Shipping and the U.S. Equity Markets: Tanker Stocks

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Abstract

The goal of this thesis is to investigate one of the recent developments of shipping finance, namely public tanker companies listed in the US capital markets. The tanker industry, compared to other sectors of the economy, has for the most part in the past produced unsatisfactory returns, but at the same time is making great steps to improve its performance and change the negative perception in Wall Street. The public tanker companies are the driving force behind the consolidation of the tanker markets and the US equities markets the suitable vehicle to steer the industry in this direction.

The aim of this paper is two-fold: to create a robust DCF model framework to value the public tanker companies and understand what are the key value drivers that distinguish each company from its peers. The companies under investigation are Teekay, Nordic American Tankers, Knightsbridge Tankers, Stelmar, General Maritime, OMI and the Overseas Shipholding Group. The first part of the paper develops the theoretical foundation to understand the mechanics and motivation of public equity offerings by tanker companies. Furthermore, the valuation procedure is set out based on solid corporate finance principles. The second part of the paper analyzes the tanker industry as a whole and each tanker company in terms of its business strategy and mission statement. The companies where valued based on a DCF model with Monte-Carlo simulation and the more widely used comparables valuation. The DCF results provide numbers close to actual market prices and the comparables valuation is consistent with the statistics of the simulation model. An examination of the assumptions and sensitivity of the results highlighted the importance of freight rates, cost control and growth policy as the most important drivers of financial performance. The paper also includes a discussion on recent IPOs in the tanker sector, the larger implications for the tanker industry as a whole and ways to improve on the accuracy of the DCF model.

Thesis Supervisor: Henry S. Marcus
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Biography of the Author

Anthony Kandylidis was born in Athens, Greece in 1977. He attended Athens College from which he received his High School Diploma in June of 1996 and enrolled at Brown University in September of 1996. After completing a rigorous 5-year program in 4 years, he graduated in June of 2000 Magna Cum Laude with a B.Sc. in Civil Engineering and a B.A. in Business Economics. Mr. Kandylidis continued his academic career at the Massachusetts Institute of Technology joining the Ocean Engineering Department to pursue a graduate degree in Ocean Systems Management. Mr. Kandylidis is expected to graduate from MIT in June of 2002 with an S.M. in Ocean Systems Management. The author has been following shipping finance developments closely for the past several years, has family ties related to shipping and has worked in the summer as a trainee in major Greek-based shipowners. Mr. Kandylidis is fluent in Greek and English and intends to work for a shipping company in the US upon completion of his studies at MIT.

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Anthony Kandylidis
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To my brothers Christos and Giannis,

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Chapter 1: Introduction

Transport of goods by ship is probably the oldest mode of transportation associated with international trading, dating back to the ancient times in the Phoenician era. Today, despite all the technological developments and the advent of the railway, the automobile and the airplane, the vast majority of intercontinental trade is still performed by sea-going vessels, linking a multitude of cities and ports all over the world. It is estimated that merchant ships transport more than 5 billion tons of cargo every year and that the industry receives and spends about USD 500 billion annually to sustain operations.[1]

Shipping is a very capital-intensive industry, whose main assets are the merchant vessels. Its asset base is estimated around USD 591 billion,[2] in terms of new replacement value. Therefore, it becomes apparent that shipping finance is of immense importance to the maritime community.

1.1 - A History of Ship Finance

Although ship finance can be traced back to the 16th century, this historical overview of ship finance will start in 1850, when steam ships started dominating ship trading. In London, in 1848 out of the 554 ships registered, 89% were owned by individuals, 8% by partnerships and 3% by joint stock ventures. Only 18% of the total number of ships was mortgaged[3]. Until then, it is evident that by far the most prevalent form of ownership was for the shares of the ship[4] to be held by a single person.

As ship sizes grew larger and new legislation established the limited liability of joint stock companies, this type of ownership quickly became the preferred investment vehicle. Some of the companies founded in this form at the later part of the century, such as P&O and Hapag-Lloyd, are still in existence. Nevertheless, control of joint stock companies still remained within a small family circle, which in tramp shipping remains to a great extent true even today. For the next fifty years, ships were financed through retained earnings and a modest degree of leverage, which resulted in downturn protection but produced relatively modest gains in an upturn.

The 1950's and 1960's

During these decades, shipowners started shifting their conservative financial structures to higher gearing ratios, but still not more than 50% leverage, in order to maximize their return on equity. At the same time the world economy was undergoing significant structural changes that created ever growing demand for oil and dry bulk products (such as coal and steel), needed to supply the industries of North America, Europe and Japan with cheap raw materials. A new player entered the game: the industrial shipper.[5] Many companies were willing to provide long-term time

[1] Andreas Vergotis et al., Global Shipping: An Investor's Guide (London: UBS Warburg, 2001), 4.
[2] Ibid.
[3] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 195.
[4] Ships in the UK at that time were divided in 64 shares, which could be held individually or as a whole.
[5] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 197.

charters to shipowners (10 years was quite common), to entice them to undertake the risk of building new vessels of bigger and bigger sizes to achieve the necessary economies of scale. With the long-term time charters as guarantees the banks were happy to lend substantial capital. The long-term time charters provided an adequate return for shipowners, which could be boosted with leverage and greatly enhanced by carefully timed S&P activity. The Norwegian tanker fleet was built in this way, the legends of Onassis, Niarchos and Livanos where created, as well as the rise to prominence of Sir Yue-Kong Pao from Hong Kong with the "Shikumi-Sen" deals.

The new form of financing led to the development of the one ship company, using flags of convenience to register ships offshore in order to avoid taxes.[6] Ownership of the fleet was exercised through a holding company, which either handled management itself or through subsidiaries.

This era of "charter-backed" financing lasted for 20 years. It gradually started to decline by the 1970's and 1980's. The main reasons for this shift in strategy were the following:[7] (1) Shipowners realized that many times their profits were "eaten away" by inflation and spot trading seemed more profitable and (2) World trading volume started stabilizing and economies of scale had been pushed to a maximum. Shippers believed that they did not need to enter into such long-term deals any more, since now, there existed large enough ships to cost-effectively serve their needs.

The 1970's

Until the mid-1960's New York was the center of shipping finance with US banks being the biggest providers of capital to the maritime industry. In 1963 the US congress enacted an interest equalization tax to stop the outflow of US capital. This effectively put New York out of the picture for this key position and the new shipping finance center was now London. More importantly, this legislation resulted in the creation of the Eurodollar market.[8] Note that shipping, although a global business, receives most of its revenues and loans in US currency, thus making it an ideal candidate for the development of the Eurodollar market. These events coincided with the closing of the Suez Canal that brought a renewed optimism especially in the tanker sector and drove spot rates to new highs. The result was that many banks were now attracted to shipping, banks that previously had no experience but wanted to have a share of the profits. This led to fierce competition between banks and the lowering of the spread and commissions charged.

More significantly, most banks were changing their policies and were willing to lend against the value of the ship with little additional security except for a first mortgage on the vessel. Leverage up to the level of 80% was the norm and there are many cases where 100% leverage was provided. This shift in policy was very significant. In the previous decade, newbuildings were financed against long-term time charters and the availability of those was a self-limiter to over-

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[6] This is not the only reason that led to the rapid growth of flags of convenience. The other basic reason has to do with the arrest of ships. By registering each ship as a separate company, the shipowner's fleet is protected from claims brought against a particular ship. For more on the legal implications of the one ship company see Stephenson Harwood, ed., Shipping Finance, 2nd ed. (London: Euromoney Publications, 1995), 13-14.

[7] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 198.

[8] Eurodollars are accounts denominated in dollars outside the US.

supply of ships. Now, by allowing lending against the hull value, newbuildings and S&P activity became a gambling game without any rationale.

The ambitions and optimism of shipowners and the willingness of banks and governments to provide abundant credit led to an unprecedented newbuilding spree and speculative S&P transactions. In 1973, with the OPEC crisis, the price of oil jumped to $40 dollars a barrel.[9] Dark clouds appeared ominously on the horizon. At this point what made matters even worse was the fact that government financing for political reasons, as well as bank loans from inexperienced banks, were still easily available, further amplifying the crisis. Freight rates dropped and ship values approached scrap values. Deal after deal started to turn sour and bankers were left with under-secured bad loans. The shipping community entered into a slump that would last for more than ten years. By the end of the decade many banks were trying to minimize their losses and exited the game with a bitter taste. The shipping cycle also claimed many shipping companies who were either wiped out or significantly restructured with the intervention of their domestic governments.

