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How Greek Shipowners Financed Their Investments in Newbuildings and in Second Hand Ships?

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Abstract

We dealt with what the Greek shipowners achieved in the World and in the EU. What was their year to year growth between 1949 and 2026? What does an ex University Professor have to suggest to them so that they can be prepared to face the frequent recessions and the rare depressions? Our empirical study indicated the way Greek-shipowners have financed their investment. For the Banks' support, one has to add it to the reasons out of which Greek-owned shipping has progressed so well. Seven case-studies mentioned where Greeks failed, or were successful, in their relationship with their bankers or bond and capital markets. Greeks, out of the fear of being taken over, avoid the international Stock Exchanges and rely heavily on commercial banks. There, the Greeks try to get as much as possible as a loan on the value of their vessel.

Keywords

Greek Shipping in EU and in the World, Its Growth since 1949-1950 per Year, How to Face the Recessions and the Depressions, Shipping Finance: What Is This All about? Are There Further Issues to Solve?

1. Introduction

We deal with the Greek-owned shipping not only because we are Greeks, but also for the reason that this industry, for hundreds of years, has achieved the top global and European positions... It is thus a business and an academic curiosity here to find out the way this industry grew, and the way it has been financed. We believe that finance is the necessary, but not the sufficient, condition for a shipping com-

pany to grow. We also know that in shipping "sky is the limit". We mentioned a few case studies where the sky never reached.

"Icarus", son of "Daedalus", in Greek Mythology, obtained wings from his father, but he flew so near the Sun that the wax, attaching his wings, melted and he fell into the Aegean Sea flying-away, or rather escaping, from Crete Island...

1.1. The Purpose of This Work

This is to show, mainly, how Greek shipowners financed their investments in new buildings and in 2nd hand ships from the Greek and Foreign banks since 1967.

1.2. Structure of the Work

This is cast in 7 parts, after literature review: Part I, dealt with the achievements of the Greek-owned Shipping, 2018, 2025-2026; Part II, dealt with the growth of the Greek-owned Shipping, 1949-1950 to 2026; Part III, dealt with a number of suggestions addressed to Greek shipowners so that to face a recession or a depression; Part IV dealt with the finance history—good and bad—of certain Greek shipowners since 1967; Part V, dealt with the finance style of the Greek shipowners, 2006, 1st chapter; Part VI, dealt with the finance style of the Greek shipowners, 2006, 2nd chapter. Part VII, dealt with the questions for further research. Finally, we concluded.

2. Literature Review

Stokes (1997) argued that Greeks used to buy ships from the 2nd-hand marker with their usual adroitness. The big names: Lemos, Livanos, Onassis & Niarchos were already established and in a position to choose their investments, but beneath this level there were hundreds of smaller owners, and would-be owners, who were eager for the chance to build up their fleets through the 2nd hand market. A new generation of Greek owners, therefore, arose, in 1967-1973, with the aim at acquiring ships cheaply, and fixing them for a period, long enough to satisfy their financing banks. This approach was one which had attractions for the banks, and the so-called "cash-flow financing", which quickly became a fashionable activity in the Piraeus banking market.

Couper (1999: p. 76 and thereafter), argued that Greeks, traditionally, were known for financing the growth of their fleets out of capital raised in local communities and from profits. They rarely approached overseas banks or other financial institutions. They were a much closed society with a certain amount of secrecy. But since 1960, a number of shipping families sought funds from international financiers and so they started.

Lorange (2009) argued that finance will always be the key (p. 255). For shipowning the emphasis is on securing the lowest *cost of capital*, where the cheap financing makes ships less expensive and thus more competitive. For the trading or chartering firm the focus will be on securing reasonable financing (in the equity market) based on cash flow (p. 98). The ability to manage financial flows and

budgets, to deal with currency issues, interest rate developments and, increasingly, with the new instruments and derivatives as they relate to futures freight market trading, where financial engineering is becoming increasingly important (p. 255).

Goulielmos (2010) argued that the interest of the shipping research, since 1913, was not on shipping finance, where the trend was that "the more the freight rate market prospers, the more orders to be placed for newbuildings". Banks, as a rule, "give the umbrella when there is sunshine, and get it back when is raining". He introduced the concept of the "joker", by which the 2008 financial crisis could be described. He calculated the "Hurst exponent" equal to ~0.70 for the 257 years of the dry cargo freight rate market, 1741-2007. He found-out that the risk is higher in the freight rate markets than that in the prices of the 2nd hand vessels. Long-term investors also run a lower risk vis-à-vis short-term ones.

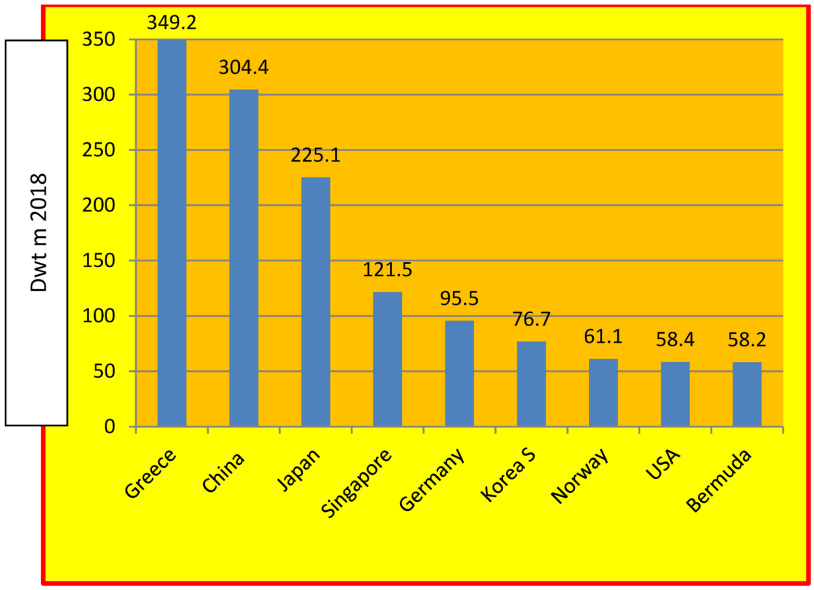
3. Methods/Data

The author uses his familiar methodology to prove things using not only sentences, but also graphs and diagrams par excellence. The reader surely will know that a diagram or a graph can easily be transformed into a mathematical relationship between X and Y and ceteris paribus. The first part deals with 2018-2026. The 2nd part deals with 1949/50-2026. The 7 case-studies occurred since 1967 to 1973. The empirical research took place in 2006.

4. Part I: The Achievements of the Greek-Owned Shipping

4.1. Greek Shipowners in the World Shipping, 2018, 2025-2026

The Greek shipping—no matter its flags—achieved the 1st worldwide position, in dwt terms, among the 9 most powerful maritime powers (2018) (Graph 1).

