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**The Determinants of Capital Structure
in Shipping Companies**

Case Studies of Broström And Concordia AB

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ABSTRACT

This thesis deals with problem concerning capital structure in shipping companies. Various capital structure theory perspectives such as agency, financial distress, and pecking order are reviewed in order to formulate arguments concerning the levels of debt and equity in shipping companies. Those issues are illustrated by two theoretical models, the trade-off model and the pecking order hypothesis. Along with those models, we will present the Square Model that was set up by Professor Thomas Polesie in 1991 regarding financial structure in relation to economic operations of a company.

We have studied two Swedish companies within the shipping industry due to comparable issues. We decided to choose Broström, an independent company, and Concordia AB, a member company of Stena Lines Group, which both operate in tanker transportation, for our case studies. We examined how Broström and Concordia decide on their capital structure and which factors were taken into account in their decisions on capital structure. These two companies have a different financial structure, in which Broström has a larger debt proportion and Concordia uses more equity. We have analyzed some relevant factors that determined the company's capital structure in order to answer the question why the two companies operate in more or less the same business area but are pursuing a different capital structure. The main differences of the two companies are business and financial risks, and management attitude.

Keywords: Modigliani and Miller's (M&M) theory, Capital structure, Trade-off model, Pecking order hypothesis, Square Models, Debt method, Equity method, Shipping industry.

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Haipei Huang

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1. INTRODUCTION

In this part of the thesis, we will introduce the background of the study, the purpose and problem discussion. The background presents the overview of Modigliani and Miller theory, Square model, and a brief description of capital raising methods.

1.1 Background

The thesis starts with the introduction of Modigliani and Miller's (M&M) theoretical model about corporate capital structure in 1958 which is considered to have created the turning point for modern corporate finance theory. The theory shows that, in a capital market free of taxes, transaction costs, and other frictions, the choice of a firm's capital structure should not affect its market valuation. Following on the famous irrelevance result of Modigliani and Miller (1958), most theories have sought to explain capital structure by introducing frictions omitted in the original Modigliani and Miller framework. In the Static Trade-off Model (Myers 1977), two frictions, the agency costs of financial distress and the tax-deductibility of debt finance, generate an optimal capital structure. An alternative model (Myers and Majluf 1984) emphasizes frictions due to asymmetric information between managers and outside investors. In this Pecking Order Model, a financial hierarchy descends from internal funds, to debt, to external equity.

In recent years, Shyam-Sunder and Myers (1999) assessed these non-nested capital structure models by examining debt financing patterns through time. They show that, under the Pecking Order Model, a regression of debt financing on the firm's deficit-of-funds, i.e., real investment and dividend commitments less internal funds, should yield a slope coefficient close to unity.

Square Model

It was created by Professor Thomas Polesie concerning financial structure in relation to economic operation of a company. It is represented in the following ways:

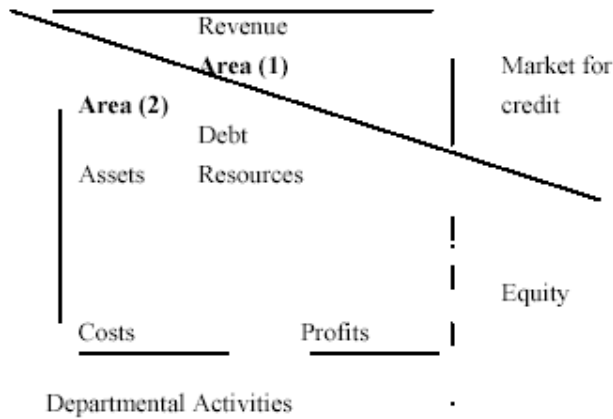


Figure 1. Square Model

Figure 1 shows a general scheme for the overview of a corporate entity in accounting terms (Polesie 1991). Area One represents finance of a company while Area Two represents management control of a company, i.e. all the activities the company performs in order to achieve its goals. The left side illustrates assets, moving from the most liquid to least liquid, the right side lists liabilities and equity. This model provides the overall financial picture of a company at a given time. We use this model to analyse capital structure in relation to other financial information, especially the relationship between debt, equity and assets. Assets should be one of the most important factors to decide the level of debt or equity. In shipping companies, vessels are the main assets which require an intensive investment requirement. It is one of the reasons why most shipping companies prefer using debt to equity. In order to have a more accurate financial picture of a shipping company, besides the financial information, we will further investigate the soft side that is not shown in the financial report such as the relationship and trust between the company and customer, employees, or external investors.

Debt financing

Using debt is a preferable way for shipping companies. Debt is defined as money borrowed that must be repaid at a set time period and generates income for the lender over that time period under the term of interest. Lending sources

include not only banks, but also leasing companies, factoring companies and even individuals.

Equity financing

Not many shipping companies use more equity than debt. Equity is a more expensive, more flexible method of financing than debt. With equity financing, a company gives an ownership stake and often representation on the Board of Directors to the equity providers. On the other hand, equity does not entitle equity providers to any claim to a company's assets or require that company to make scheduled payments. Outside investors typically receive a portion of the company equity (ownership) in return for their investment.

1.2 Problem Discussion

Capital structure has been mentioned in different parts of the literature and in many different ways. Our research problem will deal with all the relevant elements concerning capital structure of Swedish shipping companies; therefore the most relevant financial information and ratios will be analyzed. We decided to choose two models concerning capital structure of a company which we think can be applied to our case studies. Those models that we studied are a theoretical part, but we do not think they can be applicable in practice because of their inability to deal with other important factors of a company such as the firm's asset structure or the stability of the firm's income. They also only provide the information of how to determine the capital structure with very certain relevant factors, without detailed suggestions about capital raising methods. It would therefore be interesting to investigate not only how companies determine their capital structure but also how they raise capital for investment since there is the lack of literature in this area. It is also very interesting to explore whether the two shipping companies have the same business characteristics and lead to the same procedures in determining their capital structure. Is there any model that a shipping company chooses in implementing their capital structure? Is their capital structure decided by merely costs of financial sources or by management attitude as well? Do the

profitable companies use more debt than equity, especially a profitable shipping company?

Those answers will be found by examining all the factors as indicated in the theoretical part such as size, income variability, level of debt, ownership, and management attitude. We will further discuss the ownership of shipping company in relation to capital structure since the capital structure of a company is not only decided by the costs of financial sources but also by the preferences of decision makers. The reason why we desire to emphasize this idea is that the two case study companies have differences in ownership structure, and therefore they have different levels of authority over their decision making process. Broström is quite an independent company but Concordia is much influenced by its parent Group. We will try to find out that whether the ownership structure affects the capital structure of the two companies.

Furthermore, the trade-off model states that the transportation industry uses more debt than equity and the profitable company prefers using more debt in order to make use of a tax shield. However, in the case studies, it is interesting to see that Concordia has been profitable in the shipping industry with relatively slow growth, and has a low debt ratio. In the mean time, Broström, also a profitable company, has employed much more debt than equity. We will attempt to explore the factors that decide their capital structure and finally we will draw an overall conclusion about the two case studies concerning capital structure.

1.3 Problem And Purpose

Our purpose is to solve the research questions stated below, which are formulated on the basis of the problem discussion.

To summarize, the purposes of the paper are to answer the questions below:

- How do Swedish shipping companies decide on their capital structure and what is the method of capital raising they prefer to use in their capital structure long term strategy?

- Is there any model that the shipping companies use in deciding their capital structure?

Furthermore, based on the idea that shipping industry is not an attractive investment to the banks and equity investors and many investors are reluctant to put more money in the industry, we will give some discussion on how this matter would affect shipping companies in terms of money raising.

2. METHODOLOGY

The purpose of this chapter is to give the reader a better understanding of the structure of our thesis and description of the way in which we proceeded with our research. It also gives an idea of how and why we formulated and identified our questions, and the choice of the specific case studies which illustrate our research topic. We will first start with describing our research strategy and method. Then we will further discuss the quality of the methods we chose. Finally, we explain how we chose and collected data.

2.1 Research Strategy

The choice of research strategy depends on what kind of questions are to be answered and the problem to be solved. Yin refers to five different research strategies: experiment, survey, archival analysis, histories and case study (Yin 1994).

Our thesis is mainly based on the current theoretical debate and existing research regarding the capital structure models, and formulation of the theoretical hypothesis. We examined earlier studies on the subject, financial magazines, and annual reports. We gathered the basic information about the shipping companies in general: how they operate, how they are financed and why this company form exists. We conducted a research discussion and analysis using two case studies.

We have decided to choose the case study approach because we consider it as the most suitable approach to illustrate the identified problem. Also in practise, adopting the case study approach allows us to focus on specific cases, and to pursue an in-depth study of two typical companies. Therefore we could test our hypothesis derived from the theory and model.

To relate the theory and reality to each other, we applied the deductive method to deal with the problem. In the deductive way, we are supposed to empirically test the hypothesis derived from the existing theory and model in the specific cases. This theory decides how the information also shall be interpreted and

how the results shall be related to the already existing theory (Patel and Davidsson 1994). By drawing logical conclusions the result will be reached (Ericsson and Wiedersheim-Paul 1997)

We compare our findings with the already existing theories about the capital structure in the ways of choosing capital raising methods.

2.2 Research Evaluation

The quality of research is determined by validity and reliability.

2.2.1 Internal validity

Internal validity deals with how the research findings match the reality. Do the findings capture what is really out there? Are the researchers measuring what they think they are measuring? Internal validity can be addressed by using multiple sources, checking interpretations with individuals interviewed, staying on-site over a period of time, asking peers to comment on emerging findings, involving participants in all phases of the research, and clarifying researcher biases and assumptions (Merriam 1998).

In order to get solid information about the case companies we conducted several interviews by e-mail with the persons from different positions at the case companies. Through discussion and detailed consultation with our supervisor, Prof. Thomas Polesie, we also built up our own view of what the reality looked like, which improved our understanding and created a more accurate picture of the two case study companies' situations.

2.2.2 External validity

External validity deals with the subject of whether the findings can be generalized to other situations outside the single case. One has to answer the question of whether the findings are valid outside the domain studied (Merriam 1998).

In terms of external validity, although it was not possible to use several resources' information in some aspects, key information was chosen to review the empirical data. The information and data have been selected on the basis of their knowledge of their company for the examined time period.

If what was supposed to be investigated, is in accordance with what one really investigates, then one has achieved high validity (Patel and Davidson 1994).

2.2.3 Reliability

The question about reliability is not whether the findings will be found again but whether the results are consistent with the data collected. The goal for the researcher is also to minimise the errors and biases of the study as much as possible (Merriam 1998).

The reliability of our research should be justified by the procedures of gathering materials we followed.

Our study group is a very distinguished industry, which differs from other kinds of industries, and the methods applied by each specific company vary from case to case. Our intentions are not to draw a conclusion for the whole industry, but to contribute to a better understanding of how shipping companies obtain financing and provide suggestions to specific shipping companies under different economic situations and financial conditions inter-reacting with the global economy and the shipping market environment in different time periods.

2.3 Data Selection

When we studied the area of capital structure, we chose the company case studies to examine. After having a thorough consideration, we came up with the conclusion that we need to choose two companies in the same industry to illustrate the research topic. When we collect data, we can collect primary or secondary data. In our research, we used both primary and secondary data, in which primary data was collected by questionnaires and the secondary data collected was mainly from company annual reports, articles, books, previous studies, and internet searches. In the case study there are three forms of

strategies in data collection. They are interviewing, observing, and analysing documents (Merriam 1998). We chose to have our major focus on observations and analysis in our study. The theoretical framework used in the thesis is built up around theories developed by Myers and Majluf (1984).

Also there are two different types of methods, qualitative and quantitative. These two methods differ regarding the information observed, that is, how numbers and statistics are used (Holme and Solvang 1997).

The main purpose of the qualitative method is to gain a deeper understanding of the problem that is studied, and not to prove the trustworthiness with statistical tools (Holme and Solvang 1997). Statistical methods of measurement are of decisive importance in the analysis of the gathered quantitative information. If a quantitative research is carried out, statistical generalisations can be made (Holme and Solvang 1997).

For the purpose of our thesis we chose both quantitative and qualitative methods to serve our analysis and research conclusion. In the consideration of the needs of using the same kind of sources, to present a high level of comparability, we decided to base the empirical part of our study on annual reports and questionnaires. We also considered that the annual report could represent a contemporary source of data since they were written a couple of months after the end of fiscal year. But on the other hand, annual reports can be less objective because they are made by the company management to show the best picture to their potential shareholders. For the questionnaires, we contacted the person in charge in the finance department at the two companies through e-mail (see Appendix for questionnaire emailed). Base on the requirement for the empirical part, we set up our questions that include all the relevant information that we need to get from the companies. We got the answers from them through e-mail, which mostly cover the information required.

Therefore it is imperative to be aware of the secondary data and look upon it in a critical way. In order to get a more objective conclusion and analysis on our study, we minimized the error by refining the content of the statements, separating facts from opinions, and taking into account all relevant factors. The

conclusion and analysis are mainly based on the information abstracted from the annual reports.

2.4 Thesis Structure

Our thesis includes five chapters as follows:

1. Introduction
2. Methodology
3. Theoretical framework
4. The shipping industry
5. Analysis and conclusions

Chapter 1 provides the overall structure of the thesis, in which an overview of the model as well as theory regarding capital structure of a company is mentioned.

Chapter 2 gives a methodology framework of the whole thesis in which it states in detail the processes and methods we used in our research. It also shows the structure flow of the thesis.

Chapter 3 presents different capital structure theories in order to have a fundamental understanding about the capital structure of a company in relation to other relating financial information. The guideline for the case study is created in this chapter.

Chapter 4 examines the key figures that are important to the shipping companies. Industry averages in comparison with other Swedish industries are presented. This chapter illustrates the theoretical guidelines presented in chapter 3 by giving the real numbers of the Swedish shipping industry as well as other comparable industries. This chapter also presents the current relationship between the shipping industry and the financial providers such as the banks and equity market.