The 1980's and 1990's

By 1983 most banks that entered shipping during the boom of the early 1970's had withdrawn, leaving behind only a handful of banks with tradition in the maritime industry. These banks reviewed their credit policies and tried to incorporate the hard lessons of the past. OECD terms started being rationalized with the reality that shipbuilding capacity at previous levels was not sustainable and since 1980, the OECD terms have remained unchanged. It became a lenders' market with name lending being the order of the day. By the middle of the decade, the shipping cycle was bottoming out. Since most banks seemed cautious, new sources of financing were pursued. The US equity markets were tapped either by private placement or by listing in the stock exchange. Companies were created in the form of self-liquidating funds that would invest in second-hand tonnage, maintaining a specific amount of leverage and taking advantage of low asset values. The investors, after a set number of years, had the option of liquidating the company or extending its life. Few of those companies actually succeeded, especially since many imitators followed and investors failed to realize the cyclical nature of the shipping industry.

At the same time, in Norway and other European countries the K/S partnership emerged. With the K/S companies, citizens of those countries could invest in ships and enjoy significant tax benefits against their personal income taxes. This led many wealthy individuals to committing equity. Local institutions also provided significant bank lending. Such schemes were met with great success following a recovery in asset values but by the early 1990's tax benefits were reduced and the K/S idea eroded.

In 1993, the Bank of International Settlements, following the savings and loan crisis of the 1980's, imposed the new Capital Adequacy Rules and this led banks into being more careful with their loans in general[10]. This did not mean that shipping portfolios were significantly reduced, but it did mean that banks were now much more selective. Bank competition to secure

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[9] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 199.

[10] Eleftheria Mamidaki, "The Capital Markets as a Source of Finance for Shipping and the Feasibility of a Merchant Shipping Company Listing in the Athens Stock Exchange," (S.M. diss., MIT, 1995), 10.

reliable borrowers created another margin squeeze, which was partly offset by efforts of the banks to provide a wider range of ancillary products to shipowners.

In the search for other capital sources, shipowners turned to the US junk bond markets. Although in principle long-term debt would better suit a shipping company, most offerings occurred after the peak of the shipping cycle (1996-1998) and the downturn that followed caused most of the bonds to default. Some shipowners lost their fleet, while others managed to work out quite generous restructuring packages.[11] Investors were once again disappointed.

In the last few years there have been a number of interesting developments in the shipping world. The end of the decade has been marked with significant newbuilding activity. This activity is driven by the retirement of older tonnage as a result of stricter IMO regulations and a sustained growth of the world economy since the beginning of the nineties. At the same time it seems that consolidation is taking place in the industry and a number of shipping companies have raised equity in the US markets.

1.2 - The Shipping Cycle and the Role of Financing in Shipping

One of the characteristics of the shipping industry is its famous (or rather infamous) cyclical nature (Figure 1). This is the result of the interplay between demand and supply for ships. The former is affected by the state of the world economy, the latter by newbuilding and scrap activity. Looking at the previous trip in the history of shipping finance, its role in the shipping markets seems clear.

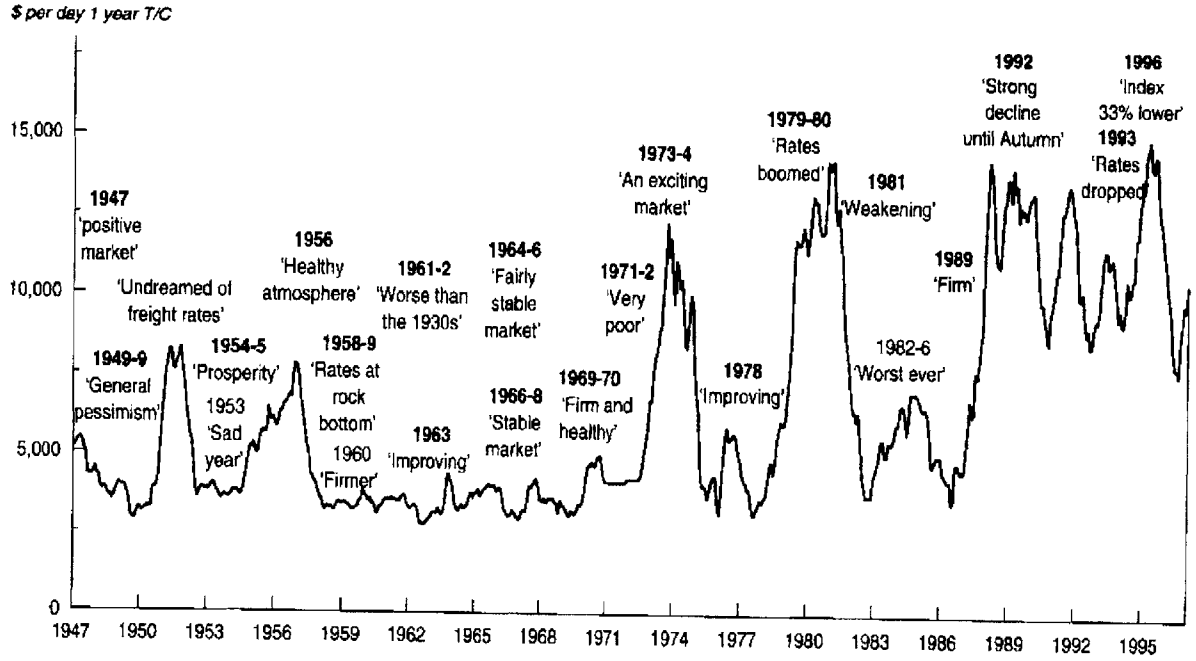

Figure 1: Tanker Single Voyage Freight Rates[12]

[11] For example, consider the restructuring of Alpha Shipping.
[12] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 59.

A typical shipping cycle consists of four phases: the prosperity, the recession, the depression and the recovery (Figure 2).

During prosperity freight rates are unusually high, probably the result of an increase in world economic activity or the shortage of available tonnage. Shipowners during this phase are happy to operate spot and, adopting a short-range mentality, drive newbuilding activity to record levels. The S&P market is also very active, with second-hand vessel prices close to newbuildings. This is the result of the immediate availability of second-hand vessels as opposed to new ones, as there is a time lag of 1 to 2 years from order to delivery. Scrapping is kept to a minimum. At some point, demand levels out and the high levels of freight rates and hull values begin to drop. Markets enter recession and shipowners now look to fix their vessels in as long as possible time charters, in order to secure acceptable revenue.

The next step is for rates to bottom out and the shipping markets enter a prolonged face of depression, characterized by significant overcapacity. Shipowners face three options. They can continue to operate, even at a loss, as long as running costs are covered, they can lay up their vessels or they can sell their vessels for scrap. As a result laid-up tonnage and scrapping activity take off resulting in a gradual decrease in world tonnage supply. On the other hand, the shipbuilding industry, for political reasons, tries to keep shipyards working and still offers cheap credit.

After some time, supply balances out with demand and freight rates start rising, entering the recovery period. Newbuilding and S&P activity pick-up and soon the prosperity phase is reached again.

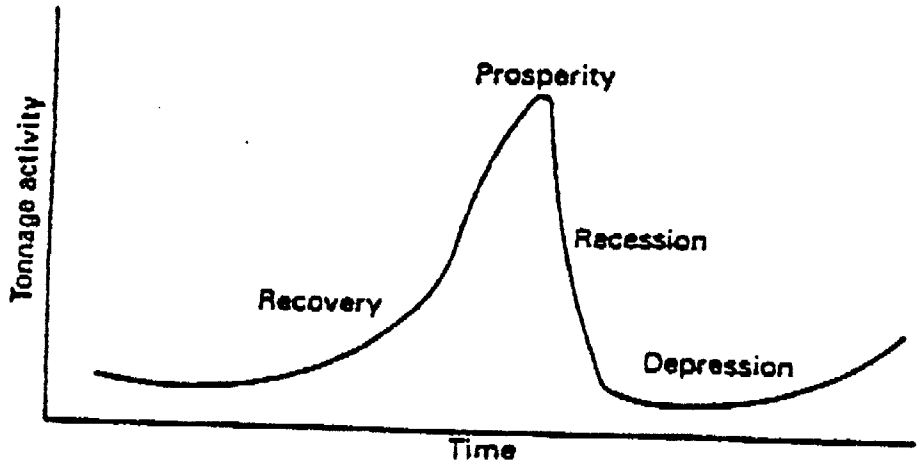

Figure 2: The Shipping Cycle[13]

The recovery and prosperity phases are usually short-lived, while the recession and depression stages can be unpredictably long, depending on how quickly the members of the shipping community realize the impact of each market cycle.

[13] Costas Th. Grammenos, Bank Financing For Ship Purchase (London: University of Wales Press, 1979), 3.

