LUISS

Department of Business
and Management

Specific Chair
Markets, Regulations and Law

Past, present and future of the Italian Shipping industry

Luca Arnaudo

Supervisor

Giuseppe Colangelo

Co-Supervisor

707531

ID Number

Academic Year 2019/2020

Table of Contents

Introduction

The thesis aims to demonstrate how the maritime transport sector has been, is and will be one of the main elements for the success of the economy of a nation or an entire continent, but above all how the economic crisis of 2008 has influenced the sector by taking as an example the company Perseverance SpA navigation which has suffered strong influences due to the crises.

The first chapter will illustrate the meaning of the term "shipping" all its facets of a macro-economic and social nature, but above all those that are the elements, the actors involved, and the methodologies used in the naval sector in the modern era. The aim is to frame the sector, very often difficult to understand for those who do not live it, trying to illustrate what are the fundamental concepts to consider in our day.

The second chapter focuses on the historical analysis of the maritime transport framework, from the last years of the 1800s until the 2008 crisis. Here we will analyse the main historical and economic events that led to the creation of the term shipping that we mean today. The past tells us how the shipbuilding industry has been the centre of many fundamental turning points both in times of economic boom and in times of war and recession, so a historical analysis is appropriate to understand the crisis in the sector and how it can be overcome or simply pandered to.

The third chapter introduces the 2008 crisis by bringing back both the overall macroeconomic framework and more specific to the shipping sector. In order to understand what the effects of the crisis on the shipping sector have been, we illustrate the company of Perseverance SpA Navigazione, a historic shipping company that has been operating since the end of the 1800s, and how the company has dealt with and is still facing the economic crisis.

The conclusion will seek to give a prediction to what will be the future of the shipping sector in particular its disappearance or not from the global macroeconomic environment.

1 What is shipping?

Transport services, generally understood, are inert in the wider chain of customer value, performing a dual function there. The transport allows to connect the various activities that make up the flow of added value, a function called “internal connection”, and is also able to intervene first between a company that needs a supply and the supplier and then between the company and the customer, allowing an external connection between these subjects[1].

The word shipping means, transport activity or service, which is paid through the payment of a price called freight.

Shipping as a transport business also shows its importance by looking at its inclusion in the value chain, transporting goods (be they raw materials or finished products) from production sites to consumer sites. For this reason, the demand for transport is said to be "derived", as it is descended from the demand for goods. The primary need that moves transport is nothing more than the need for a certain good, which without transport would not be available at that time, in that specific place.

Certain types of transport, such as cruises, passengers transport and business travel, can be identified as consumer services, but here we are talking about shipping in its most commercial sense, referring to the transport of goods from one place where their value is less, to another where it is higher (consider, for example, that the value of an extra unit of oil in Kuwait, is not the same as in Italy[2]).

It is for this reason that transport can make profits. The maritime enterprise is able to increase the intrinsic value of the goods transported, as it will make it possible for the recipient to have the goods where and when they need it.

1.1 The Maritime Value Chain

There are many economic actors that make up the maritime value chain.

Depending on what shipping segment you are in, the functions of these subjects can be combined or integrated to varying degrees.

The most important are the ship-owner, the shipyard, the charterer, the cargo owner and the various brokers.

The ship-owner is a person, company or investment fund that buys a boat from a shipyard or second-hand market to rent it to a charterer. Its earnings stem from the difference between the charter rate, and the sum of the costs arising from the ownership of the vessel (such as interest and capex, which are very often affected

[1] S. Consiglio, *Il trasporto nel sistema logistico d impresa*, Giappichelli, Torino, 1993

[2] P.Lorange, *Shipping company strategies: global management under turbulent conditions*, Elsevier, The Netherlands, 2005

by the conflicts of exchange rates) and from making it usable (expenses related to maintenance and repair, lubricants, crew, insurance, management and administration of the ship (opex).

In the search for renters of their vessels, the owner can join a broker to make the process much easier.

The main risks in which the ship owner may incur arise from the rentals, the ability to use the ship and the life cycle of the ship.

Shipyards are responsible for the construction, maintenance, repair and recycling of a ship. Construction usually takes 2 years.

Those who rent a boat from a shipowner and "sell" the transport service to those who need to carry a certain cargo are called charterers. A charterer can either arrange transport for pre-arranged journeys or scheduled activities, as is typically the case for the container segment, or it can use the ship to a single subject, which is often the case in bulk shipping.

From the spread between the existing rental contract and the rental trend comes the risk to which the renter is subject, which is also affected by his ability to use the ship in an effective manner. Moreover, in this case a broker's contribution can be inserted to look for the owner who can most adapt to the needs of the renter.

The owner of a cargo ship, however, wants to transport his products/goods to a specific destination. Depending on his needs, and especially when he needs frequent and high-volume transport, he prefers to "buy" transport directly from the owner, acting as a charterer himself.

At the end of the day, brokers are intermediaries with various specializations regarding the shipping market. The Yard Brokers are very popular, they help to conclude contracts between shipyards and shipowners, especially with regard to new construction, but also in a minority way, for repairs and maintenance. Shipbrokers support the rental of boats and also deal with the sale of second-hand ships. Freight brokers are useful for entering into large rental contracts[3].

1.2 The various types of merchant vessels

Shipping is a huge world contest. In fact, it is used to transport heterogeneous categories of goods, each of which will require a certain type of transport and vessels.

A first classification concerns the destination of use and the technological content embedded by the ship. Standard ships are those intended to transport solid bulks (grains, soybeans, iron ore, bauxite, phosphates and coal) and liquid (oil, refined products such as benzene, diesel, naphtha, chemicals such as benzol, solvents, ammonia and methanol). Among them are oil tankers, product tankers, bulk carriers (dry and liquid bulk carriers), container ships and general cargo ships.

[3] Magnolis G. Kavussanos, Ilias D. Visvikis, *The international handbook of shipping finance*, Palgrave Macmillan, UK, 2016

High-tech shipbuilding production, on the other hand, is said to be high-tech and mostly includes cruise ships, ferries, military ships (which do not concern us) and those carrying liquefied petroleum gas (LPG).

The maritime services provided affect the type of ship to be equipped; they can be distinguished into three sub-subsets depending on what activity is carried out and the business being manned:

- the tramp sub-sector
- the line sub-sector
- the passenger transport sub-sector

The boundaries between them are clear and visible: each has very different characteristics compared to the others, referring to transactional[4], competitive and relational well-defined areas. Characterizing each sub-sector for business areas, the tramp is referred to the transport of dry or liquid loads; the line's sub-sector deals with general and containerized loads; the last one it is very different from the previous ones, because the individual customer becomes very relevant and needs adequate services.

For the purpose of this study, it is interesting to delve into a given sub-sector, that of the tramp.

1.3 The Tramp Sub-sector

When we talk about tramp we talk about "port to port" services, which are carried out in the transport of goods from one port to another along very varied routes.

In this sense, the types of maritime transport can be divided into:

- transport of solid or dry bulks
- transport of liquid like petroleum and chemical products

In any case, the tramp deals with the transport of so-called commodities, or fungible goods. Dry products (bulk) are coal, iron ore, wheat bauxite, but also, even if it represents a smaller sector, timber, steel, cement.

The transport of liquid products (tanker market) is carried out by tankers and can be distinguished in:

- Maritime transport of crude oil is, typically carried out by medium and large vessels, from extraction sites to points of refinery.
- Traffic of refined products (such as benzene, diesel, naphtha etc.) instead requires medium-sized tanks to connect refining sites to coastal deposits.
- Chemical transports that eventually use generally small tankers specially built to withstand acids.

Crude oil is the dominant asset in this sector.

[4] The term 'transactional' refers to the transactions in place to provide the resources necessary to carry out their work; The competitive field, on the other hand, refers to the specific needs of the customers to be met; relational one concerns all those interlocutors that the owner seeks and needs consent

We can also talk about tramp in another case: that of cabotage. It is in fact the maritime transport that takes place between ports (port to port) of the same state. It is an alternative to road and rail transport, providing an adequate response to the growing demand for transport and environmental protection. In fact, the so-called motorways of the sea are a concrete and economic tool to solve the problems posed by alpine transit, road congestion and the imbalance between transport systems.

Since 1 January 1999, with the entry into force of the EU directive on the liberalization of cabotage services between European Union countries, every ship registered with a European state can carry out the cabotage service between the national ports of the individual states.

In addition, in 2008 the Financial Act initiated the Eco bonus through the allocation of 77 million euros for each of the years 2007, 2008, 2009, in order to incentivize hauliers to maritime transport as an alternative to the road[5].

Below, a classification of ships that crosses the type of transport carried out and the storage capacity.

For the world of oilier vessels, debt Tanker, there are:

- ULCC (ultra large crude carrier) oil tankers with a range of more than 300,000 tons (dwt);
- VLCC (very large crude carrier) oil tankers with a range of more than 200,000 dwt, but by 300,000;
- Suezmax - tankers between 125,000 and 200,000 tons of capacity that can pass through the Suez Canal;
- Aframax - oil tankers with a capacity of between 80,000 and 124,000 dtw, known as LR2;
- Panamax - ships with a capacity of between 50,000 and 79,000 dwt, known as LR1;
- Handymax e Handysize, called MR2 and MR1, with capacity below 50,000 dtw of capacity, called port-products, whose job is to transport refinery products and no more crude oil.

As for dry cargo transport, we find the Bulk ships, divided in:

- Capesize bulk carrier, ships with a range of more than 100,000 dwt;
- Panamax bulk carrier, ships with a range of between 65,000 and 99,999 dwt;
- Handymax bulk carrier, ships with a range of 40,000 to 64,999 dwt;
- Handysize bulk carrier, ships with a range of 10,000 to 39,999 dwt.

[5] Classification contribution:
- www.mediocreditoitaliano.com
- Alan E. Branch, *Elements of shipping*, Chapman&Hall, 2-6 Boundary Row, London, UK, 1994
- L.Fadda, *Cambiamento e valore nell'economia delle imprese di shipping*, Giappichelli Editore, Torino, 2000

1.4 Shipping revenues, costs and cash flow: particular balance sheet items

The following will show the particular items of revenue and cost of shipping, items that require some attention from the company, as they will depend on a profit rather than a loss.

Each item can be viewed in an aggregate, at the fleet level, but it is descended from the costs and revenues achieved by each ship that is part of it. Ideally, the overall budget consists of items detected at the level of individual vessels.

We will see later, that when the market is low, ships travel at a loss, that is, they do not reach the break-even point, since the revenues can only cover some cost items.

Revenues depend on[6]:

Figure 1: List of shipping revenues

The load capacity	The productivity	Freight rates
Vessel't Tonnage	Blaclkhauls [6]	Demand and Marke Supply balance
Bunker	Non employment time	Quality of service
	Port time	Level of market competition
	Operational planning	
	Speed	
	Using overall tonnage capacity	

Source: personal elaboration

[6] Return journeys after carrying out a transport, which the ship makes without being employed by virtue of a contract by any charterer. They're basically empty trips

They are part of the costs:

Figure 2: List of shipping costs

Open expenses	Voyage Expenses	Capex Expenses
Crew members	Fuel consumption	Reimbursement terms: • Loan amount • Loan term • Moratorium • Terms of redemption • Currency
Maintenance and repair: • age of ship • maintenance policies • regulation	Port costs: • Port charges • Loading/unloading costs • Reimbursement cargo damage • Hold-up washing charges • tugs	Interests: • Source of the loan • Loan amount • Interest rate • Terms of the loan
Stocks	Main and auxiliary engine	
Crew salaries	Cost of fuel	
Suppliers	Channel transit duties	
Water	Using overall tonnage capacity	
Lubricants		
Insurance		
Administration		
Brokerage		
Overhead		

Source: personal elaboration

Below is represented the cash flow of the vessel. In order to achieve net flows, from the revenues from the rentals, the operating expenses are subtracted and then the capital shares and interest related to the loan of the ship are subtracted.

Figure 3: Net Cash-Flow elaboration

Charter income	
- Operating expense	
- Dry docking/special survey	
SHIP OPERATING CASH FLOW	
- Loan interest payments	
- Loan principal repayment	
Residual value (ship sale)	
NET CASH-FLOW	

Source: personal elaboration

1.5 Shipping critical issue

“The shipping market is so volatile and margins so uncertain that consistent success in chartering and investment demands is a very disciplined decision-making process”.

Shipping is an extremely complex and articulated industry, for example, in a shipping company it is possible to find the expert in global logistics, that of geopolitical and macroeconomic analysis, of econometrics then of statistical applications, and so on. Seafarers and ships are imitable, the rest are not.

This complexity can lead to all kinds of reflections on the multiplicity of drivers that affect the industry. A work of reasoned skimming leads us to focus the analysis on the most distinctive and incisive variables.

We can say that shipping is an industry that is characterized by:

- peculiarities of the 'vessel' factor
- the figure of the shipowner
- intense competitiveness
- atomism
- strongly cyclical nature

1.6 The vessel factor: economies of scale, rigidity and leverage.

Unlike other types of technical immobility, a vessel shows peculiar characteristics. Below we will see the main consequences of the choices regarding these assets, with reference to:

- dimensional class
- the vessel values
- financing for the vessel

Let's talk about economies of scale first. The bigger a vessel, the cheaper it will be to travel. They exist in the shipping of economies of scale depending on the size of the vessel. This can be seen by calculating the annual dead weight tonnage (dwt) of a ship, referring to the higher expenses to be incurred already listed in the previous chapter.

Annual cost per dwt = (OpTM + OmTM + TcTM + LcTM + KTM) / DWTTM

Where:

“Op” = operating costs

“Om” = ordinary maintenance

“Tc” = travel costs

“Lc” = load costs

“K” = capital costs

“T” = time

“M” = meters

What is important to point out is that as DWTs grow, the Op, Tc and K costs do not grow proportionately, so a larger ship reduces the annual cost per dwt. Large ships have a cost advantage, due to the occurrence of economies of scale: they can generate higher cash flow at non-economic levels for smaller ones.

The disadvantage clearly relates to the resulting loss of flexibility, which can reduce revenues either by limiting part of the ports in which the ship has access, and for the ballasts that will be required in the case of backhaul or non-total saturation of ship[7].

Different consideration is the lack of flexibility, on several fronts, that is determined for a shipping company by owning assets such as ships. In addition to the fact that they are equipped with mobility and ply the seas with all the risks that can result, the vessels undergo their own degree of specialization, which we know to be very high, showing a strong rigidity. Yes because, as listed in the previous chapter, the types of ships are manifold precisely depending on the good to be transported. According to Stopford[8], one of the key principles that must guide shipping is precisely that of the obligatory consistency between the ship and cargo: the ship must be physically suitable for the specific goods. Each good will require ships with a certain characteristic: a tanker carrying refined products will never be able to carry chemicals, it would come out corroded; likewise, a tanker will not be able to meet the needs of dry transport... and so on.

It is for this reason that in order to ship, the ship-owner will have to procure highly specialized vessels. After that, once built for a certain purpose, a ship is more or less constrained to it throughout its existence and is inflexible to other types of use.

The resulting constraints are obvious. It will no longer be possible to move freely on other market segments and this will be very limiting when the one in control is in crisis.

A certain degree of replaceability exists only within the same segment, which we know to be very fragmented. For example, if dry cargo transport through a panamax was at a particular time in history that was too expensive, nothing would prohibit the owner from using more capesize. This is usually the case when the differentials between the two categories of ships are very high. And it happens when the markets and products, as in the case of bulk, are quite overlapping (chain-linked), and then in the presence of strong imbalances there can be a transpose.

For the oil sector, the interchangeability of ships is less pronounced. In the industry it is said that "getting dirty costs nothing, the problem is cleaning up". That is, moving from the transport of petroleum products, so-called clean products, to raw, as well as dirty, does not involve any expense for the company. Therefore, if the dirty

[7]data from: M. Stopford, *Maritime economics*, Terza edizione, Taylor&Francis Group, UK, 2008

[8] M. Stopford, *Maritime economics*

product sector allows better compensation than the clean product, the ship-owner will convert his product tanker into a crude oil tanker, exercising an option at no additional cost. The opposite is the case, when a tanker has to clean up its dirty products to transport clean products. Performing this step has a significant cost, which the ship-owner will necessarily have to compare with the benefits of the operation in order to establish its convenience.

Another important observation is that to be made on the ship value. This value is always very high for the purchase, characterizing the sector as a highly capital-intensive sector. The high capital intensity required a high degree of indebtedness, which qualifies for this sector as physiological. The ratio of equity to third-party capital (leverage) often leads, at best, to a ratio of 1 on 4, which makes the risk very high (as well as the return).

To make such a strong lever possible, there is the security value that the ship itself represents for the banking system, much higher than other technical fixed assets. With regard to the attitude of the financial institutions, the financing for the purchase of the vessel granted by them is equivalent to a percentage of the market value of the asset, and not to the total amount that the owner will have to pay to the shipyard. The remaining part of the ship's value will have to be paid to the ship-yard from other sources, mainly through self-financing.

Nothing to worry about, as long as the ship value remains stable. But in reality, it fluctuates strongly because of changes in rental levels, as it is directly related to their performance. It may happen that, once a construction contract is entered with a shipyard, after some time the freights fall suddenly, causing a sharp drop in the values of the vessels. The bank loan will be adjusted to the new current market value, while the original contract price will be paid to the yard, which will ensure that the ownership company is discovered for a certain amount.

From the dependence on the freights, comes another source of uncertainty. Freight is the largest source of revenue for maritime transport, as it is in fact the price at which the service is built. Their continuous and unpredictable variation means that in the face of cost certainty, revenues have never been so for a long time. When the freights are tremendously low, the ship may even end up at a loss.

1.7 The figure of the ship-owner: a gambler

Particularly in Italy, the reason for such a marked use of debt in this area is to be found in the composition of the sources of Italian shipping companies. In fact, the ownership structure is characterized by models of property with a narrow stock base, often of the family type[9].

The figure of the shipowner/entrepreneur and that of the economic subject often coincide, since it will be difficult for the ship-owner to decentralize his decisions. The nature of the industry, which requires a great deal of exposure to risk, makes it natural to establish entrepreneurship. Financial stakeholders call shipping a

[9] www.mediocreditoitaliano.com

world of gamblers, as ship-owners often decide in 5 minutes an investment of millions driven by the expectations they have for the market. They are seen as subjects that base choice on emotion and lack of rationality.

The characteristics of the entrepreneur can be very useful in such a context, where the subjects often have to act according to their intuition, if they can trace themselves to that entrepreneurial action made of propensity for success, innovation, relationships with external stakeholders[10].

In these cases, it can be a driving force in the shipping industry, precisely because of its business acumen. But when the self-made man becomes someone who is overly reluctant to delegate, he can end up being a brake on any transformation process, being overly centralizing and paternalistic[11].

1.8 Intense competitiveness and atomism.

The fact that shipping is a highly competitive industry depends in large part on globalisation: with the exception of cabotage, in fact, all services are carried out on an international basis.

The currency with which transactions are carried out is mostly the US dollar. Revenues from transport services are made in dollars, as well as shipbuilding contracts and consequently financing contracts, with the aim of stemming the exchange rate risk as much as possible.

Also take into account the application of the Common Law to the main legal relations of the sector (financing, insurance, freights...) and the fact that London is recognized as one of the world's leading shipping centres. London banks are among the leading players in the financing of shipping companies around the world.

A globalised market makes the scope of action much more uncontrollable and complex, so that subjects undergo competition on multiple fronts from individuals located all over the world.

As if all this were not enough, there is another factor to accentuate competitiveness due to the nature of the shipping market: atomism.

To explain how shipping is an atomistic reality, two considerations need to be made about the subjects that operate there. First of all, the organizations competing in this area have a very simple and lean structure. Consider that the activities of commercial functions are almost non-existent, it is the same user who comes into contact with the ship-owner through shipbrokers[12]. Moreover, the objective that operators pursue is not

[10] N. Lattanzi, *Family companies and competitive scenarios: strategic paths, government and economic value measurement,* Aracne Editrice, Roma, 2014

[11] U. Bertini, *Company policy document,* Giappichelli, Torino, 1990

[12] As we read in A. Gozzi, *Bulk Shipping*, second edition, Giappichelli Publisher, Turin, 2002, shipbrokers are fundamental subjects for all maritime operators, as they allow them to create a vast network of contacts, to receive timely information in order to be able to sift through the opportunities and threats of the market. The figure of this particular broker, leads to the conclusion of the rental contracts acting as a point of contact and mediation of the parties, also spent through original solutions, thanks to the deep knowledge he has about the rentals, the technical characteristics of the ships and the sector in general

to seek greater service efficiency, to add more value to the service or to achieve a better pricing policy, but to minimise unit costs, which they achieve through the full saturation of the ship's cargo capacity.

What has just been said is explained by the behaviour that the ship-owner is obliged to keep in that market. He is not in a position to influence the price, that is, the freight, the main factor of competitiveness. In other words, the ship-owner acts as a price-taker, that is, he undergoes the sudden changes of freight, often even daily, resulting from changes in the relationship between supply and demand for transport[13]. Hence the superfluous role of marketing and sales and the inability to practice higher prices - premium prices - or much lower than the competition, but the ability to leverage costs as the main competitive tool (pursuing cost leadership strategies understood as cost savings). And since the operating costs are mostly the same for a given type of ship, the real source of competitive advantage is to be found among the fixed costs, namely the cost of purchasing the ship. The impotence of the operator in the face of the price level, is right in the poor distinguishability of its service compared to that of competitors. Ships of a certain type have similar variable costs, because they are mostly interchangeable with each other, so it is indifferent for the consumer to receive the service from one user rather than another.

At this point one has to wonder, if the company made investments to improve the service, for example by bringing the ship to travel at greater speeds, achieving greater coordination between boarding and disembarking or improving the service in general, would it really have proportional returns? That is, would the customer appreciate these efforts as greater value? Will users be willing to bear the imposition of higher fees resulting from the support of higher costs? The company is looking for a cost and benefit assessment to find solutions to these types of interventions.

The answer is mostly negative. The fact that the consumer does not exceed a certain price threshold is the low intrinsic value of the goods transported. So, it is completely unnecessary to try to increase the quality of the service or the ship, which are both poorly differentiable and indifferent in the eyes of consumers[14].

If to the impossibility to influence the price level, we add the presence of a huge number of relatively small players and their low concentration, the fact that the market does not have significant barriers to entry, the lack of influence of institutional factors and absolute transparency in the formation of the rentals, the shipping market is shaping up as an atomistic market, more or less attributable to perfect competition[15].

---

[13] A. Gozzi, *Bulk Shipping*

[14] L. Fadda, *Cambiamento e valore nell'economia delle imprese di shipping*

[15] The perfect competition is defined by the following assumptions:

- in the market there is a very large number of subjects and the quantities of the asset purchased or sold by each of these constitute a negligible fraction of those exchanged altogether: from this descends that each subject is convinced, at the price found on the market, that he can buy or sell any amount of the asset he desires;
- there is full freedom of entry and exit from the market for all parties wishing to buy or sell the property

(...) From the first hypothesis comes a result of great importance that characterizes the behavior of the subjects in a market of perfect competition: each buyer or seller considers the price that is on the market as a data (i.e., with expression taken from the English language, behaves as a price-taker). This does not mean that he cannot, in principle, propose to his contractors a price other than what he finds on the market; simply has no convenience to do so. By F. Scapparone, Political Economy Course, Amon, Italy, 201

All this will have particular consequences as a result of the fluctuations in the rents: operators are never able to influence the price level; in fact, they are forced to always suffer the trend.

1.9 Cycling: the invisible hand that moves shipping.

The shipping market is directly related to the level of economic growth, in particular that of the major players in the global landscape, first of all the United States, all the more so that the main transactions are made in dollars. The growth of international trade is strongly linked to the growth of maritime transport, as shipping and other types of transport are physical support for international transactions.

More thoroughly, it can be said with certainty that world GDP affects the maritime sector because it determines the trend of demand and transport supply, which in turn affects the selling price, i.e. the level of freight. The world's well-being leads to a propensity for consumption that encourages individuals to need certain goods, especially primary goods, which guarantee acceptable living standards, including the commodities transported through shipping. On the supply side, increased wealth allows for the opening of new businesses or the expansion of existing ones, which help to widen the fleet to meet the increase in demand.

In light of this, many scholars have believed and believe that extremely high growths in the world economy correspond to high profits in shipping and vice versa, to the slowdown in growth, a drop in profits. However, empirical evidence shows that this is not always valid: it would be reductive to bring the stability of the sector back essentially to the general economic performance. As is often the case, any segment or niche market may have an opposite trend to the general one, since it is linked to specific dynamics related to it.

If it is true that world GDP influences transport demand and supply, it is not equally true that growth in the world economy will result in an inevitable success for shipping companies. On the contrary, excessive expansion is often counterproductive, because it can lead in the medium term to a phenomenon similar to the bursting of financial bubbles. For this reason, rather than focusing on the world economy to explain the fluctuations that shipping usually experiences, it is necessary to analyse the relationship between demand and tonnage supply.

Transport demand is derived from the price of goods transported (e.g. the price of crude oil). It has a strong rigidity character, because it cannot be influenced by the individual enterprise, but when there is a need for a certain good in a certain place, transport will take place at any price.

In a completely different way is determined the supply, it depends on the world available tonnage for the transport, and also[16]:

- number of active vessels

[16] The difference in the units of measurement with which supply and demand are appreciated complicates the forecast of demand, expressed through commodity data, making it difficult to compare with supply as expressed in tonnes

- demolition rate
- the number of vessels in order book [17]

There is also a rigidity with regard to supply, in terms of adaptation to market and price demands, which can take place in a long time. In fact, the time to adjust the transport capacity to demand is not short and, as mentioned above, often when the ship is received, the needs of the market will have changed. Moreover, the fact that the acquisition price is very high, and the average life of a ship varies between 15 and 25 years, certainly gives it a strong rigidity character. A company with a medium sized fleet cannot reduce its hold capacity in the short term.

The lack of flexibility, on the supply and demand side, has consequences for the stability of shipping companies, which can suffer different types of fluctuations.

What is axiomatic is that cyclicality stems from the continuous mismatch between supply and demand for transport and the variable behaviour of the market, always tending to achieve an ideal position of equilibrium.

The mismatches can occur along several time laps. The economist French Cournot, stated, away in 1838, that "it is important to recognize the independence of secular and periodic variations"[18]. This means that there may be short-term cycles and long-term cycles, driven by completely unrelated dynamics.

The "long-term movements" involve major changes, which intervene according to Stopford every 60 years, and relate to the evolution of the business: the life cycle of the sector can continue to grow or renew, and then there is the possibility for companies to achieve even more profits, even greater; It may also happen that the sector is dying out and therefore there is no longer any reason to oversee it.

Shumpeter said long-term cycles are driven by technological innovations, making them extremely powerful and difficult to predict. Fortunately for shipping, changes of this kind can be managed, at least more than others. The reason is that secular cycles exceed the economic life of ships and especially their depreciation plan, not making it necessary to bear the switching cost, which allows the owner to have time to renew his fleet and make it in line with the new technological standards.

