Financing sources for shipping

- *A case study at Wonsild & Son*

Daniel Hultin

Department of Business Administration
Lund University
SE - Box 7080
220 07 Lund

Department of Industrial Management and Logistics
Lund University
SE – Box 118
221 00 Lund

Master thesis no 72/2004

ISSN 1651-0100
ISRN LUTVDG/TVTM--04/5072--/SE

Printed in Sweden
KFS i Lund AB
Lund 2004

Abstract

Title: Financing sources for shipping. – *a case study at Wonsild & Son*

Author: Daniel Hultin

Tutors: Niclas Andrén, Department of Business Administration, School of Econonomics and Business Administration, Lund University.

Everth Larsson. Department of Industrial Management and Logistics, Lund Institute of Technology, Lund University.

Søren Hahnemann, Wonsild & Son A/S, Copenhagen.

Problem discussion:

- What is the best-suited form of equity and debt for the financing of Wonsild & Sons chemical tanker vessel?
- How is the "optimal" financing solution for the company compared with the current one?
- How can this "optimal" finance be obtained?

Purpose: The purpose of the study is to on a broad basis investigate if the financing solutions of Wonsild & Son's vessels can be improved.

Method: The methodology used can be described as inductive, which is appropriate with aspect on the purpose of the study. The study is based around two new built case vessel ordered by Wonsild & Son in 2003. The study is primarily based upon interviews with employees at ten commercial banks in northern Europe. The banks can be considered to be representative for the shipping banking industry in region. The information obtained from the interviews can be considered to be of the primary type. The information obtained form the interviews is analysed with both shipping specific, and general finance theories. The results in the study can be considered to have a high degree of validity, thanks to the large use of primary data. Regarding the reliability it is however hard to make any statements without actually testing the recommendations in real life, something that lies out of the scope of the thesis.

Conclusions: The study shows that private equity and commercial bank loan debt are the most appropriate financing forms for the studied case vessels. The study also shows that there are differences between the banks attitude and willingness to provide finance to the case vessels. These differences can be explained by the banks experience with the vessel type. Banks with a greater experience with the vessel type are more positive towards the case and are more willing to provide finance than ones that are less experienced with the vessel type. Among the group of banks that are less experienced with the vessel type is the bank that currently is providing vessel finance for Wonsild & Son. It is, as a result of these findings, recommended that Wonsild & Son enters negotiations about vessel financing with the banks that have a great experience with the vessel type presented in the case. It is also recommended that the vessels shall be owned under a A/S form. This is recommended in order to improve the financing situation at Wonsild & Son.

Key words: Shipping, finance, vessel financing, banking, credit evaluation, chemical tanker vessels, industrial shipping.

Acknowledgements

The work with my master thesis has now come to an end. During the work I have learned a lot about the ever so fascinating world of shipping and shipping finance. The more I get to know about the industry the more fascinating it becomes. The saying *"the greater knowledge you get, the more you realise how little you know"* is in my view very applicable in the world of international shipping. New concepts and issues have been presented to me during the whole process of writing this thesis. I have learned a lot about shipping during the writing of the thesis. At the same time has my eager to learn more about it grown larger for each day.

I would like to thank all the persons that have helped me in the writing and thereby making this thesis possible. I would like to thank the people at Wonsild & Son in Copenhagen and all of you who kindly have let me to ask questions about shipping during the interviews.

I would specially like to thank Søren Hahenmann, CFO at Wonsild & Son, and Stefan Albertijn at Deutsche Bank in Hamburg. Without your help this thesis would not have been possible. Thank you!

I would also like to thank my family for all the support in different ways you have given me during the writing. Thank you!

Finally to you who are reading the thesis. I hope that you will find reading it as interesting as I have found writing it.

Lund February 2004

Daniel Hultin

Table of content

1 Introduction

The shipping industry is a key factor in the world trade. The global economy is dependent on the fleet of merchant vessels and the goods they are transporting. A lot of the goods that we are consuming has one way or another been transported by ship. Most people do not however think a lot about this world out on the seven seas, except when the media reports about maritime accidents and so forth. The shipping industry is today experiencing a boom, something that could be read about in Scandinavian business press in January 2004. This shipping boom means that a lot of new investments in new vessels are being made. These vessels are to be financed in one way or another. But how is this done? And does the financing solution of a merchant vessel matter?

Merchant vessels are very expensive items. A new build LNG (Liquified Natural Gas) tanker vessel can serve as an example. A vessel like this can cost up to as much as 100 million USD. These huge investments mean that the shipping industry is one of the worlds most capital-intensive industries. This implies that finance is an important factor for the shipping industry, especially in times of new investments. The financing aspect of a vessel can play an important role of the profitability of a merchant vessel since the financing costs is one of the biggest fixed costs items of the vessel. This means that if a shipowner can optimize his financing solutions a lot of money is to be saved due to the huge sums involved. But can the financing of vessels be optimised? And how may this be done in a specific case? This thesis is investigating how the vessel financing solutions of an expanding Danish shipowner can be improved.

1.1 Background

A part of the international shipping industry is Wonsild & Son in Copenhagen, Denmark. The company is operating a fleet of smaller chemical tanker vessels in mainly northern Europe. This market is currently facing new regulations of security and vessel age, which is driving a trend of replacement of old vessels. Wonsild & Son are currently in the process of renewing their fleet by the purchase of new and second hand quality tonnage. In this process are the financing solutions of the purchased vessels a key element. It is therefore interesting to investigate if the financing structures of the vessels can be improved in order to create a better financing situation for Wonsild & Son.

1.2 Problem discussion

A company is almost exclusively financed by both equity and debt, and Wonsild & Son is no exception. But what is the best-suited form of equity and debt for the financing of Wonsild & Sons chemical tanker vessel? How is the "optimal" financing solution for the company compared with the current one? And how can this "optimal" finance be obtained? These are the issues that this thesis is addressing.

1.3 Purpose

The purpose of the study is to on a broad basis investigate if the financing solutions of Wonsild & Son's vessels can be improved.

1.4 Goal

The goal of the study is to come up with recommendations of changes in the vessel financing solutions at Wonsild.

1.5 Scope of the thesis

The scope of the thesis is restricted in a number of ways. The reasons are both of a practical and commercial nature. The practical reasons are mainly a limited availability of time and financial resources from the author, and the commercial ones arise from the commercial environment of the host company, Wonsild & Son.

1.5.1 The case vessel

The thesis is structured around the financing of the two new built Chemical tanker vessels ordered by Wonsild & Son, which are technically identical. This results in some natural restrictions in the area of commercial structure. The thesis will be based around a case with the following characteristics:

- The vessel is a new built 6300 dwt Chemical tanker with stainless steel tanks, ordered 2003 at IMP heavy industries Korea with Wonsild & Son as buyer and supposed operator.
- The vessel shall be owned by a single purpose owning company in either A/S or K/S company structure under Danish law.
- The commercial manager and operator shall be Wonsild & Son.
- The vessel shall be flying the Danish flag.
- The vessel can be employed in both Time Charters and on Spot basis.
- The vessel is aimed to be employed in the north European market.

The financing sources for the case vessel that shall be investigated are also limited. These limitations have practical reasons such as limitations in time available and sources acceptable for Wonsild & Son. These limitations are made after discussion with Søren Hahnemann, CFO at Wonsild & Son.

The banks approached in the study are targeted in discussion with Søren Hanemann and are situated in northern Europe and France. The number of banks interviewed is ten. This restriction in number is a result of limitations in the time available. It shall however be stated that the banks approached can be viewed to be representative for the shipping banking sector in northern Europe.

Furthermore do the thesis not investigate the issues of the special newbuildings financing schemes and pre delivery finance. These issues are not investigated due to practical reasons since the shipyard for the case vessel is situated in Korea.

1.6 Target group

The target group of the thesis is people involved with financing at Wonsild & Son and Technology Management students at Lund University. The latter group cannot be assumed to have previous knowledge about industry specific issues in shipping.

Hence some theoretical parts are included in the thesis, where some of these industry specific aspects are discussed such as the shipping risk and its cycles.

2 Methodology

2.1 The choice of method

Two different approaches are dominant when a researcher is out to do an investigation and make conclusions form it. One of the approaches is when the researcher starts with the empirical findings, compare them with the existing theory in the field and there after makes his conclusions. This approach is called an inductive method. The second approach were the investigator starts with a hypothesis based on existing theories and then tries to verify or reject the hypothesis with the use of the empirical findings.[1]

This investigation is using an inductive method. The choice of method is based on the thesis purpose, which is to broadly investigate if the financing solutions of Wonsild & Son can be improved. The study's purpose has the implication that a big part of the investigation is to question Wonsild & Sons current financing solutions and to see if these can be changed. As a consequence if the purpose a deductive approach would not be the appropriate one for this thesis.

It is possible to divide the time line of the study into four parts. The parts are following each other in time sequence. The parts are preliminary literature studies, empirical survey, extended literature studies and the final analysis of the material.

1. Preliminary literature study
The first part is made up by a preliminary literature study. The books and articles were found by the recommendations from the supervisors at Lund University and by searching the library databases at Lund University. This was done in order to provide a first presentation of the theoretical framework of shipping finance.

2. Empirical study
The second phase was the empirical study which consisted of interviews, both personal and telephone, with employees at banks providing shipping finance. All the respondents were either employees at specialized shipping banks or active in the shipping department of a commercial bank. The respondents were asked to answer a questionnaire with both closed and open questions. The questionnaire is attached in appendix A. The questionnaires closed (quantified) questions were duplicated from a study made in Canada 1990 by Mary R, Brooks with the addition of one extra question which was " potential for further business with client".[2] The author specified the open questions together with Søren Hahnemann, CFO at Wonsild & Son. The

[1] Abnor I, Bjerke B. Företagsekonomisk metod lära. 1994. Studentlitteratur. Lund
[2] Brooks, Mary R. Ship Finance: The banker's perspective.1990 Dahoise University, Halifax.

open questions were added in order to capture "unknown" factors since a study with only closed questions would not be the best choice available with aspect on the purpose of the study.

3. Extended literature study
After the empirical study followed a deeper literature study as a result of a recommendation from one of the respondents at the banks. The recommendation was regarding shipping and shipping finance literature used at MBA courses in shipping. This resulted in an extended literature study of the theoretical framework introduced the above-mentioned literature.

4. Analysis
The fourth part of the study was the final analysis. In the analysis were the findings from the empirical study compared and analyzed together with theoretical framework.

2.2 Data and sources

There are two main types of data gathering; existing data and data which the investigator is collecting.[3] The inductive method used in this study is to a great extent depending on the empirical findings. All of the empirical data is collected directly by the author of the thesis, meaning that it can be considered to be of the second data type. Furthermore information can be divided into primary and secondary sources relating to the distance to the source.[4] All the empirical data used in this study is gathered directly by the author through interviews implying that the material can be considered to be primary information. This means that the data used can be considered to have a relatively high degree of credibility. The author is however aware that the respondents may have incitements not to answer all questions totally honestly since really true answers may include sensitive corporate information. In order to be able to get as hones answers as possible the interviewed firms are not mentioned with their true name in the text. The firms are instead made anonymous in the way that they are referred to as *Firm A, Firm B* etc. This is done in order not to make it possible to identify the individual firms corporate policies. The sources of the study is however given in the way that all interviewed individuals are mentioned in the list of sources together with their employers name. This way of data collecting and presentation can be believed to produce more honest answers from the respondents, while it at the same time gives the author the possibility to publish the studies sources. The risk of not completely true answers of course still exists, but by using this method this risk can be considered to be reduced. There is also the risk of

[3] Lekvall, P, Wahlbin, C, Information för marknadsföringsbeslut. Göteborg. IHM
[4] Holme, I M, Solvang, B K, Forskningsmetodik: om kvantitativa och kvalitativa metoder. 1997. Studentlitteratur, Lund.

errors in the interpretation of the interviews made by the author. The quality of the empirical data can when all factors are combined be considered to be relatively high.

The theoretical sources are to be considered to be secondary. The credibility of such a source can be evaluated by examining the author of the publicised material closer. In this thesis the published sources can be divided into two categories. The first category is regarding shipping specific theories. In this case the authors of the two main sources be can considered to have a very high level of credibility. The first, Martin Stopford, is head analyst at Clarksons research studies, whereas the other, Costas Th. Grammenos, is professor of shipping trade and finance at Cass Business School in London. The other group of printed sources, which are mainly regarding theories of corporate finance, can also be considered to have a high degree of credibility since they are used as course literature in finance courses at the bachelor and master level at Lund University.

2.3 Validity and reliability

Validity in this context refers to the validity of the used information and the presented results of the study.[5] It is reasonable to argue that the collected information and the results of this thesis have a relatively high degree of validity it is based to a large extent on primary data.
The author is however aware that the method of personal interviews increases the risk of bias due to personal interference from the interviewer. The author has however been aware of this risk during the study and paid attention in order to reduce it.

It shall be stated that the empirical data in the study is covering at least 50 % of the banks in northern Europe providing shipping finance. This means that though the study is of qualitative nature it also can be considered to be quantitative to some degree. The large coverage of the financing sources available, given the restrictions of scope in the study, should contribute to a high degree of validity.

Reliability in a study exists if the information gathered is reliable[6]. It is difficult to state if the collected information and the results of the study are reliable. The only way to really test the results is if Wonsild & Son would enter negotiations about their financing solutions with the recommended banks, something that lies out of the scope of this study.

[5] Lundahl, U, Skärvad, P-H, Utredningsmetodik för samhällsvetare och ekonomer. Studentlitteratur. Lund.
[6] Holme, I M, Solvang, B K, Forskningsmetodik: om kvantitativa och kvalitativa metoder. 1997. Studentlitteratur, Lund.

3 Theoretical framework

In this section some important features of the shipping industry is presented. This is done in order to provide readers previously unfamiliar with the industry with a framework of important concepts in order to put the thesis in an understandable context.

3.1 The shipping market and its cycles

Shipping is a cyclical business, and considering the huge amounts of money involved, these cycles are at the center of attention of players in the business. In a textbook by Martin Stopford one can read: "Just as the weather dominates the life of seafarers, so do the waves of the shipping cycle ripple through the financial lives of shipowners". An example of these changes is the transportation of grain from the US Gulf to Rotterdam. A Panamax bulk carrier trading in the spot market in that particular trade could have earned, when the operating expenses were paid, 1 million USD in 1986, 3.5 million USD in 1989, 1.5 million USD in 1992 and 2.5 million USD in 1995. Add to this the fluctuations in the value of the vessel itself. A Panamax build in 1981, was worth 6 million USD in 1986, 22 million USD in 1989 and 1994 it still was worth 22 million USD. This example shows that timing is essential in the shipping industry, and this accounts for decisions regarding both sales and purchase, and chartering. However, it is not only the shipowners that face this risk, the shippers are also exposed to the fluctuations of the shipping cycle. The cost of transporting half a mt of grain from the US Gulf to Japan had in the period of 1986 to 1989 increased from 5.2 million USD to 12.7 million USD. That is an increase in the cost of transportation that is not neglect able. [7]

3.1.1 The definition of shipping risk

To understand the shipping one must cope with the thought that the cycles of the industry have a purpose. The cycles play a central part in the economics of the industry. One of the great challenges is to manage the risk of shipping investment in a business where there is a great uncertainty of the future. The first step to understand the function of the shipping cycles is to ask the question: Who takes the shipping risk?

A merchant vessel is a large and expensive item. Since the volume of trade is in constant change, the demand for merchant vessels is also changing. This implies that

[7] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p 38.

someone have to decide when to order new vessels and scrap the old ones. In a situation were trade is growing but no new ships are built the business will at some point come to a halt. Steel mills would run out of iron, oil companies would not be able to transport their oil and in factories and ports around the world manufactured exports would pile up. The owners of the existing ships would sell them to the highest bids and make fortunes. If ships are built to a larger extent than scrapping when trade is not growing the story is somewhat different. With no cargo to load the ships will be idle and the shipowners will see their investments rust away in the ports. In other words, the cycles are mainly a result of changes in the supply and demand of shipping services.[8]

This is what shipping risk is all about. When the shipper, or cargo owner, takes the risk this leads to a situation called industrial shipping. When the risk is taken by the shipowners the business becomes very speculative. A good analogy is to call it the world's biggest poker game since the ingredients are basically the same: probability, strategy, psychology and luck.[9]

3.1.2 Industrial shipping

In a situation where shippers have the view that transportation is of too big strategic importance to be left to chance, and where they are confident about their transportation needs in the future, they might decide to take the shipping risk themselves. They can do this either by operating a fleet of ships of their own to ensure their transportation need, or by pre-construction time charters with independent shipowners. Having the assurance of cargo, the owners can buy ships and make their profits by keeping their costs below the margins of the contract. This means that the shippers take the shipping risk.
It is however important to point out that industrial shipping is a policy, not a requirement. This means that things can change as time goes by and a trade that used to be organized in the industrial way can change to be a freight market trade. The oil trade can serve as a good example since it was organized the industrial way during the 1950's and 1960's, but in the 1970's it underwent a change to become a freight market trade were the takers of the shipping risk switched to be the shipowners. Industrial shipping makes the shipowner to be a subcontractor, rather than speculators on shipping risk.[10]

In industrial shipping it is, as mentioned earlier, the shippers that takes the shipping risk. This makes the shipowner's ability to get the contracts and deliver with a profit the big challenge. This does however not make industrial shipping risk free from the

[8] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p 38.
[9] Ibid
[10] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p 39.

shipowner point of view. One big source of uncertainty, the shipping risk, is by definition transferred to the shippers in industrial shipping, but there are several other risk factors that influence the outcome of the vessel investment. There is the exposure to inflation for the shipowners, currency fluctuations, breakdown of ships and also the ability of the shipper to honor his obligations towards the shipowner.[11]

3.1.3 The freight market

In many industries, notably agricultural ones, there are shippers that never in advance know the amount of cargo that they will need to have shipped. Under these circumstances shippers usually prefer independent shipowners to take the shipping risk and they rely to get their transportation need fulfilled by hiring ships in open market when needed. The shippers pay a price for having this flexibility by not knowing the freight rate in advance, which sometimes can be low and sometimes high, but at least they know that there will be vessels available to serve their needs.[12]

Shipowners who make the choice to trade their vessels in the open spot market are in essence making money by speculating in the shipping risk. For investors with access to capital and with an aggressive risk attitude towards the shipping risk it only takes an office, a telex and a small amount of buy/sell and charter decisions to create or to waste a fortune. As the sums involved in this game are substantial it is natural that the shipping cycle is at center of attention to the players active in the freight markets.[13]

3.1.4 The freight market cycle and its stages

Cycles are not unique to the shipping industry, they occur in the economy as a whole and in many other industries. Academics in the field of economic history have made efforts to map out and understand these cycles. Many different types of cycles have been identified, among them the short *Kitchen* (3-4 years), the *Labrousse* (10-12 years) and the long *Kondratieff* with a length of about half a century. Cycles have been accepted as a part of life in the shipping industry for a very long time, and it was also noted a long time ago that the cycles were more a complex matter than a regular sequence of fluctuations in freight rates. In 1913 Kirkadly had the view that the cycle was a consequence of the basic market mechanisms of supply and demand by regulating the cash flow:

“With the great development of ocean transport, which commenced about half a century ago, competition became very much accentuate. As the markets became increasingly normal, and trade progressively regular, there was from time to time

[11] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p 39.
[12] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 39-40.
[13] Ibid

more tonnage available at a given port than there was cargo ready for shipment. With unlimited competition this led to the cutting of rates, and at times shipping had to be run at a loss. The result was that shipping became an industry enjoying very fluctuating prosperity. Several lean years would be followed by a series of prosperous years. The wealthy shipowner could afford to put the good years against the bad, and strike an average; a less fortunate colleague after perhaps enjoying a prosperous time, would be unable to face the lean years, and have to give up the struggle."[14]

The average length of the shipping cycles during the period of 1872 to 1989 is 8.2 years from peak to peak. There is however a big variance in the length of these cycles as the three shortest cycles lasted for five years and the longest lasted for 12 years. There are however four characteristic phases in the cycles, first the *through* phase, secondly the *recovery* phase, third the *peak/plateau* phase and finally the *collapse* phase. The four phases and their characteristics are described in a more detailed manner in the four sections below.[15]

Stage 1. Through
The through phase has three particular characteristics. The first thing that occurs is a surplus of shipping capacity. In the ports vessels pile up idle waiting for cargoes and at sea ships slow their speed down in order to save bunkers creating delays of the arrival at their port of call. Secondly a fall in the freight rates take place to a point were the freight is barely covering or not covering the operating expenses of the least efficient ships in the fleet. These vessels are as a consequence forced to be laid up. Thirdly a negative cash flow is created for the shipowners due to sustained low freight rates and tight credits. The negative cash flow makes some shipowners short of cash, forcing them to sell their vessels at bargain prices since there are few buyers in the market. At this point the second hand price of old vessels falls to be equal to the scrap price and thus creating a high activity in the demolition market.[16]

Stage 2. Recovery
The first sign that supply and demand moves towards balance, and that the market might recover, is an increase in freight rates to a level above operating costs, followed by a decrease in laid up tonnage. The mood of the market is however still uncertain and unpredictable. Optimism is alternated with serious doubts if a recovery is taking place or not. Some times the optimism is ratified, but there have also been occasions where the pessimists were right.[17]

[14]Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 40-41.
[15] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 46.
[16] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 43.
[17] Ibid

Stage 3. Peak/Plateau
At a point when all tonnage surplus has been absorbed a situation were supply and demand are in tight balance takes place. Now the freight rates are at high levels (often up to three or four times the operating costs), and the peak might last from a few weeks up till several years. The length of the peak depends on the supply and demand pressures. Now the fleets are operating at full speed, only untradeable vessels are laid up, the owners become very liquid and the banks are keen on lending to shipowners. There are also writings in the press of the flourishing shipping business. Prompt modern ships are sold at prices above new building prices, the second hand prices are higher than the book values and the order books at the shipyards are being filled and expanded with an increasing speed.[18]

Stage 4. Collapse
Finally supply will be greater than demand and the market moves into the collapse stage. Usually the downturn is caused by fundamental factors such as the business cycle, but there are factors that can accelerate the collapse. The delivery of vessels ordered at the top of the market and the clearance of port congestion, which both take time, can speed up the collapse to a few weeks. Now the freight rates are falling, ships are slowing down their operating speed and spot operated vessels are building up in key ports. Liquidity is however still high and the mood of the market is confused and changes with each rally in freight rates.[19]

[18]Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 43.
[19] Ibid

3.2 Ship finance in the past 50 years

In this section the development of shipping finance over the last 50 years is presented. This is done in order to present the development of the industry as well as to provide an understanding of why some issues are important to the parties involved.

3.2.1 Charter backed finance in the 1950's and 1960's

During the first half of the 20th century the approach of financing ships was conservative. Retained earnings within the companies and a very little amount of debt mainly financed the vessels during this era. In the 1950's however, things started to change. In the post war era the growing industrialised economies in Europe and Japan needed cheap raw materials. This led to the development of a new kind of player, the industrial shipper. In the past merchant vessels had mainly been active in liner shipping and tramp trades. With the new need for cheap transportation of raw materials the concept of economics of scale developed in the shipping industry by the development of larger vessels. These vessels were however big and expensive and hard to finance by the shippers retained earnings. The customers, mainly major oil companies and steel makers, offered the shipping companies long time contracts, time charters, as an incentive to order large vessels specialised to their particular trade. These contracts, or really the cash flow from the contracts, could then be used by the ship owners as a collateral for a loan to buy the ship. This lead to the financing of ships with a high degree of leverage, something that not had been present in the past.[20]

This new form of financing also led to the development of new administrative structures as the single purpose company, a company that only owns a ship, and the registration of ships in jurisdictions with flag of convenience with little or now tax.[21]

This type of ship finance was most important during the 1950's and 1960's, but in the 1070's it started to lose in importance. It appears that there were three reasons for this loss in importance. The first was that in the beginning of the 1970's economies of scale had been pushed to the limits, and the period of structural change that was the driving factor behind the large ships was coming to an end. The result was that the shippers did not need to make the commitment of long time charters anymore in order to secure the ships they needed and the favourable time charters were less available.