The shipping cycle can have several implications for investors and financial institutions. During prosperity, when shipowners tend to be over-optimistic, aggressive financing can create a bubble and accelerate recession. Similarly, during depression, if lenders and investors do not keep credit tight, this phase might be unduly prolonged. This is bad not only for shipowners but for banks, who seek to be repaid by the shipping companies, and investors, who seek to earn a handsome return on their investment. Therefore, it becomes apparent that successful shipping investment depends to a great extent on timing and good information about the phase of the shipping cycle the industry is in.

To an outsider it would seem that shipping with its volatile earnings should suffer from lack of financing. Nevertheless, it seems that many of the industry's problems were created by the over-abundance of available credit.

1.3 - Thesis Description

The purpose of this thesis is to examine one of the recent developments of ship finance, namely listed tanker companies in the US equity markets. As such, most comments in the previous section and hereafter apply to bulk shipping as opposed to liner shipping. The analysis will focus on answering a number of questions such as:

- What is the fair value of each company's stock based on DCF methods and comparables valuation?
- Is there a discrepancy with the market price?
- Why is there a discrepancy?
- Why did these companies go public?
- Was the IPO story and pricing realistic?
- Have the companies accomplished their goals?
- Is the tanker sector's risk/reward profile attractive?
- Are there larger implications for the shipping industry?

The discussion will take a very practical perspective and will not try to invent any new financial theory in valuation. Rather, it will build on a robust DCF model and be more comparative in nature, in order to identify the key value drivers and what distinguishes each company from its peers.

Chapter 2 starts by outlining the industry's financing needs. It then provides an overview of financing techniques in the shipping industry, explaining the mechanics of bank financing, government credit, equity, junk bonds, leasing and alternative sources of capital, and highlighting some of the relative advantages and disadvantages of each method. This chapter serves to make the reader aware of the various financing options, in order to aid further discussion later.

Chapter 3 focuses on equity financing, mainly from a financial theory viewpoint. The IPO process and the costs of equity (direct and indirect) are put in perspective. The motivation of

companies that decide to go public is explored and the advantages and disadvantages of equity versus debt are further analyzed and put in the context of the shipping industry in general.

Chapter 4 sets the framework of analysis. A three-step process comprising strategy analysis, financial analysis and valuation is outlined. The DCF model will be clearly defined along with key parameters and assumptions in projecting cash flows. Alternative valuations based on comparables and key financial ratios will also be pursued. Moreover, a more qualitative framework related to issues such as liquidity, size, fleet composition, management expertise, reputation and research coverage is developed.

Chapter 5 describes the tanker industry from an operational and financial standpoint. Furthermore, the current market conditions are presented in order to serve as a benchmark in predicting the level of freight rates going forward, needed for valuation purposes.

Chapter 6 turns to the companies under examination, Frontline, Teekay, Stelmar, General Maritime, OSG, OMI, Nordic American Tankers and Knightsbridge. The companies are profiled in terms of their mission statement, business strategy, fleet composition and goals.

Chapter 7 presents the results of the analysis based on the framework developed. The results are compared and discussed trying to answer the main questions set forth as the thesis objectives.

Chapter 8 summarizes the most important findings of the analysis and larger issues for the tanker industry as a whole. Furthermore, the two recent IPOs of Stelmar and General Maritime are compared to give further insight about public tanker companies. The thesis ends by exploring possible errors and improvements for further study.

Chapter 2: Financing Methods

2.1 - The Industry Financing Needs

To motivate the discussion about alternative sources of financing, I will spend some time in presenting data relating to the maritime industry's financial needs. These statistics are rough estimates and should be taken with a pinch of salt, but nevertheless portray the general picture of shipping finance.

For the period 1998-2002 the maritime industry's financing needs are estimated to USD 125 billion for newbuildings and USD 33 billion for second-hand tonnage, based on 80% and 60% leverage correspondingly according to industry standards (Figure 3). These figures do not include requirements for restructuring and working capital, implying that the total financing needs are higher. The replacement cost of the ageing world fleet (Figure 4) and the stricter environmental standards can help comprehend these numbers. At the same time 1997 and 1998 saw long established banks such as Hambros, Long Term Credit Bank of Japan and Banque Paribas' Geneva Shipping, liquidating their shipping portfolios.

Type	Sub type	New-build ($m)
Tankers	Crude oil	27480.0
	Chemical	3436.0
Gas	LPG	5801.8
Dry bulk		30807.8
Reefers		4784.3
General	Tweendeck	5873.8
	Singledeck	6971.5
Containers		31646.3
Ro-Ro		8650.0
Total	New-build	125451.3
	Second hand	33000.0
Total		158451.3

Figure 3: Estimated Financing Requirements 1998-2002 (World Fleet)[14]

The largest international banks, in 1999 provided about USD 2.4 billion in signed loan agreements (Figure 5). It is also estimated that other lenders to the shipping community such as domestic banks and trading houses can contribute about 5 times that much[15] (USD 12-15 billion per annum). This means that over the next five years, based on these numbers, bank financing can only cover about 50% of the industry's needs. One can argue about the confidence of these

[14] H.K. Leggate, "A European Perspective on Bond Finance for the Maritime Industry," Maritime Policy & Management 27, no. 4 (October-December 2000): 354.
[15] Stephenson Harwood, ed., Shipping Finance, 2nd ed. (London: Euromoney Publications, 1995), 74.

numbers but one thing is clear: other sources of financing will also have to be tapped to some degree or another.

Vessel type	EU 1991	EU 1997	World 1991	World 1997
All ships	16.4	17.7	16.4	17.8
Oil tankers	17.9	19.2	15.9	17.3
Bulk carriers	12.7	16.3	12.6	14.9
General cargo single	21.0	20.0	20.5	19.8
General cargo multi	14.5	18.0	18.4	21.3
Container ships	10.2	7.8	10.9	11.1
Passenger ships	22.5	22.2	19.4	19.2

Source: Institute of Shipping and Logistics (ISL) Statistics Yearbook, 1991 and 1997.

Figure 4: The Ageing World Fleet[16]

Pos.	Provider name	Location	Amt ($m)	No.	% Share
1	Credit Agricole Indosuez	France	352.53	5	14.38
2	Societe Generale SA	France	157.82	3	6.44
3	Westdeutsche Landesbank Girozentrale	Germany	153.38	2	6.26
4	Credit Lyonnais	France	131.87	5	5.38
5	Chase Manhattan Bank	USA	125.80	4	5.13
6	Commerzbank AG	Germany	112.13	4	4.57
7	Christiania Bank og Kreditkasse ASA	Norway	104.17	2	4.25
8	Natexis Banque-BFCE	France	102.67	5	4.19
9	Bank of Nova Scotia	Canada	72.50	2	2.96
10	Landesbank Schleswig-Holstein Girozentrale	Germany	70.12	4	2.86
11	Skandinaviska Enskilda Banken AB	Sweden	62.50	1	2.55
12	Citigroup Inc	USA	52.37	2	2.14
13	De Nationale Investeringsbank NV	Netherlands	49.70	3	2.03
14	Royal Bank of Scotland plc	UK	41.67	1	1.70
15	Rabobank Nederland	Netherlands	41.02	3	1.67
16	Gulf Investment Corp (GIC)	Kuwait	40.00	1	1.63
16	ANZ Banking Group Ltd	Australia	40.00	1	1.63
16	Arab Petroleum Investments Corp (APICORP)	Saudi Arabia	40.00	1	1.63
19	Dai-Ichi Kangyo Bank Ltd	Japan	38.40	2	1.57
20	Piraeus Bank	Greece	36.03	2	1.47
		Total	**2,450.99**	**22**	**100.00**

* Providers of the loan through from lead manager to participant
** Based on the signing date of at least one of the tranches of the financing

Figure 5: Top 20 Providers in Ship Financings Signed in 1999[17]

2.2 - Bank Financing

Bank lending for many decades has been and still is the most significant source of capital for the maritime industry. Banks lend money to shipowners through term loan agreements either to purchase newbuildings or for second-hand vessels. The loan agreement specifies in detail the amount of the loan, the purpose, maturity, the interest rate charged (e.g. a margin over LIBOR), the repayment schedule (e.g. balloon repayment versus annual installments), the security for the loan (e.g. a first mortgage on the vessel or personal guarantees) and a number of restrictive covenants (e.g. flag requirement) and default provisions (e.g. hull ratio). Bank financing is asset financing in its strictest form and each loan is different. Typical terms include up to 80% of the hull value, a variable interest rate at a margin above LIBOR and anywhere from 2 to 6 years maturity.

