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LOAN AGREEMENTS AND FINANCIAL LEVERAGE: AN ANALYSIS OF GREEK SHIPPING INDUSTRY

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ΠΕΡΙΛΗΨΗ

Για περίπου τριάντα χρόνια, η ναυτιλιακή βιομηχανία της Ελλάδας, μιας μικρής περιφερειακής οικονομίας στην Ευρώπη, βρίσκεται στην κορυφή της παγκόσμιας κατάταξης. Αυτή η επιτυχία αντικατοπτρίζει την ικανότητα των ελληνικών ναυτιλιακών εταιρειών να προσαρμόζονται στις διακυμάνσεις της αγοράς και να υιοθετούν καινοτόμες χρηματοδοτικές πρακτικές. Η μελέτη εξετάζει την επίδραση της παραδοσιακής τραπεζικής χρηματοδότησης και των εναλλακτικών πηγών χρηματοδότησης στη ναυτιλιακή βιομηχανία, όπως τα δάνεια ναυπηγείων, η χρηματοδοτική μίσθωση και η εισαγωγή στο χρηματιστήριο.

Καθώς η ναυτιλία είναι ένας τομέας με μεγάλες διακυμάνσεις και ευμετάβλητες αλλαγές στις τιμές των ναυλώσεων και των πλοίων, οι τράπεζες προσπαθούν να λάβουν όλα τα απαραίτητα προληπτικά μέτρα για να μειώσουν τους υψηλούς κινδύνους. Αυτά τα μέτρα περιλαμβάνουν αυστηρούς ελέγχους, αξιολόγηση της πιστοληπτικής ικανότητας των ναυτιλιακών εταιρειών, καθώς και την εφαρμογή συμφωνιών που μειώνουν την έκθεσή τους σε κινδύνους.

Παράλληλα, οι ναυτιλιακές εταιρείες αναζητούν εναλλακτικές μορφές χρηματοδότησης, όπως δάνεια από ναυπηγεία για την κατασκευή νέων πλοίων, συμφωνίες χρηματοδοτικής μίσθωσης που επιτρέπουν την ευελιξία στην απόκτηση και τη χρήση των πλοίων, καθώς και την εισαγωγή στο χρηματιστήριο για την άντληση κεφαλαίων από επενδυτές. Αυτές οι πρακτικές βοηθούν τις εταιρείες να διαχειριστούν καλύτερα τους οικονομικούς τους πόρους και να παραμείνουν ανταγωνιστικές σε ένα παγκοσμιοποιημένο περιβάλλον.

Η επιτυχία της ελληνικής ναυτιλίας δείχνει την σημασία της ευελιξίας και της καινοτομίας στη χρηματοδότηση, καθώς και την ικανότητα των εταιρειών να προσαρμόζονται στις συνεχώς μεταβαλλόμενες συνθήκες της παγκόσμιας αγοράς

Keywords: Banks, Loans, Shipping Leverage, Debt Risks, Trade off Theory

ABSTRACT

For about thirty years, Greece, a small peripheral European economy, has seen its shipping industry positioned at the top of the global league. This success reflects the ability of Greek shipping companies to adapt to market fluctuations and adopt innovative financing practices. The study investigates the impact of traditional bank financing and alternative sources of finance in the shipping industry, such as yard loans, leasing, and stock market listing.

As shipping is a volatile business with sharp fluctuations in charter rates and ship prices, banks try implementing all necessary preventive controls to mitigate the high risks. These measures include rigorous checks, creditworthiness assessments of shipping companies, and the application of agreements that reduce their exposure to risks.

Concurrently, shipping companies are exploring alternative avenues of financing. These include loans from shipyards for the construction of new vessels, leasing agreements that offer flexibility in ship acquisition and utilization, and stock market listings to secure funds from investors. These practices serve as effective tools for companies to manage their financial resources and maintain competitiveness in a globalized environment.

Keywords: Banks, Loans, Shipping Leverage, Debt Risks, Trade off Theory

ABBREVIATIONS

CP: Commercial Papers

DWT: Deadweight Tonnage

EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization

EEC: European Economic Community

ESG: Environmental, Social, and Governance criteria

GDP: Gross Domestic Product

GRT: Gross Register Tonnage

IMO: International Maritime Organization

ISM: International Safety Management Code

LIBOR: London Interbank Offered Rate

LTV: Loan-to-Value Ratio

MVC: Market Value Covenant

NAT: National Authority for Transparency

ROA: Return on Assets

ROE: Return on Equity

CHAPTER 1

1.1 HISTORIC EVOLUTION OF SHIPPING FINANCE

Shipping finance and maritime investments evaluation provide the right conditions for the optimal return on an investment, given that shipping requires substantial investment funds, which cannot always be covered by self-financing.

Commercial banks play the most crucial role in the shipping industry, as they are a source of significant funds that can meet its short-term and long-term needs. The role of the banks is broader, as they not only play the role of the lender but also mediate and collect fares, pay the shipping costs of the ships (unloaders, port costs, fuel, agent supplies, etc.), handle foreign currency transactions, and offer financial advice and information. Shipping companies depend on banking services, which presupposes that the relationship between banks and shipping companies should be maintained at excellent levels throughout the shipping cycle, as it can be a decisive factor in approving a loan. On the other hand, the goal of the shipping companies is to achieve the minimum cost and adequate protection from possible abrupt changes in the international money market, mainly the bank interest rates.

Regarding the Greek data on shipping financing, the services offered by the International and Greek Banks that finance Greek shipping move according to the current developments in the global and Greek shipping markets. Thus, each bank adopts its policy depending on the data and the current conditions, setting different criteria for each case presented to it.

The high level of self-financing helps to maintain the company's control by the ship owners with low financing costs. Its disadvantages are related to the high cost of acquiring a ship in modern times, which makes it challenging to raise the necessary funds from its sources and exposes the company to a high level of risk.

However, the growth of the world economy, in combination with the market need for more and larger ships, has increased the amount of investment capital required, making it necessary to use other sources of financing. Shipping financing through Banks began to develop during the 1960s by oil owners chartering large oil companies, which covered a significant part of the repayment period (Karakitsos et al., 2016).

In the first stage, orders for the construction of new ships were financed by shipyard credits and the funds of the shipping companies, i.e., by withholding profits and government subsidies. Thus, until the end of the 1960s and 1970s, shipyards competed with each other to attract

orders, and governments intervened by subsidizing loan rates so that loans had low financing costs. These shipyards ranged from 5% to 7% for an entire decade.

Under this method, shipyards credit ship owners to secure their ship orders. This is especially important in times of crisis when there is insufficient liquidity. The settlement usually made is the advance payment to the shipyard, while the remaining amount is made periodically in instalments or with the ship's delivery. Credits from shipyards can also take the form of a loan, which they provide to ship owners to cover part of the cost of building a ship. The main disadvantage is that a short repayment period is given, creating a liquidity problem. If the repayment of this loan takes a bank with a new loan, they enter a vicious cycle of financing.

In the early 1970s and 1980s, shipbuilding loans began to become increasingly expensive due to the high cost of government subsidies. Was it then becoming?

Increasingly involved in maritime finance, the company was willing to fill this gap by raising funds from the rapidly growing dollar market in European banks.

Shipping companies, until the mid-1970s and 1980s, had no difficulty finding capital from governments, shipyards, or the banking system. Also, from 1970 to 1974, new commercial houses were introduced, thanks to which the tanker market increased, and the financial market was generally euphoric due to the large profit margins. Shipping loans also allowed large profit margins for Banks (spread=LIBOR and loan interest rate difference). However, anticipating the future (forecasting)with the expectation of high profits proved to be the wrong policy, given the oil crisis that followed in 1973. The Middle East war in 1973 and the boycott against the oil, the first oil crisis, resulted in a prolonged crisis in the tanker market. From 1974 onwards, relations between ship owners and banks, combined with the financing of ships, began to become increasingly unfavourable (Kavussanos et al., 2017).

At this point, note that in English, spread, which means dispersion, is a concept that expresses the difference (dispersion)of two values or two things. In economics, the term spread has several issues, such as the difference between the yield values of two bonds. Each percentage point (1%) is 100 "base points". For example, lending rates may be between two countries where one is used as the base country. Usually, a country with a strong and stable economy is used as a base country. For example, in the Eurozone, we compare the spread between the borrowing rates of Germany as in the given period in the Eurozone, the most stable economy is that of Germany. So when we talk about the spread of Greek bonds, we refer to the difference in the yield of Greek bonds from German ten-year reference bonds. For instance, when Greece's

borrowing rate is 11% and German's is 3%, the spread(difference) between the two is 8%. Therefore, the Greek spread ranged at 800 basis points until October 2008, the spread of Greek bonds did not exceed 100 basis points (1%), while in September 2011, the spread jumped to 2000(20%)basis points. What is the difference between the two interest rates? This is the difference between the interest rate at which a bank borrows and the interest at which it lends. For example, a term in a loan agreement may stipulate that the loan interest rate is equal to EURIBOR+ Spread. So, suppose the EURIBOR is set at 2% and the spread of the specific customer has been set by the bank at 4%. In that case, the final interest rate is 6%—the difference between the buying and selling process of foreign exchanges, shares, and other financial instruments. For the exchange rate with foreign currency, banks set a low price (bid)and a higher price(ask). At a low price, they buy the specific currency and sell at the highest earning by the difference. This difference is called the spread exchange rate (Karakitsos et al., 2016).

As 1975-1976 was considered a problematic period for shipping finance, as the crisis arose, exorbitant orders placed in the early 1970s were not justified. Also, low fares and declining ship prices have created an economic crisis for tanker owners, especially those who have ordered new construction. Some bankers were called upon to provide additional working capital to the ship owners and may have been forced to defer or even redistribute loan instalments and interest payments. Unfortunately, these loan applications were made at a time when the real values of the ships securing the loan were rapidly falling below the outstanding balance of the loans. Many ship owners did not survive the subject crisis and 1-2 banks suffered significant losses or went bankrupt.

The crisis of 1970-1980 with oversupply led to the failure of shipping loans, and the same was true from 1982 until the first half of 1987, when the same situation prevailed in all shipping sectors except the tanker sector. More specifically, the crisis of 1970-1980 resulted in all banks becoming very careful and examining in-depth the applications for shipping loans. This made the job of commercial managers more complex, and it had the natural consequence of making shipping financing even more difficult in the next decade. In particular, commercial banks are interested in a loan project(ship) that can have fixed interest rates over the life of the loan and can generate a sufficient surplus to service the repayment of capital and interest payments according to a loan payment schedule. Thus, all traditional sources of funding for ships have become inaccessible or selective to this day, and there has been serious concern about whether these sources will ever be available again.

Regarding the Greek data, during the last years, the international banks have partially changed their policy, showing more interest in the more prominent shipping companies, leaving their smaller ones on the side-lines despite the increased profits that were offered to them. Thus, the latter were forced to turn to Greek banks. They face an even bigger problem as a new entrant shipping company, which was forced to turn to new sources of financing offered by the current market, as the majority of Banks require proven reliability in the field from their customers. From 1997-2000 onwards, after two years of exceptional freight on both dry and wet cargo, due to the growth of China and India, shipping financing flourished as it exceeded 330 billion dollars. Therefore, it becomes apparent that the extent to which commercial banks have been involved in shipping industry loans has fluctuated significantly over the last 20 years.

1.2 CONTEXT OF THE STUDY

The shipping industry is primarily a lending industry because the securing of loans and their cost drives the success or failure of business initiatives in the industry. Shipping finance plays a vital role in the development of international shipping and is of particular concern to ship owners, as the financial system has a direct impact on the competitiveness of shipping companies. (Merika, 2015).

Nevertheless, it should be noted that shipping's dependence on finance is directly proportional to the industry's high capital intensity and cyclical nature. From a technical point of view, shipping is considered a branch that includes the process of performing a trip and the issues related to this process.