[20] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 197-198.
[21] Ibid

Secondly there was a change in the trend of the trades were the growth of the crude oil and iron trades was stopped. Third was the influence of a strong inflation. Ship owners who had committed their vessels to long time charters had done this expecting to just sit down and enjoy the profits, but instead they saw their margins being eaten up by inflation. In addition, things were made worse when several charterers failed to honor their commitments.[22]

3.2.2 Asset backed finance in the 1970's

After two decades of charter backed high leverage financing bankers started to change their lending policies in the early 1970's. Opposed to the previous practice of securing the loan to a cash flow from a long-term time charter contract the banks started to finance vessels with the first mortgage on the hull as the primary, and with little additional, security. Or put in other words, the bankers started to view ships as floating real estate. The reasoning was that cash flow from time charters was not sufficient security since inflation and accidents could make the time charter less of a good deal for the ship owner. At the same time bankers saw that vessels operated in the tramp market usually were more profitable than those with a time charter. The view that the value of modern well maintained ships was stable, and also increasing was also common. The result was that banks during a short, but disastrous, time in the 1970's started to finance the ships with the hull value as the only security. Now the link between supply and demand of ships was not present any more. When the financing was charter backed new buildings of ships where restricted by the availability of charters. Now when the hull value was accepted as the primary or only security there was no limit of how many ships that could be ordered with a very small amount of equity base. In 1973 money from the oil industry was flooding into the world, and the shipping industry. Huge credits for new building where allowed and the new building of 105 million dwt of tankers, representing 55 % of the fleet, was ordered in one single year. It took the tanker market 15 years to recover from this bubble.[23]

This was however not the end of this way of building with no real demand. In the early 1980's money from the oil industry was again flooding in the world. This was combined with desperate shipyards using credit as disguised way of building to stock. Mortgage backed debt backed the ordering of 40 million dwt of bulk carriers in 1983 and 1984, at a time when the freight market was at rock bottom. This was counter cyclical ordering, something that is usually rationale behavior. The problem here was

[22] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 197-198.
[23] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 198-199.

that the ordering was so huge that when the ships were delivered the addition of new tonnage was so great that there was a surplus on the supply side in the freight markets and the recession went trough 1986. This resulted in owners having trouble to serve their debt, causing many defaults, and reducing second hand prices of ships since the owners had to sell their ships in order to raise cash.[24]

3.2.3 Financing asset play in the 1980's

When the shipping market hit rock bottom, and stayed there for a longer time than usual there was the opportunity of asset playing (speculating in residual value of vessels by buying the vessel cheap and selling it later to a higher price) with presence of cheap second hand ships due to distress sales. There was however few sources of conventional equity and debt that was interesting to finance more ships. This led to the requirement of finance from new sources. One way was the creation of self-liquidating shipping funds. The first, set up in 1984, was very successful when assets appreciating the original purchase price four times in the following four years. Others copied the concept, but these funds proved to be less successful and few made a commercial return on the investment and some even lost their invested money.[25]

Another common way of financing ships during this era was to raise equity from people that usually were not in the shipping business. A very well known form is the Norwegian K/S company were many small investors put their money in ships. The K/S structure was very popular since advantages made by the investment was tax free, given that the money was re invested within a specific time period, and this at a time with very high taxes in Norway. This made the K/S companies very attractive to private investors and the concept became a success despite the unconventional structure.[26]

[24] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 198-199.
[25] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 199.
[26] Ibid

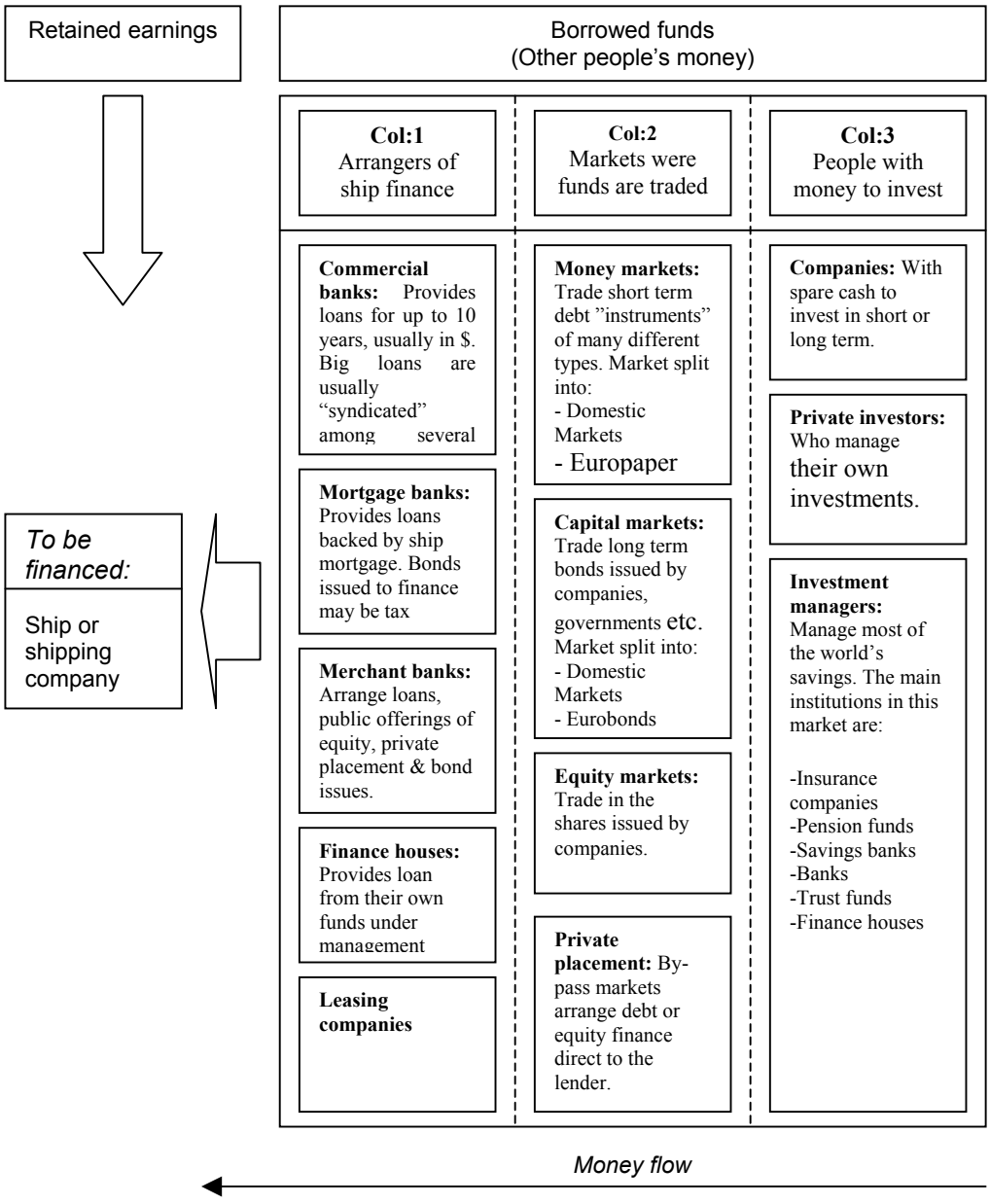
3.3 The world financial system and types of finance

In this section is the world's financial system and different types of finance available presented. This is done in order to present an overview from were possible vessel finance can be obtained.

When financing ships two essential questions must be asked. First: *Where does the money come from?* And secondly: *What do businessmen have to do to get it?* One way to answer the first question is to look at Figure 3.1. The figure presents the financial system as a whole. Column 3 in the figure presents the s*ource* investment funds. Column 2 displays the markets where funds are traded. Finally in column 1 the *arrangers* are presented. These *arrangers* act as intermediates and risk takers by providing the shipping industry access to the pool of funds in column 1 and 2.[27]

[27] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 200-201.

Figure 3.1 *Sources of finance*



3.3.2 Investment funds

The source of financing vessels, or investment funds, are savings of different origin. It can be both private and corporate savings, of which some are handled by the individual or company themselves. The main part of these savings (about 80%) are however managed by professional investment managers such as insurance companies, pension funds, savings banks, finance houses, trust funds, mutual funds and commercial banks. All of these institutions take care of money on deposit and they can be labeled under the group name of institutional investors.[28]

3.3.3 Investors and lenders

The professional managers of these institutions have, very broadly spoken, a choice between two options, to *invest* or to *lend* the money they are appointed to manage. An investor commits the funds in a business venture in return for a share of the possible profits. The most common way for the investor to get the money back is to resell his stake of equity. A lender on the other hand advances money during a predetermined period in return for regular interest payments. At the end of the period the loan in whole is repaid to the lender. The distinction has important implications since the investor and lender have very different perspectives of the business. Investors are interested in the potential *upside* of business since they take risk for profit. The investors are not sure if they will receive any return on their investment, although they are expecting to do so to some degree. They are also not sure of the size of the return, but there is in theory no upper limit. This implies that investors focus on the potential gains of the business. The lenders perspective is different since they get their return in the form of interest payments. They want to be sure of that they get their interest payments and get the loan repaid. This makes them more interested in the potential *downside* of business. What can cause things go wrong and make the ship owners unable to repay the loan and its interest? This is the reason why owners and bankers may look completely different on a potential business project.[29]

3.3.4 Private placement of debt or equity

A widely used method of investing or lending money is *private placement*, were the "fund managers" place the funds directly with the companies who need finance. The lender/investor, who might be a pension fund or an insurance company, negotiates directly with the company to a deal that suits both borrower and lender. This arrangement can be made for both equity and debt. There is however some problems involved in private placement. The fund managers are first to deal with the task of

[28] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 200-202.
[29] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 202.

analyzing detailed investment proposals. There is secondly and more important the issue of inliquidity of the loan or investment. When the transaction is made the investor has small possibilities of adjusting the portfolio of such loans and investments. The practical implication is that the private placement market is available only to shipping companies of investment grade quality.[30]

3.3.5 Financial markets

As an alternative to private placement the financial markets can provide finance. The financial markets buy and sell packaged investment funds in the same way as commodities are traded. These different standardized packages are bought and sold under the common form of securities. Securitizing investments means taking a unique investment and package and process it in a uniform way so that it meets rigid standards and thereby is easy to buy and sell. To make sure that the rules are followed securities markets are strictly regulated. The financial markets can be divided into three types depending of what kind of security is traded.[31]

Money markets
In the money markets short time debt with a lifetime of less than a year is traded. The market is made of a loose network of banks and dealers connected by telex, telephone and computers. These actors deal with anything that is credit worthy and sufficiently standardized. An example is a shipowner with an oversupply of cash and who wants to keep these funds liquid. Instead of putting the cash in a bank deposit, the owner can purchase commercial papers in the money market and thereby get a better return than would be available in the bank deposit alternative. The markets trade funds both held in local currency by local investors, called local markets, and funds that are held outside the issuing country called the Eurocurrency market. The above mentioned markets have separated interest rate structures, were the Eurodollar interest rate, used in the Eurocurrency market, is called LIBOR (London Inter Bank Offered Rating).[32]

Capital markets
The capital markets trade in long-term debt financial instruments named bonds or debentures. The holder of the bonds is repaid a specific amount of money on prescribed maturity date. Redeeming coupons that are attached to the bonds pay interest. The size of the interest reflects the credit rating of the issuer. To make the public issued bonds readily tradable they have to be highly standardized.[33]

Equity markets

[30] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 202.
[31] Ibid
[32] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p.203.
[33] Ibid

In the equity markets shares of equity are traded allowing credit worthy companies to raise capital by a public offering to the stock market. This way of raising capital implies that the company must follow regulations and convince the shareholder that the investment will be a good one. Investment banks are acting as intermediates in the issuing process and they usually charge a 5 % fee of the raised capital for their work, including underwriting, legal and auditing services.[34]

The securities market handles considerable sums of money. An example is that during 1996 the world's securities market totaled 13.5 trillion USD of which transport accounted for 0.18%. This is in relation a proportionally small amount but this does not mean that the capital is easy to obtain. All industries are getting funds through the securities markets, which means that there is a fierce competition for the money in the system. This means that the borrowers must offer a competitive rate of return to satisfy investors. The markets are also highly regulated. A shipping company wanting to raise capital in the money and capital markets must achieve recognized standards of credit worthiness by obtaining a credit rating. These ratings are made by credit rating agencies such as Moodys and Standard & Poors. The agencies monitor the performance of companies on a regular basis and publish a rating of their credit worthiness. This system provides purchasers of bonds and commercial papers a guide to the actual company's creditworthiness by looking at their rating. In other words the market works as a kind of sophisticated risk filter.[35]

3.3.6 The role of financial institutions

To be able to get access to the financial markets above-mentioned a borrower has to go through intermediates. The commercial and mortgage banks borrow their funds in the financial markets and then lend to shipowners. The banks make their profits by adding a margin, spread, on the interest rate offered to the shipowner. The banks use their specialist knowledge to identify shipping investment opportunities with an acceptable risk. The investment banks aide companies with sufficient credit ratings to issue bonds, equity and private placement. Around the world there are at least 200 institutions that in some way have a specialist expertise in some aspect of shipping finance, often through special shipping departments.[36]

[34] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p.203.
[35] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 202-205.
[36] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 205.

3.3.7 Institutions providing or arranging ship finance

Commercial banks
The commercial banks are the most important providers of debt to finance the bulk segment of the shipping industry. Many of the commercial banks have specialised shipping departments. These banks usually offer term loans of 2-10 years which they in turn have financed by borrowing from the capital and money markets. The short term funding is creating a limit to the tenor of loans that commercial banks are willing to take on their balance sheets. Most banks are not comfortable lending for more than 5/8 years possibly with a balloon payment in the end. Borrowers seeking financing with loans lasting for 12 years must in most cases approach other financial institutions such as ship mortgage banks or leasing companies. The commercial banks' loans are usually quoted at a margin over LIBOR (London Inter Bank Offered Rating). The spread usually ranges from 0.5 % to 2%. Large loans, more than 50 million USD, are usually syndicated between a number of banks. The commercial banks also offer additional services and products other than ship mortgages, including risk management products, financial advisory services etc.[37]

Ship mortgage banks
In some countries specialised ship mortgage banks offer credits to shipping companies. These banks obtain their funds either in the market or by issuing bonds which have tax concessions for local investors. Examples of countries were this kind of banks are doing business are Denmark and Germany. In Germany the loans are limited not to exceed 3/5 of the vessels value and a 12 year tenor.[38]

Investment and merchant banks
Investment and merchant banks do not usually make loans themselves. They do however arrange and underwrite finance deals such as loan syndications, public offerings of equity, bond issues in the capital market and the private placement of debt or equity with financial institutions or private investors. There are however few investment banks specialised in shipping since the organizational structure wanted by these banks to raise equity and additional services is rare in the shipping industry.[39]

Finance houses and brokers
There are some financial institutions, with substantial funds under their management that have specialised shipping departments, which lend directly to the shipping industry. Examples of such institutions are GE capital and Fidelity Capital etc. There are also a number of organisers and brokers of ship finance, whose specialty is to put together innovative financing packages.[40]

[37] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 204.
[38] Ibid
[39] Ibid
[40] Ibid

Leasing companies
Leasing companies are specialists in leasing assets and some of these companies arrange long term leasing of vessels. In Japan these companies are also significant lenders. Due to the appearance of different regulatory rules to these companies they can offer long term finance that commercial banks would not be able to have on their balance sheets.[41]

Shipbuilding credit schemes
Many countries offer shipbuilding credits to domestic and foreign ship owners. The terms of export credits are regulated by the OECD Understanding on Export Credit and were at the printing of the source set at 80%.[42] This figure is confirmed to be accurate also at the beginning of 2004.[43] With the exception of South Korea these credits are usually set up in the domestic currency. The export credit funding is either provided by a government bank or a commercial bank that receives a government guarantee and a subsidy that covers the difference between the pricing of the loan and the rate borrowed at in the local Money Market.[44]

[41] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 204.
[42] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 204.
[43] *Source: Interview with Søren Hahnemann*
[44] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 204.

3.4 Capital structure

In this part some of the very basic and fundamental concepts of corporate finance are presented. This is done in order to give the reader a theoretical framework that can explain some of the forces involved in finance. This is also done in order to give an understanding of what is meant by an expression such as: "the most favorable finance situation as possible"

3.4.1 Cost of capital

When investing in projects or valuating stocks the cost of capital is of a central nature. It is the cost of capital that determines the discount rate calculated with when evaluating investment opportunities. There are two central models when calculating the cost of capital, the *Weighted Average Cost of Capital* and the *Capital Asset Pricing Model*.

3.4.2 The relationship between risk and expected return

Capital Asset Pricing Model

The relationship between risk and expected return can be described by the Capital Asset Pricing Model, or CAPM. The basic logic is that the higher the risk of an asset, the higher expected return that particular asset shall have. A standard way of measuring the risk is to measure the historical variance of the returns of the asset. The question is however how to quantify this into an expected return?

Risk

One solution is to measure Formula 3.2the risk and return of the asset in relation to the markets risk and return. This relationship is described by the β variable given in Formula 3.1.[45]

Formula 3.1 $$\beta_i = \frac{Cov(R_i, R_M)}{\sigma^2(R_M)}$$

Expected return

[45] Ross, S, Westerfield, R, Jaffe, J. Corporate Finance, 6th edition. P. 271. McGraw Hill 2002

If the β of a particular asset on a particular market is known it is possible to calculate the expected return for that asset, $\overline{R_i}$, using the risk free rate of return, R_F, and the expected return of the market portfolio, $\overline{R}_M$, and Formula 3.2 .[46]

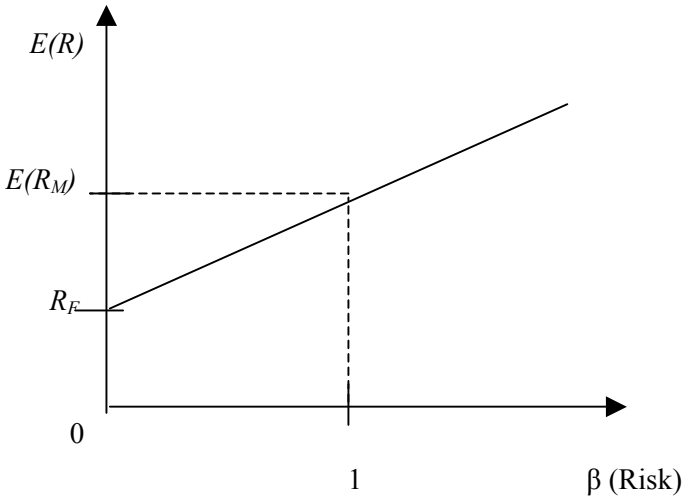
Formula 3.2 $$E(R_i) = R_F + \beta_i * \left(E(R_M) - R_F\right)$$

This is possible since the average β for all securities in the market, when weighted by the proportion of each security, by definition is 1. This is written algebraically in Formula 3.3 where X_i is the proportion of security i's market value to the entire market and N is the number of securities on the entire market.[47]

Formula 3.3 $$\sum_{i=1}^{N} X_i \beta_i = 1$$

If one puts this information into a diagram it is clear that there is a linear relationship between risk and expected return, as given in Formula 3.2. Figure 3.2 shows graphically the relationship between risk (defined as β) and expected return. The higher the risk, the higher expected return.

Figure 3.2 CAPM



[46] Copeland. T, Koller. T, Murrin. J. Valuation, 3rd edition. PP. 214-226. John Wiley & Sons 2000.
[47] Ross, S, Westerfield, R, Jaffe, J. Corporate Finance, 6th edition. P. 271. McGraw Hill 2002

3.4.3 Calculating the expected rate of return on a project

Weighted Average Cost of Capital
When valuating a share price a common technique is to discount the expected future free cash flows with an "adequate" interest rate, and thereby get a fair price/value of the share. The "adequate" interest rate referred to is usually the Weighted Average Cost of Capital or r_{WACC}.

The r_{WACC} takes into account the cost of debt capital, the cost equity and corporate tax effects.
The components used when calculating the r_{WACC} is the cost of debt, r_D, the cost of equity, r_E, the corporate tax rate, T_C, the amount of debt in the company, D, and the amount of equity in the company, E. The r_{WACC} is given by Formula 3.4.[48]

Formula 3.4
$$r_{WACC} = \frac{E}{E+D} * r_E + \frac{D}{E+D} * r_D * (1 - T_C)$$

The formula shows that debt usually is cheaper than equity. One reason behind this is that interest payments for loans usually are deductible from the corporate tax, and that dividends are not. This results in a tax shield for the levered capital that is not available for equity capital. Note that r_D in Formula 3.4 is usually the same as $E(R_i)$ in Formula 3.2 for the actual share.

There is however also another important aspect of the difference between debt and equity and the balance between them. This can be explained by the CAPM model. Assume that an individual can either invest his money in corporate equity or in corporate debt. The logic behind the CAPM says that the higher the risk, the higher expected return, as shown in Figure 3.2. One important difference between debt and equity is that a company has an obligation to pay its debt interest payments. This means that an individual that has invested in corporate debt with relatively high certainty knows what the return will be, in the form of interest payments, unless the company can serve its debts service and thereby goes default. This is different from an investment in equity where the owner of shares does not know what the return will be. It is however reasonable to assume that the certainty of dividend payments are lower than of interest payments since the capital available for dividends is a residual claim when all other payments are made, including interest.

The conclusion is that, in a given company, investment in equity is of a riskier nature than investment in debt. Given the logic in models as the CAPM the expected return

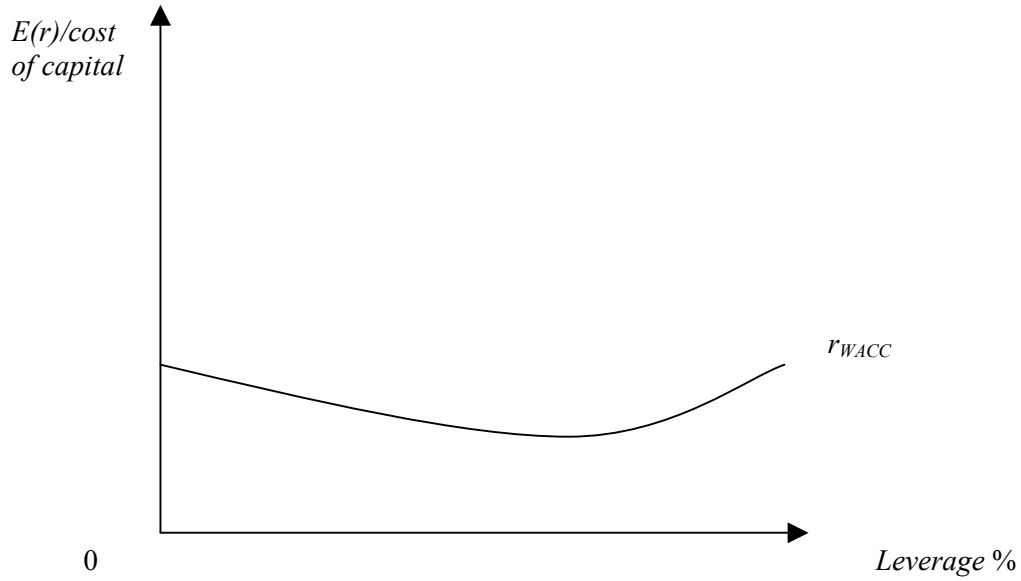
[48] Ross, S, Westerfield, R, Jaffe, J. Corporate Finance, 6th edition. P. 472. McGraw Hill 2002

for equity, r_E, shall be higher than the expected return for debt, r_D, also in a world without corporate taxes.

