

Erasmus University Rotterdam

The Impact of the financial crisis on the role of government in the shipbuilding industry

Erasmus School of Economics
Center of Maritime Economics & Logistics (MEL)

Supervisor: Eelco van Asperen

Name: Desislava Oblakova

Exam number: 314619

E-mail address: 314619do@student.eur.nl

Study: International Bachelor of Economics and Business Economics (IBEB)

Table of Contents

CHAPTER 1 INTRODUCTION	4
1.1 General Introduction	4
1.2 Objectives of the Research	5
1.3 Methodology	5
1.4 Structure of the Thesis	6
CHAPTER 2 SHIPPING INDUSTRY	7
CHAPTER 3 SHIP FINANCING INDUSTRY	10
3.1. Introduction	10
3.2 Evolution	11
3.2.1 Pre-steam History	11
3.2.2 Post-War Period – the 50s and 60s	11
3.2.3 The 1970s	12
3.2.4 The 1980s	13
3.2.5 The 1990s	13
3.3 Alternative methods of ship financing	15
3.3.1 Private Funds	16
3.3.2 Bank Loan	16
3.3.3 Capital Markets	18
3.3.4 Special Purpose Vehicles	19
CHAPTER 4 IMPACT OF CURRENT ECONOMIC AND FINANCIAL DOWNTURN ON SHIPPING AND SHIPBUILDING INDUSTRIES	22
CHAPTER 5 GOVERNMENT AID ALTERNATIVES FOR FINANCING	25
5.1 State Loan	27
5.2 Shipyard Credit	27
5.3 Role of OECD	28

CHAPTER 6 HOW DIFFERENT GOVERNMENTS ARE COPING WITH THE FINANCIAL AND ECONOMIC DOWNTURN OF 2008?	30
6.1 China	30
6.2 South Korea	32
6.3 Japan	32
6.4 European Union	33
6.5 Analysis	35
CHAPTER 7 CONCLUSION	38
REFERENCES	40

Chapter 1 Introduction

1.1 General Introduction

Merely induced by the fact that around 71% (NASA) Earth surface is covered by water and hence great part of freight is moved by sea, maritime transportation plays a focal role in world economic growth and development. Before the current financial crisis hit the world economy, shipping industry has been one of the main beneficiaries of globalization and economic prosperity that characterized the period between 2002 and 2007.

Nevertheless, the recent financial downturn, comparable only to the great depression of the 1930s, has had a major negative impact both on world economy and trade volumes. And in view of the fact that there exists a strong relation between industrial production, economic development, trade volumes and demand for maritime economics, when in 2007/2008 the world economy experienced a substantial slowdown, it was inevitable for the shipping industry to be affected severely. The sharp reduction in energy demand, demand for consumption goods, as well as the decrease of industrial production have triggered a cutting-throat competition, reflected in considerably lower freight rates leading to further depletion of profits. As a consequence, the chain effect of the economic crisis has influenced also the shipbuilding and the ship financing industries. The unprecedented contracting activity during 2007 has now created an oversupply of tonnage in the maritime fleet. In addition, as a result of the contraction in credit availability, cancellations and postponements of ship deliveries continued in 2009 and are expected to further proceed in 2010 (Danish Shipping Finance, 2010). And despite the expectations that world economy will slowly start to recover, according to Danish Shipping Finance the future is not bright for the shipping market, arguing that simply there is not enough cargo volume to fill in the existing fleet.

Shipping finance plays a critical supportive role to both shipping and shipbuilding businesses, because of the great capital intensity, volatility and unpredictability that characterized these industries. Today, ship finance is going through a not so uncommon to practitioners period of unavailability of capital resources, consequence of the hostile economic environment. There various sources of finance, broadly divided into equity, mezzanine finance, senior debt and lease. In this paper the focus is placed on senior debt, more precisely on export finance and shipyard credit offered by local governments in order to support and protect national shipbuilding industries, considered to be strategic for the process of industrialization.

1.2 Objectives of the Research

In the light of another financial downturn, the shipbuilding industry has entered into a period of low new-building prices, decreased contracting activity, increased cancellations of orders and lack of capital availability. Shipping finance has always played an essential role in overcoming such hard periods for the shipping and shipbuilding industry with its various alternatives for capital procurement. Nevertheless, nowadays, raising capital for new-building projects from commercial banks has become extremely hard. As a consequence, government aid seems to be an excellent and at the same time indispensable alternative.

The intention of this study is, to make a thorough analysis of how the recent financial predicament has influenced the shipbuilding and ship financing industries and understand whether because of the financial/economic downturn the role of the government intervention has changed and increased/decreased. In particular, the aim is to investigate and create a comparative analysis of government aid practices in different leading shipbuilding nations, primarily concentrating on export finance. In order to achieve this, an update of the already existing literature concerned with the topics of ship financing will be also needed.

1.3 Methodology

This sub-section is intended to present the methodology employed in this study.

Secondary research was employed in order to obtain sufficient knowledge and insight of the topics of shipping, shipbuilding and ship financing. In general, secondary research is considered to be as important as the research using primary data due to the fact that information usually is collected utilizing the same methods.

For the purpose of gaining relevant knowledge on the topic various literatures was reviewed. The main sources of information concerning the economic of shipping industry was the 3rd edition of the textbook "Maritime Economics" by Martin Stopford. To collect information on the history background of ship finance as well as the various methods of procuring capital text books by Peter Stokes ("Ship Finance, Credit Expansion and the Boom-bust Cycle" Edition 1997), Stephenson Harwood ("Shipping Finance" Edition 2006) we utilized. Furthermore, "The World Shipbuilding Industry" by Daniel Todd (1985) was used to provide relevant information on developments in the shipbuilding industry and major shipbuilding nations in the world. In addition, annual reports from financing institutions, the United Nations and the Organization of Economic Cooperation and Development (OECD) were employed in order to create a solid base for the analysis of the impact of the current financial crisis on shipbuilding industry, as well as various open sources.

1.4 Structure of the Thesis

This paper consists of seven chapters.

Chapter one includes a general introduction to the topic of the thesis, as well as the objective of the research and the methodology employed.

Chapter two present an economic analysis of the shipping industry, explaining the shipping market cycle and the supply and demand model for the shipping industry.

Chapter three is concerned with an overview of the ship financing industry. It starts with a historical overview of the financial vehicles employed over the years. The chapter ends with an in-depth review of the alternative methods for financing ships.

Chapter four present an analysis of the impacts the financial downturn from 2007/2008 had on the financing and shipping industry and as a consequence on the shipbuilding market.

Chapter five pays specific attention to government interventions in the shipbuilding industry, explaining what export finance and shipyard credits are.

Chapter six consists of comparative analysis among major shipbuilding nations in order to investigate what are the government practices and policies around the globe.

Finally, the paper ends with conclusions.

Chapter 2 Shipping Industry

The importance of maritime transportation, and shipping in particular, as a key promoter for economic development has been known to economists centuries ago (Stopford, 2009). The shipping industry has been a business dependent on and developing hand in hand with the industrialization and globalization of world economy as well as with the expansion of world trade. "No wonder the oceans are the highways of economic development, an aspect of the business which hardly changes with the centuries" (Stopford, 2009) with maritime transportation accounting for the shipping of 90% of the world trade (International Chamber of Shipping, International Shipping Federation).

The shipping industry is characterized by numerous attributes which make it a very exciting, risky and volatile business at the same time. Some of the features typical for this industry comprise its capital intensity and extreme leverage because of the high sunk costs its core assets, the vessels, represent. In addition, since shipping is a highly fragmented industry, namely including diverse kinds of business offering a great variety of services, and is geographically diversified, there exists almost perfect international competition. Furthermore, due to the international mobility of shipping, a lot of countries like the Bahamas, Cyprus and Liberia are offering favourable maritime laws in order to foster ship registration under their jurisdiction, making flag ownership diversity a major concern in the industry. Government regulations have a great impact on freight rates, costs and fair competition. The shipping industry is highly sensitive to international and national political events as well as random shocks (Stopford, 2009).

To begin with, the shipping industry is an extremely cyclical market. There are three types of cycles that dominate the industry, namely the long-term cycle, short-term cycle and the seasonal cycle. For a matter of convenience, only the short-term cycle is going to be discussed as it is the having a focal function in the shipping market developments. The short-term cycle has a shorter time span compared to the long-term one (from peak to peak 60 years); a full cycle last from around three to seven years. The typical shipping market cycle, has four stages. According to Stopford (2009) the first stage is called trough and is characterized by surplus of shipping capacity, low freight rates, contraction of credit availability leading to the trend of selling new ships below book value and prices of old ships reaching scrapping prices. Recovery is the second stage of the shipping cycle and can be depicted by growing confidence, slowly reaching balance supply and demand, slightly increasing freight rates and liquidity. In the next stage, peak, the surplus of capacity disappears and freight rates increase significantly, reaching sometimes ten times the operating costs. As a consequence of increased earnings, banks become more willing to lend against the rising value of the assets. The rising positivism in the industry ultimately results into order-books skyrocketing, prices of new ships reaching unreasonable levels and second-hand ships selling for more than their replacement costs. Finally, during the collapse stage, due to the over-trading there are too many ships being delivered, a lot of vessels start to wait to be filled with cargo and consequently freight rates start decreasing considerably. All in all, the shipping community is

having troubles accepting the idea that the peak stage is over. To conclude, the short-term cycle plays a very important role in the shipping market mechanism as a regulator of the supply-demand balance, simply stated when there are not enough ships to satisfy demand, freight rates rise so to fuel orderings and when there is oversupply of tonnage, freight rates go down and remain low the fleet has not reached a balanced size.

There are different economic drivers behind the shipping market cycle. In Chapter 4 of "Maritime Economic" (2009) Stopford present an economic model in order to explain the shipping market cycle. Accordingly there are three components: demand, supply and freight market, which plays the role of a cashflow regulator from one demand to supply and the other ways around.

