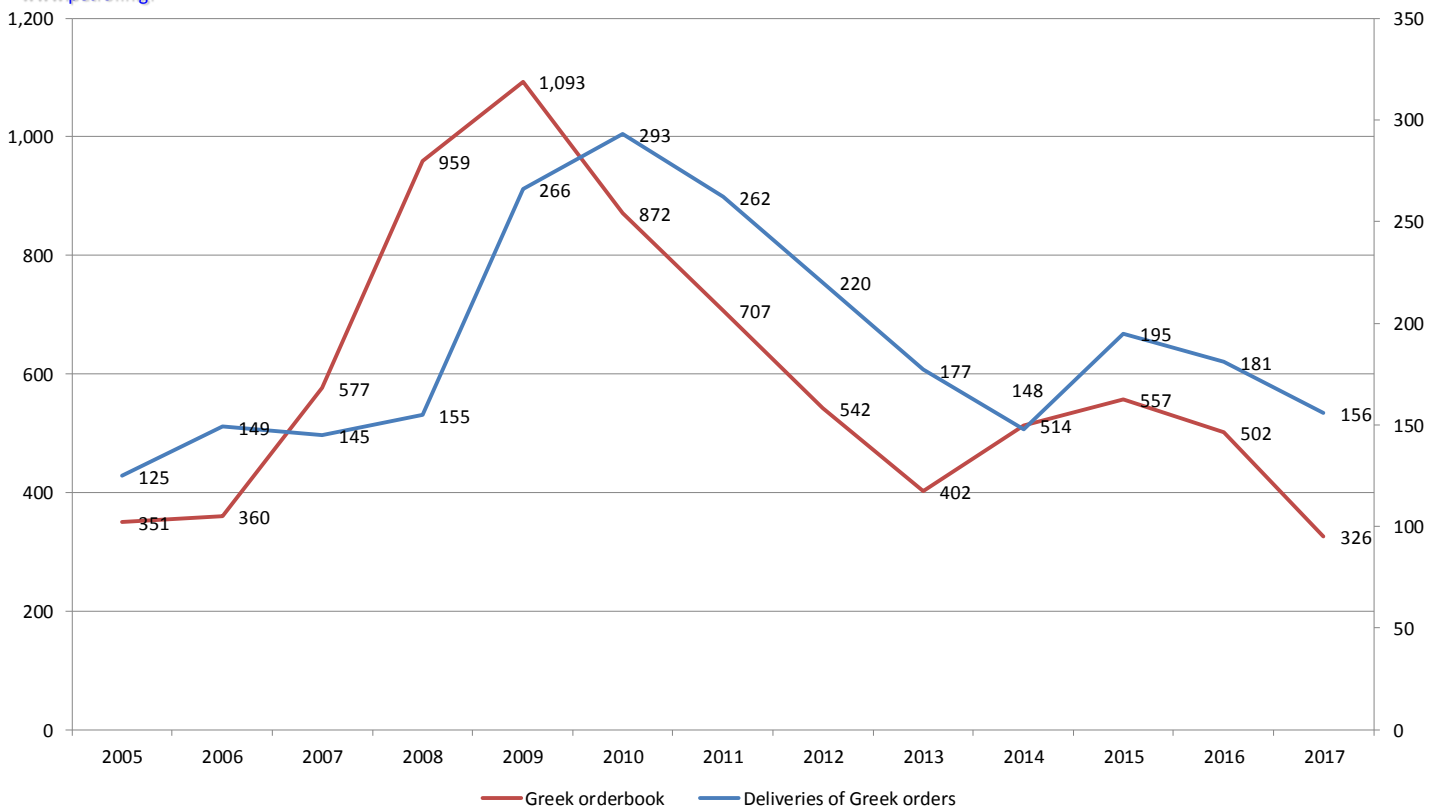
- Private capital
- Investment and private equity funds
- Leasing
- Short term BBHP (4-6 years)

The current Greek orderbook now consists of approximately 320 vessels (Clarkson’s World Fleet Register) with the trend shown below:



### GREEK ORDERBOOK AND DELIVERIES – 2005 TO 2017

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Greek owners took advantage of the relatively poor markets and low level prices to acquire young second hand vessels for their fleets. Second hand purchase costs compared favourably to those of



newbuildings and this is evidenced by the rise in the acquisition of second hand vessels by approx. 30% in the last year, from about 200 the year before to 260. The Greek orderbook fell from 502 to 326 vessels, as owners preferred 'propellers in the water' rather than longer term deliveries in anticipation of improving market conditions. Nevertheless, as we write, new order activity is picking up and this needs to be watched carefully so as not to once again cause imbalances between demand and supply.