Chapter 5 analyzes the two case studies in terms of capital structure and answers the problem discussion. At the end of each case study, we will draw a

conclusion that is based on the information found from their annual reports, questionnaires or other relevant documents. Finally, we present our overall conclusion for the two case studies and suggestions for further study in this field.

3. THEORETICAL FRAMEWORK CONCERNING CAPITAL STRUCTURE

This chapter of the thesis introduces the theoretical problems concerning capital structure in shipping companies. It will begin with the introduction of Modigliani and Miller (1958) theoretical model about corporate capital structure. The two related models will be analyzed in order to formulate the guidelines for the case studies that will be carried out in the next part of the thesis. The Square Model which was created by Professor Thomas Polesie in 1991 is also mentioned with the aim of having a clearer illustration about capital structure in relation to the financial information of a shipping company. Furthermore, we will briefly introduce the two most commonly used methods of raising capital, debt and equity method. The final purpose of this chapter is to find out the factors that should be taken into consideration in terms of capital structure of a shipping company. The chapter will be used as a guideline for our case studies in the following parts of this thesis.

3.1 Modigliani And Miller's Theory Summary

As mentioned above, in 1958, M&M published their seminal paper on the theory of the irrelevancy of capital structure. They outlined the conditions under which capital structure is irrelevant. These restrictive conditions included no taxes, a perfect capital market, no bankruptcy cost and full information. Subsequent studies have analyzed the existence of imperfections in the real world and have used these to disprove M&M's original hypothesis and to argue the importance of firms' capital structure decisions.

We now understand the most important departures, from M&M's assumptions, that make capital structure relevant to a firm's value. The two most prominent capital structure theories, Trade-off Model and Pecking Order Hypothesis, have been developed to explain these real world imperfections which are respectively based on bankruptcy costs, agency costs and costs deriving from asymmetric information. As the purpose of this paper is to consider the determinants of capital structure in the cases of two firms which have different size, and future growth, it is also important to address the question of the extent

to which financial structure is related to the size of the firm. M&M did not make reference to the size and future growth of the firm being factors in determining financial structure and therefore by implication these factors should not affect financial structure. Nevertheless, recent research on financial structure has a growing acceptance of differences between financial structures of firms which have different ownership structure. Ang (1992), in agreement with Pettit and Singer (1985), differentiates the financing problems of one firm who has full control right of management with another firm who has only part authority over its decision making and emphasises that some standard problems such as agency and asymmetric information encompass different issues in the cases of the two firms. According to Jordan and Tayler (1998), capital structure decisions involve not only the cost and availability of different sources of finance, but also the preferences of the decision makers. This theory is very helpful for our case studies since Broström has more or less full right over its decision-making but Concordia is much influenced by Stena Lines Group because 54% of its ownership belongs to Stena Lines.

3.2 Theoretical Models

Many studies have so far attempted to test the information content of financial decisions made by firms and focused on the factors motivating the choice between debt and equity. Empirical work has shown results inconsistent with the Modigliani and Miller (1958) irrelevance theorem. Reconciliation of theoretical and empirical study in this area has resulted in two major theories of optimal capital structure; the trade-off theory and the pecking order theory (Myers 1984). We will introduce these two models in brief, and we will emphasize the Trade-off Model since we think it will be applied to our case studies. Another reason for this choice is that only the Trade-off Model provides an actual formula for calculating the optimal capital structure while the Pecking Order Hypothesis only tries to explain observed patterns, not to calculate an optimal capital structure level (Copeland & Weston 1992).

3.2.1 Model based on agency costs - The trade-off model

The trade-off theory views a manager as trading off the benefits from debt financing against the various costs of debt. The marginal agency cost of debt is regarded as an increasing function of debt in a capital structure. Therefore, a manager, acting as a shareholder value maximizer, should borrow up to the point where the marginal value of the benefits from debt financing, including interest tax shields, is equal to the marginal cost of debt including agency and financial distress costs. According to the trade-off theory, mature firms holding mostly tangible assets should borrow more, other things being equal, than growing firms with many intangible assets, since the costs of financial distress should be greater for firms with valuable intangible assets and growth opportunities. Barnea, Haugen and Senbet (1981) argue that a firm reaches an optimal capital structure when the costs associated with agency problems are balanced by the benefits associated with different financial contracts in terms of their inherent ability to resolve agency problems and tax exposure.

The M&M proposition assumes that there are no bankruptcy costs, and this has been shown to be an important determinant of capital structure. The trade-off model is based on the value of an un-levered firm, where the optimal capital structure is found at the trade-off point where the gain from adding additional debt is offset by the extra-incurred cost of financial distress.

3.2.1.1 Financial distress

The trade-off model shows that debt on the one hand provides tax benefits to the firm, but on the other hand puts pressure on the firm, since interest and principal payments are obligations. The large cost of financial distress probably leads to bankruptcy. In other words, the ultimate financial distress is bankruptcy, where ownership of the firm's assets is legally transferred from the shareholders to the bondholders. Bankruptcy costs include two parts, direct and indirect costs. Direct costs can be seen as out-of-pocket cash expenses, which are directly related to the filing of bankruptcy and the action of bankruptcy. Examples of direct costs are fees for lawyers, investment bankers, administrative fees and value of managerial time spent in administering the bankruptcy (Haugen and Senbet 1978). Indirect bankruptcy costs are defined as expenses or economic losses that result from bankruptcy but are not cash

expenses on the process itself (Titman and Wessels 1984). Examples of such costs caused by bankruptcy are sales that are lost during and after bankruptcy, diversion of management time while bankruptcy is underway, and loss of key employees after the firm becomes bankrupt. Sales can frequently be lost because of fear of impaired service and loss of trust.

3.2.1.2 Agency costs

Apart from financial distress, the trade-off model also concerns the agency costs, which arise due to conflicts of interest. Agency costs are the costs associated with monitoring management's actions to insure that these actions are consistent with contractual agreements among management, shareholders and debtholders. A large, publicly owned firm would require much more monitoring than a small, unlevered, owner-managed firm when considering shareholder agency costs. However, bondholders' agency costs will be the same for both small and large firms. Therefore, total agency costs will be higher for large, publicly owned firms than for small, unlevered owner-managed firms.

The question raised here is how these conflicts between shareholders and bondholders affect the firm value? Bondholders are rational, they "price protect" themselves, which leads to the restrictive covenants in debt agreements.

3.2.1.3 Trade-off theory of capital value

According to the model, target debt ratios should vary from firm to firm. Obviously, the company with safe assets and plenty of taxable income should have high target debt ratios. Whereas, marginally profitable companies with risky intangible assets should rely primarily on equity financing, meaning they have low target debt ratios. These findings are very important to assess the company's borrowing capacity.

3.2.1.4 Comparison between the trade-off model and MM

From these discussions above, we can say that the trade-off model theory is more realistic than the M&M model. The trade-off model explains many industry differences in capital structure, in which high techs with risky and intangible assets often use little debt, while transportation or manufacturing firms use more debt than equity.

3.2.2 Pecking order hypothesis

The pecking order theory states that firms prefer internal financing and if external financing is required, they issue the safest security first. The costs generated from asymmetric information are greater for equity than debt. Managers will choose to issue debt when investors undervalue the firm and issue equity when they overvalue the firm. Recognizing this policy of managers, investors will perceive an equity issue as bad news, making the cost of issuing equity higher. If the firm can use internal financing sources or issue low-risk debt, then the cost of asymmetric information can be minimized. If the manager has better information than investors, it is better to issue debt than equity (Myers and Majluf 1984). That is, firms issue debt first, then possibly hybrid securities such as convertible bonds, then equity as a last resort.

Donaldson (1961) has found a pecking order for how firms establish their long-term financing:

1. Firms prefer internal financing to external financing of any sort (debt or equity), when financing positive NPV projects.
2. When a firm has insufficient cash flow from internal sources, it sells off part of its investment in marketable securities.
3. As a firm is required to obtain more external financing, it will work down the pecking order of securities, starting with very safe debt, and then progressing through risky debt, convertible securities, preferred stock, and lastly, common stock.

The pecking order hypothesis does not provide a formula for calculating an optimal capital structure but it helps to explain observed patterns regarding financing preferences.

3.2.3 Comparison between pecking order and the trade-off models

While the trade-off model implies a static approach to financing decisions based upon a target capital structure, the pecking order theory allows for the dynamics of the firm to dictate an optimal capital structure for a given firm at any particular point in time (Copeland and Weston 1992). A firm's capital structure is a function of its internal cash flows and the amount of positive-NPV investment opportunities available. In the real world, it is interesting to see that a firm that has been very profitable in an industry with relatively slow growth, for example, few investment opportunities, will have no incentive to issue debt and will likely have a low debt-to-equity ratio. A less profitable firm in the same industry will likely have a high debt-to-equity ratio. The more profitable a firm, the more financial slack it can build up. Financial slack is defined as a firm's highly liquid assets (cash and marketable securities) plus any unused debt capacity (Moyer, McGuigan, and Kretlow 2001). Firms with sufficient financial slack will be able to fund most, if not all, of their investment opportunities internally and will not have to issue debt or equity securities. Practical financial managers will attempt to maintain financial flexibility while ensuring the long-term survival of their firms. When profitable firms retain their earnings as equity and build up cash reserves, they create the financial slack that allows financial flexibility and, ultimately, long-term survival. Pecking order theory explains these observed and reported managerial actions while the trade-off model cannot. It also explains stock market reactions to leverage-increasing and leverage-decreasing events, which the trade-off model cannot. However, the trade-off model provides a formula for calculating an optimal capital structure. Pecking order theory, on the other hand, does not explain the influence of taxes, financial distress, security issuance costs, agency costs, or the set of investment opportunities available to a firm upon that firm's actual capital structure. It also ignores the problems that can arise when a firm's managers accumulate so much financial slack that they become immune to market discipline. For these reasons, the pecking order theory is offered as a

complement to, rather than a substitution for, the traditional trade-off model. While the traditional trade-off model is useful for explaining corporate debt levels, pecking order theory is superior for explaining capital structure changes.

The comparison will be summarized in the Table 1.

Table 1. Comparison of Trade-off and Pecking Order Theories

TRADE-OFF THEORY	PECKING ORDER THEORY
Conforms with value maximizing construct	Considers managerial motivations
Assumes a relatively static capital structure	Allows for a dynamic capital structure
Considers the influence of taxes, transaction costs, and financial distress	Considers the influence of financial slack and availability of positive-NPV projects
Ignores the impact of capital market “signals”	Acknowledges capital market “signals”
Ignores concerns regarding proprietary data	Acknowledges proprietary data concerns
Cannot explain many real-world practices	Explains many real-world practices

By combining the trade-off and asymmetric information (Myers and Donaldson) theories, we obtain the following explanation for a firm’s behavior:

1. Debt financing provides benefits because of tax deductibility of interest, so firms should have some debt in their capital structures.
2. However, financial distress and agency costs place limits on debt usage – beyond some point, these costs offset the tax advantage of debt.
3. Finally, because of asymmetric information, firms should maintain some reserve borrowing capacity in order to be able to take advantage of good investment opportunities without having to issue new stock at low prices; hence the actual debt ratio will generally be lower than that suggested by the trade-off models.

3.3 The determinants of capital structure

In this part, we will analyze the factors that should be considered by any company in deciding their capital structure. We have so far introduced the theoretical models behind an optimal capital structure. The most important model for our purpose is the trade-off model because it explains and also provides a formula for calculating the optimal capital structure. The capital structure of a company is provided by various sources, which are shown on the liability and owner's equity side of a balance sheet. In general, the company has three main ways of funding new investment: use retained earnings, borrow through debt instruments, or issue new shares. These components make up the capital structure of a company and also reflect the firm ownership structure of a company, in which retained earnings and common stock reflect ownership by shareholders while debt represents ownership by debtholders. The aptitude of liability and equity varies across companies, and depends not only on the business characteristic of the company but also on the perceptions of the managers in this matter. Generally, debt is cheaper than equity as a source of investment financing but the company cannot use only debt to finance the new investment. We suppose that a company is financed completely by debt and the interest rate paid on its debt is 5%, earnings are also supposed at 10% yearly. Thus its payments can be made and the financing in this case is effective. On the contrary, if the company carries a lot of debt at high interest rates, but the

growth rate is low, it could be a very risky investment financing since the interest payments probably completely wipe out earnings.

Similarly, the company also cannot raise funds only by issuing stock. This is because the company must use cash to fund new investment, while stock cannot generate cash at the time the company needs to pay for the new investment.

Similar to other companies, shipping companies also use debt, retained earnings or stock to finance their investments. However, each shipping company has shown its own particular method of raising money for its operation in the process of acquiring capital. Companies are occasionally financed by the use of common stock; others are sufficiently risk free to use long-term debt. Some companies are very conservative in their methods of financing while others use various types of debt securities as long as they can be marketed. Patterns of capital structure have developed in different companies based on previous results and projected expectations. Large companies in the maritime industry have different capital structures and may react differently to the same change in the economic outlook. From different points of view, the capital structure consists of different factors that should be discussed. To decide whether shipping companies should use debt or equity, they should consider many relevant issues in different periods of a company's development. We are going to discuss in brief some of principles that we think are of concern by most shipping companies in deciding on their capital structure.

By combining the knowledge from these sources, we can conclude which factors are the most important ones when determining an appropriate capital structure for a company in the shipping industry.

3.3.1 Tax shield

The impact of tax on capital structure is the main subject of the pioneering study by Modigliani and Miller (1958). Almost all researchers now believe that taxes must be important to companies' capital structure. Firms with a higher

effective marginal tax rate should use more debt to obtain a tax-shield gain. However, if much of a firm's income is already protected from taxes by accelerated depreciation or tax loss carry-forwards, its tax rate will be low, and in this case debt will not be as advantageous as it would be to a firm with a higher effective tax rate. Also, if the firm is not making a profit, there is no tax advantage to debt; therefore a tax shield only can be considered in the profitable company. A profitable firm should have all intentions to protect its income from taxes, but the opposite situation is seen in real life. Very profitable firms use the tax shield to a smaller extent, because these firms do not need much debt financing. Their high rate of return enables them to do most of their financing with retained earnings (Donaldsson 1961). We will return to examine this factor in the case study to find out if the two companies in our example take tax shield into consideration when determining their capital structure since they are both profitable companies.