Shorter and more frequent are the "seasonal cycles", fluctuations of freight that occur throughout the year, especially in certain seasons, in response to the needs of transport demand. The bulk market, for example, is linked to the time distribution of the crop: walnuts fall during July and August, when relatively less wheat is shipped, and peak in September and October. For oil routes, seasonality is manifested because during winter the demand is at a sharp peak compared to summer, as oil products are most needed with the arrival of the cold[19].

[17] L. Fadda, *Cambiamento e valore nell'economica delle imprese di shipping*

[18] A. Cournot, *Researches into the mathematic principles of the theory of wealth,* Macmillan & Co. London, 1897

[19] Magnolis G. Kavussanos, Ilias D. Visvikis, *The international handbook of shipping finance*

If seasonal cycles are very short-term cycles (monthly) the best known in the world of shipping, the real "business cycles", are short/medium-term cycles, with a duration of 3 to 12 years. These are the main challenge for shipowners. Unlike seasonal cycles, they are largely determined by the supply of tonnage, in particular by oversupply, which is called overtonnage or overcapacity, with the exception of external shocks on the demand side (such as the recent crisis of 2008). They are economic cycles, which go from quiescence phases, to phases of improvement, then to phases of prosperity and euphoria, up to overtrading, convulsion and compression, stagnation and depression of the market.

1.9.1 The phases of short-to-medium-term shipping cycles

According to Stopford, the shipping cycle consists of at least four main phases:

1. market trough
2. recovery
3. market peak
4. collapse

There is no certainty about the duration of each phase. Each cycle is a reality unto itself.

Phase 1 is a "low market". The low market has three characteristics. First, there are clear signs of excess transport capacity, with ships queuing at loading points and slowing down at sea to save fuel. Secondly, transport freight drops to the level of operating costs of less efficient ships. Moreover, when low levels and credit crunches lead to negative cash flows, financial pressures grow leading to de-establishment, while difficult decisions are postponed until the situation is untenable. The general sentiment is of strong pessimism.

In extreme cycles, banks no longer lend and shipping companies are forced to sell modern ships at bargain prices, well below their book value, in order to make cash. The price of the old ships instead falls at the price of scrap[20], leading to an active demolition market and slowly sowing the seeds of recovery. When the wave of difficult decisions passes and the market begins to correct itself, a state of quiescence is inserted.

We get to Phase 2: "recovery". As supply and demand move towards balance, tonnage is reduced and the cores begin to outweigh operating costs. Market sentiment remains uncertain, but confidence gradually increases. There are doubts about the real recovery of the market. Sometimes pessimists are right, but if they are wrong, as liquidity improves, second-hand ship prices rise and companies following the market become prosperous.

When you're not so lucky, the market may start to recover, but it fails and slowly shrinks to recession levels. That's what they say is a false shooting. Missed recoveries of this type are quite widespread and are often the result of counter-click orders. Investors expect the recovery and order large volumes of cheap ships, leading to supply dampening the recovery.

[20] Recoverable value from the demolition and sale of the ship's parts

The Phase 3 "market peak" could have been achieved if investors had been less aggressive, as this would have allowed the surplus to be absorbed. When peak times are reached, only those ships that cannot sail remain unused: the fleet operates at full speed. The freights increase, often amounting to two or three times the operating costs, or on rare occasions up to ten times.

The peak can last a few weeks or years, depending on the balance of pressures between supply and demand, and the more this continues, the more excitement increases. High earnings generate excitement, increasing liquidity; banks are more likely to lend money, given the values of much more promising assets; the international press speaks of the prosperity of transport activity calling it a "new era"; shipping companies are listed on the stock market. This will be followed by very high profit prospects and the sector will gradually attract more and more investors who will take action to expand their hold offer through new orders or purchases on the second-hand market. In the end, however, all this leads to an over-trade, as second-hand prices move above their replacement costs, modern ships are sold at a higher price than new-build ships and older ships are purchased without inspection.

We get to Phase 4, "collapse" sooner or later. As supply demand is largely outweighed by hold supply, the market moves into the phase of collapse and convulsion and the lump falls precipitously.

This is often reinforced by the downturn in the economic cycle, but other factors contribute: the offsetting of port congestion, the delivery of ships ordered at the top of the market and, generally, these factors are reinforced by an economic shock. Spot ships pile up at key ports; ships drop, ships reduce operating speed and less attractive ships have to wait for cargo; liquidity remains high and there are few ship sales, as owners are unwilling to sell them at a discount to recent peak prices. The general sentiment of the market is initially confused, trading every small recovery in an increase in the freights, and reluctance to accept that the peak is over. In the end they give up and start a race to divest, which clearly will not happen at the same advantageous prices related to the growing cycle[21].

After a more or less persistent Phase 4, there will be a countertrend due to various contingent causes that will increase demand, increase the number of freights sharply and at that point will only benefit the companies that, during the previous slowdown, managed to stay on their feet by spinning their ships at very low margins, if not at a loss.

1.9.2 Cycling: the tension when balancing through shipowners

Kirkaldy was the first scholar to focus on the issue, about shipping cycles. He noted that with the development of maritime transport, the competition began to become more intense and that the tonnage capacity available in ports was much higher than the quantities to be transported. He realized that there was no limit to the

[21] M.Stopford, *Maritme economics*

competition, all of which led to the fall of the billions and periods of loss for the companies. Years of incredible prosperity, very hard years inevitably followed.

His studies suggest that business is governed by a kind of Darwinian law of selection, as robust businesses can withstand lean periods thanks to the successes of the past and stand, while weak ones, unable to cope with the collapses of the cycle, succumb[22].

Cyclicality can be seen as a mechanism that tends to remove imbalances between supply and demand. It has been said that in the shipping market, with some form of almost perfect competition, there is a tension towards achieving the equilibrium price, which clearly will not be achieved in a short time given the difficult modelling of supply on demand.

When supply is low, walnuts pay off investors as long as orders increase and tonnage grows. When the supply is too high the walnuts remain at very low levels, until the players decide to reduce the fleet: the more this is delayed and the longer the cycle will last.

The reason why overtonnage is reached can be found in a non-regulation of the sector, in particular by the lack of barriers to entry; fluctuations in demand contribute to a continuing disproportion between transport supply and demand.

The sector for these reasons is characterized as high speculation, where operators are moved when by euphoria and when to fear, but in any case by irrationality. The fact that these influence that it happens in a completely irrational way is one of the reasons why cycles are so difficult to predict. It is the subjects who move the cycle. When profits are high, the installed base expands its fleet and together with the new entrants, they increase the world tonnage. Only the change in the prices of ships are signals that move investment decisions. The walnuts are high and induce orders. Overorders flatten the freights. Low levels stop orders and encourage demolition. The total supply decreases and lays the foundations for a rise in the number of freights. And the cycle starts again.

1.9.3 The role of emerging markets, financial markets and oil in shipping cycles

It is clear that the collapse occurs due to an overtonnage, but that it can also contribute to the fall in demand due to external shocks. To date, exogenous causes that contribute to a collapse of the freights, can be sought in the action exerted by the emerging markets, financial markets and the price of oil - for the tanker segment.

[22] With the great development of ocean transport, which commenced about half a century ago, competition became very much accentuated. As the markets became increasingly normal, and trade progressively regular, there was from time to time more tonnage available at a given port than there was cargo ready for shipment. With unlimited competition this led to the cutting of rates, and at times shipping had to be run at a loss. The result was that shipping became an industry enjoying very fluctuating prosperity. Several lean years would be followed by a series of prosperous years. The wealthy ship-owner could afford to put the good years against the bad, and strike an average; a less fortunate colleague after perhaps enjoying a prosperous time, would be unable to face the lean years, and have to give up the struggle." Kirkaldy (1914)

The advent of emerging markets in shipping and shipbuilding has played an important role in the development of shipping. Countries such as China, Korea, India, Brazil, have built a national shipping industry and a large network of customers.

China and South Korea, in the late 1990s, were considered minority players in shipbuilding. Since 2002 they have begun their take-off and can be seen in the correlation between steel imports and the wealth of the country[23].

Financial markets also have a direct effect on shipping markets. Exchange rates can directly impact the rents and can also have an indirect effect through the impact on commodities, such as oil prices.

Moreover, exchange rates affect the prices charged by shipbuilders, stimulating or damaging construction initiatives, which in turn has consequences for ship transport.

Interest rates have more or less the same effects. Understanding how exchange rates fluctuate and interest rates has become an integral part of understanding how shipping markets work. For example, since most transactions in that market are completed in dollars, what is normally the appreciation of dollars against other currencies, leads to a lowering of the freights. In addition, when interest rises, shipowners incur higher overall costs[24].

Oil prices, on the other hand, can rise, when relative demand rises or when supply is reduced, and this increases demand and price for its transport[25]. This cannot be limited to this: in fact, many factors come into play when transport is about crude oil, because a lot of factors affect the supply of oil. First of all, OPEC policies, but still geopolitical factors, wars. A striking example is what happened in the 1970s, when oil prices rose and as a result their consumption contracted. Demand for crude oil decreased and an excessive tonnage capacity resulted in the disposal of the owners or rather the sale of their fleets. When oil prices fell to much lower levels a few years later, the oil prices slid upwards and again the companies competed for a fleet again. But as we know, there is a fairly large time between the order and the delivery of a ship. As is often the case, the price of crude oil rose again a few years later, causing a drop in the number of oils and making new orders useless. Overtonnage again.

1.9.4 The world of shipping: a zero-sum game

Every time supply and demand are unbalanced, someone loses. The owners and owners of the cargo are alternating to bear the dramas arising from the cyclicality of the market. They are in diametrically opposite positions of the scale: when demand or supply is unbalanced, one or the other will lose.

---

[23] Alan E. Branch, *Elements of shipping*

[24] Alan E. Branch, *Elements of shipping*

[25] X. Sun, L. Tang, Y. Yang, D. Wu, J.Li, *Identifying the dynamic relationship between tanker freight rates and oil prices: In the perspective of multiscale relevance,* Elsevier, Amsterdam, 2014

If supply and demand matched perfectly, the rentals would always be equal to the line corresponding to the break-even level. In truth, we know that this rarely happens, and that the freights therefore fluctuate around the level of balance, but do not coincide with it.

Owners and owners of the cargo lose when they do not calibrate tonnage supply and load demand respectively along the supply and demand balance signals.

If the owner of the cargo misses their assessments, by equipping themselves with excessive quantities, the walnuts grow above the break-even point, transferring value to the owners, who in response will order more ships.

The trend reverses, and the profits are made by the owners of the cargo, when the owners have a fleet too large: the walnuts fall.

The cycle in this way puts financial pressure on those involved, who will change their behaviour to correct the situation and lead the freights back to the equilibrium trend. As a result, the risk of shipping is all related to timing. But we'll see it better later.

1.9.5 The alarm bell: the rate of fleet utilization

What is clear from the previous paragraphs is that cyclicality, i.e. the irregular trend in the level of walnuts, depends substantially on the supply of tonnage.

In this sense, it is worth mentioning the rate of use of the fleet (ITFU: Intensity of total fleet utilization), to which the Greek Gratsos[26], blames the so rapid change in the freights in such a short time. The rate is defined by the ratio of the demand for transport expressed in tons per sea miles (tm, tonne-miles), to the maximum capacity of the active fleet in dwt. There is an equivalence to be respected: the demand for transport met must coincide with the supply of capacity actually used, removed the inactive fleet, i.e. damaged ships, under repair or stopped.

His studies show that the rental's reaction to the increase in this rate is not proportional but exponential: if, for example, the utilization rate reached 92%, the number would grow by 5 times, bringing the market to a big peak.

The freight splashes upwards the closer you get to the maximum capacity, because the need for the goods is such that it can be transported at any price. Supply tends to be growing and demand tends to be rigid.

Depending on the rate, therefore, we will have a higher or lower level. The rental information gives feedback to how many new ships to build, whether to delay orders, how many ships to leave stationary or anchoring, how many scrapping, and so on.

[26] George A. Gratos, *Freight markets signals in a changing environment: an internal view of dynamic forces that shape the dry bulk business,* I. Sideris Publications, Atene, 2011

The divestment curve of the ships will follow the index and when the freights are in traction the more there will be a slowdown in disposal, the more depressed the rental will be and the more the ships will attempt to be sold.

1.9.6 Putting the pieces together: a contribution on cyclicality

Here are the factors that most affect the world of shipping, which are the ones that most determine cyclicality.

On the question side we find:

- macroeconomic fluctuations;
- external shocks;
- seasonal.

Macroeconomic fluctuations refer to general economic trends.

These are business cycles, which affect transport demand, and cause short-shipping cycles. The previous paragraphs show that shipping is more or less related to global economic trends, first of all because of the effect it has on trade. It can definitely have a direct effect on the level of commodity demand. When wealth and general well-being, which we can understand in terms of GDP, grow, they cause each individual to show a greater propensity to consume, which increases the demand for goods.

This is where the transport demand shows all its nature of derived demand. In fact, the greatest demand for goods will require a material shift of them, from places where there is availability to those where they are lacking.

When we talk about shocks, which by definition are sudden, we can divide economic shocks from political ones. The former, such as the crisis of '29, the bursting of the bubble of the new economy, the subprime crisis, have a disruptive and direct effect on demand. In fact, these undermine global economic performance, with an effect on industrial production and trade. Political shocks, on the other hand, act indirectly on the level of demand: wars, tensions between states, have given rise over the years to decisions with even more localized but still important consequences for shipping.

Seasonality is less intense, as its effects are more limited and predictable. The study that has already been reported shows that, unlike what many people may think, distance and freight, do not affect decisions on the demand side so significantly: it is rigid, that is, when there is a need for a certain asset, transport will take place at any price. These will influence the way in which transport will be implemented, i.e. the use of the spot market rather than time charter, or risk-sharing.

Decisions on the tonnage supply are even more complicated. It can be said that the level of global tonnage affects fleet productivity and determines investor decisions about new orders, scrapping, various buy-to-let operations on the second-hand market.

Rarer, but to be taken into account, are secular trends, that is, the long-term changes that can result from the discovery of a new technology that changes all the rules.

The general economic trend is once again desperate for its effects in this case, but it does so in an indirect way. A prosperous economic period allows shipping companies to make investments in the first place. In addition, through the demand for maritime transport, it will solicit supply, as many players, enticed by the gains, will invest in the sector, helping to expand the capacity of the fleet in terms of tonnage. A positive cycle of the economy will make the banking system more inclined to lend that will help companies establish new purchase agreements. With less or greater intensity, these forces will provoke shipping cycles, putting pressure on cargo and ship owners, who by adjusting their behaviours end up affecting the performance of the maritime transport market themselves.

This is because supply and demand will affect the rate of use of the fleet, which in turn will determine the level of the rentals, a key driver for the decisions of the subjects. When demand for transport increases or the capacity of the active fleet decreases, it will have a positive effect on the freight; on the contrary, if there is no demand for goods or overtonnage occurs, the freight will fall.

The level of rentals in the case of the offer, has a fundamental role as it will act as feedback to the total tonnage. When the market is low, sooner or later shipowners will try to reduce their fleet and rebalance the market.

1.10 Freight contracts

A shipping company can arbitrarily decide how to use its fleet depending on whether it wants to fix the ship for long periods, or let it make shorter journeys fixed in continuity. We can call time charters the ones based on time and spot freights the ones base on travel: the difference lies in the duration of the contract and the obligations that result.

With regard to the duration, the contract takes a different form depending on whether it uses the ship for individual voyages and for the transport of a given cargo, which are carried out in a more or less short time frame, or that they fix the ship for predefined periods of time without limits on the cargo front to be transported.

Each type of rental contract has a different price to pay. Freight is a price, the price of transport. This price does not look at the ship in its full cargo capacity, but at a small portion of it. It consists of several elements, depending on how the contract stipulates that the costs are shared between the owner and the renter.

The vessel to carry out the transport, needs various expenses, related to its availability, operation and navigability:

- capex expense: the ship's availability costs, as well as capital costs such as interest and mortgage repayment instalments on the vessel;

- operating expenses: operating costs, i.e. repair and maintenance costs, crew costs, insurance and class maintenance costs;
- voyage expense: the travel costs, purely related to navigation, therefore related to the costs of fuel and lubricants, the costs "passing" and those in port[27].

The freight may include all these expenses or partially do so. In the primary way, however, it is determined with reference to travel expenses (voyage expense), then, depending on the contract, capital and operating costs can be increased to transfer them to the renter.

The "travel freight" for bulk and tanker, can be calculated using:

- the daily hire rate, which multiplied by the days of transport will form the freight;
- LUMPSUM freight, with which the ship-owner and renter agree to a lump sum for the transport of a certain cargo; it is used when both the quantity and quality of the load are not uniform, so the risk of bad exploitation of the spaces is transferred to the loader;
- the rental instalment per tonne, which will be multiplied by all the tonnes boarded[28].

The most frequent solution is the freight instalment per tonne. The shipping companies, in order to set the price of their service, most often refer to the instalments published by international associations of professionals, composed as a result of data collection, concerning the port costs, the costs of the bunker and the costs of passing from the canals of sea routes, therefore mainly related to voyage expenses.

Instalments are provided in Dollars, so there are exchange fluctuations from the USD currency. With regard to dry bulk cargo ships, the benchmark indicator is the Baltic Dry Index (BDI), provided daily by the Baltic Exchange in London. The index is built on the basis of the type of ship (Handysize, Supramax, Panamax, Capesize) and then synthesized into a single BDI.

Every working day, a group of international brokers broadcast their vision of current transport costs on various routes to the Baltic Exchange. Routes are intended to be representative, that is, quite large in terms of volumes transported to the global market. These valuations are then weighted together to create both the overall BDI and the Supramax (BSI), Panamax (BPI) and Capesize (BCI) dimension indices. Being provided daily, these indices are very volatile.

For tankers, the reference associations are the Baltic Tanker Index, with the same operation as the BDI, and the World Scale (WS), based in London and New York, which publishes annually a volume containing fixed instalments (in dollar/ton) for each individual route. The World scale is a nominal fare that makes comparable trips made by different ships along different routes, for the transport of oil or refined.

[27] Magnolis G. Kavussanos, Ilias D. Visvikis, *The international handbook of shipping finance,* Palgrave Macmillan, UK, 2016

[28] http://www.genoaportcenter.it/Repository/Allegati/Il_calcolo_del_nolo_2011_2012.pdf

2 The Birth of modern Shipping

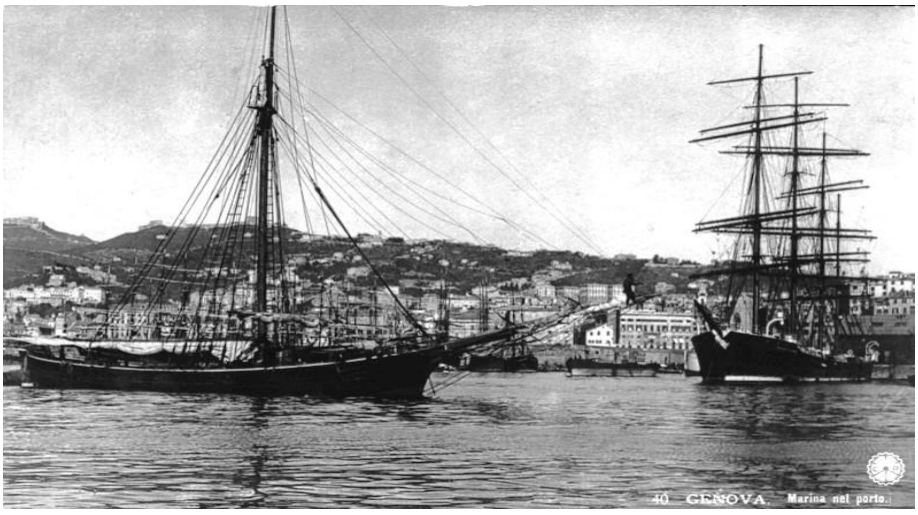
2.1 The 1800s as a synonym for innovation in the shipbuilding industry

In the first few decades, the unity of Italy, fundamental to understanding the twentieth century, are few traces of a unitary, continuous and economically efficient maritime policy, as we can now conceive of it.

We do not want to argue at all that some policy on maritime issues was not conducted at that time, on the contrary, there was no lack of political debate or legislative measures, but the complex of stresses coming from the development of industries, the evolution of markets and innovations in transport systems failed to quickly trigger the organic response of the political class and government institutions that other nations, with a much more established political-administrative tradition, had long since implemented.

First of all, it should be remembered that throughout the 19th year naval technology had been the protagonist of incremental and subsequent innovations (the so-called "cluster innovation"), in various ways stimulating by the revolution of the advent of steam propulsion. It was therefore in a phase of strong growth in size, accompanied by continuous increases in efficiency and significant changes in management, including with regard to the workforce. The same innovation of steam, applied to rail transport and associated with the rapid construction of a post-unit rail network, from the 1870s to 1880s began to threaten the predominant role that nature had always had on land[29]. Until that time, in fact, especially for coastal resorts, cabotage had proved to be the least expensive and safest system, compared to both railways and driveways. Moreover, it should not be forgotten that at that time for many international connections, navigation was normally the only mode of transport for both trade and the movement of people. The main maritime concern of the post-unitary state was therefore to ensure the penetration of Italian goods into foreign markets, and this by subsidising the shipping lines that served the major international routes.

Figure 4: Emanuele Accame vessel, 1896



Source: from web

[29] At the end of 1800 the Italian railway network had a predominantly coastal development, but it also had an internal longitudinal link, which ran through the peninsula and as many as four trans-Alpine lines

To these peculiarities of the end of the 19th, we must add the persistency of the historical interweaving of interests between the merchant and military navies:

- the first one was used in the event of war or colonial expansion to support military needs;
- the second one reciprocated the favour by protecting, where necessary, the Italian flag merchant ships and the continuity of trade.

All this, together with the maritime police skills, had given a strong military connotation to maritime activities in a broad sense, both to those concerning the peripheral and central administration, and to those that are attentive to navigation in the strict sense. The Ministry of the Navy itself, created with the unity of Italy as far back as 1861, saw the functions of defence prevail within it, while those of purely mercantile type were less developed.

The basic powers to carry out an organic maritime policy, such as those relating to shipyards, trade and shipping, port works, customs and maritime taxes, were dispersed in a large number of ministries. The administration of the new state was organizing as best it could to respond to the countless political, economic and social problems that troubled the peninsula, but also in the maritime sector, as well as in other sectors, struggled to equip itself with the organization necessary to respond effectively to the interests of the country.

The legislative initiative was therefore enacted by parliament itself, rather than the executive, so that the process of the measures was characterized by an interminable debate and the prevailing political compromise: often, as a result, the laws enacted lacked the timeliness and finalisation to the much-needed objective in maritime policy. So it was that the heated political debate about the prospects of sailing over steam lasted for decades, without ever being able to come together in a truly incisive decision, and this despite the fact that steam navigation called for huge changes, which not only the armament but also the nascent Italian industry struggled to cope with. With a few exceptions, the cultural tradition of sailing strongly resisted in the armament, while in the shipyards the semi-craft dimension associated with the wood supply chain continued to prevail. The armament realized that it was always less competitive than the foreign one operating in the Mediterranean, but the diagnoses of the parliamentary inquiries that were conducted on the subject failed to be sufficiently lucid and precise, so much so that the economic policy to protect the nascent basic industry, implemented in the last decades of the century, was simply extended to the shipyards and the national armament, resulting in unforeseen effects and waste of public resources without the desired objectives being achieved. It can be said that the main maritime measures of the last quarter of the 1800s not only failed to meet the real demands of incentivising Italian armament, but rather deceived it about the real prospects of sailing, holding back the process of renewal.

2.2 Beginning of 1900s the great war

At the beginning of the new century something began to change and certainly to this renewal contributed the progressive decline of the ancient territorial divisions of Italian armament, of which the first expression was the birth of the Italian Armed Federation on April 9, 1901.

An organized, precise and constant call on the needs of the Italian merchant navy, addressed to the political forces, was the necessary condition to initiate an administrative reform in order to harmonize maritime policy measures in a single perspective. After years of debate, in 1910, the Minister of the Navy, Admiral Bettolo, succeeded in passing a law that concentrated in a single ministry powers previously dispersed, thus allowing the progressive maturation of a policy of organic and autonomous government.

But the real leap in quality of Italian armament was accomplished with the government's policy on transoceanic emigration, a phenomenon that at the beginning of the century had acquired a mass dimension and which, in the drama of personal events concerning people almost always poor and illiterate, was accompanied by abuses that we today struggle to imagine. Concerned by these implications, from 1901 the government determined the development of a supervisory body under the Ministry of Foreign Affairs. In particular, minimum safety standards were established, the use of sailing ships for ocean crossings was prohibited, and pass fees were set at levels consistent with the costs of a qualitatively adequate service: it was an important legislation that, by favouring the selection of occasional carriers together with the affirmation of companies with the necessary resources and professional skills, allowed the development in Italy of a modern shipping industry. The young Federation of Owners also had great merits, which, despite the opening of the Italian market to foreign flags, was able to manage the competition on the routes to the Americas, obtaining important achievements, such as the 1907 agreement with the navy French[30] (Union of Mediterranean Marines, Mediterranean Conference**)** for the defence of foreign competition of common interests within the Columns of Hercules. From the period of intense competition, which lasted for the first fifteen years of the century, the Italian armament came out fortified and victorious, managing in the post-war period to acquire the dominance of the transatlantic routes originally from the Mediterranean.

However, it cannot be said that all the maritime problems of the late 1800s had been overcome. The new law in favour of shipbuilding**,** was the daughter of the coarse maritime laws of parliamentary initiative and continued to produce even in the first decade of the new century strongly oscillating annual effects, while the shipbuilding industry that had come to work constituting needed greater continuity and consistency of orders. It was not until 1911 (law n. 745 of 13 July) that a long-term discipline of shipbuilding was found, but its approach was completely overturned by the demands of the First World War. Moreover, in the first decade of the century, aid for armaments could not be found to be a worthy substitute for the inefficient shipping premiums awarded to Italian shipyards alone, and the long search for incentive instruments more in line with

[30] P. Preti, *Cent'anni per mare,* Confitarma 2001

the mechanisms of the maritime market only ended in 1913 (law 784/13), with the creation of an annual rental contribution which was a contribution of interest linked to the rational use of the vessel.

After a year of neutrality, Italy's entry into the war in 1915 came at a time when the reorganization of state intervention in maritime matters had not yet produced the desired expansion of the merchant fleet. This highlighted in all its drama both the dependence of the country on the availability of a sufficient fleet to adequately meet the needs of national war mobilization, and a more general dependence of the Italian territory of the sea routes, threatened, especially in the Eastern Mediterranean, by ships, mines and German and Austro-Hungarian submarines.

Figure 5: Austrian prisoners of war in Durazzo, 1915

Source: Historic office of "Marina Mercantile italiana"

Upon entry into the war, however, Italy had neither a war management plan for the existing merchant fleet nor a plan to upgrade, deficiencies that were paid dearly. The state bodies were forced to carry out a huge organizational effort in short time and too often conflicting manner, which led to late and poor results, among which should be mentioned at least the fact that the administration managed to equip itself with statistical and management skills that were previously rare. Initially, the Central Maritime Traffic Commission took care to seize the useful vessel and to charter ships abroad, which it entrusted to the management of the company State Navigation Exercise; then, as the war losses worsened and the shortage of ships on the international market worsened, he was forced to face the problem of how to promote new construction in completely difficult operational and economic circumstances.