On the demand side, the most significant variables influencing demand for maritime transportation are world economy, seaborne commodity trades, average haul, random shocks and transport costs. World trade, in particular business cycles, is considered to be the major driver of demand for sea transport, simply induced by the demand for raw materials or manufactured goods. Nonetheless, it is worth noticing that, in the short-term business cycles alone do not have the power to create a distress in the shipping industry. Rather random shocks are considered the primary reason for the deep peaks and troughs in shipping cycle. As far as seaborne commodity trade is concerned, there two aspects, namely the long-term and short-term. The short-term volatility is demand for transportation is for the most part driven by the seasonal nature of some commodities (e.g. agriculture), which most of the time are difficult to predict. In the long-term, one should examine the economic aspects of the industries that produce and make use of commodities, more specifically explore the changes in demand for particular commodity, changes in the sources of supply, changes in trade pattern and changes shipper's transport policy. Next variable to be considered is the average haul of trade, meaning the distance effect on time for a commodity to arrive at the point of destination. The average haul is measure in 'ton miles', defined as the tonnage of cargo shipped multiplied by the average distance (Stopford, 2009). Changing the average distance of trip can have significant impact on demand for ships through freight rates. A famous example is the closures of the Suez Canal, which lead to a sharp rise in the freight rates due to the increased demand for sea transportation. Furthermore, random shocks, such as political events, wars, weather changes, prices changes, can also create disturbances in the shipping market. Economic shocks, like the great depression in the 1930s and the financial crisis of 2007, have the greatest impact on the shipping cycles. Last but not least, transport costs are a major factor in the demand function. As long as costs of transportation are low enough or the commodity transported is of great value there is going to be demand for maritime transportation.

On the other hand, world fleet, productivity, shipbuilding production, scrapping and losses and freight revenue are the factors affecting supply of transport services. The size of the world fleet is controlled by the ship-owners through adjustments in response to fluctuation in the freight rate market by either increasing new-building orders or scrapping activity, thus altering productivity of the fleet. There are four

major groups of individuals playing a crucial role in supply of shipping capacity, namely ship-owners, shippers, banker and regulatory authorities, which introduces a behavioural element in the analysis. Because of these complex and difficult to understand relationships between individuals, economic analysis of supply side of shipping market can be weak in its predictive power and hence unreliable.

Finally, the freight rate market is to be discussed. Freight rates are the mechanism that connects supply and demand. More precisely, freight rates in the short-run are an indicator of the balance between cargo availability and fleet size. For example, if there is oversupply of capacity and not enough cargo to fill in all the ships, freight rates are going to go down. In contrast, when there are not enough ships and hence demand for transportation is elevated, freight rate increase.

The shipping market is a fascinating and complex industry where different agents and factors interact till equilibrium is reached in the long-run. Two important markets playing a key role in shipping are the shipbuilding and ship financing industries, which follow to be discussed in this paper.

Conclusion

The role of this chapter is to highlight the major traits of the shipping industry, these being capital intensity, high volatility, global competition, severe competition which influenced by government policies and subsidies. In addition, the shipping market cycle is depicted as well as the economic forces behind it, namely demand, supply and freight rates.

Chapter 3 Ship Financing Industry

3.1. Introduction

Ship financing has played a significant role in the shipping market since centuries. At the same time, the core characteristics of the shipping industry have come to define the ship financing as a unique and “exotic” business. According to Harwood (2006) the main characteristics of shipping finance are capital intensity, asset mobility, volatility and business structure.

Shipping has always been a highly capital intensive industry, especially in the period between 2003-2007 due to the high world trade levels and as a consequence increased demand for even larger and more specialized ships. According to Stopford (2009) in 2007 the investments in new ships amount to \$187.5 billion. In addition, due to the heterogeneity and mobility of vessels, finance treats ships as stand-alone assets (Harwood, 2006). Furthermore, as already mentioned in the previous section, the shipping industry is characterized by great volatility and unpredictability in earnings and ship’s value. Thus, compared to other industries risk in ship financing is unique in its nature, since it combines volatility and long-term financing. Last but not least, the international mobility of the main asset as well as the freedom of owners to choose the legal jurisdiction, under which they prefer to operate, gives the opportunity to companies to adopt a less formal corporate structure. The industry is characterized by single purpose companies and consequently making financial and operational issues not transparent enough.

Due to these attributes, analyzing the shipping industry has always been a challenge for bankers. The main issue for specialists is assessing the credit risk, namely the ability of the ship-owner to repay all its financial obligations, even in adverse conditions (Harwood, 2006). There are three main sources of collateral in a bank loan: the asset value, its earnings, and the balance sheet of the company. The asset value and its earnings are directly controlled by the fluctuations in the freight rate market. Therefore, for bankers is inevitable to study the shipping market cycle when carrying out a credit analysis. Nonetheless, as already mentioned, the shipping cycle is very difficult to predict, thus being uninformative when forecasting future earnings or value of assets.

It would seem logical, after enumerating all these difficulties characterizing both industries, that obtaining capital is going to be difficult. Nonetheless, history has shown that the shipping industry suffers from too much financing (Stopford, 2009) and that lessons from previous financial downturns have not been learned by both ship-owners and financiers; actually they were repeated all over again.

3.2 Evolution

In the sub-section a brief overview of the shipping finance history is presented, paying special attention to the progress of different financing methods after World War II.

3.2.1 Pre-steam History

In the 1850s a common method of ship financing was the use of shares, more precisely the "sixty-fourth" company. In the United Kingdom, ships were registered as 64 shares. Each ship was treated as a stand-alone investment and the number of shares investor purchased was a determinant of the level of ownership, for instance if one bought 32 shares it meant that he/she owned half of the ship. According to Stopford (2009) there were three ownership structures at that time. One possibility was for individuals to hold shares on their own account, which was chosen by the majority of investors. Second, share could be held by partnerships (consisted of several individuals). And the last and least preferred ownership structure was for share to be bought by investors in a joint stock enterprise.

As size of ships continued growing, a greater amount of money was required for financing. As a result of the "Limited Liability Act" of 1862, which protected investor against liability claims, the joint stock companies became the preferred method of procuring capital.

However, after the recession of 1904-1911 that caused the default of many shipping companies that were highly leveraged, borrowing money became quite a notorious practice. Until the 1950s lending conservatism had overcome the shipping society and large portion of the owners financed their investments from retained earnings (Harwood, 2006).

3.2.2 Post-War Period – the 50s and 60s

The period after the WWII was characterized by rapid industrial development of major economies like the USA, West European countries and Japan. This led to a strong demand for raw material and as a consequence resulted in higher demand for vessels and ship's type and size. In order to remain competitive, ship owners realized that economies of scale and faster turn-around time were the answer. As the size became larger and design more complex, meaning that "the financing of new investments from cash flow became increasingly difficult, and the appetite of the industry for external financing began to expand" (Stokes, 1997).

The method of charter-backed finance was quite popular at that time. This technique consisted of oil companies or steel mills to offer long run time charter to ship-owners as an incentive for owners to order even larger ships. Owners used these time charters as collateral when raising a loan, which would cover a large part of the

ship's purchase price. Among the countries that took advantages of the charter-backed finance were Norway, the US and Greece. However, the "Shikumi-Sen" arrangement between Japanese shipyards and charterers and Hong Kong shippers is considered to be one of the finest forms of the charter-backed systems. The only possibility to increase their tonnage was through offering charters of 10 to 15 years to Hong Kong entrepreneurs, who were more than pleased to order and finance ships against such a long period contract.

The charter-backed finance introduced new innovations in the industry, namely the single-ship company, where each ship was registered as an individual company. This type of organizational structure was characterized by little financial transparency, few financial accounts and no taxation. It was quite convenient for bankers as higher leverage rate could be obtained against the security of the hull and the time charter of the ship.

Until the 1970s the utilization of charter-backed financed gradually decreased. According to Stopford (2009) there are three main reasons for this. One of them being, that by the beginning of the 70s, shippers no longer needed to give an incentive for owners to order more ships as economies of scale exhausted. In addition, oil and iron trade stopped growing. Lastly, inflation had squeezed the already small profit margins that ship-owners had agreed upon.

3.2.3 The 1970s

In the first couple of years of the 1970s, bankers started to alter lending policies. Due to the effect of increased risk along the duration of the long-term charter contract, inflation and currency changes on ship owners' revenue, bankers preferred to secure their loans simply against first mortgage on the hull. The existence of new building contracts of 80% credit at a 5.5% 10 years was both satisfactory for ship owners and shipyards. As a consequence of the lack of discipline in the shipbuilding credit competition, the recession in the beginning of the 70s pushed governments, bankers and shipbuilders to reconsider their lending policies.

However, in 1973 the shipping industry managed to bounce back. World trade in bulk commodities increased considerably leading to unprecedented delivery of new tonnage. As a consequence, fierce competition started in the banking industry with a large amount of small banks pushing to enter the market in order to take advantage of the boom in the industry. The enthusiasm that had overwhelmed everyone led to considerably lower financing standards resulting in a disaster in the ship financing sector. By 1979 the industry thought that recovery was already coming. However, in 1978 and 1979 the average six-month dollar rates started fluctuate, from 9% to 13% and by the mid of 1980 they reached levels up to 17-20%. These fluctuations put a lot of pressure on ship owners (especially in Hong Kong) to cancel their new building contracts. By 1982 the shipping industry had entered a recession that has never been experienced in the last 50 years, with the key factors behind it being the over capacity and excess of debt financing.

3.2.4 The 1980s

The 1980s were disastrous for the majority of shipping companies and bankers. Prices of tanker and bulk carriers fell so drastically that young vessels were sent for scrapping and second-hand ships prices reached almost scrap value, thus creating outstanding opportunities for thriving investors with capital. An investment prospect was to buy ships at cheap and sell them later when their value had risen considerably, also called the "asset play". Large part of these investments could only be financed through equity financing. However, the problem of the shipping industry, at that point of time, was its insufficient and rapidly exhausted equity base as well as the lack of interest from investors to be further exposed to shipping risk. As a result, companies had to explore other alternative vehicle of financing.

One option was for companies to attract non-shipping investors with self-liquidating ship funds; Bulk Transport Ltd. was the first of this kind, established in 1984, which proved to be very successful. The intention of the organization, according to its terms of reference (Stroke, 1997), was to "identify and invest in sectors of the shipping market where the values of ships have fallen to exceptionally low levels, but where the underlying balance of supply and demand has begun to improve. By purchasing tonnage near the bottom of the market, the company expects to achieve significant capital appreciation within a few years."

As a result, other funds offering equity to non-shipping investors started to emerge, such as the Norwegian, German and Danish K/S limited partnership, which were a method of funding speculative investments in second-hand ships. The core idea to attract financiers behind this type of investment schemes was that it represented a taxation refuge for its shareholders. Thus, the K/S partnerships could only attract large sum of investments in countries where marginal rates of personal taxations were high (Stroke, 1997). The 1987-1989 recovery in ships' value in combination with the tax incentive marked the boom in K/S movement. Eventually however, government tax reforms in addition to a series of bad deals led to the collapse of the K/S market in the first years of the 1990s.