3.3.2 Business risk

Volatility or business risk is a proxy for the probability of financial distress and it is generally expected to be negatively related with leverage. Business risk is another important factor for any company in making their capital structure decision. Business risk is defined as the uncertainty inherent in projections of future returns on assets (ROA) if no debt is used. The greater fluctuation in ROA, the larger is the firm's business risk, in which ROA is calculated by net income divided by total assets. The larger the firm's business risk, the lower is its optimal leverage level. Business risk could either be determined by fundamental factors or by un-levered beta. Un-levered beta is derived from beta equity. Beta equity consists of a firm's business and financial risk; consequently the beta equity must be un-levered in order to refine the business risk. A higher levered company will have a higher equity beta since a larger financial risk is used (Copeland & Weston 1992). We will emphasize the fundamental factors to estimate the business risk of the two companies since the unlevered beta is quite complicated to explain deeply.

3.3.3 Industry

Industry is also one of factors that should be considered when the company decides on its capital structure. It can be assumed that companies belonging to the same industry face the same economic conditions, but the economic conditions may vary among industries. Consequently, industry classification can be used as a proxy for business risk. Different industry groups have been found to have significant differences among capital structure. In all developed countries, it has been found that certain industries, such as utilities, transportation companies, and mature, capital-intensive manufacturing firms, are characterized by high leverage ratios, while other industries, such as service firms, mining companies, and rapidly growing or technology-based manufacturing companies, employ little or no long-term debt financing. Construction was found as the most leveraged industry with a significantly different capital structure from the industries with low average ratios.

3.3.4 Size

Many studies suggest there is a positive relation between leverage and size. Marsh (1982) finds that large firms more often choose long-term debt while small firms choose short-term debt. Large firms may be able to take advantage of economies of scale in issuing long-term debt, and may even have bargaining power over creditors. So the cost of issuing debt and equity is negatively related to firm size. A firm's size is considered positively related to leverage. The most important argument is that informational asymmetries are less severe for larger firms than for smaller firms. If the public is more aware of what is going on at larger firms, the firm will find it easier to raise debt. Furthermore, larger firms can diversify their investment projects on a broader basis and limit their risks. Large firms are often more diversified and have more stable cash flows; the probability of bankruptcy for large firms is smaller compared with smaller ones. Thus the financial distress risk can be considered lower for larger firms.

3.3.5 Growth opportunities

Different theories give different predictions on how a firm's growth is related to its leverage. The agency theory gives a negative relationship between growth

and leverage. Myers' (1977) underinvestment problem suggests a negative relationship between growth and long-term debt. The argument is that if a firm's growth opportunities are intangible assets instead of tangible assets, the liquidity effect of high leverage may reduce a firm's ability to finance its future growth. So he suggests that managers at firms with valuable opportunities should choose low leverage. Capital-intensive firms with few growth opportunities should be highly levered while technology-based industries with many growth opportunities should have relatively little debt. This is due to the fact that growing firms have more flexibility in their investment choices and may accept risky projects (Myers 1977). Shipping is an industry with a low growth rate and usually uses more debt than equity.

3.3.6 Assets tangibility

In an uncertain world, with asymmetric information, the asset structure of a firm has a direct impact on its capital structure since a firm's tangible assets are the most widely accepted sources for the bank borrowing and secured debts. If banks have imperfect information regarding the behaviour of the firm, firms with few tangible assets find it difficult to raise funds via debt financing. The type of assets the firm holds plays a significant role in determining that firm's capital structure. The reason can be that when a large fraction of the firm's assets is tangible, assets can serve as collateral, which diminishes the risk of the lender suffering agency costs of debt. The liquidation value of the firm's assets will also be higher with tangible assets, which will decrease the probability of mispricing in the event of bankruptcy and make lenders more willing to supply the loans. It has also been found that firms can borrow at a lower interest rate if their debt is secured by assets with a stable long-term value (Williamson 1998). Collateralizing the debt also restricts the firms to using the funds for a specified project and decreases the conflicts between equity holders and debt holders (Jensen and Meckling 1976). In the Rajan and Zingales (1997) study of European countries, it is found that tangibility of assets is positively correlated with leverage in all countries examined. These findings are consistent with studies made of U.S. companies. Asgharin (1997) found in his study of Swedish companies, that there is a positive relationship between corporate leverage and the collateral value of the firm's assets. Construction, Transport,

and Forest, which are highly leveraged industries, are also industries with large tangible assets.

In short, it can be assumed that companies with tangible asset structures experience a lower business risk. The shipping companies are usually highly levered, whereas companies involved in technological R&D employ less debt. Tangible assets reduce business risk and therefore also the cost of financial distress (Asgharin 1997).

3.3.7 Earnings volatility

-Demand variability. The more stable the unit sales of a firm's products are, other things held constant, the lower is its business risk. With stable sales a firm can more safely accept more debt and incur higher fixed charges than a company with unstable sales.

-Sales price variability. Firms whose products are sold on highly volatile markets are exposed to higher business risk than similar firms whose output prices are relatively stable.

3.3.8 Profitability

Many authors have different views on the relationship between leverage and profitability. The pecking order theory strongly suggests a negative relationship between leverage and profitability. If a firm has more retained earnings, it will be in a better position to finance its future projects by retained earnings, instead of external debt financing. Regardless of the industry in question, it has been found that the most profitable firms borrow the least. The finding that the more profitable the firm is, the less they borrow, is against the trade-off model. The trade-off model suggests that profitable firms should borrow more, since they have a greater need to protect income from corporate taxes. What should also support a positive relationship between profitability and leverage is that the probability of bankruptcy decreases as profitability increases (Myers 1993). We will use the ratio of operating income to total assets as the proxy for profitability.

3.3.9 Financial risk

Financial risk is defined as the portion of shareholders' risk, over and above basic business risk, resulting from the use of financial leverage (Weston and Brigham 1990). The following factors will be used in order to estimate financial risk.

3.3.9.1 Leverage level

Leverage level shows the financial risk of a company; a large leverage level is equivalent to a large financial risk. A widely used method to examine the effect of financial leverage is to analyse the relationship between earnings before interest and taxes and earnings per share. Cheng (1979), with an example, illustrated clearly that earnings available to common stockholders are higher under the long-term debt proposal than they are under the preferred stock proposal, regardless of the fact that the interest rate on long-term debt is higher than the preferred stock dividend rate. His example is summarised in the Table 2.

Table 2. Example of leverage

	Common Stock	Preferred Stock	Long-Term Debt
Earnings Before Interest & Tax	\$40,000,000	\$40,000,000	\$40,000,000
Interest 8%			<u>\$8,000,000</u>
Earning before taxes	\$40,000,000	\$40,000,000	\$32,000,000
Income taxes 45%	<u>\$18,000,000</u>	<u>\$18,000,000</u>	<u>\$14,400,000</u>
Earning after taxes	\$22,000,000	\$22,000,000	\$17,600,000
Preferred stock dividends 6%		\$6,000,000	
Earnings to common stockholders	<u>\$22,000,000</u>	<u>\$16,000,000</u>	<u>\$17,600,000</u>
Number of shares outstanding	6,000,000	4,000,000	4,000,000

Earning per share	\$3.67	\$4.00	\$4.40
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Cheng further stated that the company would have more advantage in using more debt if it has more corporate income tax. Furthermore, if the financial leverage is successful, the use of more debt capital would generate higher earnings per share. But if the debt leverage is too high, for example three-fourths of capital, a drop in the amount of earnings before interest and taxes by two-thirds would drastically reduce the earnings per share more than five times. The evidence shows that in the case of a shipping recession, all common stock financing has the most favorable business conditions. On the contrary, in good times, all long-term debt financing is the most favorable choice. In this sense, when a company decides to use more debt to finance, they have to consider the possible impact of future economic conditions on earnings per share under various financing plans.

3.3.9.2 Debt coverage ratio

The fixed charges of a firm include principal and interest payments on debt and lease payments. If the firm wants to take on additional debt, which increases fixed charges, the firm should analyze its expected future cash flows, since fixed charges must be met with cash. The inability to meet these charges may result in financial insolvency and bankruptcy. To gain knowledge of the debt capacity of a firm, the debt coverage ratio is helpful. When the debt coverage ratio is equal to one, it means that the firm is just able to pay its interest expenses. Consequently, a ratio below one means that the firm will not be able to pay its interest expenses. The larger the debt coverage ratio is, the lower is the company's financial risk (Van Horne 1986).

3.3.10 Financial flexibility

It is crucial for firms not to be forced to turn down promising projects because funds are not available. The firm should always be in a position to raise money, even when times are bad. In bad times, suppliers of capital are more willing to make funds available through bonds, to firms with a strong balance sheet and secured positions. The greater the probable future need for capital, and the

worse the consequences of a capital shortage, the stronger the balance sheet should be. The goal of the firm is to maintain financial flexibility, which means maintaining adequate reserve borrowing capacity (Weston and Brigham 1990). The lower the firm's financial flexibility, the higher is the firm's financial risk. In other words, flexibility here should be understood as the capacity of the shipping company to adjust to expected and unexpected changes in circumstances. It means that the company prefers a capital structure, which gives it maximum freedom to manage at all times. In general, the more flexible the contract for the use of money, the more desirable it would be from the point of view of financial management. The contract with common shareholders gives the shipping companies the right to pay or not pay dividends. The proportion of common shareholders' equity can be increased by the sale of additional share, but it cannot be readily reduced. In general, the type of capital structure is influenced by managerial control factors. If a company disregards maintaining the ownership, it will sell additional common stock. Preferred stock is usually issued as a senior security with a fixed dividend rate during the period when the money obtained from the shareholders has not yet provided additional earnings to the company. If the preferred stock is converted into common stock, the capitalisation is not changed but the capital structure is changed by reducing the preferred stock proportion and increasing the common stock proportion. It is often used by growing companies that are anxious to keep their cost of capital as low as possible with the issue of new common stock and that are also reluctant to maintain the obligation imposed by preferred stock. Commonly, it is difficult for a shipping company to reduce the amount of common stock outstanding unless the shareholders are willing to sell stock back to the company. Therefore, common stock is not a flexible factor that can be used. Long-term debt may be reduced at the time of maturity but a change in the use of this source before maturity is more difficult.

3.3.11 Management attitudes

The other factor to consider when determining an optimal capital structure is managerial attitudes. Some managers are simply more aggressive than others. Therefore some firms are more inclined to use debt in an effort to boost profits, whereas some managers are very conservative and prefer the capital structure

that has always been used, even if it is not optimal (Weston and Brigham 1990).

As one of the specific features of the shipping companies, the purchase of a ship requires a very large amount of money and it usually takes a long period of time to pay for the acquisition. Not too many industries require so large an investment to provide capital equipment, in proportion to total investment, as does the shipping industry. However, each shipping company has its own policy regarding capital raising. In the case of a close-held corporations, the fear that an additional issue of voting stock will in some way reduce the control of the present shareholders is an essential consideration. The company may be driven to sell more debt securities or preferred stock. Many of these companies use various kinds of nonvoting common or other devices to limit the voting rights of newcomers. In most large corporations whose stock is very widely distributed, the present management or controlling shareholders are usually well assured of maintaining their control over the positions on the board of directors and over the appointment of corporate officers. When additional capital is raised through the debt or in some cases preferred stock, the company's management is free from worrying about the participation of debt providers in making business decisions or management decisions. This is because creditors have no direct influence in the management of the company although they may place certain restrictions in the debt agreement on the company's financial activities. Accordingly, creditors have no vote in determining the board of directors. Similarly, preferred shareholders may or may not have voting rights. In general, they do not have the right to vote for the board of directors. However, in the case of unpaid dividends on the preferred stock, they may have right to elect the board of directors.

3.3.12 Lower cost of capital

The company also considers the cost of capital in deciding on their capital structure. Obviously, most companies use the cheapest way of raising money if other conditions of all methods are the same. First, we will briefly introduce the components of cost of capital. In general, cost of capital includes common stock, preferred stock, debt and retained earnings. Each of these components

has a cost which can be understood as the costs of using it. The retained earnings are the earnings a company made, that are not distributed to the shareholders. It can be seen as the cost because the shareholder keep their investment in the company and they ask for certain returns on it, which is same as dividends payment on stock. This cost that the company has to pay for shareholders is the cost of retained earnings. The cost of debt is nothing but the cost of the funding provided by credit. Cost of equity is more difficult to determine as share capital carries no explicit cost. But it can be understood as the cost to pay to attract investors to invest in the stock of a company and to keep them interested in retaining their investment. In analyzing the cost of capital, financial analyst uses WACC (Weight Averged Cost of Capital) which is the average of the cost of each of these sources of financing weighted by their respective usage in the given situation. By taking a weighted average, we can see how much interest the company has to pay for every currency it borrows.

Returning to shipping companies, they have usually financed new ships by bank loans or by the issuance of shares. However, shipping companies prefer debt to equity, because of some reasons. First, debt financing costs, or interest, is an acceptable deduction in computation of corporate income taxes, whereas dividends are not. Long-term debt may be useful in a period of raising interest rates since the bond issue sets the cost at the time of issuance such as printing or announcement fee, etc. Preferred stock is a mixed form of financing, combining debt and common stock. The return to common stock shareholders represents earnings, not merely dividends. On the other hand, the maximum return to preferred shareholders usually is limited to the specified dividend, and these shareholders ordinarily do not share in the residual earnings of the company. The cost of preferred stock is based upon the relation between yearly dividends and the net amount received from the sale of the issue. The cost of capital obtained from preferred stock is often less than that of common stock. Preferred stock, unlike debt, has no maturity. However, most preferred stock issues are not regarded as a means of perpetual financing because provisions for retirement of the stock invariably are made.

Cost of capital should be considered along with other relevant factors when deciding capital structure, but low cost of capital is not a decisive factor in this process.