The trend towards bigger and younger vessels has continued unabated. Economies of scale continued to impact Greek shipping not only in terms of operating costs, procurement and insurance costs savings but also in finance. Hence, it is not surprising that last year's 68 over 1m ton DWT Greek companies are now 75 and their share of the Greek fleet is just below 80%. Greek owners continued to take advantage of the sale of modern vessels by bank promoted deals, especially as German owners and banks continued to be under financial pressure.

These sales are usually not supported by soft financing as many banks are looking to exit shipping and reduce their loan portfolios. En bloc loan portfolio sales have not materialised to the extent anticipated by the market as the offers to banks have not largely met the banks' expectations.

The current Greek orderbook now consists of approximately 326 vessels (Clarkson's World Fleet Register). As deliveries approach, owners are invariably looking for leasing from the Far East, an area where Chinese leasing companies have excelled together with Japanese banks/leasing companies for the top owners. The fall in the tanker market has brought this market also to the attention of private investments funds as alternative capital. Although activity had slowed down in 2016, in 2017 there was considerably more interest in dry bulk by such funds. IPO activity, however, remains slow as no public companies have escaped the assault on their share prices as a result of weak earnings and value impairments. However, we believe that there is a change in the wind, especially for dry bulk shipping and we would expect more activity in this sector from the public markets coupled with a recovery in company share prices, which has already commenced.

The drive to quality and size continues in Greek shipping. The consolidation that has been evident over the last 20 years continues with the number of Greek owners, reducing to 597. However, the average size of Greek owner and the age of their fleets have shown remarkable improvements. Inevitably, the smaller owners have borne the brunt of the poor markets and the lack of finance, which has rendered them increasingly uncompetitive in a market that values fleet size.

Across all sectors, there has been a drive towards younger vessels and there has been a considerable upward mobility from the lower to the larger fleet sizes. Every owner has come to realise that small, older fleets are at a distinct disadvantage to larger, newer fleets in terms of operation, finance, maintenance, employment and insurance.

In order to compete, Greek shipping must remain cost competitive and at the forefront of technological development. This can only be achieved by making the right decisions in term of vessel acquisitions, finance and employment, as well as maintaining an efficient technical management.



Although the prospects across all shipping segments appear to be improving with dry bulk and LPG at the forefront and recoveries in product carriers and containers appear lively in 2018, it is important to realise that the cost of finance has increased across the board for all owners, as leasing and alternative capital cost is more expensive than bank finance and as US interest rates are on the rise. For a capital intensive industry like shipping, the cost of finance remains a key. As long as markets are steady or growing, the higher financial cost can be accommodated assuming modest levels of overall financial exposure.

In the event of a market rise across most sectors, we would anticipate that whilst the growth of Greek shipping would continue, the decline in the number of Greek shipping companies would slow down. The reason is simple in that even small owners find trading conditions attractive and can remain in the market with some being able to grow. Hence, we anticipate the rapid fall in the number of companies may stop and that a modest recovery will take place.

Greek shipping is continuing its growth and quality path that has transformed the fleet over the last 20 years. The conditions and challenges facing Greek shipping have continued and Greek owners have demonstrated the ability to rise to these challenges and grow to become a key global force.



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## G. METHODOLOGY AND DATA SOURCES – RESEARCH CRITERIA

### METHODOLOGY AND DATA SOURCES

Petrofin Research © has been publishing for 20 consecutive years the detailed profile of the entire Greek-owned/Greek-based Shipping Companies and Fleets. Thus, a trend line since 1998 has been established regarding the overall number of Greek Shipping Companies as well as their fluctuation and profile in terms of size of company and the respective age of their fleets.

The basic sources used for this study is the 2017 Greek Shipping Directory, the weekly Newsfront Greek Shipping Intelligence right up to end December 2017, cross-referenced with the on-line updates of the Greek Shipping Directory and with Clarkson's World Fleet Register, as well as market sources. As we do every year, market reports and data on Greek fleets are extensively used to double-check fleet and company data, as well as numerous additional industry sources.

Our total industry data covers all vessels and all vessel types included in the total statistics for Greek based/owned shipping and shipping companies. However, in the second part, specific research is conducted separately into tankers, bulkers and container vessels, LNGs and LPGs.

### RESEARCH CRITERIA

1. Only the Greek-owned/Greek-based fleets are taken into consideration. This also includes the Groups that operate abroad, provided they have an office in Greece.
2. Regarding US and UK listed companies initiated/promoted/managed by Greek interests, which also hold a Greek presence, these are included in our research.
3. We have taken into account newbuildings that have a date of delivery up to and including 2018 only, as it is not certain that all Greek newbuilding orders beyond 2018 shall materialise, due to cancellations, sales and delays.