In times of greatest difficulty, Italy sought to take advantage of the support of the Allies, who had set up a colossal organization, coordinated by London and dedicated to maritime supply according to the civilian and military needs that presented themselves in the Alliance countries. Unfortunately, the Allies' requests for help led to the acceptance of very unfavourable conditions, both economically and politically. Moreover, the

national measures to incentivize new constructions which were, albeit belatedly, did not produce the desired effects[31], and indeed ended up benefiting the speculative manoeuvres of some shipowners, but also the large industrial concentrations.

By the end of the war, the Italian merchant fleet had lost over a million tsl and, among the Allied fleets, it was the one that had suffered the greatest losses in proportion to the initial size: 45%, compared with 39% in Great Britain, 35% in France and 20% in the United States. In the post-war climate, of strong controversy and resentment between public and private, controlling speculation and prolonging the improvised experience of public management of the merchant fleet through the company Exercise of State Navigation[32].

Even the main political initiative in favour of armament, in this confused post-war period, that is, the agreement with the British Government for the purchase by the Italian private armament of 500,000 tsl of war-built merchant ships, proved to be a bad deal for the excessively burdensome conditions imposed by England in the contract.

The situation changed perspective only with the signing of the Peace Treaty, when, after exhausting tracts, Italy was able to expand the eastern borders of the Venice Giulia to the natural limit of the Alps and, in the maritime field, could enjoy the benefits of the annexation of the important Julian and Istrian-Dalmatian ports, ports of ancient maritime tradition, with excellent shipyards and even refineries. In addition, after further negotiations with the Allies, Italy obtained to acquire practically all the ship of the Venice Giulia: about one million tsl, a fleet that, after a confused period of public management, was ceded to free armament, allowing it to compensate for the war losses and to resume the interrupted trades.

2.3 Fascism and World War II

With the advent of fascism began, as is well known, a phase of highly autarchic politics in all sectors of the country's economy. This led to profound changes in maritime traffic routes in a few years and, had it not been for the contextual policy of population growth and colonial expansion in Africa, it would have had the effect of greatly contracting the overall volume of traffic at our ports. Fascism also gave impetus to all national productions, starting with the primary ones:

- developed an autonomous electricity industry based on water force;
- strengthened the oil refining sector to break the monopoly of foreign companies on the Italian market;
- last but not least, it built a vast road network to allow the rapid development of the transport of goods.

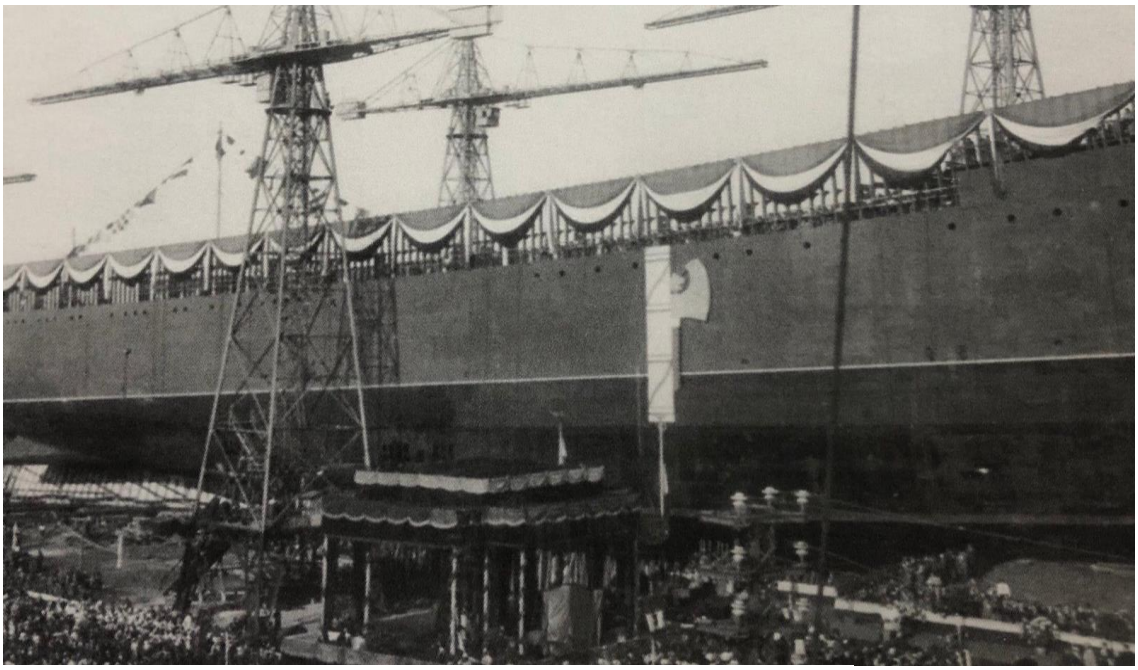
[31] The merchant tonnage built in 1928, the most successful war year, was only 60,000 tsl: less than the 1901 production

[32] A company that had managed the fleet of requisite ships during the war, it was able to extend its activity until 1922, having been tasked with ensuring at low prices vital supplies for reconstruction

This latest political initiative, in particular, was full of implications for the future of transport in Italy. The road mode, which has the advantage of "door-to-door" compared to other modes of transport, had rapid development in the 1920s and exceeded, in tonnes, sea transport as early as 1928 and those by rail two years later. In the following years, despite the effects of the economic crisis since 1929, the intensification of fascist autarchic policy led to the doubling in just five years of goods transported by road. The international maritime trade of our country, on the other hand, in the three years following the crisis of '29 suffered a reduction of about 30%. It was not until 1934-35 that international transport by sea resumed, but the consequences of Ethiopia's campaign to conquer Ethiopia and subsequent events led to a new phase of heavy stagnation for Italy's international trade.

Fascism made its influence felt in the field not only with its general economic policy, but also, more directly, with a maritime policy that suited more to the symbolic-nationalistic needs than to the real economic interests of the country. It did not matter that the sea traffic tended to stagnation: the importance was that the ships that carried our flag in ports all over the world stood out for beauty and modernity, recalling in the observer the maritime splendours of Rome and the maritime republics.

Figure 6: Launch of Sestri Ponent of the ocean liner Rex, 1932



Source: Aldebaran archive

A primary objective of fascist maritime policy was to put together the pieces of the irrational dismemberment of the Ministry of the Navy implemented between 1918 and 1922. The objective was pursued as part of a grandiose project of administrative centralization that resulted in the Ministry of Communications, a macro-ministry with expertise not only on transport, but also, in fact, on the media. The new organization was equipped with technically trained personnel and addressed a number of problems, including new types, such as international conventions on the safety of navigation and the protection of human life at sea, as well as

international agreements on the protection of maritime work and the discipline of port work that received during the twenty years a complete legislative arrangement.

The general direction of fascist policy was of strong state participation and interference in certain maritime sectors considered essential for the country, which resulted in the services of The Pre-eminent National Interest (PIN), as well as the public fleet for the transport of oil (AGIP) and bananas (RAMB). Starting in 1933, with the creation of the Institute for Industrial Reconstruction (IRI) and state-owned finances that controlled large sectors of Italian industry, central control extended to shipping companies and shipbuilding industries.

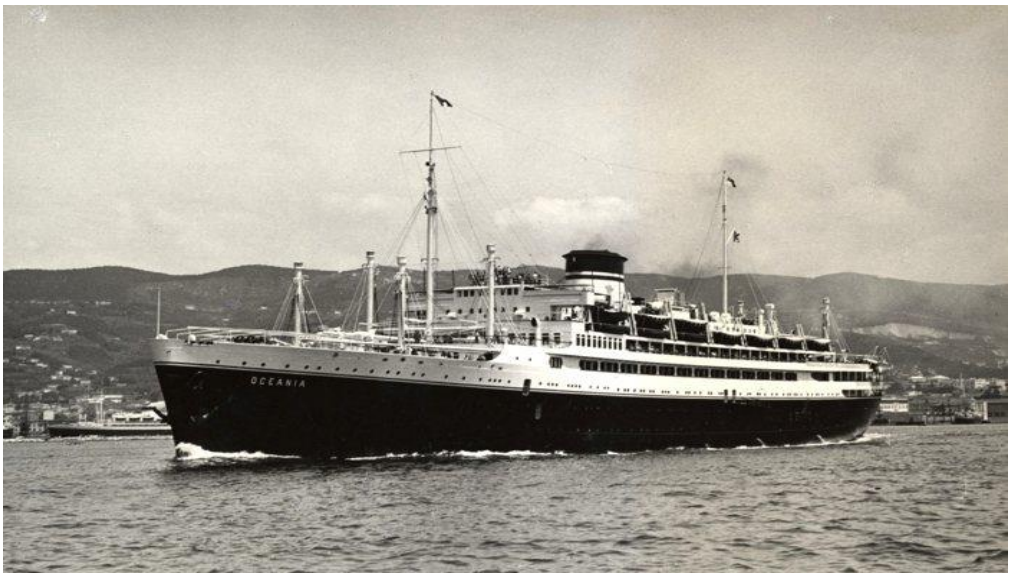
As for shipping companies, in December 1936 the company Finmare[33] was created, which grouped the pre-existing PIN services and reorganized them into four different companies:

- Italian society;
- The Lloyd Triestino, with privileged routes in the Far East, Africa, Asia and Australia;
- The Adriatic, which came from the spin-off from Lloyd Triestino of the eastern Mediterranean and Black Sea line services;
- Tirrenia, which was led by the Western Mediterranean, North Africa and Northern Europe.

With regard to the policy of protection of shipbuilding, the regime did not go so far as to prohibit Italian shipowners from buying ships abroad but concerned with massive support for orders on national shipyards, and this even in recessions of the market as a whole.

During this period, some of the most beautiful and prestigious ships in Italian maritime history were built, such as the Rex (52,000 tsl), the Conte di Savoia (48,000 tsl) and the Neptunia, Oceania and Victoria, the latter known as the most beautiful in the world for its elegant line and interior accommodations.

Figure 7: Oceania vessel 1933



Source: Aldebaran archive

[33] The Finmare fleet in 1939 had 205 ships for 1,345,000tsl, serving on 85 regular lines. With the war it suffered losses of 92% of the tonnage, reducing to 16 units

However, the luxury of a maritime policy so far removed from the needs of the market[34] could not be sustained for long and above all, it was paid dearly not only by the shipowners, but by all Italians, because after the contraction of trade and the collapse of the nobles following the crisis of 1929, the flag fleet found itself oversized and inefficient: disarmament therefore had a rapid increase and the Government was forced to unilaterally introduce clearing measures that would be oversized and inefficient, incentivized the reduction of the Italian offer, they actually benefited the market of others.

A separate insight into the maritime policy of the fascist government deserves the expedition for the conquest of Ethiopia, with which Mussolini tried to reintegrate into the imperialist game of the great powers: by size, it can be considered one of the greatest colonial expeditions by sea in history. Planned for a few years, it resulted in the transfer to Eritrea and Somalia[35] of more than two hundred thousand men in 1935 and about half the following year.

Not only military, but also economic operators, craftsmen and workers. The military expedition was accompanied by the immediate implementation of a major program of public works and the organization of the territories. Mussolini's initiative, however, met with strong opposition from the British: while the international community lingered in the discussion of sanctions to be applied through the League of Nations, they sought to operate a de facto blockade by intervening in the insurance market, where the Lloyds held the world monopoly. The Lloyds then increased the insurance premiums set for ships operating in Italian ports to a great extent, which practically led to the disappearance from the national ports of foreign flags. This measure could not prevent the trafficking of the Italian flag, since the government reacted with the establishment of an independent national insurance fund, but something had now broken in the international balance and it was increasingly easy to foreshadow like the beginning of a new, destructive world conflict.

Although hostilities broke out in 1939, Italy was in a situation with some similarities, however apparent, with the beginning of the First World War, it can certainly not be said that this time the war had not been widely and long prepared: in the 1930s, in fact, the experiences of mobilization of the First World War were the subject of in-depth analysis precisely theorizing a "war" between large planetary groups.

The maritime sector was also the subject of these preparations, which were implemented in a special legal discipline, which should have allowed the rapid mobilization of resources by the state at the outbreak of the conflict[36], and this by equipping the competent administrations with the necessary technical and economic resources to deal with direct management of the fleet, but also by implementing a preventive policy of

[34] The Bellotti decree of 1921 and the two Ciano laws of 1923 and 1926 for the protection of Italian shipyards allowed the construction of 128 merchant ships. The government created the Maritime Credit Institute in 1928 to provide long-term loans with a government interest contribution of 2.5%

[35] To give an idea of the logistical effort, there was no real port in Mogadishu, for the transfer of men and vehicles they used boats built in Chiavari and transported on site by trailer

[36] The law 19 September 1935 n.1386 regulated the system of requisitions according to the different types of use of the vessel by the public authorities. The Benne Act of 1938 also allowed a decent supply with new shipbuilding in the period of war 1942-43

accumulation of goods and goods. , both through imports and domestic production, to be used in view of a short-conceived war effort.

Compared to the past, however, two factors were acting which, in some way, reduced the strategic importance of the fleet during the conflict: the aircraft had acquired a danger that threatened any ship, port or shipyard, while the deployments on the ground, given the control by the British of Gibraltar and Suez, were such as to block global traffic with the Mediterranean and to preclude Italy many of its routes. The traffic routes that remained less exposed to enemy incursions were those to Yugoslavia, Albania and Greece, as well as cabotage routes.

If the preparation was accurate, it cannot be said both for the timing of entry to the war, which was completely wrong for not having been able to predict its effects on the Italian fleet, and for practical implementation, since the fascist organizational machine, so centralized, quickly denounced its limits. The precipitation of events at the beginning of June 1940, with the too rapid collapse of France and the lightning Nazi occupation of Poland, Norway, the Netherlands and Belgium, led Mussolini to anticipate the time of entry into the war (June 10, 1940). This happened just five days after the order sent to ships around the world to return home, or to other safe harbour, resulting in the immediate loss of 36 ships at that time anchored in enemy gates, while another 176 stopped at neutral or colonial ports, where they remained stranded for fear of air or submarine incursions and in any case, became unavailable for the needs of the nation.

The loss of as many as 1.2 million tsl of commercial vessels, in addition to the insufficient organization and the various strategic errors, were the determining factors in hindering the transfer of troops and resources to North Africa, a decisive front precisely for the control of trade and supplies that would have allowed to support with adequate resources the mobilization of war. It is no coincidence that, in the opinion of many, once defeated the Italian forces in Africa the Allies gained control of the Mediterranean and were thus able to invade Sicily and Southern Italy.

Starting to face a war of a few months, Italy managed to withstand three years, but finally had to give in, and not only for the technical and organizational superiority of the enemy[37], but also for the deficiencies in the supply of fuels, fuels, raw materials and food, essential goods for both the population and the war machine.

Following the armistice declaration of 8 September 1943, it is estimated that ships of about 300,000 tsl managed to repair in the ports occupied by the Anglo-Americans, while almost 900,000 tsl passed into the hands of the Germans who, often, sank the newly requisitioned units at the mouth of the ports (especially Campania and Puglia) to prevent landings of the enemy.

With Italy split in two, the problematic situation of ships that ended up under Allied control, in southern Italy or abroad, whose owners and owners were in the Area occupied by the Germans, was created. It was then decided to set up a special body with a mixed public-private participation, the Comitato Gestione Navi

[37] An important role, for example, was the radar technology used by The Anglo-American forces, espionage and radio communications decryption systems

(Co.Ge.Na.), which was entrusted with the task of managing (requiring, renting, administering) the ships available on behalf and in the interest of shipowners who did not have representation in the territory controlled by the Badoglio Government. It was, in fact, the first maritime policy initiative involving the active participation of representatives of free armament, after decades of centralizing public administration, as if to foreshadow the strong spirit of renewal that would characterize the post-war period.

The war budget for the Italian fleet was catastrophic: while at the beginning of 1940 it amounted to 3.448 million tsl, at the cessation of hostilities it was reduced to only 219 ships (339,000 tsl, therefore less than 10% compared to 1940). Overall, even taking into account the ships built during the war (about 400,000 tsl), which were almost all affected (sometimes even during the maiden voyage), about 2,500 ships were lost, for more than three and a half million tsl[38].

2.4 The post-war and economic recovery of the 1950s

With the end of the war, the maritime sector also returned to full freedom of expression and economic initiative, so one of the first concerns was the reorganization of the territorial and confederal associative structures in a unitary key, the Government focused on the transport structure by establishing the Ministry of the Merchant Navy (DPCS 13 July 1946), a slender and specialized department with respect to the centralizing experience of the Ministry of Communications. The post-war reorganization, therefore, allowed to affirm the old need, never realized, to give a unitary administration of an exclusively civil type to the complex of matters concerning the merchant navy, ports and shipyards. The reform was not, however, complete: the peripheral personnel of the Port Captains' Inspectorate maintained its predominantly military nature, a characteristic strengthened in the fascist period.

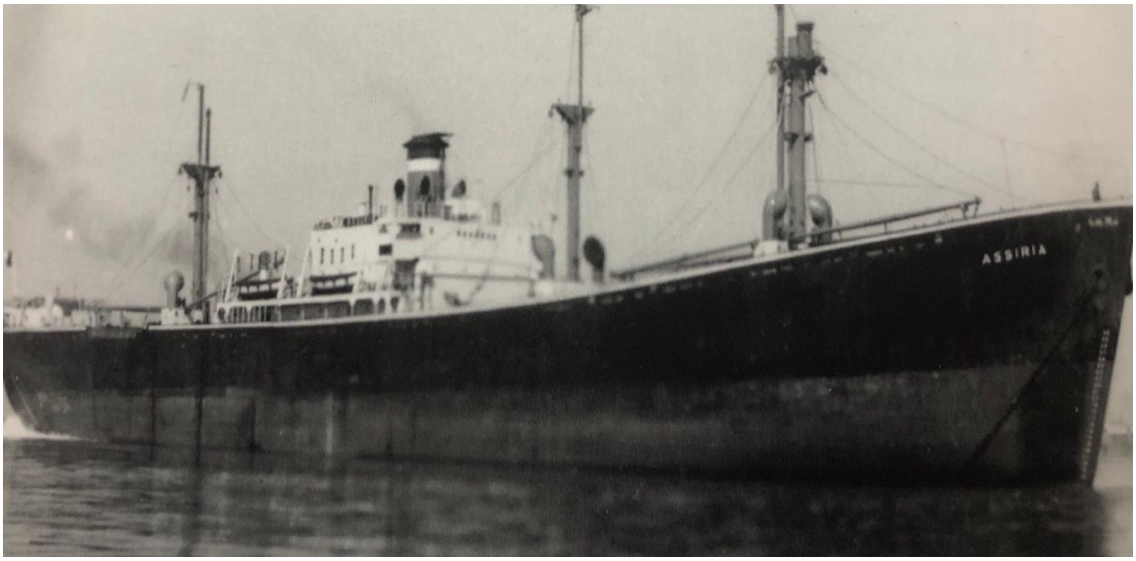
The new government faced enormous problems such as the replenishment of the fleet, the resumption of trade and unemployment in shipyards. But the real, big obstacle was the lack of economic resources at a time when the whole country was demanding reconstruction aid (aid that then came from the United States with Marshall Plan)[39]. The armament relied on a measure of strong incentive to build or purchase new ships, and was available, on this condition, not to prioritise the issue of war damages. The government, however, preferred to operate in other ways, separating the problems and eventually dragging the dispute over war compensation for decades.

The government's first move was to initiate a policy of recovery and re-efficiency of the damaged or sunken vessel in the ports, a policy implemented through a serious measure issued between 1945 and 1950

[38] The most terrible period was 1941-42, with the attacks of Italian aircraft and submarines on African routes; in the following years maritime traffic was reduced to the bone, as the vessel can be used almost exhausted or stuck in ports

(contributions to the loss of funds, which reached up to 40% of the recovery and repair costs), thanks to which were literally "floated" ships for about 286,000 tsl. The government also committed itself to making agreements with some foreign governments (United States, Argentina, Colombia) for the return of ships seized during the period of Italian neutrality. The 274,000 tsl obtained were then returned or sold at a discounted price to Italian shipowners. A second step was the refinancing, in 1947, of the Benni Act of 1938: this allowed to resume the interrupted construction of the war and thus acquire another 227,000 tsl in a three-year period. Two years later, a first measure was issued to help new construction, provided they were implemented in the Italian shipyards: it was the so-called "Saragat Law"[40], which made a contribution of interest and amortization for the contractors of new construction in Italy.

Figure 8: Assiria vessel, 1947



Source: Aldebaran archive

But what most marked the policy of replenishment of the fleet was the facilitation of the purchase of semi-new ships that, taking advantage of the favourable moment of the rental market, allowed a rapid reintegration of the Italian fleet into international trade. This was mainly the focus of the reserve ship of the U.S. fleet, built during the war. The Italian Government acted as a guarantor intermediary, providing shipowners with financial and currency facilities, thus establishing the way in which the acquired lots were allocated (mainly in proportion to the lost tonnage of the shipowners).

At the end of 1949, that is, at the end of this post-war phase so crucial to the future of the Italian flag, the national merchant fleet amounted to about 2.5 million tsl (late 1949): in addition to the ship that survived the war, about 1.4 million tsl had been purchased at the end, 227,000 tsl came from new national construction, 274,000 tsl from ransoms abroad, while the rest came from recoveries and renovations.

[40] Law 75, 8 March 1949, given the competitive differential of Italian shipyards over foreign ones (especially those in England), as well as the conditions for the disbursement of depreciation and interest contributions, it can be said that the beneficiaries of the law were not so much the shipowners as the national shipyards as the national shipyards

The policy of promoting purchases abroad continued for another two years, after which the government's attention turned decisively towards new construction. This turning point came not so much because of Confitarma's calls to intervene promptly on the problem of the loss of efficiency of the increasingly old Italian ship, but because of the pressures of the trade union, which for years called for a relaunch of investment and employment in the massive shipping industry bequeathed by the fascist regime.

The first measure of this new phase was the "Cappa Law" (named after the authoritative Minister of the Merchant Navy, no. 949 of 1952), aimed at encouraging the construction of new tankers in Italian shipyards through a contribution that was reduced over the years. The innovative element of the measure was the downward auction procedure, wherein the allocation of orders to shipyards that quoted the cheapest prices, avoiding partitioning mechanisms between construction sites. The government's commitment intensified with the so-called "Tambroni Law". Taking note of the liberal principles concerning the owner and shipyards that existed abroad, Italian legislation thus imposed a protection of the national shipbuilding industry with many innovative elements: the high duration of incentive disbursements (ten years), the extension of access to contributions to foreign contractors (to keep construction at a high level, which the Italian armament did not guarantee), the reduction of the construction premium over time (in order to promote the competitive strengthening of the shipyards), a contribution to the owner of 1.5% per annum on the total value of the investment, the exemption of the mobile wealth tax of income produced by the new ships. Favoured by a long period of trade prosperity, the "Tambroni Law" was a huge success, so much so that the annual production capacity of the shipyards, considered satisfactory at a level of 200,000 tsl in 1954, increased considerably, reaching in 1958 the 530,000 tsl.

Interestingly, a significant contribution to the increase of the flag fleet was also made during this period by the Sicilian regional legislation, with particular regard to protectionist rules that allowed the abolition of the names of the shares of companies based on the island. In the maritime field, the possibility of setting up companies with bearer shares formed a breach in the Italian tax system, attracting the registration of new ships for more than one million tsl. These measures, which in fact constituted a favoured tax regime, parallel to the national one, were then gradually abandoned; it was in fact a wasted opportunity, and in any case a sign that until then the government's maritime policy was more attentive to the needs of shipbuilding than to those of private shipowners.

During the 1950s, in fact, the problem of flag competition in an increasingly globalised maritime market began to become more pressing. This problem, in the absence of state policies to protect the competitiveness of the flag fleet, was at the root of the phenomenon of the "shadow flags", that is, the migration of ships and shipowners to country flags which, although lacking maritime traditions (Libya, Panama, and others), offered particularly favourable legal and fiscal treatment. The resulting process of "international specialization" of fleets and trade on certain flags, and the resulting policies to defend competitiveness put in place by governments, are now of general interest and, among other things, for the mobility characteristics of ships as

an investment asset, it can be said that the maritime transport market has been a precursor to the current processes of globalization of markets.

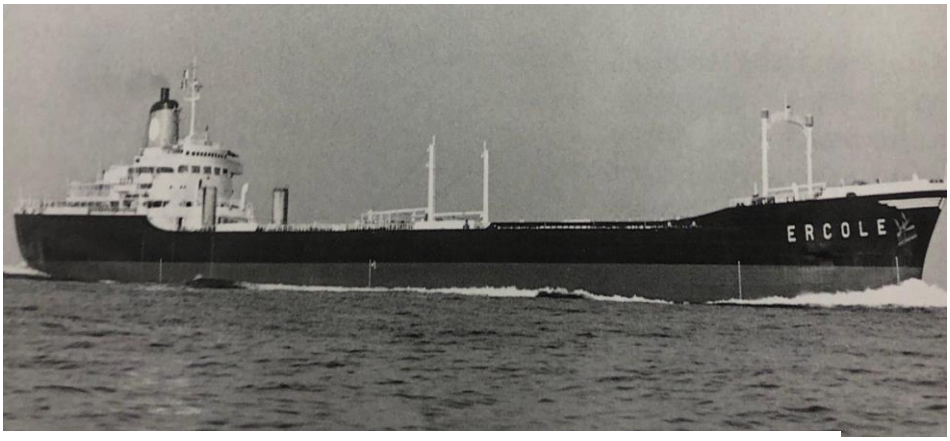
In the economic and political situation of Italy in the 1950s, the phenomenon of flags of convenience was seen with even greater concern, as it could have led to a spill abroad of large capital and valuable currency, so a large and compact political party soon formed that went against the phenomenon, leading to a highly punitive legislation. Other countries, however, such as the United States, Greece, Argentina and Norway, had a different attitude towards these flags, pandering to the phenomenon with bilateral regulations and agreements aimed at limiting the consequences and the most damaging excesses (tax, security, crew agreements, etc.).

In this context, exasperated by the first post-war freights crisis, one can understand the heated political debate that characterized the end of the 1950s on the role of the state in maritime policy, on the functions of the public fleet, on the appropriateness and manner of flag protectionism, it was also a debate that also divided private armament.

2.5 The turning point of the 1960s

The government issued two key measures, devised in a unified maritime policy framework, that separated the issue of the protection of national shipyards from the objective of improving the competitiveness of the flag fleet. In 1961, the Shipbuilding Act was enacted, amending and updating the aid regime of the "Tambroni Law" of 1954, while in early 1962 the Shipbuilding Credit Act was enacted, which insisted on a credit system that would benefit shipowner financial needs. This was done both by introducing substantial credit facilitation and by extending credit to ship renovations. However, due to fierce opposition from the trade union and the shipbuilding industry, the ban on national armament to order ships to foreign shipyards was not overcome due to fierce opposition from the trade union and the shipbuilding industry. The management of naval credit was entrusted to a dedicated and autonomous section of the IMI, which was also attended by other banks of public interest. Naval credit was a major success among free armament, which could finally have an autonomous tool to defend against foreign competition and facilitated the creation of a network of stable collaborations and commercial agreements between banks, shipowners and rental industries.