3.3.13 Generalization of choices

The final choice of the types and structure of capital of a shipping company depends on the objective of the management and the desires of the investors who supply the capital. Management chooses the most favorable sources and attempts to obtain money in the market. Because of the uncertainties associated with the investments of fleets and other marine facilities, shipping companies must propose a new investment with expectations of a return higher than the cost of additional capital, and it obviously requires careful consideration.

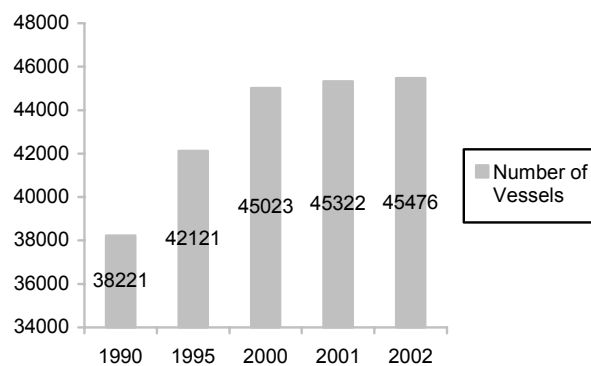
4. THE SHIPPING INDUSTRY

The main purpose of this chapter is to present the Swedish Shipping industry in terms of financial information. In the beginning of this chapter, we will introduce in brief the overview of the shipping industry, in which we attempt to find out some figures to demonstrate the present status of the industry. In this part, we will also present the relationship between the shipping industry and other financial providers such as banks and the equity market in order to investigate the possibility for shipping companies to raise money externally. We also use the figures of some big Swedish shipping companies to represent the whole industry; the two companies that we use for our case studies are in this group. Some financial ratios regarding capital structure will be analyzed in depth as a guideline for our case studies.

4.1 Overview of Shipping Industry

The following figure will illustrate the world fleet for the time period from 1990 to 2002. As can be seen, the number of ships has increased year by year, especially from 1990 to 1995.

Figure 2 The world fleet – number of vessels



Source: Lloyd's Register of Shipping

4.1.1 Introduction

Today, the global shipping industry has witnessed over-capacity, fierce competition and an accelerated trend toward industry consolidation. Ship

carriers continue to focus on achieving higher returns and more efficient utilization of assets. They are facing the difficult task of meeting contract volumes to preserve their contract rate due to lack of required vessels. The inefficient investment in the shipping industry, especially in the current economic climate of today, shows the need for an industry-wide solution. The industry therefore needs to quickly achieve efficiencies in investment with minimal capital expenditures. In order to achieve such a purpose, a number of changes should take place in every aspect of the industry. Furthermore, the capital requirement is very intensive with a great amount of money required for investing in vessels. Also, the life cycle of a ship is usually much longer than other assets, while its value is reduced as its ages. The most expensive new ships will be cruise ships with large vessels of this type costing their owners \$300 million - \$400 million. Other very expensive ships are gas carriers, where the cost is inflated by the price of the material used in the tanks and the extraordinary level of quality control to ensure that they are safe and gas tight. A Very Large Crude Carrier (VLCC) will cost its owners about \$85 million. In general, the industry has to invest about \$40 billion per year to regenerate the fleets, in which the amount of \$30 billion of debt per year is needed to raise (Shipping Times 6/1998). The financing of such sums, especially in a volatile market not known for huge returns on investments, requires careful consideration. In an ideal world a shipper would buy new ships from retained profits, but that seems rarely possible with an industry with an intensive capital requirement, and external resources should be the option to purchase new or second hand vessels.

Currently many shipping companies are experiencing rapid growth, due to the change in business strategy such as merger or acquisition, joint venture, corporation, etc. that accordingly need to make more investment with the sound business decisions. But one of the difficulties encountered by these companies is the access to adequate working capital. Cash flow is often insufficient to fund the new vessel, because the ongoing trading vessels cannot generate enough money for the new investments. Even in the profitable shipping companies, their cash is tied up in stocks and debt with no money to pay for the new investments.

4.1.2 Shipping industry with banks

4.1.2.1 Overview

Banks and financial institutions have been the main source of debt financing for shipping companies. Shipping has relied almost exclusively on commercial bank financing for its external capital needs. Its relation with the public equity markets has been strained and punctuated by corporate collapses. For an industry of its size, it contains relatively few major public corporations, and therefore its access to the corporate debt markets is extremely limited. Leasing, although it has been a significant factor in certain sectors of shipping, has assumed nothing like the prominence it was able to attain in other transportation markets. As mentioned earlier, the shipping industry is a capital-intensive industry with an increasing demand for larger sums of new capital investments year after year. Historically, shipping companies often raised the capital required by selling the older ships in their fleet to replace the new ones. Today the cost of the new ships is very high and the size of the ship becomes larger and larger so shipping companies have to seek outside financial assistance for buying new ships. Obviously, commercial banks are one of the sources of credit for the financing of ships and marine facilities; they represent the dominant sources of short and intermediate-term credit. The cost of bank loans is generally lower than the cost of bond financing.

4.1.2.2 Banks and shipping companies at present

Although the banks have as much, if not more, knowledge of the shipping industry than many of its other investors, the banking community has been complaining that its returns from shipping loans are too low compared with the risk involved. It is not surprising that most of the banks have found that the returns from ship financing are grossly insufficient which has led to a number of banks withdrawing from the shipping finance group. Furthermore, it is unavoidable that banks might be called to absorb some of the market risk, since asset values and freight rates have fluctuated very significantly in recent years. The banks may not intend to provide loans, at least not without the appropriate return. Furthermore, the banks have experienced a large amount of bad debts

from shipping companies and accordingly they put more restrictions on covenants and bank loan conditions to the shipping companies.

4.1.2.3 The challenge and opportunity of the shipping industry in getting loans

It is generally recognized by the shipping industry that the banks continuously play a substantial role in determining the structure of the future world fleets although shipping has always been viewed as a low rate of return industry. In recent years, shipping companies have suffered from lower economic activity around the world, which has caused considerable deterioration in the freight markets and the values of shipping assets. Influenced by a diverse array of socio-economic and political factors, shipping markets are notoriously difficult to forecast. Strong cyclical and sudden movements in ship values and freight rates means that the timing of an investment or divestment is critical. The business of operating vessels, particularly highly sensitive vessels such as passenger ships and crude oil tankers, is becoming ever more demanding and expensive in terms of resources. From a management perspective, ship owners and operators are faced with a serious vessel's aging problem and shortages of well trained and experienced manpower at the time needed. Also, inconsistent profit generation, high profile maritime casualties, notably marine pollution incidents, etc. have pushed the investors to turn their backs on the shipping industry.

4.1.2.4 Why is shipping industry still attractive to investors, especially the banks?

In spite of the problems and potential pitfalls awaiting unwary investors, the shipping industry is a dynamic one, which offers certain advantages for a number of reasons. First, there is a definite need for external sources of capital for shipping companies. Various estimates of the world fleet replacement requirements have been and continue to be based on different interpretations of world sea-borne trade growth, the durability of the existing fleet in the face of mounting regulatory pressures and fleet productivity. It is clear that, with the industry unable to finance its own needs and with traditional sources of debt

financing contracting, greater reliance must be placed on alternative methods including external sources of equity. Second, shipping, as a fragmented and still largely unregulated market, offers numerous and diverse investment opportunities. Indeed, shipping is an industry, which offers something for every kind of investor in the form of a part share in a vessel, a bareboat charter commitment or shares in a public company. Furthermore, shipping can offer investors projects which provide stable, if relatively unspectacular yields, based on strong cash flows over a sustained period to exceptional returns over short periods due to rapid asset appreciation. Third, while vessels' operating margins have been squeezed in many shipping market sectors in recent years due to weaker freight rates and sharp increases in vessel running costs, potentially attractive returns can still be generated.

The fact shows that although shipping industry is not attractive investment for the lenders and other investors due to its low return on investment, there are still increasing numbers of creditors who put more investment in the shipping industry. In the 1980's there were some 20 banks seriously engaged in shipping. By the mid 1990's that number had grown comfortably into triple figures. Now it has fallen back below one-hundred again (Lloyd's Shipping Economics, June 1993).

4.1.3 Equity financing

4.1.3.1 The role and impact of Capital Market with Shipping Industry

Faced with limitations on new credit availability and a high cost of fleet renewal, ship owners have been belatedly waking up to the need to solicit the interest and support of the professional investment community, but they face considerable skepticism and suspicion in most markets. The records of quoted shipping companies, which include some outstanding successes, but also a large number of disasters, is taken into account by investors. Shipowners have too often assumed that equity finance can be used in the same way as debt finance, that is, simply as source of funds for the purchase of vessels. But equity investors are not just providers of capital, which they will want to see, repaid at some point. They are part owners of the businesses in which they

invest, and they require a return on their fund commensurate with the risk profile of the industry in question. In the case of shipping, the risk profile is perceived to be high and it is obvious that the investor is reluctant to invest. In most stock markets of the world, shipping companies represent a tiny proportion of the total market capitalization. They are therefore poorly analysed, if at all, and major institutional investors largely ignore them. Moreover, because of the industry's poor record and reputation, companies seeking a flotation will encounter a large measure of indifference and will find that, if they are successful in their efforts at all, their shares are priced at a substantial discount to adjusted net asset value. Only with time and a material improvement in financial performance will this indifference and the adverse pricing of shipping company shares be overcome.

4.1.3.2 How to get more attraction from equity investors

The shipping industry, it is clear, has to broaden its access to capital if it is to renew its assets on a relatively orderly basis during the coming years. For this to happen, a number of changes have to take place in the organization of the industry. First, there must be increased consolidation, along the lines already implemented in the tanker, carriers, and container sectors. Simply merging two or more companies with the same deficiencies is no great benefit, and it is the stronger companies in the industry which will have to come together, in order to create entities with greater market penetration, operating efficiencies and negotiating strength such as major charterers and shipbuilders. Secondly, these companies must apply tight financial disciplines, ensuring an adequate margin of safety at all times. Such a margin can be ensured by the maintenance of large liquid balances or by a high proportion of first class contractual cash flow, but either way the proof lies in an adequate coverage of interest charges by pre-interest operating cash flow. Thirdly, the industry must convince the financial markets that it is engaged in a business and not a form of asset price speculation. Certainly, the abilities to time the purchase and sale of assets advantageously are a prerequisite for any successful shipowner, especially in the oil tanker and dry bulk sectors. One of the most obvious shortcomings of most shipping companies is their lack of corporate management skills. The

strategic decision making process, if it exists at all, is still too often based on the hunches of one manager.

Shipping stocks are viewed by many investors and institutions as being unattractive, but this has not stopped an increasing number of shipping companies across the world from entering the public equity markets. Debt/equity ratios of shipping companies reduced gradually from ratios of three or more in the 1970s and 1980s to a more conservative debt-to-equity level of no more than two by the 1990s (Shipping Times).

4.1.4 Suggestions on choosing debt or equity

We so far have introduced the two most common used capital raising methods by most shipping companies. Choosing debt or equity depends on not only the business characteristics of a company but also the company's perception of each method. Many companies have a tradition of using more debt, for examples, shipping or manufacturing companies; others are always equity-based companies such as the company in high technology industry. Even in the same industry, some companies always prefer using more debt than equity. It is not possible to give a general guideline for any shipping company in choosing debt or equity. We only expect to make some analysis and suggestions regarding this issue on specific companies that could be different when applied to others. As mentioned earlier, debt is money borrowed, that must be repaid at a set time period and generates income for the lender over that time period under the term of interest. Debt is a preferable method for the company which needs immediate cash or has an intensive cash requirement. In general, before lending the loans to a company, banks and other financing lenders normally look at two factors: how risky is the loan; and can the company generate sufficient cash to pay the interest and repay the principal. The strength of assets and growth potential of the company are considerably taken into account by most of banks. Total assets of a company are not given full book value in securing a loan. For example, if a vessel has a book value of \$10,000,000, a lending source will only give the company 50% to 75% of that value. The reason is that the lending source would have to quickly liquidate the vessel,

rather than sell it at market prices.

Take a quick look at balance sheet of a shipping company. Accounts receivable, or money that is owed to the company from customers who have previously purchased products or services but not paid for it yet, are also considered. Using the same example, \$10,000,000 worth of accounts receivable may only be worth 60% to 70% of that value to the lending source. Customers may not pay the full amount owed, if an outside lending source is demanding payment with other vessels, marine equipment, land, buildings, furniture, fixtures and whatever other assets the company has.

Next, we will return to equity, another method of raising capital for the shipping company. Equity capital is money given for a share of ownership of the company. Equity can be provided by individual investors, venture capital companies, joint venture partners, and the equity and capital contribution of the founders of the company. Equity providers are more interested in the growth potential of the company. Their objective is to invest an amount now and obtain the rewards of a 5 to 1, or even 10 to 1, pay off in three to five years. For example, \$100,000 now will be worth \$1,000,000 or more in three years if invested in the right company. Since the objectives of investors are different from lenders, the factors they evaluate in determining whether to invest are different from lending sources. Growth potential is based on the quality of management of the company, product brand strength, barriers of entry to competitors and size of the market for the product.

Based on this discussion, which sources are optimal for the company in general and in particular for a shipping company?

The answer is dependent on the answers to several questions: Why does the company require additional capital? What stage is the company at? What is the financial condition of the company? How much capital is required? What constraints will the financing source put on the day-to-day operations of the company? And finally, what impact will the financing source have on the ownership of the company?