In addition, the technical features of shipping include the technological means and instruments used and the existing technical skills and knowledge of those who perform the voyage. As early as the 1970s, the Rochdale Report 1 considered Shipping a complex industry in which the conditions governing process in one sector did not necessarily apply to another. He also argued that it could sometimes be seen as a set of interrelated industries. Its core components, ships, vary widely in size and type, providing a full range of transport services for a wide variety of cargo that must be transported near and far by sea. Although it is possible to separate sectors and markets within the shipping industry itself, their significant interaction and interdependence are undeniable.

Maritime transport is the most competitive sector of the transport sector. Today, 4/5 of world trade is conducted by sea, and there is relatively little government control, focusing mainly on safety and environmental protection. Maritime transport is also considered one of the most

important links between production and consumption and one of the key factors in global economic growth.

In practice, the notion prevailed that “Shipping” means the Merchant Navy, which is the total of merchant ships or merchant fleets, which is written in the registers of a state. In this case, the term Merchant Shipping is formulated as a clear distinction to the “Navy”.

Most of the shipping industry is involved in international trade. Therefore, it moves within a complex global context of agreements of economic, political, and social importance between companies, shippers, government agencies, and other stakeholders.

The most widespread sources of funding for the shipping industry and, hence, the companies that operate in its context are mainly two comprising: equity finance and loans (Alexandridis et al., 2020).

A shipping loan agreement represents a compromise between the ship owner's need to keep capital expenses to a minimum and vessel trading freedom to a maximum and the lender's need to be secure, fully informed, and with maximum rights following a default or borrower insolvency (Law Insider, 2021).

A company's sound capital structure, i.e., the appropriate ratio of loans to total loans and equity, is a prerequisite for its long-term viability. A company's use of loan capital to finance its activities has significant potential benefits but also risks. In particular, lending allows a company to take advantage of investment opportunities for which equity may not be sufficient to increase its return on equity. Still, at the same time, it increases the risk of bankruptcy (Brown, 2016).

A company with a high debt burden risks losing operating profits to interest, which can result in banks' and investors' reluctance to provide new capital. This deprives the company of the possibility of new borrowing and the exploitation of new investment opportunities (Wright, 2014).

The fundamental importance of a sound capital structure for a company is highlighted by recent research on the financial health and growth prospects of Greek companies. According to a recent Grant Thornton survey of 8,000 Greek companies from 92 industries, published in March 2019,60% of the companies in the sample face high debt problems, which make it difficult to raise new capital. The corporate finance literature has documented that beyond a

certain threshold, leverage can hamper a firm's ability to raise new capital and, as a result, have a bearing on its corporate investment policy (Merika, 2015).

It is noteworthy that despite a period of radical change and the efforts of many European Union countries to strengthen their position in international shipping, the Greek shipping market demonstrated remarkable resilience after the new millennium. This was largely due to the strategic choices of Greek ship owners, who opted for special registers, thereby altering the conditions of international competition.

According to Code 18, by 1 July 1998, all ships and the companies operating them have compulsorily implemented the Code procedures on land and at sea to ensure compliance with existing international rules and regulations for the safe operation of ships and the protection of the marine environment, level, continuing their activity in bulk transport with great success. In the climate of optimism that prevailed all these years, with orders constantly increasing, there was a visible risk of a new crisis caused by the oversupply of capacity. Thus, the optimism that prevailed until 1996 was followed by pessimism and insecurity. The market is no longer able to absorb the excessive volume of capacity. These problems, combined with the collapse of the economies of the Far East, affected maritime trade and, with it, international shipping and the Greek ship owners.

After the entry of the millennium, the shipping market showed strong upward trends, and even though it was in a period of radical change and many countries of the European Union sought to strengthen their position in international shipping, choosing the policy of special registers and Greek ship owners managed to overturn the conditions of international competition.

Greek merchant shipping has not only been a consistent source of financial support for the Greek economy, but it has also served as a constant lever of economic, social, and cultural development for the entire nation, a fact that should fill us with pride.

In light of the above, the main questions that arise concern debt reality in the shipping industry as well as how much should a company, especially in the shipping industry, borrows for a well-balanced capital structure, the proper statement, and critical clauses (Spoullos,2016) that should be included in a loan agreement well-adapted to reflect the secured nature of the transaction and the shipping background on one hand and the leverage techniques applied involving using debt(borrowed funds)with the expectation that the after-tax profit to equity holders from the transaction will exceed the borrowing cost enabling gains to be multiplied (Bernitz et al, 2021). These questions have greatly concerned academia and

companies in recent decades. According to the research findings, the optimal level of leverage, i.e., the ideal ratio of loans to total funds, is determined by several factors. These have to do with the characteristics of each company, such as size, industry to which it belongs, profitability, and assets, but also with the external environment, such as investment opportunities, macroeconomic conditions, tax rates, and respective conditions in the capital markets (Stevenson Harwood, 2012).

These issues will be discussed and analysed with a focus on the Greek companies vis-à-vis their significance for the Greek economy and their respective effects on it (Lagoudis et al., 2017).

1.3 CONTRIBUTION OF THE STUDY

The current research aims to enhance the reader's awareness of the main fundamental variables underlining the operations of the Greek shipping companies, loan agreements, key clauses that should be in a loan contract expected from the shipping companies to sign, and the acknowledgment of banks as the primary source of Greek Shipping companies' financing.

This study also aims to contribute to a profound rethinking of financial gearing on firm value propositions to design the optimal capital structure through loan agreements for shipping companies, ensuring sustainable financing and responsible investments. It also applies efficient leverage techniques and thereby decides to maximize wealth in the shipping industry, with a focus on Greek shipping companies.

1.4 AIM AND OBJECTIVES

Based on the above, this study aims to contribute significant knowledge concerning Greek Shipping loan agreements, their likely benefits, and the dangers that any result may entail.

The aim above can be further broken down into the following objectives:

- Specification of the extent to which a shipping company could borrow and keep a well-balanced capital structure.
- Identification of the critical clauses that should be included in a loan agreement well-adapted to reflect the secured nature of the transaction.
- The Trade-off theory identifies how the benefits involved (e.g., tax exemptions/financial relief) are managed.
- Specify the degree of shipping companies' leverage relative to efficiency/effectiveness.

- Comparison of Greek shipping companies' practices (concerning loan agreement and leverage) vis-à-vis the ones applied by their foreign counterparts.

1.5 OUTLINE

This chapter, presents and defines its context and scope. The aim of the study has been specified, along with the identification of the respective objectives that must be met for the aim to be completed. The Historical Evolution of Shipping Financing is concluded and communicated with the most common types of lending and financing,

The second chapter presents the main fundamental variables underlining the operations of the Greek shipping companies, which are presented and discussed. Specifically, a brief historical review of Greek shipping is presented, the contribution of the Greek Shipping industry to the Greek economy, and finally, acknowledgment of banks as the primary source of Greek Shipping companies' financing.

The third chapter defines Loan Agreements within the spectrum of respective clauses and Key Clauses that should be included in a Shipping Loan Agreement for a secured transaction.

The fourth chapter includes the presentation of the findings in terms of the term leverage parameters' definition, likely debt risks identified, and the optimal leverage ratio of loans to total funds with a focus on the Greek companies discussed based on leverage ratio and concerning efficiency as well as the Trade-off Theory. In this chapter, benchmarking of Greek Shipping companies' good practices concerning leverage vis-à-vis relevant practices applied by other shipping companies internationally is carried out, and the results are presented and discussed.

The fifth chapter, which is the last chapter of the present study, includes the summary of the results concerning the initial objectives of the study and the drawing of conclusions in proportion to the purpose and objectives of the study. This is followed by the formulation of conclusions to meet the objectives of the study research, areas for improvement, and presentation of applicable improvement proposals. The chapter concludes with the formulation of proposals for further research on his issue.

CHAPTER II

2.1 THE HISTORICAL BACKGROUND OF GREEK SHIPING

Some of the fundamental variables underlining the operation of the Greek shipping companies are presented and discussed. Specifically, a brief historical review of the evolution of Greek shipping is presented, as the contribution of the Greek Shipping Industry to the Greek economy, the Historical Evolution of Shipping Financing is mentioned and discussed along with the most common types of lending and financing and finally, acknowledgment of banks as a primary source of Greek Shipping companies.

According to Pantouvakis et al. (2017), the purpose of shipping, through its usefulness and development, is to create an industry in which many states will be brought together. This is achieved through work and activities so that it can evolve further and increase the division of labour by combating any crisis in the future.

The uniqueness of the Greek shipping example lies in the fact that in complex and demanding conditions of both the 19th and, above all, 20thcentury, a small island nation of a few million inhabitants in the eastern corner of the Mediterranean managed to build and operate one of the largest merchant fleets globally, competing with economic giants of the time such as Japan, Britain and Norway (Kampalampidis, 2018).

Starting our historical background from the pre-war period (William, 1996) we see that, in 1939, the merchant fleet under the Greek flag reached a point to occupy about 2.6% of world tonnage, including around 600 ships with a total tonnage of 1.8 million GRT which means gross registered tonnage-total capacity and expresses the total capacity of all enclosed and covered areas below and above the main deck. This percentage gave Greece the ninth place in the world behind the fleets of the United Kingdom, the USA, Japan, Norway, and other delivery shipping countries.

Although older than the establishment of the Greek state (1830), the Greek shipping industry acquired its basic characteristics, which we recognize today, in the first post-war years. It followed a long and interesting course until it reached its current form (Tzoanos, 1997).

After the end of the war, Greek merchant shipping was at a critical juncture. In contrast to the pre-war data, it had losses of 75% in the number of ships and tonnage, and it had 120 ships over 500 tons with a total tonnage. In 1946, the US government decided to sell 4,500 state-

owned ships. Thus, the Greek ship owners bought them at a satisfactory price, starting the renaissance of Greek shipping.

Amidst the Suez crisis and the subsequent global economy turmoil, Greek ship owners occupied the third place in terms of vessel capacity (William, 1996)

In 1960, the Greek ship owners started an effort to expand their fleet, and the fact that the port of Piraeus was developing into one of the largest shipping centers in the world helped. This had the natural consequence of the foreign exchange contribution of shipping reaching the top of the table of undisclosed resources of the national economy, surpassing the tourist and post-naval exchange (Harlaftis, 1995).

In 1974, the reduction in crude oil exports, the high inflation in bio-mechanical states, and the turmoil in the exchange rates of strong currencies slowed down shipping Tiliaki activities, significantly affecting Greek shipping. As a result, the reduction of its ships under the Greek flag. Thus, entering the 1980s created a crisis in world shipping, which, as we have seen, was mainly due to the decline in world trade in petroleum products and the restructuring of world capacity at the expense of oil tankers (William, 1996).

Greek shipping capital managed not to be affected but rather to benefit from the global crisis, increasing the total capacity of oil tankers, which controls but almost doubles its share of the global tanker fleet. In 1979, Greece owned an oil tanker fleet with 19,635 miles. GRT (38.3% of its capacity Greek owner fleet) accounted for 11.25%of the world capacity oil tanker (Nautical Chronicles, 1980), while in 1989, it had 21,360 mils. GRT (47.2% capacity Greek accounted for 16.5% of the world capacity of oil tankers or 18.2% of the world capacity large-capacity (Greek et al., 1988). Also, in the last decade, Greece entered into the EEC, and Greek ship owners they correct to contributed to the formulation of the regulations of the standard European maritime policy, first adopted in this upward trend (Theotokas et al., 2009).

A significant event that marked his decade “90s” is the worldwide implementation of the IMO International Code of Safe Management. According to this Code, by 1st of July 1988, all ships of the companies operating them had to have implemented the Code procedures both on land and at sea to ensure co-education in the existing international rules and regulations for the safe operation of ships and the protection of the marine environment (ISM Code). The Greek ship owners implemented the new procedures in time, as a result of which they successfully secured the certification in the new Code (Tzannatos et al, 2009).