In 1990-1991 the days of the "asset play" investments were over. After two decades of serious financial distress, the shipping community was finally realizing that shipping was simple a branch of transportation business. Furthermore, the industry found itself "hungry" for capital right in a period when the commercial banks were going through the toughest crisis since the Great Depression.

3.2.5 The 1990s

In general, shipping has always relied heavily on commercial banks for capital procurement. It is surprising the low number of companies that consider public equity markets as an alternative to banks, despite the capital intensity characterizing this industry. Furthermore, leasing, another alternative to debt financing, did not manage to become as popular as in other transportation equipment markets.

A serious concern in the shipping industry in the beginning of the 1990s was the aging profile of the world fleet, which could create grave replacement problems. Another problem, shipping companies were facing was the significantly tighter credit environment. For more than two decades the shipping industry was enjoying unrestricted access to debt, nevertheless banks had hit the limit of their resource.

The implications for shipping companies of the tighter capital circumstances were severe. Even well established companies that used to do frequently business with banks had to accept rejection. Furthermore, banks became much stricter on the funding requirements as well as on the amount they are willing to lend. For instance, the loan-to-value criteria had become 50-60% in contrast to the 80% in the 1970s (Stroke, 1997). The hunger for capital raised the need for cardinal changes in shipping industry. First, there was the need for greater consolidation among the stronger companies through mergers, joint venture or pools so to build entity that is more efficient, possesses greater negotiating power and market penetration with respect to charters and shipbuilding companies. In addition, companies were to become more disciplined and responsible as far as finance was concerned ensuring adequate safety margins. And last but not least, the industry had to persuade the financial guild that it had outstanding corporate management teams.

It did not pass too much time until there was access to credits again for shipping companies. There was an invasion of new coming banks in the shipping finance in the period of 1994-1996. The mid-1996 represents the boom in the ship lending cycle. Nonetheless, soon there was about to come the point when the bad loans will come to surface which would create panic among new comers. The over-ordering in the bulk and containership market triggered a crisis in the shipping industry resulting in shortage of cheap financing, which would hit much harder the non-corporate borrowers. The corporate companies, on the other hand, had managed to diversify their sources of funds and started making use of equity and bond markets, as well as other more unusual financial techniques.

In the twentieth century ship financing becomes even more sophisticated. We can observe that from decade to decade there are different financial vehicles introduced. The financing has usually tracked down the shipping cycle, often blamed by shipping companies to be the reason for over-provision of capital. However, history and current crisis in the shipping market show that lessons are hardly learned by entrepreneurs and financiers.

3.3 Alternative methods of ship financing

The core sources of capital used to finance ship purchases (both new ones and second hand) are considered to be debt and equity. Nonetheless, throughout the years, practitioners have used both equity and debt in different combination to come up with a variety of financial vehicles. Table 1 present the various combinations of debt and equity, divided into four broad categories, namely private funds, bank loans, capital markets and special purpose vehicles (Stopford, 2009).

Table 1.

Methods of Raising Funds	Structure of Finance	Features of Structure
Private Funds	Own Funds	Equity finance provided by owner or private investors in return for shares in a privately held company.
	Private Investment	Equity or loan arranged privately with family, colleagues, high net worth individuals.
Banks Finance	Mortgage-Backed Loan	Term loan provided by bank, secured against mortgage on ship(s). Large loans may be syndicated between several banks.
	Corporate Loan	Loan secured against the company's balance sheet (e.g. term loan or revolving credit)
	Shipyards Credit	Loan provided or guaranteed by government or agency to assist domestic shipyards in obtaining orders
	Mezzanine Finance	Finance containing elements of both debt and equity, e.g. debt with equity warrant.
	Private Placement	Sale of equity or corporate debt to one or several element institutions. Avoids lengthy public offering process.
Capital Markets	Public Offering	Offering of shares, sold by subscription on a stock exchange, and subsequently traded on a secondary market.
	Bond Issue	Long-term security issued in a capital market, usually with interest payments every 6 months and principal repaid on maturity
Special Purpose Vehicles	Special Purpose Company	Shares in a special purpose company sold privately by individuals or may be listed on a stock exchange.
	Limited Partnership	Limited liability partnership set up as a vehicle for financing ships. Equity provided by private investors and debt by bank.
	Finance Lease	Long-term tax efficient finance based on sale of ship to company which benefits from tax allowances and leased the ship back to user
	Operating Lease	Short-term lease (less than 7 years, which does not have to be shown on the lessee's balance sheet
	Securitization	Financing structure designed to separate the assets from the company management

Source: Martin Stopford, 2009

3.3.1 Private Funds

Using the owner's private funds, retained earnings from business activities or capital borrowed from family, friends or colleagues, is considered to be easiest and most obvious option to finance ship-building projects. There are several advantages from making use of private funds. First of all, using private funds avoids incurring the additional cost of interest payments, which can elevate considerably the final value of a project. Furthermore, if a company wants to avoid the risk of incurring debt and the heavy administrative costs of public equity, private funds seem an appropriate alternative. Nonetheless, this type of ship financing has its drawbacks. For example, as already mentioned in the previous section, the shipping industry is characterized by extreme volatility and competitiveness, which make profit margins small and uncertain. In addition, ship building is highly capital-intensive, thus to find sufficient private funds can be challenging task for companies.

3.3.2 Bank Loan

Commercial bank loans are considered to be the most significant and common source of capital for ship financing because they secure a flexible and fast access to capital. As one can see from table 1, there are five various options of financing when considering commercial bank loans. There are mortgage-backed loans, corporate loans, loans that have been backed-up by the government as well as mezzanine finance and private placement of debt and/or equity.

Mortgage backed loans are made available usually to the one-ship companies as they are not considered to be financially stable, thus the loan has the ship as collateral. The most basic form of mortgage-backed loan has a repayment period of five to seven years; the size of the loan would be between 50% and 80% of the market value of the ship (depending on the current market situation and the state of the asset). The loan is to be repaid on equal instalments, usually on a six month basis. One of the drawbacks of mortgage backed loans is they are limited in terms of size. Moreover, the loan has to be secured against an asset (usually the ship) and the contract may entail some quite restrictive covenants. As a consequence, it is a less favourable alternative when considering the acquisition of new ships.

An alternative to the mortgage backed-loan would be the corporate loan; a loan where a company is using their balance sheet as collateral instead of a ship. This type of borrowing is convenient for large companies that own more than one vessel and that are financially stable. The major advantage of borrowing as a company is that corporate loans allow for flexibility by making it possible to realise unplanned acquisitions or to cover cashflow variations (Stopford, 2009).

In general, banks prefer to restrict themselves on the maximum size of loan they give to one client. Thus, in cases when there are larger loans to be considered, risk is spread over a syndication of several banks, both in the case of mortgage-backed and corporate loans. This practice not only allows for risk diversification, but also gives

the opportunity to banks, which lack experience in this type of business, to participate under the guidance of the lead bank. The organization of a large shipping loan is a challenging undertaking as it requires significant co-ordination among participating banks.

As already mentioned above, financing newbuildings brings up some considerations. First, share of the ship's price is to be paid before the construction has even started, hence capital is needed but it is not possible to use the ship as collateral. In addition, freight rates might not be sufficiently high to be able to generate enough cash to cover the capital cost, particularly when the time to repay the loan is usually quite limited (5-7 years). As a consequence, there is pre- and post-delivery finance arranged with the bank. According to Stopford (2009), in the pre-delivery stage, the owner uses retained capital to pay for the first instalment and then the loan is supposed to cover the rest of the payments. Pre-delivery credits forces banks to face considerable risk, like incompleteness of the ship due to various reasons or because of shipyard bankruptcy. In such cases, a possible solution would be to purchase political risk insurance or require the local government to guarantee for the shipyard. As far as post-delivery finance is concerned, it can be arranged through shipyard credit, commercial bank credit or leasing. Leasing is going to be discussed in the following subsection, whereas commercial bank loan has already been discussed above. Export financing schemes are to be considered later in this paper.

Another option of bank loans would be mezzanine finance. As already mentioned, commercial banks would offer only between 50% and 80% of the market price of a ship and sometimes the owner would not be able to provide the rest. In such situations mezzanine finance is to cover the difference that the owner is not able to cover. According to Stopford, this type of financing can be determined as a high-yielding debt. Because lenders face much higher risk, this type of financing calls for higher interest margins, large front-end fee and equity stake in the company a fixed future price (Tzavaras, 2006). Some of the advantages that mezzanine finance entails are higher return to equity and gearing ratios as less equity is to be used. On the other hand, this type of debt requires higher interest payment and has a higher break-even point, which leads to higher probability of default. Generally, banks do not really practice mezzanine finance because, according to Raban (2002), it requires an in depth understanding of the shipping industry and it will be used only if traditional financing sources are limited.

Last but not least, to be considered under bank loans financing, according to Stopford (2009), are private placements, defined as sale of securities to a restricted group of private investors, usually these investors being pension funds, insurance companies or leasing companies. Some of benefits of using this type of financing are that such procedure has less strict regulatory procedure, company's inner information is not known to the public but rather to a limited number of investor that might have a better knowledge of the industry than bankers or shareholders. Nevertheless, private placements entail only a limited amount of capital. Moreover, the larger the investor is the more closely he is going to follow the financial

performance of the company. Finally, the securities being sold are not very flexible and liquid, thus making it hard for investors to resell those (Tzavaras, 2006).

3.3.3 Capital Markets

Another possibility for companies to finance ship purchases is through either public offerings or bonds sales in the capital market. The main advantage of this type of financing is that, once the company is known to the investors in the industry, it is one of the easiest and cheapest ways to raise substantial amount of capital. Even so, a major drawback is that it requires considerable amount of time and finances to raise these sums of money that most companies in the shipping industry could easily obtain through a commercial loan.

Initial Public Offering (IPO) is one way for companies to raise equity through the public markets. The whole procedure behind the public offering is very time consuming and requires large capital resources. First, usually investment banks have to prepare a prospectus, which describes the company, its financial performance and the industry it operates in. Consequently, the prospectus is to be submitted to the authorities for an approval in order for the company to be able to issue and trade share on stock exchange. Once the approval has been given, issue and trading can start. The price of the stocks will be determined by the supply and demand in the market. Unfortunately, due to the cyclical and unpredictability of the shipping industry, IPOs have not been very successful and common among shipping companies. Tzavaras (2006) enumerates some advantages of IPOs among which the most important would be that the company would have easy access to large amount of money. In addition, this is the least expensive source of equity. And lastly, it gives the company a greater strength to resist to freight market downturns. On the other hand, however, the costs related to preparation and reporting of the documents are high. Moreover, IPOs entail strict legal regulations and company's market value is dependant on external market factors.