Studying the r_{WACC} in Formula 3.4 and knowing this logic the first reasonable thought is to lever the firm all the way, that is finance the firm with all debt. This is logic since debt is cheaper than equity in the first place *and* tax deductible. Why would anybody want to finance a company with equity? The answer is that first of all it is not legally possible to finance a company without equity. Then the logic continuance is "finance with as much debt as it is legally possible, to obtain the cheapest possible financing". This is however not the way to get the cheapest finance. The explanation lies within the basic difference between debt and equity. The interest payment for debt capital is an obligation, different from dividend payments. This means that a high leverage of a firm gives a high debt service. This is good in times of good markets and profit. But how about things when the times are bad? In bad times a high leverage can be devastating if the incoming cash flow of the company is not sufficient to pay the debt service. The high leverage can possibly cause the company to be in default of its debt service and also in the long run make the company goes out of business. One conclusion is that a company wants to have a high leverage in good times and a low leverage in bad times. This is not news for investors and lenders and they take this into account when investing or lending to a firm. This means that higher leverage increases the risk of the investment, due to the higher debt service and increased probability of default, and given Formula 3.2 the expected return on investment shall also risk.

The conclusion is that there is a point of leverage where the two takes each other out, hence the optimal debt ratio, illustrated in Figure 3.3. It is however hard to exactly calculate this specific point since this is unique from case to case.

Figure 3.3 Capital cost function



3.5 Equity

There are three main types of raising equity finance for shipping, owner equity, limited partnerships and public offerings. These different types all have in common that they apply to the basic idea of equity, that is to seek investors that are willing to take a stake in the company and to share the risk and profit.[49]

3.5.1 Owner equity

Most shipping companies finance a part of their investments with equity that comes from retained earnings or the owner's private recourses. This way of financing trough internally generated equity is, to some degree, used by almost every shipping company but the proportions differ very much from company to company.[50]

3.5.2 Public offering

A public offering takes place in one of the world's stock exchanges. New York, Oslo, Singapore, Hong Kong and Stockholm all have stock exchanges used by the shipping

[49] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 205.
[50] Ibid

industry. The offering is made in cooperation with an investment bank, which is preparing a prospect of the publicly issued shares for a specific stock exchange. The prospect usually includes detailed information about the issuing company. The offering is successful if there are enough investors willing to buy the shares at the offered price, which in turn depends on their perception of the industry and if the company appears to be well managed There is however no guarantee that the offering will be successful, and it might also be withdrawn. The factor that makes a public offering successful or not is whether the offering company is able to convince that the company is sound. A well-defined strategy, clear corporate structure, a credible management record and much of detailed information are factors that usually are helpful in this process. The process of offering the shares usually takes 10-15 weeks, and cost about 5% of the raised funds.[51]

An advantage with a publicly traded share is that it makes it liquid, giving the investors to buy and sell the share at any time. To make this possible, the public offering must however be big enough to enable reasonable trading volumes.[52]

Raising equity to shipping companies trough public offering has a mixed history. There are few successful publicly traded shipping shares apart from the liner business. An explanation to this might be the high volatility in the shipping market, since the stock market appreciates companies that have a consistent profit growth year after year. Added to this is the opportunistic nature of tramp business that usually does not fit with the structured corporate environment wanted by the stock markets in publicly traded companies. Contrarian decision making and an entrepreneurial flare can be difficult in the structured corporate environment where major decisions are made in consensus.[53] It is important to notice that it is very common that publicly traded shipping companies have a "discount" in their share price. Or put in other words, one of the cheapest ways to buy vessels is to buy a publicly traded shipping company and thereby also acquire the vessels of the company. The price of the company's shares is usually smaller than the market value of the vessels that the company owns less the companies debt. Hence there is a discount in the share price for publicly traded shipping companies.[54]

3.5.3 Partnership structures

The most well known form of a partnership structure in the shipping industry is the Norwegian K/S, a standard company form where the investors were offered tax

[51] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 205-206.
[52] Ibid
[53] Ibid
[54] *Source: Interview with Jens Vind Jensen.*

benefits. The K/S's were usually set up on a one-ship basis where the management of the vessel is subcontracted. A forming organizer selected a "general partner" and then invited equity partners to raise capital. The law in Norway at that time stipulated that, in order to get the tax benefits, the equity capital was required to be 70% of the project cost, where the general partner provided 10%. A the time of the incorporation of the company at least 20 % of the committed capital had to be available in cash and a further 20 % within two years. The rest of the capital could be called at, but only when necessary. The general rule of thumb was that 80% of the purchase price was raised by bank loan with cash drawn against the committed equity. The committed capital could then be depreciated at an annual rate of 25% on a declining balance basis. Furthermore provisions could be made for classification costs, however the total depreciation could not exceed the total committed capital. The benefit of this structure was the tax benefits. The weakness from the investor's point of view was that the important protective regulation that is implied in the stock markets was missing in the K/S structures.[55] There is a Danish partnership structure also named K/S, which is discussed in 3.5.4.

3.5.4 Danish company structures

The two company structures that are relevant in this thesis are the Danish A/S structure that is a normal limited corporation and the Danish partnership structure called K/S. In this part some important differences in respect of liability and taxation between the two company forms are discussed.

A/S

The A/S company is the Danish form of the standard limited incorporated company. The investors are investing their capital in equity shares. The investors have only limited liability, meaning that they are only putting the invested capital at risk. They have no obligations for the company's liabilities beyond their invested capital.[56]

The A/S company is paying corporate tax with at a rate of 30% on their earnings. Furthermore there is a personal tax in Denmark of 40% on dividends received from A/S company shares.[57]

K/S

In a K/S company structure there are two main differences from the A/S structure. The first is the liability of the investors. An investor in a K/S company is personally liable for a percentage of the company's commitments equal to his part of the

[55] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 207-208.
[56] *Source: Interview with Søren Hahnemann.*
[57] Ibid

company's equity. Or put in other words, if an investor holds 10 % of the company's shares he can also be held liable for an amount up to 10% of the company's liabilities. Furthermore this liability is solidarical, meaning that, in the case of default of the K/S, the owners of the liability can target any part owner in the K/S of their choice and demand the whole debt to be paid by this individual (given that the amount is within his share of the company's total obligations).[58]

When it comes to taxation the K/S structure also has a somewhat different structure than the A/S companies. A K/S does not pay corporate tax. The tax of the company is instead paid by the individual investors in the company. The earnings of the K/S is added to the investors taxable income with an amount equal to their part of the equity. This is then taxed on a personal basis of the investor. In Denmark the personal tax rate is 61%. If the investor is an A/S company (something that is possible) the normal corporate tax rate of 30 % is used. The advantage of the K/S structure is however the tax-deductibility. The investors can use their part in the K/S company as a tax deduction object with an annual depreciation rate of 25% of the ingoing balance. This can be illustrated with an example. Imagine a vessel that has a purchase price of 100 million DKK. The vessel is financed with a loan of 80 million DKK, and with equity of 20 million DKK. One investor has 10% equity stake in the vessel. This means that the investor during the first year can depreciate the value of his share with 25%, or with 500 000 DKK (20 000 000*0,1*0.25 = 500 000). This figure is subtracted from the taxable income of the investor, and is hence in effect reducing his tax. This is one of main driving forces in the K/S structure.[59]

3.5.5 Mezzanine financing

In between debt and equity there is a half thing called mezzanine finance. The term is loosely defined but it is usually applied for high yield debt with equity "kickers" attached, such as warrants. Mezzanine finance has been scarcely used within the shipping industry and it is not easy to place.[60]

3.6 Debt

3.6.1 Bonds and fixed term securities

Companies that have an acceptable credit rating are able to raise money through issuing bonds in the capital markets. The amount that can be issued, if issued at all, and the level if interest is determined by the credit rating. A rating company, Moodys

[58] *Source: Interview with Søren Hahnemann.*
[59] Ibid
[60] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 209-210.

or Standard & Poors, makes the rating. To be able to obtain a credit rating a clear corporate structure, good management, and a corporate structure that analysts can understand is required. If the company is able to obtain the rating, the issuing of bonds goes through an investment bank, which draws up the deal, handles documentation and manages the placement. The procedure involved takes long time and it takes months to develop the prospect and placing the bonds in the market. The sums involved when shipping companies issuing bonds are large and the investment grade is usually "high yield" rather than "investment".[61]

3.6.2 Commercial bank loans

The dominating way of financing vessels and shipping companies is the commercial bank term loan. The procedure of raising capital trough a shipping loan is relatively simple. The shipowner usually approaches a bank and presents his case for them. If the bank is interested in the case it presents a proposal to the shipowner with suggested terms of the loan. These terms are presented and discussed further in section 3.6.3. The negotiations of these terms are central in the borrowing process. Once the parties have come to an agreement the proposal has to go trough the bank's credit system. The length of this process can vary in time from a few days to be rather lengthy, depending of who the borrower is and the complexity of the case. [62] A further discussion regarding this process and the issues involved, from the banker's point of view, is found in section 0.

3.6.3 Key points in a commercial term loan

Tenor

The tenor is the length of the loan and can range from 3 to 15 years depending on the circumstances.[63]

Gearing

The percentage of the debt in relation to the asset value, in this case the vessel's value, is called gearing, or degree of leverage. The gearing varies from 40-80% and it is dependent on the ship type, the employment, the collateral, the vessels age, the competition from other banks and the lending policies of the lending bank.[64]

Repayment

The schedule of repayment of the loan is usually of equal installments over the period of the loan (normally every 6 months in the Eurodollar and London markets). When

[61] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 210.
[62] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 211-213.
[63] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 212.
[64] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 210.

policies of the lending bank do not allow loans over a sufficient period of time to make repayment of the debt possible with manageable principal repayments a "balloon" might be added to the loan. In this context a balloon is a big repayment at the end of the period (i.e. 30% of the loan). The size of the balloon reflects the banker's confidence of the asset value at the end of the tenor. For older vessels the residual asset value at the end of the period is usually set in relation to predicted scrap values.[65]

Currency
In most cases commercial banks lends in US Dollars. There are of course exceptions where the loan is set up in another currency, such as Yen and Pounds Sterling. An example is shipyard credits that usually are given in the local currency of the shipyard. This presents the borrower with a currency risk that usually has to be hedged against.[66]

Interest rates
The common practice of commercial bank loans is to use a floating interest rate, with the exceptions of some ship mortgage banks and government subsidized interest rate schemes.
Commercial bank loan interest rates are in most cases defined by a spread over the 6 month LIBOR. The spread can, depending upon circumstances, range from 0.5 % to 2%.[67]

Fees
The customer of the loan might be charged with a commitment fee if there is a standby period or an extensive draw down period of the loan. The commitment fee is about 0.5 % per annum on the unused portion of the commitment. In complex transactions, such as where syndications are involved, a management or arrangement fee of up to 1 % might be charged as a front-end payment in order to cover the bank's administrative costs.[68]

Syndication
In order to spread the risk of the banks, syndications of shipping loans sometimes take place. The syndicated loan has a leading bank and others that participate.[69]

[65] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 210.
[66] Ibid
[67] Ibid
[68] Ibid
[69] Ibid

Hedging
Both the interest rate and currency risks can be hedged in order to reduce the risk. The interest rate can be hedged in different ways, i.e. by fixing it or putting a ceiling on it. Currency risk can be hedged forward by using swaps, options and compounded options. These techniques can remove a big part of the currency and interest rate risk from the financing of vessels.[70]

Security
There can be many different types of securities attached to the loan. Examples are the first mortgage of the vessel financed, mortgages on other vessels, assignment of earnings from time charters or insurances, corporate guarantees or personal guarantees of the owners of the vessel.[71]

Covenants
Attached to the loan agreement there is usually a number of covenants, of which some may be an issue of major negotiation. The covenants can be a minimum value clause were an additional collateral is to be provided if the value of the vessel falls below a certain multiple of the amount borrowed, maintenance of working capital and provision of regular financial information.[72]

Documentation
The documentation is different from loan to loan and is customized to fit each specific case. The documentation contains information about the interest rate, repayment terms, fees, in detail described collaterals etc.[73]

3.6.4 Syndication and asset sale

It is common that lenders like to diversify their risk and they usually do not like to have single transactions larger than 25-30 million dollars in their books. When loans are larger than that sum it is customary to share the risk trough syndication of the loan between several banks. This syndication, or asset distribution with another name, takes place by splitting large loans into small packages that can be distributed out to other banks. The syndication has not only the purpose of spreading risk, but it also enables banks without the shipping expertise to participate in shipping loans under the guidance of a lead bank that does. In syndicated loans the loan is split into smaller pieces at the start of the loan, and there are many participating banks.[74]

[70] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 210.
[71] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 212.
[72] Ibid
[73] Ibid
[74] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 213-215.

However there are problems with widely syndicated loans due to the large number of participants. If the borrower have problems the lead bank may have trouble to control a diverse group of participating banks were some of them have little knowledge about the shipping market's cyclical nature. This is something that borrowers at times feel uncomfortable with and it has been argued that it is better if syndication is restricted to club deals between fewer banks who combine to offer joint financing.[75]

The distribution of loans also comes in the form of asset sales. In an asset sale the bank arranges the loan the normal way without syndication and puts it on the balance sheet. If the bank at a later stage wants to reduce its exposure of shipping risk it can sell the loan to another bank. If a buyer of the loan is found the banks sign a joint participation agreement, transferring a specified proportion of the loan on the agreed upon terms. Normally the selling bank is aiming to make the terms favorable and retaining a margin for themselves. The originating bank still operates the loan in the normal way, and there have been cases when the borrowing party is not even aware that the loan is being held by another bank.[76]

3.6.5 Private placement of debt

For some shipping companies there is the possibility to arrange private placement of debt instead of borrowing from a bank. Instead, the lending party is then a pension fund, insurance or leasing company. These transactions are one-off deals and can therefore be expensive. If the borrowing company is well structured and credit worthy private placement can present opportunities to raise debt on attractive terms. This form of raising debt can present fixed interest rate and a long tenor. It is furthermore a form of corporate lending and thus leaving the individual assets unencumbered.[77]

3.7 Leasing

Developed in the real estate business, leasing is a business structure where the owner, lessor, of the property hands it over to the lessee in return for rent. The lessee is free to use the property, as it was his own. At the end of the lease contract the property is handed back to the lessor. This form of doing business is widely used for mechanical equipment with a long economic life, including merchant vessels. From the lessor's point of view there are three main risks involved in leasing transactions, the revenue risk, the operating risk and the residual value risk. Revenue risk means uncertainty about the lessees ability to pay the lease hire. The operating risk refers to what happens if the vessel breaks down. Who will pay? The residual value risk is

[75] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 213-215.
[76] Ibid
[77] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. p. 215.

concerning the residual value of the ship at the end of the leasing period and who will benefit if it has gone up?[78]

The two most common types of leasing forms are the operating lease and the finance lease. The operating lease is short-term arrangements were the lessor is taking most of the risk. The lessor is carrying out the maintenance and at the end of the contract the asset is reversed to the lessor. During an operating lease the lessee has the right to terminate the contract. The finance leases are usually longer in time, covering a main part of the assets life span. In financial leases the lessor is less involved in the asset, apart from ownership. The lessee is carrying out maintenance and is also responsible for the general operation of the asset. Further more the lessee is obligated to compensate the lessor in the event of an early termination of the contract in a financial lease.[79]

Leasing in the shipping industry is usually carried out in the financial lease form since it can provide a tax benefit. In order to support investment some governments are providing tax benefits in the form of accelerated depreciation rules. A company with high profits may want to make benefits of these tax rules, but may not have any suitable investment opportunity of their own. They can in this case purchase a merchant vessel, in order to get access to the tax benefits, and lease it to a shipowner who operates it until the end of the lease. The success of this kind of tax driven arrangements is of course dependent on the good will of tax authorities.[80]

It shall however be stressed that leasing is debt from a lessee's point of view although it does not appear on the balance sheet.[81]

Examples of simple lease structures
In the following section two examples of simple lease structures are presented. The first one is a vessel that is new built at the shipowner's specifications but purchased by the lessor. The lessor is providing the finance for the purchase and is in this case a bank, an insurance company or another large corporation. The lessor then leases the vessel to the shipowner, the lessee, under a long-term agreement (i.e. a bare boat charter). This structure leaves the shipping company the opportunity to operate the vessel the way it pleases them. At the same time the ownership of the vessel remains in the hands of the lessor who can use it to obtain tax benefits by depreciating the vessel against profits. These tax benefits are to some degree shared between the lessor and the lessee in the form of lower leasing hire.

[78] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 217-218.
[79] Ibid
[80] Ibid
[81] Ross, S, Westerfield, R, Jaffe, J. Corporate Finance, 6th edition. P. 586. McGraw Hill 2002

The second variant is a structure where most of the cost of the ship is raised in bank debt and where the lessor buys the equity at a price of were the tax benefit from deducting the whole ship is reflected. This form is called leveraged lease.[82]

Benefits and disadvantages of leasing

Financing ships by the use of leasing has several advantages. First it provides finance for time spans that are longer than what would have been possible with a commercial bank loan (possibly for time periods up to 15-25 years). Secondly the capital cost is reduced to the level that the tax benefits are reflected in the leasing hire. Further more the vessel does not appear on the shipping company's balance sheet since they have not purchased the vessel. There is however regulations implying that published accounts shall reveal such liabilities as leasing contracts. There are however also several disadvantages with leasing. The lessor, who has no interest in the actual vessel, is mainly concerned with the lessee's ability to serve his leasing hire obligations. This has the implication that only shipping companies that are financially strong are qualifying for leasing contracts. Furthermore the lessee is tied in a long-term contract, and the decision of selling the vessel must undergo a complex procedure of unwinding the leasing contract. Finally is the problem with the tax benefits. One of the basic reasons for setting up a leasing contract is to be able to obtain tax benefits, but these are never certain and this problem must be covered in the documentation of the contract. Since there are so many uncertainties and eventualities that have to be covered, extraordinary paperwork is needed when leasing contracts are concerned. The result is that leasing works best in situations where there is a well-defined long-term requirement of the ship and where the lessee is a well-established shipping corporate.[83]

[82] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 217-218.

[83] Stopford, M. Maritime Economics. 2nd edition. 1997. Routledge. London England. pp. 217-218.

3.8 Risk

3.8.1 What is risk?

When discussing finance, the concept of risk is a central issue. This is a concept discussed by both academics and practitioners. There is however a common misunderstanding of the interpretation of the word due to different frames of reference. As an example one can reflect over the following statement that "there is a substantial risk that the pound will be devaluated by 10% over the next few months". From practitioners point of view this means that there is a strong likelihood that the pound will be devaluated.

From the academic side, on the other hand, the view is somewhat different. The statement means that there is indeed a strong likelihood of a devaluation of the pound. The risk refers however, in this case, to uncertainty of the magnitude and timing of the devaluation.[84]

It appears that to many practitioners risk is evaluated in terms of potential losses relative to the current values of different variables. In the academic language risk is evaluated relative to expected changes in different variables, such as interest rate. Risk is in this context a measure of the timing and magnitude of unanticipated changes.[85]

In finance risk is defined, from an individual's point of view, as the variance of the rate of return on the individual's portfolio. This variance is in turn a measure of how widely the return may deviate from the expected one.[86]

3.8.2 Up- and downside of risk

The presence of uncertainty does not have to be negative by necessity. Contrarily it often presents opportunities to increase ones wealth, especially for those who are better at forecasting than others and to those who remain flexible as circumstances changes. A firm working in an uncertain environment looking for profit opportunities must therefore also take into account that the outcome will differ from the forecast.[87]

[84] Oxelheim, L, Wihlborg, C. Manageing In The Turbolent World Economy, Corporate performance And Risk Exposure. John Wiley & Sons Ltd. p.18. 1998
[85] Ibid
[86] Oxelheim, L, Wihlborg, C. Manageing In The Turbolent World Economy, Corporate performance And Risk Exposure. John Wiley & Sons Ltd. p.19. 1998
[87] Oxelheim, L, Wihlborg, C. Manageing In The Turbolent World Economy, Corporate performance And Risk Exposure. John Wiley & Sons Ltd. pp. 19-20. 1998

In this discussion an important distinction that often is referred to is the "up" and "downside" of risk.

The "downside" of risk referrers to the possibility of unanticipated outcomes below the expected outcome.

The "upside" of risk referrers to the possibility of unanticipated outcomes above what is expected.

3.8.3 Classifications of risk

There are several ways to classify risk and it's origins. The outcome is however dependent of who is making the classification, and the context that it is made within.
Systematic and unsystematic risk
One very common distinction is however made between *systematic* and *unsystematic* risk. The distinction between the two is made upon the basis of the possibility diversifying away the risk by constructing portfolios with large number of assets.
The *systematic* risk cannot be diversified away by constructing large portfolios. The *unsystematic* can be diversified away.[88]

By constructing portfolios with a large number of assets the unsystematic risk of each individual asset becomes irrelevant. An individual holding an asset denominated in GB pound is not exposed to changes in the value of the pound to the extent these changes are unsystematic and generally compensated for by changes in the value of other currencies.
The changes in the value of the pound that affect the value of the whole portfolio is however considered to be a systematic risk.[89]

3.8.4 Risk attitude

When discussing management's risk attitude, it is important to notice that the issue is linked to other ones such as the choice of target variable and time horizon. Another remark about risk attitude is that it can be grouped into to main categories, *risk neutral* and *risk averse*.[90]

Risk neutral
An individual or corporation having a neutral attitude towards a particular risk factor do not conduct activities to hedge themselves towards unanticipated changes in

[88] Oxelheim, L, Wihlborg, C. Manageing In The Turbolent World Economy, Corporate performance And Risk Exposure. John Wiley & Sons Ltd. p. 19. 1998
[89] Ibid
[90] Oxelheim, L, Wihlborg, C. Manageing In The Turbolent World Economy, Corporate performance And Risk Exposure. John Wiley & Sons Ltd. pp. 179-197. 1998

timing and magnitude of the variable. This risk neutrality can also be divided into two sub attitudes, laissez faire and aggressive attitude.[91]

Laissez faire and an aggressive attitude towards risk
Laissez faire means, obvious to French speaking reader, to do nothing towards the risk. An aggressive attitude on the other hand means that the individual, or corporation, is speculating on changes in the actual variable by having the belief that they can make better forecasts and are thereby able to "beat the market".[92]

Risk averse
An individual or corporation having an averse attitude towards a particular risk factor take different measures, such as buying forward contracts, to hedge themselves towards unanticipated changes in timing and magnitude of the actual variable. The risk averse attitude can also be divided into two subcategories, selective hedging and minimize variance.[93]

Selective hedging and minimize variance
The selective hedging attitude means that the individual or company, is hedging themselves against unanticipated changes in selected variables and at specific time horizons that is particulary important. The minimize variance attitude means that as much as possible is hedged to obtain as small a variance in the variables as possible.[94]

Target variable
It is reasonable to assume that the management of a company may have different risk attitudes towards different sources of risk. To perform a risk management program it is therefore necessary that top management, or board, of the firm defines what variables that are of importance and the risk attitude towards them so that it is in line with the strategy of the company.[95]

Time Horizon
It also important for the management, or board, for the same reasons as mentioned above, to decide of what time horizon that should be applied when regarding the target variables and the risk attitude towards them.[96]

[91] Oxelheim, L, Wihlborg, C. Manageing In The Turbolent World Economy, Corporate performance And Risk Exposure. John Wiley & Sons Ltd. pp. 179-197. 1998
[92] Ibid
[93] Ibid
[94] Ibid
[95] Ibid
[96] Ibid

3.9 Credit risk analysis in bank shipping finance

In this section the views of shipping finance from the banker's perspective is presented. This is done in order provide an understanding of which issues that are important to the bankers as well as their way of reasoning when it comes to shipping finance

3.9.1 Introduction

Bank finance is the most important source of raising capital to the shipping industry. The commercial bank loan is in turn the most important form of shipping finance provided by the banks.[97] Hence it is arguable that understanding of the banks' lending function is of importance when investigating possibilities for shipping finance.