In the same decade, Greek shipping showed an upward trend, reaching in 1996 3.200 ships with a total capacity of 75 mil GRT, almost 16% of the world fleet. Also, the Greek fleet was renewed with new ship orders from Greek ship owners, who successfully took advantage of its flourishing. Freight, significant developments also took place in the field of banking financing with the establishment of foreign banks, such as Citibank, in Greece and the development of its sector by Greek banks (National Bank of Greece, Alpha Bank, Piraeus Bank) (Petropoulos, 2008).

In the climate of optimism that prevailed all these years, with orders constantly increasing, there was a visible risk of a new crisis caused by the oversupply of capacity. Thus, the optimism prevailed. Until 1996, it is followed by pessimism and insecurity. The market is no longer able to absorb the excessive volume of capacity. These problems, in combination with the collapse of the economies of the Far East, have resulted in the maritime trade being affected and in international shipping as well as into the Greek ship owners (Germain, 2006).

After the entry of the new millennium, the shipping market showed upward solid trends, and even though it was in a period of radical change, many European Greek ship owners sought to strengthen their position in international shipping by opting for the policy of special registers and flags of convenience. Under the conditions of international competition, they managed to play a leading role at the world level, continuing their activity in bulk transport with great success (Lyras, 2015).

2.2 CONTRIBUTION OF THE GREEK SHIPPING INDUSTRY TO THE GREEK ECONOMY

The fundamental question is, what were these strategic choices and values of the Greeks? The creation of a global network of offices and agencies, the staffing of their businesses based on kinship and shared place of origin, the use of Greek crews on their ships, access to international shipping and financial centers, specialization in the transport of bulk goods, use of various flags, direct access to charterers, the choice of the traditional business model of the market and the operation of second-hand ships, and course the timeless business principle of Greek ship owners, which stipulated to “buy cheaply and sell expensively”(Papathanasiou et al, 2020).

Greek merchant shipping has been a source of financial support for the Greek economy all these years. The shipping currency has been the constant lever of Greek economic, social, and cultural development.

The Greek shipping industry is one of the main pillars of the Greek economy. In a turbulent global landscape marked by geopolitical events like the war in Ukraine, the maritime industry showed resilience, adopting new, lengthier trade routes. Maritime trade volumes dipped 0.4% in 2022 but were on track for a 2.4% rebound in 2023 and above 2% growth in 2028 (UNCTAD, 2023).

However, the shipping industry's contribution to Greece's economy is significantly wider. Greek shipping constitutes the core of one rapidly developing shipping grid, which creates investments and employment chances in the country. A recent study concludes that the global contribution of the Greek shipping industry to the country's economy has both indirect and inductive impacts, exceeding 11 billion Euros in 2019, corresponding to 6.6% of Greece's Gross Domestic Product (GDP) (Petrofin, 2019). The overall contribution of shipping in employment positions, including indirect and inductive employment, exceeds 3% of total employment in the country. Due to its size and future, the Greek shipping industry renders Greece a vital role in polymer commercial systemic despite the country's small size. It is a substantive and strategic partner and important commercial force: about 22% and 20% of the activity of the Greek fleet serve the trade from the USA and Europe, respectively, while the bigger share of activity of Greek shipping is about 32%, serving rapidly developing Asian economies (Union of Greek Shipowners, 2019).

Another recent study by the Foundation of Economic and Industrial Research (IOBE) in October 2023 estimated the overall GDP impact of the shipping industry at 14.19€ per year (period average 2018-2021), equivalent to 7.9% of GDP. In terms of employment, the industry supports approximately 86.3 thousand full-time jobs, while it directly and indirectly contributes to public revenue, amounting to approximately 1.9€ billion.

The supply of shipping becomes even greater if the effects on the economy resulting from the investment of profits are considered. These investments include respective ventures made by the shipping companies in the same industry or other sectors, such as the real estate market and the investment in fixed equipment. There is no reliable and accurate method to calculate the value of these investments. Still, by one estimation, the specific value of 2016 reached 2.5 billion Euros, i.e., 1% of GDP, raising the percentage of shipping contribution to the country's GDP by 9%. Take heed of the inputs and outflows arising from the interaction of shipping with other sectors of the Greek economy; the contribution of maritime transportation and operations to the main economic figures of the country is multiplied with the result that the final demand

for maritime transport creates in total (directly and indirectly)15 billion Euros for the year 2017, i.e., about 6.6% of the country's GDP.

Greek shipping is of strategic importance to the EU; as such, it is not an economy of as much prosperity as the prosperity of citizens, which is based on access to financially affordable energy sources. The EU, introducing 88% of needs in argon oil,74% in natural gas, and 44% in solids minerals or fuel, depends on a significant degree of its transportation. With the worries about energy security constantly increasing, EK shipping plays a crucial role in ensuring that imported energy from various remote areas of the planet is imported into the EU. The strategic importance results also from that the EU is based on international shipping for the execution of international trade at in rate of about 76%(UNCTAD, 2021).

2.3 SHIPPING LENDING AND FINANCING

The shipping industry is capital-intensive because the cost of acquiring a ship is very high and higher than all the order costs associated with all activities of a shipping company.

Based on Paul Bennett (1999) a bank has three goals: Firstly, avoid significant losses: The economic and the market value of the bank is at risk if poor lending threatens the organization with bankruptcy. Careful management of loan underwriting and risk diversification can mitigate the risk of failure for the bank. Secondly, earn strong profits: The Bank's profitability derives from its ability to add economic value for its customers. Although this comes as a natural outcome, profits are sine qua non when related to risk management. Thirdly, maintain high shareholder value: According to Bennett's statement, the theory emphasizes that the market value of an asset cannot be determined in isolation based on its risk and return features. Rather, the real issue faced by bank owners is how their shares in the bank will affect risk and return in their portfolios.

In addition, shipping is one high-risk industry and multiple fluctuations, which makes it even more uncertain and risky to place large funds on it. For these reasons, most of the purchase or construction of a ship is covered through various forms of lending and financing that exist in the market and which are (Omiros, 2021): Bank loans, Yard loans, Leases, Self-financing, and stock exchange.

2.3.1 BANK LOAN

Bank financing is the most common form of financing for shipping companies to purchase and build ships or address their potential operational needs. It consists of providing funds from banks to shipping companies as a loan. It presupposes the existence of a loan plan characterized by stability and will serve the timely payment of loan instalments. Shipping loans are concluded based on a floating interest rate LIBOR (London Interbank Offer Rate). The loan duration ranges from 5-10 years, with a tendency to decrease on the part of banks due to uncertainty that characterizes the activities of the shipping industry. The banks have been the most crucial source of shipping funding for many years. Banks engaged in lending shipping companies have their shipping departments, and their credit policy process is modified according to their target size, the international economic conditions, the shipping markets, and the existing policies of competing banks and organizations. In recent years, this type of financing has encountered many problems due to the lack of liquidity of the banks and the uncertain financial situation, as a result of which the banks grant maritime loans much more complex and with stricter terms and conditions. This fact has led many entrepreneurs to find alternative financing for their business plans.

It is reasonable to say that the shipping banks make loans with expectations of tiny interest margins without capital gain for the value increase of financed assets. However, in the default case of a shipping loan, loss climbs to several times the expected interest income. Thus, the low price of financed assets only makes a difference when looking into cases regarding a favourable minimum value covenant. Still, it offers no incentive for shipping banks to commit to new shipping loans (Pittas et al., 2017).

2.3.2 YARD LOAN

Shipbuilding units grant yard loans to the interested parties in the shipbuilding, modification, or repair of a ship following the signing of a relevant contract for her performance of the above works. They provide facilities by the shipyards to repay the due funds with some agreed form of credit. The maximum duration of this credit (loan) can be at most ten years for Greece and more than eight years for the European Union. The credit and ease of payment provided by the shipyards is called a loan, although it does not involve the disbursement of funds because it is charged with a very high interest rate of 8-10%. It also presupposes the mandatory participation of the ship owner with own funds in the total investment, at least by 10%. This percentage of participation of the ship owner is usually prepaid with the signing of the shipbuilding

contract, and the repayment is made in interest instalments within the agreed duration of the loan. The yard loans are considered state shipping financing if the shipyard is state-owned. This means that the state intervenes by shaping the financing terms, such as the maximum lending rate or the loan duration. The objectives of this form of financing are, on the one hand, to strengthen a country's shipyards by increasing their operations and the choice of ship owners to use them, and on the other hand, to provide an alternative form of financing support for ship owner and shipping, without strict terms, conditions, and controls imposed by bank financing.

2.3.3 LEASING

In this case, shipping financing, the ship is purchased by a financial institution and leased to the ship owner, based on a long-term lease of 15-20 years. The ship owner has complete control over the ship's operation; he is responsible for its management, but he owns only the use of the ship and not the ownership. The financial institution owns the ship. This form of financing works essentially like a ship charter naked. During the concession of the ship, the ship owner reaps all the proceeds from the operation of the ship but is also obliged to pay a fee to the financial institution in the form of an interest-bearing instalment. The interest rate that burdens this form of financing is relatively high. At the end of the lease term, the ship owner can purchase the ship for a relatively low amount calculated based on its original purchase value plus the level of inflation, less the total instalments paid by the ship owner during the lease. The advantages of leasing over other forms of financing are the following:

One of the key financial benefits of leasing is the non-payment of ship acquisition capital by the ship owner. This allows for the avoidance of taxation by not acquiring ownership of the ship, maintaining its liquidity, and easier cost planning. Additionally, leasing can help avoid the strict control regime in the shipping company that often accompanies bank financing, and it can also lead to a reduction in shipping risk.

An operating and finance lease is one of the most ordinary types of leasing structures. The first type is used for hiring ships in the form of a short or mid-term bareboat or time charter. At the end of the agreement, the lessee returns the boat to the lessor. For a ship operator, the two main advantages of an operating lease are the impact on its balance sheet, which can be limited to "an off-balance-sheet" commitment, and, second, financial costs can be limited if, for any reason, the lessee charges a low price for its cost of equity (Koukoutsi, 2015).

On the other hand, the finance lease is used for long-term finance, covers a substantial part of the ship's economic life, and is usually fully amortized. The lessor, whose primary role is a

financier has little involvement with the asset beyond owning it, and all operating responsibilities fall on the lessee, who, in the event of early termination, must fully compensate the lessor. The finance lease generally appears on the lessee's balance sheet. However, it brings a tax benefit to the companies by depreciating the ship's value against profits. (Koukoutsi,2015).

2.3.4 SELF - FINANCING

Self-financing consists of payment equity by the ship owner to meet the financial needs of his business. It was the most common form of financing in the old days when ships were lower and other forms of funding for shipping companies were less widespread. Nowadays, self-financing as a whole is not one of many sources of funding. Self-financing is usually used to cover only a small part of shipping investment in combination with some other form of financing (e.g., banking). The advantages of partial self-financing include:

- Avoiding high lending rates or reducing borrowing costs.
- Avoiding strict control procedures by bank financiers in shipping companies.
- The more immediate utilization of revenue-profits by ship owners.

Self-financing's disadvantages are the reduction of the enterprise's liquidity, the assumption of high risk and exposure of the enterprise to risk, or the freezing of funds, which could be used in other sectors (e.g., covering extraordinary operating expenses of the enterprise).