The alternative to raising capital in the public market would be to issue bonds. According to Stopford (2009), bonds are defined as debt securities that redeemable on a specific date (e.g. in 10 years), on which the issuer pays interest (coupon). Raising debt through bonds is considered to be the most expensive method of raising capital as it involves high costs in terms of the coupon rates to be paid. The procedure of issuing bonds is similar to that of an IPO. There are several advantages that this type of debt has compared to bank debt. First, it allows for a longer period of repayment, as already mentioned this period is around 10 years. Moreover, for companies that are already known to investors in the public market and performing well, bond issues offer fast and flexible finance (Stopford, 2009). However, as already mentioned, the first issue requires considerable set-up and administrative cost, thus being quite expensive. In addition, through the issue of bonds the business exposes itself to a higher financial risk.

3.3.4 Special Purpose Vehicles

Special purpose companies are another vehicle used to raise capital in order to finance ships purchases. The SPC acquires the vessel and then it either leases or time-charters it (Stopford, 2009). The funds needed to finance this acquisition are raised through either investors' equity or commercial bank loans. There two types of special purpose vehicles, namely ship fund and limited partnership companies.

Ship Funds

A ship fund is an investment vehicle created to let equity investors undertake a particular investment opportunity. Stopford (2009) notices that ship funds are not be considered as the typical shipping company. Rather they are to be thought of as a vehicle because shareholders can decide close down the company after a certain period of time if they consider that share cannot be traded, thus guaranteeing liquidity. Simply stated, ship funds have limited life. The structure of the funds is significantly similar to the one of the Special Purpose Company, already described above. However, there are several drawbacks related to this type of structures. First, finances must be raised before the vessel has been acquired, which offers a short period of time to discover quality ships. In addition, according to Stopford (2007), the commercial and management structure of ship funds is confusing.

However, the timing and corporate responsibility issues that arise through ship funds appear to be very well dealt with by the Special Purpose Acquisition Corporations (SPAC). SPAC is a fully reporting listed company whose primary goal is to raise finances through a public offering of their securities in order to acquire an operating business. A large part of the raised funds need to be invested within a certain period of time and shareholders have to give their approval before acquisition procedure begins.

Limited Partnership Companies

Limited partnership companies have been used in the shipping industry to raise equity capital. This structure consists of on the one hand investors of limited liability, depending on how much they have invested, and on the other hand investors that are fully liable to the company's debt. In Europe, in order to boost the local shipping and shipbuilding industry, limited partnership companies were offered quick and low cost access to capital, as well as considerable tax benefits. It is worth mentioning that raising capital through this type of structures is not cheapest one, nonetheless they offer an opportunity to get full financing off the balance sheet. The most famous examples of partnership schemes are the Norwegian K/S and the German K/G structures, but since it is not the main focus of this paper these are not going to be further discussed.

Leasing

Leasing is considered to be the third most important way of raising finance for ship acquisition, after equity and debt. Leasing has been widely used in the shipping industry as well as other capital intensive industries. The origin of this type of financing is the real estate business. In general, there two central figures in the transaction, the lessor, being the legal owner of the ship, and the lessee, who in return for regular lease payments, can use the vessel as its own (Stopford, 2009). There are three different risks that need to be considered when discussing lease finance. First, the lessor faces revenue risk, namely whether he well enough compensated for the acquisition of the asset. Next, the operating risk reflects the problem of who is going to cover the cost for repairing the asset if it breaks down. And last issue to be considered is in case the value of the asset at the end of the lease is higher, who is going to benefit from this increase, also known as residual value risk (Stopford, 2009). There exist two kinds of leasing, operational and financial, that tackle these three types of risk in different ways.

Operational lease is a rather short-period arrangement meant for equipment leasing. It places a higher burden on the lessor since the lessee has the liberty to end the agreement on his judgement and all the maintenance costs are covered by the lessor. On the other hand, in the case of financial lease, the lessor has only the role of a financier; otherwise the lessee carries all the responsibility for the asset. Financial leases are meant to last throughout the life of the asset. An advantage of this type of lease is that it entails tax benefits for the lessor that are eventually partly transferred to the lessee through lower charter hire.

The major advantages of making use of leasing as a financing method is that first of all provides financing for a longer period of time compared to commercial bank loans. In addition, it is an off-balance sheet liability since the company does not really own the vessel. Lastly, due to tax benefits capital costs are reduced to an extent. Nevertheless, this type of transactions seems much more complicated compared to a situation in which the company simply purchases the ship. Moreover, tax laws can undergo modification hence one should make sure cover this is issue in the contract.

Asset – backed Securitization

Asset-backed securitization is not a widely used financing technique in the shipping industry simply because there are many other more appropriate alternatives. Essentially, the whole procedure starts with the shipping company to assign an investment bank to take over the transaction management. Next, a special purpose company and a trust are founded. The SPC start issuing bonds, which are backed up by the asset. Lastly, both equity and bonds are issued and the special purpose company uses the capital to acquire the shipping company's vessel fleet, which is eventually leased back to the shipping company (Stopford, 2009). Some of the benefits of making use of this type of structure are that it is a long-term finance and

allows for flexibility when dealing with the cyclicity of the shipping market. However, as already mentioned, commercial bank financing is rather competitive and offers better priced debt compared to securitization.

Conclusion

In this chapter a brief description of the ship financing industry is given, highlighting the importance this sector has to shipping. Furthermore, the historical developments of financing methods are reviewed. In the last part of the chapter, the focus is placed on the different financing alternatives available to shipping companies, including private funds, bank finance, capital markets and special purpose vehicles.

Chapter 4 Impact of current economic and financial downturn on shipping and shipbuilding industries

The current financial and economic crisis is considered to be the biggest downturn that the world has witnessed, comparable to or even exceeding the magnitude of the Great Depression of the 1930s.

High real estate prices in 2006 encourage the high distribution of subprime mortgages, which is home loans give to risky borrowers. Furthermore, this trend was further support by Wall Street bankers, who combines different type of loans into securities that were sold to investors such as pension funds, insurance companies and etc (Associated Press, 2007). However, in the summer of 2007, the majority of borrowers could not paid their loans back anymore, after the housing bubble burst and assets lost value overnight. As a consequence, financial institutions encountered serious troubles in the US and Europe causing illiquidity. Economic activity slowed down, with major developed countries entering into a mild recession and emerging economies still managing to keep high rates of economic growth. Governments around the world made an effort to keep maintain financial liquidity and capitalization (IMF "World Economic Outlook – Crisis and Recovery). Nevertheless, in the fall of 2008, in a range of couple of weeks the financial markets experienced a major distress with Lehman Brothers filing for bankruptcy and US government coming at the rescue of Merrill Lynch and AIG (American International Group). The majority of banks had to write-off large amount of bad debt. Furthermore, capital became largely restricted and hence banks were forced to adopt stricter rules when considering lending. As a result of credit squeeze and plummeting equity and assets values, the considerable part of consumer wealth, created during to the housing bubble, was lost. Government interventions were necessary in order to prevent a crisis of an even bigger scale, such as reduction of interest rates, tax cuts, increasing public spending and guaranteeing credit liquidity.

The world economy soon entered a severe recession, with world GDP slowing down its growth, in 2008 it only increased by 2% (UNCTAD "Review of Maritime Transport 2009"). According to the document world GDP level is supposed to actually shrink for the first time since 1930s with 2.7%. As the domino effect, mainly explained by the fact that demand for transportation is a derived from demand for economic activity and trade, maritime transportation demand plummeted in 2008. Due to reduced private spending, stiff credit situation, and low demand for consumer goods, industrial production had to slow down. Consequently, this affects trade volumes exchanged among countries, which are most of time transported by sea. All in all, it is no surprise that shipping industry was one of the major industries that had to bear and deal with the consequences of the recent economic and financial events.

Chapter 2 of this paper was dedicated to detailed description of the shipping cycle, with the three major components having great influence on it, namely demand and supply of sea transport and freight rates, hence making it easier the economic recession affects the balance in the shipping cycle.

Before the financial downturn began in 2007, the shipping industry was one of the main beneficiaries of globalization and strong performance of emerging economies. High demand for consumer goods, and hence for transportation was driving freight rates high on the one hand. On the other hand, loose availability of credit was encouraging fast expansion of the world shipyard orderbook. In 2007 and first half of 2008, despite the recession tendencies threatening the global economy, contracting activity and newbuilding prices were setting all time records. As a result the shipyard capacity had to expand in order to be able to maintain acceptable delivery times.

However, after the fall of 2008, the situation turned out to quite different. Credit availability unexpectedly tightened, consumer demand for goods went down and most OECD countries seemed to have entered a recession. Not surprisingly, freight rates and prices of new ships plummeted, thus resulting into almost no contracting activity in the last months of 2008 and first couple of months of 2009 (Danish Shipping Finance, 2009) and causing mortgage-backed finance more difficult to obtain for ship owners. It was critical period for the majority of companies in the shipping market as most of them were struggling for survival. Even though emerging economies were continuing to grow, the real generators of demand, developed countries, had hard time recovering. As a result some adjustments to the orderbook were needed, namely cancellations, scrapping, ship type changes, price reductions and payment deferrals (Korea Shipbuilders Association presentation, 2009). For instance, 29% (Danish Shipping Finance, 2010) of the scheduled deliveries for 2009 did not happen due to cancellations and deferral of payments, as for ship owners paying the cancellations fees seemed a better alternative than going bankrupt.

In 2010, the world economy slowly started to recover, with expected increase in world GDP of 3.9% and expansion of trade levels with 9.5% (Danish Shipping Finance, 2010). However, as there still exists a possibility for banks to write-off more loans, revitalization of the financial market is still fragile. Low freight rates and credit unavailability "encourage" cancellations and payment postponements, namely 24% of deliveries expected not to happen in 2010 (Danish Shipping Finance, 2010). Asset prices are expected further decrease due to the lower contracting activity from 2009. Furthermore, shipyard capacity nowadays is much higher than the annual fleet replacement rate; hence delivery times have shortened considerably therefore causing asset prices to further drop. Meanwhile, consistent with review from Danish Shipping Finance for 2010, the capacity expected to be delivered in 2010 is as twice as high as the one build in 2009, hence making the oversupply situation even tougher to deal with. According to the Community of European Shipyards' Association, key to recovery is lowering current capacity and not allowing newbuilding prices to reach construction cost levels (CESA presentation, 2009).