Figure 9: Ercole vessel, 1961



Source: Aldebaran archive

At this point, another important event, the Treaty of Rome (25 March 1957), which, by establishing the European Economic Community (EEC), marked the birth of a new and broader institutional sphere of regulation and direction, also concerning maritime transport. In fact, the rules of the Treaty for a common transport policy of the Member States were suspended, and it had to wait until the 1990s to find the conditions for overcoming monopolistic and national reserve barriers. At first, the European Community's main concern on maritime matters was the incompatibility of national aid to shipbuilding with the principles of the Treaty, so much so that, in 1965, it was forced to issue a harmonisation directive to avoid excessive disparities between Member States.

Italy immediately adapted to the Community aid system by enacting two shipbuilding laws[41] which separated the purely fiscal measures. The principle of the full deductible import of all materials directly used for the construction of ships was thus acquired, in such a way as to reduce production costs at source and avoid excessive direct contributions. In addition to the specific policy implemented by the CEE the fundamental result of the Common Market should be remembered: it has allowed a strong expansion of international trade, first among the Member States (reduction of domestic duties), then also with extra-CEE nations (through the increase in income), thus leading to a strong development of maritime trade: in the period 1955-1965 the volume of goods transported by sea to and from Italy almost tripled. In the comparison of modes, the development of maritime transport over the same period was slightly lower than that of the road, while it was found to be significantly higher (more than three times) than that of rail, partly because of a serious gap in transport policy which, in years so strategic for the development of the country, had not bothered to start an upgrade of the railway network.

The Community's economic development was accompanied for many years by the slowest, but steady, growth of economies and maritime transport on a global scale. Thus, seemingly different and increasingly pressing problems began to find United States bodies as a natural place for debate and confrontation. In particular, there were two main international negotiations that affected the period: the one on navigation security and the prevention of marine pollution, and the UNCTAD negotiations, which addressed the sensitive issue of the

[41] Law 21 July 1965, No. 939 and Law 29 November 1965, No. 1372

relationship between international trade, maritime transport and the development of non-industrialized countries.

On the issue of maritime safety and pollution, it could be addressed by a body specialising in the United Nations from 1959 on the issue of maritime safety and pollution, with the operational launch of the Inter-governmental Consultative Organization (IMCO), which became IMO in 1982. Initially, he devoted himself to safety issues in a strict sense, mainly focused on the protection of the crew and cargo. It was not until 1967, when the tanker "Torrey Canyon" sank off the coast of The United Kingdom, pouring about 120,000 tons of oil into the sea, under the pressure of an increasingly concerned public concern about environmental risks, that the IMO intensified its efforts on the issues of marine pollution, managing to define a series of extremely important agreements, then the basis of essential organizational and technological innovations that revolutionized operational management. , both on board and on the ground.

The other major problem, particularly felt by national armament, was that of flag reserves, which are increasingly being applied by some states, mainly developing countries.

As early as 1963, the Italian Government had intervened, more with deterrent than substantial purposes, by enacting a law defending against flag discrimination, which gave the possibility to the port authorities to subject certain trades to permits, checks and information requests. However, it was clear that the problem could not be adequately addressed at national or bilateral level. Efforts were therefore increasing, at Community and world level, to find solutions, but it was realized, unfortunately with a certain slowness, that the problem was much more ingrained than previously thought and extremely difficult to solve. The reasons for many developing countries to apply load preferences stemmed from the "Conferences" of shipowners on-line traffic, which they considered to be sources of abuse and exploitation. After many years of gruelling negotiations with international shippers' associations, the issue ended up on the table at the UN Trade and Development Conference (UNCTAD). Here clearly emerged the rift between developed countries, predominantly liberal, and the developing countries, where the state-based design of flag reserves dominated, in support of export needs. The contrast found an unexpected and bitter solution for developed countries, with the Geneva International Convention known as the UNCTAD Code of Conduct for Maritime Conferences, 1974, but came into force nine years later, in 1983. It regulated "line" maritime trade by abandoning the traditional principles of freedom of traffic agreements and acknowledging a kind of pre-eminent right of importer-exporting countries. As many countries with planned economies continued to apply mutual reserves for all trade, competition then focused on the most open areas of traffic, so more and more foreign flags, many of them of convenience, began to scale Italian ports, eroding our fleet outbound and inbound traffic.

It was thus that the issue of flag discrimination ended up adding to the problem of the loss of competitiveness of the Italian flag and the continuing deterioration, after the active balances of the early 1950s, of the currency balance of maritime transport. In fact, even by virtue of state aid to shipyards and armament, the flag fleet continued to increase in size. At the end of 1967 it exceeded 6 million tsl; three years later the 7 million, while in 1973 it exceeded 9 million. The situation, however, could not be considered rosy by Confitarma because,

despite the efforts of maritime policy, the flag fleet grew at a much slower rate than that of foreign flags and precisely in the period of greatest growth the Italian fleet fell from fifth to eighth place in the world rankings. In addition to the discriminations carried out abroad, the factors that led to the loss of competitiveness were mainly the flag legislation along with the constraints on the freedom of action of the armament in the field of currency and employment, resulting in higher costs than abroad, but also different factors, such as the growth of port charges and the increasingly monopolistic management of services. All matters of no small importance, which corresponded to the continuous exodus of ships from important foreign flags, such as the Dutch and German flags, which were in conditions not dissimilar to that of Italy.

Unfortunately, the concerns of armament, little heard by the Government, were overwhelmed by the reality of the markets when the Kippur War (late 1973) triggered effects that proved destabilizing to the world economy.

Initially, in fact, some basic elements were overlooked which, in the fall of the persistence of a high price of oil, would end up having a major impact on the economies. In short, it was not immediately clear that the boom of the 1950s and 1960s had finally ended and that the world economy had entered a new phase. In Italy, the pace of construction of new ships remained unchanged until 1978, under the pressure of the government's social protection policy, which, in the maritime field, had induced a strong link between national shipbuilding and the public fleet. It should not be forgotten, in fact, that there had been years of very high social conflict and that the pressures on the trade unions for a policy to protect employment and for a redistribution of income were very strong: on armament they expressed themselves with equal intensity, in the form of demands for realignments of remuneration, introduction of jobs with rigid definition of work tasks, tables of armament that struggled to take into account the processes of naval automation.

2.6 The second oil crisis of the 1970s and 1980s

In this climate, in 1979, the second oil crisis came to exacerbate many of the problems that troubled the sector. The consequences, this time, were very heavy, not least because they were poorly managed by short-lived governments and not attentive to the needs of private armament. Moreover, in the first half of the 1980s there was a completely atypical phenomenon in post-war maritime history: despite the recovery, albeit a moderate, of the global growth of economies, world maritime trade continued to contract until 1985. The intensifying competition on the charters accelerated the exodus from many prestigious foreign flags to flags of convenience and triggered the development of hybrid forms of registration such as "bare boat charter registration" and "international registers". In the long period of crisis, the Italian fleet, prevented in its movements by excessively strict regulations, suffered heavily these new forms of international competition: the disarmament, which began in 1980, peaked in 1983, and then remained at high levels until 1985; demolitions and divestments abroad also reached a substantial level, with the national fleet gradually shrinking to a low of 7.7 million tons in 1988.

An important positive phenomenon of this period, however, was the effort supported by our shipowners to diversify their activities by investing in new specialized ships and turning to new markets, even niche ones.

In the decade from the mid-1970s to the mid-1980s, government efforts for maritime transport focused on two aspects, which did not affect the structural problems of our fleet: the acquisition of maritime traffic quotas through bilateral agreements and the defence of the public fleet, implemented in an attempt to reconcile political-welfare objectives with objectives of economic efficiency. In addition, it is important to mention the gradual formation of an environmental policy in all the most developed nations. This constitutive process began in Italy in a fragmented and sectoral manner, and then culminated in the establishment of the Ministry of the Environment, i.e. the attribution to a specialized department of the function of protecting all the main environmental resources.

In this period, distracted by old and new cross-party social demands, the political class ended up lacking in the specific demands of private armament, also because of the short duration of most executives. However, it was increasingly clear that the post-war system of government, which had been moving towards a maritime policy with strong social connotations, could no longer afford to ignore the demands of armament: global competition was leading to a very strong liberalization drive, which risked not only to have irreversible economic consequences, but also to be severely dismantled for national welfare systems (Welfare State). While other nations, starting with the United States, had preferred to openly support the exodus of shipowners to flags of convenience, fearing that they would introduce into their own systems the principles of liberalisation and induce dangerous imitative sectoral effects, Italy was forced to face the difficult path of internal reforms, and this meant introducing concessions to allow shipowners to face international competition while continuing to operate in Italy.

Figure 10: Gran Bretagna Ro-Ro multipurpose vessel, 1999

Source: Confitarma archive

The first concrete opportunity for reform was not, however, the government initiative of the General Transport Plan, approved on 16 April 1986, but the autonomous initiative of the operators who, in 1987, jointly presented to the Government a plan of political and legislative action to be carried out over a three-year period. In addition to the continuation of support for shipbuilding, the reform of ports and the introduction of the institution of the temporary decommissioning of the flag following the lease of the bare-hulled ship to a foreign subject. The following year, a Parliamentary consultation on the problems of the merchant navy was carried out, which allowed the government forces to develop a precise direction of privatisation and liberalisation, both in the armament and the port sector. A first initiative was the abolition of the ban on the purchase of ships abroad, obtained despite opposition from shipbuilding and the trade union. The role responsible for the latter was essential to enable the introduction into the Italian system of the institute of the aforementioned "bare boat charter registration", which provided for the maintenance of trade union control over the training and treatment of crews of ships leased naked abroad and therefore temporarily registered in registers different from the Italian one. The first collective contact for seafarers boarding bare-hulled ships abroad provided for a bond of Italian nationality for at least 50% of the crew, effectively preventing full control by the landlord, although specifically recognized by the UNCTAD Convention. Even within the limits of the instrument, this institute represented a radical change, as it was the first step in the irreversible process of internationalization of commercial management that characterized the 1990s, allowing the Italian armament to improve its competitiveness and to undertake new investment and development strategies.

In the meantime, in fact, the other important strand of national maritime policy, concerning shipbuilding, had made important instruments available to help new construction, even if they were brought back within the links of European Community policy. The Sixth Community Directive on shipbuilding aid 1987-1990, issued in 1987, had proposed a stricter and more selective aid policy, setting a common ceiling as a percentage of the contractual value and including all forms of aid, including local aid to construction sites and those provided to armament to favour new national construction. As a more favourable market situation emerged, the Commission lowered the ceiling first to 13% and, more recently, to 9%. In fact, the shipbuilding program initiated by national armament in 1990, in a decade, has allowed to build about 560 new ships, for more than 6.2 million tons of gross stab, with a financial commitment that exceeded 21,000 billion lire.

2.7 The 1990s

The other important area of maritime policy, the port policy, has also experienced a turning point since the late 1980s. Following the serious crisis in Italian port traffic, mainly caused by high service charges and oversizing of port company staffing, in 1989 the Government also intervened on the intricate subject of port reform. However, the intense unrest promoted by the trade unions and companies, together with the

unconvinced adherence of the port authorities to the government's reform guidelines, then prevented the implementation of the provisions enacted. A significant step towards liberalisation had to be taken in 1991, when the judgment of the European Court of Justice declared that Italian legislation, which recognised the monopoly of port work to companies, was incompatible with the rules of the EEC Treaty. However, the tug-of-war continued until the beginning of 1994, when the important port reform law was finally passed, which, judged insufficient by port users, in any case initiated the much-desired liberalisation process, allowing, among other things, the birth and affirmation of the port terminal operator business figure.

Also, in the same period, the amalgamation of central administrative powers for all modes of transport was launched: with financial law No.537/93 the Ministry of Merchant Navy and the Ministry of Transport are integrated into the new Ministry of Transport and Navigation. Under the same law, the powers of maritime fisheries are transferred to the Ministry of Agriculture and Forestry, while the functions of the Ministry of Merchant Navy in the protection and defence of the marine environment, including the Inspectorate for The Defence of the Sea, are transferred to the Ministry of the Environment. It should be noted, therefore, that the scope of this reform does not only relate to transport, but also extends to public environmental functions.

The great problem that remained unresolved during this period of troubled transformations is that of the low competitiveness of the Italian flag, whose share of international traffic in Italian ports has fallen to less than 20%, while the size of the fleet has also suffered a further contraction, reducing to 6.6 million tsl in 1996 and sinking to sixteenth place in the world. Yet, the report on maritime economics prepared by the Censis Foundation for the Federation of the Sea, Presented in the same year, it has made it possible to highlight the strong benefits brought to the country by the Italian armament: the Italian production of merchant shipping services amounts to 17,000 billion lire and allows the employment of 30,000 employees, figures that rise to 27,500 billion and 78,500 billion employed if it also takes into account the shipbuilding and the service sector. There are also indirect benefits, in the form of productive and employment induced, as well as currency input. Under the pressure of this and other evidence, the need for a measure to protect the competitiveness of the flag fleet has become increasingly strong, with a particular impact on the tax treatment of shipowners and crew rules. A first intervention was made in early 1995, giving the arms companies of ships engaged in international trade a contribution equivalent to the IRPEF of the crews, in order to reduce the cost of labour.

Figure 11: Gioia Tauro port, 1998

Source: Gioia Tauro port authority

At European level, the initial proposal to establish an EU register to be accompanied by national registers, which Confitarma has also supported since 1990, has finally been overtaken by member states' autonomous initiatives to establish a second national register. In Italy, even the trade union forces were now convinced of the need for a radical change in the position on the nationality of the crews and, on 5 November 1996, while the specific coverage was being carried out with the financial law, the historic agreement between the union, Confitarma and Federlinea was signed for the establishment of an international register of ship registrations in Italy.

A little more than a year later, the law that established the Italian International Register was prevented. By allowing a reduction in the competitive gap with its foreign competitors, the International Register was immediately decisive for the relaunch of the Italian fleet, a revival that today, however, needs further interventions to recover its competitiveness for its full affirmation.

In addition, comforted by the success of the policy of consultation with the trade union, but concerned by the entry into force from 1 January 1999 of the Community liberalisation of the traffic of cabotage liaison with the islands, Confitarma has managed to pass a law extending to Italian shipowners in the sector some competitive strengthening rules already provided by the International Register. Again, the proposal was supported by an analytical study of the competitive differential of the Italian cabotage fleet with respect to its foreign fleet competitors.

In the meantime, something had also moved on infrastructure and integrated planning of the transport system: in July 1998 work had begun on the General Transport and Logistics Plan (PGTL), which would have reached its first conclusion exactly two years later, with the approval by the Government of a "flat document"

accompanied by technical thematic annexes. Initially Confitarma was concerned about the insufficient attention devoted to maritime transport, however the establishment of a mixed working group of experts and operators then allowed to refine the final forecasts for maritime transport in an integrated logistics framework.

The projects envisaged by the PGTL anticipate the new big bet for our country's shipowners: the development of short-haul shipping, an optimal solution to alleviate the serious problems associated with road transport. Of course, this framework clearly places a strategic imperative on Italian armament: to be able to stand out more and more from other fleets in terms of the quality of maritime transport, which must be understood in its broadest sense: quality of service, naval technologies, business organization and marine, coastal and environmental resources. Quality, therefore, in every single aspect of the business, will be the true, essential, decisive criterion to reaffirm the centrality of shipping within the transport system of our country.

3 The economic crisis of the 2000s, the case of Perseveranza SpA di Navigazione

3.1 History of Perseveranza SpA di Navigazione

The stock company "Perseveranza SpA di Navigazione" has origins from the ownership group of the D'Amato family, one of the longest-lived Italian groups whose historical beginning in armament dates back to about mid-800s. To confirm everything there are real documents and rental contracts dating back to the second half of the 1800s, such as the nautical license registered to Michele D'Amato of 1861 (Korean marine director) commander and shipowner of sailing ships.

Figure 12: Michele D'Amato's naval driving license

Source: Perseveranza SpA di Navigazione Archive

However, it is necessary to wait until the early 1900s, around the 20-30s of the century, to have a change in both the managerial and core business point of view in order to be able to recognize the company as a real company of an international type, in this period the company was named Palomba and D'Amato with the head of the administrative body Umberto D'Amato and Giuseppe Palomba.

At a time of strong economic expansion due to the post-war period of the First World War, the company owned some sailing ships and/or steamboats, all purchased without bank debt but with the contribution of many private investors (the technical term of this investor is "caratista") the ships were divided into 24 carats in which various families participated in the shares and sometimes also part of the maritime crew that worked on board.

In the city of Torre del Greco, where Perseveranza SPA di Navigazione is currently based, the carat practice was a widespread tradition since they were investors and capital partners in companies of unlimitedly responsible persons; while the role of the owner (Palomba and D'Amato) was mainly that of manager and co-investor.

Despite the strong beginning of economic expansion, by the end of the Second World War all of the company's fleet had been sunk or confiscated by the Allies. For this reason, in the post-war war the company had to start almost from scratch and in order to start again as quickly as possible, various shipping families joined to receive shares of a liberty ship received by the Marshall Plan of American aid to Italy, always divided into carats.

At the end of the Second World War (at the end of the 50-60s) the founding owners succeeded the two eldest sons of Umberto (Giuseppe and Michele D'Amato) and the grandson of Giuseppe Palomba (Peppino Palomba) who continued together until the mid-60s when Giuseppe D'Amato, to make room for the younger brothers, created a company called Fratelli D'Amato.

It was precisely in the 1960s that Perseveranza SpA (established in 1969 as a single purpose company for the purchase of a ship) took place, always with the contribution of families of investors (caratists). Perseveranza SpA has always maintained 3/4 of the ships owned by ensuring a constant ship of about 15 years.

The activity was also carried out with offshore companies and with shadow flags (Panamanian/Liberian). As a result of the law that required Italian armament companies to leave the shadow flag and use the Italian flag for the crime of tax evasion (at that time the Italian flag cost about twice the foreign flag due to the failure to tax the social charges on the crew and the full tax on income) between 1974 and 1980 two brothers of the D'Amato Family, Michele and Luigi moved to Brussels to continue the off shore business (two other brothers Antonio and Filippo had left the firm starting other business on their own).

In 1981, the first 90.000 tons bulk carrier ship was purchased with a bank financing of about 5 billion lire (IMI bank), that ship called "Peppino D'Amato" was chartered for 10 years to Shell Coal and allowed the company to overcome the first major crisis of the freights of the 80s, in fact, it was charter Between 1982 and 1987 the situation was similar to what will occur after between 2009 and 2017 with the freights price at half the operating costs.

In the modern era, with the entrance of the sons of Giuseppe D'Amato, Angelo and Umberto,, and the daughters of Michele D'Amato (Joseph's younger brother) there was a first split in 1992-93 that gave birth to the "D'Amato di Navigazione" and then a second split by Luigi D'Amato (Giuseppe's younger brother) who in 2003 disassociated himself by taking over the "Fratelli D'Amato".

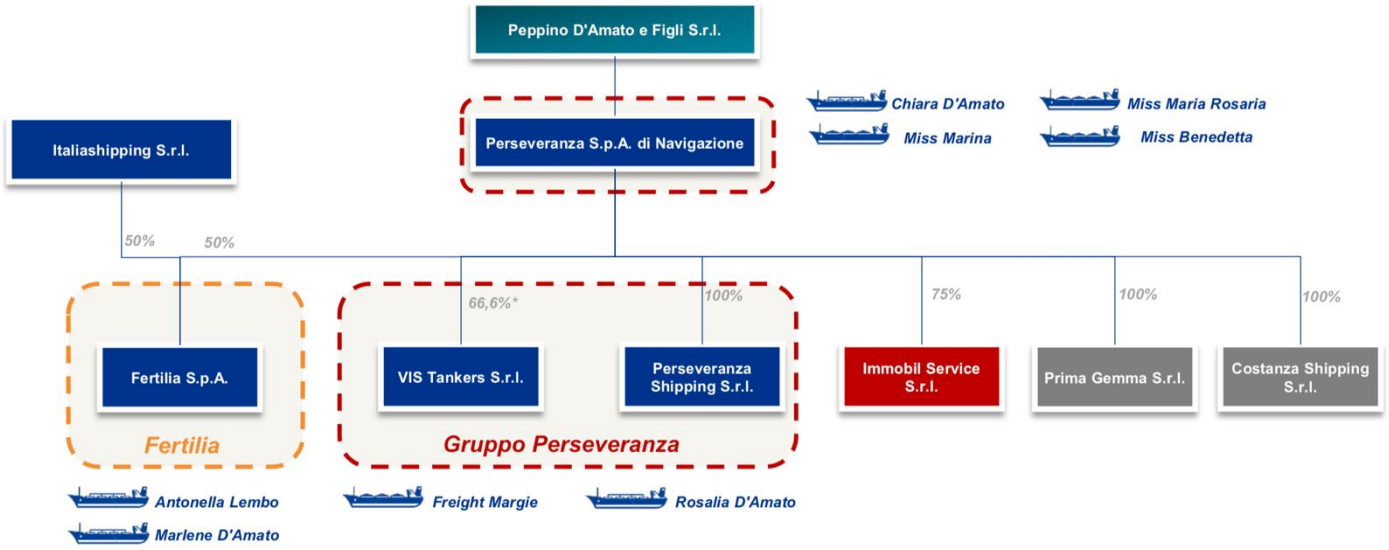
In the 90s, therefore, the holding company was the "Fratelli D'Amato" owned by the three (later remaining in two) brothers while Perseveranza SpA di Navigazione remained an SPV with various shareholders owner of only one/two ships.

Between 1987 and 2003 all the old caratists, then shareholders of Perseveranza were liquidated by the D'Amato family (about 100 individuals) and were offered the opportunity to underwrite bonds of perseverance, bonds that have been maintained to date.

From 1995 onwards the companies began to order new constructions, first with Fincantieri and then with various Chinese and Korean shipyards, going so far as to build over 25 ships on their own and about 60 ships in association with other shipping groups.

To date, the three companies have not survived the subsequent crisis of 2009/2017; D'Amato di Navigazione passed for a bankruptcy agreement in 2009 then failed in 2018; the "Fratelli D'Amato" was the subject of a debt restructuring agreement (ex - art. 67) of liquid nature and is no longer operational today.

Figure 13: Company organization



Source: Perseveranza SpA di navigazione Archive

Finally, the group Perseveranza SpA di Navigazione first signed an art. 67 (in 2016) and then a debt restructuring agreement (art. 182 LF) which in fact within 12/24 months will lead to a voluntary liquidation of the group, which will maintain the management of some ships.

3.2 Shipping crises: the joint action of overtonnage and external shocks.

As explained in the previous chapters, the crises in shipping correspond to the descent of the rental cycle, for which profits to fall to losses.

The lower part of the cycle is essentially reached for the effect of movements:

- in the offer: the overtonnage;
- in the question: external shocks.

With consequences on:

- price of service: rentals;
- value new and second-hand ships.

The main problem of shipping is usually the overcoming of demand by tonnage supply, resulting in falling prices; This does not preclude, as we have already seen, that the crisis cannot result from a shock on the demand side, or that this is not added to the over-tonnage.

As a demonstration of the joint and disruptive action of both of these factors, the most relevant cycles in the tanker market of the last 50 years, calculated from one peak to the next (peak), is briefly illustrated, and then deepen the crisis of 2008 and finally give a brief explanation of the recent developments in the economy and shipping[42].

3.2.1 The 1973-1988 Cycle: The Effect of Oil Shocks.

In fact, this period is recognized by scholars including two distinct cycles, taking 1979 as a watershed, with equal duration of seven years.

Both cycles are characterised by falling demand and disproportionately high supply. There is no worse situation for shipping, as such circumstances cause the maximum imbalance and consequently the maximum depression of the market.

As we shall see, '79 is not characterized as a real peak, but as a brief interruption in a period of stalemate and recession. In addition, both periods are experiencing a decline with a common matrix: an oil shock. For these reasons, it seems more appropriate to recognize in a unified way the two cycles, linked by the oil crises of 1973 and 1979.

1973 was a fantastic year for shipping. The prices of each type of ship, but especially of tankers, according to Hill and Vievoye[43] increased their value by 40/60% from the previous year. The parties were willing to pay inflated prices to obtain a VLCC: commissioned in the 1970s at a cost of 26.4 million dollars, it could be resold up to 73 million.

[42] Reviewing data for the processing of cycles from M. Stopford, *Maritime economics*

[43] 1974

The dream ended with the Yom Kippur War of '73, which led the sector to a recession that lasted until 1987. The reasons for such a prolonged cycle are essentially due to the joint collapse of both world industrial production and maritime trade, i.e. in the presence of both a global economic and shipping crisis.

More thoroughly, here are the three main causes of depression:

- the overcapacity of the tankers resulting from the highly speculative attitude of the early 1970s: the general excitement led to new orders, which increased the total fleet from 225 million dwt in 1973, to 320 million dwt in 1975; at the same time, demand was shrinking;
- market sentiment also reached the shipyards, which were capable of producing 60 million dwt per year, well beyond the levels that made it possible to meet with demand;
- the price of oil in 1973 and shortly thereafter in 1979 grew so much that it dramatically reduced demand for its import.

It took more than a decade before the over-tonnage could absorb.

Until October 1973, a VLCC was sailing at prices as high as 300 WS; then in October OPEC introduced a 10% embargo on all imports to the West, causing a market collapse: the same ship was turning to 80 WS. In April '75 it reached 15 WS. The 52 million second-hand ships

of dollars fell to 23 in '74, to 10 in '75, up to 5 in '77.

There was a kind of interval, a kind of failed revival around '79. The fees grew to 62 WS, but this barely allowed to cover the travel expenses.

In 1979, the Iranian revolution led to a further rise in oil prices, from 11 euros per barrel to as many as 40. So, if up to that point the oil traffic was around one and a half billion tonnes, in 1983 it would be reduced to 900 million. This, combined with the over-tonnage resulting from the early 1970s, caused the market to collapse again. The freights dropped to 17 WS and the prices of the ships plummeted.

Low profits led operators to scrap their fleets in an attempt to rebalance the market. The ships, although new, were sold for no more than 5 million. According to Fearnleys Review[44], no historical precedent has ever matched the decimation of shipping companies like this period.

Downsizing the supply is always a long, complicated and expensive process. Nothing more than these nearly 15 years of stalemate and recession has proved so blatantly. It was not until 1986 that the first signs of recovery began to be seen. In that year the walnuts grew at a rate of 70% and the prices of ships doubled. The appreciation of the assets continued virtuously: particularly old ships, at the end of 1988 could be sold for 40 million. The 19973-1988 cycle ended, just as it had begun: with a phase of speculative construction.