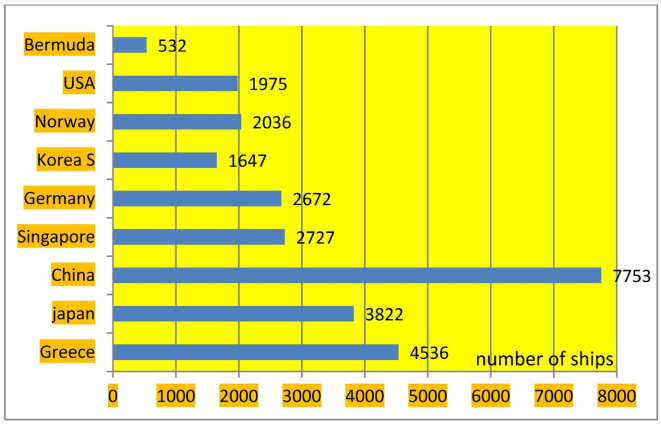


Source: **BHMA Journal, 2019.**

Graph 1. The capacity of the 9 worldwide nations in m dwt, 2018.

As shown, the Greek-owned shipping achieved the 1st worldwide position in dwt terms, in 2018, owning ~349 million dwt. In March 2026, it achieved 361 m dwt despite a number of negative events, which have occurred since 2009, *including the global financial crisis, 2009-2018, the Pandemic, 2019-2021, the Ukraine-Russia war, 2022-2026, the Israel-Gaza War, 2022-2023, and the USA-Israel-Iran 2026-war.*

As far as the number of ships is concerned the situation in 2018 was as follows (Graph 2).



Source: as in Graph 1.

Graph 2. The 9 world maritime powers and their number of ships, 2018.

As shown, China owned the top number of ships, i.e. 7753 out of 27,700, or ~28% of the world total (2018). This meant an average size of 39,262 dwt. Greece owned 4536 units with average size of 76,984 dwt. Thus, Greeks have exploited "economies of scale" once more, while the Chinese served also, apparently, their "Short Sea Shipping".

Moreover, the world fleet is destined to be reduced in 2026 and thereafter, not only in number of ships, but also in terms of dwt, and thus, given demand, the freight rates will be increased. In 2025, the global number of ships ordered was 1301 units, a lower mark since 2024, or ~65 m dwt less...

Shipyards[1] apparently are not happy from the above low orders. This was the result not only of the geopolitical developments mentioned above, but also of IMO's inability to decide what will be the NZF[2], which in 2025 remained unfixed. The only positive fact was the *low scrapping*, which took place in 2024 of only 4.64 m GT, compared with the 319 m GT since 2009 (16 years; i.e. ~20 m GT p.a.).

The reader may be reminded that in the Short Sea shipping, the average size of the ships is lower than the "ocean going" one, due to the fact that the distances are

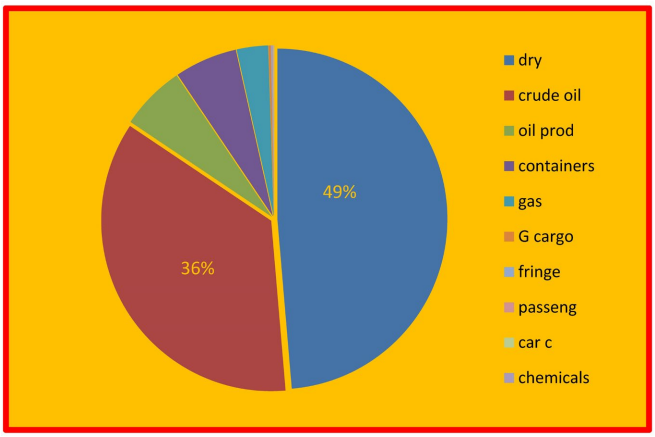
[1]In the search of a new cheaper and stronger material for building ships, we read that the staff of King's college of London discovered a new form of aluminum...

[2]The IMO agreed in April 2025 to the regulating framework NZF for the reduction of the greenhouse gases freed from the ships to be adopted by October 2025, but it did not occurred. It is based on the principle: the one who pollutes has also to pay.

shorter. Even Japan, with extensive short sea shipping, had 58,896 dwt of average size in its ships.

In addition, the greater the average size of one's national shipping, the more this nation is a "cross-trader"[3]. The flag of convenience Bermuda e.g. hosting also Greek-owned ships (0.5% or 21 units in 2025) was the protagonist in the economies of scale with an average size of 109,398 dwt.

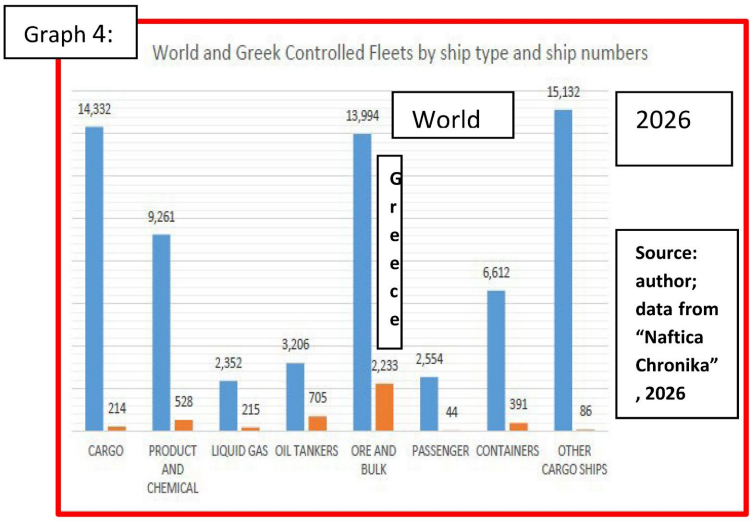
As far as the type of ships owned by Greeks, this is next shown (Graph 3).



Source: author; data: IHJ Markit, 2019, dwt of ships > 1000 GT.

Graph 3. The types of ships owned by Greeks in dwt %.

As shown, the "dry cargo" ships and the "crude oil tankers" dominated the Greek shipping, in 2018, with a share of 85%. In recent years Greeks, however, put an emphasis on their orders for "containerships" (64 units out of 140 or 46%) and "gas carriers" (12 units) (2026). This is verified by Graph 4.



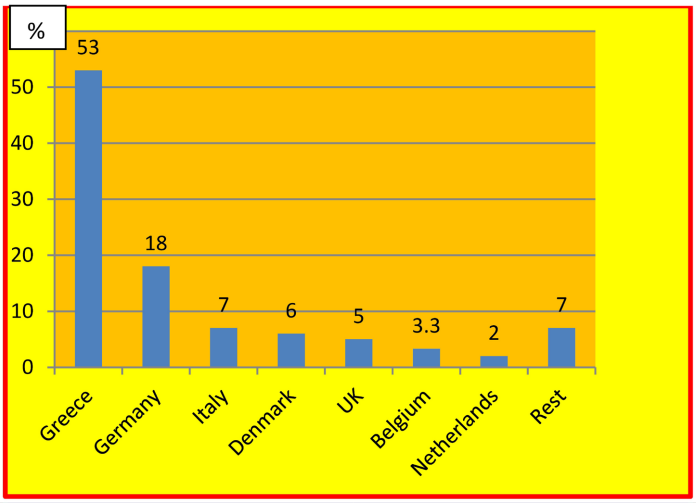
Graph 4. Controlled fleets.

[3]A "Cross-trader" is the international shipowner who serves the sea trade of other countries more intensively than that of its small native country.

As shown in Graph 4, the Greek-owned fleet, flying 31 international flags, owned, in March 2026, 4416 units of ~361 m dwt, meaning an average size of 81,748 dwt, i.e. higher than that of 2025. Greeks as mentioned turned into containerships and gas carriers (606 units in 2026).