As a start one can ask the question of what is the purpose of the lending function in banks? Grammenos suggests that the objective of the lending function is to create value for the bank by granting sound loans. A sound loan, from the bank's perspective, is a loan that is paid off.[98]Another way to explain this is expressed elegantly by Martin Hugger, a German shipping banker: *"You do not get rich in banking by the deals that you do, but by the deals that you do not do"*[99].

The lending function of a commercial bank is handling credit risk and it has four main tasks to deal with. The first is the origination of the loan, which includes the analysis and approval. The second task is the funding for the loan, were both internal and external funds can be used. Thirdly the lending function has to follow the loan and assure that the interest and principal is being repaid. Fourthly the lending function has to monitor the loan by gathering, processing and analyzing data and information about the borrower.[100]

[97] Grammenos, C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 731-732
[98] Ibid
[99] *Interview with Martin Hugger*
[100] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp.731-732

3.9.2 Credit risk

The concept of risk has been discussed earlier in this thesis. In this section the focus lies on the credit risk from the banker's point of view. A financial institution that lends money to a ship-owner for an acquisition of a merchant vessel faces a number of risks such as interest rate and liquidity risk. The far most important type is however the credit risk, or default risk. The reason for this is the volatility in the shipping markets, which affects the vessel's income and the market value of the vessel. This is important since the cash flow generated by the vessel's revenues is the main source for repayment of interest and principal of the bank loan. Further more this is important since the vessel's market value is the main security of the loan.[101]

Agency theory, moral hazard and adverse selection

At various parts of the lending function there may emerge different kinds of problems to the lending department of the bank, which may affect the repayment of principal and interest. One source of these problems can be explained by the agency theory. In a situation where a commercial bank loan is used to finance a vessel the bank is acting as principal and the shipowner as agent. There is the possibility of problems since there may be information asymmetry between the two parties, since the borrower usually is better informed than the bank, during both the initiating and monitoring phase of the loan. The information asymmetry may regard matters such as the condition of the vessel, financial accounts and incoming freights. Furthermore is the friction area of moral hazard, were the borrower deliberately may mislead the banker about financial statements regarding net worth and liquidity, unknown clauses in time charters and transfer of income from the mortgaged vessel to other companies in the group. Thirdly the banks have the problem of adverse selection, which is the approval of unsound loans. These approvals may arise from a number of reasons such as inadequate knowledge about the shipping industry from the banker, poor judgment and hurried loan decisions.[102]

In order to handle these problems and increase the value of the firm, the financial institutions incur agency costs. The agency costs arise from the collection, processing and analysis of data in order to grant new, and monitor old loans. This is in order with the role of financial institutions as intermediates in the allocation of capital. Savers usually have a limited ability to collect and analyze the information needed to make correct credit worthiness judgments of the end user of their capital, the borrower. Hence the financial institutions undertake this task on the behalf of the savers, they have as a consequence a clear incentive to collect and process this information. In

[101] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp.732-734

[102] Ibid

performing this work the financial institutions are also protecting and increasing the wealth of their shareholders. The crucial question is then how can the shipping bankers minimize the credit risk? The bankers have a set of tools that can help them to minimize this risk such as, credit risk analysis, collateral securities, covenants in the loan agreement and the mortgage, monitoring of granted loans and the credit policy for shipping loans.[103] Some of these tools are discussed in the forthcoming sections.

3.9.3 Credit risk analysis

A method to help bankers analyze potential deals of financing new or second hand vessels is presented by Grammenos, and is being used by a number of financial institutions. The method is structured around five C's which represent the basic groups of information to be analyzed, *Character*, *Capacity, Capital, Conditions and Collateral*. It is important to notice that the return from interest rate and fees is fixed. This means that, from the banks point of view, the upside return on the loan is also fixed, whereas the downside is substantial due to the possibility of not receiving interest and principal as agreed upon. One important implication of this is that the credit risk analysis has to evaluate the probability of the repayments in full.[104]

Character

The first C, referring to Character is focusing on the shipping company and its management team. Fields of interest are their accumulated experience over the years, ingenuity during the lower parts of the shipping cycle and their integrity. The executive and the managerial teams are to be evaluated as a group with emphasis on their performance in relation to plan of strategies. The period of investigation shall be long enough (10 years) to cover at least one shipping cycle. Special emphasis is to be put on the fields of finance and investment, chartering, insurance, technical issues, the management of costs, risk management and the relation to creditors. This information is to be put in relation to the ability of the managerial teams' ability to create an overall return of equity by decreasing costs, increasing revenues and profits and creating efficiencies. Benchmarking the company's activities and results to leaders in the segment may as well be useful.[105]

[103] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp.732-734

[104] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . p. 734

[105] Ibid

Capital
Shipping is a capital intense industry, and therefore requires substantial funding, used to acquire new and second hand vessels. The gearing ratio in the company is of importance. A large own investment in the company from the shipowner signalizes confidence in a project, whereas the capital structure shows how the company has been financed. A high degree of leverage can be somewhat ambiguous. In a fortunate shipping market it can boost the return on equity. In bad times a high gearing ratio can on the other hand jeopardize the existence of the whole company. Cash flow generated from the vessel is of importance since it is the main source of repayment of the loan, whereas the existence of accumulated cash from profits or deposited funds is important for the ability of debt service in times of a temporary weak freight market. The real economic net worth is important since as long as this figure is positive the loan is relatively secure.[106]

Company
The ownership structure of vessels can be categorized into two main types. The first one is the one purpose company owning only one single vessel. These companies are often registered in open registers such as Panama or Liberia. The vessel is being managed by the shipowner or by a management company. In the second main structure the vessel is being owned by a holding company. This is of importance since in the case of the one vessel company the bank deals with an entity that has no other resources apart from the vessel. The loan is then only being repaid by the income and secured by the mortgage on the vessel or some other security. In the case where the vessel is being owned by a holding company the bank deals with a company that owns a fleet of vessels and the repayment of the loan is generated by cash flow from the whole fleet of the company. Within the term company the field of strategy is included. It emphasizes the chartering strategy of the company and the stability of its revenues. A company that has a time charter or a contract of affreightment has a much more stable stream of revenues than one who operates its vessels on the highly volatile spot market. When investigating the company it is also suggested to look into how efficiently the company is being run. This is important since the competitiveness of a company is not only dependent on high revenues, but also its ability to operate the vessel with low costs. Finally, when analyzing the company it is suggested that the market where the company operates shall be investigated, with emphasis put on its market share and its operating position against the competitors.[107]

[106] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . p. 736.
[107] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp.736-737

Conditions

In the concept of conditions the competitive and changing economic, financial and political environment is to be analyzed. The development of the world economy, the changes in interest rates, and financial markets are important. Furthermore changes in international and seaborne trade are important as well as the development in commodity markets. All these markets are important since the demand for shipping services is derived from them. The shipping companies operate in an environment that is heavily dependent on the cycles in the shipping market. The shipping market and its cycles are discussed in detail in section 3.1. It is therefore of great importance for the banking officer to figure out in what stage of the cycle the market is at the time of the lending. A vessel bought at the bottom of the cycle can be a very good investment since the vessel at later stages in the cycle is competing with vessels bought at higher prices and therefore higher costs. Furthermore a sale of a vessel at the peak of the cycle, which is bought at the bottom of the market, can be very profitable. On the other hand, it is very possible that loans given to finance vessel acquisitions at the top of the cycle can be a great source of trouble to the lending bank. Finally it is important to stress that, from the banker's point of view, the stable cash flows generated from a vessel purchase at the bottom of the cycle shall be used to repay the loan rather than financing asset playing.[108]

Collateral

The final group of issues to be analyzed of the five C's are collaterals, where the focus lies on the lending companies fleet and its composition. Through the specialization of a company's' fleet expertise, and the following improvement of the company's marketing and operations, efficiency can be gained. This does however also imply a greater vulnerability to recessions in the actual market. A diversified shipping company can on the other hand be better suited to handle these swifts in the income stream but is generally requiring a larger fleet. When analyzing collaterals the condition of the fleet and the maintenance and repair policies are of interest since the vessels are the assets that produce the income needed to serve the banks outstanding loan (which is often assigned to the bank). Furthermore it is important for the bank that the vessels are in good condition since the mortgaged vessel is usually the main security for the loan. If the shipowner fails to honor his obligations and defaults on the loan the bank may decide to sell the vessel in the open market. In this situation the condition of the vessel may naturally influence its second hand value and therefore

[108] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 737-738.

also the banks opportunity to get their loan repaid in full. There are additional collaterals to the mortgage and these are discussed in section 3.9.4.[109]

Cash flow analysis
After having analyzed the case from different perspectives, using methods as the five C's or others, the banking officer has to make cash flow calculations in order to make sure that the total revenue is sufficient to cover the total cost of the vessel to be financed, including a cash cushion sufficient to cover unexpected negative financial developments. These projections are recommended to be made for both the individual vessel as well as for the company's whole fleet. To assess the stability of a possible fixed revenue used in these calculations, an analysis of the quality and terms of time charters and contracts of affreightments that might be available. The creditworthiness of the shippers involved in these contracts must also be analyzed.[110]

3.9.4 Collateral securities

A bank that has a shipping loan outstanding has three principal ways to recoup their funds. The first and intended way is when the loan is being repaid through the cash flow generated by the financed vessel. Secondly, if the first way fails, the bank can recoup the funding by imposing a mortgage on the financed vessel (the direct security). The third possible way for the bank to recoup its funds is through additional securities (indirect securities). It is important to notice that a bank granting a loan does so in the conviction that the loan will be repaid without problems by the vessel's revenues, and therefore is not expecting to enforce its rights on the securities of the loan. The bank decides on an individual basis for each loan of what collateral securities that are appropriate. Different types of collateral securities are discussed in the following parts of this section.[111]

Mortgage
The normal method of the bank security for the outstanding loan is a mortgage on the financed vessel, registered in the country of the vessel's flag of operation. The mortgage is carrying conditional ownership on the vessel and becomes void when the loan is fully repaid. An often encountered problem when dealing with mortgages is the establishment of the vessel's market value. The market value of the vessel is of

[109] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . p. 738
[110] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 738-739
[111] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . p. 739.

importance since it represents the value of the bank's security. A reasonable estimation of the market value can be the average price at which a seller could be expected to make an acceptable offer to a purchaser on the open market. It is important to stress that the vessel's market value is separated from the insurance value, which is fixed. In order to protect themselves against unpleasant fluctuations in the vessel's market value banks usually put great importance on the vessel's hull-to-debt ratio, given in Formula 3.5. The ratio indicates how much the market value of the vessel may decrease and still be sufficient to cover the outstanding debt. It is common that if the ratio falls below a predetermined level, usually between 130-150%, the bank may request additional securities.

Formula 3.5 $$HDR = \frac{MV}{D}$$

were: *HDR = hull-to-debt ratio*
MV = current market value of the vessel
D = the amount of outstanding debt

Vessels can also be subject to second and third mortgages and so forth. The second mortgage is by definition a mortgage that is taken on a vessel where a first mortgage already exists. The second and third mortgages lie lower in pecking order than the first mortgage in the creditor ranking. Second mortgages serve as additional securities, and to be able to apply one the consent of the first mortgagee is needed.[112]

Assignment of revenue
During a general assignment of revenue the present and future revenues from the vessel are paid directly to the shipowner unless an event of default on the loan occurs. The general assignment of revenue indicates trust and confidence from lenders on the shipowner's ability of serving his debt. An intermediate form is the Retention Account were the revenues from the vessel is paid to an account held by the mortgagee, who accumulates the revenues in to a degree sufficient enough to met the next month's payment of interest and principal. The strictest form is the Specific or Legal Assignment of Revenue under which all the specific rights of the borrower that arises from a charterparty are assigned to the bank. As a consequence all revenues from the vessel are paid directly to the bank, which then allows the shipowner to withdraw sufficient cash to maintain the operations of the vessel so that it can

[112] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 739-740.

continue to serve its debt. This form of revenue assignment requires the consent of the charterer.[113]

Assignment of insurance

There are different types of insurance coverage in the shipping industry. These can be grouped into three main types, the hull and machinery, the loss of hire and earnings and the protection and indemnity (P&I) insurance. The first category is protecting the interest of the owner in the case of damage from accidents or loss of the vessel, while the second is handling losses in earnings and damages due to events such as strikes, riots and other political circumstances. The third type of insurance is covering party risks, such as liability due to collisions, loss of life and cargo liabilities. When a shipping loan has an assignment of insurance clause included in the loan agreement this is done in order to protect the vessel against damages, lost or claims from third parties. Insurance protection in shipping finance primarily involves the assignment of all insurance payments due to the borrower, either to be paid to the borrower after the bank has given consent or handed over directly to the bank.[114]

Mortgagee's interest insurance

An additional insurance aiming to protect the loan-giving bank may be included as collateral security. The insurance protects the bank in the case of a policy becoming void if certain warranties are broken. An example of such is the coverage of interest to the mortgagee in the case of disputed claim by the underwriters on the grounds of fraud. During a situation like this, the mortgagee's interest claim will normally be withheld, awaiting the conclusion of litigation. This may however take considerable time and the outstanding loan and the accumulating interest is set at default rate, implying that the final payment may not cover the full amount in due.[115]

Guarantees and comfort letters

Guarantees given to the bank can be either personal or corporate ones. The guarantee makes the guarantor answerable for the loan and interest granted by the bank to the shipping company in events when the loan becomes default. Under a personal guarantee agreement the guarantor is on demand liable for the discharge of all liabilities to the bank, up to the stated amount or proportion, in the event of default on the loan from the borrower. The guarantee is based upon the personal assets of the guarantor. Legal action, when necessary, against the borrower and guarantor, who

[113] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 740-741.
[114] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . p. 741.
[115] Ibid.

often is a major shareholder in the shipping company, is often difficult and questionable. It is furthermore not uncommon that the guarantor's personal assets available for legal action are limited due to registration of assets in the names of family members or in offshore companies. Due to these circumstances the banks usually look upon personal guarantees as an indication of good faith and moral of commitment of the owner, rather than a real security. Corporate guarantees are normally given by the corporate group of the holding company in conventional structures, or by the related management companies in the single vessel ones. In the case of single vessel structures the guarantees become important when the only securities are the mortgage and the assignment of income. In an event of default the bank has recourse to the guarantor. An intermediate, less strict form, of guarantees is comfort letters that normally only contain assurances and intent.[116]

Cash collateral security
Securities in the form of cash collaterals normally take the form of a special account that is blocked by the bank, which may be initiated by a lump sum or on a monthly payments basis. These accounts have the purpose of lowering the bank's loan exposure and putting cash under the bank's control. This cash can be used for repayment of interest and principal on the loan in times of falling shipping markets when the shipowner may have temporary problems with serving his debt. These accounts are usually interest bearing and subject to negotiations.[117]

Share security
Share securities are normally taken in addition to the vessels mortgage, and are made of a transaction of where an owner are depositing shares, in the borrowing shipping company, in the bank for a specific period until the final amortization of the loan has been made. This enables the bank to take over the ownership of the shipping company, not only the vessel, in the case of default on the loan.[118]

3.9.5 Covenants

Covenants are contractual obligations of the borrower to the lender, which serve to reduce the risk exposure. The covenants impose contractual limitations of the actions of the borrower and can be divided into two groups, affirmative and negative. The

[116] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . p. 742.
[117] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . p. 742.
[118] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 742-743.

affirmative covenants refer to actions that the borrower shall undertake, while the negative ones refer to actions not to be undertaken. Usually loan agreements have four areas that are covered by covenants, liquidity, profitability, financial leverage and dividend policy. The prime objective of the covenants is to protect the value of the assets of the borrower, assuring that the market values of these are greater than the liabilities. In cases where the net worth is positive the shipping company has a value for the borrower and can serve as security for the lender. In situations were the market value of the assets decreases and the net value becomes negative, problems arise. This is the reason why banks often put big emphasis on the hull-to-debt ratio, discussed earlier in this section, and why regular valuation of the vessel by international shipbrokers usually takes place. Covenants regarding liquidity may focus on the maintenance of a minimum amount in the current account balances. An example of profitability covenants is when the income of the vessel is to be directed to a specific bank account. Dividend policy covenants impose a restriction on dividends. These usually stipulate that the shipping company is not allowed to give out dividends without the prior written consent of the bank. These covenants allow the bank to oversee the liquidity and to control the cash flow of the shipping company and also control its further investment actions. All of these covenants are to be seen as protective measures in the lenders interest. It shall however be pointed that there shall be a balance between the covenants and flexibility. Very strict covenants may prevent a company's growth opportunities, whereas a very relaxed attitude may lead to moral hazard.[119]

[119] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 743-744.

3.10 Pricing of shipping loans

3.10.1 Basic concept

The basic model used when a bank is setting the price of a shipping loan contains four parts; the *marginal funding cost,* the *administrative-* and *overhead cost*, the *default risk premium* and an acceptable *return on investment*.[120]

Marginal funding cost
The marginal funding cost is normally the London Inter Bank Offered Rating, or LIBOR, which is the interest rate the bank pays for the funding needed for the loan.[121]

Administrative and overhead cost
In the administrative and overhead cost part are the bank's costs for the initiating, analysis and monitoring of the loan included.[122]

Default risk premium
The process of assessing credit risk, or default risk, discussed in section 0, is closely linked to the pricing of the shipping loan. Generally spoken it can be said that the riskier the business, the more expensive the loan.[123] For a detailed and more specific discussion of relationship between risk and expected return see section 3.4.1 were the *Capital Asset Pricing Model* is discussed.

Return on investment
The last part of the pricing of the shipping loan contains a profit margin on the loan, which creates an acceptable rate of return of invested capital to the shareholders of the bank.[124]

In the pricing of the loan the first part, the LIBOR, is used as a basis to which a spread (margin) is added. The other three components added up together set this spread. In addition to the spread the banks also charge fees for the provision of the loan such as facility- and commitment-fee. The facility fee is usually a flat fee taken out by the bank for the administration of the proposal and the granting of the loan.

[120] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 746-749.
[121] Ibid
[122] Ibid.
[123] Ibid
[124] Ibid

The commitment fee is taken out as a percentage fee for the undrawn loan, or a part of it, that has been approved but not yet taken.[125]

3.10.2 Competition, relationships and sources of income in Banking

To understand how the banks are reasoning when they are setting spreads and fees one has to remember that the banks are acting in a competitive environment. There is a competition between the banks to have creditworthy and desirable clients. The tougher this competition gets the greater incentive there is for the bank to accept a smaller profit in order to get the desired clients. In the light of this competition it is important to notice that the funding, administrative costs and the default risk all are determined by the bank's internal decisions, whereas the profit margin also is influenced by the external competition from other banks. There is however another side of the coin as well. High interest rates charges may encourage those that normally are not high-risk borrowers to invest in projects with a high risk. Furthermore a high interest rate may induce low risk investors to temporarily cease their investments, and hence resulting in a decreasing quality of the bank's shipping loan portfolio and a possible situation where an adverse selection of loans is created.[126]

For many banks shipping finance is primarily a question of relationship banking, which means that the provision from an existing borrower comes from multiple sources, not only the shipping loan itself. It is common that the bank can sell an array of banking products to the shipping client, such as cash management, derivates, foreign exchange dealings, letters of credit, letters of guarantee and advisory services. Selling these additional services to the bank increases their income from the particular client and strengthens their relationship and mutual loyalty. It is therefore not surprising that financial institutions measure their overall profitability of the borrower, and hence the relationship given in Formula 3.6 can be established.[127]

Formula 3.6 $$R = \frac{LI - CL}{AL - AD}$$

[125] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 746-749.
[126] Ibid
[127] Ibid

where: R =Net Before-Tax rate return to the bank from the borrower's relationship during the year in question

LI=Loan and other services income provided to the borrower

CL=Costs of loan and other services provided to the borrower

AL=Average amount of loans to the borrower

AD=Average deposit balances

The income side in the numerator in the formula includes all sources of income from the client in a particular year, such as the expected interest rate, loan fees, commission from foreign exchange transactions, cash management and letters of credit. From the income side in the numerator all the costs of the loan that incurred during the particular period shall be subtracted. In this figure there are expenses such as salaries, utilities, rent, expenses for the initiation, analysis and monitoring of the loan, interest on the borrowers deposits and cost of funds to lend to the particular borrower. In the denominator is the average amount of loan to client of the particular year included, less the particular borrower's average amount of deposits (after that the reserves required by monetary authorities have been subtracted from the deposits). Note that in the eurodollar market deposit reserves are not required. If the result of the equation is positive the loan may be preceded from the profitability viewpoint, since the required income exceeds the expenses. If the result on the other hand is negative, the income and expenses items should be recognized.[128]

In two studies, made by Grammenos in 1995 and 2002, the profitability of the shipping departments in international banks is discussed. The first study shows that the banks have four main sources of income, the interest and fees from loans, commission from foreign exchange dealings and remittances, collection of cheques and deposits, and finally the letters of credit and guarantee. The study ranged in time from 1998 to 1995 and it indicates that there is increasing trend towards non-interest activities, the volume of which, and therefore the profits, increase. Figures from the study are presented in Table 3.1. [129]

[128] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 746-749.
[129] Ibid

Table 3.1

	1988	1989	1990	1991	1992	1993	1994	1995
Interest and Fees from loans	60%	58%	57%	55%	54%	52%	52%	51%
Foregin exchange	19%	21%	23%	23%	23%	25%	25%	26%
Commision	21%	21%	22%	22%	23%	23%	24%	23%

In the study from 1995 the same issue was addressed and two fundamental changes were identified. The first was the very intense focus on the overall return to the shipping departments trough relationship banking. The second change is the appearance of new income sources, such as derivates and advisory services, and the intensification of banking efforts for cash management of the shipping companies. The study showed furthermore that the main income source still were the loans (interest and fees), ranging from 45-60% of the total return from loans and services, whereas the borrower related fee services accounted for 42-60%.[130]

3.10.3 Credit policy

The shipping credit policy is a package of general and specific guidelines that targets important factors when providing shipping loans, allocating responsibilities and creating control mechanisms. Furthermore the credit policy creates an internal framework for the banks within where the loans are initiated, analyzed, approved, granted and monitored. The policy is also creating a tool for comparing the actual and projected performance of the shipping loans. The main areas covered in credit policies are usually the size of the loan portfolio, fund apportionment and desirable clientele, the facilities offered (terms and conditions), legal aspects, loan documentation, type of bank participation, loan granting (lending authority and responsibility), the administrative structure and the credit committee. The degree of exposure the bank has to the shipping industry is mainly a question of specialization or diversification. The degree to which the bank is involved in shipping, percent wise to other industries, is dependent on many factors such as the bank's geographical position, its shipping expertise, the strength of its shipping department and credit committee, the bank's loan loss experience, the shipping loan perceived risk, the profitability of shipping loans compared to other sectors and the shipping sector's overall securities cover in comparison with that of other banks.[131]

[130] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 746-749.

[131] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 753-756.