The shipping and shipbuilding industries are strongly related, so all the issues arising due to the financial crisis in the shipping market seriously affect shipbuilders all over the world. Shipyards are struggling to keep on delivering, particularly in the view of the fact that ship owners are doing everything possible to convince them not to. Moreover, a major concern is the fact that since the year 2000, shipyard capacity has tripled (Danish Shipping Finance, 2010). Therefore, now that contracting activity is

low, this either means closure of shipyards or converting them for repair, resulting in a loss of image and job losses. All these prospects call for state interventions, under the form of either shipyards credits or export financing, leading to distortion of the market.

Conclusion

The focus of this section is to describe how the financial crisis of 2007-2008 has triggered the economic downturn and the impact they had and still have on the shipping and shipbuilding industry. The core consequences for the industries are lack of capital, lower new ships' prices, overcapacity, cancellations of orders and payment delays.

Chapter 5 Government aid alternatives for financing

Shipbuilding is considered to be a fundamental factor fostering economic growth, modernization and industrialization, due to the fact that maritime transportation is the most common mean of transportation of goods and materials. It is characterized by a very open market where customers and competitors come from all over the world resulting in fierce rivalry at an international level. In fact, the industry is one of the few that has witnessed continuous alterations in terms of leadership distribution in the last century. Besides, it is a rather labour intensive industry, which is a definite advantage for countries where wages are low. In addition, shipbuilding requires significant initial capital investments and modern technology.

On the demand side of the shipbuilding industry, the main factors that influence appetite for new tonnage are freight rates, second-hand prices, availability of capital, liquidity of financial markets and people's expectations about the future (Stopford, 2009). Fluctuations in the freight market are directly influenced by variations in trade volumes. When trade is growing freight rates are most likely going to be high as well, which would make ships more profitable and as a result would trigger a demand for more tonnage. However, because ship owners usually want the ships immediately and to construct a vessel takes several years, demand for ships is also influenced by second hand prices. Only when second hand prices start to increase, new ships seem a better alternative. When the shipping market is overtaken by enthusiasm about the future, the consequences are excessive contracting activity, usually happening when demand for maritime is at its peak. Lastly, as mentioned in the previous chapters, the shipping industry core asset are the ships, a highly capital intensive investment, hence ship owner rely heavily on capital markets for financing. As the current financial crisis has demonstrated, credit squeeze and market illiquidity can seriously affect contracting activity leading to lower demand for new tonnage.

On the other hand, the supply of ships is determined by the existing shipyard capacity, unit costs, exchange rate and government subsidies. First, in the short-term, how many ships are being delivered depends on how many shipyards are operating, how busy is their order book and whether they are willing to engage into new contracts based on the current market prices. Second, unit production cost is a combination of many factors such as labour cost and productivity, raw materials cost, exchange rates and availability of government subsidies. In the past decades, labour costs have been decisive for the competitiveness of shipyards, for instance, in the 1980s wages paid in South Korean shipyards accounted only for one third of those paid in Japan and considering the fact that shipbuilding requires significant labour force, wages can account for a large share of production costs. Steel, being the major input for shipbuilding, entails some risk as well, because from the date of signing the contract to the point in time when the ship is actually delivered, steel prices will experience significant changes, thus continuously altering raw material costs. Supply is also influenced by exchange rates variations, meaning that weak domestic currency against the US dollar (the currency in which ship prices are stated) would result in a higher dollar ship price. All these factors call for very careful and smart price strategy. Last factor influencing the supply of ships is the government.

Especially in times of economic downturn, when demand for new tonnage goes down, the state makes use of subsidies, export financing and other methods to help domestic shipyards survive.

In all shipbuilding nations, the state has always had significant involvement in the industry by being either directly engaged into the construction process or playing the role of an industrial planner. The chief motive for governments to have preferential treatment for shipbuilding is that the industry is considered to be the driving factor of industrialization and as a consequence modernization of society. Hence, a lot of governments have realized that if they want to achieve fast economic growth shipbuilding is a sector worth investing in. Furthermore, imports and exports activities, largely carried out by ships, are beneficial for the national income. In addition, because it requires large labour input, shipyards secure a certain employment level. The industry is also greatly dependent on the steel and other manufacturing sectors, which also vital for the industrialization of a nation, hence stimulating shipbuilding supports the rest of the economy. Moreover, shipbuilding necessitates significant initial capital investment, usually secured by the government, for facilities and infrastructure. Lastly but not least, many shipbuilding nations keep the industry alive is for national security and defense reasons.

In times of economic or financial downturn, in order for the nation to maintain and gain market share, the government has to intervene. One possibility is direct intervention under the form of market protection, as in the USA with the Jones Act which states that "all water transportation of goods between U.S. ports be on U.S.-build, - owned, -crewed, and -operated ships"(CRS report for Congress, 2005). Another intervention would be directly control demand, the government becomes the main contractor for domestic shipyards, in order to be able to absorb the existing shipyards and employment capacity. On the other hand, the state can indirectly try to foster demand for ship through subsidies to shipyards or ship owners. Another alternative is to offer research and development grant so to diminish the industry's cost of developing production technologies (Zeien, 1992). Lastly, the state can also offer tax reliefs or incentives for both shipbuilders and ship owners; however the final effect is difficult to distinguish.

Economic theory has always considered government intervention to be distortive. First of all because it impedes the market forces to achieve equilibrium between supply and demands independently, therefore undermining efficiency of the markets. Moreover, state aid helps domestic shipyards lower prices, thus leading to destabilization of fair competition. Government intervention has the effect of "prolonging and reinforcing the chronic problem of over-supply in the industry" (Strokes, 1997) in times of economic and financial distress. Despite that, legislators usually believe that the shipbuilding industry is too important to be left to fall down; hence they continue to support ship production beyond the normal commercial limits (Todd, 1983). Last but not least, subsidies are considered ineffective because they support inefficient producers, consume tax payers money, which could have been invested into something more useful, and in case of bankruptcy it entails significant risk for government's financial stability (Kuhne, 1966).

Another alternative for ship owners to raise capital through debt would be the shipbuilding credit, supplied directly by the government or by state-owned agencies. The shipbuilding credit is a credit offered by the shipyard either under the form of a shipyard credit or state loan.

5.1 State Loan

The state loan represents a credit provided indirectly by the supplier through the local export credit agency to the ship owner. For instance, in the case of South Korea, the KEXIM bank enters an agreement directly with the buyer to grant him a loan that is going to be used to repay the domestic shipyard. The structured finance for ships is offered mainly to Special Purpose Companies. The maximum financing ratio is in accordance with the OECD Agreement, namely up to 80%. In cases where the total debt amount exceeds USD 200 mil, the percentage financed by KEXIM is 70%. This leaves 20% of the contracted price to be financed by the buyer, provided by the parent company. The interest paid on the loan is fixed on the Commercial Interest Reference Rate (CIRR) on the date the bank has received the official loan request from the company. According to the OECD requirements, the loan is repaid over 12 years, with instalments financed by the time charter earnings of the ship. Lastly, the securities required by KEXIM include a first priority mortgage over the vessel, first priority assignment of charter, earnings, insurance and corporate guarantee or support letter of the sponsor (KEXIM,2010; Tzavaras, 2005).

5.2 Shipyard Credit

On the other hand, the shipyard credit is directly provided by the supplier of the vessel. In the case of South Korea, for example, the borrower in the transaction is the Korean exporter (the shipyard). The export loan covers up to 80% of the of the vessels contract price, whereas the other 20% have to be paid by the foreign importer (the ship owner) upon delivery, which complies with the OECD Sector of Understanding on Export Credits for Ships. Furthermore, the interest rate is paid in foreign currency and can be either fixed (CIRR + margin) or floating (LIBOR + margin). The maximum repayment term is of 12 years. The security of the loan is either provided by promissory notes or letter of guarantees backed up by a financial stable international bank, buyer's country government or central bank (KEXIM, 2010). For other export credit agencies the procedure would be different. For instance, in the case of Export Credit Guarantee Department in UK, the credit line facilitates the domestic exporter's access to capital by guaranteeing that the borrower will repay the debt (ECGD, 2010).

5.3 Role of OECD

Shipbuilding credit was widely used in the nineteenth century. However in the modern history of shipbuilding, Japan was the first country to start offer subsidies to support their industries. In the 1960s, the Japanese shipyards were offering customers credit covering up to 80% of the asset's at a 5.5% interest rate, with a repayment period of 8-10 years. The cut-throat competition that began among European, Japanese and Korean shipyards, necessitate the intervention of the OECD in order to bring clarity to the official export financing terms (Stopford, 2009).

The OECD plays a significant part in the development of shipbuilding financing over the years. The central goal of the organization is to create a framework for "the predictable, consistent and transparent use of officially supported export credits", where official support means direct credit/financing, refinancing, interest-rate support (where the government supports a fixed interest rate for the life of the credit), aid financing (credits and grants), export-credit insurance and guarantees. Furthermore, the Arrangement strives at establishing fair competition among shipbuilders, which based on quality and prices of goods, rather than simply based on the most favourable financial terms of the credit. The understanding sets certain limits on the conditions and terms of export credits. According to the latest version of the Arrangement (January,2010) , the sector understanding on export credit for ships has as participants Australia, the European Community, Japan, Korea, New Zealand and Norway. The members have agreed upon the following credit term (OECD, 2010):

- Maximum repayment of the credit is 12 years
- The buyer should make a payment of 20% of the contract value by deliver.
- The repayment of the export credit should be done on equal instalments on a regular basis with minimum intervals of six months and maximum intervals of 12 months.
- Interest payments ought to be paid at least every six months, up to 12 months.
- The interest rate must not be lower than the Commercial Interest Reference Rates set by each country in relation to its currency, plus one per cent in order to reflect the commercial cost of borrowing for a first class borrower.

Furthermore, it is crucial to note that the Arrangement is not legally binding on any of the participants; rather it is considered a Gentlemen's Agreement. However, in 1994, the Working Party on Shipbuilding proposed the Agreement Respecting Normal Competitive Conditions in the Commercial Shipbuilding and Repair Industry. This document offers a set of obligatory, legally enforceable regulations addressing both subsidies and injurious pricing practices. Nevertheless, due to the involvement of various national interests, the OECD Agreement has never become official (OECD,2010).