As mentioned earlier, a firm has the option to choose either debt or equity in financing a new investment. The option available is concerned with the control rights over managerial actions of the company. In other words, the financing structure of debt and equity can be compared with respect to the characteristics of control and property rights. The debt instrument is carried out with its fixed rules and covenants that usually monitor the lending process. The repayment schedule of the principal loan amount and the interest payments is stipulated in the contract, with debtholders having primary claim over the firm's cash flows from the assets. In this case, the firm is often required to meet liquidity tests to ensure that the lender's investment is not risky. Thus, these characteristics imply that debt has strong property rights in the firm. Equity owners, on the other hand, have a residual claimant status over the cash flow from asset earnings and asset liquidation. Obviously, equity owners obtain the cash flows that are left after paying off debt. Thus, equity holders have weaker property rights than the debt holders. However, the control rights of the two instruments are reversed. The equity contract is not for a fixed period but runs for the life of the firm. The board of director's monitoring and evaluating managerial actions ensures that the investment of equity holders is protected. Also, the board has the authority to monitor internal performance, approve significant decisions, decide on managerial compensation, and replace managers, if necessary. The instrument of equity emphasizes continuous behavior control providing equity holders with stronger control rights. On the contrary, debt holders are limited in their ability to interfere with firm operations so long as the contractual stipulations are satisfied. That is, they have much less ability to control managerial actions in ensuring that assets are utilized efficiently. They can get involved only when a firm defaults on its repayment schedule or does not meet its promised obligations. Hence, debt is characterized by weaker control rights. The decision to choose debt or equity depends on many factors, which are thoroughly considered by any company, and control right is one of the most important factors.

We so far have discussed some information regarding debt and equity financing methods that should be considered by a company when deciding on their capital structure. We do not expect these discussions to become guidelines but we think they probably could be helpful for the company as a reference in

deciding on their capital structure. In general, however, we still draw some conclusions regarding capital structure of a shipping company. The new established shipping company requires much money to finance its initial investment such as purchasing or renting vessels, building infrastructure or setting up the working facilities, etc. It could be better for them to get immediate cash through loans or borrowings, meaning that debt is preferably employed. However, it is a bit hard for these kinds of companies to get loans from the banks without promising investment projects since they have just appeared on the transportation market. On the contrary, successful companies usually want to use their reserves such as retained earnings or issuing stock rather than debt, because they are afraid of risk caused by much debt. With these companies, we still suggest they use more debt to the extent that they can make use of tax shields if they are very strong and want to expand their business investment.

4.2 Swedish Shipping Industry

4.2.1 Introduction

The shipping industry dominated the Swedish economy from the 19th century until the middle of the 20th century. As an example, shipping lines and shipping business were developed and made Göteborg famous all over the world. At the beginning of the 20th century, Göteborg was Scandinavia's most important port for exports, the shipping lines were very large and the shipyards dominated industry. But in the second half of the 20th century, the Swedish shipping industry went down rapidly along with the slump of the country's economy. Recently, many Swedish shipping companies withdrew from the world list of top shipping companies, although there are still some dominant ones in the Nordic Region. According to statistics from the Institute of Shipping Analysis in Gothenburg, Swedish Shipping consists of 570 ships with a total deadweight of 11.06 million tonnage at December 31, 2001. The corresponding numbers for December 31, 2000 were 583 ships and 11.78 million tonnage deadweight. This number will hopefully be increased in the following years since the Swedish Government had decided in favor of the net wage model, which brings

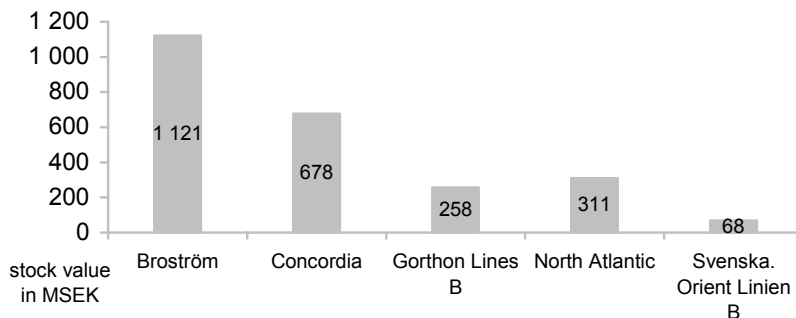
the competitiveness of Swedish shipping companies up to a level with the neighboring countries in the EU as regards manning costs.

In 2001 the Swedish Government set the financial targets for the Swedish Maritime Administration, in which the equity/assets ratio is to amount to a minimum 30% in the long term.

4.2.2 The size of some Swedish shipping companies

We choose some of the biggest Swedish shipping companies at present to represent the Swedish Shipping industry in general. As can be seen from Figure 3, Broström and Concordia are the two biggest companies in terms of stock value. We chose these two companies for our case studies, which are presented in the following chapter.

Figure 3. Size of Swedish shipping companies in 2001



Source: Stockholm Stock Exchanges

4.2.3 Financial analysis

4.2.3.1 Business risk

There are some factors that should be analyzed when determining the companies' business risk. In this section, we will discuss the two measures that we think they are commonly used by the shipping industry, the un-levered beta and commercial vessels. The companies with a high operating level of vessels

experience a low business risk. In other words, the more often a shipping company employs vessels, the less business risk it has.

4.2.3.1.1 Un-levered beta

The smaller the un-levered beta, the lower the business risk. As can be seen from the Table 3, the Swedish shipping industry experiences one of the lowest un-levered beta in recent years, meaning that the business risk of the industry is low. It could be derived from the tangible assets and the capital-intensive business. This fact has been much changed recently since the shipping industry was regarded as a risky one before. It is probably because the industry's administration organisation (International Maritime Organisation) has found many solutions to prevent ocean accidents.

Table 3. Un-levered beta, leverage level of Swedish industries in 2001

	Un-levered beta ($0 \leq \beta \leq 1$)	Leverage level (%)
Machinery	0,37	59
IT	0,63	55
Chemical	0,33	40
Forest	0,41	58
Trade	0,35	56
Shipping	0,27	60
Investment	0,53	41
Banking	0,26	83

Source: Own construction- based on Swedish business daily magazine, nr. 49, 2001.

4.2.3.1.2 Commercial vessels

A shipping company with a large fleet of vessels usually experiences a lower business risk than others. Obviously, shipping is a risky industry both in operational and financial activities. It's true to say that a shipping company can spread its risks by having more trading vessels and business activities. We will

thoroughly examine this problem in the two companies in the following chapter since Broström had 60 vessels at the time of our study, whereas Concordia had only 7 vessels at the end of 2001 and now has only 2 vessels. This factor is very important to be considered in deciding on their capital structure, as it also shows the borrowing capacity of the company.

4.2.3.2 Financial risk

The financial risk of a company can be measured in many different ways. We decided to choose the three important measures: they are the levered level, equity ratio and the debt coverage ratio. Also, to simplify, we use the book value to calculate these ratios without any regard to the market value since we have insufficient evidence to use these figures.

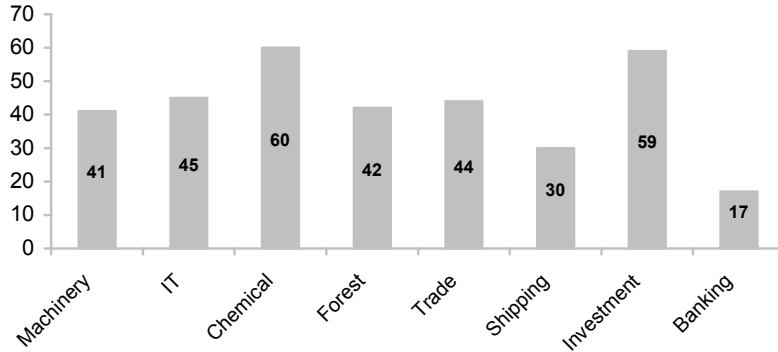
4.2.3.2.1 Levered level

Table 3 shows that the shipping industry is a medium levered industry in comparison with others. It can be explained by the fact that the industry consists of many mature companies and not many growth companies. However, the industry still lacks consolidation, which does not create enough influence to attract investors as that of other industries. Another reason to explain the levered level is the asset structure. The main assets that make up a shipping company's asset structure are vessels, which are very tangible and liquid in nature. These assets also are very good collateral for loans, which somewhat makes it easier for shipping companies to get loans from banks.

4.2.3.2.2 Equity ratio

It is very essential to examine the equity ratio when analyzing the capital structure of a company. Equity ratio demonstrates how much equity is out of total capital sources, normally in percentage. Figure 4 shows that the equity ratio of shipping industry is the second lowest one compared to that of other industries, only after the banking industry. This number illustrates that the capital structure of shipping industry is mainly made up of interest-bearing debt, which accounts for approximately 60% of capital sources.

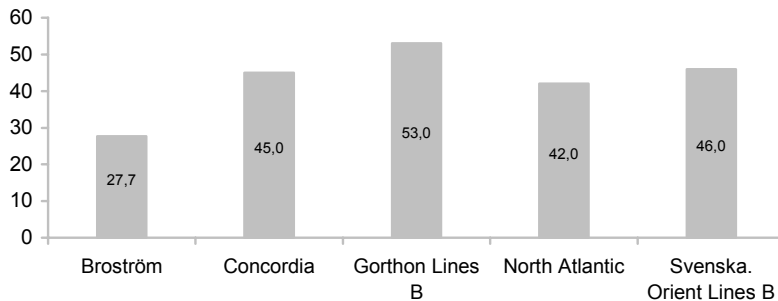
Figure 4. Equity Ratio Between Swedish Industries (%) in 2001



Source: Own construction, based on the numbers from Swedish business daily magazine - Veckans affärer nr. 49, 2001.

We will continue by introducing the equity ratio of the five Swedish shipping companies.

Figure 5. Equity Ratios of Swedish Shipping Companies (%)



Source: Own construction, extract from the companies' annual report 2001

Figure 5 shows the equity ratio in the Swedish shipping industry, in which Gorthon Lines B is the company with the highest equity ratio, while Broström has the lowest one of 27,7%. Referring to the industry's equity ratio of 30%, most Swedish shipping companies in our example above experience a higher equity ratio than the average one.

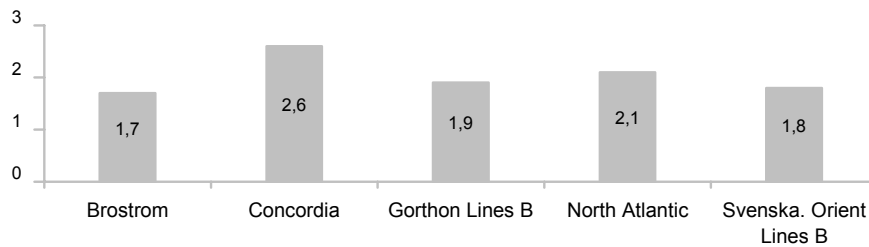
4.2.3.2.3 Debt coverage ratio

This ratio indicates how well the company's cash flow covers debt and the capacity of the business to take on additional debt. It shows how much of the company's cash profits are available to repay debt. In general, lenders look at this ratio to determine if there is adequate cash to make loan payments. Most lenders also have limits for the debt coverage ratio. We will introduce the formula for the debt coverage ratio. It could be very useful for our calculation in the case studies next section.

Debt coverage ratio = (Net Profit + Non cash expenses)/Debt

Figure 6 shows the debt coverage ratio of some Swedish shipping companies.

Figure 6. Debt Coverage Ratios of Swedish Shipping Companies



Source: Own construction based on Annual reports 2001

As seen from the Figure 6, Broström shows the lowest debt coverage ratio, while Concordia AB experiences the highest one of 2,6. Unfortunately, we do not have the average number of debt coverage ratio of the Swedish shipping industry so we cannot make any comments on each company's debt coverage ratio in comparison with the industry's average number. However, according to the financial theory, say, if the debt coverage ratio is close to one, the company is just able to cover its net financial items with its operating income. So we can say that most Swedish shipping companies in our example have no problem in repaying debt, and more appropriately we can say that the cash profits of most of them are available to repay debt.

4.2.3.2.4 Comparing leverage level with debt coverage ratio

By comparing the companies' leverage level and the debt coverage ratio we can see if it is possible for the companies to increase their leverage. It is clear that that a lower debt coverage ratio is often experienced with a higher leverage level. Companies that have a large debt coverage ratio could increase their leverage level. For example, if a company has a large debt coverage ratio, it could increase their leverage level without experiencing a low debt coverage ratio, which would be unacceptable. By increasing their leverage level this company would increase the value of the tax shield, without being exposed to an unacceptable cost of financial distress. However, a company having a low debt coverage ratio should not, regardless of its current capital structure, increase the leverage level. The higher leverage could be accepted, with the higher possibility of increasing the value of the company.

5. THE CASE STUDIES: ANALYSIS AND CONCLUSIONS

This chapter will be introduced as a clear explanation for the theory presented. We decided to choose the two companies which are similar in terms of business areas but which are very different regarding their capital structures. The main reason for this choice is to find out which company uses the more appropriate capital structure in accordance with its business characteristic. In this part, we will attempt to answer the research questions that we set up before. We do not expect to explore the optimal ways that should be applied for any shipping company. Instead, we only attempt to make some comments and suggestions on each case, based on its financial information as well as some other business information that we have.

5.1 The Case of Broström

5.1.1 Introduction

Broström is one of the leading logistics companies for the oil and chemical industry, focusing on industrial product and chemical tanker shipping and marine services. Broström's 1,100 employees are based all over the world and operate within two areas: Shipping and Marine & Logistics Services. Broström's head office is in Göteborg, Sweden.

5.1.2 Broström's capital structure analysis

5.1.2.1 Financial structure in 2001

Figure 7. Broström's financial structure (in MSEK)

	<u>Revenue</u>	2,650		
	<u>Net profit/loss</u>	307		
	<hr/>			
<u>Assets</u>			<u>Debt</u>	
			Debt	3,096
			Provisions, others	414
	49			

Fixed assets 3,611
Ships 3,151
 Current assets 1,752

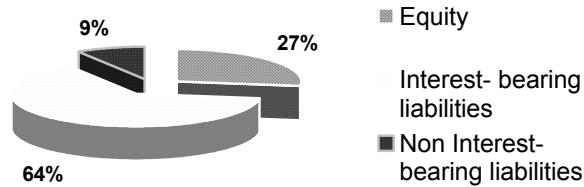
					<u>Equity</u>
					Restricted reserves
456					
<u>Total assets</u>	5,363				Share capital
609					
					<u>Retained earnings</u>
					Accumulated profits
81					
					Profit 2001 307
					<u>Total capital</u>
5,363					

The financial structure of Broström in 2001 is shown in the Figure 7. If we disregard other relevant factors, the debt amount of SEK 3,096 million can finance about 96% of the total value of ships of SEK 3,151 million. In other words, the company's vessels are mainly financed by debt. Although debt accounts for 64% of total capital, with the current assets of SEK 1,752, the company is able to cover at least 50% of the current debt, and the other sources can be used such as retained earnings and reserves. The question regarding the company's ability to utilize debt will be discussed in depth in the part of limitation to borrowings.