The diversification in the shipping sector may be done by allocating funds between different geographical areas, shipping markets and shipping companies. Doing business in different shipping centers such as London, Piraeus, Oslo, Hamburg, and Hong Kong can create the geographical diversification. The diversification within different segments in the shipping business is made by doing business with operators of different types of vessels, such as tankers, bulkers, car carriers etc. The diversification between shipping companies can be made in respect of ownership structure, aggressive or conservative loan strategy of the company and the type of employment of the company (spot, T/C, Bare Boat). These factors, individually or combined, may affect the bank's overall risk profile as well as its exposure to such risk. This is particularly important in periods of falling shipping markets when the debt serving income of the shipowners decreases and the loans may become problematic.[132]

The shipping credit policy does furthermore deal with a number of issues. Among these are what kind of shipping loan that the bank is to grant, the maximum percentage of the market value of the vessel to be financed, in conjunction with the securities offered or the maximum amount to be lent to a low risk shipping company, on the basis of a stable and sufficient cash flow. Issues such as spread, maturity, amortization schedules, interest and currencies are also dealt with in the credit policy document. Furthermore the different types of securities, their usefulness and limitations, in conjunction with a proper documentation are also covered. Finally it is suggested that the credit policy includes the role of the credit committee and its composition. This since the credit committee is a function that discusses, modifies, approves or turns down, credit proposals of the shipping department.[133]

[132] Grammenos. C. Credit risk, analysis and policy in bank shipping finance. In Grammenos, C. THE HANDBOOK OF MARITIME ECONOMICS AND BUSINESS. LLOYDS PRESS 2001. . pp. 753-756.
[133] Ibid.

4 Empirical findings

4.1 The Case vessel

This thesis is structured around a case vessel. The models for this case vessel are the two newbuildings ordered by Wonsild & Son. The two ordered vessels are intended to be technically identical. The first is to be delivered in the fourth quarter of 2004 and the second three months thereafter. In this section the vessels themselves and important surrounding aspects are described.

4.1.1 The actual vessel

The vessels ordered are Chemical / Oil tankers, IMO 2 classed. The length over all is 99.95 meters and the beam is 17.20 meters. The vessels are of 6 300 dwt at a scantling draft of 6.90 meters. The cargo tanks are constructed of stainless steel. Furthermore the vessels have 9 separated cargo tanks of a total size of 6 650 m^3. Each tank is fitted with a submerged electrical pump with a capacity of 300 m^3 /h. The main engine has an output of 3 840 kw, which allows the vessel to have a service speed of 14 knots. The vessels have ice class 1A and are to be built under Danish rules and regulations.[134]

4.1.2 Project cost

The project cost is estimated to be of EUR 17 200 000 per vessel including the pre delivery cost. [135] According to a sales and purchase broker familiar with the project a very favorable price for the vessels from the purchasers point of view. Or put in the words of the broker, *"they got the vessels at a rock bottom price"*.[136]

4.1.3 Market value

The market value of the vessels are estimated to be in the range of EUR 17 500 000 to 18 500 000 of an independent sales and purchase broker.[137]

4.1.4 Ship yard

The vessels ordered are to be built by INP Heavy Industries Co. Ltd. Ulsan, Korea. The yard is well established in Korea and has built several vessels for western

[134] *Source: Internal presentation, Wonsild & Son.*
[135] Ibid
[136] *Source: Interview with Gilbert Walter.*
[137] *Source: Internal presentation, Wonsild & Son.*

European customers. The yard has however not built any vessels for western European customers of this particular type.[138]

4.1.5 Flag and crew

The vessels are to be registered under the Danish International Ship register (D.I.S), meaning that they will fly the Danish flag. The senior officers of the vessels will be Danish. The vessels are estimated to have a total crew of 12 per vessel.[139]

4.1.6 Owning structure

The vessels are to be registered under a Danish owning company (single vessel company incorporated in Denmark). Wonsild & Son will be a major shareholder of the equity stake in the owning company, together with other investors that will be invited on a selective basis. The vessels managing owners will be Wonsild & Son who also will undertake the commercial management of the vessels. A subcontracted professional ship management firm will undertake the vessels technical management.[140]

4.2 Business case

4.2.1 Wonsild & Son

Wonsild & Son is one of the leading players in the North-European intra-regional chemical trade. The traditional focus of the company has been in operating vessels in the size range of between 2 000 - 4 000 dwt. The employment of Wonsilds vessels is to a large degree based on Contract of Affreightment with major petrochemical companies. This way of vessel employment can be classified as a form of industrial shipping. Wonsild was at the time of the printing of the source operating a fleet of 15 chemical tankers in the size range between 2 000 – 6 000 dwt and with an age profile between 10 to 24 years. The newer vessels have a flexible design with a high pumping capacity and split tank design, enabling the vessels to carry large quantities of a single product or smaller batches of different cargoes.[141]

4.2.2 The supply in the market

The supply side of the global market of chemical tankers in the range of 2 000 – 9 000 dwt consists of several hundred vessels. The majority of these vessels are however restricted to be traded in areas were the customers and regulations are less demanding than in Europe. This is mainly due to factors such as age, design and

[138] *Source: Internal presentation, Wonsild & Son.*
[139] Ibid
[140] Ibid
[141] Ibid

certification o the vessels. There are about 80 vessels that are employed in northern European intra-regional trade. Of these vessels 30 are already 20 years of age or older and the ordered newbuildings of the vessel type are few.[142]

4.2.3 The demand side in the market

The global demand for chemicals is expected to grow steadily over the forthcoming years, with a positive effect on the sea-borne trade as an effect. In the past the global chemical sea-borne trade has been growing 50 % faster than the global industrial production and GDP. The northern European trade has historically been experiencing stable volumes and it is expected to grow, although with a slower pace in growth than the global chemical trade. The trade is also experiencing a growth in the trade in Clean Petroleum products (CCP) and Lubricating Oils (Luboil) from the oil majors. These companies are requiring increasingly modern quality tonnage for these trades and hence is the demand for modern chemical tankers with stainless steel tanks expected to grow in the forthcoming years. Taken into account that there are few orders for new built chemical tankers, combined with the expected recovery in the global economy the market conditions are expected to be improving in the following years. Added to this is the development in the former eastern block economies and the expansion of the EU during 2004, which is expected to further support the demand for quality chemical tanker tonnage. [143]

4.2.4 Wonsilds market position

Wonsild is operating in the premium segment of the market where the customers are focusing not only on freight rates, but also on safety, reliability, knowledge of cargo handling, precision and a high degree of flexibility. Among the customers are several oil majors which all have Contracts of Affreightments which all have been renewed several times over a number of years. About 85 % of the cargo handled by Wonsild during a year is under a Contract of Affreightment. Additional cargo is booked on the spot market in order to optimize the vessel utilization. In terms of deadweight Wonsild is holding a 15% market share in the north Eurpoean tanker trade in the range between 2 000 – 9 000 dwt. The trade is considered to be a niche market with high entry barriers, and there are currently eight players in the segment. The market has over the past years seen a process of consolidation, which is likely to be continued during the forthcoming years. Wonsilds market share has been relatively stable over the last five years. There has been a tendency of customers wanting to affect the shipments of certain base chemicals in larger parcels than in the past. This implies that Wonsild may need a more diversified fleet in terms of vessel size in order to be able to provide optimal service for key customers.[144]

[142] *Source: Internal presentation, Wonsild & Son.*
[143] Ibid
[144] Ibid

4.3 Current financing

The financing of the ordered vessels is arranged trough selected investors and firm C

4.3.1 Equity

The equity stake is about 21% of the project cost and is paid by different investors.

4.3.2 Debt

The debt finance is making up 79% of the project cost and is provided by firm C.

4.3.3 Currency

The currency of the loan is EUR since earnings and 90% of the vessels expenses are based on EUR or linked currencies.

4.3.4 Profile

The profile of the loan is 15 years.

4.3.5 Tenor

The tenor of the loan is 10 years, implying a balloon payment, payable in quarterly installments.

4.3.6 Security/guarantees

The security for the loan is a 1st priority mortgage in the vessel. This is supplemented by personal guarantees from the shareholders. The shareholders are responsible for a proportion of the loan equal to their equity proportion.[145]

4.3.7 Interest

The interest of the loan is floating and is based on the EUR LIBOR and with a spread of 1.45%.[146]

4.4 Risks sources in the business case

4.4.1 Interest

The interest rate on which the financing is obtained is based on the six month EURIBOR. The calculations in the business case are made with a EURIBOR of 4%. The rate at the date of printing of the source was however 2.49%, a significantly lower interest rate. The possibility of an increasing interest rate is of course a risk

[145] *Source: Internal presentation, Wonsild & Son.*
[146] Ibid

factor that can have a dramatic impact on the results of the vessel. It should however be noted that Wonsild as a borrower has the right to lock in the interest rate for a short or long period at any time during the loan period.[147]

4.4.2 Currency

The currency risk is estimated to be rather limited due to the fact that the earnings and the majority of the operational costs are based on the EUR. There is hence practically no currency –fluctuation risk linked to the forecasted net earnings. Furthermore the loans used for financing the vessels are taken in EUR.[148]

4.4.3 Earnings

Historically the trade where the vessel is intended to be operating in has not been notably affected by fluctuations in the worldwide chemical market. There is however the possibility, tough estimated to be unlikely, of minor periodical negative fluctuations on the net earnings. The case is based on, in the view of Wonsild's management, a conservative level on earnings and this is assumed to leave little room for negative influx from the market in general.[149]

4.4.4 Residual value / depreciation

The vessel is estimated to have a commercial life of up to 30 years. A conservatively yearly reduction of the Fair Market Value with 4% is considered appropriate. A reasonable Fair Market Value of the vessel after 10 years when the loan is due to be repaid is hence EUR 10 300 000. This shall be compared with the estimated balloon at the time of EUR 4 500 000.[150]

4.5 Empirical findings from interviews with banks, generally focused

4.5.1 Summary of closed questions

The interviewed banks were asked to, in relation to a shipping loan application, score a factor of relative importance. The banks were asked to give the factor a score between one and five were one means that the factor is of less importance, and five means that the factor is highly important. A summary of the answers given in relation to these quantitative questions is presented in Table 4.1. In the table the mean score of the variable and the standard deviation of the variable is also presented.

[147] *Source: Internal presentation, Wonsild & Son.*
[148] Ibid
[149] Ibid
[150] Ibid

Table 4.1 .[151]

Firm	A	B	C	D	E	F	G	H	I	J	MEAN	STD	
Question													
1	n/a	5	5	4	5	5	5	5	5	n/a	4,88	0,35	The potential Cash Flow generated by the vessel
2	n/a	5	5	3	3,5	5	4	3	3	n/a	3,94	0,94	The actual vessel
3	n/a	5	5	5	4	5	5	4	4	n/a	4,63	0,52	The borrower
4	n/a	4	2	4	5	5	4	3	5	n/a	4,00	1,07	Financial indicators
5	n/a	3	4	4	3,5	3	4	3	3	n/a	3,44	0,50	Maturity on existing debt
6	n/a	5	5	5	5	3	4	4	3	n/a	4,25	0,89	Availability of working capital
7	n/a	1	0	4	4,5	1	3	4	1	n/a	2,31	1,75	Credit agency evaluation
8	n/a	2	5	5	4	5	5	5	2	n/a	4,13	1,36	Previous experience with the borrower on a personal level
9	n/a	4	5	5	5	5	5	4	4	n/a	4,63	0,52	Previous experience with the borrower as a company
10	n/a	3	5	4	4	3	3	4	4	n/a	3,75	0,71	Age of the fleet
11	n/a	5	5	4	4	4	5	4	3	n/a	4,25	0,71	Maintenance and accident record
12	n/a	5	3	3	4	1	5	5	1	n/a	3,38	1,69	Insurance rating
13	n/a	5	2	5	4	3	3	3	4	n/a	3,63	1,06	Borrowers business structure
14	n/a	2	0	3	4,5	3	3	4	3	n/a	2,81	1,36	Mix of leasing ownership
15	n/a	3	0	4	4	2	3	4	3	n/a	2,88	1,36	Diversification base of the borrower
16	n/a	5	5	5	4,5	5	5	5	4	n/a	4,81	0,37	Management skills
17	n/a	5	3	4	4	5	4	3	5	n/a	4,13	0,83	Length of time in business
18	n/a	3	3	3	5	3	4	4	4	n/a	3,63	0,74	Potential for further business with applicant
19	n/a	5	5	5	4,5	5	5	4	5	n/a	4,81	0,37	Net cash flow
20	n/a	4	5	5	4,5	2	5	3	1	n/a	3,69	1,53	Currency of revenue generation
21	n/a	3	0	5	4	2	0	3	1	n/a	2,25	1,83	Stability of that currency
22	n/a	1	3	4	3	2	4	3	3	n/a	2,88	0,99	Return on investment
23	n/a	4	5	4	4	5	5	3	3	n/a	4,13	0,83	Salvage or resale value of

[151] *Source: AppendixB-L.*

													ship
24	n/a	5	3	5	3,5	4	3	4	4	n/a	3,94	0,78	Charter as security
25	n/a	3	3	3	3,5	4	3	4	4	n/a	3,44	0,50	Contract of affreightment as security
26	n/a	5	5	5	4,5	5	5	5	3	n/a	4,69	0,70	Flag of operation
27	n/a	4	3	4	3	3	5	3	2	n/a	3,38	0,92	Report of marine surveyor
28	n/a	2	3	5	3	5	3	3	3	n/a	3,38	1,06	Vessel technology
29	n/a	5	n/a	4	3	5	5	5	5	n/a	4,57	0,79	Hull value
30	n/a	2	3	3	2,5	2	4	3	1	n/a	2,56	0,90	Fuel consumption levels
31	n/a	2	3	4	0	2	4	3	2	n/a	2,50	1,31	Manning requirements
32	n/a	4	5	5	0	5	3	4	4	n/a	3,75	1,67	Employment strategy
33	n/a	5	5	4	4,5	5	5	5	5	n/a	4,81	0,37	Market evaluation

34		5[152]						5[153]	3[154]				Other factors

4.5.2 Corporate policies on ship finance

The interview respondents were asked the question: *"What are the general corporate policies on ship finance in your firm?"* The answers given from each firm is presented in the following parts of this section.

Firm A
The respondent does not want to be specific about the bank's corporate policies regarding vessel finance. The respondent's personal view is however that when evaluating a possible case the cash flow projections are the most important parameter, while the actual asset is less important. Timing is also a central issue for the respondent when evaluating shipping loans. The shipping business is basically about assessing the future and to find out what things that can produce a negative impact on the cash flow. Finally the respondent has the view that *"shipping banking is more of an art than a science",* implying that experience is of outmost importance. [155]

Firm B
The bank has a three-legged approach towards shipping finance. The three parts focus on the actual asset to be financed, the cash flow generated by the asset and the corporate background of the lenders. The bank is eager to get a balance between the three parts in the sense that in the case that one of them is strong, the other parts can

[152] Previous track record and reputation of owner. (Gut feeling)
[153] Shipowners risk attitude to business risk.
[154] Geographical area and market position.
[155] *Source: See Appendix B.*

be less strong, and the case might still be attractive. The respondent is primarily focusing on lending with a corporate approach rather than asset based. This is particularly the case for international deals; whereas there might be domestically finance deals where an asset based ground view is in favour over the corporate one. This is due to special circumstances in the domestic shipping market of the bank. The ground view of shipping finance is however corporate.[156]

Firm C
The bank is a specialised financial institution that is only providing ship finance when they have a first priority mortgage on the financed vessel. The bank's business is mainly, with a few exemptions, providing financing for commercially used vessels. The vessels that are financed shall be of 100 BT of size or larger. The bank is not interested in taking part of financing deals of cruise vessels and specialised tonnage such as oil production vessels. The bank has the policy to serve all companies within the home market, which is northern Europe. Financing outside of the home market will only be provided to selected companies (top 10 names).[157]

Firm D
Since the bank is a part of an international financial group, the office is, among others, responsible for providing financial services to clients in the country where the office is situated. Among these services shipping finance is included. When providing shipping loans the client is important. The bank has the policy that, if the client wants to have a vessel loan provided by them, the client should be able to provide an own equity stake in the project. Furthermore the employment of the vessel is of importance when issuing shipping loans. The bank usually provides financing with a gearing of up to 70-75 % of the purchase price of the vessel, and with a length of 8-10 years, but with a profile of 20 years, which creates a balloon payment at the end of the loan. Finally the bank is using the contractual price of the vessel as a guiding point when assessing the vessels value of that particular point in time.[158]

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[159]

Firm F
The bank has the ground view that providing financing for ships is a form of relationship banking. Hence the bank has a client-orientated organisation, where clients have their own relationship banker. The bank is only financing younger

[156] *Source: See Appendix C.*
[157] *Source: See Appendix D.*
[158] *Source: See Appendix E.*
[159] *Source: See Appendix F.*

vessels that are of an age of less than 10-12 years upon the date of drawing down the loan. The maximum length term of the loan added to the age of the vessel shall be less than 20 years to be able to be financed by the bank. When assessing a shipping loan one big point of interest from the bank is the quality of the client's management, both technical and commercial, and a proven track record over a long time period is essential for a positive loan decision. Clients wanting to get finance from the bank shall be situated in developed countries or regions of the world, have their vessels in the usual ship registers and flags and have sufficient insurance coverage for the vessels. If the bank is to take part in project financing, vessels in standard markets are preferred. Deals in more specialised markets are however welcome, provided that the loans are structured accordingly. Furthermore the bank, when it comes to specialised markets, wants the client to be operating in an industrial shipping environment with good contract coverage for the tonnage. The bank has a preference for low to medium risk levels. This means that the bank is not willing to enter a high-risk transaction even if the risk is compensated by a higher margin. Finally the bank wants to have a cross-selling potential to the costumer besides the pure credit product. This means the possibility to handle cash management, hedging, capital markets products for the client and so forth.[160]

Firm G

The bank holds the basic view that shipping finance is built on long-term relations. When entering ship finance deals the bank is keen on knowing the shipowner, or as the interview respondent put it: "*The shipowner is the first mortgage"*. The shipping loan shall always be within the credit policy of the bank with aspect on market segment, gearing, length of the loan and age of the vessel. There are limitations in the credit policy of the bank on all the above-mentioned variables. Furthermore the bank does not want to give loans that are not possible to resale trough syndication. This view has come from the thought that the syndication is a form of market test. If a loan is resalable it is reasonable to assume that the bank have analysed the loan correctly, if it is not on the other hand that can be an indication that the case has been misjudged. When firm G is the originating bank in a syndication deal, it is also always the biggest risk taker (owner of debt).[161]

Firm H

The bank is a full-service bank with relatively large shipping clients. This is important since larger shipping companies can generate further business to the bank, and the bank only provides shipping finance to clients with ten or more vessels in their fleet. The bank has an Anglo-Saxon type of organisation with an analysis department, something providing the bank with knowledge about their clients. When

[160] *Source: See Appendix G.*
[161] *Source: See Appendix H.*

analysing a shipping loan deal the credit policy of the bank stresses that the first variable looked upon is the cash flow of the vessel. The policy is also stipulating a gearing limit of 70%, but if a Time Charter is involved in the deal this figure might be higher. If all aspects of a case are within the frame of the credit policy it is a simple deal to provide a shipping loan. In situations where some of the parameters are outside the credit policy, and this is the most common case, a deeper investigation and analysis is needed.[162]

Firm I
The bank has a holistic view of ship finance originating from both an asset based approach on the one hand and a corporate on the other. When providing finance for vessels the owner, and the potential for cross selling of other banking services, is important for the bank. Furthermore the quality of the vessel itself important, with regard to shipyard and specifications, as well as the employment of the vessel. The ship financing deals provided by the bank have a structure that is within 20 years of age. Furthermore the maximum profile of the loan also 20 years, implying that there is always a balloon payment involved at the end of the loan. Finally the bank is not willing to finance single hull VLCCs or strange type vessels.[163]

Firm J
To enable the firm to enter a ship finance project there shall, according to law, be a significant domestically interest in the deal from the country of the firm. This regulation is however somewhat flexible and it is possible that a deal can be made if there is a secondary domestic ownership of the vessel or with a traffic that is mainly active on routes with ports of call of the firm's home country. The firm has a basic approach of analysing ship finance deals that is object orientated. It is important for the firm that there is a second hand market for the vessel. It is also important for the bank that it is possible to employ the vessel at different rates in order to make the cash flow projections attractive.[164]

4.5.3 Shipping segments of the banks

The respondents were asked the question *"In what segments of shipping is your firm mainly active?"* The answers given are presented in the following parts in this section.

[162] *Source: See Appendix I.*
[163] *Source: See Appendix J.*
[164] *Source: See Appendix K.*

Firm A
The shipping segments that firm A is active in is in line with the industry in general, with the exception of that they are not currently financing car carriers and fishing vessels. Furthermore the bank is not very active in the cruise line business.[165]

Firm B
The bank is providing finance for all shipping segments apart from fishery. Domestic business applies for half of the bank's shipping activities. The domestic business is mainly in the container and tanker (crude and product) segments. The vessels financed for the domestic business usually have a deadweight of 50 000dwt or more. Internationally the bank is not keen on financing smaller vessels since the bank holds the view that it is easier to find charter for larger vessels. The main part of the international business is for new, under five years old, and large, ocean going, vessels. The bank is usually not looking into loans that are smaller than 10 million USD.[166]

Firm C
See answer given in 4.5.2.[167]

Firm D
The bank is specialised in financing product and chemical tanker vessels in the span between 10-25 000 dwt, were the main part is in the range between 16-17 000 dwt. The bank finances almost exclusively new built vessels.[168]
Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[169]

Firm F
The bank is mainly active in providing finance for container vessels, bulk carriers and oil tankers. The bank also has smaller proportions of other vessel types, among them chemical tankers.[170]

Firm G
The bank's shipping portfolio is reflecting the world's merchant fleet with the exception of that they have financed relatively few container vessels and with a small

[165] *Source: See Appendix B.*
[166] *Source: See Appendix C.*
[167] *Source: See Appendix D.*
[168] *Source: See Appendix E.*
[169] *Source: See Appendix F.*
[170] *Source: See Appendix G.*

overweight on tanker vessels. The core competence of the bank's shipping activities lies within the offshore and tanker shipping, crude and VLCC, segments.[171]

Firm H
The bank is focusing on creating a large diversification between the segments in its shipping finance business. At the moment bulk carriers is a small segment, whereas the bank actively looks into the container market.[172]

Firm I
The bank is mainly active in the container vessel, RoRo, car carriers, chemical and parcel tankers (40 000 dwt and bigger), VLCC, LPG/LNG and FPSO (Floating Production, Storage & Offloading) segments.[173]

Firm J
The bank is mainly active in costal tanker tonnage, ranging between 5-25 000dwt, both product and chemical tanker vessels. The bank is willing to take part in financing of most kinds of vessels, special tonnage excepted. The bank also has loans outstanding to RoRo and bulk carrier vessels.[174]

4.5.4 Not wanted shipping segments

The respondents were asked the question *"Are there any segments of shipping that your firm, based on corporate policies do not want to do business within?"* The answers given are presented in the following parts of this section.