3.2.2 The role of Asian economies in the 1988-2001 cycle.

The peak of 1988, in the tanker market, was followed, by incessant orders totalling 55 million dwt, trusting in three expected developments:

[44] 1986

- the fleet built during the boom of the 1970s was expected to be 'scrapped' after 20 years, leaving room for new orders in the 1990s;
- shipbuilding capacity had shrunk considerably, so it was thought that the new fleet of the 1990s was smaller than the previous one; even the sudden growth in asset prices seemed to give credence to this hypothesis;
- it was believed that demand for oil could grow thanks to exports from the Middle East, creating a demand for tankers, especially from VLCC.

None of these expectations came true, indeed:

- much of the fleet of the 1970s continued to be used beyond 20 years of life;
- in the 1990s, the capacity of the fleet instead of shrinking was duplicated (33 m.dwt), as there was no replacement;
- exports from the Middle East stagnated as technological innovations allowed oil production from closer fields.

For these reasons, over-capacity still occurred, leading to a recession from 1992 until 1995, when a slow recovery began.

The bulk followed the trend of the tanker market until 1989, then continued independently, since having not widened the supply could still register very profitable rentals.

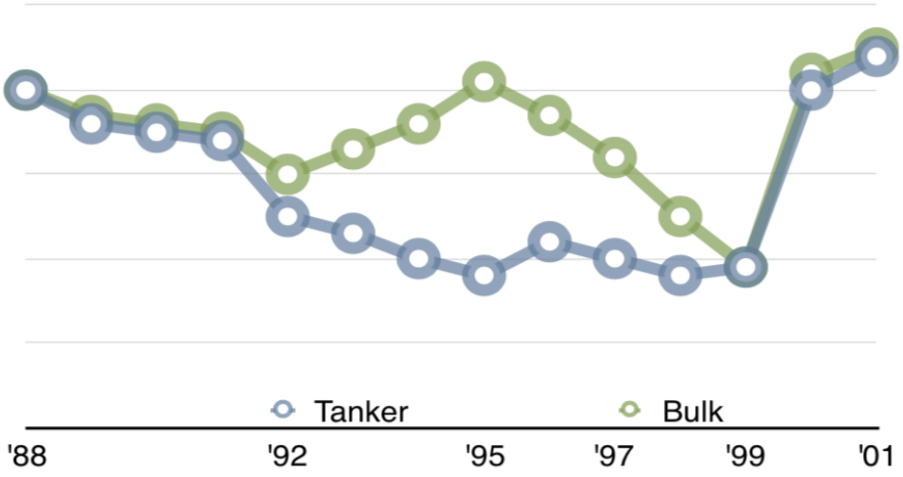
In this case, the financial crisis of 1989-1992 did not have much correlation with the trend of shipping, which followed its own pace.

The crisis in Asian economies, on the other hand, since 1997, has had a significant impact on all shipping segments, in particular bulk, which is more related to trade with Asian countries.

As is well known, however, in shipping nothing ever goes as expected, and the two years to come recorded an unexpected boom. The regions of Asia emerged from recession, reaching around the new millennium to record growth rates of 11% per annum.

Meanwhile, the tanker fleet grew very little, as the negative sentiment experienced by the market encouraged the scrapping of the 1970s: the oils peaked, with a VLCC traveling at 80,000 dollars per day in the late 2000s. This was the first real peak in 25 years, but it didn't last long. The boom was crushed in 2001 by the bursting of the dot-com bubble, which first caused the fall in the share prices of companies in the new economy, then dragged the American and later Asian economies into a severe recession. The crisis ended up touching many sectors, including shipping: the freights fell once again.

Figure 14: The trend of rentals for the taker and dry cargo from 1988 until 2001



Source: data elaboration from M. Stopford, Maritime Economics 1988

3.2.3 The most recent cycle that shipping remembers: 2003-2007

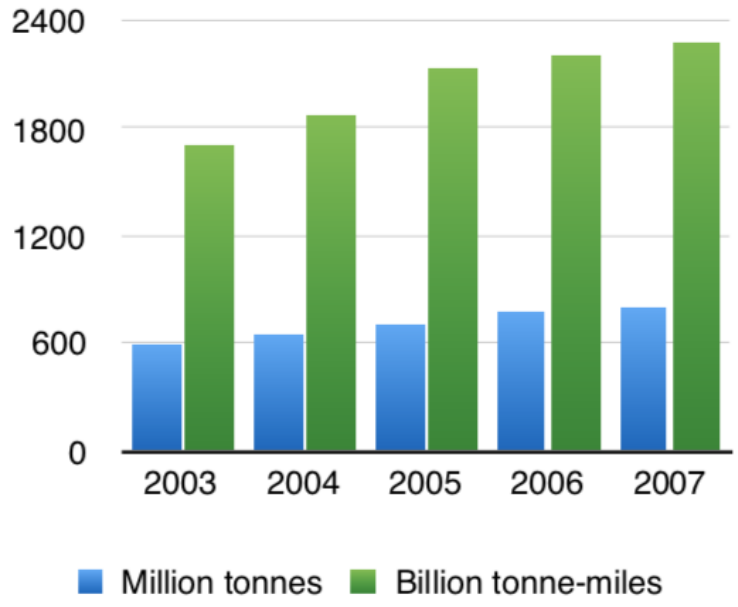
The recovery began in 2003 and until 2007 there was a particularly prosperous period, which saw the contrast of very strong growth demand with relatively poor supply. A key role was played by Asian economies, particularly China, which in previous years had already developed its economy thanks to an open-market model, which allowed to attract large investments. Beginning in 2003, China began a series of investments in infrastructure that required huge quantities of materials. Its iron production amounted to 468 million tonnes per year in 2007, quadrupling since 2002. In addition, its need to import oil and export 'bulk' goods gave impetus to multiple segments of shipping, resulting in a high demand for ships.

The graph in Figure 6 shows the increase in demand for petroleum products in those years. The development of the Middle Eastern countries engraved not only in the eventful volumes, growth at a rate of about 10% in 2004 and 2005, and with 8.27% in 2006, but especially with regard to tuna-miles, greatly expanding product-trade routes: demand expressed in tonne-miles grew by 13.8% from 2004 to 2005[45].

As you can imagine, the nobility squirted upwards, and despite some swings, they remained there for four consecutive years.

Figure 15: The increase in demand for petroleum products

[45] UNCTAD, *Trade and development report*, UNITED NATIONS PUBLICATION, Palais des Nations CH-1211 GENEVA 10 Switzerland, 2016



Source: UNCTAD, Trade and development report, 2016

3.3 The 2008 crisis

To talk about the fall in the cycle in 2008, one cannot ignore a macroeconomic excursus. The crisis in shipping in the years following 2008, is one of those crises that must be more related to an external shock: the subprime crisis.

The events of 2007-2009 were preceded by a period called "Great Moderation"[46], characterized by a global boom in commodity and stock prices that can be placed in the two years 2002-2003. It was low interest rates, low credit costs and rapid industrialization in China and India that generated economic growth that was behind the boom in commodity prices.

In addition, especially in the United States, where there were policies aimed at incentivizing the purchase of houses, it was much easier and less expensive to receive credit for this purpose, and households became more indebted than they should. This increased the overall increase in high-risk mortgages granted mainly to low-income individuals, so they were very risky. Mortgage lending grew exponentially (from 200 million to 650 million dollars from 2002 to 2005) and new technologies were developed to finance these positions[47].

Securitization is one of these and one of the main causes of the tsunami. The low return on mortgages, as low-risk assets, resulted in portfolios being recomposed to more profitable and even riskier assets: synthetic assets.

[46] Borio (2008)

[47] T.G. Weyman-Jones, *The financial crisis and the regulation of finance*

There are several benefits from the securitization of illiquid debt. Securitization unifies and spreads risks, increases market liquidity and consequently increases the number of lenders and borrowers. Its ultimate effect is to reduce the cost of capital for investments that otherwise could not be made. What has happened is not attributable to securitization, but to negligence and fraud in the subprime market.

However, it is clear that securitization poses monitoring and control issues that before then were not balanced with the right weight. In the real estate market, the obtaining of the loan and the repayment of the mortgage was usually done under a single entity, a traditional bank or a lender. Securitization has divided these functions along at least four different actors. First of all, the lending company turned into a marketing organization whose primary goal is to maximize the number of mortgages created, leaving out accuracy in credit selection.

The banks then demobilized their assets in exchange for funds through securitization, usually with the intervention of investment banking: they then packaged the mortgages and created structured products to be issued to finance the purchase of the mortgages themselves. The process continued with the sale of specialized synthetic products[48] by risk appetite level, at hedge funds, pension funds, insurance companies, various investors, without a limit to the length of the chain[49].

The risk assessment was clearly carried out by rating agencies. What was underestimated was the moral hazard that can involve these agencies, made up of individuals who find themselves assessing the debt of a third party, who contracts and pays to have that valuation.

Finally, the supervision and management of mortgages were largely in the hands of vehicle company managers, and until house prices rose, they received incentives to renegotiate the terms of repayment for borrowers who had the most difficulty, and inevitably for subprime there were many.

With this system, synthetic activities such as CDOs (Collateral Debt Obligation) began to run without any control, thanks to the possibility of selling the loans provided by the banking system to the market, moving from an OTH (originate to hold) model to OTD (originated to distribute): who originates, then charges on others the risk, and with each new divestment the intermediary on duty receives commissions.

What should be emphasized is that, if the whole thing has taken the form of a crisis, one should not question the value of securitization, but on its implementation and the need to monitor the whole process in each step just illustrated.

The question then, on what depends more specifically on the decline, has made possible a mismanagement of securitization. It can be said that the most responsible is the speculative attitude of some, that is, of many of the subjects involved in the OTD system. For example, the adverse selection practiced by the banks, which paid no attention to the selection of credit, by virtue of the possibility of immediately offloading the risk on other parties. Or, the moral hazard of all those intermediaries who blinded by the idea of profit, did not

[48] Financial assets consisting of the combination of two different financial products; one of the two is typically a derivative product

[49] G. Forestieri, *Corporate & Investement banking*, Third edition, Egea, Milan, 2015

accurately assess the risk profile of certain instruments, knowing that the consequences would not affect them: first among all rating companies.

Irresponsible behaviour is added to a solid basis of conditions, such as to allow what has happened. First of all, in 2000, after the bursting of the new economy bubble, the Fed decided to reduce the cost of money, lowering interest rates from 7% to 1% in 2004. It is thanks to this decrease that subprime mortgages have been made possible by most U.S. households, beyond their real possibilities.

Add to that the repeal of the Glass-Steagall Act in 1999, which resulted in commercial banks entering the investment banking sector, and vice versa: this led to a sharp increase in competition, which prompted banks to seek more profitable areas.

An important role was then played, by a series of manoeuvres that contributed to deregulation in the United States. A first theme is the measure taken by the SEC in 2004, through the so-called Consolidated Supervised Entity (CSE) procedure, which is dedicated to the five largest investment banks (Lehman Brothers, Bear Stearns, Merrill Lynch, Goldman Sachs and Morgan Stanley) which exempted them from the capitalization regime (maximum debt-to-equity ratio). CSE meant that these institutions could increase their leverage (total assets/equity) enormously, reaching over 30% in 2007. With similar levels of leverage, a simple write-down of assets of 3.3% completely resets equity.

In addition, Basel II schemes could be applied with certain discretional margins: this in the US allowed, unlike in Europe, the adoption of internal valuation models, without the requirement of minimum capital requirements. The SEC, which with the CSE did not want to loosen controls but to be able to monitor investment banks, actually failed to do so.

Finally, we need to know that the application of the IAS/IFRS accounting principles involves the use of the mark-to-market rule, which is the valuation of financial instruments based on market prices. This principle becomes dangerous when, as happened with the subprime crisis, the market for many types of securities becomes illiquid and fear leads to fair value so low that it creates massive losses, eroding profits and capital.

To clarify the scale of the crisis, we add opaque governance systems, with excessive powers in charge of CEOs, inadequate risk management systems, the complexity and opacity of new financial products, the search for the product at any cost.

3.4 Regulatory impact on the 2008 crisis

In order to understand how the crisis has impacted the shipbuilding sector, it is also appropriate to analyse the national regulatory situation in Italy, the Community and the international sector, but above all how it has evolved or not and what the negative or positive effects it has had on the maritime transport sector.

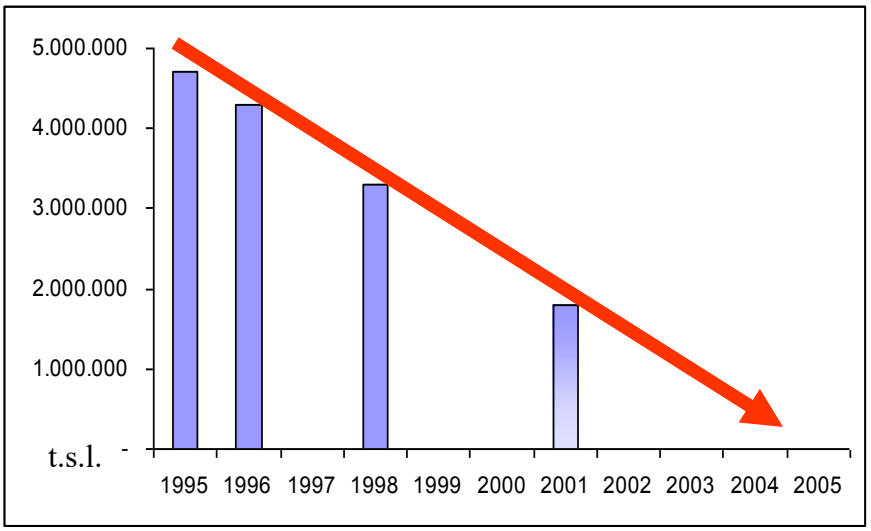
3.4.1 National legislation

One of the most important legislative innovations in the transport sector of the century XX in Italy was the introduction of the Italian International Register with the Law of 27 February 1998 No.30, within it are registered the major ships used exclusively for international trade[50].

Law 522/1999 (Article 9.5) amended part of the previous legislation to state that ships registered in the R.I. can make a monthly cabotage trip as long as followed or preceded by an international trip. This law bore a great limitation since in the absence of an international trip it was not possible to take a cabotage trip until Law 166/2002 (ar. 34.6) where ships could make up to 4 (become 6 with Law 289/2002) monthly cabotage travel without the obligation to follow or precede an international journey as long as their crews were entirely Community.

Unlike the previous trend in the sector thanks to the international register, the Italian fleet in '98 began to grow again in 1998, because thanks to the possibility of being able to regulate and control the ship, the shipowners were able to grow from the point of view of fleet and number of international travel and cabotage.

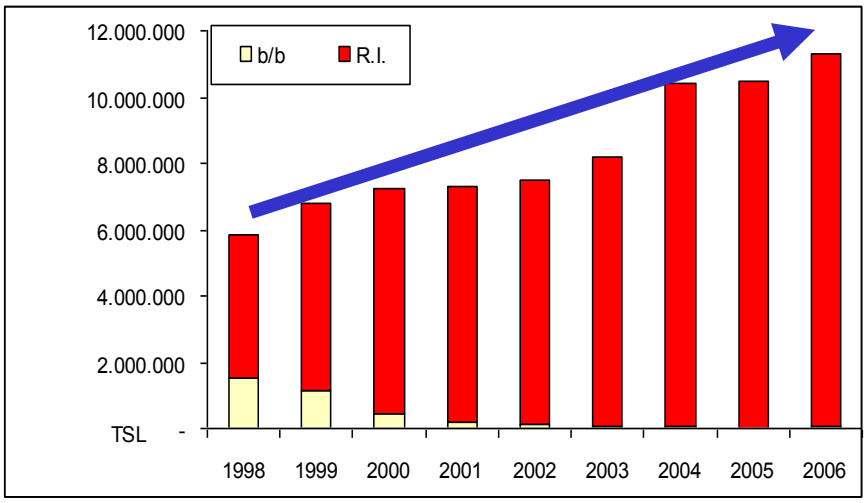
Figure 16: Forecast number of vessels, 1997 (before R.I.)



Source: Confitarma elaboration

[50] L. Sisto, *Presentazione normativa per Confitarma*, 2010

Figure 17: Forecast number of vessels, 1998 (after R.I)



Source: Confitarma elaboration

The Italian International Register has been, and remains, an indispensable tool for the competitivitỳ of our fleet.

Comparison with other European registers shows that the Italian International Register, introduced later than the former, has been able to absorb many positive elements by making important improvements that now constitute its strengths such as, for example, tax and social security benefits. Facilities, however, comply with the necessary EU legal principles and as a result of the choice made to support the Italian flag and occupation.

Nevertheless, in a context such as the ever-changing maritime one, the excellence of our International Register cannot remain so unless improvements are pursued in line with the new needs of operators.

In particular, the aspect that needs the most progress is that of the bureaucratic procedures relating to the various stages of a ship's life. In fact, it can be concluded that, as a result of the strong competitiveness between registers found at global level, the schemes examined, including us, have developed a more or less homogeneous degree of competitiveness in terms of costs. The bureaucratic and administrative component is increasingly playing a key role in determining the validity of a register.

The ability of a flag administration to respond quickly and efficiently to the needs of operators is therefore a qualifying element and should not be a limit to the functionality of the sector.

There is a clear need to simplify, or rather "bureaucratize", a whole series of requirements that relate, for example, to the issuance of documents/certificates for which today, despite the logic of effective collaboration with the Administration, complex procedures and excessively long time are necessary.

To this end, a reorganization implemented through the development of IT procedures and the extensive use of the network would allow, as is already the case in all other countries, a greater speed and practicality in the issuance and management of documents.

Similarly, in order to further streamline the administrative machinery, it could be considered with all the actors involved whether to adopt the system followed in the other countries examined, or to entrust to a single central body all the powers in relation to the administrative regime of ships (remaining the right to choose the port of entry).

This would allow the Port Captains to enhance all the other skills assigned to them (security, crews, PSCs, etc.) as they would be relieved of the bureaucratic requirements related to the maintenance of the register.

Finally, a further boost to streamlining could be given by a greater involvement of the Ranking Registers with regard to the issuance of certain specific statutory certificates.

Ultimately, given the extreme validity of the International Register, the choice to work more functionally to divide tasks between the administrations involved today could prove successful. This subdivision should concentrate those activities that can be carried out efficiently by a single central entity and vice versa delegate as much as possible all those activities that need greater capillarity and presence on the territory, both in Italy and abroad.

It is clear that all this requires a real and concrete review of the activities now in charge of the Administration aimed at the development of the necessary organizational and IT tools that, in addition to streamlining many activities, would contribute in an essential way to the competitive development of the Italian shipping industry.

Another key regulatory regulation was the law of 1992 no. 3577 for the liberalisation of European cabotage. This regulation established that the principle of free provision of maritime cabotage services within the Member States[51].

From 1 January 1999 (similar to what the northern European countries had already implemented) France, Italy, Portugal and Spain opened up all their cabotage services, including those connected to the islands, to competition.

Today, any Community shipowner can operate in the insular cabotage of a Member State if:

- Realize the service in accordance with what is allowed for similar activity in its state of belonging (continental transport);
- It complies with the crew conditions that the host state imposes on its owner (this constraint does not exist in the case of travel as a result or preceded by international connections, Transport with the islands and in any case ships under 650tsl).

Although the effects that these two regulatory developments were positive in the early 2000s, with the onset of the crisis of 2008 the effects were totally different:

- The International Register Act increased the number of ships and investments in shipyards for the construction of ships that, once delivered in a late crisis, were chartered at prices that did not allow to

[51] L. Sisto, *Presentazione normativa per Confitarma*, 2010

cover the investment costs, but above all there was an oversupply compared to the decline in demand and the advance of Asian economies;

- The liberalisation of European cabotage only exacerbated maritime competition in Europe as well as the world starting a downward race on the price of dumping that led to the untimely death of small shipping companies that could not compete with the prices of Asian markets and large companies.

It is clear that even in the regulatory field the choices made were not focused on a long-term time perspective but short-term and, above all, it was impossible, in a late crisis, to change those that were already repeatedly amended and rewritten regulations.

3.4.2 International legislation

From a Community and international point of view, the main laws and reforms are mainly concerned with the environment, in order to reduce the impacts that maritime transport has on the marine ecosystem and indirectly also on land.

There are several examples of regulations which, although they have reduced the environmental impact at the same time, have caused economic damage to shipowners, while for those that have not adopted such regulations (think for example, Asian companies that enjoy a jurisdiction that does not look at environmental impacts) suffer reputational damage.

A first example is the Anti-fouling systems IMO Convention on the Control of Harmful Antifouling Systems on Ships[52]. From 2013-14, anti-vegetative paints cannot be used for the hulls of ships, as they released poisons into the waters of the sea. In fact, previously it was possible to use paints that during navigation released poisons (chlorine or chlorine-based on the hull) that prevented the vegetation from taking hold by ruining the painting of the ship; therefore, the paintings were peeling through the vegetation in a very short time.

Today, the current painting no longer releases more poisons but have a much less efficient yield as well as costing about twice as much as the previous ones.

The direct consequence is that it is practically impossible to maintain a hull clean and therefore efficient for at least 5 years (the original expire of the inspection visit of a ship by class obligation) forcing the ship to an extra basin stop (every 4 years and not every 5 years), thus increasing the operating cost of drying docks by about 20% and thus reducing the net marginalization and economic contribution of a ship. , as well as increasing average fuel consumption due to the reduced hydrodynamic efficiency of the hulls.

Another key regulation introduced by the IMO (international maritime organization) is the Ballast Water Convention[53] adopted on February 2004. It is the main rule that has accelerated the face-out of ships and

[52] http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-on-the-Control-of-Harmful-Anti-fouling-Systems-on-Ships-(AFS).aspx

[53] http://www.imo.org/en/OurWork/Environment/BallastWaterManagement/Pages/Default.aspx

imposed extraordinary investment limits for all ships. It has introduced an obligation from September 2018 to install a ballast water treatment system that makes them, once discharged into the sea, bacteriologically pure.

The reason for the drafting of this convention is to prevent a cargo ship travelling in ballast (without to head to ports of loading goods but in ballast trim) not transport and discharge contaminated ballast water.

The deadline and therefore the obligation to install this plant is connected for the rest of the world at the expiration of the IOPP (international oil pollution prevention) certificate from September 2018; expires every 5 years.

Differently, in the United States they have imposed an even more restrictive rule, namely that all ships that make rankings from 09/2018 must install this plant, as long as it is impossible to unload ballast (and therefore load load) in US territorial waters.

The cost of these facilities for a ship is approximately USD 0.5 to 1.5 million in addition to structural changes to the hulls that in some cases have made no retrofittable system installable.

Since 2013-14, all new ships have installed such facilities during construction.

The impact was to have split the market into two (ships built before 2013 and ships post 2013) effectively reducing economic life to about 20 years compared to 25/30 before the introduction of the BWMS (Ballast Water management system) legislation. In fact, a ship with a demolition value of between USD 3 and 4 million does not have time to generate the pay back of a plant worth about 35% of the commercial value, so many ships have accelerated face-out around 20 years of life.

Also, by the IMO, the MARPOL Convention Double Hull[54] for tankers is one of the main innovations in environmental impact.

Introduced after the famous accident of the ship Exxon Valdez, which destroyed the coast of Alaska in 1985 polluting with more than 100 thousand tons of oil, with damages in excess of billion dollars.

This regulation introduced the requirement for new ships built after 6 July 1993 and with a gross flow of more than 5,000 tonnes to have a double hull and provided for an impossibility to transport petroleum products for existing tanker ships, with a timetable up to 2005 or in any case after the twenty-three years of life and with more or less serious limitations in the range (larger was the largest and fastest was the out of the existing ship).

The effect was comparable to the introduction of the BWMS by effectively shortening the economic life of the world's 90s tanker fleet and effectively putting many ships off the market from the late 1990s to early 2000s.

Finally, the International Air Pollution Prevention[55] - IMO 2020 Global Sulphur Limit 0.5% in Fuel Oil - ECA 0.1% Sulphur has completely revolutionized the way ships consume bunkers and fuels.

[54] http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx

[55] http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Air-Pollution.aspx

Starting from 1 January 2020, all ships are prohibited from consuming fossil fuel (bunkers) with sulphur content of more than 0.1% in the ECA and US areas, while for the rest of the world the limit has been raised to 0.5%, against the previous limit of 3.5% for the rest of the world (ECA and USA had already reduced the emission limits before). In summary, the reduced sulphur content reduces THE emissions of NOX and OSX (Nitrogen Oxide and sulphur monoxide) among the main culprits of the greenhouse effect: sulphur improves the detonating power of the bunker and helps to lubricate pistons and cylinders by improving engine performance.

The effect was, for all ships over 10 years of life, to undergo extraordinary maintenance to their engines and/or generators, to replace the parts related to the injection of the engines to make them compatible with the low sulphur bunker; obliging in some cases the introduction of additives and/or other systems to facilitate the burning of bunkers and low sulphur, which has a higher combustion point and has a lower caloric yield.

In practice, all engines with more than 10 years of life have not only reduced their performance, but above all an increase in consumption with the same thrust (so with positive doubts about carbon dioxide emissions), but have also shortened the useful life of the plants and reduced their efficiency by helping to increase the division of the market in ships with engines already prepared for low sulphur and undisposed ships.

In addition, about 10% of shipowners followed a different path: counting on the fact that high sulphur fuel would remain at a very high price differential compared to low sulphur (the procedure for reducing sulphur is to mix fuel with diesel and/or other fuels with lower sulphur content, they have a much higher cost), in order to secure a competitive advantage by offering in the market less onerous ships, because using high sulphur bunkers have preferred to install on board their ships exhaust fumes washing plants that allow to reduce the air emissions of NOX and SOX.

However, this choice to date does not seem to be successful for the following reasons:

- These plants, called scrubbers are very expensive, for a 75k bulk carrier of gross range with an engine of about 15,000 horsepower the installation cost is between USD 3 and 4 million;
- These systems, especially when installed as retrofits have serious installation and management problems, outweighing the benefits of not changing injection systems and/or adding additives, such as to make a retrofit often impossible; have therefore not confirmed the validity of cost/benefit;
- Bunker prices after an initial moment of great volatility were at a very low-price differential of less than 70 dollars a tonne, against a forecast of about USD 250 per tonne. Given that a bulker ship consumes an average of 7-8000 MT per year, the cost differential is approximately USD 70 x 7500 tons, 500,000 bringing the pay back to over 8 years; making it not convenient to install scrubbers for ships over the age of 13/14 years;

- HSFO fuel[56] is becoming increasingly difficult to find (as it is an increasingly niche product, creating supply problems and in fact making scrubbers unusable, given the scarcity of the product.

As can be easily observed, although the regulations and regulations introduced had been issued with positive purposes, especially from an environmental point of view, these impacts were so direct and immediate that the shipping companies, in a late crisis, could not follow these regulations or at least be able to regulate quickly if not at the expense of a sharp increase in costs and management problems.

3.4.3 EU legislation: Strategic approach

EU regulations on maritime transport[57] focus on the application of the principle of free movement of services and the correct application of competition rules, while ensuring a high level of safety, good working conditions and environmental standards.

Maritime transport was the subject of a 1985 Commission memorandum entitled "Progress towards a common transport policy maritime transport" and a 1996 communication entitled "Towards a new maritime strategy". The Commission Green Paper on seaports and maritime infrastructures offered a review of the industry and took a close look at the problems of port charges and market organisation, including integrating ports into the trans-European transport networks (TEN-T).