Some times, when the sums of money involved are in excess of $50 million, banks are organized in a syndicate to provide for the funds of the loan. Syndicate financing in principle, works like a

[16] H.K. Leggate, "A European Perspective on Bond Finance for the Maritime Industry," Maritime Policy & Management 27, no. 4 (October-December 2000): 354.
[17] Michaela Crisell, ed., Shipping Finance Annual 2000/2001 (London: Euromoney Publications, 2000), 90.

normal term loan with the primary distinction that more than one bank is involved. The borrower still deals with one bank, called the leading (or managing) bank, which acts as an agent for the syndicate.

Bankers and shipowners have distinctly different objectives and hence, the loan agreement is a reflection of the bargaining power of each party at a specified point in time. This bargaining power depends on the experience of the bank, the financial clout of the borrower and market conditions. In general, a shipowner would like a loan with as long duration as possible in order to match the life of the vessel. He would like to get a low interest rate, finance as large a part of the value of the ship as allowed and provide as little collateral as feasible. In this way, he maximizes his return on equity in case of success while if things turn sour he has lost little capital of his own. Furthermore, he would prefer to obtain the loan with minimal documentation and quickly. In addition, a full range of financial products and reliable financial advice from his bankers would make the whole package much more desirable. The banker has almost the opposite in mind. A short maturity of the loan allows him to shift the bank's portfolio according to opportunities arising. He would like to commit as little of the banks money as possible, secure the loan to the greatest degree feasible and charge as high an interest rate as permitted. This conservative approach will ensure adequate profitability for the bank and protect its shareholders in the event of default. Moreover, he would like to review applications thoroughly, which takes time, and would make sure he obtains every document needed to record his claims. A full range of financial products and financial advice would gladly be provided, subject to adequate compensation.

A fundamental requirement in any deal is that both parties must agree in principle that the purpose of the loan is meaningful. Establishing that, the main points of negotiation are the amount of the loan, its duration, the interest rate charged and the collateral. The owner will try to pitch his abilities and his project as best as possible and offer what he believes is adequate security. The skill of the loan officer is in evaluating correctly the downside risk, the available collateral and the owner's ability.[18] He must then offer his most attractive risk/reward ratio to the shipowner, while ensuring an adequate return for the bank. Given the fact that both parties have access to expert legal advice, debate over wording and documentation should be a laborious but straightforward exercise. The key for the shipowner is to convince the bank that he is capable, while the key for the banker is to convince the shipowner that he knows his business as well. Trust is therefore a prerequisite.[19]

The most important advantage of bank lending is that it is based on relationships and the terms of the loan agreement are the product of negotiations and hence acceptable to both parties. This allows both parties a great degree of flexibility in order to achieve their differing objectives and tailor the deal accordingly. If the shipowner is capable and the loan officer experienced enough to understand his client's limitations, shipping loans can be beneficial to everyone involved. In case of unforeseen default, the relationship nature of the loans might help avoid the worse and acceptable solutions can be reached.

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[18] Stephenson Harwood, ed., Shipping Finance, 2nd ed. (London: Euromoney Publications, 1995), 77.

[19] A full range of financial products and expert financial advice would also help cement such a relationship.

The variable interest rate risk has been pinpointed in the past as a source of problem for shipowners, but with the modern financial innovation and the advent of forwards, futures and swaps, such risk can easily be hedged at a small cost to the shipowner. The term loan period especially in second-hand purchases is also acceptable. Others have argued that shipping loans are too risky for the banks. Of course, return goes hand in hand with risk and this means that a properly evaluated and diversified portfolio can prove very profitable for the bank. The costs of borrowing (interest and fees together with restrictive covenants that restrict the management's flexibility) have to be weighed against the cost of alternative sources of external financing.

As banks have rationalized their lending policies, the problem lies with bad borrowers. The credit squeeze does not really affect high quality borrowers who many times do not even need to borrow. On the other hand, shipowners must be careful to avoid being lured into unprofitable ventures by inexperienced banks offering cheap credit in prosperity periods. All in all the fact that bank financing has been the prevalent source of capital for the shipping industry is not accidental and is a reflection of its relative merits. In the end a successful loan deal will be determined by the balance the contracting parties achieve in protecting their interests.

2.3 - Government Credit

Government credit is involved in the financing of newbuildings only. Historically a buyer of a new ship had two options: (a) to obtain yard credit subsidized by the government or (b) to arrange for a bank loan with the balance payable in full upon delivery, some times with government guarantees. As there is a time lag between the contract and delivery, payments would have to be made during construction under any scheme. Typical payment terms for each option are shown in Figure 6.

Signing of contract	5%
6 months after contract	4%
Beginning of keel laying	4%
Launching	4%
Delivery	3%
Post-delivery (yard credit)	80%
	100%

On a cash contract, a possible split would be:

Signing of contract	15%
Cutting of first steel plate	15%
Beginning of keel laying	10%
Launching	10%
Delivery	50%
	100%

Figure 6: Payment Schedules of Yard Credit and Cash Option[20]

In the case of the cash contract, the shipowner would seek a regular bank loan for say 80% of the contracting price. The loan might be advanced in tranches and that interest rollover during construction or delaying of capital repayments might be negotiated. Collateral might also involve the assignment of the shipbuilding contract or government guarantees. In the case of yard credit,

[20] Stephenson Harwood, ed., Shipping Finance, 2nd ed. (London: Euromoney Publications, 1995), 52.

a similar agreement to the bank loan will have to be drafted and signed either as part of the shipbuilding contract or separately. The main distinction of such agreements is that the interest rate is fixed. Many times yard credit was actually provided by commercial banks, subsidized by the government. In the past in an effort to stimulate the shipbuilding industry, governments have devised numerous schemes and subsidies to provide cheap credit and tax advantages to shipowners. Initiatives vary from country to country and many commentators on the shipbuilding industry believe that it was these measures that destroyed the shipbuilding industries of Europe and the United States. Title XI financing in the U.S., EXIM bank credit in Japan and many others are some of the more known such schemes. After the crash of the 1970's countries that are members of the OECD agreement have reached an understanding as to the most favorable terms these subsidies can take in order to avoid unfair competition. These terms are: up to 80% financing, minimum 8% fixed interest rate and $8^{1/2}$ years maximum maturity.

In recent years, yard credit has been curtailed, as a result of the unwillingness of governments to provide subsidies and the willingness of commercial banks to provide loans for newbuildings with flexible terms.

2.4 - Equity Financing[21]

Equity would seem from a finance theory perspective, as a great way to replenish the shipping industry's depleted capital structure. The obvious advantage of equity financing is that the firm does not have to repay back the money raised and investors expect returns in the form of capital gains and/or dividends, which are optional at the discretion of the shipping company. On the other hand, the cost of equity is difficult to estimate, and stems from the fact that the earnings of the company will have to be shared between the shipowner and the investors. The cost issuing equity (i.e. the underwriting fees) can be substantial.

The first obstacle in equity financing is the shipowners themselves. In a fragmented industry like world shipping, with companies many times controlled within a closed family circle of relatives and friends, most shipowners are unwilling to give up part of their ownership. A public listing of a company, or even private placement might not only mean less share of profits for the shipowners, but also that information about the firm's financial position and operating style will become publicly available, unveiling the purposely foggy corporate structure of shipping companies. This could have significant tax and liability implications making equity financing undesirable. Shipowners that have an organized and transparent operation many times are the ones who do not need external financing and thus are also not interested in such deals.

On the other side, the investors have had in many cases in the past bitter experiences with the shipping community. They do not trust shipowners (who like to use "Other People's Money"), they do not understand the shipping cycle and consider shipping as a high risk/low return business. Compared to other industries in the recent years it is true that shipping has little luck in attracting the interest of Wall Street and the investing crowd. This can also be attributed to fact

[21] Eleftheria Mamidaki, "The Capital Markets as a Source of Finance for Shipping and the Feasibility of a Merchant Shipping Company Listing in the Athens Stock Exchange," (S.M. diss., MIT, 1995), 34-62, presents a very detailed analysis on the mechanics and the advantages and disadvantages of equity financing.

that shipping is a very small sector by Wall Street standards, which means that liquidity is limited and industry research scarce.

In the past the successes of equity issues have been limited. The K/S funds in Norway were successful for tax reasons and for a limited time period. A few self-liquidating funds really succeeded in Wall Street (Anangel-American and B+H Carriers are exceptions), but the majority of the attempts ended in disappointment. The case of Tidal Marine[22] in 1978 in the NYSE is particularly noted, since criminal charges of fraud were brought against the Board of Directors and some of its bankers by the shareholders. It is instances like this that have destroyed the credibility of the maritime industry. Today active listings exist in Norway and some other European countries with mixed results over the years. The last few years, in the US capital markets, there are a number of tanker stocks that are trying to make an impression and are the subject of this paper.