Firm A
The bank is not willing to finance reefer vessels, leisure boats and fishing vessels. The averse attitude towards the last group of vessels is explained by that there is a different logic in that sector apart from other parts of shipping.[175]
Firm B
The Bank wants to do deals that are worth more than $10 million, with owners that have 10 vessels or more. Furthermore is the bank not interested in doing business on a name lending basis.[176]

Firm C
See answer in section 4.5.2.[177]

[171] *Source: See Appendix H.*
[172] *Source: See Appendix I.*
[173] *Source: See Appendix J.*
[174] *Source: See Appendix K.*
[175] *Source: See Appendix B.*
[176] *Source: See Appendix C*

Firm D
The bank is precautious to enter financing of RoRo and bulk vessels.[178]

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[179]

Firm F
The bank does not want to finance fishing vessels, inland barges, short-sea shipping vessels in Asia and river cruising vessels. The bank is furthermore careful when entering offshore deals, and only does so as part in syndications together with experienced agents of that segment.[180]

Firm G
The bank is not financing older and small vessels. Furthermore the financing of inland transportation units (river vessels) is something that the bank is not willing to take part in. Finally the bank is not particularly active in the container vessel segment.[181]

Firm H
There are no segments of shipping that the bank, based on corporate policies, is not willing to take part in.[182]

Firm I
The bank is not willing to take part in the financing of single hull VLCCs, war ships, cattle carriers and offshore supply vessels.[183]

Firm J
There are principally not any segments of shipping that the bank is not willing to finance with the exception of special tonnage. The bank is however aware of that it might be difficult to define what special tonnage is.[184]

[177] *Source: See Appendix D.*
[178] *Source: See Appendix E.*
[179] *Source: See Appendix F.*
[180] *Source: See Appendix G.*
[181] *Source: See Appendix H.*
[182] *Source: See Appendix I.*
[183] *Source: See Appendix J.*
[184] *Source: See Appendix K.*

4.5.5 The credit application process

The respondents were asked the question *"How is the credit application process designed in your firm?"* The answers given are presented in the following parts of this section.

Firm A
When asked to describe the credit application process for shipping loans the respondent was rather scarce with providing information about this issue. The answer given is simply that it looks like any other process in the bank and that a credit committee is involved. Furthermore the process is designed to cover as many angles as possible of a credit evaluation.[185]

Firm B
When the bank is making ship finance deals it is usually as a part in small syndications. The normal way the credit application process is described in the following steps:

1. The first step is usually that a shipowner approaches the bank, explains that he has bought a vessel, and would like to have it financed. The owner explains the case to the bank.
2. A co-worker at the bank makes an analysis of the case.
3. The co-worker approaches the bank's credit department, presents the case and gets their views about it. After this the co-worker makes a loan proposal.
4. The co-worker approaches the client and presents the loan proposal, which the client accepts or rejects.
5. If the client accepts the general loan offer the bank makes a formal offer letter.
6. The offer letter is followed by negotiations between the bank and the client, which hopefully result in an agreement.
7. The found agreement between the co-worker and the client is handled in the bank's internal approval process, which is mainly done trough the credit committee, and a final binding loan offer is made by the bank.
8. The client gets the final loan offer, which he accepts or rejects. If the client accepts the offer a deal is made.
9. A few weeks are spent making the loan documentation with external lawyers.[186]

[185] *Source: See Appendix B.*
[186] *Source: See Appendix C.*

Firm C
The credit procedures in the bank are, according to the company respondent, to be short and the whole process can, provided that the client is prior known to the bank, be accomplished within a week. An account manager, the head of the account managers department and a designated co-worker in the credit department, processes the application for the shipping loan. Based on a mutual decision from the three persons mentioned above an indication for a possible finance is discussed with the client. There is in some special cases also a discussion with the credit committee involved in this decision-making. If an agreement can be made between the bank and the client, the final decision to offer a loan will be taken firstly by the banks credit committee and secondly by the bank's board of directors.[187]

Firm D
The whole credit application process in the bank starts with that a potential client approaches the bank with a credit application. When deciding whether to grant the client a loan or not, and on which terms the bank looks at who the potential client is, how the accounting figures of the client look like and finally how good the potential client is in operating a vessel. One can say that a big part of the process is made up of a kind of "selling" process from the client's side. It is up to the client to sell in his case to the bank and this is done with regard to three dimensions. The first is the cash flow and balance sheet figures, both the historical, current and projected figures. The second is the actual market with regard to both Spot rates and Time Charters. The third dimension is the shipper of the vessel. Does the client run the vessel himself, and who are their clients in turn?[188]

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[189]

Firm F
The bank is organised in groups that are responsible for different geographical areas in the world. These groups consist of people with different tasks such as relationship, risk and credit management. The clients have access to a personal team in the bank through which they can do all their banking business. When a new loan application from the client is presented to the relationship manager, he/she will together with the risk manager prepare a memo of the case where important aspects are highlighted. The bank's credit risk department also gives a second opinion about the case. The board then decides whether to enter negotiations or not based on the information given in the memo. A central part in the credit application process is an internal rating

[187] *Source: See Appendix D.*
[188] *Source: See Appendix E.*
[189] *Source: See Appendix F.*

system that is designed to cover all aspects of project based finance structures, including long term employment for the vessel, support from the mother company as well as other structuring aspects normally found in shipping finance. The bank is charging low risk projects low risk costs and vice versa. The bank will not enter into high-risk projects. The credit application process is usually fairly quick and normally takes about a week, but can, given special circumstances, be even faster. Cases with faster credit application can take place when clients known to the bank see a window of opportunity to acquire a vessel at favourable terms. Given that the project is straight forward financing for the vessel can be managed in as such short time as a couple of days.[190]

Firm G

In normal cases where the client is prior known to the bank and where the client approaches the bank with an object to be financed the credit application looks as follows in firm G.

1. The potential client approaches the bank and presents his case.
2. When the bank has got the case presented to them it is being analysed internally by the bank. The analysis is focusing on, among others, the following parameters. What contracts have been signed? How is the vessel as such, what is its history, have there been any problems? How do the financial statements, both historical and projected, of the company look?
3. Based on the analysis a loan prospect is designed regarding gearing, profile, covenants and price.
4. An offer-letter based on the loan prospect is being written and sent to the client.
5. A dialogue between the client and the bank regarding the loan takes place.
6. A new, updated, offer letter is being written and sent to the client.
7. If the client accepts the new offer letter, an internal credit committee in the bank decides whether the loan shall be accepted or not.
8. Deal

One remark about the credit application is that there are three different sales processes involved in the process: to the client, internally within the bank and to the financial market through underwriting (syndication).[191]

Firm H

The steps in bank Hs credit application process is as follows:

1. The potential client approaches the head of the shipping department at the bank office in place and presents his case to the bank.
2. A co-worker at the bank's analysis department analyses the case and the potential client.

[190] *Source: See Appendix G.*
[191] *Source: See Appendix H.*

3. Based on this analysis an offered term sheet is being written and sent to the potential client.
4. If the potential client is satisfied with the terms in the offered term sheet, a credit committee will handle the credit application.
5. If the committee accepts the application a deal is done.[192]

Firm I

The whole credit process can be divided into two parts, where the first contains negotiations between the client and the bank, and where the second is the banks internal process.

The first part looks as follows:

1. The first step is to get into contact with the deal, and this is done either in the way that the client approaches the bank or through intermediates such as brokers.
2. Once the deal has been presented to the bank they take a first look at the project by asking themselves questions such as: What is the reputation of the potential client? What kind of fleet does the client have and what does the project look like? Furthermore the bank is looking at the description of the actual vessel. What is the client's track record of operating a fleet of vessels? What kind of strategic view does the company have? Finally the bank looks into the vessel's specifications.
3. After that this first analysis has been performed there is a meeting within the bank between the relationship manager, the credit structuring officer and the head of the actual department of the bank. These people are trying to decide, based on the information gathered in the previous step, what the "gut feeling" about the project is.
4. If the "gut feeling" is positive a credit officer takes a look at the project and investigates if any further research is needed.
5. The credit officer makes an indicative credit scheme that is presented to the potential client.
6. The potential client decides whether they are interested in making business or not based on the terms given in the indicative credit scheme?
7. If the potential client comes to the conclusion that they are interested in business around the terms in the indicative term sheet the process enters the bank's internal credit decision process.
8. The bank's internal credit decision is based upon recommendations given by the credit analyst and the relationship manager's view of the commercial side of the case. The head of the actual department puts the case forward to the credit application board that takes the actual credit decision.[193]

[192] *Source. See Appendix I.*
[193] *Source: See Appendix J.*

Firm J

The first step in the bank's credit application process is to obtain information about the actual project regarding variables such as employment of the vessel and projected cash flows and budgets. The bank is also trying to decide what the general impression of the company looks like. The second step is the bank's credit evaluation of the project. Does the project make economical sense and how does it fit with the bank's portfolio? Is the bank able to offer the potential client a term sheet that is attractive to the client? If the answer to the above questions is yes and the client is interested to make business on the terms indicated from the bank the case is being put forward to the bank's board of directors. The board of directors get the case presented to them and then take the formal decision whether to grant the credit or not.[194]

[194] *Source: See Appendix K.*

4.6 Empirical findings, case specific level

4.6.1 The banks views around financing of a vessel such as the one presented in the case

Firm A
The respondent believes that financing such a vessel as presented in the case can be tricky.
If he would have a specific case like that presented to him he would like to have more specific information regarding, among others, the pool arrangements and their historical performance. He would furthermore like to have information about the owners involved, and how these people get along. What will happen if something goes wrong and one owner defaults, what will the others do? The respondent stresses that the finance opportunities can be different from company to company. In the case that the above-mentioned parameters are all right he might be willing to finance up to 10 million EUR, not more.[195]

Firm B
The respondent has a rather sceptical view towards the presented case. The vessel type is operating in a niche market that is not transparent. The local trade gives a lack of statistics. The vessel is of a size that smaller shipyards can build. For larger vessel types there is a limited number of yards that can build them. The limited number of yards has the implication that it is possible to calculate the yards' orders and thereby also the supply of the vessel type. This calculation cannot be made for the smaller vessel types, such as the case vessel, and the uncertainty is therefore increasing in deals with these vessels.

To be able to finance a vessel as the one presented in the case, you will need an owner with a good track record and balance sheet. The respondent in firm B however holds the view that owners in this kind of trade usually don't have good characteristics of track record and balance sheet. The respondent is not keen on spending a lot of time on a case like the presented one, and would probably have a conservative approach with different covenants. The bank's opportunity cost is the same for all deals, implying that smaller deals are less attractive. The presented case is a small deal and hence less attractive from the bank's point of view. A deal like this is not the flavour of the month.[196]

[195] *Source: See Appendix B.*
[196] *Source: See Appendix C.*

Firm C
The bank has a positive attitude towards financing vessels such as the one presented in the case. The bank has financed a number of vessels of that type, both stainless and coated cargo tanks.[197]

Firm D
The bank is positive towards the case but raises a question regarding the choice of shipyard and wondering why the vessel is not being built in China instead of South Korea. In the case of financing a vessel like the presented the bank would prefer an ownership under an A/S structure since a K/S gives less transparency and is hard to evaluate. A K/S structure might be of interest, but in that case a structure with few partners involved would be preferable due to analysis reasons.[198]

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[199]

Firm F
The bank holds the general view that providing finance for a vessel such as the one presented in the case could be of interest for the bank. The bank would, in order to be able to do so, have more extensive information provided to them regarding the wanted structure, (including pre-delivery finance) and profile of the loan, the specifications of the vessel, the building price, Time Charter rates and the existence of a spot market and its rates. The bank also would like to have information around the possible K/S structure with aspect on the financial strength of at least the three biggest investors. Furthermore the quality and experience of the technical and commercial management of the vessel is of interest for the bank as well as the financial statement of the borrower and the mother company. If the bank would provide finance to such a vessel as the presented one there must be an acceptable package of securities attached to the loan and documentation in line with comparable financing of this kind. Finally, in the light of the comparatively small loan amount it would be unlikely to syndicate such a transaction.[200]

Firm G
The interview respondent in firm G has chosen not to give a specific answer to this question.[201]

[197] *Source: See Appendix D.*
[198] *Source: See Appendix E.*
[199] *Source: See Appendix F.*
[200] *Source: See Appendix G.*
[201] *Source: See Appendix H.*

Firm H
The case vessel is operating in market that is partly driven by face out regulations. Further more demand is a smaller variable than supplies in the actual market, resulting in a situation where the supply side is driving the market. In providing finance for such a vessel the shipping company itself is of great importance.[202]

Firm I
A first important question, in the view of the respondent at firm I, is whether the vessel is a product, IMO 1, 2 or 3, or a parcel tanker? The second hand market of the vessel is of importance when it comes to financing opportunities, and for the case vessel the respondent has the view that the second hand market is not that liquid. Furthermore the ship value estimation for this type can differ with as much as 40% between different sales and purchase brokers. When evaluating the market that the vessel is intended to be operated in one has to bear in mind that it is of a tough physical character. This implies that the vessel itself, the crew and the operator must be first class. In addition the market environment is hard with cutthroat competition, and the vessel can probably only produce a profit during the winter months. The respondent also believes that the owner must make a choice whether the vessel shall have a Time Charter or to be operated in the spot market. Finally the respondent would like to know who the investor in a possible K/S structure would be and how much uncalled capital that would be available.[203]

Firm J
To begin with it is a necessity that there exists an interest of the bank's origin country in order to enable it to provide finance to the presented case vessel. Furthermore the regulatory framework of the bank is limiting the length of the loan to be of 20 years length. Apart from these regulatory restrictions, the bank is only financing vessels that can be sold in a liquid second hand market. Since the case is around a new built vessel the security of delivery from the yard is a dimension of interest from the bank's point of view. An owner shall, in order to get finance from the bank, accept a semi-assembled vessel from the yard. The delivery of the vessel can affect the shipowner's commercial interest. Hence, what does the delivery security is this particular project look like? How would a delayed delivery of the vessel affect the shipowner's business with aspect on time charters etc? Are there any fines towards the yard in the case of late delivery and so forth?[204]

[202] *Source: See Appendix I.*
[203] *Source: See Appendix J.*
[204] *Source: See Appendix K.*

4.6.2 What experience does your firm have financing such vessels?

Firm A
The bank has got some experience in financing vessels such as the one presented in the case.[205]

Firm B
The bank has one or two vessels of the size presented in the case to owners in southern Europe. The bank has not incurred any losses on this kind of vessels.[206]

Firm C
The bank has financed a number of vessels of that type, both stainless and coated cargo tanks.[207]

Firm D
The bank has great experience of financing the vessel type. Of the banks total shipping business 80-90 % is made up by new built vessels in the actual segment.[208]

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[209]

Firm F
The bank has got experience in financing a number of vessels of the type presented in the case to various clients.[210]

Firm G
The interview respondent in firm G has chosen not to give a specific answer to this question.[211]

Firm H
The bank has a great experience in financing the kind of vessels presented in the case. This kind of shipping is significant for the domestic shipping industry in the bank's home country.[212]

[205] *Source: See Appendix B.*
[206] *Source: See Appendix C.*
[207] *Source: See Appendix D.*
[208] *Source: See Appendix E.*
[209] *Source: See Appendix F.*
[210] *Source: See Appendix G.*
[211] *Source: See Appendix H.*

Firm I
The bank has financed some vessels in the range between 6-10 000 dwt. The financed vessels are mainly made up by parcel tankers, but they have also financed some product tankers. All the vessels mentioned have ice class.[213]

Firm J
The bank has great experience with providing finance to vessels of the type presented in the case.[214]

4.6.3 Strengths of the case

The respondents were asked the question *"What, in your view, are the strengths of such a vessel when it comes to financing possibilities?"* The answers given are presented in the following parts of this section.

Firm A
The respondent in bank A wants to have a more specific case in order to have a clear view about the strengths when it comes to finance possibilities for the case vessel.[215]

Firm B
The strengths when it comes to finance possibilities for a vessel as the one presented in the case is, in the view from the respondent at firm B, that, given that the shipowner has the right contacts, it can produce a stable revenue stream.[216]

Firm C
The strength when it comes to finance opportunities in the presented case are the borrowers and the limited partners financial strengths and the managers, both commercial and technical, historical performance.[217]

Firm D
The bank would like to have more specific information about the employment of the vessel in order to state a more specific opinion regarding the case vessel's strengths when it comes to finance opportunities. If the potential client is big and experienced the bank may consider to finance the vessel under a spot strategy, a Time Charter is however preferred.[218]

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[212] *Source: See Appendix I.*
[213] *Source: See Appendix J.*
[214] *Source: See Appendix K.*
[215] *Source: See Appendix B.*
[216] *Source: See Appendix C.*
[217] *Source: See Appendix D.*
[218] *Source: See Appendix E.*

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[219]

Firm F
When it comes to finance opportunities for vessels, as the presented one, the strengths very much dependent on the specifications of the vessel, the timing of purchase and the vessels employment.[220]

Firm G
The interview respondent in firm G has chosen not to give a specific answer to this question.[221]

Firm H
The bank knows that the market that the vessel is intended to be operated in is relatively stable. If the shipowner is good and experienced this is providing a stable commercial environment. Furthermore this gives a fairly high lowest level of revenues from the vessel.[222]

Firm I
The vessel is new built, implying that it should be state of the art, given that the shipyard has the competence to build this kind of vessel. If the vessel is a parcel tanker it means that the vessel has the technology and flexibility to be able to be operated in different markets. If the vessel is not a parcel tanker it will in any case have a relatively low operating cost.[223]

Firm J
The bank believes that the vessel type is resalable. However with a note about the stainless steel tanks since these are not very common in the second hand market. This can possibly be explained by shortage on the supply side of the second hand market. The tanker business is at the moment sound due to, among other factors, out-phasing regulations.[224]

[219] *Source: See Appendix F.*
[220] *Source: See Appendix G.*
[221] *Source: See Appendix H.*
[222] *Source: See Appendix I.*
[223] *Source: See Appendix J.*
[224] *Source: See Appendix K.*

4.6.4 Weaknesses of the case

The respondents were asked the question *"What, in your view, are the weaknesses of such a vessel when it comes to financing possibilities?"* The answers given are presented in the following parts of this section.

Firm A
The interview respondent in firm A has chosen not to give a specific answer to this question.[225]

Firm B
In the view of the respondent in firm B the case vessel has several weaknesses when it comes to finance opportunities. Furthermore the respondent would, if he was a shipowner choose, to invest his money in another vessel than the presented one. The weakness when it comes to finance opportunities for the case vessel is that it is to be operated in a non-transparent market with difficulties to find medium to long time employment. Furthermore the second hand market for the vessel type is illiquid.[226]

Firm C
The case vessel's finance opportunities, is in the view of the respondent at firm C, weakened by two factors. The first is that there is a small to non-existing second hand market for the vessel type. The second weakness is that there is little public information about the actual market segment.[227]

Firm D
If the case vessel would have a K/S structure it can be miss-beneficial when it comes to opportunities for providing debt. The K/S structure implies a possible transparency problem. In the case that a K/S structure would be chosen anyway it is preferable with as few owners involved as possible. Another preferred way would be a structure, where the K/S company would have strong A/S companies as part owners.[228]

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[229]

[225] *Source: See Appendix B.*
[226] *Source: See Appendix C.*
[227] *Source: See Appendix D.*
[228] *Source: See Appendix E.*
[229] *Source: See Appendix F.*

Firm F
The respondent of firm F believes that the liquidity of such a tanker segment, as the one presented in the case, can be regarded as rather limited. Furthermore the respondent raises a question whether there are any alternatives to the north European trade for the case vessel. These issues can in the view of the respondent be miss-beneficial when it comes to finance opportunities form the case vessel.[230]

Firm G
The interview respondent in firm G has chosen not to give a specific answer to this question.[231]

Firm H
There is a trend in the market segment of the case vessel of consolidation. The consolidation is beneficial for larger shipping companies, whereas smaller ones may encounter difficulties. If the case vessel is to be operated by a smaller owner this may be a weakness when it comes to finance possibilities.[232]

Firm I
In the view of the respondent in firm I there are three issues that may be miss-beneficial when it comes to the case vessels finance opportunities. The first is that the second hand market for the vessel type is illiquid. The second issue is that the vessel is very specialised. The third, and final, issue is that the vessel is to be operated in a tough competitive environment where the shipowner must have good (strong) contacts with the clients in order to survive.[233]

Firm J
The interview respondent in firm J has chosen not to give a specific answer to this question.[234]

4.6.5 Willingness to provide finance

The respondents were asked the question *"Do you believe, based on corporate policies, that your firm would be willing to take part in the financing of such vessel?"* The answers given are presented in the following parts of this section.

[230] *Source: See Appendix G.*
[231] *Source: See Appendix H.*
[232] *Source: See Appendix I.*
[233] *Source: See Appendix J.*
[234] *Source: See Appendix K.*

Firm A
The interview respondent in firm E has chosen not to give a specific answer to this question.[235]

Firm B
The respondent believes, based on corporate policies, that firm B not would be willing to provide finance for the case vessel.[236]

Firm C
The respondent believes, based on corporate policies, that firm C would be willing to provide finance for the case vessel.[237]
Firm D
The respondent believes that the bank could be willing to provide finance to the case vessel in corporation with the bank's Copenhagen office.[238]

Firm E
The interview respondent in firm E has chosen not to give a specific answer to this question.[239]

Firm F
When it comes to the case vessel's opportunities to obtain finance trough the bank the respondent holds the view that it could be possible. The outcome is however subject to the borrower's creditworthiness since the bank is focusing on financing clients rather than shipping markets.[240]

Firm G
The interview respondent in firm G has chosen not to give a specific answer to this question.[241]

Firm H
The bank is in principal willing to provide finance for a vessel such as the one presented in the case. A possible finance solution from firm H is however linked to the outcome of an analysis of the issues mentioned in the answer from firm H in 4.6.4.[242]

[235] *Source: See Appendix B.*
[236] *Source: See Appendix C.*
[237] *Source: See Appendix D.*
[238] *Source: See Appendix E.*
[239] *Source: See Appendix F.*
[240] *Source: See Appendix G.*
[241] *Source: See Appendix H.*
[242] *Source: See Appendix I.*

Firm I
The respondent in firm I holds the view that the bank may be able to provide finance to a vessel such as the one presented in the case.[243]

Firm J
The firm may be able to provide finance to the case vessel, given that the case lies within the regulatory framework of the firm discussed in 4.5.2.[244]

4.6.6 Conditions

The respondents that answered yes to the question if they could consider to provide finance to a vessel such as the one presented in the case were asked the follow up question *"If yes, under what conditions?"* The firms that answered this question have their answers presented in the following parts in this section.

Firm C
The firm is currently providing debt finance to vessels such as presented in the case, which are owned and operated by Wonsild & Søn A/S. Finance for the case vessel would be under the same terms as for these vessels. For a detailed presentation of the terms see section 4.3.[245]

Firm D
The bank can consider providing finance to the case vessel provided that there is an equity stake of 25-30% of the project cost. Furthermore the banks wants to have more detailed information about the employment of the vessel with regard to what market, and where the vessel is intended to be operated.[246]

Firm F
The firm can consider financing a vessel such as the one presented in the case. There are however dependent variables such as the profitability of the project, that there is a sufficient return on equity in the bank from the project and that there is a cross selling potential in the case for derivate products and so forth.[247]

Firm I
The bank can consider providing finance for a vessel such as the one presented in the case. In order to obtain this finance the vessel has however to be able to support its

[243] *Source: See Appendix J.*
[244] *Source: See Appendix K.*
[245] *Source: See Appendix D.*
[246] *Source: See Appendix E.*
[247] *Source: See appendix F.*

own finance and have an acceptable technological standard. Furthermore the bank wants to have more detailed information about the background and quality of the owners and investors. The bank would also like to have information about the employment strategy of the vessels (spot or time charter).[248]

4.6.7 Reasons for not wanting to provide finance

The respondents that answered no or a conditional yes to the question asked in section 4.6.5, were asked the follow up question *"If no, why so?"* The answers given are presented in the following parts in this section.