2.3.5 STOCK MARKET LISTING FOR SHIPPING COMPANIES

The introduction of shipping companies in the stock market as a means of financing their work is a new trend that has been gaining ground in recent years. The main reasons that a shipping company chooses the listing solution are the difficulty of obtaining a bank loan and the need to find alternative ways of financing at a lower cost. Therefore, the stock market is the second most common solution, after bank lending, for large companies, mainly shipping companies. London, New York, Oslo, and Stockholm are essential stock exchanges. To insert a company on the stock exchange, the application for its listing must be approved by respective stock exchange authorities and the capital market committee of each country based on criteria such as the submission of a business and investment plan that reflects the present value of the company, its valuation in shares and the value of the share, the audited financial statements of the company by a certified auditor and the existence of own funds amounting to 3-15 million

Euros, the publication of financial statements (only SAs can be listed on the stock exchange) for at least financial years which precede of the import application, the existence of three-years profits of 4-12 million Euros, the control of the company's compliance with the provisions of the law and tax control.

In summary, the primary responsibilities of the various key players in the control environment of the company are the following (I.D. Visvikis et al., 2017):

- senior management: identification of significant fraud risks and design of internal control
- audit committee, along with the board of directors: oversight of management when designing and implementing internal controls
- internal auditors: monitoring and testing of internal controls
- Employees: Implement the procedures and support the company's anti-fraud program.

In general, listing a company on the stock exchange achieves its growth degree of liquidity of the stock. It has beneficial effects, both for the business itself and for the economy as a whole. However, several Greek ship owners view the situation of stock market financing negatively for many reasons, such as the looser structure of Greek shipping companies, the cost of preparing the listing application, the lack of flexibility in the management of most shipping companies, the nature of the shipping industry, which is characterized by high risk, large fluctuations, and uncertainty, and the disclosure to create a favourable climate for the demand of the share and the formation of its price at high levels(Omiros, 2021).

2.4 GREEK BANKS: THE LARGEST FINANCIER OF GREEK SHIPPING

The lending function of a commercial bank is handling credit risk and it has four main tasks to deal with. The first is the organization of the loan, which includes the analysis and approval. The second task is the funding for the loan, where both internal and external funds can be used. Thirdly the lending function has to follow the loan and ensure that the interest and principal are being repaid. Fourthly the lending function has to monitor the loan by gathering, processing, and analyzing data and information about the borrower (Grammenos, 2001).

The share of Greek banks in the financing of Greek shipping has been constantly increasing for the last five years and already the big Greek banks are very large financiers in a percentage that now exceeds ¼ of the total loans of Greek shipping (25.81%) (Kotsikopoulos, 2021). The

specific year was a good year for shipping lending and Greek banks opened the tap of loans to increase their share of the loans, in a year when lending increased by a total of 5.6% and was the first time growth of lending, after 2014 in the industry. As a result, the total lending of Greek shipping by all banks reached 52.58 billion dollars. The trend was already recorded last year before the end of the year, but official figures from Petrofin Research confirm that Greek banks are increasing their share of their share of shipping loans and receiving a share of financing from international banks (Petrofin, 2022).

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2.4.1 GREEK BANKS: A KEY PLAYER IN INTERNATIONAL SHIPPING LOANS

In the ranking of lending, among the seven most prominent lenders for Greek shipping are all four central Greek systemic banks, with total lending of 12.87 billion dollars to Greek shipping. In particular, the Eurobank climbed to second place just behind Credit Switzerland. At the same time, Piraeus and Alpha Bank rose to third and fourth place, respectively, with the National Bank in seventh place behind BNP Paribas and Citi. In 2021, its portfolio of Eurobank increased by 29.4% compared to 2020 or by 768 million dollars. The Greek bank recorded the most significant annual increase in loans to Greek shipping in 2021 compared to 2020, with the international body underlining in its report its impressive rise of Eurobank by four places

in the general classification in just one year. The total shipping portfolio of the group Eurobank to Greek shipping companies amounted to 3.38$billion dollars, corresponding to approximately 6.43%of the total debt exposure of Greek shipping companies worldwide. In total,556 banks are involved in lending to Greek shipping worldwide. Piraeus Bank is the third largest financier of Greek shipping internationally, with 3.25 billion dollars in debt and a portfolio corresponding to 6.18% of total borrowing of Greek shipping. Alpha Bank follows it with loans of 3.3 billion and a share of 6.09%; seventh is the EIB with 2,647$ billion and a share of financing of 5.03% of total loans. The balances of loans from Greek banks increased by 14.2% and amounted to 13.57 billion dollars.

The lending of Greek banks to Greek shipping companies has remained upward, without interruption, since 2017. Among the banks that lend to Greek fleets worldwide, Greek banks were the only group that, despite the pandemic and global uncertainty, continued to increase funding (Kotsikopoulos, 2021).

Greek banks also contributed to the relative increase in lending by European banks to Greek shipping companies compared to previous years. Greek banks recorded the highest increase in lending to Greek shipping companies, among the other banks examined in this index. The increase of financing from Greek banks in Greek shipping is the most remarkable element in 2021 with Greek banks, as they are, among other things, now able to further strengthen their position with Red Loans' consolidation of balance sheets. This, combined with, among other things, the general recovery, the improvement of the country's credit rating, and the strength and sound of their clientele in the sector has pushed Greek banks to be more competitive and to expand this field.

In light of the above, the Greek shipping community, which consists mainly of small and medium-sized private companies, embodies the true spirit of entrepreneurship. Strongly supports free trade, free market access, and an adequate international status for a vital international industry, such as shipping. Representing the most significant international trade cross-trading fleet in the world, the Greek owner fleet has a strategic role in transporting trade and energy worldwide, especially in the European Union, which depends on shipping to transport 75% of international trade and consists as an integral part.

The contribution of seafaring Greek shipping to developing the domestic Greek economy has increased as the Greek shipping companies chose Greece to install their premises and operations. This has mainly been achieved over the recent years. The significant increase in the

number of shipping companies that settle in Greece in recent years has resulted in substantial payments from them for purchasing ships (brand new or second-hand vessels), which are recorded as imports of ships in the country's balance sheet. In contrast, their receipt from ship sales are reported as export ships. In addition, ship exports do not record receipts from ship sales made by domestic shipping companies through foreign banks, and the receipts were not imported into Greece. On the contrary, payments for ship purchases are realized essentially through Greek banks by debiting corporate accounts.

2.4.2 BANKING OPPORTUNITIES IN GREEK SHIPPING FINANCE

According to Petrofin Research, 68 Greek shipping entities comprise fleets of more than 20 ships (independent of DWT) and 83 with more than 1cm DWT fleets. These fleets and several medium-sized ship owners make up the list of customers many banks aspire to reach. It should also be noted that Greek shipping has suffered relatively few financial failures, and the rate of losses and red loans has been meager. The profile of the Greek fleet thus offers a favourable risk/reward ratio, which is attractive to banks.

With minimal losses on its assets, Greek shipping offers banks attractive opportunities, increasing banking competition. It is generally believed that banking shipping financing has increased as the Greek fleet has risen, especially over the last four decades. The support comes from Greek banks, but the international banks, whether operating from Greece or outside Greece, are the ones that have provided the lion's share of the fleet lending. As a result of the banking crisis of 2009, there was a decline in banking financing (Petrofin Research, 2022).

The main reason for the decline in bank financing in recent years has been the need for many banks to leverage and reduce their loans, dramatically affecting Greek ships' financing. Meanwhile, the fleet increase reflects Greek ship owners' decision to increase their fleets, often with larger vessels, and improve efficiency. The development of the Greek fleet during this period took place through the utilization of other sources of financing their ships, through the private resources of ship owners, refinancing, and intense activity of buying and ordering new ships, too.

Some prominent banks, such as RBS, the Commerzbank, the Nord LB, and DNV, have left the scene. There have been changes in the behaviour of banks. Today, most international banks focus on lending to customers of their national base, while some others that still lend to Greek ship owners do so from other financial centers. Among the recent notable developments, the Uncredited and HSBC started the process of closing their Greek offices. Other banks, such as

Standard and Chartered and ABN Amro, have redefined their geographical areas of interest (Petrofin Research, 2022).

After the big exit of the banks came some new entrants, including Cypriot banks and other small, local European banks, who could not replace the lost financial capacity; however, the overall banking outflow has decreased, and we can see the first signs of a return on bank financing to Greek shipping. Although the total lending of Greek shipping has decreased, the number of banks with some lending activity in Greek shipping is increasing.

Greek banks were an exception to the broader trend, as their share of Greek financing increased from 18.5% in 2018 to 25.8% in 2021. They tried to exploit market opportunities created by reducing banks' international lending capacity in the Greek market. Unlike some of their international counterparts, they consider Greek shipping a key area of interest.

For the top Greek owners, the lending terms offered by banks have become more competitive, and there is intense banking competition. Borrowing margins for these owners are so low that they reach below 2% while borrowing against ship value was around 60-65% for modern and newly built ships. Small to medium-sized Greek ship owners have fewer banking options but are generally still able to attract financing and compare it with other non-bank financing offers. Each market segment has its dynamics and prospects, so the terms of the loans vary considerably. Unlike in previous cycles, a crucial overall feature of the market is that banks have avoided "inflated" lending. As ship prices have risen in many sectors, the charter guarantee has reappeared as collateral for the loan. Institutionalized regulations and compliance with capital adequacy rules also affect banks' ability to offer competitive lending conditions.

Greek banks have reduced their interest rates and competed with international lenders, mainly for medium and small Greek owners. While Greek banks are emerging more robust than before, some inherent challenges affect the limits of their ability to grow. Many international banks have sought to diversify their services by offering fundraising consulting services, while others provide private banking services (private banking). The new bond issues of the Athens Stock Exchange from Costamare, Capital Product Partners, and Safe Bulkers have been supported by Greek banks, and the success of the transactions demonstrates future opportunities. Other banks, including Scandinavian institutions, have maintained a strong presence in local shipping and have taken advantage of the opportunities offered by their customer base (Financial Stability Board, 2018).

Banks such as Berencberg Bank, Macquarie Bank, and others continue to grow within the specialized limits of their activity. Some banks tried to combine their experience with Greek customers and cooperate with Asian lenders while maintaining some lending participation. Banks are usually involved in financing ships through unions, and club deals are less active due to reduced orders for new ships and intense competition from Chinese Leasing. Banks have emphasized developing their private banking services, offering greater security from non-regulatory lenders.

In recent years, unforeseen events, such as the pandemic crisis and the war between Russia and Ukraine, have increased market instability. Furthermore, the targets of pollutant emissions and their impact on shipping have been a source of concern for some time as they pose a considerable challenge for Greek ship owners and lenders. Many banks and leasing companies have adhered to its Neptune Principles (Poseidon Principles), and many funds have been directed exclusively to customers with alternative fuel vessels (alternative fuels). Both Greek Ship owners and lenders continue to evaluate these factors and how they may affect shipping in the coming decades.

Apart from the fact that banks are leading the financiers of Greek shipping companies, we must recognize two significant developments in finance, such as Leasing and Funds. Overall, Leasing has become more competitive than bank financing. While banks still offer lower interest rates on average, leasing overcompensates, offering higher loan rates, longer repayment time, and greater flexibility.

Another significant development is the increase in ship financing by funds. There are now many experienced shipping companies' funds that can provide rate loans in US dollars or euros at a cost, for Greek owners, of about 6-7% and which include a loan of up to 70-75% of the value of the ship (Loan-to-value ratio LTV). Higher LTV may justify higher costs. (Financial Stability Board, 2018). In conclusion, the Greek fleet is expected to continue to grow and participate in developing low/zero emission ships to maintain its competitiveness. Banks must provide the necessary support in the coming years to achieve this goal. Greek shipbuilding financing provided by Greek and International banks is expected to progress further.