Another finding is that Broström's revenue is much lower than total assets, meaning that the company has made an intensive investment in ships but is still on the way to get more long-range contracts for their vessels. As a matter of fact, the company continues to expand its market to the Asia Pacific region through alliances with Mitsui O.S.K Lines (MOL), and its expansion is also followed by many other service activities such as using the unique network of tank storage terminal with Vopak.

5.1.2.2 Capital structure overview

Figure 8. Broström's capital structure in 2001



Source: Broström's Annual report 2001

5.1.2.3 Leverage ratio

In 2001, Broström used a 64% debt financing (interest bearing liabilities), using book values of properties, as seen in Figure 8. This can be compared to the industry average of 60 %.

Figure 9. Broström's levered level (%)

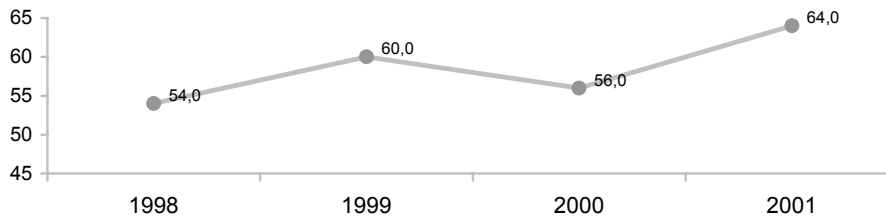
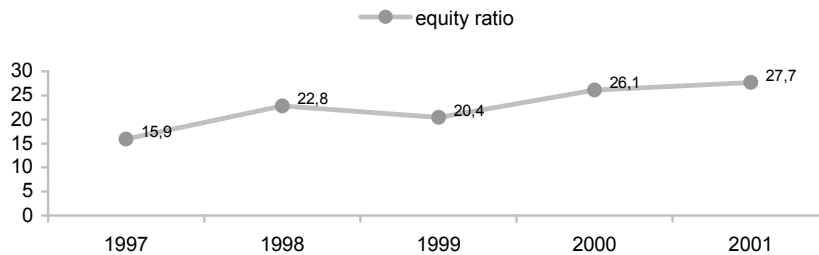


Figure 9 shows that levered level of Broström has increased from 1998 to 2001 by 10%. As we said before, we only use the book value of the company to do our calculation and we hope that the market value does not significantly affect our figure and therefore our conclusions about this company.

5.1.2.4 Equity ratio

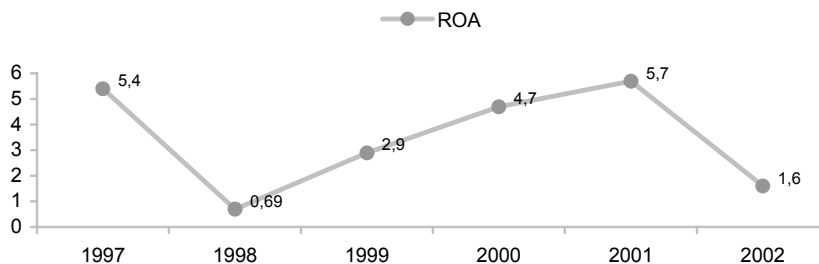
Figure 10 shows that Broström's equity ratio has increased from 15% to 27,7% during the last five years. Broström still has the smallest equity ratio in the industry since a major part of its investments is debt financed.

Figure 10. Broström's equity ratio (%)



5.1.2.5 Return on Assets (ROA)

Figure 11. Return on Assets of Broström (%)



The return on assets of Broström has considerably fluctuated during the last six years as can be seen from the Figure 11. According to financial theory, large fluctuation in ROA shows a large business risk of a firm, meaning that Broström should experience a high business risk. However, the fluctuation mainly took place in 1998 and 2002 at the time of the world's economy crisis. In other words, the figure on ROA of Broström is much influenced by the outside economic conditions, and most of the companies in the same industry were at the same situation. From this analysis, we would agree with Ms. Thorunn Benson from Broström's Financial Department, that the company has a low business risk compared to other companies.

5.1.3 The analysis of the determinants of Broström's capital structure

As can be seen from the figure above, Broström would be one of the highest levered companies among the companies in the Swedish shipping industry. We will now present and analyze all the determinants of capital structure that are utilized in Broström. The purpose of this part is to examine how this problem takes place in Broström. Then we can have a conclusion regarding this matter for the two case studies. It is clear to say that that the company does not use any model that we presented in the theoretical part in determining their capital structure. Broström's goal and target ratio regarding capital structure is to keep equity ratio from not falling below 30%, according to its annual reports. Broström's current equity ratio is 27,2%, and interest-bearing debt ratio is 73% which reveals that Broström is not at their target ratio at the end of the year 2001. To reach their goal, Broström needs to decrease their amount of debt financing in relation to equity financing. However, the high equity proportion of a company doesn't show if this company is in a bad financial condition or not; it should simultaneously be analyzed with some other relevant factors in order to find an appropriate answer. This question will be answered in the following parts of this section. 5.1.3.1 Tax shield.

From the financial information and analysis above, we can say that the company makes use of the tax shield to a maximum since it has the highest leverage level within the Swedish shipping companies. According to the trade-off model, a company should try to make maximum use of the tax shield that comes with debt financing. However, a crucial assumption for benefiting from the tax shield is that the company is making a profit. Broström has continuously made a profit for the last five years and we think that they probably use the tax shield to a maximum and it is very reasonable for them to do it. The question is if Broström could accept even more debt, and use the tax shield to a greater extent, or if the level of debt financing is already too high. According to the trade-off model, debt financing should be used as long as the gain from taking on extra debt exceeds the cost of financial distress that the extra debt brings. To examine whether their current leverage level is acceptable, we must look at their sensitivity to financial distress. To find the appropriate leverage level we will analyze Broström's business and financial risk, but first we need to find if there are any practical restrictions for Broström to take on additional debt by examining its borrowing capacity.

5.1.3.2 Business risk.

The magnitude of business risk is shown by ROA as mentioned in Chapter 3; the greater fluctuation in ROA, the larger the business risk. However, Broström has a low business risk even though it experiences a large fluctuation in ROA as analyzed above. Broström's business risk is considered to be the most important factor when making capital structure decisions, according to its annual report. Shipping operations are usually associated with fairly high risk exposure with a large number of risk parameters to observe. Broström's operational risks include freight rates, oil prices and temporary production disruption at local refineries. However, the company perceives its business risk as lower compared to its competitors, according to Ms. Thorunn Benson, which is proved from the fact that the company has long term contracts with some oil companies and a stable market share. Furthermore, long-term customer relationships allow the company to take a long-term view of business, which creates conditions for improved planning of their operations and increased use of their transport. It leads to increased stability in their income and earnings trend. Like many other companies, Broström is also trying to monitor other business risks, for example, fluctuation in the operating profit/loss, in other words, earnings after depreciation. During the past five years, Broström's operating profit has amounted to a low of SEK 90 million, and a high of SEK 499 million. The average for the past five years is SEK 216 million. The operating margin reached a high of 20% and a low of 4,3%. The average for the past five years is 10%.

5.1.3.3 Industry.

Like many other shipping companies, Broström has a high leverage ratio. The shipping industry has traditionally experienced a poor investment from stock investors due to its high risk and low return. Broström is not an exceptional case. There are several explanation for why the stock market has maintained its traditional view of Broström. The Stockholm Stock Exchange's interest in the shipping and transport sector has probably declined recently. In addition, shipping companies accounts for less than 1% of the Stockholm Stock Exchange's total market value. Thus, the industry has trouble winning attention

primarily from institutional investors that often focus on index weighting in their portfolios. All of these factors have probably led to reduced knowledge about the entire transport and logistic sector. This is one of the constraints for the company in attempting to increase equity financing.

5.1.3.4 Size.

Broström is a medium-size shipping companies in the world but it is one of the biggest Swedish shipping companies with a fleet of 60 vessels. The company has a diversified business activities, not only in shipping but also in marine services. This leads to greater flexibility and improved efficiency in the utilisation of the fleet. This supports the explanation for the idea that the company has low business risk.

5.1.3.5 Growth opportunities.

As stated in the company's annual report, Broström sets their growth rate to 20% per year over three-year period. Firms with valuable growth opportunities are advised to choose low leverage. Traditionally, shipping companies have low growth rate and normally use more debt than equity. Broström could be considered as a growing company so it would better to decrease their debt financing in the coming years.

5.1.3.6 Assets tangibility.

The main assets of the company are vessels which account for about 65% of total assets. The company now operates a fleet of 60 vessels with a total deadweight of 1.6 million tonnages. The average age of the vessels is 7 years compared with an industry average of 16 years. The number of vessels increases year by year; an average of three vessels are added to the company's fleet every year. Having young and valuable assets allows Broström to stay financially flexible and minimize the financial risk. With the current young fleet of vessels, the company can disregard the requirement for substitution of them, and therefore they might have free hands to invest in new vessels. When

making the capital structure decision, Broström evaluates how strong the asset side of the balance sheet is. The stronger the asset side is, the higher leverage that can be accepted. As analyzed before, Broström is holding very strong assets with an average age of vessel of 7 years. It could be a very good advantage in obtaining more loans.

5.1.3.7 Earnings Volatility.

Table 4. Broström's summary of Income

Group (SEK million)	2001	2000	1999	1998	1997
SUMMARY OF INCOME STATEMENTS					
Net sales	2,642.0	2,498.7	2,033.9	2,126.8	1,807.5
Operating profit (EBIT)	580.2	499.1	90.3	158.0	199.6
Net financial items	- 145.8	- 180.0	- 120.2	- 128.7	- 84.9
Profit/loss after financial items	434.4	319.1	- 29.9	29.3	114.7

Source: Broström's annual report

Table 4 shows the profit/loss of the company over the time period from 1997 to 2001. As can be seen, the company had a loss of MSEK 29 in 1999. As a result of the Asia crisis, the freight market dropped gradually during 1998 and remained weak throughout 1999. According to its annual report, the larger vessels that had previously seen good earnings, were now operating at a substantial loss. The economic outlook was getting better in 2000, and as a result, Broström's earnings were further boosted and the year 2001 turned out to be the best in Broström's history. The company's income increased year by year, profit is going up even though it decreased in 1999 but it is due to external reasons. It is reasonable to say that Broström has a stable earning performance.

- *Income.* Broström has a market leading position in the sector with twice as many vessels as the nearest competitors, Norwegian Navion, Russian Lukoil, Finnish Fortum and the Anglo-Dutch Shell. Since Broström's income has fluctuated very little in the past, accurate predictions of future profits can be made.

- *Liquid assets.* For many years Broström has built up a strong position in international product and chemical tanker shipping. Through its link with Vopak, Broström can offer the oil and chemical industry a comprehensive range of services. Access to Vopak's unique network of tank storage terminals and river-going tankers and to Nordic Bulkers' tank containers makes it possible for Broström to supply everything from single transport assignments to complete global logistics solutions. The company has a very young and high value fleet of vessels with an average age of seven, and the average age of the industry's vessel is sixteen. In other words, Broström's assets are very liquid, which further reduces business risk. We believe that these fundamental factors indicate that Broström is experiencing a lower business risk than their competitors.

5.1.3.8 Financial risk.

Broström has the highest leverage level in Swedish shipping industry; it means that the company has high financial risk. However, its leverage level is still in the industry's average norm. Broström's current financial risk is also important when determining capital structure. Although Broström's financial risk is very high due to its high debt proportion, the company seems not to take it seriously. They further state that the high financial risk is justifiable because of the low business risk and it is still in the same level with the industry's average. By knowing how well they cope with their current financial risk they can make a good prediction if a change in the financial risk is appropriate. In addition, Broström tries to control financial risks by ensuring that the equity/assets ratio does not fall below 30%. The Group's adjusted equity/assets ratio over the past five years is an average of 27%, and estimated to reach 31% at the turn of 2001/2002, even though this ratio in 2001 is still 27,2%. We have used three measures to estimate financial risk: the leverage level, the debt coverage ratio and borrowing capacity.

- Leverage level

Figure 5 shows that Broström is the highest levered company in the industry, using book values. Broström's leverage level of 73% should be compared to

the industry average of 66%. Broström's equity ratio of 27,2% should be compared to the industry average of 30%. The high leverage level indicates that

Broström faces a high financial risk, but not to the extent that can be a threat for the company.

- Debt coverage ratio

Table 5. Broström's debt coverage ratio

Year	1998	1999	2000	2001
Debt coverage ratio	1,62	1,89	1,53	1,7

Source: Broström's Annual reports

Broström has the lowest debt coverage ratio in the Swedish shipping industry, 1,7 in 2001. However it is still at the same level with the industry average of 1,7. We think that the low debt coverage ratio does not give any room for fluctuations in the income, operating expenses and interest expenses. This is because of the fact that the low debt coverage ratio demonstrates a high financial risk, meaning that a higher leverage level cannot be accepted. If the company wants to increase the debt coverage ratio to more than 1,7, it means that they have to decrease the debt financing level, especially the debt interest bearing level. The interest expense has continuously increased from SEK 177 million in 1998 to SEK 258 million in 2001. If the company continues to increase the interest expense, we are afraid that the debt coverage ratio will be lower than 1,7; it could not be accepted by the bank. We also calculate the maximum interest bearing loan amount that can be accepted. The current levered level of 64,5% is higher than the industry's average of 60%. At this level the interest bearing liabilities correspond to SEK 3995 million, and we think it could be the maximum loan that the company should employ. If the company desires to improve the debt coverage ratio, this amount of loans should be not higher than SEK 3995 million.