Firm B
The respondent believes that he does not get the parameters right to get the case bankable in firm B.[249]

Firm D
Although the bank can consider providing finance for a vessel as the one presented in the case there are restrictions. There might be a case were a loan application for such a vessel could be rejected. A rejection would probably come from a bad prognosis of survival for the project or from a lack of a sufficient capital base in the project. The bank is aware that shipping is a cyclical business. It is therefore important that the potential client have sufficient capital to be able to manage the downturns in the business. Another aspect is that the bank must have credibility. A condition for the bank to be able to retain this is that the bank sticks with the clients also in weak markets.[250]

4.6.8 Changes needed to get finance

The firm that held the view that a vessel like the one presented in the case would not be able to get finance from their bank where asked the follow up question *"What changes in characteristics do you believe would be necessary to obtain financing?"* The answer given from firm B was: *"If everything is right in the case, the bank might be willing to provide finance for a vessel such as the one presented in the case."*[251]

[248] *Source: See Appendix J.*
[249] *Source: See Appendix C.*
[250] *Source: See Appendix E.*
[251] *Source: See Appendix C.*

5 Analysis

5.1 The case

This analysis begins with a discussion about how the vessels that serve as models for the case are financed and what is good and less good with the current situation.

5.1.1 The optimal financing

A good start in analysing how something is financed is to reflect on the thought behind the WACC, or Weighted Average Cost of Capital. The idea behind the WACC is that a company gets its funding from two sources, debt and equity, and that debt is usually the cheaper of the two. This is so for two reasons. The first is that the interest payments that a company has for its debt is tax deductible, something that dividends are not. Furthermore the investment in debt to a given company is usually of a less risky nature than the investment in the same company's equity. This relationship between risk and cost of capital is explained by the CAPM, or capital asset model. The reflecting reader then comes to the conclusion that the cheapest way to finance a firm, or a project, is by only using debt. This is however not the case. This can be explained by a deeper reflecting of the meaning of the CAPM, which states that the higher the risk the higher the expected return should a given asset have. The case when a firm is financed with a high degree of leverage gives a low WACC, but it also has the effect that the risk increases. This is so since the higher the leverage, the higher fixed negative cash flow in the form of interest payments each month. A higher fixed negative cash flow each month increases the sensibility of the firm to the positive cash flow. Or put in other words, a high leverage increases the possibility that the firm will be default on the loan in periods of a week market. The link between risk and leverage combined with the logic in the WACC implies that there should be an optimal gearing ratio in a company or project. At this point the two factors are taking out each other and finding this gearing level should hence be the first step in the process of finding a firms optimal financing solution. This point is however to be exactly calculated. A starting point is however to see how high gearing a firm can get, with all other factors fixed. The highest gearing with the same debt interest can hence be a reasonably good approximation in finding the point of ultimate degree of leverage.

Wonsild are today financing the case vessels with a ship mortgage loan and with privately raised equity in a single vessel company incorporated in Denmark as either a A/S or K/S. The debt, its terms, and the gearing solution will be discussed in the next section. The A/S and K/S issue will be later discussed in section 5.9.

5.1.2 Good things in the case

If one begins to reflect over how the case vessels of Wonsild & Son are financed today one can see that the degree of leverage is relatively high (79%), provided by a single loan for each vessel taken with a 1st priority mortgage of the vessel financed. This is good from Wonsild & Son's point of view. Furthermore the length of the loan is 10 years and the profile 15. This is fairly reasonable. There are however not only good things in the current financing situation. Things that might not be that attractive from Wonsild & Son's point of view are discussed in the following section.

5.1.3 Less good things in the case

When the terms of the current financing situation are looked through most of the things are reasonable and quite common. Not everything is optimal and as a start is the price that Wonsild is paying for the loan with a spread of 1.45% over the marginal funding cost, which not can be considered to be optimal. There is however another thing that can be looked upon as more unappealing from the loan-taker's point of view. This is the personal guarantee from the shareholders in the ship-owning company, which is meant as a supplementary security for the bank in addition to the mortgage. Although there is theory that states that personal guarantees are, from the banks point of view, an indication of good faith from the shipowner it would be unwise to leave the issue there. This view might be reasonable from the bank's side, but how does the personal guarantee influence the investors? One can begin with thinking about the idea of the limited liability company. The foundation in this corporate form is that the investors are only risking the capital they have invested in the actual company. They cannot be held responsible for any of the company's obligations beyond that. This implies that there, from the investor's point of view, is a limit to the downside of the risk in the investment, and this limit is the amount of capital invested. The upside of risk is on the other hand, at least in theory, unlimited. The combination of the up- and down-side of risk is of course an important factor when the investor is assessing his risk perception of a project. This risk perception is important to the company as far as the idea behind the CAPM is concerned. The higher the risk, the higher the expected return on invested capital. Or to put it in this case, the higher the risk perception of the investors, the more expensive will the equity capital be. It is in this view that the ultimate liable clause in the loan agreement becomes a less attractive factor. Since the clause is making the downside of risk larger for the investors, their view of the total risk in the project should then also increase. This implies that the ultimate liable clause should in effect increase the projects cost of equity and hence also the total capital cost. This makes the clause, all other things unchanged, less attractive from Wonsilds point of view.

If one summarises the discussion in the above sections one can say that there are good things and not so good things in the current financing situation. The question is then. Is it possible to obtain financing that is better? And what is better financing? One way

to answer the latter question is that if all other things are the same in the loan agreement and the ultimate liable clause is removed then the financing situation has improved. Another way to improve the financing is by getting a loan, all other things still unchanged, with a lower price (Smaller spread). Furthermore the financing is improved by getting a loan that, all other things the same, has a longer profile or tenor. Finally the financing is also improved by, all other things still the same, getting a higher gearing ration of the loan. But how can this be done? One way to begin is to examine what the options are when it comes to financing possibilities. This is done in the following section.

5.2 What are the options?

There are according to theory a variety of sources of finance for the shipping industry. These sources of capital can all be put into two main categories, equity and debt. The different types of equity and debt are discussed together with some important aspects of the case in the following parts of this section.

5.2.1 Equity

Owner equity
Owner equity is used in almost every shipping company and is a very common way of raising capital, although the degree varies from case to case. This form of equity is the form that is being used for the case vessels today. The equity used to finance a part acquisition of the case vessels is being raised by offering a selected and limited number of investors the opportunity to invest in the actual vessels equity part. This is a reasonable approach since the purpose is only to provide finance for the actual vessel and nothing more. Furthermore it is reasonable not to rule out this form of finance since investigating the finance situation of whole Wonsild & Son is out of the scope of this thesis. Hence is raising capital from owner equity a financing form that is suggested to be used by Wonsild also in the future.

Public Offering
Another form of raising capital is trough a public offering. This is done in co-operation with an investment bank. The company is offering their shares to the broad public by selling their shares in the public stock exchanges. The process of pricing and selling the shares is handled by the investment bank, which takes out a fee for their services. The publicly traded shipping companies are usually large corporations. Wonsild cannot be considered to be a large corporation and it is not reasonable that it would be worth the effort of going public with the sole purpose of financing a new chemical tanker or two. Furthermore it shall be stated that there have been few successful public offerings of shipping companies, and that shipping shares often are traded at a discount. For these reasons, Wonsilds size and the discount, public offering is no attractive way of providing finance for the case vessels.

Partnership structures
Partnership structures is a form of finance that was extensively used in Norway during the 80's in the Norwegian K/S companies. It is being used today in among others Germany and Denmark. One of the restrictions of the thesis is that the vessels are to be incorporated in Denmark. Furthermore Wonsild & Son is using the Danish K/S form as one of the incorporation forms for the vessels. This implies that a partnership structure for providing finance cannot be ruled out at this stage of the analysis. It shall however be noted that in Wonsild & Son's case the capital comes from the same investors in both the A/S and K/S case. This means that the choice between owner equity and a partnership structure is in this case in reality just a question of incorporation form. Which of the two that is suggested to be used is discussed in section 5.9

Mezzanine finance
Mezzanine finance is hybrid between equity and debt. The most common form is loans that have a form of equity "kickers" attached to them such as warrants. There has been little use of mezzanine financing in the shipping industry. For this reason mezzanine finance is not investigated further and hence ruled out as an appropriate source of finance for the case vessel.

5.2.2 Debt

The second main group of finance types is debt. The debt used for vessel acquisitions can in turn be grouped into three categories: bonds and fixed securities, commercial bank loans and the private placement of debt. Each type is discussed with aspect on the Wonsild case in the following parts of this section.

Bonds and fixed term securities
In order to be able to raise debt capital through the issue of publicly traded bonds and other fixed terms securities the issuing company needs a credit rating. Such a rating is issued by rating companies such as Standard & Poors and Moodys. In order to get this rating the company needs to have a clear corporate structure, a good management and a corporate structure that the analysts at the rating company is able to easily understand. Once the company has got the rating the issue of the bonds is done in co-operation with an investment bank, which draws up and administrates the deal. The time involved in issuing bonds long and it is also a costly process. It is not reasonable to assume that Wonsild & Son has the corporate structure needed to obtain a rating in the first place. Furthermore it also questionable, assuming that they would get a rating, that the costly process of issuing bonds could be defended with a purpose of raising finance for one or two chemical tankers. Hence bond issuing is ruled out as a way of providing finance for the case vessel.

Commercial bank loans
The most common way of financing vessel acquisitions is trough a commercial bank term loan. It is fairly easy to get these loans and it is usually a fairly quick process, although the length depends on the deal's complexity. Wonsild is financing their vessels today by a commercial bank term loan. These factors imply that this is an adequate source of financing for the case vessels. Furthermore the terms in a commercial bank loan is a question of negotiation, and it is therefore interesting whether it is possible to get a loan with terms that are better, from the borrower's point of view, than the ones applied in the current finance situation. This matter is comprehensively discussed in the sections 5.3 to5.8.

Private placement of debt
Private placement of debt is a form when the money is not lent through an intermediary such as a bank. In private placements of debt the company lends the money directly from an investor such as a pension fund. Private placements are usually one off deals, implying that the process of getting the deal done can be rather expensive. If the company is well established and credit worthy this form of capital raising can be attractive from the borrower's point of view. It is though questionable if Wonsild falls into this category of companies. It is also questionable if the amount needed to be raised in the actual case can justify the high administrative costs involved in such a process. Private placement of debt is therefore ruled out in this thesis as an adequate source of financing for the case vessel.

5.2.3 Leasing

A third way, apart from equity and debt, of financing assets is leasing. As a start it shall be stated that from the lessee point of view a leasing deal can be seen as a form of debt. This so since the lessee is having an obligation to pay the rent during the leasing period, just the same as for a bank loan. On the other hand the lessee does not own the actual asset. This is one of the drawbacks when it comes to vessel leasing. One of the big sources of income in shipping is profits made from buying and selling vessels. This option for profits is not there in the same way when a vessel is leased instead of owned. This can of course be dealt with in the leasing deal with a clause of sharing a possible profit from a sale of the vessel. It is however not the same thing as when a shipowner sells a vessel at attractive terms when he sees a window of opportunity.

One has to remember that one of the foundations for leasing is the usage of tax benefits. In order to exploit the benefits of leasing the most, one has to use different tax systems the most.

In the leasing of vessels one of these benefits is usually accelerated depreciation. A tax benefit like this is usually impost to stimulate investments. But one has to remember that these tax benefits are dependent on the good will of the tax authorities.

A typical case when leasing can be beneficial is when a major company, let say a bank with steady profits, is investing in a vessel. The vessel is owned in a single vessel company that is registered in a tax efficient location, i.e. Liberia, where there is no dividend tax. The owning company can on the other hand use the vessel as an object of depreciation. The object can then be written off in a fast pace, and hence impose great tax benefits for the mother company, usually registered in a western country like the UK. Added to this is the low cost of capital that a bank has in the first place. All these factors combined can create a situation were the leasing cost is lower than what the marginal funding cost would be in a normal ship mortgage loan. It is important to stress that to be able to create a deal like this one has to know a bank that is willing to invest in the actual vessel and which is located in a country which tax authorities accepts such structures. Another prerequisite for an efficient leasing deal like this is that the vessel is flying the flag of a tax efficient country. These conditions are not fulfilled when it comes to the case vessels. First of all is it questionable whether there are banks that are willing to invest in the case vessels, something that is indicated in the rather sceptical view some of the banks in this study had towards the case vessels. Secondly the vessel is to be flagged in Denmark, according to the scope of the thesis, a country that cannot be viewed to be a tax efficient location. These aspects imply that leasing may not be an optimal solution for Wonsild's finance needs.

5.2.4 Commercial bank loan and private equity

The analysis in the previous part in this section implies that private equity, in either an A/S or K/S structure, and commercial bank loans are the forms of financing that are best suited for the Wonsild case vessels. Furthermore the analysis implies that the terms in a commercial bank loan is a question of negotiation between the bank and the borrower. Since it in every negotiation situation is favourable to know and understand the opponent, a deeper analysis of how banks think when it comes to shipping finance is reasonable.

5.3 How banks think

In this section the banks views of shipping finance is analysed in order to get a deeper understanding of the banks views on the subject

5.3.1 What do banks think is important when evaluating shipping loans

In Table 4.1 different variables of importance when it comes to shipping finance, in the banks point of view, are presented. The variables have been marked with a score indicating the variables relative importance, were 1 is the lowest, and 5 are highest possible score. These variables have been processed in the way that the variables that had a mean score of 4 or above are all presented in a falling order in Table 5.1.

Table 5.1

Firm	A	B	C	D	E	F	G	H	I	J	MEAN	STD	
Question													
1	n/a	5	5	4	5	5	5	5	5	n/a	4,88	0,35	The potential Cash Flow generated by the vessel
16	n/a	5	5	5	4,5	5	5	5	4	n/a	4,81	0,37	Management skills
19	n/a	5	5	5	4,5	5	5	4	5	n/a	4,81	0,37	Net cash flow
33	n/a	5	5	4	4,5	5	5	5	5	n/a	4,81	0,37	Market evaluation
26	n/a	5	5	5	4,5	5	5	5	3	n/a	4,69	0,70	Flag of operation
3	n/a	5	5	5	4	5	5	4	4	n/a	4,63	0,52	The borrower
9	n/a	4	5	5	5	5	5	4	4	n/a	4,63	0,52	Previous experience with the borrower as a company
29	n/a	5	n/a	4	3	5	5	5	5	n/a	4,57	0,79	Hull value
6	n/a	5	5	5	5	3	4	4	3	n/a	4,25	0,89	Availability of working capital
11	n/a	5	5	4	4	4	5	4	3	n/a	4,25	0,71	Maintenance and accident record
8	n/a	2	5	5	4	5	5	5	2	n/a	4,13	1,36	Previous experience with the borrower on a personal level

17	n/a	5	3	4	4	5	4	3	5	n/a	4,13	0,83	Length of time in business
23	n/a	4	5	4	4	5	5	3	3	n/a	4,13	0,83	Salvage or resale value of ship
4	n/a	4	2	4	5	5	4	3	5	n/a	4,00	1,07	Financial indicators

When studying these variables some interesting observations can be made. The first is that all of the variables are linked to the three basic approaches when it comes to shipping finance, the cash flow based, the asset based and the corporate based. By starting with the cash flow the variables potential cash flow, the net cash flow and the market evaluation all be put into this group. The net cash flow and the potential cash flow are basically two versions of the same concept. The market evaluation can also be argued to be put into the cash flow group. This is so since the market evaluation is a key variable when making cash flow projections. It is highly interesting that these three are among the four most important variables, something that implies that the cash flow of the vessel is os outmost importance when evaluating shipping loans. This importance can be explained by the fact that the cash flow is intended to be the primary source of loan repayment of the bank.

Furthermore the vessels' hull value, the maintenance and accident record and the salvage and resale value all are put into the group of the asset based approach when it comes to vessel finance. It can be argued that the banks consider these variables to be important since they all are linked to the vessels (the assets) value. This is important since the vessel is the second source of repayment of the loan for the bank. Hence the banks are keen that the shipowners are maintaining their vessels in a manner that the vessels value (and hence the banks security) is not diminishing.

The last group is the corporate view. This group contains the variables management skills, the actual borrower, previous experience with borrower, both as a company and on a personal level, the length of time in business of the borrower and finally the corporate variables such as availability of working capital and financial indicators. The corporate view can be considered to be important for two reasons. The first is that the shipowner is the third and final source of loan repayment for the bank in the case that the two previous fail. Furthermore the evaluation of the borrower is important since the borrower's skills in employing and running a vessel are crucial for the possibilities of getting a sustainable cash flow and maintaining the vessel's value.

5.3.2 Why these variables are important

The findings in the previous part imply that there are three principal ways for the banks to get their shipping loans repaid, by the cash flow generated by the vessel, the mortgaged vessel and from the borrowing shipowner, findings that are supported in the theory regarding shipping finance presented in this thesis. One can however ask why these things are so important for the banks. The logical answer is that the banks

are keen on getting their loans repaid. This is of course true but it is also important to notice that the banks and shipowners have rather different perspectives regarding a key issue, which is the risk and its sides.

A shipowner is facing both the down- and up-side of risk. The shipowner's downside is limited to the equity stake in the project. The shipowner does however also have the upside of risk in the project, which is theoretically unlimited. This is different from the banks that are only facing the downside of the risk, which is limited to the whole outstanding loan amount, and not having the upside of it. This has the result in different perspectives and attitudes towards risk between the banker and shipowner. The shipowner has a greater incentive to have a neutral or aggressive attitude towards risk than the banks due to this. The banks have in fact a real incentive to have an averse attitude when it comes to risks involved with the financed vessel. It is therefore important for the banks to really understand the project in order to minimize the risk and securing that they will get their loan repaid. Understanding the vessel's cash flow projections, the actual asset and the borrower are important parts in doing so. It is furthermore important to notice that the three groups are not independent of each other. The link between the owner and the cash flow projections, and the vessel value has been discussed earlier. There is however a second, and perhaps more important, link between the cash flow and the asset value. The cash flow generated by a vessel is to a large extent dependent on the shipping market. This is so since the shipping market is in one way or another determining the vessel's income and hence its cash flow. If the market is good the vessel's incomes are usually also good and vice versa. The vessel's second hand value, or residual value, is also linked to the shipping market in the same way. This has the result that in situations when owners are defaulting on their loan repayments, due to lack of sufficient cash flow from the vessel, the second hand value of the vessel is usually also low. Hence, it is not unusual that banks that are retrieving a mortgaged vessel, in order to get repayment on a defaulted loan, are finding themselves owning a vessel that may be worth less than the outstanding loan amount. This is why banks are putting weight on the hull to debt ratio mentioned in the theory part of the thesis.

5.3.3 Implications

It has been showed that both the cash flow and the residual value of the vessel are dependent on the state of the shipping market. The shipping market is however very cyclical and therefore the success in shipping is to a large extent dependent on timing. This means at what time the vessel is purchased and sold. A vessel bought at the top of the market may encounter severe problems to serve its debt when the market turns down due to the high capital costs implied by a high purchase price. This may as mentioned earlier lead to an event of default and the retrieving of the vessel by the bank, however with a market value below the outstanding loan. Since the bank is facing the downside of the risk it is of outmost importance that the bank understands

were in the shipping cycle the market for actual vessel is at the time of the purchase. One can argue that the bank has to understand the case as good as the shipowner, if not even better, when evaluating a shipping loan application. Some of the important variables are mentioned in Table 5.1. There are however also structured methods of different kinds of doing the shipping risk analysis such as the 5c's introduced by Grammenos.

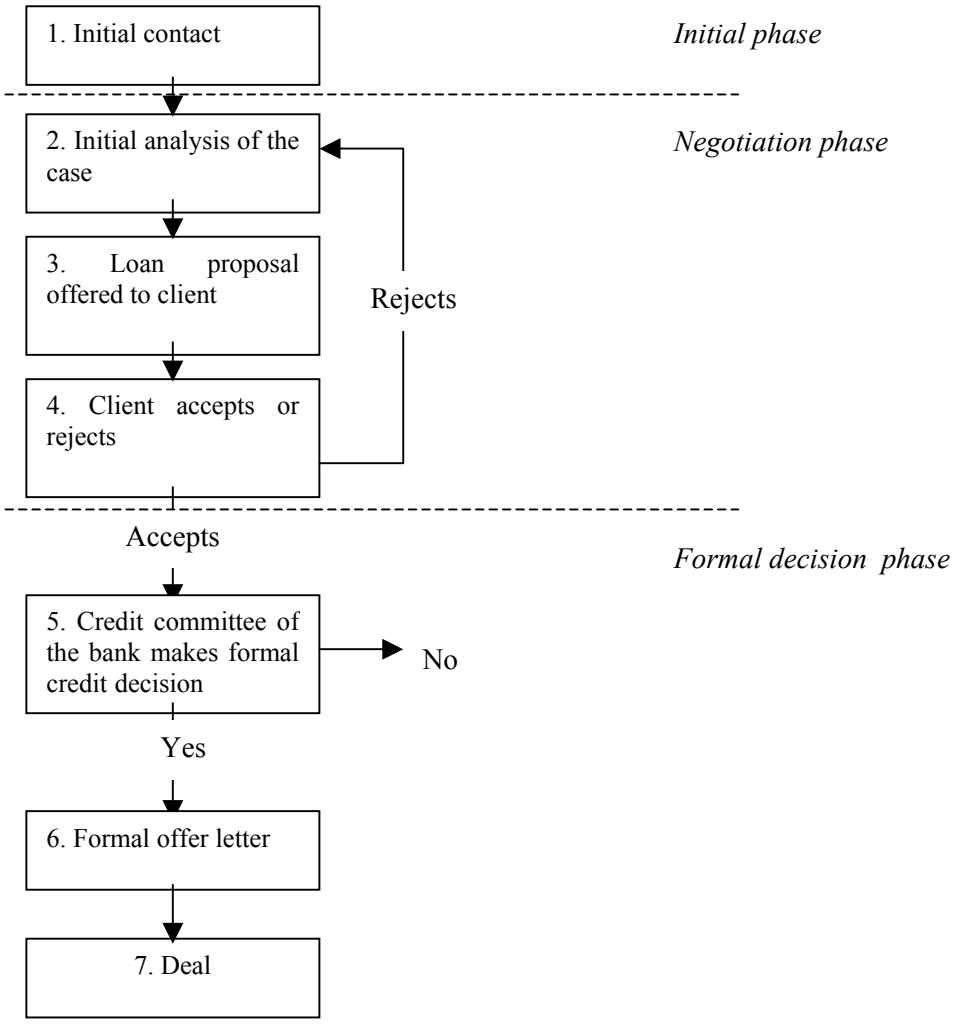
There is however another reason for the banks to have a deep understanding of cases that are presented to them. When entering a negotiation with a shipowner about a shipping loan it has a big similarity with the trading of other goods, which is the sales process. The shipowner has to "sell" his case to the banks in order to get the loan. This is something that is verified by some of the interviewed bankers in this thesis. If the bank understands the market and the actual vessel type when they get the case presented to them, they can determine two critical things. First the bank can evaluate the project as such. Secondly the bank can, by having this knowledge, understand how good the potential client understands the actual market and vessel type. An important implication of this is that, from the potential clients point of view, it is beneficial if the bank understands the project. If the bank understands the project you will then have your case "tested" by someone else and you can hereby see if you are about to enter a good deal or not. Furthermore it is good for the potential client if the bank understands the case since it is probably easier to "sell" in the case to someone who understands it. Finally it is likelier to get good terms, provided that the case is essentially good, from a bank that thinks the case is good and feels confident in this evaluation than from one that has doubts or feels that they do not entirely understand it.

5.4 Are there any differences between the banks?

5.4.1 How do the credit application process look like?

When studying the answers given to the question of how the banks credit application process looks like the first thing that is striking is the differences in how much information the respondents are willing to give. Furthermore the answers are structured in different ways. There are however some aspects and a structure that is common in all of the usable answers.
This structure is graphically presented in Figure 5.1.

Figure 5.1 The credit application process



1. Initiation

The firs step in the process is the initiation of the deal. This initial contact can be done in the way that the potential client approaches the bank or through brokers etc.