In January 2009, the Commission published a communication on strategic goals and recommendations for the EU's maritime transport policy until 2018.

A wide range of impending challenges was identified, including:

- EU maritime shipping in globalised markets and in the face of increased competition;
- Human resources, seamanship and maritime know-how: possible strategic measures that could be taken included, in particular, increasing the attractiveness of maritime professions, improving the training of seafarers, promoting lifelong professional prospects in maritime sectors and improving the image of shipping;
- The long-term objective of achieving 'zero-waste, zero-emission' maritime transport, improving maritime safety and preventing terrorism and piracy;
- Exploitation of the full potential of short sea shipping, for example by creating a borderless European maritime transport area and fully implementing projects to establish motorways of the sea or to link ports to their hinterland;

[56] High Sulphur Fuel Oils are the most widely used marine fuels outside the Sulfur Emission Control Areas (SECA) zone, but from January 1st 2020 they can only be used by vessels equipped with Exhaust Gas Cleaning Systems (EGCS, known as "scrubbers")

[57] https://www.europarl.europa.eu/factsheets/en/sheet/124/maritime-transport-strategic-approach

- Maritime research and innovation: promoting innovation and technological R&D in order to improve the energy efficiency of ships, reduce their environmental impact and provide better quality of life at sea.

Market Access

The first maritime legislative package dates back to 22 December 1986 and comprises the following regulations:

- Regulation (EEC) No 4055/86, which was intended to abolish restrictions on EU ship owners;
- Regulation (EEC) No 4057/86, which dealt with unfair pricing practices in maritime transport;
- Regulation (EEC) No 4056/86, which allowed the Community to counter the 'protectionist' measures of third countries.

In 1992, the Council adopted a second maritime package of measures to phase in the liberalisation of national cabotage (access for carriers not resident in a given Member State to the maritime transport market between ports in that Member State) and in particular Regulation (EEC) No 3577/92 of 7 December 1992.

These rules have progressively aligned Europe's situation by essentially making it a single market where any ship flying a European flag can carry out long-haul cabotage trade between ports in individual EU countries and countries, in order to ensure equal competitiveness rules for all European operators.

These regulations, rather than fragmenting the market, have favoured intra-European merger processes, i.e. companies that have acquired port and logistics infrastructure in EU countries and favoured the creation of international groups.

In addition, these regulations strongly opposed a widespread practice among airline service operators which was to create cartel agreements aimed at manipulating the dynamics of the service's prices, mimicking the American model (in the US such practices are criminally sanctioned).

The effects from both a market supply and demand perspective have been remarkably positive ensuring rapid pre-crisis controlled expansion in 2008.

Competition rules

Regulation (EEC) No 4056/86 was repealed by Regulation (EC) No 1419/2006, through which the scope was extended to include cabotage and international tramp vessel services.

On 1 July 2008, the Commission adopted a set of guidelines on the application of Article 81 of the Treaty establishing the European Community (subsequently replaced by Article 101 of the TFEU) to maritime transport services.

In September 2013, it decided not to extend the guidelines on maritime transport agreements, having found that their objective of facilitating the regime change by applying competition rules to the maritime sector had been achieved.

On the issue of State aid, in 1997 the Commission had already adopted a legal framework authorising Member States to implement State aid schemes for the maritime sector.

In 2004, the Commission confirmed this framework in the form of revised guidelines on State aid to maritime transport. These clarified what aid (particularly for the purpose of promoting the entry of vessels in the registers of the Member States or a return to registration under their flags) is compatible with the Treaty establishing the European Community.

The opening up of port services to competition, however, is yet to be achieved.

In February 2001, the Commission presented a communication on reinforcing quality services in seaports, accompanied by a proposal for a directive on market access to port services ('first port services package'). After nearly three years, an agreement was reached between Parliament and the Council through a conciliation procedure, but Parliament rejected the agreement on 20 November 2003. The Commission then tried to address the subject again, putting forward a new proposal on 13 October 2004, which Parliament also rejected, this time at first reading on 18 January 2006.

On 23 May 2013, the Commission presented a new package of measures to liberalise port services: a communication entitled "Ports: an engine for growth" and a proposal for a regulation establishing a framework on market access to port services and financial transparency of ports.

On 15 February 2017, Regulation (EU) 2017/352 of the European Parliament and of the Council was adopted. This new EU strategy is part of the revised TEN-T guidelines and covers 319 major seaports. The aim is to level the playing field in the sector, protect port operators against uncertainties and create a climate that is more conducive to efficient public and private investment. The regulation defines the conditions under which the freedom to provide port services applies, for instance the type of minimum requirements that can be imposed for safety or environmental purposes, the circumstances in which the number of operators can be limited and the procedure for selecting operators in such cases. It introduces common rules on the transparency of public funding and of charging for the use of port infrastructure and port services, notably by making sure that users of the port are consulted. It introduces in each Member State a new mechanism to handle complaints and disputes between port stakeholders. Finally, it requires all port service providers to provide employees with adequate training.

The social provisions governing the port labour regime are discussed by the Social Dialogue Committee for Ports, which was set up in 2013 and brings together port authorities, terminal operators, dockers and other port workers.

The complex rules that have been setup in recent years have led to a limit of market manipulation and competition, with regard to port services, which have historically been regulated in exclusive concession services (bunker services, piloting services, mooring services, blocking services and handling of cargo from ship to ground, etc.).

As a result, these conditions produced monopoly systems which in turn generated major impacts on the cost of the service and therefore on the competitiveness of the ship.

The effect from an economic point of view was positive as it allowed better management of what were port activities by reducing costs, but from a competitive point of view the tightening of relations for port concessions has meant that very often there was a real race to the downside to get as much of the demand as possible in the port airlines.

Working conditions

Directive 1999/63/EC of 21 June 1999 was based on an agreement between the European Community Shipowners' Associations (ECSA) and the Federation of Transport Workers' Unions in the European Union. It concerned the working time of seafarers on board ships carrying EU Member State flags, while Directive 1999/95/EC of 13 December 1999 applied it to third-country ships calling at Community ports.

On 23 February 2006, the International Labour Organisation adopted the Maritime Labour Convention (MLC), thus creating a single, self-contained instrument comprising all the current standards relating to maritime labour: seafarers' right to a safe, secure job in accordance with current safety standards; appropriate employment and living conditions; health protection; medical care and social protection.

Directive 2009/13/EC amending Directive 1999/63/EC implements the agreement on the MLC.

Directive 2012/35/EU of 21 November 2012 amending Directive 2008/106/EC on the minimum level of training of seafarers stipulates that the training and certification of seafarers is regulated by the International Maritime Organisation (IMO) Convention on Standards of Training, Certification and Watchkeeping for Seafarers.

It was adopted in 1978 and entered into force in 1984 but was significantly amended in 1995 and again in 2010. A recent proposal for a directive aims to increase the efficiency and effectiveness of the legal framework in this area.

Directive 2013/38/EU of 12 August 2013 amending Directive 2009/16/EC on port state control aligns the text more closely with the above-mentioned MLC of 2006. The amended directive also makes reference to the International Convention on the Control of Harmful Anti-fouling Systems on Ships (the 'AFS Convention', 2001); and the International Convention on Civil Liability for Bunker Oil Pollution Damage (2001).

Directive 2013/54/EU of 20 November 2013 concerning certain flag State responsibilities for compliance with and enforcement of the Maritime Labour Convention implemented the agreement reached between ECSA and European Transport Workers' Federation on the 2006 MLC.

Finally, Directive 2015/1794/EU of 6 October 2015 amended the text of five directives on works councils, collective redundancies, the transfer of undertakings, employer insolvency and informing and consulting workers, to ensure that seafarers would be covered by all of the directives in all Member States.

These regulations helped to standardize the relevant standards:

- Conditions and working environments;
- Economic conditions;
- Safeguarding the marine's psychophysical health;
- Social protections.

These standards have raised standards, improved contractual levels by improving the gender quality of the work environment. Despite these benefits, the number of seafarers employed on board European ships has decreased in recent years (a phenomenon also due to the introduction of international registers allowing non-EU personnel to board).

Environmental standards for sea transport

In recent years, numerous measures have been adopted on protecting the marine environment. They include in particular:

- Directive 2000/59/EC of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues, which made it compulsory to dispose of oil, oily mixtures, ship waste and cargo residues at EU ports, and provided the monitoring mechanism necessary to enforce this. In January 2018, the Commission presented a proposal for a new directive repealing Directive 2000 /59/EC. Parliament adopted its position at first reading in a resolution of 13 March 2019 and the Council adopted the proposal in April 2019. The final act has been signed and was published in the Official Journal on 7 June 2019;
- Regulation (EC) No 782/2003 of 14 April 2003 on the prohibition of organotin compounds on ships. Prior to the entry into force of this regulation, such compounds were used primarily as anti-fouling agents to prevent the growth of organisms on ship hulls but caused serious environmental damage. This regulation implements the AFS Convention adopted by the IMO on 5 October 2001;
- Directive 2005/35/EC of 7 September 2005 on ship-source pollution and on the introduction of penalties for infringements. This contains precise definitions of offences and also provides for effective, dissuasive and proportionate penalties (criminal or administrative) for violations of the rules. It was amended by Directive 2009/123/EC of 21 October 2009, which ensures that persons responsible for discharges of polluting substances are subject to adequate penalties, including criminal penalties (even in less serious cases);
- Directive 2012/33/EU of 21 November 2012 (the 'Sulphur Directive') provided that cargo vessels sailing in the maritime territories of Member States would no longer be permitted to use fuel containing more than 0.1% mass of sulphur as of 1 January 2015. These waters are classified as a sulphur emission control area in accordance with Annex VI to the MARPOL Convention.

The impacts of these regulations are considerable for armament, especially with regard to the costs of installing new installations in order to make ships standard with what are the new environmental directives, to date probably the attention to the environment has been one of the main points that has led to a significant increase in the timing of the management of the plants on ships.

In addition, one of the next steps envisaged by the EU in terms of reducing environmental impacts for harmful emissions in ecosystems will be focused on reducing carbon dioxide (CO2)[58].

3.4.4 EU legislation: traffic and safety rules

EU directives and regulations[59] have, over the past few years, greatly improved safety standards in sea transport. The improvements were brought about in particular by the three legislative packages adopted in the wake of the Erika and Prestige disasters.

Training and qualifications

Directive 94/58/EC of 22 November 1994 on the minimum level of training of seafarers gave the 1978 STCW Convention the full force of EU law.

The convention underwent significant revisions in 1995, and again in 2010, entailing corresponding revisions to the EU directive, the most recent version of which is Directive 2012/35/EU of 21 November 2012. It outlines the rules on training and competency standards for seafarer certification, as well as regulated specialist training. The directive also deals with Member States' requirements for seafarer training, communication between crew members, and the verification of crew members' certificates (port State control). It also includes stronger measures to combat fraudulent certification, higher standards for physical aptitude and updated safety training.

Directive (EU) 2017/2397 of 12 December 2017 on the recognition of professional qualifications in inland navigation and repealing Council Directives 91/672/EEC and 96/50/EC provides a gradual phasing-in with transitional measures to extend professional qualification requirements beyond the level of boat masters to cover all crew in inland navigation in the EU. The updated directive lays down the obligation for deck crew members and persons in charge of emergency procedures to hold certificates of qualification. Boat masters sailing in hazardous circumstances should be specifically authorised to do so and should be required to demonstrate additional competences.

[58] https://www.consilium.europa.eu/it/press/press-releases/2019/01/16/co2-emission-standards-for-cars-and-vans-council-confirms-agreement-on-stricter-limits/

[59] https://www.europarl.europa.eu/factsheets/en/sheet/125/maritime-transport-traffic-and-safety-rules

The EU has introduced the requirement for European staff to duplicate all mandatory certifications relating to basic training, the use of radio systems, first aid rescue systems, tanker management, etc. under the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)[60].

These certifications represent a significant cost of investment both for the seafarer and at the same time for the owner having to update on what are the new types of certifications required, on the other hand, increasing what are the quality standards of the crew and the management of ships during navigation.

Marine equipment

Directive 96/98/EC of 20 December 1996 on marine equipment aimed to ensure the uniform application of the SOLAS Convention to equipment for commercial vessels, making the IMO resolutions deriving from it mandatory. Directive 2012/32/EU amended Directive 96/98/EC by replacing Annex A to adapt it to take account of the most recent amendments to international conventions and applicable testing standards. Directive 2014/90/EU of 23 July 2014 on marine equipment strengthened the implementation of the relevant rules and the monitoring of their observance.

The EU has introduced the obligation to have the compliance mark (CE[61]) for all plants such as machinery or other ancillary elements for ships, which are installed on board, logically as well as representing an increase in machinery costs, it also reduces the obsolescence of these elements by increasing the operation of ships over time.

Security on ships and in port facilities including Passenger ship safety and ship inspection

The ISPS (International Ship and Port Facility Security) Code was adopted at an IMO conference in 2002, together with amendments to other international agreements. The aim of the code is to ensure better protection of ships and port facilities. Regulation (EC) No 725/2004 of 31 March 2004 was intended to ensure that decisions adopted by the IMO were interpreted and implemented uniformly. The European Union Maritime Security Strategy was launched on 24 June 2014 with the adoption of a Council decision approving it as a political and strategic measure for effectively addressing maritime security challenges using all relevant international, EU and national instruments.

The common rules and standards for ship inspection and survey organisations and for the relevant activities of maritime administrations (classification societies) were laid down in Directive 94/57/EC of 22 November 1994. Safety on ships providing scheduled services between two EU ports is regulated by Directive 2009/45/EC of 6 May 2009, which consolidated and recast the safety rules and standards for

[60] International Convention on Standards of Training, Certification and Watchkeeping for Seafarers(STCW), 1978 sets minimum qualification standards for masters, officers and watch personnel on seagoing merchant ships and large yachts

[61] The CE marking designations a set of mandatory practices for all products for which there is an EU directive, which also includes the application of a symbol with the letters "CE" on the item of marking object

passenger ships established by Directive 98/18/EC. Directive 98/41/EC of 18 June 1998 on the registration of persons sailing on board passenger ships made it possible for passenger numbers to be monitored and for rescue operations to be mounted more efficiently in the event of an accident. The rules on minimum qualifications for seafarers were updated in 2019 on the basis of a Commission proposal. Following adoption by Parliament and the Council, Directive (EU) 2019/1159 was published in the Official Journal on 12 July 2019.

In 2016, the Commission put forward three legislative proposals, which were voted on in plenary on 4 October 2017 and published on 30 November 2017. The first of the resulting directives, Directive (EU) 2017/2108 of 15 November 2017 amending Directive 2009/45/EC on safety rules and standards for passenger ships, sought to clarify and simplify the safety rules and standards for passenger ships.

The idea behind the directive was to make the rules easier to update, monitor and enforce. Amendments to the previous directive included removing inconsistent and incorrect references, providing new definitions of different types of ships, clarifying the definition of equivalent material, excluding ships under 24 meters and simplifying the definitions of sea areas.

A database has also been established by the Commission to increase transparency and facilitate the notification of exemptions, equivalences and additional safety measures.

The second, Directive (EU) 2017/2109 of 15 November 2017 amending Council Directive 98/41/EC on the registration of persons sailing on board passenger ships operating to or from ports of the Member States of the Community and Directive 2010/65/EU on reporting formalities for ships arriving in and/or departing from ports of the Member States, updated and clarified the existing requirements for the counting and registration of passengers and crew on board passenger ships.

Amendments included updating the definition of ‘port areas’ in order to incorporate information on the nationality of the persons on board and obliging companies to store lists of passengers and crew in a National Single Window. The third proposal led to the adoption of Directive (EU) 2017/2110 of 15 November 2017 on a system of inspections for the safe operation of ro-ro passenger ships and high-speed passenger craft in regular service, which amended Directive 2009/16/EC and repealed Council Directive 1999/35/EC. This updated and clarified the existing survey requirements for ro-ro ferries and high-speed craft and provided for a system of ship-based inspections prior to the commencement of a regular service, which can be combined with a flag state survey on a yearly basis.

In Europe, all safety regulations have been implemented as they were previously defined at IMO through the SOLAS[62] (safety of life at sea) convention as amended by ISPS[63] (international ship and port facility security code).

The impacts of these regulations have led to an increase in the level of safety that a ship must possess and on the inspections that are now compared to the past and are more onerous, they are also more meticulous in compliance with the new regulations.

Developments since the Erika and Prestige disasters

Following the wreck of the oil tankers Erika and Prestige, in 1999 and 2002 respectively, EU safety standards for maritime transport were once again strengthened considerably.

Erika I package:

- Directive 2001/105/EC of 19 December 2001 strengthened and standardised the legal provisions laid down in Directive 94/57/EC on ship inspection and survey organisations (see previous section). In particular, it introduced a system of liability in the event of proven negligence;
- Directive 2001/106/EC of 19 December 2001 made port State control mandatory for potentially hazardous vessels and introduced a 'blacklist' of ships which can be refused access to EU ports;
- Regulation (EC) No 417/2002 of 18 February 2002 set a fixed timetable for withdrawing single-hull oil tankers from service and replacing them with safer double-hull vessels. Following the Prestige oil tanker disaster, a more rigorous timetable was adopted in Regulation (EC) No 1726/2003 of 22 July 2003. Regulation (EU) No 530/2012 of 13 June 2012 on the accelerated phasing-in of double-hull or equivalent design requirements for single-hull oil tankers subsequently repealed Regulation (EC) No 417/2002 and countered certain potential exemptions under IMO rules. It specified that, for the transport of heavy grade oil, only double-hull oil tankers would be allowed to fly the flag of a Member State, and it banned all single-hull oil tankers, irrespective of the flag, from ports or offshore terminals or from anchoring in areas under the jurisdiction of Member States.

Erika II package:

[62] The SOLAS Convention in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships.

[63] The International Ship and Port Facility Security (ISPS) Code is an amendment to the Safety of Life at Sea (SOLAS) Convention (1974/1988) on Maritime security including minimum security arrangements for ships, ports and government agencies

Directive 2002/59/EC of 27 June 2002 established a Community vessel traffic monitoring and information system (SafeSeaNet[64]). Before a ship is allowed to enter a port in a Member State, its owners are responsible for providing certain information to the relevant port authorities, particularly in the case of dangerous or polluting cargoes. The directive made it mandatory for ships to be equipped with automatic identification systems (AIS) and voyage data recorders (VDRs) or "black boxes". The authorities of the relevant Member States have the right to prohibit ships from leaving a port in unfavourable weather conditions.

Regulation (EC) No 1406/2002 of 27 June 2002 established a European Maritime Safety Agency (EMSA). EMSA's role is to provide Member States and the Commission with scientific and technical support, and to ensure that safety rules in maritime transport are enforced. Its remit has considerably expanded over time to incorporate pollution control (operational assistance at the request of Member States) and satellite-based monitoring systems.

Regulation (EU) No 100/2013 of 15 January 2013 amended the EMSA Regulation, clarifying EMSA's core and ancillary tasks, as well as detailing the role it should play in facilitating cooperation between Member States and the Commission, by:

- Developing and operating the EU Long-Range Identification and Tracking of Ships (LRIT) European Data Centre and SafeSeaNet;
- Providing relevant vessel positioning and Earth observation data to the competent national authorities and relevant EU bodies;
- Providing operational support to Member States concerning investigations related to serious casualties.

The third maritime safety package and port State control:

Following intense negotiations, Parliament and the Council reached agreement in December 2008 on a third legislative package comprising two regulations and six directives:

- A recast of the Directive on port State control (Directive 2009/16/EC of 23 April 2009) to ensure more frequent and more effective inspections under new monitoring mechanisms linked to potential risk, thereby bringing the procedures, instruments and work done in accordance with the Paris Memorandum of Understanding within the field of application of EU law;
- Directive 2009/21/EC of 23 April 2009 on flag State requirements, which enabled compliance on the part of ships flying a Member State flag to be monitored more effectively;

[64] SafeSeaNet is a vessel traffic monitoring and information system, established in order to enhance:
- Maritime safety
- Port and maritime security
- Marine environment protection
- Efficiency of maritime traffic and maritime transport

- Directive 2009/17/EC of 23 April 2009 amending the Directive establishing a Community vessel traffic monitoring and information system (SafeSeaNet), aimed to improve the framework legal conditions concerning places of refuge for ships in distress and to further develop SafeSeaNet;
- Regulation (EC) No 391/2009 and Directive 2009/15/EC of 23 April 2009 established common rules and standards for ship inspection and survey organisations, and were aimed at creating an independent quality-monitoring system to eliminate the remaining flaws in inspection and certification procedures for the world fleet;
- Directive 2009/18/EC of 23 April 2009 establishing the fundamental principles governing the investigation of accidents in maritime transport set out the standard principles for investigations at sea of marine casualties and incidents involving vessels flying the flag of an EU Member State and occurring in the territorial sea or internal waters of a Member State. The directive also established a system for pooling findings, known as the 'permanent cooperation framework', between EMSA, the Commission and the Member States;
- Regulation (EC) No 392/2009 of 23 April 2009 on the liability of carriers of passengers by sea in the event of accidents (based on the 1974 Athens Convention relating to the Carriage of Passengers and their Luggage by Sea as amended by its protocol of 2002);
- Directive 2009/20/EC of 23 April 2009 set out the requirements for port State control in respect of ship owners' certificates of insurance against maritime claims (subject to limitation under the 1976 Convention on Limitation of Liability for Maritime Claims as amended by the 1996 protocol thereto).

The European Union has set up a European Maritime Safety Agency (EMSA)[65] to ensure a high, effective and uniform level of maritime safety, maritime protection and ship pollution prevention, action against marine pollution caused by oil and gas extraction facilities. The EMSA monitors the standards for inspections carried out on ships by the authorities of the individual member states (PARIS MOU and PSC)[66] that dock at European ports in order to increase the standards of safety and quality of all ships.

[65]The European Maritime Safety Agency (EMSA) provides technical advice and operational assistance to improve sea protection, pollution preparedness and intervention and maritime safety

[66] The Paris Memorandum of Understanding on Port State Control is the official document in which the 27 participating Maritime Authorities agree to implement a harmonized system of Port State Control

3.5 The explosion of the bubble

We talk about the bubble when much more capital than required is accumulated in a certain activity, creating a peak of overcapacity linked to a spike in demand, artificially induced. Bubbles are nothing but credit-driven shocks.

In North America, above all, a level of artificial consumption has been created with regard to real estate. And like every time the rope is pulled too much, sooner or later the mechanism breaks and the bubble explode. It doesn't explode at any moment, the signals are there, and there were in 2008, but the general euphoria made you blind.

When we are in an excessively bloated bubble, mortgage fraud rates rise. History teaches this, in particular the crisis of '29.

In addition, house prices no longer rise, which means they are debts no longer assets. Long story short, the housing bubble burst after, in response to inflationary pressure in the U.S. economy, the Federal Reserve increased the discount rate progressively, for a total of 425 basis points (bps) between 2004 and 2006. The families were no longer able to maintain their solvency.

The supply of real estate outweighed demand and the boom in house prices and loans began to fade. CDO became toxic, underlying mortgages were in default. The entire global financial market has produced write-downs of 4 trillion dollars. Around February 2007, the first warning sign was issued: California's New Century is at a loss.

A few months later, due to the insolvency, the quotes of subprime products fell, which became illiquid. The fall of these instruments infected other products and financial sectors, in order to reach all European banks, passing first of all from the English Northern Rock, as many held subprime securities in their portfolios. Credit default swaps (CDS) became more widespread in an attempt to cover the risk of failure of the issuer; CDS are tools already used in the past that can create paradoxical situations, which allowed short selling, or to bet against subprime bonds.

The crisis took shape on September 15, 2008, the day of the failure of Lehman Brothers. This, like the others that had been the subject of deregulation measures, suffered severe devaluations. CDS premiums skyrocketed, stock prices plummeted. The U.S. government did nothing to save the great international bank, so its downfall was the ruin for many other American institutions and overseas.

The crisis has affected the stability of the world's financial institutions by causing liquidity problems, limiting sustainable growth. Developed economies ended up in recession: in the fourth quarter of 2008 GDP fell by 6.2% in the United States, 5.9 in the Eurozone and 12.7 in Japan compared to the previous period.

Italian banks have resisted the crisis relatively better thanks to a competition of causes:

- banking intermediation was based on close relationships with customers;
- families were a stable source of collection;

- the balance sheets of Italian banking institutions were poor in the new financial products of the crisis;
- for households, financial debt accounted for 49% of disposable income, compared with 90% in the Eurozone and 150% in the UNITED Kingdom and the US[67].

Nevertheless, the crisis has become felt as in all other European countries, characterized by a decline in consumption, a sharp deceleration in credit, due both to the decrease in demand from companies and the poor concessions of banks. In particular, the construction industry, the most contiguous to the real estate market, was particularly affected.

As far as consumption is concerned, the goods that suffered the least from the crisis were primary and luxury goods. Durable goods, on the other hand, suffered the most, recording a serious decline in consumption. Not with the same intensity, but of considerable magnitude, the fall in the marketing of discretionary goods and capital such as ships, port infrastructure.

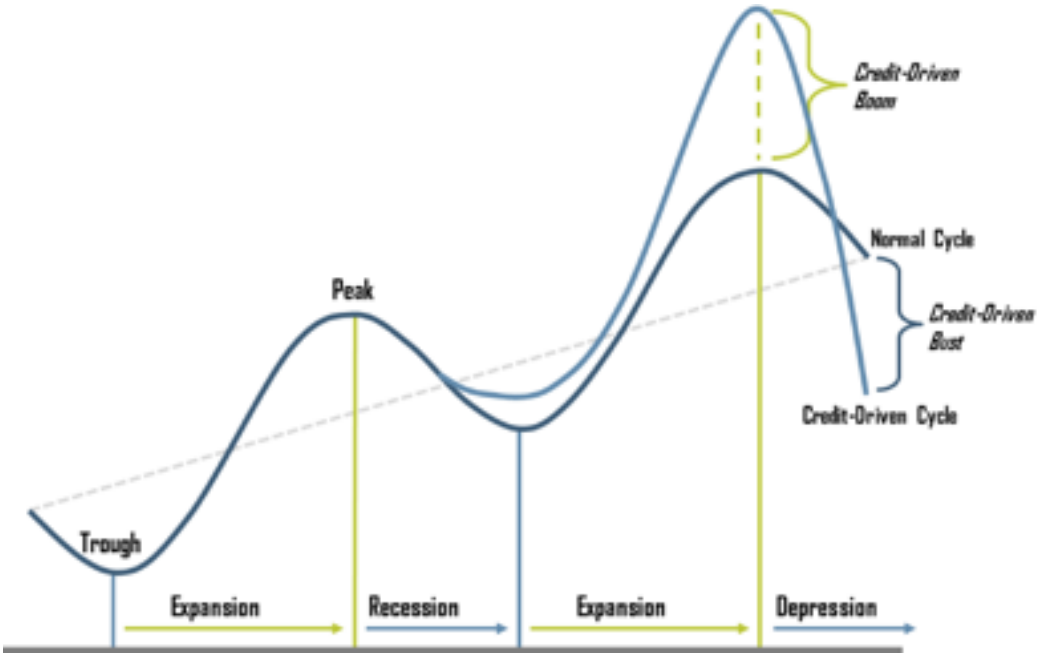
With regard to trade and production indices, the biggest decline was in equities and rentals, followed by income, container volumes and the value of trade.