CHAPTER III

3.1 MODERN CHALLENGES AND PRACTICES IN SHIPPING FINANCE

The deep and multi-layered crisis of the last decade drastically changed the data of shipping finance. The positive attitude of the banks towards the shipping sector, the irrational granting of loans based on interpersonal relationships, insufficient collateral, and leniency towards the violation of loan terms and repayment deadlines are no longer found in international banking practice. As a matter of principle, bank financiers now show a special reserve in the selection of their clients. In place of a "guarantee of reputation," there are evaluative criteria for checking the creditworthiness of a shipping company, which are summarized in the 6C's rule: Charterer, Company, Capital, Capacity, Conditions, and Collateral (Duru, 2016). In principle, the potential lending bank assesses the profile of the shipping entrepreneur leading the company, his integrity and consistency in the company's obligations, and his management skills regarding the company's management and strategic practices. The corporate structure of the shipping company (e.g., if it is a single ship), its strategic choices in terms of charters and the choice of its customers, its income and fixed costs, and its competitiveness in the market play an equally important role (Kavussanos et al., 2018). The capital structure of the company(Capital), its financing policy (with equity or foreign capital), its share capital, and indicators such as debt-to-equity ratio (external and domestic borrowing ratio), hull-to-debt ratio (ratio of the market value of the business to its debts) and net worth (net worth of the business) are paramount criteria.

In addition, the abilities of the managers and the company's administrative bodies are evaluated (Capacity), their decisions on vital issues such as investments and cost management, and their effectiveness. Of course, the current conditions of the international shipping market are also a determining factor (Conditions), as well as the current and expected price of fares and the amount of operating expenses. Finally, existing assets are taken into account that may be provided as collateral, in particular the company's fleet, its number and age, the company's repair policy, as well as the characteristics of the wider group to which it probably belongs, since corporate collateral is often provided by the group as well (Schinas et al.,2015). In summary, it is a network of preventive controls aimed at reducing the high risks associated with the shipping business, the risk of insolvency, the risk arising from the cyclicality that

governs the market, and the operational risk, aiming at the maximum possible security of the lender.

Secondly, the exposure of banks to large amounts of loans that were not they could be serviced and the write-off to large debts which they were forced to undertake, with substantial financial losses at their expense, led to a radical change in the attitude of the banks. A catalytic role has been played by the regulatory rules of Basel II and Basel I, which constitute a set of regulations issued by the Basel Committee (Basel Committee) on the capital adequacy and liquidity of European banking institutions. These are regulatory standards aimed at reducing banks' exposure, limiting their financial leverage(leverage), and strengthening capital requirements, events that mostly force them to refrain from high-risk businesses. It is no accident, after all (Grammenos, 2016) that in the previous year's extensive few years large banking groups have left the once state-owned shipping sector by liquidating their portfolio, with RBS (Royal Bank of Scotland), which in 2016 sold a portfolio of Greeks loans amounting of 3 billion dollars. The presence of international banks in Greece decreased in 2015 by 7.49%. Greek banks also noted a significant reduction in exposure to the shipping market to limit increased risk and comply with the strict requirements above.

Moreover, the above data led lenders to demand more excellent collateral from shipping companies to grant new loans or restructure existing ones. The ship is no longer the only asset put in place as a security measure for lenders. At the same time, the most significant change lies in the clauses that are put in the text of the loan contracts and aim at continuous control and supervision (monitoring) of the loaned business to be received on time to measure any "worrying" signs of changes in its financial situation.

Correspondingly, more aggressive practices in the pursuit of overdue and receivable debts have been observed, but without this, the significant rates of loan restructuring are not recorded. The increasing aggression is found in the modern phenomenon of distressed debt funds, funds to which banking institutions assign non-performing loans in a weak financial position and enter into the existing loan relationship by aggressively deploying means of satisfying their claims (McCleery, 2016).

3.2 KEY ELEMENTS OF A SHIPPING LOAN AGREEMENT

The shipping loan is a particular category of bank loan that, in principle, presents the basic legal elements (obligatory contract, permanent, with a monetary object) but with particularities related to the specific characteristics of shipping and the increased risks it presents as a business

sector. After all, it is no coincidence that banking institutions active in the shipping sector are also made up of independent shipping departments (shipping departments), which are staffed by specialized staff, knowledgeable of the specific needs of the area, who adapt the control and preparation of documents to the individual unique characteristics of the sector. The shipping loan, in its traditional version (term loan agreement), includes the "term sheet," a preparatory contract, and the preliminary agreement from which mutual commitments derive. Precisely, it embodies the intent of the banking institution to grant a loan to the applicant company, includes the terms that will be included in the body of the loan agreement, and constitutes the initial text on which the parties' negotiations are conducted until the final signing of the loan (Otto et al.,2016). However, each bank and its associated legal advisors use different contact models, common and preferred, which, in principle, are governed by English Law, like the majority of concluded shipping loans but are adapted accordingly to the applicable law and the changing needs of each case. Making an indicative reference to the terms used, as they have already been exposed in term sheet and then its essential elements, the purpose of granting the loan, the granted amount, the duration of the loan and the method of its repayment, the interest rate and the starting time of interest, the benefit of the banking institution(margin), the bank's fee for carrying out the administrative procedures until the conclusion and disbursement (or the time needed when a loan with more than one disbursement phase is agreed)and the managed the contract law (usually English). After recording these conditions found in each type of loan agreement, the essential clauses of the loans are set out (operating clauses), which relate exclusively to its maritime character and are the results of the substantial negotiation and convergence of the opposing interests of the contracting parties(Gojanni, 2015).

3.3 KEY CLAUSES

Securities (Assurances): The cornerstone of the loan agreement is, in any case, all the collateral provided to the lender. In the context of the maritime loan, where the assumed risk is increased due to the characteristics of the maritime market, the bank's requirements are stringent. Completing all the required actions to grant collateral constitutes a condition that must be met at the time of signature and disbursement and is expressly agreed upon in the chapter of prerequisites (C.P.s), as will be set forth below. It is easily understood that depending on the type of credits granted, the provided collateral, but here, the most common ones in maritime banking practices are recorded(Spoullos, 2016).

Mortgage: The first requirement of the banks, regardless of the legal status of the loan agreement, is the mortgage of the financed ship or even other ships of the same group or the parent company, depending on the amount of financing) and in fact, in the first place. This is a collateral security of the lending bank on the ship, which most commonly appears in its preferred mortgage. In Greek Law, in this case, the preferred mortgage is governed by Legislative Decree 3899/1958 and grants the mortgagor more expansive rights than the simple mortgage of the KIND, which is why financial institutions prefer it. Specifically, in the same way as the preferential security of the claim in the event of initiation of enforcement proceedings, which is classified according to the rule of priority, after the satisfaction of the maritime privileges of article 205 KIND, the preferred equips the lender with the right to take over the management of the ship for set-off of the income from the operation with the debt owned and the right to sell it privately, following a relevant agreement, a fact which provides increased security to the mortgagor. The fundamental question is which legal path the bank will follow in case of default on the loan terms and which factors will guide its choice. The order of ranking of the lenders differs if the financed ship is registered according to n.d.2687/1953 as foreign capital. In this case, it is set as a condition in the issued ministerial acts that the preferred mortgages precede the maritime privileges, with the only exception being the maritime privileges listed in Article 2 of the Board of Directors of Brussels 1926, which are identical to those listed in article 205 of the KIND. This is, the preferred mortgage is followed by the privileges that are not included in Article 2 of the international agreement, namely the requirements N.A.T. and K.A.A.N. Banks rarely make use of this right due to the increased obligations stemming from the characterization as ship owner(Wright, 2015).

Insurance assignment of the revenues from the exploitation of the ship: This is a debt contract for the assignment of a claim against a third party, according to article 455AK, which performs a collateral function in the context of financing. As an excipient, the bank is required to exercise her claim only for the provided reason, i.e., only in case of breach of obligations of his part assignor or borrower. A particular case that falls into this category is the assignment of a charter agreement in force (usually a long-term time charter agreement). This is carried out by notice to the charter, as dictated by article 460AK, and constitutes essential financial security, especially if it is a profitable contract with a solvent charterer (Lax Insider, 2021).

Insurance assignment of the insurance contract: This is an assignment of the claim arising from the insurance contract. With the conclusion of the assignment and the announcement to the insurer, as dictated by article 460AK, the excipient lender is the insurance beneficiary in

the event of the insurance risk. The announcement is made with the clause "loss payable clause" incorporated into the insurance contract (Sawyer et al., 2016).

Retention Account: In the vast majority of cases, with the granting of financing, an account is set up with the lending bank in which the revenues from the operation of the financed ship are deposited (earnings account). At the same time, the bank is authorized to receive a monthly amount from the payments to this account, which can be transferred to another account held in the same bank to accumulate the amount for the next instalment payment. This is called a practice retention account, which the bank pledges. The amount that is blocked from the income account and transferred to the particular account varies according to when an instalment is due, i.e., if the loan instalments are quarterly, then the bank receives monthly 1/3 of the deposited income to cover the upcoming instalment (Spoulos, 2016).

Pledge shares of the company or its parent company: This is absolute security with a pledge by articles 1211 and 1244 of the Civil Code. The ship's commitment to a long-term charter agreement is considered a significant collateral advantage since the inflow of fixed income is estimated for the financed company over time, compared to a situation and the financed ship which have binding force, in the sense that any untrue statement(misrepresentation) recommends from herself (no fault that is) default that makes the loan amount due and payable. They are mainly concerned with the validity and binding nature of documents submitted, the legal and financial status of the company, the possession of licenses and certificates required by law, etc. An important issue that needs special attention during the preparation by the borrower is the possible agreement to repeat the declarations (without reservation) and at intervals after the signing of the loan agreement, during which some facts may have changed (e.g., legal framework) for which the debtor has nevertheless guaranteed (Spoulos, 2016).

Covenants: positive and negative clauses imported by lending bank and aimed on the one hand at the additional securing of its claims, on the other hand at the exercise of continuous control (monitoring) on the loaned business in order not to change its financial situation and its asset to the detriment of the lender. The most crucial role of these clauses, especially the negative ones, is that they constitute warning signs for any breach of the obligations of the debtor company. They constitute a mechanism for early notification of the bank about the possibility of a deterioration in its financial position debtor and any inability to meet its financial obligations arising from the loan. As set out in the introduction, monitoring clauses of the financial performance of the shipping business have proliferated in recent years of recession as

one of the measures taken in response to the large amounts of non-performing loans affecting the global bank community. For example, in the favourable clauses, i.e., those that oblige the lending company to 30, usually the distinctive element of the essential false statement is included in the contract (materiality), which conceptually limits the cases where untruth is equated by default (Otto et al.,2015)23 specific actions, including the obligations to possess all of these legal licenses, the registration in a state-approved by the lending bank, the provision of the specified information and documents at regular intervals and the use of the provided funds for the agreed purpose.

The negative clauses are those that impose restrictions and prohibitions on the transfer of the mortgaged items a prohibition on the transfer of the mortgaged items, a prohibition on encumbering them with other real collateral, a prohibition on the distribution of dividends to the company's shareholders, or at least without the prior written consent of the lending bank, etc. Of utmost importance, however, are the stated negative financial clauses (financial covenants), the violation of which either constitutes the terms of the loan or raises the alarm bell for the bank's corresponding voyage charter concluded in spots Buy.

The announcement is made with the "loss payable clause" incorporated into the insurance contract (Harwood,2012), 21 equips the lending bank, in addition to privileged satisfaction, with administrative rights over the company, granting it the right to vote in General Meetings and beneficially sell without judicial permission. In practice, despite the potential benefits, the specific collateral may lead the banks to risks, as it may be perceived legally as a de facto shareholder of the company, with responsibilities towards third parties. At the same time, in the event of bankruptcy, there is a risk that its loan will be treated as a shared payment that is satisfied after repayment of debts to third parties. In addition to the above, additional collateral may be requested in each case, such as a pledge on the company's bank accounts or even personal collateral from the parent company or the group to which the financed company belongs. In pre-delivery financing, an assignment of the shipbuilding contract is granted, to which those above apply similarly. This is the case where a newly built ship is ordered from a shipyard, and based on the sales contract, the price is paid in instalments, with the last instalment coinciding with the delivery time of the ship. The payment of the instalments is based on bank financing. In this case, the borrower still needs to own the ship to mortgage it in favour of the bank, which is why the latter requests an assignment of the shipbuilding contract. This practice entails more significant risks for the financier, who is under-secured and faces the risk of the shipyard's insolvency.