2.5 - Junk Bond Financing

Long term corporate borrowing in theory can have significant advantages for a shipping company over bank loans and equity.[23] Compared to equity, underwriting fees are much smaller and ownership in the company is not given up. Compared to bank loans, long-term bonds have positive cash flow implications since only interest has to be repaid until maturity. If a company does not default on its interest payments, it is also highly probable that the principal can be refinanced in a similar manner in the future. A clear corporate structure is necessary to allow claims against the whole company in the event of default.

A shipping company that wishes to place a corporate bond either publicly or in an exchange, will have to get a rating from a recognized credit agency, such as Moody's and Standard & Poor's (Figure 7). This rating will reflect the ability of the shipping company to repay interest. Shipping companies will most likely be assigned a below investment grade rating. Below investment grade bonds are called high-yield or junk bonds. Interest is charged according to the credit rating and the risk of the project and is due in equal semi-annual installments, called coupons.

	Moody's	Standard	Fitch
Investment	Aaa	AAA	AAA
Grade	Aa	AA	AA
Companies	A	A	A
	Baa	BBB	BBB
	Ba	BB	BB
	etc.	etc.	etc.

Exerpts from the definition of the ratings by Moody's which typifies their quality are as follows:

Aaa "... the best quality... gilt edge..."
Aa ".. high quality by all standards..."
A "... higher medium grade... elements may be present which suggest a susceptibility to impairment some time in future."
Baa ".. lower medium grade.. lack out-standing investment characteristics, and, in fact have speculative characteristic as well."
Ba ".. their future cannot be considered as well assured.. not well safe guarded during both good and bad times."[8]

Figure 7: Sample Credit Ratings[24]

[22] Peter Stokes, Ship Finance, 2nd ed. (London: LLP, 1997), 25-27.
[23] H.K. Leggate, "A European Perspective on Bond Finance for the Maritime Industry," Maritime Policy & Management 27, no. 4 (October-December 2000): 355.
[24] Minos Athanassoglou, "Shipping Finance and the High-Yield Corporate Bond Market" (Term Paper, MIT, 2000), Appendix 1.

Investors in high-yield bonds are usually large institutional investors or very wealthy individuals and such bonds make up only a fraction of their portfolios, while certain restrictions apply.[25]Investors will also look at the leverage of the company, whether the bond will improve the company's overall financial position, the company's assets, the current state and future prospects of the maritime industry and the management of the company. On aggregate they expect a handsome return for their investment.

In practice things have not faired as expected. A limited number of shipping companies approached the U.S. markets around 1993 at a period of low interest rates and were quite successful, with Eletson as a prime example. A greater number of shipowners (many of much smaller caliber) attempted similar placements a few years later in the period between 1996 and 1998. In contrast to the previous time the second attempt was a disaster. Most shipping companies that followed this route were charged higher interest rates compared to other companies of the same rating in the range of 9.5% to 12%. The ensuing drop in freight rates crippled them and they failed to meet coupon payments. Timing and the mismatch between what shipping companies could afford as interest rates and what investors charged seem to have been the decisive factors. Teekay was among the exceptions to this rule. Shipowners lost their fleets to the bondholders while a few managed to escape relatively unscathed by negotiating restructuring deals (e.g. Alpha Shipping). It will take some time before the investing community is willing to invest in shipping bonds again.

2.6 - Leasing

Leasing is a way to finance the use of the ship, rather than the ownership. Two parties involved are the "lessor" (the owner of the vessel) and the "lessee" (the shipping company). For the "lessor" it is a purely financial transaction, since usually all costs related to the vessel's use are paid by the shipowner. Finance leases as described above are many times tax driven, since the title- holder of the vessel receives substantial depreciation allowances. The shipping company on the other hand, in this case benefits from cheaper financing. Finance leases are usually long-term (10 to 25 years) and there are severe penalties in case of early termination.

The attractiveness of the finance lease is that it allows the shipping company to gain access to a ship with a small cost, for the time period it needs and without worrying about ownership problems. On the other hand, its long duration forbids the shipowner to complement its earnings with asset plays, something that is definitely a disadvantage. For the lessor the risk is that there is little security he can ask in relation to the vessel and thus leasing is only available to very creditworthy shipping companies. But it is likely that such companies will have the ability to purchase the ships themselves and take advantage of the capital allowances, while still retaining asset play options, making leasing unattractive to them.

In recent years authorities have tried to eliminate or complicate most of the tax advantages of financial leases and thus this form of lending has become increasingly intricate and costly.

[25] Eleftheria Mamidaki, "The Capital Markets as a Source of Finance for Shipping and the Feasibility of a Merchant Shipping Company Listing in the Athens Stock Exchange," (S.M. diss., MIT, 1995), 23-33.

2.7 - Other Sources of Financing

Mezzanine Financing

Mezzanine structures refer to the placement of some kind of high-yield debt with an equity "kicker" involved, like equity warrants.[26] Convertible bonds could fall under this category. Such offers in shipping have been attempted, but never reached the market.

Securitisation

Securitisation would involve the packaging of a company's receivables in a saleable asset in exchange for an up-front lump sum. The purpose of such transactions is to move financing off the balance sheet. This principle could be applicable in the case of a shipyard, where the receivables could be the installments it will receive from the buyer of a ship. This is a new idea in the maritime industry and the exact details are quite complicated involving the formation of an SPC (Special Purpose Company) to carry out the transaction.[27]

Operating Lease

The operating lease is similar to the finance lease, but it is not tax driven and is of much shorter duration. It is very common in the aviation industry where 20% of the world's aircrafts have been supplied in this way[28]. The credit risk is reduced, but the "lessor's" profit in effect depends on supply and demand, since at the end of the lease he must find another "lessee" at uncertain terms. This is of great concern to the "lessor". The problem is exacerbated in the shipping industry where such activity is uncommon and there exist numerous combinations of vessel types and ages. Companies willing to engage in this form of lending in the maritime industry will probably have to overcome a steep learning curve.

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[26] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 209.
[27] Michaela Crisell, ed., Shipping Finance Annual 2000/2001 (London: Euromoney Publications, 2000), 2, 3, 7-11.
[28] Ibid., 3-4.

Chapter 3: Equity

3.1 - The Process of Raising Equity

Any company contemplating raising equity has a number of options at its disposal. It can raise capital through a public offering or via private placement. In the US capital markets, the Securities Act of 1933 (Securities Act) and the Securities Exchange Act of 1934 (Exchange Act) outline the regulatory registration and disclosure requirements[29] of equity offerings.

Public Offerings

From the moment a company's board of directors has approved raising equity through a public offering in the US, there are a number of steps before the consummation of the deal.

The first step of the process is to choose an underwriter, usually an investment bank, and sign a letter of intent to enter into an underwriting arrangement. The underwriter acts as an intermediary between investors and the issuing firm. Under the Securities Act, in the case that the issuing firm is a "foreign private issuer"[30] the company must file the F-1 form with the SEC, while if it is a domestic company, the S-1 form. In addition under the Exchange Act the 8-A form[31] is also required.[32] The registration forms are detailed documents that disclose the nature of the issuer's business, past financial statements prepared in accordance with US GAAP rules, disclosure of material events affecting the company's business, the proposed securities offered and the use of the proceeds. The documents are sent to the SEC where they are reviewed by the SEC Division of Corporate Finance and returned with comments upon which the underwriter and issuer must respond. In the meantime, the underwriter and issuer have drafted a preliminary prospectus called the "red herring". The preliminary prospectus is essentially a part of the registration statements filled with the SEC but of a simpler nature. During this waiting period, the investment bank organizes a series of road shows in order to "pitch" the issue to potential investors. This prospectus serves to inform investors about the issuer and the company. Nevertheless, no transaction can take place until final SEC approval. At this point a range of the possible issue prices is presented. The investment bank gauges investor's sentiments and is engaged in "book building" in order to be ready to sell the securities upon SEC approval. When the underwriter and issuing firm finally get approval from the SEC, an amended prospectus is filed with the SEC, specifying the exact price and number of shares to be issued. After that, the shares of the issuing company start trading publicly in the stock exchange of its choice.

A number of clarifications are in order. In the case of a private company issuing equity, the above process is described as an "initial public offering" or IPO. In the case of a public company raising additional equity, the above process is characterized as a "seasoned offering". At the

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[29] Stephenson Harwood, ed., Shipping Finance, 2nd ed. (London: Euromoney Publications, 1995), 93.

[30] A company is not a "foreign private issuer" if more than 50% of its outstanding voting securities are held by persons which are recorded with a US address, more than 50% of the companies assets are located in the US, the majority of the directors are US citizens or the business of the issuer is principally located in the US.

[31] Stephenson Harwood, ed., Shipping Finance, 2nd ed. (London: Euromoney Publications, 1995), 93.