Conclusion

This chapter deals with the government alternatives to bank finance, namely shipyard credit or state loans. In addition, the importance of the government in the shipbuilding industry has been discussed as well as the regulatory role of the OECD has in disciplining the export credit practices.

Chapter 6 How different governments are coping with the financial and economic downturn of 2008?

As already discussed in previous chapters of this paper, the financial and economic crisis that hit the world had serious impact on shipbuilding industry everywhere. Every country has adopted different policies in order to support and foster competitiveness of their shipbuilding industry, in the tough environment characterized by illiquidity of financial markets, continuous cancellations of contract and postponements of payments. In this chapter is going to investigate on the government measures undertaken by government in the major shipbuilding nations.

6.1 China

In 2010, the world witnessed China becoming the world shipbuilding industry, overtaking South Korea on the three indicators of industry competitiveness, namely new orders, order backlogs and deliveries. According to Clarkson Research Services Ltd., in 2009 China's share of the world shipbuilding market was 41.2% compared 32% for South Korea, for 2010 these percentages seem to be increasing for both shipbuilding nations, namely China accounting for 43.1% of the world's shipbuilding and South Korea 38% respectively. The amount of new orders for China for the first half of 2010 is estimated to be 5.0 million CGTs, compared to the 4.6 million CGTs for South Korea. As far as order backlogs, another indication of competitiveness, Korea is behind China with 49 million CGTs and China is taking the first place with 53 million CGTs. Lastly, Korean deliveries for the first half of 2010 are estimated to be 7.5 million CGTs. On the other hand, China has managed to deliver 8 million CGTs (JoongAng Daily, 2010).

The success of the Chinese shipbuilding industry is determined by several factors. First, the competitiveness of Chinese shipyards in the world market is for the most part due to the lower vessel prices. In general, ship prices are a function of production costs, and wage costs in particular represent one-third of these costs (OECD, 2008). Hence, the abundance of skilled and cheap labour works at an advantage for Chinese shipbuilders. Furthermore, as the world's biggest exporter (China Daily, 2010), there is a high need of ships that needs to accommodate the high demand for transportation. Moreover, government policies have had significant impact on the great achievements of the Chinese shipbuilding industry.

The government has always played the role of central planner for economic development and stability of China since it introduced the Open Door Policy in 1978 (OECD, 2008). The government has embraced the shipbuilding industry as the "engine" to boost economic development. In 2006, the Chinese state issued a medium- long-term development plan for the domestic shipbuilding industry. The main objectives of the blueprint included increasing state-owned shipbuilding capacity, increasing local ship equipment production, speeding up the construction of key shipbuilding facilities as well as increasing foreign investments (OECD, 2008). In general, the government is sustaining domestic shipyards by exempting them

from paying tariffs on imported components, as well as supporting R&D and innovation (OECD, 2008).

In view of the global financial meltdown, in February 2009 the government approved a stimulus package for the shipbuilding industry, which aims at relieving the credit situation and stabilizing demand for new ships. The measures taken by the state include a subsidy of 17% on ship prices for Chinese ship owners until 2012. Second, shipbuilders are offered preferential interest rates in addition to being granted loans in case ship owners are not capable to pay for the vessel. The government is persuading domestic companies (COSCO, China Shipping Group, Sinotrans etc.) to buy ships from the two biggest state-owned shipbuilding corporations (CSSC, CSIC), which are facing significant cancellation of orders, by either offering them low interest rate borrowing opportunities or tax benefits. Furthermore, qualified domestic shipyards are encouraged to raise capital through listing or issuing of bonds ("The Report on Chinese Shipbuilding Industry: Target After 2008"). Besides, banks are being encouraged to be more flexible as far as lending to ship owners is concerned. It is worth noting that for the first half of 2009, the loans from Chinese financial institutions for shipping and shipbuilding are equivalent to the state revenues for 2008, namely around 6 trillion yuan (OECD, Workshop on market distorting practices, 2009). The Chinese Eximbank has become one of the major sources for ship financing in China and is responsible for around 90% of domestic ships exports. The bank, which is state owned, has thus taken a central role in helping Chinese shipyards progress and compete on the international shipbuilding market. A few examples include, China EXIM Bank offering financing to CSSC (equal to 14.6 billion US\$), CSIC (amounting to 8.8 billion US\$) and Jiangsu Rongsheng (around 4 billion US\$). In addition, the China Construction Bank offered a loan (417 million US\$) to STX Group the building of a new shipbuilding base in Dalian and Bank of Communication has offered loans in order for companies to substitute older ships and place new orders to domestic shipyards (e.g. China Shipping Group equal to 5.4 billion US\$ and COSCO up to 10.9 billion US\$) (EMF presentation, 2009). Moreover, the Chinese government has confirmed that it will forbid further expansion of shipyard capacity at least for the next three years (Trade Finance Magazine, 2010).

In addition to ship financing, the government has been offering export tax rebates, as well as it has been trying to involve more foreign producers in the local production of key parts for ships. For instance, while it is a fact that many European ship owners are coming to China to order ships, it is also true that majority of the marine equipment is imported from European manufacturers. As a consequence, the state is allowing Chinese maritime suppliers to generate joint ventures with foreign producers or foreign producers to build manufactories in China. Moreover, the state contributes to R&D and innovation for speeding up the technical upgrade of the industry by importing advanced production methods and complete production lines. For example, the domestic companies have established joint venture with major Japanese and South Korean shipyards for the exchange of production and engineering skills as well as technology transfer (OECD, 2008)

6.2 South Korea

In 1975, in the chart of the world's largest shipbuilding nations, South Korea was ranked 70th (Todd, 1985). Five years later, 1980, the country was already right behind Japan, ranked second. The rapid growth during the 70s can be explained by the government strong intervention in industry through disproportionate subsidies and export credits. The majority of shipbuilders minimize the importance of state interventions, explaining that their advantages was due to low steel prices, cheap and disciplined labour force as well as productive plants. Furthermore, back in the 1980s the South Korean shipbuilding industry was greatly benefited from technology transfer arrangement with countries from Western Europe (e.g. UK) in order to gain know-how in ship design (Todd, 1985). Nevertheless, in the first half of 2010 South Korea lost the first position as leading shipbuilding nation to China. The loss of positions cannot be attributed to loss of quality or efficiency of Korean ship makers, but is rather due to the aggressive policy on behalf of the Chinese government, thus allowing home shipyards to offer lower ship prices. Nevertheless, South Korean shipyards are still taking orders for ships requiring more proficient technology and design, since their Chinese competitors lack the experience.

In view of the financial crisis that has hit shipping and shipbuilding companies worldwide, the South Korean government has taken serious actions in order to help domestic shipping and shipbuilding industry. To begin with, the government has increased its investments ratio in the ship acquisition fund up to 60%. This fund, which is run by the government backed Korean Asset Management Corporation (KAMCO), is intended for buying vessels from shipping companies in financial distress and then leasing the vessels back to the. The initial plan is to acquire 62 ships. Until November 2009, the fund has bought 16 ships from Hanjin Shipping and one ship from Hyundai Merchant Marine (HMM). However, the government is aiming at giving access to the ship acquisition fund to small and medium-sized shipping companies. Furthermore, financing provided so far from financial institution, which are state-backed, amount to more than 4 billion of \$US. These funds are going to prevent more than 100 new building orders to be cancelled. Despite the large stimulus-package, the Korean state has requested the Korean EXIM bank to further expand the fund intended for ship yards. Moreover, the government is also demanding from commercial banks to relax their loan-to-value requirements, since lending has decreased from up to 100% of the contract price to only 60% due to significantly lower ship prices. It is worth mentioning that the government share in the financing deal is only 40%. The rest is offered by senior lenders. Lastly, the Korean Development Bank has set up a "Let's Get Together Shipping Fund" equal to 1.8 billion of \$US intended to sponsor newbuildings and second hand purchases. (OECD, Workshop on market distorting practices, 2009).

6.3 Japan

The success of the Japanese shipbuilding industry can be attributed to the intense government policy intended to promote domestic sector, which is another good

example of the shipbuilding growth model (Stopford, 2009). In the 1990 Japanese shipbuilders were challenged by increasing competition coming from South Korea. In that period, the Japanese shipbuilding industry was suffering because two major drawbacks, namely higher labour costs and strong currency. Nevertheless, shipbuilders managed through adoption of production planning, engineering and subcontracting to maintain high production efficiency and keep the position of a leading shipbuilding nation until 2003.

As a shipbuilding leader, Japan has managed shipbuilding recessions decisively by reducing shipbuilding capacity twice, once in the period during the second Oil Crisis (1979-1980) and the second time in 1988. Nowadays, due to the financial and economic recession, according to the Japanese Ministry of Land, Infrastructure and Transport some of desirable policies to be adopted include reduction of existing shipbuilding capacity, forbidding any further expansion projects as well as avoiding subsidy assistance and supervision of the practices in the industry (such as vessels' prices) (MLIT presentation, 2009). As far as state intervention is concerned to support the shipbuilding industry, Japanese shipyards are trying to keep existing shipbuilding orders by offering price cuts in accepting price cuts for an extra ordered vessel (EMF presentation, 2009). Moreover, the Japanese Bank of International Cooperation, which is government affiliated, has committed to continue to sustain the export of domestic vessels. For instance, in 2009 the bank signed two deals one for 57 million US\$ with a South Korean shipping company and another one with the largest commercial bank in Turkey amounting to 111 million US\$ (Journal of commerce, online). The former head of the Shipbuilders Association of Japan has criticized the considerable aid shipyards and shipping companies are getting in South Korea and China, emphasizing on the fact that this will only lead to a procrastination of the recovering process in the industry (OECD, Workshop on market distorting practices, 2009).

6.4 European Union

In the 1970s, the European shipyards already started losing position with respect to Asian competitors and were heavily relying on authorised operating subsidies. In 1987, the EU realised that in order to boost efficiency and competitiveness of the European shipbuilding industry, it had to adopt tighter rules regarding state aid aimed at reducing subsidizing activities. The policy was having results, financial support for the sector decreased throughout the years compared to other manufacturing industries. However, in 1997, the European Commission proposed to postpone regulation of state aid until 2001, January 1st (Glen, 2006).