MVC Ratio (Minimum Value Covenant) illustrates the percentage by which the ship's commercial value exceeds the loan's outstanding amount. The debtor is obliged to maintain the value of the ship at a rate that exceeds the loan debt. At the same time, if the said index falls below the levels permitted by the loan agreement, the company must provide additional collateral whose value will cover the amount due from the loan or prepay part of the loan (extraordinary payment).

Debt that Equity Ratio, the Leverage Ratio: an indicator that illustrates the relationship between equity and external capital in the company's financing. It applies both to the financed company and its parent company, which acts as the loan's guarantor. The higher the value of the index, the bigger the assumed risk from the bank. It, therefore, acts as a warning for the lender by indicating the possibility of problematic credit development (Law Insider, 2021).

Loan-to-Value Ratio (L.T.V.): a financial index used by credit institutions and expresses the percentage resulting from the loan amount to the value of the financed item. In other words, it expresses the percentage of the value of the financed element, in this case, the ship, that is covered by the granted loan while the remainder is mainly covered by equity. The higher the ratio, the higher the credit risk the financier runs. In the context of loan evaluation, the index is a critical tool for assessing ascended danger. Usually, as a clause, a maximum percentage of 70% of the value of the ship31 is imposed, which is evaluated at regular intervals, together with the other indicators.

Liquidity: It is widespread to impose a minimum amount of liquidity that must always be available in a specific company account and to guarantee, at a minimum, the fulfilment of the company's short-term debts.

Events of Default (Events of Default): The loan agreement includes, as a rule, an extensive list of the cases that constitute a default on the loan and entitle the lender to terminate the agreement, making the sums due from it due and payable. Although these differ in each case, depending on what was agreed and the negotiations that have preceded, the typical events of default include the non-fulfilment of the repayment obligations, either instalments on the due date or interest, the violation of the statements and guarantees that have been included in the contract (with the criterion of materiality or not), the violation of the stated clauses (covenants), the declaration of bankruptcy by the company, the actual or presumed loss of the ship, etc. It should be noted that depending on the respective agreement and the wording of the contract, the events of default are distinguished into those that lead to immediate termination-expiration

(e.g. the non-fulfilment of the repayment instalments) and those that lead to termination after an impractical rectification deadline- removal of the default on the part of the borrower (e.g. the reduction of the MVC index and the failure to provide additional collateral in favour of the bank) (Spoullos, 2016).

Conditions Precedent-CPs: This is a list of conditions that are met to disburse the loaned amount. It is a set of documents and information provided to the bank concerning both the company and the ship. Characteristic examples: the presentation of collateral contacts (registration of a first-line mortgage, signed contracts for the assignment of claims or the establishment of a pledge), presentation of certificates of the company's current status(non-dissolution, non-declaration of bankruptcy, not subject to a reorganization regime, etc.), other evidence her financial statement of the company (e.g. copies of financial statements-balance sheets), presentation certificates concerning the condition of the ship and issued by classification societies (e.g. class certificates) and proof of insurance of the ship(Law Insider, 2021).

Representations & Warranties (Declarations & Guarantees): These are statements by the borrowing company regarding legal and factual facts concerning both the company's situation and financed ship and which have binding force, in the sense that any untrue statement (misrepresentation)recommends from herself (no fault that is) default that makes the loan amount due and payable. They mainly concern the validity and binding nature of documents submitted, the legal and financial status of the company, and the possession of licenses and certificates required by law. An important issue that needs special attention during the presentation by the borrower is the possible agreement to repeat the declarations (without reservation) at intervals after the signing of the loan agreement, during which some facts may have changed for which the debtor has nevertheless guaranteed (Spoulos, 2016). Any representations and warranties related explicitly to the vessel will usually be contained in the mortgage or deed of covenants. However, the loan agreement will often contain a warranty that the bank has been provided with a full copy of documentation relating to the purchase and chartering of the vessel. (Harwood, 2006).

3.4 DEFAULT OF LOAN OBLIGATIONS

The case where the clause is included in the loan agreement cross-default should be critical. This is a condition in which the debtor defaults to the contract in question when he defaults to another contract with another of his lenders. This clause is mainly applied to large financings

when loans are granted to more companies of the same group, either from the same bank, from a third institution, or through a banking consortium. It is even possible to agree that the borrowing company is defaulting when another company of the same group defaults against a third-party lender (Otto et al., 2015). The importance of this term lies in protecting the credit institution against any insolvency of the guarantor companies and the parent company. It is usually accompanied by signing an agreement between most of the creditors who have financed the same group to draw up a standard policy towards loan contracts (common terms agreement).

Entering the main subject of this study, i.e., the abnormal development of a shipping loan, it is right to start from the concept of default, or otherwise according to the international terminology "default," with the admission of which the abnormal development of the bilateral bank loan contract takes place. Three different concepts of "default" are reflected in international economic theory. According to the first, default occurs when a loan is classified as "doubtful" since its full repayment is disputed based on all the information available to the lender (e.g., breach of negative financial clauses). According to the second, default occurs when a loan is classified as "in crisis" (in distress), when the repayment of an overdue instalment (either part of the capital or interest, depending on the agreed repayment framework) has been delayed for a period longer than ninety (90) days. According to the third concept, a default occurs if the debtor company officially initiates bankruptcy proceedings. It should be noted that the regulatory guidelines of the Basel Committee, Basel II and Basel III, adopt the second view of default, i.e., after more than ninety days of late payment of an overdue loan instalment (Kavussanos et al., 2016). In Greek economic theory, the broader concept of economic hardship is financial distress (Kavussanos et al, 2016).

In modern financial transactions, given the emergence of the massive phenomenon of non-performing loans, the concept of default provided for in article 178 of the European Regulation 575/201334 regarding prudential supervision requirements for credit institutions and investment firms and the amendment of the Regulation is adopted EU 648/2012. According to this definition, default is considered, on the one hand, the delay in payment of agreed payments for some time longer than ninety (90) days (2nd economic theory); on the other hand, the institution's assessment that the creditor will not fully fulfil his credit obligation without to liquidate existing collateral (distress theory). In practice, in addition to the above versions, the loan agreement defines and specifies the events that amount to default and grants the right to terminate the loan, such as, e.g., in addition to financial non-compliance, the violation of

fundamental conditions or negative financial clauses set as a means of supervising the financed company (Plomaritou et al, 2017). A default shall be considered to have occurred about a particular obligor when either or both of the following have taken place: (a) the institution considers that the obligor is unlikely to pay its credit obligations to the institution, the parent undertaking or any of its subsidiaries in full, without recourse by the institution to actions such as realizing security (b) the obligor is past due more than 90 days on any material credit obligation to the institution, the parent undertaking or any of its subsidiaries. Competent authorities may replace the 90 days with 180 days for exposures secured by residential or SME commercial real estate in the retail exposure class and exposures to public sector entities). The 180 days shall not apply for Article 127.

If a default occurs, good banking custom is for the mortgagee to give prompt notice of the default to the mortgagor, making clear that the mortgagee neither condones the breach by the mortgagor nor waives its right of enforcement. If the beach is potentially curable, the mortgagee provided the alternative options below:

Firstly, the mortgagee may require the owner to remedy the default. In defined cases, the mortgage documentation may give the mortgagor a limited time to cure the default. Otherwise, the mortgagee may force a time limit within which the mortgagor must cure the default. In either case, the mortgagee has no right to take further steps, given that the mortgagor rectifies the default within the specified time. Secondly, the mortgage may wave the default conditionally or unconditionally. Thirdly, the mortgagee may take steps to remedy the default itself and demand the cost of so doing from the owner, provided that mortgage documentation confers an express power to take such steps. Such provisions are the norm in commercial loan agreements. They usually expressly entitle mortgages to incur and recover as part of the secured debt costs to preserve or maintain their security. A term for the reasonableness of such costs would ordinarily be implied into such provision, which would be difficult, if possible, for any mortgagee to contract out of. Where there is no such express power, the mortgagee may incur such costs and recover them from the owner only if:

- The power to do so can be implied in the true and proper construction of the contract between the parties.
- The owner consents
- Such cost can be characterized as reasonably incurred by the mortgagee in mitigating its loss arising from the owner's breach, in which case the cost of remedy may be

recovered as part of the mortgagee's damages, ordinarily for the diminution in the value of its security flowing from the owner's breach of contract or, such costs are provided for by statute.

CHAPTER IV

4.1 LEVERAGE AND DEPT RISK IN GREEK SHIPPING

In this chapter, we delve into the crucial concept of leverage, identifying potential debt risks and discussing the optimal leverage ratio. Our focus is on Greek shipping companies, examining their leverage ratio about efficiency. We also explore the Trade-off Theory and benchmark these companies with international counterparts, shedding light on the leverage techniques they employ. This comprehensive understanding of leverage is of utmost importance for finance professionals and researchers alike.

Leverage is related to using debt (capital borrowed) to invest in or fund a project. The aim is to multiply the capacity returns from this project. Nevertheless, at the same time, leverage may result in multiplying the risk of default when referring to a business enterprise, property, or findings as "pretty or overleveraged," the related investment carries more outstanding debt than equity. Each trader and corporation utilizes the idea of leverage. Investors use leverage to seriously grow the returns that may be achieved from an investment. They leverage their investments through numerous instruments, techniques, and strategies. Companies can use the leverage to finance their property. In other words, instead of issuing stocks and shares to raise and increase capital, businesses can use debt to finance their operations to grow their shareholders' value (Bodie et al., 2012).

To calculate leverage, a range of ratios can be applied to assess the height of debt an enterprise uses; it is leveraging in a try of its profits and returns maximization. The most common ratio includes the following (Corporate Finance Institute, 2022):

Debt-to-Assets-Ratio: Total Debt/Total Assets. A business enterprise can examine its level of leverage by calculating the percentage of its property acquired through debt. If the debt-to-property ratio, the business enterprise in question relies on debt to acquire its assets or finance an investment.

Debt-to-Equity Ratio: Total Debt/Total Equity. Instead of examining what the business enterprise owns, it can calculate the degree of leverage by strictly examining the means through which the acquisition of its assets and property has been financed. The debt-to-equity ratio

examines what the business enterprise has borrowed as compared to what it has raised through traders or shareholders.

If the result of applying the debt-to-equity ratio is more than the one, the company in question has more outstanding debt than equity. However, this only sometimes suggests that business is highly or overleveraged. Each corporation and enterprise will generally function in a selected manner that can warrant a better or decreased ratio. For instance, start-up businesses operating in the technology sector may need help to secure financing and should turn to and apply to private investors. Consequently, a debt-to-equity ratio of five is considered excessive compared to the industry standards in which a business operates.

4.2 BORROWING AND LEVERAGE

The high capital intensity and reliance on debt financing associated with shipping companies, coupled with the financial constraints brought forward by the new financing environment, suggest that a shipping company's success is highly sensitive to its debt policy since deviations from target capital structures can lead to a high cost of financial distress (Drobetz et al., 2013).

It is generally true that high asset risk and liquidity conditions in the shipping industry have led to the development of more debt-focused capital structures and, consequently, higher leverage levels. As a result, the sector has reached critical funding levels. According to estimates by Reuters, European banks have provided over 150$ billion in loans to the shipping industry. In contrast, the world's top 40 banks have combined exposure of over 345$ billion to the sector.