[32] Ibid., 94.

same time there are two ways a company can sell securities, i.e. through a "general cash offering" or through a "rights issue". The "general cash offering" is the sale of new shares in exchange for cash and is almost always used in IPOs, while a rights issue can be used only in "seasoned offerings" and involves the sale of shares to existing shareholders at a discount from market price.

It is worth looking more deeply at the underwriting process and the services investment banks offer. The underwriter advises the issuer on the type of security to issue and on the underwriting method. In "firm commitment" underwriting the investment bank purchases the shares from the issuing company, at a discount from the offer price called the spread, and assumes responsibility to sell them to investors at the offer price. Price is set the day before the issuance and is the subject of negotiations. It is common for "seasoned issues" and is used by the most prestigious firms. In best efforts underwriting the investment bank promises to sell as much as possible at the offer price. Any unsold shares are returned to the issuing company. It is most common for IPOs. Sometimes an over-allotment option is included called the "Green Shoe" provision, which allows the underwriter to buy additional shares from the issuer at the original offer price.[33] This is similar to overbooking in airplanes.

The role of the underwriter is crucial and as such should be selected with care. Based on its contacts and expertise it helps issuers determine a realistic price range, measure demand and many times forms a syndicate with other underwriters to sell the shares more effectively. Furthermore, it is important that the underwriter conducts due diligence in order to understand the issuer's business and limit liability in case of future litigation concerning misrepresentations or fraudulent conveyance. Investment banks also offer after-market support in the form of stabilization efforts, the establishment of trading and research coverage.

It is clear from the previous discussion that public offerings are complicated and time consuming. The IPO process usually takes from four to six months and is exhausting for the management of the issuing company. Furthermore, the company's business as a public entity automatically becomes more transparent. In fact the company under the Exchange Act is now required to follow US GAAP rules for its financial reporting and must file with the SEC audited quarterly financial performance statements (usually form 10-Q), annual reports (usually form 10-K) and any major corporate events (usually form 8-K) such as merger and acquisition activity.[34]

Private Placement

A private placement involves raising equity by offering the securities not to the public but to a handful of investors. There is not a clear definition of what constitutes a private placement in the eyes of the SEC but an issue qualifies for private placement if it falls under Rule 144-A of the SEC, which exempts from registration initial private placements for immediate resale to Qualified Institutional Buyers (QIB).[35] QIBs include large mutual funds, pension plans and insurance companies who invest a fraction of the portfolio in private placements. The shares of

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[33] Gordon Phillips, "Selling Securities to the Public and Initial Public Offerings," (15.434-Advanced Corporate Finance lecture notes, MIT, 2001), 8.
[34] Stephenson Harwood, ed., Shipping Finance, 2nd ed. (London: Euromoney Publications, 1995), 98.
[35] Ibid., 99.

the issuing company are not traded in an exchange but rather can be traded over-the-counter between these investors with much less liquidity. Many times the securities are sold directly to the investors, although it is also common to hire an investment bank to draw up a prospectus and solicit investors. In any case, the investors are usually sophisticated and deals are custom-tailored. Investors have to be compensated with a generous discount for the extra risks taken and the illiquid assets they hold.[36] Private placements are meaningful for smaller issues than IPOs, for specific projects or as a way to "test the waters" for a larger IPO. Private offerings are a way to avoid the lengthy and expensive underwriting process and the registration and reporting requirements to the SEC.

3.2 - The Costs of Issuing Public Equity

Looking at the process of issuing equity, especially public offerings, it is evident that there are a number of costs and risks associated in equity financing. The costs involve not only direct expenses, easily quantifiable in monetary terms, but also indirect costs in the sense of opportunity cost and unrealized receipts for the issuer.

The most significant direct cost is the margin of the underwriter, i.e. the difference between the issue price and the underwriter's purchase price. This is the compensation of the investment bank for providing its underwriting services. Other direct expenses include fees related to registering the securities with the SEC, fees related to listing the securities in a stock exchange, administrative fees, printing costs, auditing expenses and legal fees.

The most important indirect cost is the underpricing of new issues. The difference between the stock price on the first day of trading and the offer price is essentially money left on the table by the issuer and the underwriter, benefiting investors. The "Green Shoe" provision in effect is also an indirect cost since the extra receipts go to the underwriter instead of the issuing company. Of course such an arrangement is the product of negotiation and thus can be avoided. Another important cost that cannot really be quantified is the time element. The IPO process and even a private placement not only take a considerable amount of time but also demand the total attention of management.

Figure 8 presents a number of interesting statistics concerning the costs of going public.[37] It seems that the costs of issuing equity are very sensitive to the size of the issue. The smaller the IPO is the bigger the underwriting discount, the underpricing and all other expenses. Note that for the smaller issues, the cost of underpricing might exceed the direct issue costs. It is also evident that "best efforts" offerings are more expensive than "firm commitments". The total cost of going public averaged 21.22% of the gross proceeds for "firm commitment" and 31.87% for "best efforts".[38] This can be attributed to a great extent to the fact that underpricing is much more severe for best efforts.

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[36] Richard Brealey, and Stewart Myers, Principles of Corporate Finance, 5th ed. (New York: McGraw-Hill, 1996), 399.

[37] J.R. Ritter, "The Costs Of Going Public," Journal of Economics 19 (January 1987): 269-281.

[38] Gordon Phillips, "Selling Securities to the Public and Initial Public Offerings," (15.434-Advanced Corporate Finance lecture notes, MIT, 2001), 13.

	Firm Commitment					Best Efforts				
Gross Proceeds ($)	(1) Underwriting Discount (percent)	(2) Other Expenses (percent)	(3) Total Direct Discount (percent) (1) + (2)	(4) Underpricing (percent)	(5) Total Expenses (percent)	(6) Underwriting Discount (percent)	(7) Other Expenses (percent)	(8) Total Direct Discount (percent) (6) + (7)	(9) Underpricing (percent)	(10) Total Expenses (percent)
1,000,000-1,999,999	9.84%	9.64%	19.48%	26.92%	31.73%	10.63%	9.52%	20.15%	39.62%	31.89%
2,000,000-3,999,999	9.83	7.60	17.43	20.70	24.93	10.00	6.21	16.21	63.41	36.28
4,000,000-5,999,999	9.10	5.67	14.77	12.57	20.90	9.86*	3.71*	13.57*	26.82*	14.49*
6,000,000-9,999,999	8.03	4.31	12.34	8.99	17.85	9.80*	3.42*	13.22*	40.79*	25.97*
10,000,000-120,174,195	7.24	2.10	9.34	10.32	16.27	8.03*	2.40*	10.43*	-5.42*	-0.17*
All offerings	8.67	5.36	14.03	14.80	21.22	10.26	7.48	17.74	47.78	31.87

Figure 8: Statistics on IPO Costs[39]

It is interesting to look at the underpricing phenomenon of equity offerings. Underpricing is to a great degree a function of timing, information and the perceived risk of a deal. It has been observed[40] that there exist "hot" and "cold" periods for an IPO. During "cold" periods (e.g., in a depressed economy) it is much more difficult to sell the issuer's story. The striking fact is that as volume picks up and a "hot" market is reached, it is of course easier to complete public offerings, but underpricing is much more severe. A number of studies and theories, although none conclusive, have been developed to explain underpricing. Explaining the details about any of these theories[41] is beyond the scope of this thesis. Nevertheless, there are a few points worth stressing:

- Underpricing could be the result of systematic exploitation of issuers by underwriters who have the information advantage in sizing up investors' appetites. The investment bank in this way can reward large clients. Although there are IPOs where this has definitely been the case (e.g., the recent CSFB settlement), it is unlikely such a phenomenon is systematic. The fierce competition between investment houses should almost guarantee the loss of future business and the smearing of the reputation of any underwriter that engages in such activities.
- Another explanation has to do with information or more specifically the asymmetry of information. This theory could explain the severe underpricing of small and speculative issues because investors cannot separate the good from the bad. But since most such deals are done using best effort underwriting, that should not be an issue.
- Underpricing could also be the result of the "winner's curse". Because overpriced issues are under-subscribed and underpriced issues over-subscribed, underpricing allows uninformed investors to make a normal return across all issues. Because "smart" investors are scarce, the market needs uninformed investors, implying that markets are inefficient.

[39] Ibid.
[40] Ibid., 11.
[41] Ibid., 16-19.

- There are cases where investors just pay too much after the IPO, making it seem like underpricing when in fact it is pure speculation. The long-run performance of such stocks could easily show if this is the case. This phenomenon could explain the paradox of the severe underpricing during hot periods where usually investors are filled with exuberance.
- In specific deals, underpricing could also be intentional on the part of the issuer, in order to be able to sell more securities in the future or could be a form of insurance for the underwriters in the case of lawsuits by angry stock buyers.