Almost one year before the adoption of this regulation concerning the termination state aid practices, the European Commission reported South Korean new building contracts for three particular types of vessels, these being containerships, LNG carriers and chemical and product tankers, with prices below the construction costs. Because this was considered detrimental for the European shipbuilding sector, the Commission adopted a "twin track policy" intended to provide temporary aid to

shipyards. In 2002, a regulation, known as TDM (temporary defence mechanism), which allow a 6% operating subsidy for the production of the three types of vessels that South Korean shipyards underpriced, was adopted in order to protect European shipbuilding industry. The TDM was in violation of the WTO rules and of the Dispute Settlement Body and completely ignored the commitment the EU has made a few years back. As a consequence, the Dispute Panel that has started, due to the EU request, concluded the benefits for South Korean shipbuilders obtained from those contracts were cancelled by the actions taken by the EU (Glen, 2006).

The EU has designed several policies intended to guide the future development of the shipbuilding sector, without state subsidies since those do not promote long-term competitiveness and progress of the industry. LeaderSHIP 2015 is a programme which is aimed at creating a framework for keeping the competitiveness of the European shipyards. The most important topic tackled by the programme comprise the setting of a level playing field in the shipbuilding industry, improving R&D and innovation investments; creation of European guarantee fund that will work in compliance of the OECD rules, which would secure financing and guarantees for pre- and post delivery stages as well as development of safer and environmental ships (European Commission, 2003). However, according to EU state aid rule, " all subsidies are prohibited unless they fall within a number of narrowly drawn categories which are considered to have negligible impact on trade". For instance, the allowed subsidies comprise environmental and R&D aid as well as aid to companies in financial trouble which need to be restructured, "but only against examination of its restructuring plan providing viability without further subsidisation". According to information provided by the European Commission, state aid has decreased considerably, by representing 1.1% of GDP in 1992 to being only 0.5% of GDP in 2007. In addition, from the EU confirm that the crisis has required involvement by governments in the financial markets, but direct intervention in the real economy have been minimized so that markets are left unaffected (European Commission, December 2009, OECD workshop).

However, the economic and financial downturn had significant consequences for the European Shipyards, which have to deal with considerable laying-off of employees, bankruptcies and restructuring of enterprises in order to survive the tough environment. For instance, in Norway several shipyards filed for bankruptcies after being unable to get financing to continue operating. In Germany, several companies went bankrupt (e.g. Lindenau GmbH, SSW GmbH, SMG GmbH, WADAN Yards) and there have been some restructuring practices in companies. In addition, in France for example, the state became 33.34% shareholder in STX St. Nazaire and UNM (Union Naval Marseille) has been liquidated by parent company BOLUDA. In Denmark, Odense Steel Yard has decided to stop constructing post-Panamax containerships and to concentrate on more specialized ships. In addition, because of lack of new orders, there is a major employment concern arising. Major shipyards, in countries like Sweden, Denmark, Germany, Norway and Italy have started laying-off working force (EMF 2009, presentation).

Around Europe various financial supporting measures have been taken to help the domestic shipbuilding industry. In Norway, a new legislation allows for ship owners to benefit from registering hulls built abroad under Norway flag, whereas in Germany, the innovation financing has been increased to 155 million of euros and the government has placed orders for new buildings worth 160 million of euros in the next two years in order to foster ship replacement. It is intended to prolong the credit repayment period to 15 years, to allow for exemption of up to 90% of liability, with all the risk covered by the government. In Spain, credit has been extended up to 200 million of euros. Moreover, in an OECD questionnaire concerning stimulus packages intended to assist the particular domestic shipbuilding industry, most European countries, except for Norway, state that they have not or plan to take any measures to directly assist shipbuilding sector. However, countries like Finland, Germany, Norway, Romania, answered positively when asked whether they have planned any assistance that is not directly intended for shipbuilding, but where there is significant benefits to it. For instance, Finland is offering credit guarantees, refinancing of export credits and interest equalisation. Germany and Norway are providing loans and loan guarantees (OECD, July 2009 "Government Responses – Stimulus Packages"). Despite the fact that many countries have been taking measures to support shipbuilding industry, there seems to be missing a co-operation for the creating of a joint strategy of how best to handle the crisis (EMF 2009, presentation).

6.5 Analysis

In light of the above, it becomes clear that none of leading nations in the shipbuilding sector has left the industry to be guided by the market. Every government has taken measures to support and keep competitiveness of domestic shipbuilding, some of which they all have in common and some which make considerable difference. The level of involvement on behalf of the state, however, differs significantly, not only among nations but also among and within regions. Major organizations such as OECD and WTO have been trying for years to control use of state subsidies. However, the financial and economic downturn have made the shipping environment very tough for shipping companies and shipyards, as well as for financial institutions and governments around the world.

Europe has long lost its position as a leader in the shipbuilding industry. Yet, there are 44 large shipyards (with around 1000 or more employees) on the continent in addition to numerous small and medium-sized ones (CESA, 2009). European shipyards have managed to take leading position in value-added market niches characterized by high technology, superior design and excellence of production. As a consequence, the dependence on innovation and R&D activities is considerable; this is why in the case of Europe such subsidies have been used to fight the effects of the crisis. In addition, extensions of loans as well as subsidies in case of restructuring have been a common practice (Germany, Norway, and Spain). There is only one case, according to the available information, in which the state has actually placed newbuilding orders to domestic shipyards so to encourage replacement of old

vessels, Germany. In addition, Europe has been one of the countries strongly advocating for fair competition for shipbuilding at a global level through participating actively in OECD and WTO. It is important to notice that every government is allowed to take whatever action considered appropriate, but due to the inter-relatedness of the economies on Europe, the European Commission has the task to make sure that there is the same level playing field for all member countries so that state interventions are not distortive for the normal function of the market. As a consequence, such practices have not been seen explicitly in the decisions taken by governments.

Not the same situation can be seen in the Asia region, where the three leading shipbuilding nations, China, South Korea and Japan are situated. In these countries shipbuilding has been the core of the state's industrial development plan, for Japan in the 1950s, for South Korea it was 1970s and 1990s for China. The government has played significant role in the developments of the industry.

In the case of Japan, there is not significant amount of reliable information concerning the measures undertaken by the government in order to support their shipping and shipbuilding industry. However, from what could have been obtained, as in the other countries, state-backed banks have had a key role in providing capital for both shipyards and shipping companies. As already mentioned in previous subsection, the general position of the government is restraint from subsidizing the industry and thus distorting even more the process of recovery. On the other hand, in South Korea the government has taken serious part in the subsidization of the shipbuilding and shipping sectors. In light of the information provided in the above sections, as an active participant in the discussions concerning Sector of Understanding for Export Credits for ships as well as a member of WTO, the aid measures undertaken by the government have been examined whether they break any of the international agreement. The structure of the shipbuilding industry is very different than that of other manufacturing industries; hence fair trade rules are difficult to apply. This is why sometimes it can be hardly determined whether a certain measure taken is distorting according to the rules. The policies adopted by the South Korean government mainly focuses on providing liquidity in the financing market for shipbuilding and shipping as well as acquisition of new building contracts in order to prevent them from cancellation. In addition, the government has focused on acquisition of ships to prevent them from scrapping and to transfer capital in companies. China is another example of how a nation can become the number one shipbuilder with the support of government policies. The state has carried an aggressive policy in order to boost domestic industry so to prevent cancellations of existing orders and to foster demand for new ones. Furthermore, the government-backed banks have stepped in and made capital more available for companies in distress. To be able to keep the competitiveness of shipyards, the government has made use of price subsidies, which is condemned by EU, Japan and South Korea. The Chinese government has been providing R&D subsidies as well.

Obviously there are some similarities among polices adopted by government among the above mentioned countries. For example, Europe and China both put emphasis

on R&D and innovation subsidies, since innovation is necessary for EU to maintain competitive advantage and for China to acquire know-how on ship design and production technology. Everywhere governments have intervened in order to increase capital availability for shipping and shipbuilding companies, in view of the fact that exactly credit unavailability has been the main reason for the economic downturn. In some countries these funds have been much larger than in others. For instance, Japan and Europe, based on the available public information, have not dedicated such large amounts for rescuing the domestic shipyards. Evidence for this can be the fact that the largest shipyard in Denmark is supposed to cease production in 2012 threatening the loss of 8000 job positions (Press Europe, 2009). In addition, both Japan and Europe seem to be supporters of the view that the government should minimize as much as possible distortive subsidies, thus not artificially keeping the competitive advantage for the domestic sector. On the other hand, China has managed to overtake the first position as a leading shipbuilder due to such policies, for instance the price subsidy which allows Chinese shipbuilders to offer more competitive prices. In addition, both South Korea and China have dedicated significant amount of capital to preventing orders to be cancelled or in case they have been cancelled to find a third party buying the contract or the government-backed institutions to do that. Such practices have been applied neither in Europe nor in Japan. From these facts the relationship between the importance of shipbuilding to national economy and the level of industrialization and economic development of a country becomes more evident. For instance, China as a developing country places such importance on shipbuilding as it is one of the core industries for the country's development objectives. Moreover, due to the significance of China as importer and exporter, shipbuilding is relevant for the creation of a large enough vessels fleet able to accommodate the demand for transportation. As such, in periods to distress it is crucial for government to intervene and take measures, which might be distortive but that will keep the industry alive. On the other hand, Japan and Europe are considered to be already developed economies, where shipbuilding industry has reached a mature stage of its progress and hence does not have such a great importance to economic wealth generation.

Chapter 7 Conclusion

The shipping industry characterized by high capital intensity, extreme volatility and international mobility of the core assets, the ships, has been a promoter of economic development and progress since centuries. Because of the importance of shipping, the shipbuilding industry has become the engine fostering industrialisation and economic prosperity for the home country. Due to the high volatility of shipping, assessing risk and forecasting revenues of shipping companies has always been a challenging task for ship financiers. For this reasons capital procurement would be expected to be rather complex. Nevertheless, throughout the years bankers have demonstrated that they are more than willing to offer financing for the shipping industry, more precisely shipbuilding thus being the main reason why the industry is suffering by over-provision of capital.