The high level of debt finance that the shipping industry has received and the new financing environment has raised concerns about the potential impact of the sector's financial constraints on its operations. This is why companies must maintain their debt policies to avoid experiencing leverage and financial distress.

The literature has shown that the high level of debt financing the shipping industry has received can hamper companies' ability to raise additional capital. This issue is also reflected in the industry's limitations in developing corporate investment policies. Due to the industry's unique characteristics, it is a natural area for studying the effects of financing policies on corporate investment. (Antypas et al., 2020).

Moreover, the positive relation of financial leverage with capital intensity and effective internal control mechanism in the case of the shipping industry implies that bank loans are secured with asset underwritings and effective governance. This course of action reduces creditors' exposure

to risks that arise from revenue volatility, especially in an industry with increased demand uncertainty. As a result, managers in a shipping firm might have limited incentives and opportunities to manage earnings, and their resource allocation decisions are mainly driven by the level of adjustment costs of disposing of idle resources when volume activity decreases and the managerial expectations for future financial periods (Naoum et al., 2020).

4.3 LIKELY DEBT AND RISK

As mentioned earlier, shipping is a high-risk industry, so risk management is important to shipping companies. Risk in shipping finance relates to the uncertainty faced by the bank regarding the collection of interest and principal. Many techniques have been developed for measuring and reporting risk, such as "value-at-risk," "capital-at-risk," "risk-adjusted-capital-risk," and others.

Bank executives need to be able to assess the various risks associated with shipping finance. The ability to identify these risks arises from evaluating the borrower's historical data, such as its historical track record, survival mode during shipping crises, respect ratio for its obligations, and evaluating other banks' experiences with the same customer (Bartram, 2013).

The main types of risks faced by shipping banks are presented below.

4.3.1 CREDIT RISK

Credit risk is the leading risk that a shipping bank faces when it has to make an initial assessment of a request for financing from a shipping company. It is considered the risk that the borrowing company will default on its obligations to the bank. Two types of credit risk can be identified: the risk that the borrowing shipping company cannot meet its loan obligations (payment default) and the risk that the borrower fails to meet other loan conditions (technical default). The credit risk is mainly due to the volatility of the revenues from the operation of the financed vessel and the continuous change in the ship's values. To counter this risk, banks formulate their credit policy accordingly. This policy must include a proper assessment of the shipping investment to be financed and future forecasts of the shipping market, ship values, and freight rates.

Furthermore, as part of their credit policy, banks monitor the shipping company's performance and competitive conditions. The classification of commitments is based on financial factors such as accounting data and non-financial factors such as managerial perspectives. Therefore,

banks can adapt to circumstances and take appropriate measures in good time. Banks impose some reserve trust, credibility, transparency, and safety characteristics.

4.3.2 COUNTRY'S FINANCIAL RISK

This is the risk when the foreign borrower cannot meet its loan obligations due to events either in the country where the ship owner is based or in the region where the financed ship operates. Often, the credit is derived from the country's financial risk. The country risk can be reduced if careful assessment is made at the initial stages of the lending process to ensure that countries involved in the financing and operation of the ship are financially and politically stable.

4.3.3 INTEREST RATE RISK

This is considered to be the risk of a change in the level of interest rates. It occurs mainly when the banks grant loans at a fixed interest rate while the bank borrows from the interbank market at a variable interest rate. To deal with credit risk, there are various products that each bank can use, such as swaps, futures, forwards, and option.

4.3.4 FOREIGN EXCHANGE RISK

Currency risk is the risk of change in the exchange rate of currencies when the bank lends in a currency other than its Own. Currency risk can be reduced by matching the inflows of cash flow and outflows to service the loan obligations. In addition, through an appropriate clause, the bank may allow the use of multiple currencies for specific loan maturity periods.

4.3.5 LIQUIDITY RISK

This is the risk of creating a liquidity shortfall in the bank's liquidity and the inability to lend further. As a result, the bank may need help to respond to massive customer withdrawals. Therefore, in situations where there are massive or unforeseen withdrawals from deposits, if the bank does not have the required liquidity, it can either use part of its reserves, liquidate its readily liquid assets, or borrow in the interbank market, in most cases playing a higher than the average interest rate and then increases the interest rates at which it lends to its customers.

4.3.6 RISK OF DEFAULT

The risk relates to the possibility that a bank may be unable to cover losses on non-performing loans and is forced to exit the market due to insufficient resources. This risk is created by incorrect financial analysis of the customer's situation and incorrect market forecasting. These factors determine the amount of collateral and income required to repay the loans.

4.4 THE BASEL PLAN

Mitigating the above risks is of great importance both for banks and for the shipping companies to which loans are granted. The Basel Accords plan involves fundamental changes to the banking system, and its implementation will, by extension, affect the shipping finance process.

The Basel Accords are related to guidelines for banking institutes' hard and fast supervision via the Basel Committee on Banking Supervision (BCBS). They have evolved and advanced over more than three decades, between 1980 and 2012, presenting a process of numerous changes over these years. The Basel Accords have been designed to make a worldwide regulatory framework for dealing with credit and marketplace risk. Their key feature is to ensure that banks keep sufficient capital reserves to fulfil their monetary duties and continue to exist in monetary and financial distress. Their additional goal is reinforcing companies' governance, transparency, and risk management. The guidelines are considered a complete set governing the worldwide banking system. The Basel Accords include Basel I, Basel II, and Basel III sets of guidelines and regulations and the forthcoming Basel IV.

One hundred countries adopted the original plan of the Basel me and II Accords, which has helped create a safer and fairer global banking system. It requires banks to maintain sufficient capital to be able to cover their credit risks and imposes fines on banking institutions that engage in unsafe lending (Bank of International Settlements, 2019).

The Basel Committee's stated main objectives are to maintain the stability of the international financial systems and establish a level playing field, particularly between internationally active banks and investment firms.

In general, the structure of the Basel Committee's Accords comprises three thematic sections (pillars):

Pillar 1: Calculation of minimum capital requirements.

Pillar 2: Carrying out a supervisory review process.

Pillar 3: Reporting requirements to the supervisory authority (market discipline)

Next, the oversight body of the Basel Committee, responding to the global financial crisis, approved the finalization of Basel III reforms, providing a regulatory foundation for a resilient banking system that supports the real economy. After a one-year delay, the Committee announced that the implementation of the Basel III Accord started on 1 January 2023.

4.5 GREEK SHIPPING CONCERNS ON BASEL REGULATIONS

On the 30th of October 2016, in the hall of the Piraeus Shipping Club at the Piraeus Port Authority, the Association of Greek Banking and Finance and Greek Shipping Companies' Executives was another successful event for its members and the shipping market.

The conference aimed to inform the participants about the current issues in shipping finance and how implementing the Basel I/II, Basel III, and IV Accords will affect shipping companies' funding now and in the future.

Concerns were expressed that this would make it more difficult for shipping companies to borrow from banks. First, the capital requirements will henceforth vary over the loan's life span, thus straining banks' profitability. The direct consequence is that any additional costs incurred will ultimately be passed on to the customer. In addition, fears were expressed that new liquidity ratios are coming to make the regulatory framework even heavier (Association of Greek Shipping Banking and Finance Executives, 2016).

Another compounding and aggravating factor for banks identified is banking supervision. In particular, he referred to the single banking market and the concepts of a single Pan-European banking supervision, a single banking supervision authority, a single banking supervision authority, a single banking supervision Pan-European resolution authority, and finally, the pending Pan-European coverage of deposits. The forthcoming rules are intended to shield banks (at least at the Pan-European level) to cover their current or future losses, safeguarding deposits, and creating a sound operating environment; however, in the short or even medium term, it has an impact on the profitability of the own funds' efficiency of banks' capital and, consequently their corporate funding and its terms.

It was also discussed and explained how the risk of a loan directly affects the amount that each bank has to retain under the latest Basel rules. This shows clearly that the higher the risk of a loan, the higher the percentage of the mandatory capital that has to be reserved, but without these funds having a return for the bank in question.

Findings of a significant study by Kavoussanos based on the assessment of 128 shipping loans identified the main factors that would increase the likelihood of a shipping loan ending up in default. In particular, the variables considered to be statistically highly significant to explain the probability of a shipping loan defaulting include costs, the difference between the current annual rate(ITC) minus the percentage of inactive ships about the total number of boats in the

fleet, the ratio of inactive vessels to the total fleet, the chartering policy of the company to be financed (Association of Greek Shipping Banking and Finance Executives, 2016).

However, according to Petrofin Research's annual report, the total borrowing of Greek shipping companies by all banks worldwide increased by 5.6% in 2021 to 52.58 billion from 49.79 billion in 2020 and 53.1 billion in 2019.

2021 was the third year between 2008 and 2021 that total lending moved upwards (the other two years were 2012 and 2014). In 2020, lending was $49.79 billion, the lowest since 2006.

Loan balances from Greek banks alone rose 14.2% to 13.57% billion. Lending by Greek banks to Greek shipping companies remains on an upward trend, uninterrupted since 2017. Among banks lending globally to the Greek shipping fleet, Greek banks were the only Group of banks that continued to increase.

4.6 GREEK SHIPPING LOANS: FINDING THE RIGHT RATIO

Leverage in shipping arises when a financial institution or different dept is received to acquire a vessel. If, for example, the acquisition price of a vessel is 10M $ and the debt and the capital used for its buy are 5M $, then the leverage is 1.

As debt increases, so does leverage. Leverage is commonly measured on the ship-proudly owning corporation level, which might also consist of extra capital or retained income, or on a consolidated Group level, in case of more than a few ship-owning organizations with a conserving corporation comprising a Group (Petropoulos, 2021).

As using debt is designed to boost income according to the proportion of a corporation/Group within the contemporary unsure climate, it is viable that debt is confused via means of potential losses/Until now, the manner debt laboured become via way of means of lowering the required capital, even taking into consideration the borrowing costs, supplied that there may be net earnings above the value of the mortgage capital, the income according to proportion had been expected to boom. Using leverage could bring about spectacular income according to proportion when the markets had been strong. Even in situations below a medium market, using mild leverage should beautify income according to proportion.

However, the volatility of the delivery market affects what are deemed secure leverage stages in shipping. Under solid market conditions, therefore, using controlled leverage is usually a

blessing. The same cannot be said in conditions of a poor or volatile market or when events unduly affect shipping income, e.g., pandemic, breakdown, or disputes.

Under these conditions, a vessel's net cash flow is insufficient to service the interest and repayment of the loan. In addition, banks often require that a ship's or a Group's expected income be higher than the Group's liabilities and financial obligations, i.e., operating and voyage expenses, loan debt service, dry-docking costs, etc. The bank may ask for additional security if such expected income exceeds the Group's expectations.

Furthermore, banks always require a minimum asset cover ratio, whereby the value of the asset should exceed the loan outstanding by, say,120% at a minimum and 130% -150% at a useful minimum average, as this level is determined on a loan-by-loan basis.

It is easy to imagine that a shipping venture may run into trouble with either a breach of financial covenants or payment defaults due to market volatility. Often, shipping companies experiencing cash flow problems are also pressed to reduce technical maintenance and allow the build-up of unpaid creditors, which may further jeopardize the survivability of a shipping entity and unsettled lenders. This leads to the question of what may constitute "safe" leverage in shipping and what measures an owner can take to protect their shipping venture and ensure its survival during a pandemic.

Traditionally, safe lending at the ship-owning level is 50%-60% of the vessel's value. Leverage, for instance, of 75% is deemed very unsafe. The current rule is for a standalone loan, that 50% is the starting point of a discussion with banks, and this might rise in case of a period time charter that underpins the cash flow or other supporting factors. Banks also require some cash collateral for "safety," which usually equates to up to two loan instalments. To obtain higher loans, additional security or the support of a strong parent company would be needed. The above may constitute "safe" lending for banks, but this does not mean such loans may not experience difficulties in the COVID-19 era as a characteristic monument.