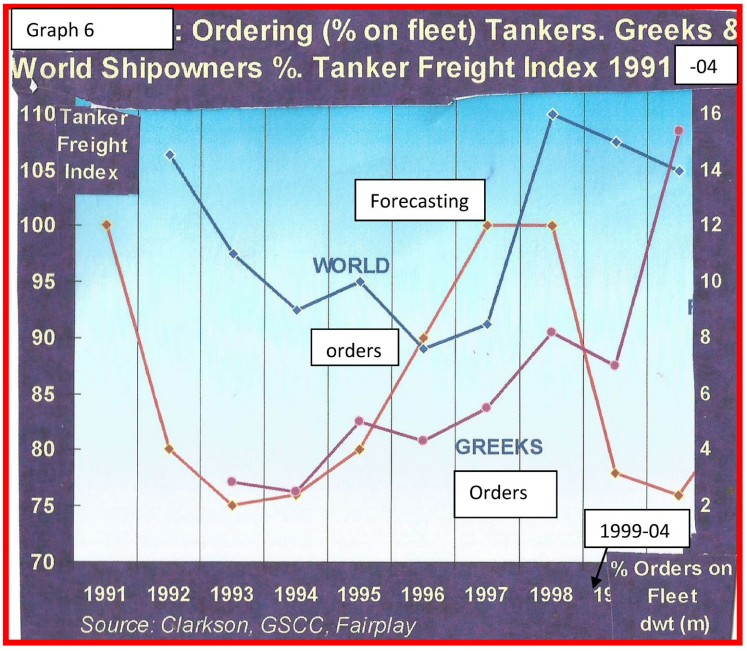
4.2. The Greek-Owned Shipping in the EU

Greece held the 1st position in the EU shipping with 53% in dwt for large ships over 1000 GT, in 2018, followed by Germany with 18% and Italy with 7% (EU Committee) (= 78%). In addition, the 7 top nations in EU were (Graph 5):



Source: EU Committee.

Graph 5. The 7 shipping nations that were protagonists in EU shipping, in 2018, in dwt %.

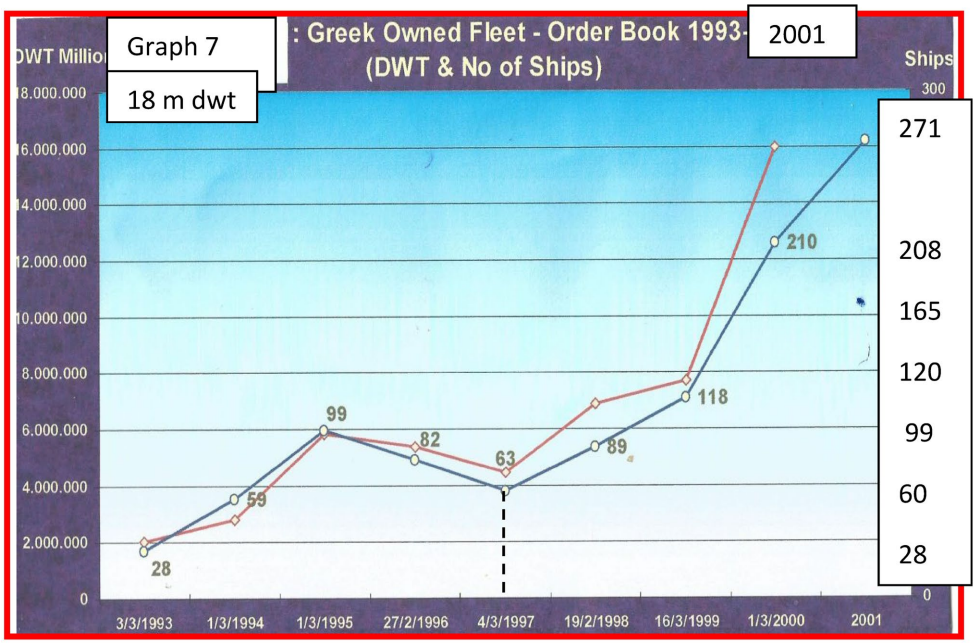


Graph 6. Ordering tankers.

As shown in Graph 5, Greece owned a % in EU almost 3 times higher than that of the 2nd Germany.

One may now ask: *did the Greeks lead the way in ordering tanker ships* or this was done only by global shipowners during the recent past (1991-2004)? Graph 6 gives the answer.

As shown in Graph 6, Greeks ordered tankers in a similar way with that of their world colleagues in 1991-2004, except in 1998-2004. It seems that Greeks were expecting the exceptional market in 2007-8. The forecasting positioned one year earlier than actual, in 1991-1992, and in 1997-1998. The above trend is confirmed by Graph 7.



Source: author.

Graph 7. Greek owned fleet.

As shown in Graph 7, the Greek shipowners, after 1997 (March), were aggressive in ordering vessels, till 2001, indicating a trend which was going to compensate them in the following boom in 2004-2008...

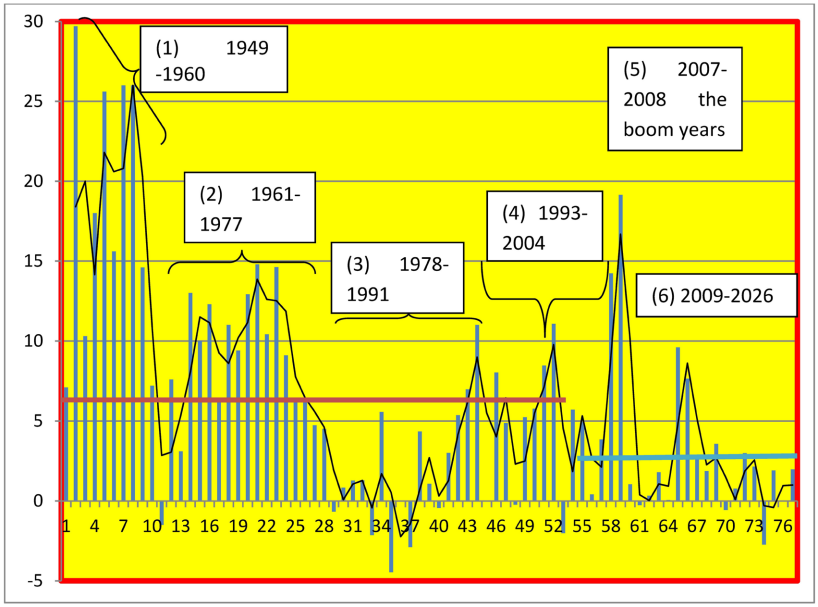
Let us next present the growth that Greek-owned shipping achieved over the last 77 years, i.e. since 1949-50 to 2026.

5. Part II: The Growth of the Greek-Owned Shipping, 1949-1950/2026 (March)

The growth rates achieved by the Greek-owned Shipping are presented in Graph 8, for the last 75 years.

As shown in Graph 8, only in 11 years the growth was negative, i.e. 14.7% of the total period. The Greek-owned shipping passed through 6 (cyclical) periods over the 75 years showed (average duration of cycles: 12.5 years). Greek ship-

ping however, was vulnerable, par excellence, during the 1981-1987 "depression"[4] (1978-1991).



Source: authors' archives; there were 30 years above 6.5% (the "typical" average growth rate), 40% of the period; 34 years below 6.5% or ~45.3% of the period; 11 years negative rates = 14.7% = 100%.