Today, there exist various types of financing techniques available for companies. The basic sources of capital are debt and equity and based on these the various alternatives are combined. The four methods of raising funds include private funds, bank loans, capital markets and special purpose vehicles. The most common and important method of financing are bank loans, more precisely the commercial bank loans. In the case of newbuilding contracts, the problem of finding the necessary capital arises in the pre-delivery stage since the ship is still property of the shipyard and as a consequence the bank does not have anything to secure the loan against. This is why the majority of banks are reluctant to provide pre-delivery finance. In addition to commercial banks, other opportunities include government-backed loans, mezzanine finance and private placements. As far as other alternatives to loans, companies can make use of public offerings or special purpose vehicles.

The importance of shipbuilding sector for the development of domestic economy is significant some of the reasons why comprising employment advantages, regional development impact, national income benefits from trade activities, as well as national defence and security. In times of financial and economic distress, as is the current market situation, the role of government is even more emphasised. The financial crisis from 2007-2008 has severely affected trade levels and progress all over the world. Shipping and shipbuilding, the major beneficiaries of the high trade levels and globalization, are not an exception. The consequences for the shipbuilding sector are cut-throat competition among shipyards for every newbuilding contract, plummeting ship's value and credit squeeze which leads to cancellation and delays of existing orders.

To keep the competitive position of domestic shipbuilding industry, the government has different alternative measure. First option is market protection. In addition, the state can directly influence demand by ordering new ships in order to prevent shipyards shutting down and thus losing job positions. Furthermore, there exists also indirect control of demand through subsidies and bank loans for shipbuilders or shipowners. Lastly, government can offer R&D and innovation aid as well as tax reliefs. Economic theory, however, has condemned government aid as distortive for the normal functioning of the market, since it impedes fair competition and it

prolongs and emphasizes the problem of overcapacity. Despite that usually in the eyes of policy makers shipbuilding is too important to be left to economic forces to recover from a crisis.

This seems to be the case in the major shipbuilding nations today. Professionals from the shipbuilding, shipping and financing industry have seen huge amounts of capital being poured into the industry, despite the financial downturn from few years ago, just to maintain the competitive position of shipyards. China is the most recent example of a country becoming the world's number one shipbuilding nation, where the state has a share in the promotion of the industry. The government has set an objective to achieve this position in 2015, but due to its aggressive policies it has managed to do so five years earlier in a period of a global financial and economic crisis. Moreover, South Korea, the home of seven of the ten top shipyards in the world (Maritime Connector, 2010), seems to consider its shipbuilding industry too-big-to-fail. The government has been financing ship acquisitions funds and trying to convince banks to loosen the financing for shipyards. On the other hand, in Europe and Japan rescue practices seem not to be that much directly focused on shipbuilding and shipping but rather the industries are benefiting as a side effect of subsidies to other sectors. Nevertheless, countries everywhere have been offering more loans for newbuildings financing, in most cases in compliance with the OECD terms for export financing.

It is important to mention that public information about government practices referring to shipbuilding is of limited availability for some countries, like member countries of EU and Japan. This poses questions regarding transparency of government intervention in countries, which otherwise strongly support transparency of subsidy practices. Another interesting topic, which does fall in the scope of interest of this paper but could not be covered due to lack of time space and information, is if more countries are included into the regional comparison, especially developing countries (e.g. India, Vietnam, Brazil, Russia). Moreover, it would be appealing to not only compare government practice among countries but also through a large period of time in order to be able to compare reactions of the states to other crisis periods. However, this would limit to regions in comparison.

References:

- Associated Press (article 2007) "Will subprime mess ripple through economy?"
<http://www.msnbc.msn.com/id/17584725> (Accessed 26 August 2010)
- China Daily (article 2010) "China becomes the world's largest exporter"
http://www.chinadaily.com.cn/china/2010-03/30/content_9662350.htm
(Accessed 26 August 2010)
- Community of European Shipyards' Association (CESA), Map of Shipyards (2009)
- CRS Report for Congress (2005) "Agriculture: A glossary of terms, programs and laws, 2005 Edition"
<http://ncseonline.org/nle/crsreports/05jun/97-905.pdf> (Accessed 26 August 2010)
- Danish Shipping Finance (2008) "Shipping Market Review: 2nd half 2007-May 2008"
<http://www.shipfinance.dk/Home.aspx> (Accessed 26 August 2010)
- Danish Shipping Finance (2009) "Shipping Market Review: second half 2008 – April 2009"
<http://www.shipfinance.dk/Home.aspx> (Accessed 26 August 2010)
- Danish Shipping Finance (2010) "Shipping Market Review: April 2010"
<http://www.shipfinance.dk/Home.aspx> (Accessed 26 August 2010)
- EMF Shipbuilding Committee Meeting (2009); Presentation "Impacts of the Financial Crisis on European Shipbuilding Industry from the Union's Point of View"
- European Commission (2003) "LeaderSHIP 2015: Defining the Future of the European Shipbuilding and Repair Industry – Competitiveness through Excellence"
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2003:0717:FIN:en:PDF>
(Accessed 26 August 2010)
- European Commission (2009), OECD Workshop on shipbuilding: EU Opening statement on market distortions (Session B)
<http://www.oecd.org/dataoecd/48/61/44210409.pdf> (Accessed 26 August 2010)
- Export Credit Guarantee Department (2010), Quick Guide to Lines of Credit (online) <http://www.ecgd.gov.uk/products-and-services/lines-of-credit> (Accessed 26 August 2010)
- Export-Import Bank of Korea (2010), Export Credit (online)
http://www.koreaexim.go.kr/en2/02_export/01_export/01.jsp
(Accessed 26 August 2010)
- Harwood, Stephenson (2006). Shipping Finance (3rd edition). London: Lloyd's of London Press Ltd.

- International Chamber of Shipping, International Shipping Federation – Shipping Facts (entered August 2010) <http://www.marisec.org/shippingfacts/home/> (Accessed 26 August 2010)
- International Monetary Fund (April 2009) “World Economic Outlook – Crisis and Recovery” <http://www.imf.org/external/pubs/ft/weo/2009/01/pdf/text.pdf> (Accessed 26 August 2010)
- JoongAng Daily (Article 2010) <http://joongangdaily.joins.com/article/view.asp?aid=2923363> (Accessed 26 August 2010)
- Kuhne, Karl (1966) “Shipbuilding and Subsidies – Pros and Cons”, INTERECONOMICS, No. 6
- Maritime Connector (Article, 2010), “South Korea’s major shipyards enjoy modest orders in H1” <http://www.maritime-connector.com/NewsDetails/8967/lang/English/S-Korea-s-Major-Shipyards-Enjoy-Modest-Orders-In-H1.wshtml> (Accessed 26 August 2010)
- National Aeronautic and Space Administration http://www.nasa.gov/worldbook/earth_worldbook.html (Accessed 26 August 2010)
- OECD (June 2008) “The shipbuilding industry in China” <http://www.oecd.org/dataoecd/34/19/42033311.pdf> (Accessed 26 August 2010)
- OECD (January 2010) “Arrangement on Officially Supported Export Credits – January 2010 Revision” <http://www.oecd.org/officialdocuments/displaydocumentpdf?cote=TAD/PG%282010%292&doclanguage=en> (Accessed 26 August 2010)
- OECD Council working party on shipbuilding (WP6) (2009), Workshop on Market Distorting Practices, Submission by the European Communities providing additional information on government support
- OECD, Export Credits: Official Export Credit Agencies Website Links (online) http://www.oecd.org/countrylist/0,3349,en_2649_34169_1783635_1_1_1_1,00.html (Accessed 26 August 2010)
- OECD “Negotiations on a Shipbuilding Agreement” (online) http://www.oecd.org/document/22/0,3343,en_2649_34211_1823894_1_1_1_1,00.html (Accessed 26 August 2010)
- OECD Workshop on Market Distorting Factors in the Shipbuilding Sector (December, 2009) presentation by Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan “Measures against the serious gap of supply and demand in Shipbuilding Market” <http://www.oecd.org/dataoecd/48/63/44210226.pdf> (Accessed 26 August 2010)
- OECD WP6 Meeting (9-10 July 2009); Presentation by Community of European Shipyards’ Association (CESA) on “Dealing Effectively with the Crisis” http://www.oecd.org/document/40/0,3343,en_2649_34211_43320616_1_1_1_1,00.html

(Accessed 26 August 2010)

- OECD WP6 Meeting (9-10 July 2009); Presentation by OECD Secretariat "Economic Crisis – Stimulus packages and other support for the shipbuilding sector"
<http://www.oecd.org/dataoecd/22/3/43312675.pdf> (Accessed 26 August 2010)
- OECD WP6 Meeting (9-10 July 2009); Presentation by The Korean Shipbuilding Association on "Impact of the Economic Downturn on the Shipbuilding Industry"
http://www.oecd.org/document/40/0,3343,en_2649_34211_43320616_1_1_1_1,00.html
(Accessed 26 August 2010)
- OECD "The Export Credits Arrangement 1978-2008: Achievements and Challenges – Continued!" <http://www.oecd.org/dataoecd/17/24/40594872.pdf>
(Accessed 26 August 2010)
- Press Europe (Article, 2009), "Largest Shipyard Lindo due to close"
<http://www.presseurop.eu/en/content/news-brief-cover/74801-largest-shipyard-lindo-due-close>
(Accessed 26 August 2010)
- Raban, Ido (2002) "Shipping Finance: Investment Alternatives of Shipping Funds in Today's Ailing Markets" Erasmus University Rotterdam, Master Thesis, MSc in Maritime Economics and Logistics
- Stokes, Peter (1997) Ship Finance- Credit Expansion and the Boom-Bust Cycle (2nd edition). Business of Shipping series. London/Hong Kong: LLP Limited
- Stopford, Martin (2009). Maritime Economics (3rd Edition). London/New York: Routledge
- Todd, Daniel (1985) The World Shipbuilding Industry. London/Sidney: Croom Helm
- Trade Finance Magazine (article 2009) "China urges banks to use trade finance to boost shipping sector"(entered August 2010)
<http://www.tradefinancemagazine.com/Article/2143679/Search/Results/China-urges-banks-to-use-trade-finance-to-boost-shipping-sector.html?Keywords=China+shipbuilding&PageMove=0>
(Accessed 26 August 2010)
- Tzavaras, Dimitrios (2005) "Alternative Sources of Raising Capital in Ship Finance" Erasmus University Rotterdam, Master Thesis, MSc in Maritime Economics and Logistics
- United Nations Conference on Trade and Development (2009) "Review of Maritime Transport 2009"
- Zeien, Jennifer (1991-1992) "International Shipyards Subsidies: Can the United States level the playing field", George Washington Journal of International Law and Economics; Volume 25 (1991-1992), p.615