-Borrowing capacity. This factor can be considered as a strategy that has much influence on the capital structure decision of a company. It is decided by many factors such as the stability of income, mortgaged assets, market share, and reputation. According to its annual report, Broström simply borrows as much money as possible when it enters a new investment without any restriction from the banks. By doing this they can keep their capital structure at a high debt level. Although income is one of factors that affects the company's decision on capital structure, the size of the profit is irrelevant. Profit will only affect capital structure in the sense that profits will increase equity, which will change the balance between debt and equity. From the analysis of the company's financial information as well as their financial statements, we can say that there are basically no practical limitations to borrowing money for Broström. The market conditions facing Broström are good and it is in the position to borrow basically as much capital as they like. They can keep their borrowing capacity since they have established a close long-term relationship with their bank, and at the moment many banks such as Nodda and Sparbanken expect to lend more money to Broström. Even though Broström's debt proportion is already high, Broström is in the position to borrow more money, and at an interest rate that is just a few basis points higher than the current borrowing interest rate. We can conclude that Broström has no practical limitations for taking on additional debt at a reasonable cost. Since there are no practical limitations to debt financing, the limit of the leverage level depends upon Broström's business risk and financial risk.

5.1.3.9 Management attitudes.

Tradition is a managerial attitude that further influences the capital structure decision. Broström has traditionally been a highly levered company, which is used as a norm when they decide on their leverage level. There has been no change in managerial attitude toward capital structure decision in Broström for the last five years. History also plays an important role when Broström decides on its capital structure. When it was introduced in the Stockholm Stock Exchange in 1998, they made their principal guideline regarding their long-term strategies and goals. These strategies and goals were decided with respect to the deep economic recession. The company aims at increasing equity

proportion in the years to come, but at the moment it still mainly counts on debt.

5.1.4 Conclusions

Firstly, we can see the overall financial picture of Broström is that the company has low business risk and high financial risk compared to other shipping companies in the industry. However, the high financial risk can be offset by low business risk since they possess a very high value and liquid assets with a stable market. From many discussions about relevant factors regarding capital structure, we can say that the company doesn't have any threat from the high debt proportion employed at present. Regarding models application, we can conclude that Broström does not use any models explained in the theoretical part of this thesis. The reason is possibly because that they are too technical to use not only for Broström but also for any other companies. The most obvious observation we found is that Broström seems to make the most use of the tax shield, since they are the highest levered company in the industry. We further argue that Broström has estimated the financial risk of adding more debt as being too large. A higher leverage would certainly mean a higher risk of bankruptcy and an increased cost of financial distress. Although the company has the highest leverage level among some Swedish shipping companies, this level is still lower than the industry average. It is certainly acceptable since the company has diversified business activities and therefore their risks can be offset among them. Instead of using any models intentionally, Broström takes several fundamental factors into account.

The most important factor for Broström when deciding on an appropriate capital structure is business risk, which is a starting point when they determine their leverage level since it is the most advantageous element of the company. Broström argues that the lower the business risk is, the higher the leverage level that can be accepted. They perceive their business risk as very low based on the increasing demand for oil transportation by some of the big oil companies. Although Broström's income has considerably fluctuated during the last five years as analyzed above, we somewhat agree with their perception since they show a very stable income during the last few years and they also possess a

very young fleet of vessels. The fact that Broström perceives its business risk as very low allows them to take on an exceptionally high leverage. Another important factor is tradition. Broström has historically been a highly levered company, which they also use as an argument in order to justify a high leverage ratio in the future. This means that they have a tendency to use historical data when determining current capital structure. This factor is also supported by the fact that the company has been using more debt than equity so far and it seems to be the same in the years to come, and we think the company can keep the same level of debt financing as before or even a little higher than before. Further suggestions and conclusions will be made in the overall conclusion for the two case studies.

5.2 The Case of Concordia AB

5.2.1 Introduction

Concordia was formed more than 100 years ago but it became a publicly listed tanker shipping company in 1984 with the Stena Group as its long-term principal owner.

5.2.2 Concordia's capital structure analysis

5.2.2.1 Financial structure in 2001

Figure 12. Concordia's financial structure (in MSEK)

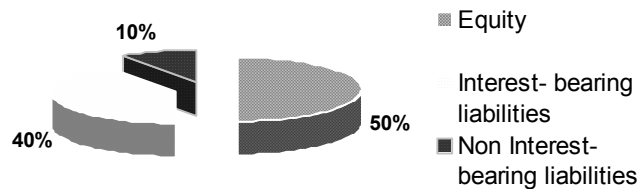
	<u>Revenue</u>	1,336	
	<u>Net profit/loss</u>	231	
<u>Assets</u>			<u>Debt</u>
Fixed assets 2,689			Debt 1,508
<i>Ships</i> 2,675			Provisions 79
Current assets 491			
			<u>Equity</u>

<u>Total assets</u>	3,181		Restricted reserves	319
	371		Share capital	
			<u>Retained earnings</u>	
			Accumulated profits	
671			Profit 2001	231
			<u>Total capital</u>	
	3,181			

As can be seen from the asset side, ships are SEK 2,675 million which accounts for 84,1% of total assets, meanwhile debt is SEK 1,508 million. Thus, in this year debt can cover 56% of total ship financing. Also, as a part of the equity capital, a restricted reserves of SEK 319 million has been set up to cover the possible losses in the years to come. In addition to the restricted reserve, the retained earnings are SEK 902 million, and this means that the company has a very strong financial condition with almost 50% owned-finance sources. The increase of restricted reserves and provisions year by year shows that the company prefers to build up reserves for the future, an example of prudent accounting practices. Similar to Broström, Concordia's revenue is much lower than its total assets. At the end of this year, the company sold two vessels but it has not been totally recorded the result (only SEK 1,5 million). However, net profit of this year excludes the differences in foreign exchange rates, and since we couldn't find this number in the company's annual report so we are unable to confirm that it is positive or negative. As we acknowledge that the main markets of the company are the US and Middle East which have depreciated local currencies compared to Swedish Krona, we presume that the company has a negative difference in foreign exchange rate and it should be calculated as an expense item, and therefore total expenses should be higher than those reported.

5.2.2.2 Capital structure overview

Figure 13. Concordia's capital structure in 2001

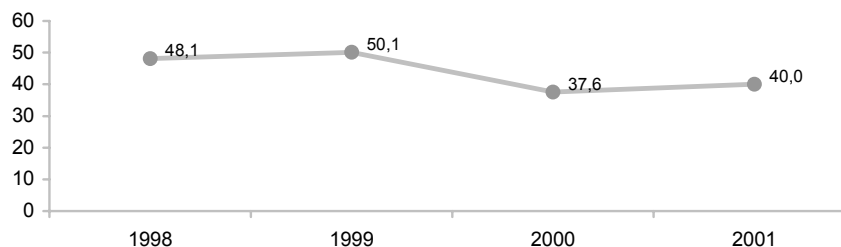


Source: Concordia's Annual report 2001

5.2.2.3 Leverage ratio

In 2001, Concordia used a 40% debt financing (interest bearing), using book values of properties, as seen in Figure 13. This can be compared to the industry average of 64 %.

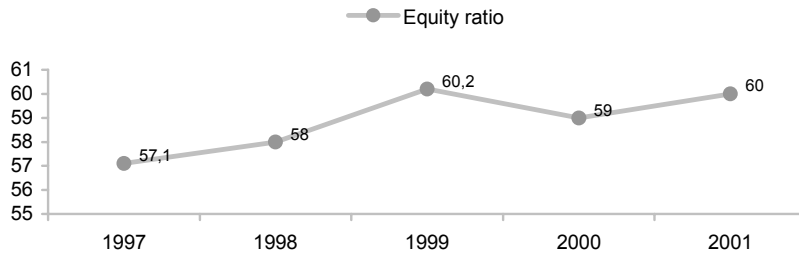
Figure 14. Concordia's leverage ratios (%)



Different from that of Broström, the levered level of Concordia has decreased from 1998 to 2001 by 8%. As we said before, we only use the book value of the company to do our calculations and we hope that the market value does not significantly affect our figures and therefore our conclusions about this company.

5.2.2.4 Equity ratio

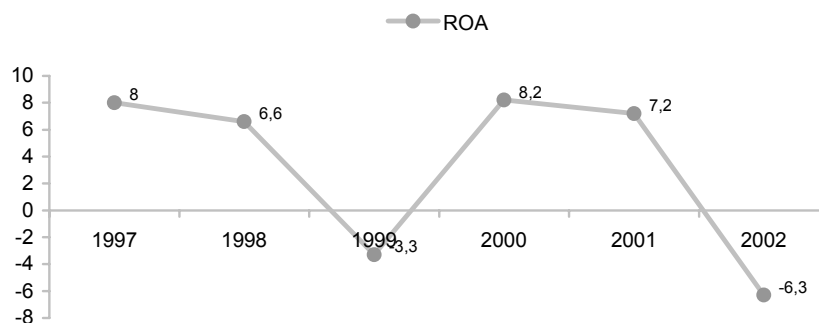
Figure 15. Concordia's equity ratio (%)



The equity ratio of the company has slightly increased from 57,1% in 1997 to 60% in 2001. Concordia has the highest equity ratio among those companies we chose in the Swedish shipping industry.

5.2.2.5 Return on Assets (ROA).

Figure 16. Return on Assets of Concordia AB (%)



The return on assets (ROA) of Concordia has largely fluctuated during the last six years. Similar to that of Broström, the company experienced a loss in 1998 and 2002, but the fluctuation in income is much more than that of Broström. This fact shows that Concordia has very high business risk, especially in 2002 when the company has only two vessels left after selling five vessels.

5.2.3 The analysis of the determinants of Concordia's capital structure.

Opposite to the case of Broström, Concordia is the least levered companies in the Swedish shipping industry. Similar to what we did with case of Broström, we will look at the factors that determine the company's capital structure. In this part, we will also list the factors that need to be considered when analyzing capital structure, and we will analyze each of these points, and we will move on to draw conclusions from our findings.

5.2.3.1 Tax shield.

As stated in the Trade-off model, a profitable company should make use of tax shield to a maximum. Concordia has made a large profit since they have been listed on the Stockholm Stock Exchange, which is an argument for using the debt tax shield to a maximum. A larger amount of debt financing will also reduce Concordia's Weighted Average Cost of Capital (WACC), which will increase the value of the company. According to the Trade-off theory, debt financing should be used as long as the gain from the tax shield exceeds the cost of financial distress. There is much information indicating that Concordia has not yet reached the Trade-off level, meaning that the company has not made use of the tax shield to a maximum since it is the least levered company in the industry. It is the same as many other profitable companies who have no incentive to issue debt and are likely to have a low debt-to-equity ratio. We should emphasize here that Concordia is considered as a profitable company for the time period of our study based on the current financial information reported, disregarding other relevant factors such as ownership proportion or market share.

5.2.3.2 Business risk.

- *Income.* Concordia has experienced a stable income for the last few years, at least before 2002. However, the company also describes the principal factors which could have an impact on the future development of the company. In recent years, the global economic climate has developed negatively and the US, which is the single most important market for Concordia's vessels, has reduced its consumption of crude oil by 10%. It could result in a sharp drop in the level of utilization for large-tanker tonnage and a corresponding fall in freight rates. When determining their capital structure, the company pays more attention to the stability of income in the future, in which unforeseen events such as the global economic climate is considered as one of the most decisive factors. However, the company still expects that freight rates will be increased due to the recovery of the world economy in the near future.

- *Liquid assets.* Although the company, according to their statement, owns a highly valuable fleet of tankers, we want to discuss further the age of their vessels. Today, a number of oil companies have chosen to cease using older tonnage for transporting oil, but many oil companies accept vessels more than 25 years old, accounting for 45-50% of the market. The trend is clearly towards fewer companies accepting older tonnage. Also, recently the European Union and International Maritime Organisation adopted a proposal that would result in vessels built in 1973 and 1974 beginning to be withdrawn in 2003 and those built in 1975 and 1976 in 2004. With this decision, Concordia's Very Large Crude Carriers (VLCC) fleet, which was built in 1970, would lose 7 years of trading compared to the company's forecast of 11.8 years in 2000.

From this fact, we cannot say that the company's fleet of vessels is very liquid since some of vessels could not be employed for trading operations. Just look at the company's vessels age, and we see that only one vessel built in 1971 will be unemployed, so it could not significantly affect the whole fleet's trading capacity. However, we think that the company has a quite risky business since it has only five vessels with an average age of 15, almost older than allowed.

5.2.3.3 Size.

Concordia is a medium-size company in terms of stock value, but it is now considered as a small company in terms of number of vessels. As the company merely operates in tanker transportation, without any other marine services, it could be very risky for them since their main business mainly depends on the freight rate. There is considerable uncertainty as to how the world economy will develop, which means that it is also difficult to assess which way the freight rate will go. If the company has other supporting services such as ship agent or screw training, etc. their risks could be limited. This comment is proved by the fact of 2002 when the company had only two vessels and experienced a loss of MSEK 142. Its loss is all because of the sharp drop in freight rate, even though the large-tanker market rose sharply towards the end of the year.

5.2.3.4 Assets tangibility.

The main assets of the company are also tankers which account for about 90% of total assets. The numbers of vessels slightly fluctuate year by year with an increase of one from 7 in 1998 to 8 tankers in 2001 but three vessels have been sold in 2001 so it had only 5 tankers at the end of 2001. According to the director's statement in the annual report, the company's success is based on first-class ship operation with a very valuable fleet of vessels. Theoretically, if a company has a very high value trading assets, it has many possibilities to have financial flexibility and minimize the financial risk. We cannot conclude that Concordia has financial flexibility due to its high value vessels since the company has only five such vessels.