[67] Conference School of Tributary Police of the Finance Guard, *The International Financial Crisis and Italian Banks* – intervention by Stefano Mieli, Central Director for Banking and Financial Supervision of the Bank of Italy, Rome. 4 March 2009

3.6 The effects of the 2008 crisis on shipping

What made the crisis so entrenched was the sum between a global bubble, the one linked to subprime, and a bubble in the shipping market, whose business cycle had reached complete saturation. If, as mentioned above, the bubbles are largely artificially generated by excessive credit concession that generates excessive speculation, to aggravate the situation of the "physiological" fall of the shipping cycle has been added the bursting of the financial bubble: see the Figure[68]:

Figure 18: Representation of the shipping cycle during the crisis



Source: De Monie, G. J-P Rodrigue and T. Notteboom, Economic Cycles in Maritime Shipping and Ports: The Path to the Crisis of 2008

Among the factors at play, the peculiarities related to the nature of the sector, determined the degree to which it was affected:

- the correlation with global consumption: the effect; of macroeconomic turbulence;
- market tension towards balance: the effect of oversupply;
- the link with the financial world: the. effect of financial turbulence.

[68] De Monie, G. J-P Rodrigue and T. Notteboom, *Economic Cycles in Maritime Shipping and Ports: The Path to the Crisis of 2008*, P.V. Hall, B. McCalla, C. Comtois and B. Slack (eds) Integrating Seaports and Trade Corridors. Surrey: Ashgate, 2010

3.7 The effect of macroeconomic turbulence

The decline in consumption and therefore of traffic has, as expected, had an immediate effect on the internal transport sector. It can be said that the sector has been affected by the decline in aggregate demand and that this has led to a fall in international trade and global volumes transported.

3.8 Oversupply and freights depression

The tankers segment had the largest fleet at that date, both in number of ships and by tonnage, but it is the bulk sector that has increased its fleet the most with new orders, bringing to market 271.731.000 tonnage, a number that accounts for 67% of existing capacity.

Such an attitude throughout the shipping market can be explained by the sentiment that the market was experiencing at the time. Funding for the fleet could be received at low interest rates, and it was believed that there would still be a lot of demand to meet. Consider that in 2008 there were 16 trillion dollars of goods exported[69].

The data shows the existence of a bubble. A bubble much bigger than that of the new economy. Just like the Wall Street Stock Exchange or the new economy phenomenon, in fact, what happened in shipping before 2008, is a speculative process.

Like every bubble sooner or later it burst, and the reason was still the overcapacity. Optimism and irrationality have once again blinded investment forecasts and decisions. One of the reasons for the oversupply is the growth of emerging countries, especially China, which has greatly expanded supply since the 2000s, especially dry bulk.

East Asian countries have been opening up more and more shipyards since the 1990s under the "flying gene paradigm"[70]. The FGP is a model for the international division of labour in East Asia based on dynamic comparative advantages. The paradigm explains how the development of Asian countries takes place, as part of a regional hierarchy where commodity production is constantly shifting from the most advanced and least advanced countries, and thus the growth of various sectors. The underdeveloped nations of the region can be considered aligned behind the industrialized nations and advance in the order of their different stages of growth, just as they do for the flight of wild geese. The development drive always comes from the higher level, making the FGP a top-down model. The leader was initially Japan, which from 1970s to 1975 gained a 52% share of the world's naval production. Like a domino, the growth model was followed by South Korea, which

[69] UNCTAD, Review of maritime transport 2016, (UNCTAD/RMT/2016), UNITED NATIONS PUBLICATION, Palais des Nations, CH1211 Geneva 10, Switzerland, 2016

[70] United Nations, Discussion Papers, “The Asian developmental state and the flying geese paradigm” Discussion Papers N.213, November 2013

in the 2000s came to contribute 30% of the world's tonnage supply. And finally, China, gaining a 35% in 2009[71].

3.9 The financial turbulence caused by the connections between shipping and finance

The close correlation between shipping and finance has caused the sector to be particularly affected by what has happened in the banking world. In the decade before the crisis, the relationship of shipping companies with banks had changed considerably. If the latter were first in a passive role, by the end of the 1990s they began to have a higher degree of involvement.

One of the reasons for this change was the capital intensity required by transport, no longer only for the acquisition of assets, but also for the financing of the operational activity. Investments have become increasingly active over time, requiring an increasing involvement in the activity by banks.

Moreover, as international trade has grown, ports and transport companies have become increasingly attractive to the financial world, from banks, insurance companies and even pension funds: large amounts of capital have been invested in shipping companies, considering them as assets to differentiate their portfolio and consolidate mutual dependence.

The growth of trade is due to another phenomenon, which has intensified the bank-shipping relationship even more: the financing by banks of almost all of the world's transactions. One of the most widely used tools with which this is achieved is the letter of credit.

If this were still not enough, in the past years before the crisis, we have known the spread of shipping derivatives, derivatives developed to protect against the risk arising from the high volatility of the shipping market, that is, from fluctuations in the rents, bunker prices, the value of ships and scrap, interest rates, foreign currencies[72].

Until 2008, this report produced many benefits for the sector: it supported important export economies such as East Asians, contributed to the integration of ports with regional markets in Europe and the United States.

But when the bubble burst, the dependency was so intense that weaknesses in the financial system spilled over into shipping. The terms of receiving letters of credit became much stricter; financial institutions sometimes refused to honour letters of credit issued by foreign banks or simply did not want to grant credit[73].

[71] Magnolis G. Kavussanos, Ilias D. Visvikis, *The international handbook of shipping finance*

[72] Magnolis G. Kavussanos, Ilias D. Visvikis, *The international handbook of shipping finance*

[73] De Monie, G. J-P Rodrigue and T. Notteboom, *Economic Cycles in Maritime Shipping and Ports: The Path to the Crisis of 2008*

Despite the turbulent relationship that exists today between the shipping and finance sectors, sea traffic is a fundamental element of the modern globalized economy: according to statistics of the International Chamber of the Merchant Navy, about fifty thousand merchant ships manage the world's transport of raw materials, people and goods.

Financing a ship is a capital intensive operation, as the cost of building a merchant ship can range from ten to two hundred and fifty million dollars depending on whether you are talking about a small bulk carrier or an ocean cargo ship for the transport of natural gas equipped to deal with, for example, , the frozen seas.

Therefore, regardless of the technical and dimensional characteristics of the vessel, the sources of financing that the owner has traditionally available in the banking sector are essentially the mortgage and nautical leasing, or instalment financing, which provide for the granting of a sum of money to be returned to a predetermined interest in a depreciation period of between five and ten to twelve years.

The loan, obtained by mortgaged the ship under construction, generally covers a part of the total investment. As with an ordinary mortgage transaction, it is therefore essential to assess, on the part of the lender, the Loan To Value (LTV) of the transaction, that is, the impact of the loaned sums on the total value of the asset, as well as of course the prospective repayment capacity.

In times of financial euphoria, the LTV of shipping finance operations has also taken on values above 80%, while it is advisable, and it is customary to come back into vogue after the 2008 financial crisis, precisely, that LTV does not exceed 60% of the transaction. In the event that the owner's own assets are not sufficient to cover the rest of the transaction, there is often a simultaneous mortgage of other naval assets of the shipping company, or, the disbursement of a subordinated loan alongside the main operation (mezzanine finance)[74].

In addition to the creditworthiness of the maritime company, which is based on the logic of corporate analysis at the banking level, in a shipping finance operation both the framework of collateral to the business and the analysis of the expected cash flows of the transaction itself (discounted cash flows analysis), closely related to the monitoring of the value of the asset for the depreciation period of the loan, are fundamental.

In the first respect, as this is a capital-intensive sector with high operational risks, shipping finance operations are generally structured with a framework of guarantees that do not stop of course at the mortgage registration on the ship (whether finished or under construction), but which include a much more complex security package:

- disposal of asset insurance;
- divestment of the proceeds (i.e. rental or transport contracts that may already be guaranteed during the investigation);
- pledge on the company's shares.

[74] Mezzanine financing is a hybrid of debt and equity financing that gives the lender the right to convert to an equity interest in the company in case of default, generally, after venture capital companies and other senior lenders are paid

From the second point of view, the assessment of the banking transaction is necessarily based on the analysis of prospective cash flows that are an expression of the ship's ability to generate the profits needed to service the debt. In the drafting of a financing contract, we often see the drafting of separate business plans in the assumptions of a more favourable and a more conservative scenario, in order to ensure greater credibility to financial planning.

The recent development of the financial and banking markets has made the finance shipping scenario much more complex: on the one hand, financial intermediaries, having to adapt their credit policies to Basel III[75] standards and having to comply with increasingly stringent capital requirements, have in recent years provided less and less credit by applying generally more onerous conditions to the occurrence of anomalies in the relationship with the customer or the occurrence of conditions provided by financial or not financial or non-financial covenants.

On the other hand, the offer of financial solutions for shipping has been enriched with new types of non-traditional type, primarily the issuance of bonds and private equity and has recently been marked by the increasing weight of the financing contracts, of the covenants, which have become for the owners financed a number of drivers determining the calculation of the actual expensiveness of the operation.

Among the alternative sources of financing, corporate bonds are certainly among the most common, due to the many advantages it offers compared to the traditional banking circuit: by targeting a potentially very large audience of savers, they can draw resources from global bond markets on often more advantageous terms and with covenants less stringent than those provided by lenders.

In addition to traditional corporate bonds, convertible bonds (i.e. bonds that the saver can turn into shares of the financed company) and structured bonds, which provide for the establishment of a new company that owns the property of the ship, issues bonds and guarantees reimbursement, effectively securitizing the financing.

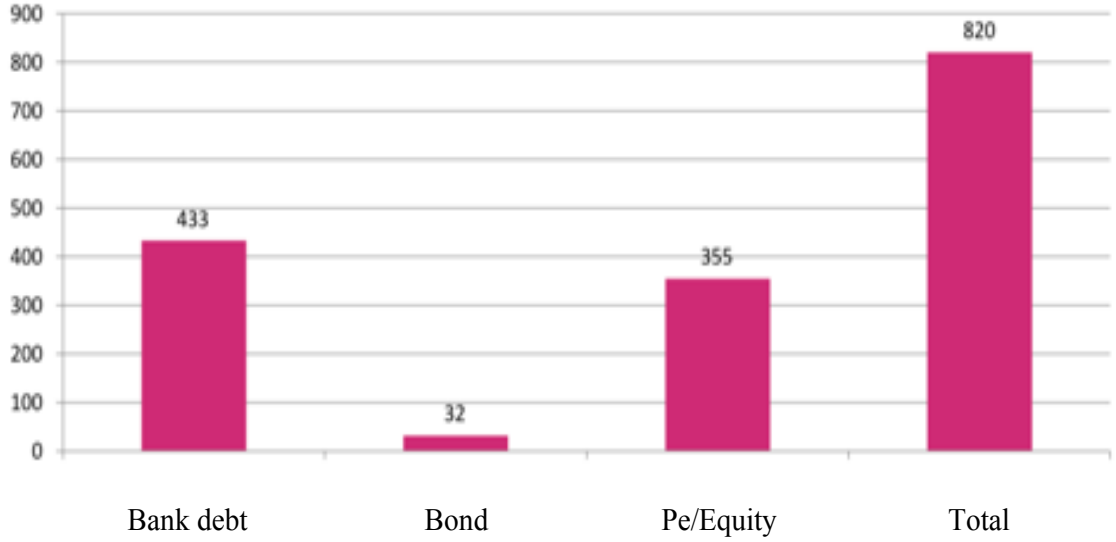
This form of financing is also called asset-based financing, as the characteristic element of such transactions is the establishment of a vehicle company in which the shareholders are normally the funders of the transaction. The legal and conceptual separation of the asset from the rest of the shipping company's assets facilitates the repossession actions of the asset and the valuation of the asset and its residual value over time represent the criterion of assessing the creditworthiness of the transaction.

The definitive affirmation of private equity in the Financial Market of the European Union is closely linked to the forecast of economic recovery in the parts area since 2014 and many believe that the instrument can reasonably replace the banking offer in a market with high potential such as shipping, where several target companies could be identified.

[75] The term "Basilea III" refers to a set of measures to regulate banking management that were introduced in 2011 in response to the financial crisis. The regulatory body aims to promote a more robust banking system and to define a homogeneous discipline for crucial aspects of banking activity

The chart shows how the equity segment is gradually becoming a global fund source and is eroding market share at traditional banking circuits after the credit crunch in recent years.

Figure 19: Financing of the world naval fleet



Source: Pareto Securities, Petrofin research, World yards

Not least, the development of a high yield bond market for the maritime sector and with the entry of private equity into the sector, leads to a rethinking of the governance process within maritime companies, which develops a positive dialectic within corporate bodies often advocates an improvement in the quality of the decision-making system.

The most frequently used covenants in financial and asset contracts are those of a financial and capital nature, which are based on the monitoring of particular liquidity indices or capital ratios of the financial enterprise.

Neglected in financial practice until a few years ago, the financial covenants themselves, on the other hand, in the phase of market reversal, have increased the burden of the current transaction or have been used, with increasing frequency, in the context of debt restructuring agreements that have affected, in the last three years, some primary shipping companies in our country.

Among the most common covenants, for example, should be remembered:

- The Security Cover Ratio (SCR), which measures the ratio of the value of mortgage ships to out-of-date debt over the duration of the transaction: if the ratio is reduced below a certain threshold (typically 100%) The bank is required to apply more burdensome conditions or to require a strengthening of the framework of guarantees. It is precisely the worsening of this index that has often allowed some banks exposed in the shipping sector in recent years to carry out a policy of repricing their dispensing, thus mitigating the increase in funding on the international capital market;

- The Debt Service Cover Ratio (DSCR), which measures a company's ability to meet its debts. The higher this ratio, the easier it is to get a loan. This ratio must be greater than 1: if it is lower, such as 0.95, it would mean that there is a negative cash flow. Usually in the shipping sector the minimum DSCR must be 1.20-1.30, and should be monitored quarterly, while the average DSCR is around 1.30-1.40;
- The Loan Life Cover ratio (LLCR), which represents the dynamic decline of the previous index, effectively measuring the ratio of prospective cash flows to the remaining debt considered to be miserly time intervals;
- Minimum net capital and/or dividend distribution limits;
- Minimum cash.

The recent financial practice has then experimented with other more sophisticated forms of covenants, including, but not limited to, the one developed by CARIGE in a recent operation to finance the sale, at auction, of two vessels formerly belonging to the Ligurian company Handy Shipping, with the expectation of high leverage for the buyer, beneficiary of a mortgage loan and a parallel subordinate loan. , the reimbursement of which is linked to the occurrence of a number of suspenseful conditions related to market trends: more precisely, the transaction substantiates a profit share agreement between the bank and the buying company, in the presence of obviously the conditions of settlement of the relationships particularly advantageous for the latter and the opportunity, on the part of the former, not to immediately account for a loss on a loan in distress with the prospect of, if the market recorded a recovery, of a recovery in value.

To date, these options are valid and existing, in fact they have not replaced the classic mortgage financing that bank. However, these alternatives that are on average more expensive than bank debt have failed to completely support the traditional mortgage financing offer that has largely zeroed out the banking shipping system since 2008.

3.10 The effects of the crisis on shipping, and beyond.

Looking for a comparison in past history, during the freights crisis of 1981-86 there was a similar situation, and that is even then the banks found themselves with default loans that had been granted to shipping companies. Unlike the subprime crisis, however, the crisis in that case was linked only to the maritime sector, which allowed banks with a diversified portfolio to deal with the liquidity problems that were experienced by banks after 2008.

In fact, the banking system in 2008 did not have sufficient reserves to absorb losses, as they had to commit to complying with the capital requirements imposed by Basel II. For each write-off sum, a capital increase or asset reduction is required.

In addition, in the 1980s, the modus operandi was to sell as many ships as possible to try to repay some of the debts. This did not happen with subprime.

The 2008 crisis had far more disastrous effects than any crisis in the last 50 years. It impacted almost all sectors of the economy, including shipping. The effect was immediate on the container segment, due to the sudden decrease in consumption, but the dry-bull segment was almost unchanged, which in fact benefited from Chinese investment that led to a sharp increase in its steel production and imports of coal and wheat.

Finally, family businesses deserve some attention in this matter. In fact, in 2008 out of a total of 7,660 Italian companies with revenues of more than 50 million, 2,522 were family members and 21 of them operated in the maritime transport sector.

These 21 companies had, among other things, a turnover of more than 250 million, which is therefore much higher than the total Italian companies and qualifies them as large companies. From the 2000s until the crisis, family businesses have shown that they can grow more than others: their revenues grew by 84%[76]. Even more deserving family companies in shipping, which in the same period grew at a rate of 136%. If, at the beginning of 2008, the profitability of the sector was very high, higher than the national average, the crisis then completely nullified this advantage.

The crisis in the shipping sector in Italy came by unfolding all its effects in 2009.

And it was at the family business level that the crisis had a more significant impact. The reasons can mainly be traced back to two circumstances:

- the heavy dependence of these companies on the banking sector. This can be seen in the degree of indebtedness expressed as a ratio of total assets to net worth, which appeared to be below market averages, but was right in the accounting of leasing, which was of significant weight to those companies[77];
- the low capacity of these companies to repay the debt. The ratio of PFN to EBITDA increased from 3.8 in 2008 to 8.1 in 2010. In addition to the excessive exposure, shown in 2009 by an increase in PFN of 28%, it clearly affected the reduction in the ability to generate income, which fell by 30% in terms of EBITDA[78].

As for the Italian ports, it can be said that most have been affected by what has happened in the commodity market. It, which in previous years benefited from a continuous expansion of demand, in the wake of general

[76] Conference School of Tax Police of the Finance Guard, *The International Financial Crisis and Italian Banks* – intervention by Stefano Mieli

[77] Companies do not draw up the balance sheet according to the IFRS/IAS principles that impose the financial method, so the accounting of the lease does not involve its inclusion in the assets and its debt in liabilities

[78] For the data in this paragraph see the writing of G.Corbetta, A. Minichilli, F. Quarato, Executive Summary - Focus on Shipping Companies, Observatory AIdAF-Unicredit-Bocconi (AUB) on all Italian family companies of medium and large size, Milan, 2012

economic development, since 2009 experienced a severe contraction causing a collapse in prices and a strong demand for storage of goods at ports.

Data show that 2009 saw a 13.7% contraction in freight traffic for Italy compared to the previous year. In particular, the trade in solid goods was affected. Some of the most significant decreases: Livorno -24%, Trieste -18.10%, La Spezia -16% and Ravenna -13.7%. Among the least negative Taranto (-5.7%) Venice (-2.5%)[79].

With regard to liquid bulks, which deserve more attention for this study, the main Italian port in 2009 remained Trieste, which also experienced one of the smallest decreases, with a relatively less pungent 6% less than the previous year. For importance in relation to the size of the decrease, in the liquid goods sector, there were the ports of Augusta with 23.522 million tonnes (-19.78%), Cagliari-Porto Foxi with 23,343 million tonnes (-16.3%), Genoa with 20.310 million tonnes (-3.3%), Messina-Milazzo, where many of its preceding airports show a growing traffic rate (2.6%; 14.859 million tonnes), and Venice (-5.33%; 11.674 million tonnes). Livorno handled a -13.3% increase on the quantities handled in the previous year, for a total of 7.474 million tonnes. The only stopovers that, compared with 2008, reported growth were Taranto (about 4.3%; 6.610 million tonnes) and Ravenna (3.2%; 4.632 million tonnes). Essentially stable, although slightly down, were traffic in Savona (- 1.27%; 7.360 million tonnes) and Naples (-0.5%; 4.260 million tonnes).[80]

3.11 Business crises as a strategic opportunity for change

It sounds paradoxical, but crisis and success have more than one characteristic in common, you could say that they are two sides of the same coin.

What changes is that they proceed in opposite directions. We can talk about crisis and success respectively as a vicious circle and virtuous circle, a phenomenon not random but due to the succession of strategies Neither must be traced back to physiological and random phases of corporate life, whether they are difficult or advantageous.

Success is a phenomenon of economic growth that is valid over time and therefore not transeunt, able to permanently strengthen the economic foundations of the enterprise[81].

The crisis "constitutes a serious pathological state of the company, such that it can jeopardize its survival and require demanding healing."[82]

[79] http://www.mit.gov.it/mit/mop_all.php?p_id=08957

[80] http://www.mit.gov.it/mit/mop_all.php?p_id=08957

[81] U. Bertini, *Scritti di economia e politica aziendale*

[82] P. Bastia, *Pianificazione e controllo dei risanamenti aziendali*, Giappichelli Editore, Turin, 1996

Bettola speaks of the crisis, properly understood, as "the acclaimed, and externally apparent, phase of decline, that is, the continuation of a negative trajectory of the affairs of the enterprise in which the aggravation of economic and financial imbalances is fully perceived on the outside."[83]

When the crisis is unequivocally manifested, through serious economic and financial imbalances, it is only the culmination of a decline that began well before. Critical issues exist for everyone. What the economic entity should do is make all the resources available (especially human resources) effective) and neutralise the weak points of the organisation[84].

What differentiates successful companies from non-successful ones is the ability to "arrive on time", anticipate changes rather than undergo them, what is said to be pro-active companies.

As Bertini teaches, the strategy must not only be an isolated and extraordinary moment in the life of the company, an ongoing activity like that of operational management.

The breaking point is the accumulation of positive tension[85] to change, which allows the company to interpret the environment and take a leap from today's strategy to tomorrow's strategy. Here still comes into play the summit of the company, which makes a creative effort "rethinking" the current reality from a future perspective, to imagine the possible future configurations.

The highest objective of a strategy is to achieve competitive advantage; In this regard, Porter states that "at the heart of the basic strategy concept is the idea that competitive advantage is at the heart of every strategy and gaining this advantage requires a choice on the part of the company: if a company wants to gain a competitive advantage it must choose what kind of advantage to pursue and in which area it wants to achieve it[86].

At this point, aware of the current situation, we try to close the gap in terms of resources and skills that separates the company from the achievement of the goals, first of all the competitive advantage hoped for.

This is accentuated even more in the wake of a business crisis, when the gap to be closed widens, in order to reverse the direction of the circle, from vicious.

As a result, the analysis should be aimed more at the search for the resources that will enable the revival and enhancement of their potential, than to the spasmodic search for past errors and the causes of the crisis[87].

The situation in which the company is in sharp decline is comparable to that of a machine that has travelled for too long with the handbrake pulled causing damage to the clutch and engine. At this point removing the

---

[83] G. Bettoli, *Crisi d'impresa, ristrutturazione e ritorno al valore*, Egea, Milan, 2000

[84] P. Drucker, *Manuele di management*, Etas, Milan 1978

[85] G. Hamel – C. Prahalad, *Alta conquista del futuro*, Milan, il sole 24 ore, 1995

[86] M.E. Porter, *Il vantaggio competitivo*, Edizione comunità, Milan, 1993

[87] S. Garzella, *Il sistema d'azienda e la valorizzazione delle "potenzialità inespresse": una visione strategica per il risanamento*, Giappichelli Editore, Turin, 2005

handbrake is no longer useful, instead you need to think of a completely new car. The example of the handbrake will serve in the future to avoid making similar mistakes.

In the same way, the company will have to learn from its mistakes and rethink a new strategic formula for relaunch. What is saved of the old formula are the resources considered strategically relevant. "Not only turn to the future with the simple hope of survival, but with the desire to seek success."[88]

It is in this sense that the need for a clean-up becomes almost a strategic opportunity, because it forces the company to complete a complete renewal. If we think about the ethological meaning of rehabilitation, in fact, the term refers us to the idea of something yes sick, but of treatable.

Of course, easy to say, less to do.

There are two fundamental premises for this to actually happen.

- intervention is planned in a timely manner before the crisis is irreversible;
- The new strategic formula must balance and harmonize the short (the present) and the medium/long term (the future): it must not lead to short-term profits but set the stage for a sustained production revival[89].

3.12 How Perseveranza SpA di Navigazione is facing the crisis

The crisis of 2008 led to the bankruptcy and subsequent closure of many shipping companies, the management of many of these passed into the hands of investment funds while, others had to declare bankruptcy due to lack of liquidity or solvency problems, mostly of a banking nature.

The Perseveranza Group from 2004 and until 2008 benefited from a cycle of huge expansion of the rental market, which reached the high of the 2000s.

In the face of operational and financial breaks of all ships in the group between USD 12 thousand and USD 13 thousand daily for rentals, profitability between 2004 and 2008 was about three times that break even, with a cash generation that saw the company with reserves of about USD 100 million, short-term trust for about USD 50 million unused, on a consolidated turnover of about USD 150milioni per year.

The company in 2004-2008-formalized new-build contracts for about 15 ships, all with prices ranging between USD 45/50million per ship, all built on behalf of the group in Korean and Chinese shipyards, including dry cargo and petrochemical vessels.

---

[88] R.A. Cenciarini, *Ristrutturazione e crescita*, Giuffrè, Milan, 1998

[89]V. Coda, *Le tappe critiche per il successo dei processi di ristrutturazione aziendale, in AA.VV., Crisi d'impresa e strategie di superamento*, Giuffrè, Milan, 1987

Since the mid-1990s, the group has stopped buying second-hand vessels and first with Fincantieri and then at public and private shipyards in China and Korea, it has built over 25 ships.

Since the second half of 2008, as described above, the world economy has suffered a sharp halt as a result of the credit crunch originating from the sub-mortgage crisis in the United States and the Lehman Brothers crisis.

At that time the group still had in order six new ships (three bulkers and three petrochemicals) and had a fleet of 14 ships in operation all of new construction and with an average 'age of about 4.5 years (the oldest ship of the group was built in 2001, against an average economic life of these ships of about 25 years).

In addition to the ships owned, the group controlled, through medium and long-term passive rental contracts, 10 ships almost all bulk carriers.

The financial position at the time amounted to approximately USD 350 million of debt in the medium and long term, compared with a net worth of about USD 200 million and assets fixed for approximately USD 450 million, for which the group's leverage (PFN/ PN) was approximately 1.45, while consolidated EBITDA amounted to approximately 25% of turnover. The available liquidity was approximately USD 70/75million at the end of 2008, with capital commitments for investments of approximately USD 25 million.

All 24 ships were chartered in medium/long-term with rental levels of at least 1.3 times the operational and financial break even.

Between 2009 and 2012, the company defaulted on nearly all of its active trading counterparts, including two Korean state-owned companies and some of the main Chinese and Indian operators.

Since the end of 2012, the company has unilaterally suspended the service of the debt and has begun a debt restructuring process with its financial creditors. This huge negotiation ended in two steps, the sign of a first restructuring agreement (ex art. 67 LF) in 2016, and the sign of debt elimination and restructuring in July 2020 (ex art. 182 LF) that will generate the company ordinary liquidation through the "datio in solutum" of remaining vessels (as of the date of the signing of Article 182 there were 7 remaining vessels, while all rental ships had been returned and damages relating to the non-performance of the rental contracts had been transacted).