Graph 8. The Growth, from year to year, of the Greek-owned fleet from 1949-1950 till 2026 (March) in GT: 77 years; less 2 years, which had their tonnage basis changed (shown by a gap).

As shown, the Greek-owned Fleet grew soon after the 2nd WW in 1949-1950 and for 11 consecutive years remarkably, achieving rates, from year to year, from ~7% to ~30% (in GRT). In the second period, of 17 years, the fleet lost a 5% of its yearly growth on average, but it retained its cyclical character. The third period was a disaster, 1978-1991 (14 years), bringing-in a depression (except for the years 1983; 1987; 1991) with 5 yearly negative growth rates.

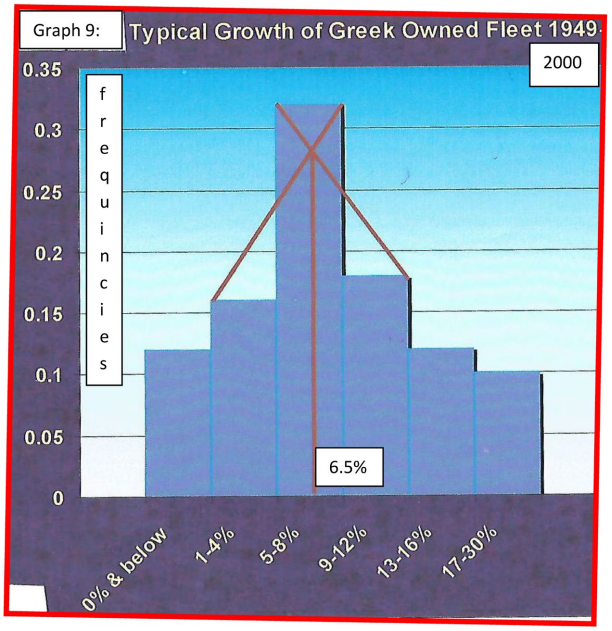
In the fourth period of 12 years, the fleet recovered with 6% additional growth in certain years (1993; 2001). The boom years, 2007-2008, intervened (*). The last period and the last cycle emerged between 2009 and 2026, (18 years), with rather higher growth rates in 2013-4. (*) The shipowners saw such freight rates only in 1918.

The red line (in Graph 8) indicates the typical[5] growth rate of the Greek-owned

[4]A depression can be considered as that abnormal phenomenon brought-in by an "investment bubble" (Stokes, 1997). This further means that during a depression owners massively have ordered ships a year or so before because they believed in a substantial rise in freight rates upon delivery and during the years to come. This, however, had to be verified by the balance of demand and supply, and thus the freight rates prevailed.

[5]"Typical" means "mode". The Mode is the most "usual" number in a distribution. The mean in the distribution of the growth rates was 6.53% (rounded) for the 75 years. The Mode = Mean − 3 (Mean − Median) and the Median is 6.51%.

fleet between 1949 and 2000, which found equal to 6.5% (Graph 9). In the next period, of 2001-2026, the typical growth rate fell to 2.5% (blue line) as the fleet exceeded the 98 m GT and reached the 361 m dwt (March 2026). The average growth from 1949/50 to 2000 was 7.95% and for 2001 to 2026, was 3.54%.



Source: author.

Graph 9. The growth of Greek owned fleet.

6. Part III: Suggestions to Greek Shipowners so as to Face a Shipping Cycle

The following suggestions are addressed to Greek shipowners so that to make the right preparation[6] to face a shipping recession[7] and depression. Our suggestions are concerned with the creation of a number of reserves from gross profits during especially the periods of the high freight rates.

We will start by making the realistic assumption that in shipping the long term, i.e. above say one year—forecasting of the freight rates is not possible. As Priesmeyer (1992) argued, the free will of the entrepreneurs is the reason for making any forecasting to fail, where only *visioning* is possible for the enterprises.

We suggest to shipping companies: (1) To form a "reserve" to face the liquidity problems that a recession/depression will bring-up. The fact that a depression will

[6]According to Homer the Greek word εφοπλίζω (i.e. being a ship manager) means to *prepare* the vessel for her voyage.

[7]A recession is a normal cyclical phenomenon, which is self-correcting after a painful, but necessary, process of adjustment (Stokes, 1997). This means that in shipping industry the *recessions are more frequent than the depressions*, because the imbalances between demand and supply are something to be always expected. This further means that owners in ordering ships do not know what the other shipowners ordered or what the demand of tonnage is going to be. As a result supply may exceed or fall short of demand. The freight rate is then *called* to repair the surplus by falling down, and to remedy the deficit, by increasing-up.

happen is quite certain to those... living in Jerusalem... (2) Depreciation to be tied to gross profits so that to avoid bankruptcy—due to an excessive depreciation—being company's major expense. (3) The "dividends-to-be-paid", to be tied also to gross profits and to be conservative, equal to the interest of a "yearly bank deposit plus a % for risk". Managers have to discipline their shareholders so that to look forward for exceptional money from the sales of ships and not from gross profits. (4) A further "reserve" to be created for future investments, from gross profits, in new buildings and in 2nd hand ships. (5) Forming-up another reserve so that to repay company's *long term debt* by first priority so that to avoid the danger from a bank of a foreclosure[8]. (6) Finally, to agree with company's bankers for a permanent credit line, of an adjustable amount, with an upper limit, for the company to face a crisis, if all the above measures fail. The company to pay the interest.

Our above suggestions of course are addressed to an efficient and effective Manager, who deserves them. To create specific deserves with their proper titles, we believe is wiser than using for the same purpose "retained earnings" and "depreciation".

Further we demand managers to apply a policy of perfect timing—PTP. The PTP in manager's decisions will have a meaning if the manager seeks also to maximize gross profits...

We know that the above policy, i.e. to maximize gross profits, is not always possible, but it is important—because all shipping prices are determined by Demand and Supply. Thus in shipping profit maximization is *constrained* by the balance between supply and demand. So, in order to judge our manager, we compare him with his/her colleagues managing *similar* ships in all their basic elements.

To return to PTP managers have to act according to Table 1.

Table 1. Principles for a manager to be efficient and effective.