4.7 LEVERAGE EFFICIENCY: INSIGHTS AND IMPLICATIONS

The issue of leverage and efficiency has been a long-standing concern of the business community. For example, in 1958, Modigliani and Miller showed that the total cost of capital, as well as the share price of a firm, is not affected by the composition of its long-term sources of financing (Modigliani et al., 1958). Therefore, firms have no reason to use debt capital.

However, this view is based on some very restrictive assumptions, some of which are invalid, such as no individual or corporate income taxes (Modigliani et al., 1963).

The Economic Leverage ratio, reflected by return on equity/return on employed capital x 100, highlights the effect of debt capital on the firm's earnings. Depending on the values which the ratio takes and is presented as more significant, equal, or less than one unit, it indicates the corresponding effect of the use of debt and borrowed capital on the financial profitability of the firm, which is respectively favourable, zero, or negative (Subramanyam, 2016).

The effect of financial leverage and debt over time was investigated in many ways by Cai and Zhang in 2011. From their research, the part related to leverage and future returns of firms can be reported, as well as future expected returns. With leverage determined by the ratio of total assets (total liabilities/total assets), their sample shows a positive and statistically significant relationship between the change in leverage and future ROA and EBITDA ratios. Also, quarterly changes in leverage do not contain information about future stock returns. However, excessive leverage hurts stock prices and stock returns. In another study by Zuraidah, Norhasniza, and Shashazrina in 2012, it was found that there is a significant correlation between debt and return on equity (ROE) and return on assets (ROA). An increase in debt significantly increases the return on assets. By examining the relationships over time, they conclude that there is no statistical significance in the relationships between returns and the previous (lagged) level of financial leverage; thus, investors interested in ROE should be indifferent to debt levels as they do not affect it. However, other factors, such as size and growth of assets, have a more significant impact on it. Bradshaw, Richardson, and Sloan also studied the effect of debt and external financing in 2006. Their relevant study reveals that external financing is statistically significantly associated with and hurts future stock returns. There is a systematic negative relationship between the change in debt and future earnings, which are determined by operating income after depreciation and amortization before tax. An important conclusion of their research is that an increase in debt typically leads analysts' future expectations to be overestimated.

Finally, Hossain carried out a longitudinal study on a cross-country and cross-industry basis, including the shipping industry, from December 2004 until December 2018, concerning high- and low-leveraged companies. The results indicated that the overall performance of high-geared firms is financially less stable and thus subject to lower value than that of their counterparts because additional debt could cause value destruction due to bankruptcy.

Interestingly, this main finding was consistent across different dimensions: cross-country, cross-industry, size group, and period analysis (Hosain, 2021).

4.8 TRADE OFF THEORY AND LEVERAGE

Evaluating the advantages versus disadvantages of debt leads to a theory of capital structure called the trade-off Model. The trade-off is the balance between two variables for an optimal gain (Cheng et al., 2013). Considering the definition of trade-offs from an operations perspective, the balance (between two expectations) benefits the most; thus, there is no room for trade-offs (Akbar et al., 2019). In general terms, Trade-offs can be visualized in different ways. One way of picturing the trade-off is that it is a function of two variables, which can also be plotted graphically, and the other is related to multivariable. It helped to predict the performance of variables in routine processes (Hayes et al., 2009).

This model balances the fiscal benefits and the negative effects of financial distress and agency costs. Debt may provide tax relief because interest is deductible from corporate income tax, but on the other hand, it increases the probability of the company going bankrupt if it cannot meet scheduled debt payments (Hossain, 2021).

According to Myers (1984), firms following this theory could be considered as the ones who set the target debt-to-equity ratio and move towards achieving it. The static trade-off theory also claims that profitable firms have a higher target debt-to-equity ratio, which contradicts the pecking order hypothesis, which states the opposite. Higher profitability firms ensure higher tax benefits because of more significant savings due to debt financing, lower probability of default, and higher over-investment. Thus, they require a higher level of debt-to-equity ratio. The fact that higher debt levels are shown to hurt acquisitiveness and have a positive effect on the quality of corporate investment has direct policy implications for shipping companies, their management teams, and shareholders, especially for firms with inorganic investment plans to place. A key implication is that financial flexibility should not be viewed as a panacea by corporate boards in the shipping industry since it can be detrimental to a firm's investment choices and shareholder value (Alexandridis, 2020).

More specifically, an increase in a firm's debt opens to an increase in the firm's potential future financial distress and cost of representation. The tax relief the firm enjoys from using debt capital is reduced and subsequently fully offset by the increase in debt capital (Dierker et al.,2019). This compensation, however, will continue indefinitely. Thus, from a certain point of borrowing onwards, the tax benefit from additional borrowing is less than the adverse effects

of financial difficulties and agency costs. Thus, there is an optimal capital structure that appraises the costs and benefits and maximizes the firm's value, except it cannot be precisely determined.

According to this model, firms should finance their activities with debt capital ranging from 0% to 100%. The existence of the benefits from the tax treatment of loans, on the one hand, and the more significant risks from increased bankruptcy costs caused by the increase in leverage, on the other, changes the value of the firm. As the amount of loans in the financial structure increases, the present value of the tax breaks will initially cause the firm's market value to rise; specifically, the slope of the curve will be equal to the tax rate (Hossain, 2021). The trade-off model predicts that more profitable firms should borrow more due to their strong debt-service capacity (Allen et al., 2019).

However, the cost of financial distress will reduce the firm's market value to a level below that which would be achieved if the only effect were the corporate tax profits. The potential financial distress costs of overleveraging may reach such high levels that they cause a decline in the firm's market value.

The following can be drawn from applying the trade-off theory principle to the Greek shipping companies in combination with Petrofin Research's findings. There are 68 Greek shipping entities with fleets of more than 20 vessels (regardless of DWT) and 83 with more than 1m DWT fleets. These fleets and several medium-sized ship owners constitute the client list many banks aspire to reach. It should also be noted that the Greek shipping industry has suffered relatively few financial failures, and the rate of losses and red loans has been meager. The profile of the Greek fleet thus offers a favourable leverage and risk/reward profile, which is attractive to banks carrying a more outstanding market value than its counterparts (Petropoulos, 2022).

In conclusion, the trade-off theory intimates that the cost of debt is always lower than the cost of equity because tax can be deducted from the interest on debt. Debt may be cheaper, but at the same time, it carries with it the risk of a company not being able to make payments on time, which could result in its insolvency.

Debt-holders are the first to have legal claims on the company's assets if it goes bankrupt, as the firm can only pay shareholders after meeting its debt obligations. Consequently, each company has to find an optimal capital structure and leverage level that minimizes the cost of

financing while optimizing its returns of capital invested ROE, minimizing the risk of bankruptcy (Hossain, 2021).

CHAPTER V

CONCLUSIONS

This research paper looks at the current shipping finance situation. Shipping is a national asset for Greece and contributes to the economy and society in many ways. Timing plays a central role in the survival of shipping companies, and ship owners need to check all the shipping market conditions before deciding to invest. Asset play is equally essential to a company's financial health as a practical and cost-controlled operation. Greek ship owners are a representative example through the years. According to the UGS Annual Report 2022-2023, our country remains the world's largest shipping country, as Greek ship owners control 21% of the global tonnage with 5,520 ships. The dominant business model, whose primary traits are speed and flexibility, is to grow or renew their fleets once the market is deficient and take advantage of a substantial fleet when it returns to a high or average level. The more extensive and newer fleet attracts charterers, who always prefer younger and technologically more advanced vessels, as they have lower maintenance and insurance costs.

It is worth noting that the shipping cycles are a common phenomenon, so ship values and fares fluctuate continuously. Shipping companies mainly direct to bank lending to raise the compulsory funds, and the banks that grant shipping loans rely on the cash flow, the cash program of the borrowing company. When the shipping industry faces enormous challenges and difficulties, Greek banks have become a pillar supporting Greek-owned shipping. The data from the Petrofin Research survey for 2022 shows the top banks that finance the industry. In specific, Credit Suisse which owns 10.6%($5.5 billion), Alpha Bank with 6.8% (3.535 billion), Eurobank with 6.65%(3.450 billion), Citi with 6.65%(3.450 billion), Piraeus with 6.63%(3.2 billion), last but not least National Bank with 2.7 billion has a percentage of 5.3%.

One of the most essential characteristics of bank loans is the securities taken for the loan, like the mortgage, the retention account, or the charter party (employment assignment. It is well known that bank loans are considered a fundraising instrument, provide low borrowing rates, and offer flexibility to the borrowers to repay the loans. At the same time, there is the need to secure loans and guarantees; the floating rate and the speed of the process are some disadvantages.

The Global Banking industry faced many challenges during 2022-2023. The Ukrainian war and international sanctions provide a route to trade discontinuity. It is generally true that global escalation and high energy prices lead the way to a drop in GDP swelling and international seaborne trade of about -0.1%, as per Clarkson. Port congestion eased trading become deliveries, and orders were kept low; the demand conditions across most market segments were, in general terms, unsupportive. The rising US interest rates from close to 0% to over 5% have rendered many vessels' cash position weaker in supporting the high prevailing vessel prices.

Petrofin research says that the provocations facing shipping and, correspondingly, global ship finance remain: “Geopolitically, the war took place in Ukraine, and the disruption caused by sanctions and dislocated trade routes appear likely to remain for the foreseeable future. The tightening monetary policy in the West, seeking to bring down inflation to 2% via high interest rates, also appears likely to affect the whole of 2023, with some hope in place in 2024. The emphasis on ESG by banks, lenders, and owners has grown stronger. This has also affected lenders in vessels not deemed in line with reducing emissions.”

According to the report, funds engaged in lending have increasingly begun to include ESG criteria with a strong preference towards sustainability loans and vessels engaged in renewables. The ability of funds to raise sums from investors has also shifted heavily towards green lending, for example, as their investor base now demands this. Meanwhile, in terms of shipping finance activity, it is clear that the industry is having difficulty finding sufficient loans that meet lenders' credit criteria. The steep rise of Western nations’ interest rates has dented vessel cash flows and high prices related to incomes in the dry bulk and container sectors, which has issued weak new loan productions. An excellent example is that average dry bulk carriers are now similar to the average in 2021, whereas 1-year charter rates are 40-50% lower. On the other hand, this characteristic does not apply to tankers where one market profits are, on average, 30-60% more than in 2021, and the vessel prices are also approximately 50% in 2021. However, it seems that lenders are concerned with how tanker prices and incomes will develop in the event of an end of the Ukrainian war and a possible lifting of sanctions.

However, Petrofin research concluded that owners across all sectors have developed sizeable liquidity. It is impressive that some have placed tier 3 orders, which picked up in early 2023, especially for tankers; they still need to pose a threat of over-ordering for the following years. Most owners seem content to sit on their liquidity awaiting better risk/reward opportunities and

technological advances, while others are prepaying their loans bearing in the high US dollar interest rates with 2023 world seaborne trade forecasted to grow by only 1.8% across all sectors and 3.2% growth in ton-miles is hardly difficult to see excess demand condition for shipping.

According to Hellenic Shipping News Worldwide,2023 and the first quarter of 2024 were years of disruption in the maritime markets. The supply side remains quite tight in most sectors due to the impact of supply and demand dynamics in the shipping sector for the past few years. Shipbuilding capacity is limited, the cost of building new vessels has risen with increased input costs, and financing is considered expensive. Focusing on the green transition and the need for alternate fuelled ships has exacerbated the squeeze, with owners hesitant to commit to new builds and uncertain about which fuelling technology to move forward with. As a physical result, the average age of the global fleet is increasing. The global fleet grew by just 3% during 2023, and the global order book, which is still only 12% of the fleet, is highly skewed towards containers and gas in the near term, likely to result in constraints for other markets.

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