2. Analysis
The part where the bank analyses the case is common for all firms in the study. There is however some differences among the firms with regard to what aspects this analysis is focusing on. These differences are discussed further in 5.4.2.

3. Loan proposal
An indicative loan proposal is sent to the potential client.

4. Accept or reject
The potential client accepts or rejects the terms indicated in the proposal. If the client rejects the terms the deal is sent back to stage 2 and 3 for further analysis and a new loan proposal. I the client accepts the loan proposal the deal enters the bank's internal and formal credit decision process.

5. Formal decision
The formal credit decision is usually by a credit committee in the bank (in one case the decision is made by the bank's board of directors). The committee's composition and variables looked at may however differ from bank to bank.

6. Formal offer letter
If the committee decides to grant the loan a formal offer letter is being sent to the client to accept or not.

7. Deal
If the client accepts the terms in the formal offer letter a deal is done.

Furthermore the credit application process can be divided into three phases, where the first is the initiation phase. The second is the negotiation phase, in which negotiations around the terms in the deal between the bank and the client takes place. The third and final phase is the formal decision phase where the bank decides whether to grant the loan or not and under what terms. These terms are to be accepted or not by the potential client, but they are not subject to negotiations.

5.4.2 The banks grouped around policies and views

One possible way of categorising the banks in the study is to group them around their basic approach towards shipping finance. The three approaches are, according to Brooks, the cash flow based view, the asset based and the corporate based view. This means what of the basic factors the bank puts the most emphasis on when evaluating shipping loans.
When conducting the empirical study a new concept was introduced by one of the respondents, the holistic view of ship finance. The holistic view means simply that the bank gives the three approaches more or less the same importance. The banks have

been categorised by empirical information from both the quantitative and qualitative part. The banks that put equal amount of weight in the quantitative part to the three approaches are viewed to have a holistic view towards shipping finance. Banks that are ranking the three approaches different are viewed to have the basic approach towards shipping finance as the highest scored variable, unless opinions given in the open qualitative questions indicates otherwise.

Cash flow based view
There are three banks that can be viewed to have a cash flow based basic approach towards shipping finance and these are firm A, E and H.

Asset based view
There is one bank that has an asset based approach towards shipping finance and it is firm J.

Corporate based view
There is one bank that hold a corporate based view towards shipping finance and it is firm D.

Holistic view
There are five banks that hold a holistic view towards shipping finance, and they are firm B, C, F, G and I.

5.5 Differences in attitude towards the case

5.5.1 Willingness to provide finance

An important step in the analysis is to investigate the willingness of the banks to provide finance for a vessel such as the one presented in the case. This is of course interesting in order to see what the available options are when it comes to financing opportunities through ship mortgage loans. A first step in this analysis is to investigate the bank's willingness of providing financing to a vessel such as the one presented in the case. By using the answers given by the banks in 4.6.5 it is possible to group them into two basic groups. The first group consists of banks that have chosen not to answer the question, which is bank A, E and G. The one bank that is not willing to provide finance for a vessel such as the one presented in the case, which is bank B, makes up the second group. Banks that are willing to provide finance for a vessel such as the one presented in the case make up the last group. These banks are firm C, D, F, H, I and J.

It is however questionable to draw any clear conclusions based upon if the banks are willing to provide finance or not. Banks are commercial institutions and are of course willing to do business, and do as consequence have an initial positive attitude to at

least look at cases presented to them. This thesis' purpose is however to investigate whether it is possible to obtain better finance for the vessels than their current one. In order to do so it is useful to investigate the view of the banks in the positive group further.

5.5.2 Strengths and weaknesses

In the group of banks that were willing to provide finance it is interesting to see what they believe to be weaknesses in the case. When the banks are grouped according to their views around this issue an interesting pattern appears. The banks can be put into two groups, were the first is made up by banks that have remarks about things such as the possible K/S structure and the consolidation in the market segment or which have chosen not to answer the question. Banks that all have an issue about the market segment of the vessel make up the second group. All the banks in this group believe that vessel type is illiquid when it comes to second hand sales opportunities.

Group A
Banks that find other weaknesses in the case than the liquidity in the vessel's second hand market make up group A. These banks are firm D, H and J. Firm D finds that the case is possibly weakened by a K/S structure since it makes it less transparent. Firm I on the other hand raise questions regarding the consolidation in the market segment. The ongoing consolidation process can be harmful for smaller players in the segment, whereas it can be beneficial for larger actors.

Group B
Banks that find that one of the major weaknesses in the case is the illiquid second hand market of the vessel make up group B. These banks are firm C, F and I. Note that firm C is the bank that is currently providing finance for the case vessels. Firm C states that a weakness of the case is the "small to non existing second hand market". Firm F states that they believe that the case is weakened by the limited liquidity of the second hand market and the lack of alternative trades for the vessel. Finally firm I finds the case to be weakened by the illiquid second hand market, that the vessel is specialised and that the vessel is to be operated in a tough competitive environment.

The observation that some banks believe the vessel's second hand market to be illiquid is highly interesting. This is so since the financed asset in itself is a key issue in shipping finance. The mortgaged vessel is the primary source of loan repayment when the owner defaults. The importance of this issue is highlighted by the banks emphasis on the hull to debt ratio discussed in 3.9.4. But what if the vessel is hard to sell? If a bank has a shipping loan where the owner defaults and retrieves the vessel in order to get their loan repaid it is important for them that it can be sold. One can ask how much help it is if the market value of the vessel is high if there is no real possibility to sell it. Then the bank may find themselves in a situation where they are

stuck with the retrieved vessel not knowing what to do with it and still not having their loan repaid. Hence the bank's view of the liquidity of the second hand market of the mortgaged vessel is of great importance for the borrower since it is highly possible that it affects the terms of the loan. The observation that firm C finds the second hand market illiquid can possibly explain the ultimate liable clause and the rather high spread in the current financing solution of the vessels.

Furthermore the observation becomes interesting when some of the banks' views regarding strengths in the case are looked at. Firm J finds that one of the strengths in the case is that the vessel type is resalable and that it is a sound business. It is also interesting to notice that bank H finds that the vessel is to be traded in a market that can be considered to be stable and can hence produce a relatively high lowest level of revenue. These views can be considered to be rather different than the ones expressed by firm C, F and I! But how can these differences in views be explained?

5.5.3 Explanations for the differences

It is of course interesting to see if the observed differences in the views around the case vessel discussed in the previous section follow any patterns. Or put in other words, what can possibly explain these fundamental differences in the view of the case? Note that this discussion is only regarding banks that are willing to provide finance to a vessel such as the one presented in the case.

One possible explanation for the differences of the attitude towards the case can be sought in the banks approach towards shipping finance. The bank's fundamental approach towards shipping finance could logically be a source for differences in the view on a particular case.
The group of banks that not considered the liquidity of the case vessel's second hand market to be an issue are firm D, H and J. The basic approaches towards ship finance among these banks are corporate (firm D), cash flow based (firm H) and asset based (Firm J). Among the banks that believed the liquidity to be an issue (firm C, F and I) all of them had a holistic view as the basic approach towards shipping finance. This observation could imply that there is a link between the basic view of ship finance and the view of the liquidity of the second hand market of the case vessel. To make a conclusion like that is however questionable. The pattern is negative, and furthermore the holistic view is the biggest group of banks (4 of 10). The banks that believe that the segment is liquid have all different basic approaches towards ship finance. This implies that the basic approach towards shipping finance may not be the best explanation for the differences in view of the liquidity of the second hand market of the case vessel.

Another possible way of explaining the different views on the case vessels second hand market is to look at the banks' experience of financing such vessels.

In the group A which did not hold the view that the second hand market was illiquid all three banks had a *great* experience in providing finance for vessels such as the one presented in the case. For bank D accounted financing for new built vessels such as the one presented in the case for 80-90 % of the banks shipping business. Bank H had great experience in providing financing for the vessel type, and finds the type significant for the shipping business in the domestically market of the bank. Bank J also stated that they had a great experience in providing finance for vessels such as the one presented in the case. The bank is mainly active in providing finance for coastal tanker vessels, both chemical and product, in the range of 5-25 000dwt.

In group B where all banks believed the second hand market of the vessel to be illiquid the story is somewhat different. All the banks in this group, firm C, F and I, had *some* experience in providing finance for vessels such as the one presented in the case. This is verified by looking at what segments the banks are mainly active in. None of the banks in group B have chemical tankers as their main source of shipping finance business.

It is reasonable to argue that the banks in group A believe the case vessel to be easier resalable than the ones in group B due to the fact that they have made more deals with the vessel type. They know the actual second hand market very well and they know the majority of the players. This means that if they are to sell a retrieved vessel they probably personally know a number of presumptive buyers. Hence the banks in group A would not have any severe problems to make the sale of the vessel. This is probably not the case for the banks in group B, which can explain their different view of the liquidity of the second hand market.

The analysis of the issue of the second hand markets liquidity shows that the banks experience of the vessel type can play an important role for the possibilities and conditions of shipping finance. This observation can also be highlighted by a quotation of Michel Bourgery at BNPParibas who said: "*Credit evaluation of vessels is more an art than a science. Experience is of outmost importance."* The importance of the banks experience of the vessel type when it comes to the case vessel's financing opportunities is more extensively discussed in the following section.

5.6 Further implications of experience

The previous section of the analysis showed that the banks' experience with the vessel type could have a real impact when it comes to financing opportunities. In this section the experience factor is discussed further in order to see what other possible implications it may have.

5.6.1 Pricing

The pricing of a loan is of great interest for a shipowner seeking to get finance for a vessel since it can have a great impact on the vessel's fixed costs. Grammenos suggests that the pricing of a shipping loan consists of four parts: the marginal funding cost, a risk premium, the administrative costs for the loan and overhead, and finally an acceptable rate of return to the bank's shareholders. The first part is usually defined by the LIBOR or EURIBOR. The three other parts are added together as a margin, spread, over the marginal funding cost.

Risk perception

The marginal funding cost is a variable that neither the banks nor the shipowners have small possibilities to affect. Furthermore the banks' rate of return to their shareholders is usually fixed in advance. This leaves the two other parts of the loan's pricing, the risk premium and the administrative and overhead costs. Can these variables be affected by the bank's experience with the vessel type? It is reasonable to believe that they do. The analysis in 5.5.3 showed that experience affects the bank's perception of the liquidity in the second hand market of the case vessel. The bank's ability to easily sell a vessel that has been retrieved due to a default from the original shipowner is an important aspect in the collateral security part of the risk analysis of shipping loans. If the bank believes that a retrieved vessel may be hard to sell this may possibly increase the bank's risk perception in that particular financing deal, and as a consequence the price of the loan as well. This implies that the banks in group A, all other things unchanged, would price a mortgage loan to the case vessels lower than the ones in group B. There are however more interesting observations, with aspect on risk perception, regarding differences between the two groups of banks. The market where the vessel is intended to be traded in is perceived rather different among some of the banks. One of the respondents in group A stated that he believed the market where the vessel is intended to be operated in is relatively stable. Furthermore he stated that the actual market can, given that the owner is experienced, provide a stable market environment, which gives the vessel a fairly high lowest level of revenues. This statement is in sharp contrast with the statement given by a bank in group B, firm I, which says that the actual market has cut throat market environment. The respondent had also the view that a vessel operated in this market can probably only make profits during the winter season. This difference in the view of the market conditions is also highly possible to affect the bank's risk perception. The banks in group A probably

believe the market risk in the case to be lower than the ones in group B. If the two observations are put together it is clear that banks in group A probably would charge a lower risk premium in the pricing of a shipping loan to the case vessel than the ones in group B. This difference in risk premium can hence be explained by differences in experience with providing finance for the vessel type.

Administrative and overhead costs
There are however more implications of the banks' experience in relation to the pricing of the shipping loan. Another part in the pricing is the banks' administrative and overhead costs. The overhead costs are reasonably fairly fixed, but how is it with the administration cost for each loan. The banks' credit application process was discussed in 5.4.1 and several similarities between the banks in the study were found. Among these similarities was a part in the process where the case is analysed by the bank. How this is done can possibly differ among the banks, but it is usually an extensive work. Grammenos 5c method, discussed in 0 is one way of doing this analysis. As anyone who reads through this method understands that shipping risk analysis can be a big task, and hence time consuming and costly. If the one who makes this analysis knows the vessel type, its market and so forth it is reasonable to assume that the process will become easier, and less time consuming. This implies that banks that have a great experience in financing the kind of vessels such as the one presented in this case are likely to have smaller administrative costs from the loan analysis than the ones with less great experience. As a result the banks in group A would have smaller administrative costs when providing finance for the case vessel than the ones in group B. Hence is it possible that the banks in group A would, all other things unchanged, price a shipping loan to the case vessel lower than the ones in group B due to lower administrative costs attached to the loan application.

5.7 The size of the loan

5.7.1 Syndication

The case vessel's shipping loan of about 13 million EUR can, though astonishing for the reader not familiar the shipping business, be considered to be fairly small. The small loan amount has some important implications, where the first is regarding syndication. The process of reselling a loan, or syndicating, has according to theory the purpose of spreading the risk of a loan between several banks. During this study another purpose of syndication has however been introduced by one of the interviewed banks. Firm G stated that according to their policies the bank should not give out any loans that are not possible to resell through syndication. The syndication process is a kind of market test of the case. If you have given out a loan that is not resalable, you have probably made a mistake in your credit analysis and should not have granted the loan in the first place. This shows that syndication plays more than just the role of risk spreading. As a consequence a bank can test if they "got it right"

with a loan that they feel insecure about by testing if it is resalable in the market. If they are not able to syndicate it they then probably should not grant the loan. This market test is however not possible for the case vessels due to the loan's size. This is expressed by bank F who says *"In the light if the comparatively small loan amount it would be unlikely to syndicate such a transaction"* about the financing for the case vessel. This means that in the aspect of providing the banks with a market test possibility the case vessel is in a sense handicapped by the fact that it is a small and not very expensive vessel.

5.7.2 Opportunity cost

A bank's opportunity cost for a shipping loan is logically determined by the bank's credit application process, which is discussed in 5.4.1. This implies that there is no strong link between the size of the loan and the bank's opportunity costs in the form of administrating, analysis and approval of a shipping loan. Though there is a link between the pricing of a loan and the administrative costs it shall be stated that the administrative costs are in real figures, whereas the pricing is set a percentage spread over the marginal funding cost. This spread is, as discussed in 5.6.1, affected by these administrative costs, but only to a certain degree. One of the interviewed banks stated that the opportunity cost is the same for all loans. This is probably not completely true for the reasons mentioned above, but the statement highlights an interesting aspect. Smaller loans have a disadvantage towards larger loans since the larger loan amount makes the loans' administrative costs proportionally smaller. This means that the administration component in the pricing of the loan becomes smaller. One implication of this observation is that banks logically have a preference for larger loans since they can make more money on these since the pricing in shipping loans are set as a percentage spread figure.
Hence smaller shipping loans become less attractive for the banks.

5.7.3 Further aspects

It is however important to stress that the loan amount discussed about in the two previous sections is *relatively* small in relation to other shipping loans. But this does not necessarily have to mean that it is small in real terms. At the end of the day 13 million EUR is a lot of money, and a loss of an amount of that size will probably hurt, whoever you are. This means that the banks cannot just handle the smaller loans without precaution just because the loan is relatively small. The banks have to go through the same procedures and analysis with the smaller loans as with the larger.

If the aspects discussed in this section, the two previous sections and in 5.6 are added together a pattern can be seen. If a bank is presented with a case where the loan amount is small and the vessel type is not very familiar to the bank it would not be worth the effort for the bank to provide finance for the vessel. This is highlighted by a comment from the respondent at firm B who stated when he got this thesis case vessel

presented to him that: *" I do not want to spend a lot of time at a case like that"*. This implies that the case vessel is, in the view of many banks in this study, disadvantaged by its size and market segment.

5.8 The best bank

It is not possible to tell exactly which bank that can provide the most beneficial financing solution for the case vessel. To be able to do that loan negotiations would have to take place between Wonsild & Son and the banks, and that is out of this thesis scope. It is however possible to get an indication on what banks it might be interesting for Wonsild & Son to have a further discussion with. Based on the findings in 5.5, 5.6 and 5.7 it can be suggested that the banks in group A, which are firm D, H and J, probably are the ones that are the most interesting for Wonsild & Son to contact regarding their shipping finance solutions.

There is however some differences among these three banks. The first is that bank J has a regulatory framework that states that there shall be a connection to the banks domestic country in the cases to which they are providing finance. It is questionable whether Wonsild & Sons vessels are able to comply with this connection to firm Js domestic country. Firm J is for this reason ruled at this stage as a source for the most beneficial finance solution. This leaves firm D and H. Both firms are interesting for Wonsild to approach, but there is one important difference between them, which is discussed in the forthcoming section.

There are theories that imply relationship banking becomes increasingly important for the banks providing shipping loans, discussed in 3.10.2, and these are to some degree verified by the banks in this study. Many of the banks stressed that they, when providing shipping loans, are keen on having a cross selling potential for other banking products. This is logical since the banks profits from the other services provided, apart from the ship mortgage loan, to the shipowners are becoming more and more important for each year. The implication of this is that if Wonsild as a shipowner is entering negotiations about financing for their vessels it probably would increase their bargaining power against the bank if they also could consider to discuss to put their day to day banking business at the same bank. A condition for this is however that the bank has the infrastructure for providing these services to Wonsild in Copenhagen. It is reasonable to assume that firm D has better opportunities than firm H to provide these added services, but it is not sure. The easiest way to find out is to enter discussions with both banks.

5.9 A/S and K/S

The choice between having the vessels in an A/S or K/S structure can be complicated. In this case the choice is however not very complicated. The reason is that in 5.8 the

banks that probably could provide the most favourable finance were found. These banks do however have a rather sceptical approach towards a K/S structure. This is illustrated by the respondent at bank D stated that "*A case with a K/S structure can be miss beneficial when it comes to providing debt financing due to possible transparency problems"*. This is a strong indication that, given that debt finance comes from this bank, a K/S structure is not the optimal one for the case vessel. Hence the vessels should be owned under an A/S structure in order to secure as favourable bank debt conditions as possible.

6 Conclusions and recommendations

6.1 Debt and equity

The first conclusion of this study is that a commercial ship mortgage loan is the best form of debt financing available for the case vessel. When it comes to equity financing the study indicates that private equity is the most appropriate form. The study also found that for the case vessels an A/S structure is the most appropriate company form.

6.2 Commercial banks

As commercial bank loans were found to be the most appropriate form of debt financing a deeper investigation was conducted regarding the banks views of shipping finance.

The banks are when evaluating shipping loans focusing on three main aspects, the forecasted cash flow from the vessel, the vessel itself and the actual borrower. These aspects are important since they can be viewed as the banks' sources of repayment of the loan. The cash flow is the primary source of repayments, the actual vessel is the secondary and the actual borrower is the last. It is therefore important for the banks to understand these three variables when evaluating shipping loans.

The banks are keen on understanding the case presented to them when dealing with shipping loans. They have a great incentive to understand the loans nearly better than the shipowner who is taking the loan. A reason for this is that the shipowner faces both the up and downside of risk in the case whereas the banks are only facing the downside. This implies an incentive for the banks to be risk averse to a larger degree than the shipowner. Hence the bank has a need for a great understanding of the case to which they are lending to. An implication of this is that it is beneficial for the borrower if the bank is familiar with the vessel type and the market it is intended to be operated in.

The study found that the banks had many similarities in their credit application process, which could be divided into tree phases, the initiation phase, the negotiation phase and the formal decision phase. In the negotiation phase the analysis of the case is an important part. In this part were some differences found among the banks regarding their approach towards analysis of shipping finance.

6.3 The banks views on the case

There were interesting differences in the banks views regarding the liquidity in the case vessel's second hand market and other conditions in the segment. These

differences can be explained by the banks experience with the vessel type and its market segment.

As a result of how shipping loans are priced it can be argued that it is highly likely that banks that are experienced with the vessel type and market segment are likely to price a loan to the case vessel lower than other banks.

Three banks were found to have a great experience with the case vessel and had a more positive attitude towards it. These banks were firm D, H and J. It is possible that these banks would provide better terms if they provided finance for the case vessel than what is the case today. This is explained by the fact that the bank that is currently financing the case vessel is among the group of banks who are less experienced with the vessel type and who also has a more sceptical attitude towards the case vessel. Of the banks D, H and J, the two first are the most interesting since firm J is acting under special regulations which could raise problems in a loan negotiation.

6.4 Recommendations

As a result of the findings in this study Wonsild & Son is recommended to finance their vessel's equity part with private equity under an A/S form. Furthermore it is recommended that Wonsild & Son will finance the debt part with a commercial ship mortgage loan.

Wonsild and Son is recommended to enter negotiations with firm D and H about the financing solutions of their vessels. This can possibly provide a more attractive financing situation for Wonsild & Son.

Suggested further studies

One suggested further study on the issues involved in this study is to analyse deeper the implications of taxation when it comes to shipping finance.

Another subject that can be linked to this study and which can be interesting to investigate further is the implications of different new-building finance schemes that are available for vessels.

A third subject of interest is how the new capital adequacy rules (Basel III) will affect banking policies in relation to shipping finance and its further implications for the shipping industry.

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Appendix A: Questionnaire Vessel financing evaluation

Date _____

Company _____

Company respondent _____

Function in company _____

Questions on factors on a general level

What are the general corporate policies on ship financing in your firm?

In what segments of shipping is your firm mainly active in?

Are there any segments of shipping that your firm, based on corporate policies don not want to do business within?

How is the ship finance application process designed in you firm?

Please mark the relative importance of the asked factor, in the evaluation of vessel financing applications, by giving the factor a figure from 1-5. The figure 1 means that the factor is of very little importance. The figure 5 means that the factor is of the highest possible importance.

Vessel financing usually have three basic approaches, *Asset focused*, *Cash Flow focused* and *Borrower focused*. These perspectives are usually all taken into account in most credit applications in vessel financing, but how is the relative importance between the three?

Please mark the relative importance of the factor in general

The potential Cash Flow generated by the vessel _____

The actual vessel _____

The borrower _____

Questions on Borrower assessment factors

Please mark the relative importance of the specific factor

Financial indicators _____

Maturity on existing debt _____

Availability of working capital _____

Credit agency evaluation _____

Previous experience with the borrower on a personal level _____

Previous experience with the borrower as a company _____

Age of the fleet _____

Maintenance and accident record _____

Insurance rating _____

Borrowers business structure _____

Mix of leasing ownership _____

Diversification base of the borrower _____

Management skills _____

Length of time in business _____

Potential for further business with applicant _____

Questions on asset use evaluations

Please mark the relative importance of the specific factor

Net cash flow _____

Currency of revenue generation _____

Stability of that currency _____

Return on investment _____

Salvage or resale value of ship _____

Charter as security _____

Contract of affreightment as security _____

The vessel itself

Flag of operation _____

Report of marine surveyor _____

Vessel technology _____

Hull value _____

Fuel consumption levels _____

Manning requirements _____

Vessel use

Employment strategy _____

Market evaluation _____

Other

Other factors _____

If answered, what factor?

Questions on a case specific level

The study is focused around an imaginary case vessel.

The vessel is a 6-10 000 dwt chemical tanker vessel, new build at a Japanese or Korean shipyard. The vessel is aimed to be in north-European trade on both time charter and spot basis by an experienced first class Danish operator under an A/S or K/S ownership.

What are your views around the financing of such vessel?

What experience does your firm have financing such vessels?

What, in your view, are the strengths of such a vessel when it comes to financing possibilities?

What, in your view, are the weaknesses of such a vessel when it comes to financing possibilities?

Do you believe, based on corporate policies, that your firm would be willing to take part in the financing of such vessel?

If yes, under what conditions?

If no, why so?

If no, what changes in characteristics do you believe would be necessary to obtain financing?