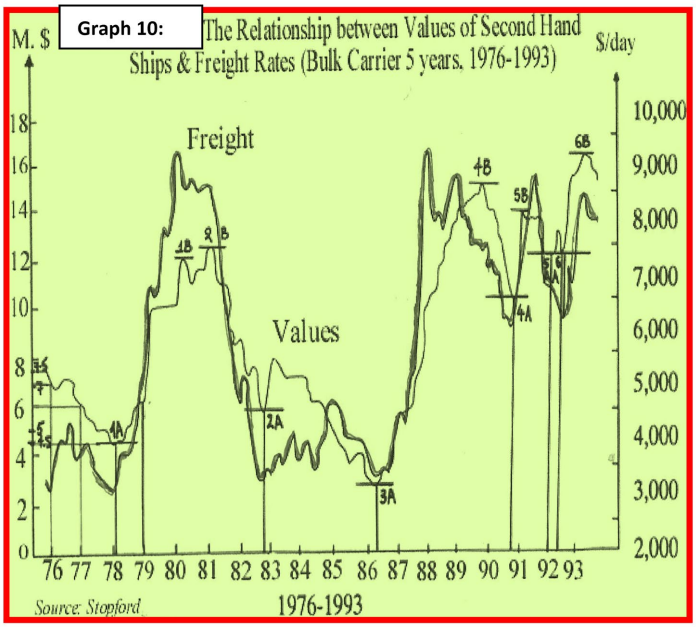
Buy ships at rock bottom prices; larger than those to be sold; younger than those to be sold	Build a ship at a rock bottom price; obtain a time charter from a first class charterer for her for as long as possible	Borrow at a rock bottom LIBOR; the gain from the rock bottom price to be greater than the interest saved from a rock bottom LIBOR	Time charter the ships when spot market is low & is expected to remain so for some time
Achieve the lowest possible cost in administration & in vessels	Minimize the off-hire time of company's vessels	Being in touch with your big charterers & try to serve their needs, in providing to them vessels especially built for them	Try to have a good relationship with your bankers & repay your long term debt in time
Forecast always the profit from a voyage; report the actual result to management & economic manager	Have an annual budget as accurate as possible; report its actual deviations to Management & economic manager	When one takes a decision, to care for the cost of it to be less than the net profit from it—old economic principle; adopt all innovations by priority that may control costs and people on board (e.g. via the use of satellites)	Be very scholastic in appointing the Captains & the Chief engineers as well the Cooks[9]; remember that Captains etc. are company's co-managers from a distance

Source: author.

[8]I.e. taking-over her ownership and management, by virtue of a 1st preferred mortgage, of a vessel in default.

[9]A good meal on board is a very important comfort for the crew working far away from their families.

As shown, by Graph 10 and Graph 11, Greeks used to buy bulk carriers, 5 years old, when their prices were low, as a result of the low freight rates, 1976-1993.

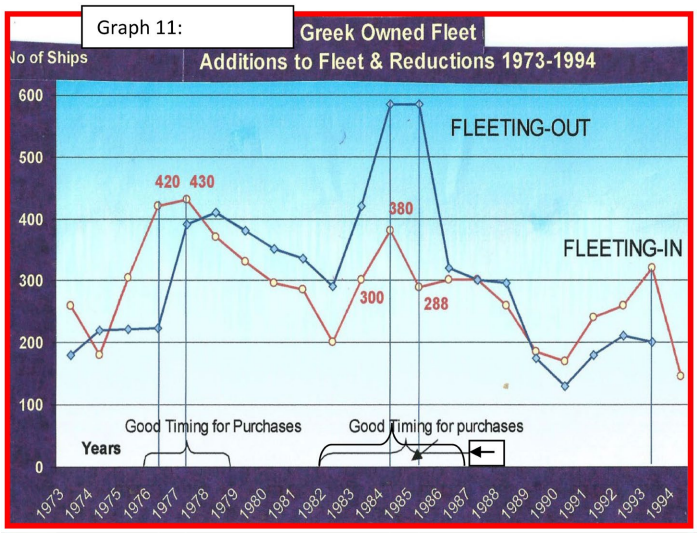


Source: author; data from Stopford (2009).

Graph 10. Relationship.

As shown in Graph 10, the best time to *buy* ships was in 1976-1979$_{1st\ half}$ and 1982-1987$_{1st\ half}$. The changes of the values of the ships and the freight rates (heavy black line) are remarkably correlated, with very few exceptions. The best time to *sell* ships was in 1979-1982, and in 1987$_{2nd\ half}$-1993.

Let us now see what the Greek shipowners did in their S + P activity (Graph 11).



Source: author.

Graph 11. Activities of Greek shipowners.

As shown in Graph 11, Greeks sold 1180 ships in 1983-1985 and bought only 668, over the same period. Their buys were best timed, *but not their sales*. Their style was first to sell and then to buy, most of the times, while the reverse is more rational, as sales would have caused a fall in the prices. One explanation is that the money from sales was required to get on with the purchases thereafter.

One understands a lot if assumes always that Greeks are constrained in their decisions from a lack of liquidity. Worth noting is the fact that the number of ships sold is almost double of those bought, assuming also a difference in size and age.

Let us now deal with the way that certain Greek shipowners financed their investments since 1967.

7. Part IV: The Finance History of Certain Greek Shipowners since 1967

Greeks, in 1967 (April) and thereafter, decided to transfer their offices from New York and London to Piraeus and Athens, where a friendly to them Government[10] was ruling the country. This meant that the international banks had to follow them and to open branches in Greece, as they did. Moreover, as Stokes (1997) argued, "one must select the year 1967 as the crucial one in the international development of shipping finance". Greek owners have decided—for a variety of reasons—to grow their fleets mainly via the 2nd hand market.

Table 2 presents the Greek shipowners that were protagonists—for better or worse—in shipping finance between 1967 and 1973. These 7 case-studies were selected from those mentioned in Stokes (1997).

Table 2. Greek shipowners and their activity for better or worse in shipping finance, 1967-1973.

Adriatic tankers	Zissimatos P, the manager	Anangel, Angelicoussis the manager	Colocotronis, the manager
Eletson	Hellenic Lines	Tidal Marine International	Amanatides
Regency Cruises	G Kallimanopulos, the manager	Minos	A. Lelakis, the manager

Source: author; data from Stokes (1997).

1) "Adriatic Tankers[11]" was a private Greek shipping group headed by P. Zissimatos—Z thereafter; a typical, and unconsolidated, Greek shipping operation. Till early 1990s, he was a quite successful owner and operator of chemical and oil tankers, with a fleet steadily growing-up and rapidly reaching more than 40 vessels. One of the competitive advantages of the company was the development of

[10]From 1967 to 1974 a dictatorship was ruling Greece providing legislation favorable to the Greek-flagged vessels (Harlaftis, 1993).

[11]A fuller account of this company can be found in Couper (1999).

"good banking relationships with serious lenders". *Worth noting is the fact that in 1992*, Z expanded to one of the largest Greek shipping concerns ever, and in next couple of years reached a fleet of about 100 vessels... *According to "Shipping Management" "a fleet expansion should not outstrip management's ability to achieve*: (*a*) *maintaining adequate technical standards*, (*b*) *attaining a sufficient cash flow*[12] *and* (*c*) *achieving low off-hire times...* Z decided to switch the main thrust of his fleet's financing away from the Piraeus banks and towards the "US bond investor market" (private placements). This did not require: (1) to obtain the "securities & exchange commission's" approval of company's prospectus; (2) to examine company's corporate structure; (3) to have the support of a recognized investment bank with special expertise in the private placement market (called the manager of the issue); (4) to examine company's due diligence and credit-worthiness/credit rating... Z raised $240 m to be repaid in 10 years, mainly from the USA insurance market. The approval based exclusively on shipbrokers' valuation of company's ships... By 1995, disputes etc. started to appear as shown in **Table 3**.

Table 3. The decadence of Adriatic Tankers, 1995 and thereafter.

Disputes with Crews	Disputes with bunker suppliers	Disputes with ship chandlers
Vessels had then to be arrested	Disputes took a wide publicity	ITF involved
Bondholders paid the price	Confidence to management evaporated	Company's vessels sold by creditors via judicial auctions

Source: author; data from Stokes (1997). This table indicates the signs & the steps, which a shipping company takes towards its bankruptcy.

As shown, to be very ambitious is not a safe platform. Growth must be accompanied with earning assets. Greeks are very clever in finding-out easy ways to borrow money sometimes over the value of the vessel. Banks and others may become victims of this principle: "Bond is our word".