In fact, the company will transform, in the execution of this agreement, its mission from armament and ownership of ships into the management of third-party ships, starting from some contracts of management of its own ships that have been guaranteed to it by creditors.

The company no longer has financial creditors such as "banks" but only financial creditors such as "speculative funds" that in 2018/2019 have taken over credit from banks through securitization operations.

Moreover, other reasons for the crisis that are comparable to all companies active in the sector are: a negative macro-cycle between 2009 and 2016/17 with average annual revenues lower than the operating costs resulting from the crisis of the world economy, accompanied by a sharp oversupply of ships compared to the actual

demand, resulting from the excess hold built in the previous five years exacerbated by the economic crisis that reduced the consumption of raw materials.

At the time of the market boom, the group continued to invest in vessels with fairly strong financial levers offered by the bank system of value 4, i.e. banks provided four euros of debt for every euro of Equity invested in ships; the Italian and European banking system helped to accelerate this imbalance by continuing to offer abundant leverage until 2008 at very competitive rates, contrary to any market logic..

So, the ships were purchased by the group with financial levers equal to 3.5/4 (75/80% mortgage financing) at very high prices but they were due to the great rental capacity and profitability of the ships.

In addition, the introduction of technological innovations in 2013/14 (the so-called eco-type engines)- accelerated the push of these ships ordered and built in 2007/2008, towards lower profitability.

Oversupply and shrinking demand have led to a debt crisis which for the period between 2011 and 2017 averaged operating costs, which accounted for about 60% of the total financial costs of these ships.

The group therefore recorded a series of defaults to chain renters; in the dry bulk segment the company found itself in the "perfect storm" suffering the default of almost all active counterparts.

Between 2009 and 2012, the group responded by selling all ships that generated cash margins, renegotiating its passive rental contracts and using the abundant liquidity that has been in the group since 2009. All this was not enough because the crisis lasted until 2017 with an average revenue equal to the operating costs, which for these ships amounted to about 30% of the financial break even.

At a time when companies have resumed operation, the banking system has decided not to, maintain support for the industry by handing over its loans to various hedge funds in sometimes opaque ways and to the limits of accounting fairness and EBA rules.

According to Angelo D'Amato, current CEO of the Perseveranza Group, these are the strategic mistakes made by the company:

- continue to push on the investments of' ships, weighing down its financial position, also thanks to the ignorance and pressure it received from the banking world, eager before the crisis of 2008, to provide loans;
- while the company has tried to mitigate its market and counterpart risks by trying to block ships in medium- and long-term rental contracts, the company has clearly underestimated the risks of the other side and market.

Exculpatory to shareholders and the company have to say that:

- The huge profits accrued in 2004/2008 were in full left in the company to support the growth of investments (the family in 2008/2009 was the main non-financial creditor of the group with more than 25million credits, partially unfruitful, amounts to which the shareholders gave up between 2012 and 2017 to support the corporate crisis);

- The family has always used all its energies to avoid competitive procedures penalizing its creditors and to avoid the failure of the group;
- The marked environment was unsustainable for any company where for 7/8 years revenues were lower than operating costs, which in turn were about 40% of the financial costs;
- Huge is the responsibility of the Italian banking system which has shown that it is incapable of operating in a countercyclical manner and in short has financed the shipowner groups, continuing to push the leverage of these groups to the limits of bankability except to lack the support (giving the credit to speculators) at a time when these groups had the concrete possibility of reaching balanced debt restructuring agreements that safeguard the continuity of the companies of these Italian shipping families.

Finally, a great criticism of the rules imposed on banks in terms of provisions in the case of NPL credit that in fact prompted them to get rid of these loans, To avoid more provisions of risk funds and burdens that impact on Core Tier 1, overly conservative with respect to the value of the underlying guarantees in this way has accelerated the disposal of credits, destroying entire industrial sectors and entrepreneurial families who have given all their energies and assets to support their business and secure thousands of jobs.

In conclusion, since the end of 2012 the company has unilaterally suspended the debt service and began a debt restructuring process with its financial creditors. This long negotiation ended in two steps, the signing of a first debt restructuring agreement (ex art 67 LF) in 2016, and the signing of a debt elimination and debt restructuring agreement in (July 2020 (ex 182 LF) which will in fact foresee the ordinary liquidation of the company through the “datio in solutum” of the group's remaining ships del (on the date of signing art. 182 remaining ships were 7, while all rental ships had been returned and the damages relating to the lack of performance of the rental contracts had been transacted.).

Conclusion

Maritime transport has always been one of the main sectors that allows large quantities of goods to be transported safely and at relatively competitive costs, so this is a fundamental sector that throughout history has been the main focus for the economic and social success of peoples and nations.

In the past as well as in the modern era, anyone who controlled the coasts or ports had a position of advantage not only from the economic point of view but also in times of wars or strong Christians, the ports in fact allow a rapid exchange of goods and supplies that guarantee a point of net advantage, just think in Greek and then Roman times how important our country and the Greek nation were by being in the middle of the Sea Mediterranean, having always had a strategic position in transport.

In the modern era, crises have shown that the maritime sector was linked to any kind of macroeconomic event that affected demand and supply of goods and consequences for transport prices and then ship rentals; It is a hugely volatile sector where in a few decades you can move from periods of economic boom to other recessions and therefore to a continuous swing of what is the industry trend.

Volatility and the impossibility of predicting negative macroeconomic events well in advance have been the main culprits for the failure of many large shipping companies in Italy as well as in the rest of the world, in fact nowadays the barriers to entry and exit from this sector are so high that they scare anyone investor, even the most optimistic.

Innovations have always been destructive, from the use of simple brute force with oars and paddles, to sails, to the first steam engines and fossil fuel, to the use of oil and diesel to even exploit the electricity to power some large ships. Those who cannot keep up with technological innovations unfortunately do not survive in this sector, but not even those who bet on some innovations well in advance can be considered safe since very often the time is not ripe and the technologies not impactful enough to replace the previous ones (just think of the example of the first steam engines that were immediately set aside because they were too expensive compared to the sail).

The figure of the owner is therefore very often that of a "bettor", logically with wise choices more than risky, but sometimes it is a real bet that can be profitable or not for this reason is an industry that intrigues and scares anyone who sees it from the outside and even those who have lived it for years and understand it never stop learning.

Many people talk about the future disappearance of the shipbuilding sector, since transport by land and air is often safer, faster and cheaper in nature, but above all it is a belief, in my mistaken opinion, that ship transport has excessive environmental impacts compared to other sectors (just think of accidents that lead to the spilling of toxic material into the seas and oceans last example). On the contrary, in the modern era, we are increasingly attentive to the environmental impact of the vessel, for example for manoeuvring in ports different types of fuels with low environmental impact and many modern ships are hybridizing also exploiting electricity.

It is impossible to think of an economy without maritime transport, it is absurd even to imagine a world without ships, I think it is a sector that is unlikely to disappear in the future, indeed it will probably always maintain its leadership in transport, but it will certainly have to modernize and innovate as soon as possible in order to compete with other types of sectors. The past has taught us how important it is to live on mar how fundamental port and coast management is, the present has helped us to understand the main economic and management difficulties, while the future must be observed in small steps it is not possible to make certain predictions, let alone continue to bet as if it were a gamble.

Crises are not to be feared, the maritime sector did not stop even in 2020 following the Covid-19 pandemic, shipowners must continue to be optimistic and seek agreement and solutions to get out of the crisis; very often some can be bloody and lead to totally unfavourable agreements as in the case of Perseverance SpA which had to give up the management of ships, but as history teaches us to severe periods of economic crisis follow great periods of expansion so we should not stop you nor be pessimistic considering the sector "at the last turn of the buoy".

One certainty remains to be reaffirmed the maritime sector however frightening and risky it may be, it will forever maintain its central role despite all the economic crises that have been going on in history. It is unthinkable, in my view, an economy without ships and a country that does not see the sea as the main economic source of transport.

In this context, as has been analysed, the Italian shipping system, with particular reference to the southern regions of the country, is called for a series of structural changes to maintain competitiveness and relaunch in the new business dynamics in the Mediterranean area: a first challenge concerns the port and logistics sector, which on the one hand must necessarily support the vocation to internationalization and export of companies operating in the southern area of the country and on the other hand it must strengthen the competitiveness of the companies operating in the southern area of the country. , with a policy of fiscal optimisation, logistical improvement, intermodity and agreements with industrial and institutional partners, also within the framework of the new Community financial planning.

A second challenge is the relaunch and change of mindset of the shipping companies, which are called to difficult restructuring policies and competitive repositioning.

The third and final major challenge concerns the country's financial system, which, despite its substantial prudence in relation to other international banking contexts, must offer greater and more structured technical expertise, greater diversification in the supply of financial services and products, greater openness to the spread of innovative forms compared to traditional bank financing or leasing, which can reasonably be identified in corporate bonds and private equity.

Finally, the European banks which have financed the shipping sector in the past (especially banks in the Nordic countries, such as those in Norway) are almost completely bankrupted, in competitive or restructuring procedures; whereas in Italy where there is a more generalist and less specialized banking system, the corporate

finance divisions dedicated to the shipping of the main banking groups have in fact been zeroed out, so family business models or medium or small companies no longer have any access to credit.

The business model of small businesses has been for years the Italian entrepreneurial skeleton, the Italian fleet was mostly composed of family or small companies, to date such a case is a rarity and unfortunately it is progressively destined to extinction.

Bibliography

- Alan E. Branch, *Elements of shipping*
- Alan E. Branch, *Elements of shipping*, Chapman&Hall, 2-6 Boundary Row, London, UK, 1994
- Conference School of Tributary Police of the Finance Guard, *The International Financial Crisis and Italian Banks – intervention by Stefano Mieli, Central Director for Banking and Financial Supervision of the Bank of Italy*, Rome 4 March 2009
- Cournot, *Researches into the mathematic principles of the theory of wealth*, Macmillan & Co. Londra, 1897
- De Monie, G. J-P Rodrigue and T. Notteboom, Economic Cycles in Maritime Shipping and Ports: *The Path to the Crisis of 2008, P.V. Hall, B. McCalla, C. Comtois and B. Slack (eds) Integrating Seaports and Trade Corridors*. Surrey: Ashgate, 2010
- Drucker, *Manuele di management*, Etas, Milan 1978
- F. Scapparone, Political Economy Course, Amon, Italy, 2013
- G. Bettoli, *Crisi d'impresa, ristrutturazione e ritorno al valore*, Egea, Milan, 2000
- G. Forestieri, *Corporate&Investement banking*, Terza edizione, Egea, Milano, 2015
- G. Hamel – C. Prahalad, *Alta conquista del futuro*, Milan, il sole 24 ore, 1995
- G.Corbetta, A. Minichilli, F. Quarato, *Executive Summary - Focus on Shipping Companies*
- George A. Gratos, *Freight markets signals in a changing environment: an internal view of dynamic forces that shape the dru bulk business,* I. Sideris Publications, Atene, 2011
- Gozzi, *Bulk Shipping*, second edition, Giappichelli Publisher, Turin, 2002
- L. Sisto, *Presentazione normativa per Confitarma*, 2010
- L.Fadda, *Cambiamento e valore nell'economia delle imprese di shipping*, Giappichelli Editore, Torino, 2000
- M. Stopford, Maritime economics, Terza edizione, Taylor&Francis Group, UK, 2008
- M.E. Porter, *Il vantaggio competitivo*, Edizione comunità, Milan, 1993
- Magnolis G. Kavussanos, Ilias D. Visvikis, *The international handbook of shipping finance*, Palgrave Macmillan, UK, 2016
- N. Lattanzi, *Family companies and competitive scenarios: strategic paths, government and economic value measurement*, Aracne Editrice, Roma, 2014
- P. Bastia, *Pianificazione e controllo dei risanamenti aziendali*, Giappichelli Editore, Turin, 1996

- P.Lorange, *Shipping company strategies: global management under turbulent conditions*, Elsevier, The Netherlands, 2005
- Preti, *Cent'anni per mare*, Confitarma 2001
- S. Consiglio, *Il trasporto nel sistema logistico d'impresa*, Giappichelli, Torino, 1993
- S. Garzella, *Il sistema d'azienda e la valorizzazione delle "potenzialità inespresse": una visione strategica per il risanamento*, Giappichelli Editore, Turin, 2005
- T.G. Weyman-Jones, *The financial crisis and the regulation of finance*
- U. Bertini, *Company policy document*, Giappichelli, Torino, 1990
- U. Bertini, *Scritti di economia e politica aziendale*
- UNCTAD, *Review of maritime transport 2016*, (UNCTAD/RMT/2016), UNITED NATIONS PUBLICATION, Palais des Nations, CH1211 Geneva 10, Switzerland, 2016
- United Nations, Discussion Papers, "*The Asian developmental state and the flying geese paradigm*" Discussion Papers N.213, November 2013
- X. Sun, L. Tang, Y. Yang, D. Wu, J.Li, *Identifying the dynamic relationship between tanker freight rates and oil prices: In the perspective of multiscale relevance,* Elsevier, Amsterdam, 2014

Webliography

- www.mediocreditoitaliano.com
- http://www.genoaportcenter.it/Repository/Allegati/Il_calcolo_del_nolo_2011_2012.pdf
- http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-on-the-Control-of-Harmful-Anti-fouling-Systems-on-Ships-(AFS).aspx
- http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Air-Pollution.aspx
- http://www.mit.gov.it/mit/mop_all.php?p_id=08957
- https://www.europarl.europa.eu/factsheets/en/sheet/124/maritime-transport-strategic-approach
- https://www.consilium.europa.eu/it/press/press-releases/2019/01/16/co2-emission-standards-for-cars-and-vans-council-confirms-agreement-on-stricter-limits/
- https://www.europarl.europa.eu/factsheets/en/sheet/125/maritime-transport-traffic-and-safety-rules

Abstract

Transport services, generally understood, are inert in the wider chain of customer value, performing a dual function there. The transport allows to connect the various activities that make up the flow of added value, a function called “internal connection”, and is also able to intervene first between a company that needs a supply and the supplier and then between the company and the customer, allowing an external connection between these subjects.

The word shipping means, transport activity or service, which is paid through the payment of a price called freight.

Shipping as a transport business also shows its importance by looking at its inclusion in the value chain, transporting goods (for example raw materials or finished products) from production sites to consumer sites. For this reason, the demand for transport is said to be "derived", as it is descended from the demand for goods. The primary need that moves transport is nothing more than the need for a certain good, which without transport would not be available at that time, in that specific place.

Certain types of transport, such as cruises, passengers transport and business travel, can be identified as consumer services, but here we are talking about shipping in its most commercial sense, referring to the transport of goods from one place where their value is less, to another where it is higher (consider, for example, that the value of an extra unit of oil in Kuwait, is not the same as in Italy).

It is for this reason that transport can make profits. The maritime enterprise is able to increase the intrinsic value of the goods transported, as it will make it possible for the recipient to have the goods where and when they need it.

To understand the sector in detail, we need to start from what are the elements that generate value, in particular the actors that allow to move the chain of maritime value. Specifically, they are the shipowner, the shipyard, the naval loan, the ships, the owner of the cargo to be transported and different naval agents (brokers). All together and with different roles and functions allow the maritime sector to create value and to exercise its function of global connection activities in the world.

Starting from the ships it is evident that for different types of goods to be transported, there are also different ships that carry them; for example, there are three sub-sectors to consider:

- Sub-sector tramp
- Sub-sector line
- Passenger transport sub-sector.

The tramp sector refers to port-to-port activities that are substantiated in transporting goods from one port to another along different routes, in particular solid materials (wheat, iron, coal, building materials, etc.) and liquid materials such as oil and chemicals are transported.

The other two, passengers and the line transport, regarding the shipping container sector and the passenger sector by cruises or ferries, which are completely different and atypical compared to the freight sector.

All these different elements generate revenues and costs that affect the cash flow of the shipping companies, specifically the revenues depend on the capacity of the ship, the price of the bunker, the productivity of the sector, the instalments of the fees and the maintenance and crew costs for the ship. All these elements underline the incredible volatility of the industry which is constantly subject to what are the changes in supply and demand or any element of the value chain that compose it, in addition the ships generate what is a huge barrier of entry and exit from the sector that characterizes it for its difficulty in finding investors.

The other key figure to analyse is that of the owner who has always been seen as a bettor, because very often the macroeconomic forecasts on the banks are not certain but simple assumptions so very often the owner bets against or in favour of the development of these freights. Moreover, the sector today is saturated with shipowners generating what is a strong competition (very often negative leading to phenomena such as dumping) and naval atomism, that is, the continuous growth in size and tonnage of ships that become increasingly difficult to manage.

But the key element of the shipbuilding industry are the rental contracts, which are fundamental to the revenues of the business since they are the main revenues in the sector. The freight depends on the duration, the type of ship, the route and the goods to be transported, plus the ship brokers do his part in negotiations on the rental price in favour of the current counterparts: the owner and the renter.

The vessel to carry out the transport, needs various expenses, related to its availability, operation and navigability:

- capex expense: the ship's availability costs, as well as capital costs such as interest and mortgage repayment instalments on the vessel;
- operating expenses: operating costs, i.e. repair and maintenance costs, crew costs, insurance and class maintenance costs;
- voyage expense: the travel costs, purely related to navigation, therefore related to the costs of fuel and lubricants, the costs "passing" and those in port.

Since the 1800s, the naval sector in Italy has been at the forefront of both managerial and innovative management, Italy was one of the fundamental poles for both the economic and innovative development of the sector.

In the last years of the nineteenth century, steamboats began to be the focus of many discussions first of all whether they were actually better than sailing ships, which for centuries were the main means of transport in the sector. After several attempts, the steam engines outperformed the sails, making it the main innovation of the century for this sector.

At the beginning of the new century something began to change and certainly to this renewal contributed the progressive decline of the ancient territorial divisions of Italian armament, of which the first expression was the birth of the Italian Armed Federation on April 9, 1901.

During the First World War it became clear that the role of ships was fundamental not only from a war point of view but above all merchant, in fact the opportunity to have continuous resources and constant supplies during the period of war were some of the main challenges that saw the sector respond not always in a positive way, since the bureaucracy was high and the different laws did not allow a rapid adaptation to the current war period.

During this period there were many novelties, first of all the creation of incentives and aids to keep the naval sector thriving (this especially in the fascist era) and the use of several merchant ships that were very often adapted to warships, some at the forefront others instead improvised and not ready for conflict.

Unfortunately by the end of the war, the Italian merchant fleet had lost over a million tsl and, among the Allied fleets, it was the one that had suffered the greatest losses in proportion to the initial size: 45%, compared with 39% in Great Britain, 35% in France and 20% in the United States. In the post-war climate, of strong controversy and resentment between public and private, controlling speculation and prolonging the improvised experience of public management of the merchant fleet through the company Exercise of State Navigation.

With the advent of fascism began, as is well known, a phase of highly autarchic politics in all sectors of the country's economy. This led to profound changes in maritime traffic routes in a few years and, had it not been for the contextual policy of population growth and colonial expansion in Africa, it would have had the effect of greatly contracting the overall volume of traffic at our ports. Fascism also gave impetus to all national productions, starting with the primary ones:

- developed an autonomous electricity industry based on water force;
- strengthened the oil refining sector to break the monopoly of foreign companies on the Italian market;
- last but not least, it built a vast road network to allow the rapid development of the transport of goods.

Despite many positive initiatives by the state, the Second World War was a disaster for Italy in fact, the war budget for the Italian fleet was catastrophic: while at the beginning of 1940 it amounted to 3.448 million tsl, at the cessation of hostilities it was reduced to only 219 ships (339,000 tsl, therefore less than 10% compared to 1940). Overall, even taking into account the ships built during the war (about 400,000 tsl), which were almost all affected (sometimes even during the maiden voyage), about 2,500 ships were lost, for more than three and a half million tsl.

Only in the post-World War II in the late 1950s and early 60s have the first revolutions in policy and regulation, the first shipping associations are born that allowed small and large companies to be able to take advantage of various internal economic advantages (aid from the Italian government itself) and external (such as the Marshall Plan of the United States of America). Thanks to this aid many shipping companies, which had

suffered seizures or sinking of ships, could start again with their merchant activity ensuring a rapid expansion of the sector towards an innovative and global perspective.

Crises have always been at the heart of the shipbuilding industry, as early as 1979 the second oil crisis brought a lot of consequences, this time, were very heavy, not least because they were poorly managed by short-lived governments and not attentive to the needs of private armament. Moreover, in the first half of the 1980s there was a completely atypical phenomenon in post-war maritime history: despite the recovery, albeit a moderate, of the global growth of economies, world maritime trade continued to contract until 1985. The intensifying competition on the charters accelerated the exodus from many prestigious foreign flags to flags of convenience and triggered the development of hybrid forms of registration such as "bare boat charter registration" and "international registers". In the long period of crisis, the Italian fleet, prevented in its movements by excessively strict regulations, suffered heavily these new forms of international competition: the disarmament, which began in 1980, peaked in 1983, and then remained at high levels until 1985; demolitions and divestments abroad also reached a substantial level, with the national fleet gradually shrinking to a low of 7.7 million tons in 1988.

An important positive phenomenon of this period, however, was the effort that shipowners employed to diversify their activities by investing in new ships and also opening up to new markets, some of them also very small and niche.

These effects of the crisis continued until the early 1990s, the great problem that remained unresolved during this period of troubled transformations is that of the low competitiveness of the Italian flag, whose share of international traffic in Italian ports has fallen to less than 20%, while the size of the fleet has also suffered a further contraction, reducing to 6.6 million tsl in 1996 and sinking to sixteenth place in the world.

The main reason for the low competitiveness of the "beautiful country" flag was the excessive burden of taxes on owner-made activities, in fact in 1995, the Italian government tried to make a state contribution in order to reduce what were transport costs for those who adopted the Italian flag.

In the 2000s the sector was saturated with several shipping companies, the competition so high that it generated dumping (especially by large companies towards small ones) and the price of the rentals began to slow down until the great financial crisis that began in 2008.

In order to analyse the causes of the 2008 crisis, as well as to look at the economic side of the period, it is also essential to analyse the regulatory side. From the point of view of national legislation, there are two regulations to consider:

- Italian International Register with the Law of 27 February 1998 No.30, which only increased the number of ships in circulation that at the outbreak of the crisis would only lead to an increase in debt;
- The law of 1992 does not. 3577 for the liberalisation of European cabotage, which although increasing the exchange of goods also increased competition and related dumping phenomena.

From a community and international point of view, the International Maritime Organization (IMO) from the late 1990s to the early 2000s introduced major revolutions to reduce the environmental impact, such as the introduction of Ballast Water for the disposal of ballast water, the reduction of emissions with the use of low-impact environmental fuels and the regulation for the modification of paints on ships to make them less toxic to the marine environment. All these regulatory revolutions rather than reducing the environmental impact (which for the maritime sector compared to other transport is not so high)only increased costs, reduced the operational life of a ship and increased the management issues all this in a period before 2008 that would have welcomed the greatest economic crisis that the world has in memory.

The 2008 crisis stemmed from the bursting of the real estate bubble in the United States of America. This explosion led to lower house prices, excessive supply increases relative to market demand, and net subprime reduction, resulting in a global reduction in the financial market of about US 4 billion dollars.

What made the crisis so entrenched was the sum between a global bubble, the one linked to subprime, and a bubble in the shipping market, whose business cycle had reached complete saturation. If, the bubbles are largely artificially generated by excessive credit concession that generates excessive speculation, to aggravate the situation of the "physiological" fall of the shipping cycle has been added the bursting of the financial bubble.

Among the factors at play, the peculiarities related to the nature of the sector, determined the degree to which it was affected:

- the correlation with global consumption: the effect; of macroeconomic turbulence;
- market tension towards balance: the effect of oversupply;
- the link with the financial world: the. effect of financial turbulence.

The decline in consumption and therefore of traffic has, as expected, had an immediate effect on the internal transport sector. It can be said that the sector has been affected by the decline in aggregate demand and that this has led to a fall in international trade and global volumes transported.

In this period of severe crisis, many shipping companies have suffered serious damage, some of them have even been forced out of business due to excessive insolvency or lack of liquidity.

Perseveranza SpA di navigazione, a historic shipping company founded in the last years of the 1800s, is one of the examples of a shipping company that suffered a great number of economic damages as a result of the 2008 crisis.

The company was founded by two different families, and then reached a definitive split that will lead in today's time to the creation of several companies of capital divided among family members, some of this unfortunately today, have not survived the crisis.

The overconfidence of Perseverance in the early 2000s led society to several risky choices such as building several ships in Chinese and Korean ports, ships that were shipped in a late crisis when the same value of the ship and the walnuts had shrunk by almost 1/3.

The financing to build these ships was all banking in nature and from the moment the company was unable to fulfil these obligations, a period of negotiations began for plans to restructure or eliminate debt (through the divestment of some ships).

Moreover, other reasons for the crisis that are comparable to all companies active in the sector are: a negative macro-cycle between 2009 and 2016/17 with average annual revenues lower than the operating costs resulting from the crisis of the world economy, accompanied by a sharp oversupply of ships compared to the actual demand, resulting from the excess hold built in the previous five years exacerbated by the economic crisis that reduced the consumption of raw materials.

Other reasons that led to the current situation of Perseveranza SpA are also due to administrative errors, such as:

- continue to push on the investments of' ships, weighing down its financial position, also thanks to the ignorance and pressure it received from the banking world, eager before the crisis of 2008, to provide loans;
- while the company has tried to mitigate its market and counterpart risks by trying to block ships in medium- and long-term rental contracts, the company has clearly underestimated the risks of the other side and market.

And in addition to this also the rules imposed on banks in terms of provisions in the case of NPL credit that in fact prompted them to get rid of these loans, To avoid more provisions of risk funds and burdens that impact on Core Tier 1, overly conservative with respect to the value of the underlying guarantees in this way has accelerated the disposal of credits, destroying entire industrial sectors and entrepreneurial families who have given all their energies and assets to support their business and secure thousands of jobs.

Volatility and the impossibility of predicting negative macroeconomic events well in advance have been the main culprits for the failure of many large shipping companies in Italy as well as in the rest of the world, in fact nowadays the barriers to entry and exit from this sector are so high that they scare anyone investor, even the most optimistic.

Innovations have always been destructive, from the use of simple brute force with oars and paddles, to sails, to the first steam engines and fossil fuel, to the use of oil and diesel to even exploit the electricity to power some large ships. Those who cannot keep up with technological innovations unfortunately do not survive in this sector, but not even those who bet on some innovations well in advance can be considered safe since very often the time is not ripe and the technologies not impactful enough to replace the previous ones (just think of the example of the first steam engines that were immediately set aside because they were too expensive compared to the sail).

Crises are not to be feared, the maritime sector did not stop even in 2020 following the Covid-19 pandemic, shipowners must continue to be optimistic and seek agreement and solutions to get out of the crisis; very often some can be bloody and lead to totally unfavourable agreements as in the case of Perseverance SpA which had to give up the management of ships, but as history teaches us to severe periods of economic crisis follow great periods of expansion so we should not stop you nor be pessimistic considering the sector "at the last turn of the buoy".