3.3 - The Financing Instrument Decision

Optimal Capital Structure

According to financial theory, the Modigliani-Miller (MM) theorem[42] claims that in an efficient market and absent taxes, the financing decision is irrelevant. In other words, whether the company is 100% equity financed or 100% debt financed, the value of the company is the same. Of course, in practice most companies pay taxes and interest payments are tax-deductible. Therefore, it seems that taking on debt would increase the company's value via the tax shields. The MM theorem can be restated, to include the effect of taxes. But this implies that the optimal capital structure is in effect 100% debt driven! The real world seems to work differently. It becomes apparent that there exist other forces at play as well.

It is true that taxes can play an important element in the financing decision. Debt has an obvious advantage over equity since interest expense is tax deductible. But there are limitations to the amount of debt a company is able to sustain. The reason is that there exist other costs associated with debt, the costs of financial distress. These are not easily quantifiable as debt tax shields but nevertheless can be substantial. What first springs to mind is bankruptcy. As debt levels increase, a firm that operates in a volatile earnings industry has a higher probability to enter into bankruptcy than a firm in a stable earnings environment. In the case that a company enters bankruptcy, the cost of doing business[43] during bankruptcy must also be evaluated. For example customers and suppliers might be unwilling to continue working with the company due to fear of impending bankruptcy, profitable projects and necessary investments (e.g., research and development) might have to be rejected due to lack of funds or financially strong competitors might force the company out of business.

Another crucial element is the characteristics of the company's assets. Bankruptcy will involve either restructuring, if the company is worth more "alive than dead", or liquidation if the opposite is true. If the company has hard assets, like power plants, pipelines or real estate, it is relatively easy to re-deploy assets and restructure the company, albeit with a change in ownership. The only economic value lost will be due to legal and court expenses. The difference between what the company thought the assets were worth and what they were appraised for during restructuring is not an issue since in a readily saleable asset this should reflect market

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[42] Richard Brealey, and Stewart Myers, Principles of Corporate Finance, 5th ed. (New York: McGraw-Hill, 1996), 449.
[43] Robert C. Higgins, Analysis for Financial Management, 6th ed. (Boston: Irwin/McGraw-Hill, 2001), 207.

conditions. On the other hand, for a high technology firm whose biggest asset is human capital and has few real assets, bankruptcy will probably lead to liquidation at fire-sale prices[44] and great economic value will be lost.

Financial distress costs also create conflicts of interest in two forms: debt overhang and excessive risk taking.[45] The result of debt overhang is to forego profitable investments. The reason is that a company in distress has too much debt and investors would be willing to provide financing only in the case that they would receive seniority over the company's existing creditors. To do that, debt with higher seniority has to be issued, but existing creditors are usually very reluctant to approve of such schemes. Excessive risk taking results in the company undertaking very risky projects with dubious payouts. Management, which usually also owns stock in the company, when the company is teetering on the brink of bankruptcy, has little to lose. They also have little to gain, since the rewards of a low risk but modest return project that does not dramatically reverse the company's fortunes will accrue to creditors. Furthermore, "going for broke", if it fails does not change anything for the company's shareholders and decreases the pie for the creditors. The net effect is that value is not added to the company.

Other Relevant Considerations

The trade-off between the debt tax shield and the expected costs on financial distress, i.e. the optimal capital structure theory, takes a rather stationary approach to explaining financing decisions. To fully understand the pros and cons of each financing decision, it must be evaluated in the context of the life of the company and its prospects for the future as well as the specific investment characteristics.

Therefore, flexibility, the concern that today's decision might endanger future financing options,[46] becomes relevant. A company cannot have access to the debt capital markets indefinitely, especially when it wants to increase its debt level aggressively. At some point debt becomes too risky and investors are unwilling to provide funds unless the equity base is widened. Hence, in terms of flexibility, it seems that equity offers a distinct advantage since it allows more financing choices for the future.

Another issue is market signaling, i.e. how does the market react to debt and stock offerings. Studies[47] have shown when a company issues debt the stock price increases, while when a company issues equity stock prices goes down. Market signaling favors debt over equity and has implications on the company's access to the capital markets in the future. One explanation has to do with dilution. The issuance of equity stock decreases the size of the pie for existing shareholders and stock prices adjust accordingly. A more convincing explanation has to do with the signals management is sending to the capital markets by its choice of financing and the existence of information asymmetry. Given that management is considered an insider, they should know what their company is worth better than anyone else. Therefore, when a firm

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[44] Ibid., 206.
[45] David Scharfstein, "Capital Structure," (15.402-Finance Theory 2 lecture notes, MIT, 2001), 44.
[46] Robert C. Higgins, Analysis for Financial Management, 6th ed. (Boston: Irwin/McGraw-Hill, 2001), 210.
[47] Paul Asquith, and David W. Jr. Mullins, "Equity Issues and Offering Dilution," Journal of Financial Economics 35 (January-February 1986): 61-89.

decides to issue debt this implies that the company is in healthy financial condition and it is confident about its future ability to repay debt. Conversely, an equity offering implies that the stock market currently overvalues the company's stock and that future prospects are not as good as they seem. Additional evidence to reinforce the effect of equity offerings is provided by observing reaction to the opposite process, stock repurchasing. The stock price reacts favorably to such actions since it implies that the company's stock is undervalued.

The maturity of the financial instrument also comes into play in assessing financing decisions. A company should try to match asset maturity with the schedule of the firm's debt schedule. For example, a long-term asset that would yield most of its returns in the future should be financed with long-term debt or equity and a short-term project, with shorter maturity instruments such as bank loans. Firms should also try to match basis sensitivity. Assets whose cash flows vary positively with interest rates should be financed by floating debt, while assets whose cash flows vary negatively with interest rates should be financed by fixed debt.[48]

Security issuance decisions can be partially driven by control issues as well. Corporations are run by managers that might have different agendas than shareholders. Such problems are referred to as agency problems. For example, management can get comfortable and indulge in excessive perks or salaries, extreme diversification or empire building that does not make economic sense. Research[49] has shown that increased leverage helps keep management in line and lends itself to a more lean and efficient organization.

Financing decisions are driven by growth too. Every company that is growing can finance operations with retained earnings to a certain degree. Financial theory prescribes that the sustainable growth rate is the return-on-equity (ROE) times the retention ratio (i.e. the percentage not paid as dividends to shareholders).[50] When the actual growth rate is higher, external financing, debt or equity is needed for the company to maintain the same business strategy and operational policy.

Consider a company experiencing rapid growth. It is prudent to maintain a conservative capital structure with lots of unused borrowing capacity. Dividend policy should be set in a way to finance a large proportion of operations internally. Marketable securities and short-term debt should be used to level temporary fluctuations of revenue. When the growth exceeds the sustainable growth rate, the best resort is to use the debt capital markets, which would send positive signals to investors. At some point, the capital structure will become too leveraged, in the sense that flexibility could be threatened. At this point equity should be issued to restore a conservative capital structure. This approach is known as the "pecking order", developed at MIT by Professor Stewart Myers.[51]

Now consider a mature company in a low growth stable earnings environment. Such companies, known as cash cows, face the challenge of managing excess retained earnings with few

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[48] Gordon Phillips, "Valuation, Security Issuance & Risk," (15.434-Advanced Corporate Finance lecture notes, MIT, 2001), 8.
[49] Ibid., 24.
[50] Ibid., 7.
[51] Robert C. Higgins, Analysis for Financial Management, 6th ed. (Boston: Irwin/McGraw-Hill, 2001), 216.

profitable investment opportunities. Flexibility is not an issue. In this case, an aggressive capital structure can create value. Debt financing offers the advantage of tax shields, market signaling and could help maintain financial discipline.

As it is clear from the above discussion, there are no hard and fast rules about when to issue debt or equity. Moreover, the optimal capital structure cannot be pinpointed exactly. Each method has its advantages and disadvantages that have to be considered when making a decision along with timing, issuing costs and the opportunities at that time. The important point is for companies to know the implications of their financial policies in order to better suit their operational requirements and long-term objectives.

3.4 - Equity and Shipping

The previous sections have discussed equity from a more general standpoint. This section will try and put the theory in perspective for shipping companies, in order to better understand why few companies have decided to go public.

The Attitude of Shipowners and Investors

Shipping is a fragmented industry. Many companies remain in a closed family circle and are small by Wall Street's standards. Usually, the owners also act as managers and are not familiar with the intricacies of the public capital markets. They are very secretive about their operating practices and financial performance and news spread by word of mouth. Therefore, it is not surprising that public shipping companies particularly in the US have been few. Going public would mean a separation of ownership and management. Profits would have to be shared with investors and business practices and financial results would have to be transparent. This could give away competitive advantages and have severe tax implications. Furthermore, the costs involved in the IPO process, including under-pricing for small issues, makes equity a very expensive alternative, compared to bank loans or even junk bonds.