2) "Tidal Marine International" was an ambitious and highly publicity-conscious corporation, which built up quite a sizeable fleet in the late 1960s and early 1970s. In 1969, it purchased 2 dry cargo vessels and 1 tanker. In 1970, a public offer took place of 267,500 shares, enabling company to buy more than 10 ships. Its prospectus in 1970, described the company as owning 12 ships, 11 off which were chartered to 1st class charterers. By 1972, the company was a model for the young managers by having: (1) a rapid expansion; (2) a prudent chartering; (3) an extensive use of the bank finance; (4) recourse to equity market and (5) a fleet of over 700,000 dwt (18 oil tankers and 27 dry cargo ships). Its lending banks were 5 first class USA ones. The company alleged to achieve almost $15 m (3 times than

[12]This indicates the pattern cash flows in a company over 12 months. Net profit has to be adjusted for all non cash items, i.e. depreciation mainly, and the loss/profit from capital transactions (sale of vessels) so that to arrive at the "operating cash flow". The inflow/outflow of capital is then added/subtracted, the purchase of vessels using cash and the repayment of debt.

that of the previous year) and a net worth of $43 m (in end 1972). The reality, however, was different than that presented by the company. It had a very low cash flow, in view also of a short slump in 1971-1972. The company collapsed in 1972-end. It turned-out that the company's charters were frequently the *work of fiction*, and the prices it was paying for vessels, when raising loans from the banks, were often grossly inflated... Banks provided over 100% finance instead of 60%, which was the normal... The company had $22.3 m of equity and $47.3 of a long term debt... The company had no track record[13].

This obviously is a criminal case, where fiction was made real.

3) Colocotronis built an empire using the "cash flow financing" method. He used to purchase relatively cheap ships, found period business for them, and financed on the basis of mortgage security plus assignment of the charter party proceeds. But he made one huge error[14] in ordering 2 ships, far more costly than any other in the fleet, *i.e. 2 ULCCs (end 1972) for $100 m when the tanker market crashed down by 1976... This is a classical case where an ambitious newbuilding program upon delivery and without a previous long-term charter party is unable to pay-out its banking debt.*

4) "Hellenic Lines"—HL thereafter, was a victim of the depression years 1981-1987. The company had cash flow problems (end 1983). It undertook a capital expenditure of $320 m in 1980 so that to obtain a modern fleet of container ships and boxes, with the ME market in mind. But this market proved disappointing. But more disappointing was the approach of company's main bankers—MG. HL dashed for growth, but there were "downside risks[15]". MG was the head of a 5-banks syndicated loan of $80 m, and it lost no time to arrest company's first 10 ships... The company called it a "compulsory liquidation". The US final debt was $200 m. This is an example meaning that the shipowner is obliged to select his/her bankers who understand the whereabouts of the industry. Moreover, the selection of the market to serve was wrong.

5) "Eletson" in end 1994 signed a contract with "Newport News Shipbuilding" for the construction of 2 + 2 optional, product carriers, and obtained $140 m for 10 year at 9.25% by issuing first preferred mortgage notes. The issue led by Citicorp securities in the "US high-yield debt market" with a high rating credit. The interest rate was apparently high, but this is the characteristic of this market. We wonder why this company did not list in NYSE. In 2016 this company owned 1.77 m dwt and 33 vessels. This is one of the well managed Greek-owned shipping companies of product tankers run by a number of ex Captains.

6) The Greek-owned shipping company "Anangel" formed in 1986 (Nov.) an entrepreneurial association named "Anangel-American Shipholding Ltd"—AASL thereafter, between "Angelicussis Shipholding group", "American Ex-

[13]See also Couper (1999: p. 36).

[14]See also Couper (1999: p. 37).

[15]A downside risk is the risk emerging from an unexpected fall in the freight rates following the delivery of a vessel newly built. This risk can be avoided if a forecasting method is applied using a nonlinear model as we have suggested elsewhere.

press Bank"—AMEX thereafter and "Lehman Brothers". Its purpose was to buy 2 bulk carriers and 1 tanker, aged ≤ 7 years of age. This is called a joint venture[16]. A new holding company was then formed aiming at offering its shares to the public (via a "best effort placing") (June 1987), as follows:

3 m A ordinary shares, at $10	1.5 m, 11% cumulative non-voting preferred shares, at $10	3 m plus B ordinary shares at $9.5 (*)	(*) 75% of this financed by a loan from AMEX

Source: author, data from Stokes (1997).

The deal was so structured so that to achieve *stability* and protection from the *downside risk...* First, AASL paid-out a small loan from the proceeds of the placing, to AMEX. Secondly, AASL declared that there will be no further borrowings to finance purchases of ships[17]. Thirdly, AASL limited itself to the purchase of vessels ≤ 7 years of age, as mentioned. Though this was a constraint in company's growth, it allowed the ships to have a long remaining life of say 18 years. Is this liked by the investors?

Greek shipowners assumed a ship to live "economically" maximum 25 years or to lose part of its original value at 4% p.a. AASL counted on the expectation of its share-buyers for capital appreciation from ships having 18 years yet to earn[18]. Fourthly[19], the founders AASL and AMEX, made a major equity commitment to the venture, where Angelicussis had to maintain its holding of B shares at a level so that to keep its share at more than 50% (of the total issued equity). AMEX had to hold about 8.5% of the equity, after placing, and the preferred shares to be held by these two by majority. AASL[20] was in fact inviting investors in a partnership, *where no party could prosper*[21] *at the expense of the other*. In 1988 the company listed in NY NASDAQ. The company liquidated, in 1992, voluntarily. In 1989, AASL, with a single share value of over $17 since 1989, offered in NY, 3 m A shares at $16.5 plus a matching subscription for B shares by Angelicussis. It has been over-subscribed. The company's return on equity was 30% or 6.3 p.a. on average, 1992-1996, 50% capital appreciation since 1987 and 6.18 p.a. return on capital. Cash flow was 11% on total capital average p.a. In 1992 (Feb.) the company proposed to its shareholders to move to a "perpetual shipping company", which it has been approved, as it was also trendy. The Angelicussis family offered a bonus of up to $3 p.s. (1994). This company in 2018 owned 24.5 m dwt and 127 vessels.

[16]It means a temporary partnership established for a specific purpose or project.

[17]This non-debt policy was an unusually severe discipline in an industry habituated to *excessive financial gearing*.

[18]This proved to be true for ships aged 15 years of age or less.

[19]This was a strong financial commitment.

[20]AASL was set up primarily as a "limited life capital appreciation fund" with a scheduled vote on voluntary liquidation in 1992, with no split of the back-end profits.

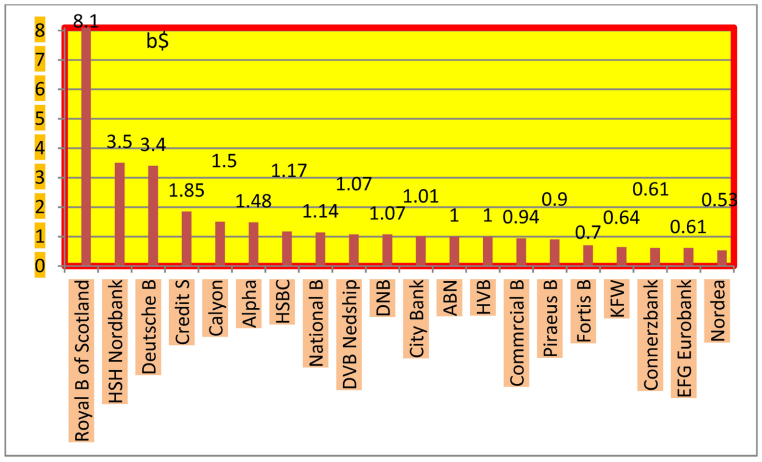
[21]Those promoting the deal had the option to buy 1.48 m shares (20% of the issued ones) at $10 each, after placing, divided equally (Nov. 1988), valid for 5 years. Holders of the A shares could vote on the winding-up resolution, but not Angelicussis.