5.2.3.5 Earnings Volatility.

Table 6. Concordia's summary of income

	2001	2000	1999	1998	1997
<i>Profit/loss and balance-sheet items (SEK million)</i>					
Net-sales	1,334.8	1,327.6	773.6	1,102.9	1,114.5
Operating result	292.5	246.0	-44.1	201.8	236.2
Result after financial items	251.9	227.7	-72.0	114.0	156.3

Source: Concordia's Annual report

Concordia shows the similar financial situation as that of Broström with a weak year of 1999. However, the company had a loss of MSEK 142 in 2002, while Broström still made a profit of MSEK 95.

- *Income.* We do not think Concordia has stable income since it only operates in large-tanker transportation which is a very risky industry. The company's income is affected by large fluctuations in freight rate and uncertainty. The situation is getting worse in 2002 when the company has only two vessels, and the demand for oil was weak which resulted in production cuts in the OPEC countries and lower demand for oil transportation with large tankers. Meanwhile the company does not have any other supporting service activities.

- *Liquid assets.* Concordia had a fleet of six vessels until the end of 2001 and now has only two large tankers. The average age of their vessels is seventeen compare to the industry's average of sixteen. We can say that the company's assets are not liquid, meaning that it is hard for them to reduce business risk.

5.2.3.6 Financial risk.

We have used two measures to estimate financial risk: leverage level, the debt coverage ratio.

- *Leverage level*

Figure 5 shows that Concordia is the lowest levered company in the industry, using book values. Concordia's leverage level of 40% should be compared to the industry average of 60%. The low leverage level indicates that Concordia faces a very low financial risk.

- *Debt coverage ratio*

Table 7. Concordia's debt coverage ratio

Year	1998	1999	2000	2001
Debt coverage ratio	1,89	2,03	2,34	2,6

Source: Concordia's Annual reports

Concordia has the highest debt coverage ratio in the Swedish shipping industry, 2,6 in 2001; meanwhile the industry average number is 1,7. We think that the very high debt coverage ratio can provide the company with room for fluctuation in income, operating expenses and interest expenses. It is obvious that the high debt coverage ratio shows a low financial risk; in other words, the company can increase their levered level by getting more debt rather than equity. If the company wants to decrease the debt coverage ratio to 1,7, it means that they have to increase the debt financing level, especially the debt

interest bearing level. The company's current interest expense is only SEK 48 million, and it is very small compared to the total operating expense of about SEK 1,100 million. From this analysis, we can say that the company is experiencing a very good financial condition, and they have many opportunities to employ more debt. We suggest they should do so in order to make use of the tax shield since they have more or less a stable business market.

- Borrowing capacity.

If we look at the current leverage level, we can say that Concordia experiences no problem concerning additional borrowing capacity. The reason is that they are lightly mortgaged and their properties are excellent collateral. Using book values, Concordia has only mortgaged its properties with 44%, whereas the industry average is 67%. Concordia could borrow up to the industry norm of 67% without experiencing a higher interest rate, and if they borrowed above the industry norm, interest rates would only rise a few basis points. We can therefore argue that there are no practical limitations for Concordia in taking on additional debt with its current capital structure. Since there are no practical limitations to debt financing, the appropriate leverage level depends upon Concordia's business and financial risk.

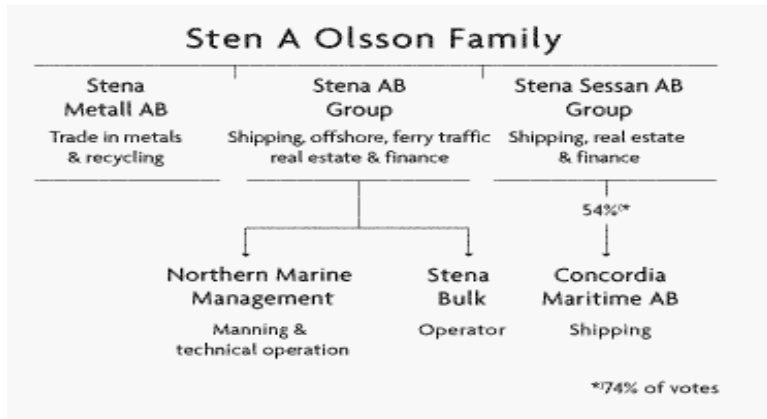
5.2.3.7 Management attitude.

As can be seen from the figure below, Stena Lines is the parent Group of Concordia holding 54% ownership. To some extent, we think that Concordia is influenced by its parent group in terms of decision making process. As we analyzed in the previous part, this factor can be a determinant in deciding capital structure. Even though Concordia has traditionally been a low levered company due to its very low debt proportion, in the future it could be changed according to the changes made by parent group.

It is probably the same situation as that of Broström, since Concordia considers history as an important factor when deciding on its capital structure. The company also makes their principal guideline regarding their long-term

strategies and goals, in which they emphasize that they accept the competitive financing and business risk.

Figure 17. Stena's Ownership Structure



Concordia AB's Annual Report 2001

5.2.4 Conclusions

5.2.4.1 Factors Determining Concordia's Capital Structure

Similar to the case of Broström, at first sight we can see that Concordia does not use any model that we mentioned in the theoretical section of this thesis. In order to analyze the company's capital structure, we have been looking at many fundamental factors that we think can be applied when determining their capital structure. The most important fundamental factor when Concordia's capital structure decision is made is to sustain a strong equity base. The reason is that Concordia has experienced many economic crises, and their long-term goal of a high equity ratio was determined in order to survive another potential crisis. With a very careful anticipation about the global economic climate, the company is aware of the business risk that they probably have in the near future, so they therefore still prefer using equity to debt. Another important factor is the debt coverage ratio which is used as a control instrument in order to assure that the operating income covers the net financial items.

5.2.4.2 Suggestions on Concordia's Capital Structure

From our analysis we can conclude that Concordia's leverage level is too low. This conclusion is based on the fact that Concordia has an inappropriate combination between business and financial risk. As we examined above, the company has a higher than average business risk. Furthermore, the fundamental factors also indicate a high business risk as our earlier analysis showed. At the same time, Concordia is facing an exceptionally low financial risk due to the high debt coverage ratio, the low leverage level and the low interest rate sensitivity. We argue that Concordia's current position regarding their total risk is inappropriate.

Even though the business risk is a bit higher than the average, we argue that the leverage does not have to be the lowest in the industry. Concordia made a profit of SEK 292 million in 2001, which is an argument for using the tax shield to a maximum. Concordia is a financially strong company, which is proved by their debt coverage ratio and the interest sensitivity analysis, but they have chosen not to take on a higher leverage. We argue that it would be theoretically possible for Concordia to increase its leverage, without suffering financial distress. Consequently, Concordia has not tried to find the Trade-off level, where debt should be accepted as long as the gain from the tax shield exceeds the cost of financial distress, which according to the Trade-off model is the optimal capital structure. Both arguments above claim that an increased leverage level is appropriate. The debt coverage ratio analysis has shown that an increase by 19,93 percentage units from the current leverage level of 40,7% to 60% is reasonable while still having a debt coverage ratio that is equal to the industry average. We should point out that Concordia is aware that a higher leverage would increase the theoretical value of the company. Even though they are aware of this fact, Concordia prefers not to take on more debt since their strategic goal regarding capital structure requires a low leverage.

5.3 Overall conclusions for the two case studies

We have so far illustrated and analyzed how the two companies determine their capital structure. We have tried to give 'true and fair' views of what has taken

place in the two companies and make conclusions based on the actual information from the two cases in relation to the theory we studied. We will now go on with some comparisons and conclusions. First of all, we can come to the conclusion that neither of the two companies we studied uses a theoretical model when deciding on their capital structure. Instead of using a model, the two companies use some important factors as guidelines when determining their capital structure. The evidence from those two companies shows modest support for the trade-off theory but weak support for the pecking order theory framework; in other words they both do not use completely any of these models in deciding on their capital structure. We find the major determinants of the capital structure decision of the Swedish shipping companies are similar to that of the other industries.

Another interesting finding is that while Broström uses business risk as one of the most important factors in deciding on their capital structure, Concordia entirely depends on their financial risk. Broström confirms that their business risk is much lower than other competitors and therefore high financial risk can be adjusted by low business risk. We somewhat believe in their affirmation but we still argue that the company would experience more or less the same level of business risk as that of other competitors since they all operate in tanker transportation. However, their belief can be acceptable since they showed very stable income and potential market expansion during the last few years.

Another finding is that tradition in the shipping industry plays an important role in the capital structure decision, which can be seen in both companies.

Broström has always been a highly levered company, while Concordia has been a strong equity based company, and they both use guidelines when determining their capital structure.

We argue that Concordia's capital structure is not appropriate due to their slightly higher business risk than others while they have an extreme low financial risk. It is based on the fact that Concordia is the least levered company among those companies chosen with a very high debt coverage ratio and low interest rate sensitivity.

Although tanker transportation is considered as a risky industry, Concordia's business risk is not as high as it seemed to be since their business service is somewhat protected by Stena Group, as they stated “..Concordia did not come empty-handed to the market. Stena's broad organisation and strength as major shipowners also benefited Concordia...”(Concordia's Annual Reports). We think that it is probably not appropriate to have very low leverage since they are able to improve this level in order to make maximum use of the tax shield. Furthermore, our debt coverage ratio analysis reveals that an average Swedish shipping industry leverage level of 60% is possible for Concordia, while they still keep a debt coverage ratio very high. We therefore suggest the company should increase their current levered level of 40% to the average level of 60% in order to make more use of tax shield and then increase the theoretical value of the company. Those comments and suggestions on the case of Concordia are based on the financial information during the time period of our study. We will have another comment regarding the situation of 2002 when the company experiences a loss of MSEK 142.

On the contrary, Broström has somewhat more appropriate capital structure since they have low business risk and very high financial risk. Their low business risk is proved by the information they provided with a low un-levered beta. Apart from keeping a stable income, the company continues to broaden their business by having co-operation in Europe with Rigel Schiffahrts, Erik Thun and Donsö tank and also an established co-operation with Mitsui O.S.K Lines in Asia traffic. To further develop and adapt customer advantage in line with customers in the oil and chemical industry increasing in size, the company primarily focuses on growth from the markets where they already hold strong positions. According to them, the negative effects of a weaker global economy are balanced by lower interest rates, the new Swedish net wage system for Swedish-flagged vessels and the probable continued strength of the dollar since its main income is in US dollars. They claim that they have been experiencing a lower business risk than that of other Swedish shipping companies.

Broström's high financial risk is based on the low debt coverage ratio and the fact that they are the highest levered company in the Swedish shipping industry and they seem to make use of the tax shield to a maximum. Their debt coverage

shows that the leverage ratio cannot be further increased, meaning that they should not use more debt. However, we can say that it is possible to maintain the current leverage level due to the company's strategy of coping with financial risk and their stable income.

Although debt plays an important role in shipping companies in general, the proportion of debt varies among the companies even when they operate in the same business field. Most of vessels of Broström are financed by debt, while only about 50% of vessels of Concordia use this method. The two companies have total income much less than total debt employed. Broström seems to have a better result since their net profit is mainly from operations, whereas the result of Concordia in 2001 included profit from selling vessels and excluded differences in foreign exchange rate. In fact, in 2001 Concordia sold three vessels but the result will be recorded in 2002. The year 2002 was anticipated as a very difficult year for the company due to the slowdown of global economy and the drop in freight rate in tanker transportation. As we look at their annual report 2002, we find out that Concordia had a loss of SEK 142 million, including a net profit from selling vessels of SEK 16 million. In the meantime, Broström continues to yield profit with an amount of SEK 139 million in 2002, which included a loss of MSEK 25 on the sale of old tonnage and also negative exchange rate differences of MSEK 93.

Concordia was a very profitable company until 2002 and the company seems not desire to build up a superior fleet of vessels. Profits from the current operation can lead to self-confidence and this may increase the inclination to make new investment. It is true that the company can spread its risks by having more trading assets and business activities. It could be true for the case of Concordia since the company has only five vessels at the end of 2001, and they seem not have any 'reserve' to offset the decline in freight rate, while many vessels have been sold. It is simple to understand that shipping companies should have flexible resources and they always must keep an eye on what is going on in the world economy. The demand for their services is mainly dependent on the fluctuation of trade and commerce. One of the most important issues for a shipping company is to maintain the capacity that its customers need, to be more flexible and to make reasonable contracts. The fact shows that

many shipping companies keep working on many markets at the same time and they seem to recognize that they would be better off with more capacity rather than less. Returning to the case of Concordia, we know that the company has more chance than other companies since they are somewhat supported by Stena Group in terms of customers and capital. At present, Stena Group has 54% ownership of the company. To some extent, we think that the company should keep making more investments until they can make use of their opportunities to a maximum, instead of staying constant. A foreseeable loss can be made in the first year of investment, especially during the period of economy's downturn in the world in recent years, but a positive return will possibly be made in the following years if the company diversifies its business in the right way.

Broström shows a very good future picture if the company keeps being a profitable and stable company. Besides, the company continues to make investments that even require a great deal of capital and therefore needs financial assets to make their way through the fluctuation of the market. A large amount of debt is not a threat for the company because it is offset by a very stable income with a low business risk. It could be the right way for the company on the way of expanding and developing.

5.4 Further Research

We don't think it is possible to have a certain model regarding capital structure that applies to the whole shipping industry. However it might be possible to set up a guideline that can be utilized by shipping companies, which is very significant for many companies in this industry, especially new established ones, in deciding on their capital structure. This is because so far the industry still lacks of practical information and research from academic professionals.

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Appendix

There are some questions regarding capital structure that we send to the person in charge at Finance & Accounting Department of the two companies.

1. What is your target ratio in terms of debt and equity ratio?
2. How does your company decide capital structure? Which factors below are taken into consideration in deciding on your company's capital structure and why? Do you consider about any other factors that are not on this list? If any, what are they?

- Business risk
- Financial risk
- Management attitude
- Assets tangibility
- Debt coverage ratio
- Tax shield
- Cost of capital
- Borrowing capacity
- Future earnings forecast

3. Do tax issues have a major influence on your decision on capital structure?

4. Could you borrow more debt at the same interest rate?