This company is really one for Greeks to be proud for.

7) The final failure of the Regency cruises (1995-1997) was due to the knock-on effects of the late delivery of a new vessel plus a slump and a failed public stock offering; we are talking about a $200 m exposure. Crews were not paid and ITF involved[22]. The section of the Sea Cruises is a rather difficult one and where Greeks involved they faced great difficulties and when competition increased many Greeks abandoned this sector.

8. Part V: The Finance Style of the Greek Shipowners, 2006, 1st Chapter

Twenty banks, foreign (15) and Greek (5), financed with ~32 b $ the Greek owned shipping companies in 2006; ~$32 b also in 2004 and $36 b in 2005 (Diagram 1) from $11 b in 1997, i.e. 3.3 times up in 9 years.



Source: author; data from Psifia's doctoral thesis (Psifia, 2006).

Diagram 1. The 20 Greek and Foreign banks that provided finance to Greek-owned Shipping companies in 2006 & their amounts.

As shown, Greeks derive about $33 m on average from the banks every year.

The 79% of the finance is provided by the foreign banks. Of course, this made possible when shipowners accepted to pass on to the banks "the management of their mortgaged ships" in case of a default (by virtue of a 1st preferred mortgage).

The questionnaires were addressed to the managers of the economic divisions of the shipping companies. However, only 9 shipping companies responded. This means that these finding are exploratory. This low response can be explained by the fact that almost all shipping companies consider their relations with the banks top confidential. The 5/9 of the shipping companies employed University graduates for their finance; 4/9 was MBA and MA-M.Sc. graduates. All these had finance experience with the banks: 3/9 more than 16 years; 2/9, 11 - 15; 2/9, 6 - 10 and 2/9, 1 - 5. 2/9 was also shipowners... Moreover, shipping companies entrusted

[22]See also Couper (1999: p. 38).

their finance function to "mature" individuals of the following age: 22%, 31 - 40 years, 41 - 50, 33%, 51 - 60, 11%, above 60, 22%.

8/9 of the companies confirmed the practice which wants each vessel to have its shipowning company. 4/9 of the companies owned 1 - 5 ships, 2/9, 6 - 10 and 3/9, more than 16; this means small companies by majority. 2/9, owned from 50,001 to 150,000 dwt, 2/9, from 150,001 to 300,000, 2/9, from 300,001 - 450,000, 1/9, from 450,001 - 600,000 and 2/9, over 600,001; this means a well distributed sample as far as dwt is concerned.

The ages of the ships were in the 1/9 of the companies 1 - 5 years, in another 1/9, 6 - 10, in another 1/9, 11 - 15 and in 4/9, 16 - 20. This means rather over-aged ships. 4/9 of the companies owned bulk carriers; 1/9, owned also tankers; 1/9 liners 10%, 70% tankers and 20% bulk carriers; 1/9 of the companies owned liners and 1/9, bulk carriers and RoRo.

Interesting are the sources from which Greek-owned shipowners financed their companies.

From banks: 5/9 always & 4/9 nearly always	Leasing: 7/9 never; rarely 11%; sometimes 11%	Mezzanine: never 8/9; rarely 11%	Bond market 7/9 never; rarely 11% & sometimes 11%
From own capital: 3/9 always & never; 1, rarely 11%; 2, sometimes	From the "Athens Stock Exchange" 8/9 never; 1/9 sometimes	From shareholders: 8/9 never; 1 rarely; this reply sounds strange but it rather means that recourse to company's shareholders after the initial one perhaps cannot be made	Private placing 7/9 never; 1 rarely; & 1 sometimes
Shipyard finance: never	Finance from persons outside family or management: never	Equity financed from a third source: 89% never	Source: author; data from the doctoral thesis of Psifia (2006)

As shown Greek shipowners are conservative in their choice of the way of financing their investments avoiding the non-classical ways like leasing etc. The bank finance is used mainly by Greeks to buy ships, considered also by them to be versatile. 6/9 of the companies responded that they keep the % of own funds steady, while 3/9 responded negatively. The % of *own funds* to total funds was: 3/9 of the companies had up to 30%; 3/9 from 31% to 60% and 1 from 61% and over.

Interesting is the reason why shipping companies borrow money from the banks.

For working capital	For ship repairing—2/9	For a ship conversion	To buy a larger vessel
To reduce cost	For technological improvements	To buy a 2nd hand ship, or build one	To refinance a loan

Source: author; data from Psifia's doctoral thesis.

5/9 of the companies had as a 1st preference to buy ships when the market was

recovering; 3/9 when the market was rising (2nd preference); similarly, 2/9 as a 3rd preference and 4/9, during a crisis as a 4th preference... Interesting is this last one though it is their almost last preference.

Sixty seven % of the companies borrow USA$ always and 33% almost always. From this %, 11% sometimes borrowed Y (Yen) and Euro, and 22% rarely borrowed Y. The loan to buy a 2nd hand ship varies usually from $10 m to $60 m; for a newbuildings varied from $50 to $150, and for a refinance was at ~$50 m (2006).

The banks charge their profit. For the 2nd hand ships this varied from 0.5% to 1.5% and from 2% to 2.5%, with the usual to be from 1% to 1.5% on the amount of the loan. The newbuildings paid from 1/2% to 1%. The big and reliable companies with a good past history achieved a low spread as expected, i.e. between 0.5% and 1% (55%). This means that banks add a % for risk. The usual LIBORS are that of the 6 months (33%) followed by that of the 3 months (67% almost always chooses this).

The "grace period" was 6 months for a new-building and 3 months for a 2nd hand one (5/9), and for 6 months (4/9). The installments were 3 monthly (5/9) and for 4/9 six months. 89% of the companies asked for a balloon[23]. 6/9 of the companies paid a "commitment fee", from 0.20% to 0.25% and from $10,000 to $20,000; 4/9 paid a "negotiation fee" from 0.04% to 0.05%; 4/9 paid a "commission" from 0.50% to 0.75%.

For the collaterals, companies always, or almost always, provide a mortgage, or a 1st preferred mortgage and the assignment of the proceeds from the insurance contracts. 44% did not assign their account and 67% never pledged ship's shares. 4/9 provided a Greek mortgage and 2/9 that of Cyprus and Malta. For the % of insuring the vessel: 1/9 said 100%, 1/9 110%, 4/9 120% and 2/9 130%.

The 6/9 confirmed that the banks ask for a periodical valuation of the price of the vessel at company's expenses, and 3/9 responded negatively. 4/9 said this to happen every year, and 2/9 rarely, and only at times of a severe crisis. For a shipping company to have a "retention account", the 6/9 responded positively, and the 2/9 negatively.

A retention account means that banks have the right to use its balance to repay the loan's installments by priority before the company uses it to pay expenses etc. This account is credited with ship's revenue from the voyages. In other words is a pledge of ship's revenue or gross income from charter parties and voyage parties.

[23]The Greek shipowners have to agree to a specific tenor in a loan, say of 6 years, determined by the bank. When they cannot see beyond say the first 3 years, they ask for a balloon for the last 3 years (i.e. for 50% of the loan). If the bank accepts this arrangement, it looks at vessel's residual value for the case of a default. This need for a balloon we believe—*our theory—can be eliminated, if the company asks for installments tied to gross profits (unequal), which naturally will prolong or shorten the tenor.* Companies propose a balloon out of the fear, we believe, that in future they may be unable to pay the high money agreed today, and thus they will have to renegotiate their loans. As this is clear, banks ignore the reality of the shipping cycle *by their demand for equal* installments, where these cannot be equal... Shipowners have to discipline the shipping banks, who by majority they do not know the industry. E.g. is wrong to provide finance when the freight market is at its top—and all expectations are for falling—something that happens always...

9. Part VI: The Finance Style of the Greek Shipowners, 2006, 2nd Chapter

Another finance requirement is the one where the value of the vessel must be always at 120% of the loan, or of its outstanding amount (44% responded positively), or at 130% (33%). Here we have to add to the unpaid loan also the interest due. The value of the ship here is that determined by her valuation every time. In such a case the bank will ask for additional collateral, as the case may be, *something which may be impossible during a crisis*. Original cash collateral is a solution here provided its amount is high.

6/9 of the companies asked by the banks to submit balance sheets of the 3 last years, financial statements, all certified by an auditor (6/9). The "Cash flow analysis" is done by 7/9; 4/9 use always, and almost always, the "net present value method" as well the "payback method" (almost always). 7/9 forecast their expenses and freight rates...

4/9 of the companies forecast the freight rates using the FFAs—the forward freight rate agreements -, and adjusts their figures for inflation. The expenses are forecast based on company's experience and adjusted for inflation. Standard average revenue is used and expenses are increased by a 4% p.a. Histograms of the revenue and of the expenses are drawn.

Freight rates are forecast by increasing them by inflation (4/9 adds inflation on freight rates). Interesting is the fact that owners check every time their charterers for economic health. This last precaution is important because friendly shipowners told me that once they did not check the economics of their charterers, they were unable to collect their money from a charter party...

Prudent shipowners put in their time charter parties an escalation clause for the future rise of the expenses of the vessel over time; 4/9 responded positively. But we consider the above 4% to be low as well dangerous for an escalation clause. The adjustment of the time charter rate is necessary as the increase in expenses overtime is something to be expected. 4/9 of the companies adjust their cash flow and its discount factor due to a shipping cycle, and 1/9 adjusts only its cash flow.

10. Part VII: Questions for Further Research

Why the majority of the Greek shipowners avoid the international stock exchanges, except of a small minority, i.e. 30 companies out of 1440? Have the persons working in the company, and on board, the permission to buy company's shares? Do Greeks prefer to buy as a rule a 2nd hand ship and not to build a new one? Had the companies the 1st and exclusive priority to buy and build ships when their prices are at their rock bottom?

11. Conclusion

Greece in 2025 (March) owned 4221 ships with an average size of 83,866 dwt. This indicates further that even in periods of low or negative growth rates, like in 2019-2026, Greeks sought economies of scale. Greeks owned 315 fewer ships between

2018 and 2025, due to the events mentioned. In March 2026, the Greeks owned 361m dwt.

Greek shipping achieved the first world position in dwt with 304 m and the 2nd position in number of ships with 4221 units (by March 2025). Moreover, had the 1st position in the EU with 53% share in dwt, 3 times above the 2nd Germany (2018).

Greeks kept their destiny in maritime shipping to serve the sea trade of others, par excellence, and to a lesser degree that of their native country, and to pursue economies of scale and age. They also sought after the sales of smaller and older 2nd hand ships.

Greek shipowners were, however, vulnerable in the various geopolitical events, the local wars, the Pandemic of COVID-19 and the uncertainty caused by the alternative NZF. In addition, the Greek-owned shipping was vulnerable to the frequent cycles and rare depressions, like that of 1981-1987, and additional 6 recessions, one over 14 years, on average... since 1949-1950.

We saw that the Greek-owned shipping grew through 6 different periods of a variable duration each. All six periods over the 75 recent years showed a cyclical behavior, starting from low growth rates and arriving gradually at higher ones, and then declining down to lower ones. Worth noting is the fact that the first period achieved higher growth rates than all other subsequent periods. One must take into account that the 30% growth in 1949 meant 3.3m GRT, while 10% in 2026 means ~36 m dwt... more than 10 times higher...

Greeks bought their 2nd hand ships at low prices, in 1976-1978 and in 1983-1986, when the freight rates were also low. But, unfortunately they sold their 2nd hand ships also at low prices. Probably they should wait till 1987_{2nd} half and thereafter, where the prices of the ships increased from $3 m to $16.5 m. What is worth noting is that the sales in number of ships exceeded the numbers purchased, except for 1973 and 1975-1977 and 1990-1993.

We know that in the shipping industry sky is the limit, but this is unwise to pursue. A company's Cash Flow indicates the limit towards which a company can go in ordering and in buying ships and indicates how far it is safe for a company to borrow.

Greeks in the past knew that ordering newly built ships ran the risk of a downside and avoided them. Onassis broke down this tradition as he realized that to grow rapidly one has to borrow, as the money is *waiting* there in the banks and in the insurance companies.

The doctoral research in this work confirmed the mistake repeated by the banks, and accepted by the shipping companies, i.e. to approve the majority of their loans at times of prosperity (i.e. during high freight rates). This also revealed that companies use naïve tools like historical data, histograms of revenue and expenses and annual inflation. Nonlinear forecasting methods were ignored.

The degree of the difficulty to borrow from the banks was found to be correlated—as expected—to the state of the freight market. In 4 to 7 degrees of difficulty, 6/9 of the respondents stated that they had difficulties borrowing during a

crisis and only 3/9 found it easy. During a top market 100% of the companies had lower difficulties to borrow, i.e. from 1 - 3 degrees. The above confirms our theory that during recessions/depressions banks' borrowing is very difficult. To lend only during high freight rates, we consider this to be a serious mistake of the banks.

Our theory is to borrow at rock bottom prices, when the prospects of recovery are there. During a top market the prospects, we believe, are for a falling course and thus for a bad investment, especially in newbuildings. Banks called this a "downside risk" like the one in the case of the Colocotronis shipping company and others.

Banks lend from 60% to 87% for buying a 2nd hand vessel and from 70% to 90% for a new building! This indicates that the major % of the risk is undertaken by the shipping banks...

The growth of the Greek-owned shipping would certainly not be the same without the foreign banks. In the past, i.e. before 1973, the shipowner was also the economic manager of the company. Once finance became a difficult discipline, perhaps by becoming "Financial Engineering", shipowners appointed economic managers and sent their children to study shipping finance mainly in UK (City University).

Greeks prefer to borrow almost always from the banks. The bank finance is considered as less expensive, being also the only alternative. Equity and banking finance are considered as the most suitable and the least expensive combination. Worth noting is the concern of the companies to avoid finance from persons *outside the family*...

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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