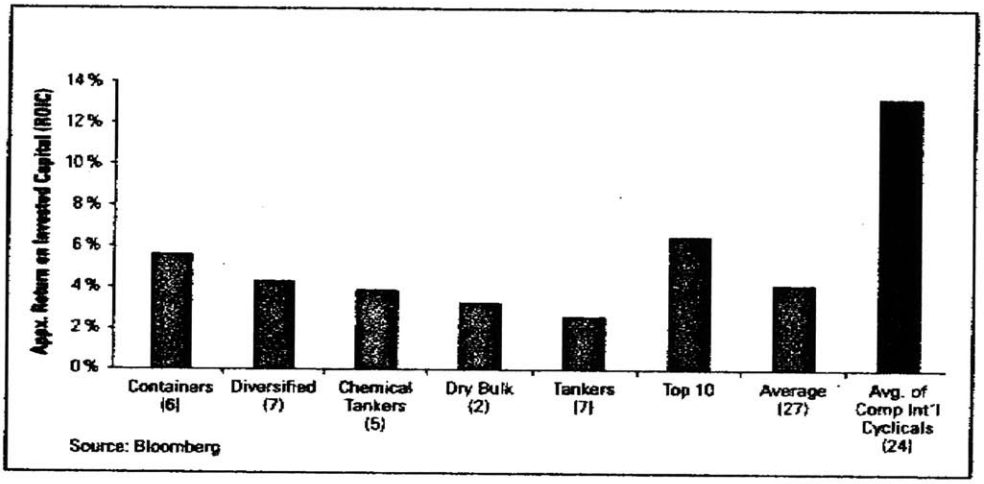

Figure 9: Public Shipping Company Operating Returns 1987-1998[52]

[52] David Berge et al., The Shipping Industry: A Field Guide for Investors (Greenwich: DVB, 2001), 8.

It is important to keep in mind that shipping companies do not exist in a vacuum. This means that access to the capital markets, debt or equity, is not free, but rather shipping firms have to compete with other industries in order to attract investors. Looking at past performance of public shipping companies (Figure 9), it is not difficult to understand the poor track record of the maritime industry. The return on invested capital for the decade between 1987 and 1998 averaged about 4% compared to about 13% of comparable cyclical stocks. At the same time the industry has demonstrated very volatile earnings and a very low growth component averaging about 3% per year.[53] To investors, shipping is a high-risk low return industry that they do not understand. It looks homogeneous and it is virtually impossible to assess the quality and honesty of shipping companies' management teams.[54] There exist good performers that are lost in the maze of speculators and bad companies. Another factor is liquidity. Shipping companies are usually small compared to other industries and stocks are less heavily traded. This implies that investors should be compensated by a "liquidity discount". The small size is also responsible in part for the lack of available information. Wall Street research is scarce and investors remain uninformed adding to the negative perception of shipping.

In this setting the key is timing. For a shipping company this means that it must have a convincing story to sell at a "hot" IPO market. For investors, this means to invest during the bottom of a shipping cycle and exit at the peak. The problem is that these conditions rarely coincide. Investors are more likely to accept a story at the peak of the cycle promising growth and consistent superior returns. Of course, the endgame is disappointment since shipping is better suited to value investors that are willing to time their investments and spend the effort to separate the good from the bad performers.

The Financial Theory Perspective

Shipping companies present a challenge to any CFO. They operate in a very volatile environment in an industry with low growth. Most companies, even public companies listed in the US, can be set up to avoid taxes. The costs of financial distress are small, since a ship is an asset that can be easily redeployed and sold. Retained earnings most of the times are not sufficient to renew fleets, expand capacity or engage in consolidation activities to create economies of scale. Managing cash flow during periods of extended troughs is crucial.

In this environment, one could argue that the optimal capital structure seems to point to relatively aggressive leverage. The benefits from taxes might not be there, since most shipping companies pay little or no taxes, but control is retained, market signaling is positive, the costs of issuance are lower, returns are boosted and the costs of financial distress low. Of course, the time the maturity of the debt should be matched with the life of the vessel, which means that second-hand vessels would require shorter-term debt instruments than newbuildings. During good times excess cash could be put in reserve to complement cash flow during downturns or be invested in additional vessels.

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[53] Andreas Vergotis et al., Global Shipping: An Investor's Guide (London: UBS Warburg, 2001), 5.

[54] Peter Stokes, "Can The Risk/Reward Balance Be Improved" (speech presented at the LSE Shipping Finance Conference, London, November 1997).

It seems that equity is not a viable alternative. But this is not entirely true. Consider how shipping companies can create value and whether they are solely at the mercy of the shipping cycle. The answer is that ships are considered a commodity and the key is controlling costs. The companies that manage to keep costs in check are the winners. Therefore, economies of scale become important: the bigger and more homogeneous the fleet, the lower the costs. In order to achieve economies of scale one can buy ships, build ships or engage in M&A activity. For this purpose, equity offers the distinct advantage of flexibility. By increasing the equity base, not only short-term growth and consolidation can be achieved, but also the ability to access the capital markets in the future can help companies achieve a size that offers the desired economies of scale and investor's recognition. It is a question of the goals a shipping company has.

A shipping company that is willing to go public had better have a clear financial policy, a crystallized strategic vision, an understanding of the US capital markets and a solid story for investors. The distance that separates investors and shipowners in assessing the price of new offerings is something that can only be resolved by mutual cooperation. Shipowners should try to be transparent and help investors understand the risks and rewards involved. Investors should be willing to devote time to understanding shipping and reward the good performers and punish the underachievers. The investment banks can help by providing more research coverage as the industry's track record becomes more rational.

Chapter 4: The Framework of Analysis

The previous three chapters provided the reader with a historical overview and the theoretical background needed to understand why a shipping company would issue equity. This helped motivate the impending assessment of tanker companies listed in the US. Before proceeding to analyze the shipping companies, this chapter will set forth, in general terms, the framework of analysis and discuss its scope, methodology and limitations.

The analysis will focus on three main aspects: strategy analysis, financial analysis and valuation. The first part will be dealt with in a more qualitative way as opposed to the more quantitative nature of the latter two. It is important to keep in mind that although each part takes a different perspective, in order to perform a sensible evaluation of the company, all perspectives should be considered and be consistent with each other. For example, if the strategy analysis concludes that the future of the company is bleak due to increased external competition, it would be unwise for valuation purposes to assume a very high growth rate.

4.1 - Strategy Analysis

Any company's profits depend on whether it can earn a return on capital in excess of its cost of capital. Although the cost of capital is largely determined by the capital markets, a firm's profitability is the result of its strategic choices, revolving around three critical axes: the industry it operates in, the competitive positioning of the firm and its corporate strategy.[55] Therefore, strategy analysis should consider all three elements that determine a company's ability to earn superior returns.

Industry analysis focuses on examining the competition among existing firms, which depends on factors such as industry growth, concentration, differentiation, switching costs, economies of scale, proportion of fixed to variable costs, excess capacity and exit barriers. The degree of potential competition must also be evaluated by looking at barriers to entry, relationships, first mover advantage and alternative or substitute products. The analysis should conclude by assessing the relative bargaining power of suppliers and buyers.

The competitive strategy of a firm deals with how the company plans to compete in the industry. There are two ways a company could choose to do so: differentiation and cost leadership.[56] The first means that a company focuses on a particular customer service or product variable and tries to distinguish itself from the competition by offering superior quality. Cost leadership on the other hand, means that the company is competing purely on costs and intends to offer the same product or service as the competition at a lower cost. The analysis on competitive strategy should focus in identifying the strategy of the firm and its ability to execute and sustain this strategy.

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[55] Krishna G. Palepu, Paul M. Healy, and Victor L. Bernard, Business Analysis & Valuation, 2nd ed. (Cincinnati: South-Western College Publishing, 2000), 2-1.
[56] Ibid., 2-9.

Corporate strategy analysis focuses on the ability of the company to create value through acquisitions, financing and operations in multiple businesses. The ability of a company to integrate acquisitions, create synergies, access the capital markets and manage resources more efficiently than the market or competitors, all play an important role in the success or failure of a firm's corporate strategy.

For the purposes of this paper, the strategy analysis will be largely qualitative and comparative and will be contained on the points mentioned above, which are by no means comprehensive. It will serve not only as a stand-alone valuation tool of larger issues concerning a shipping company, but rather as a building block to perform the rest of the analysis providing insight in the assumptions that might have to be made later. Furthermore, for companies that recently went public, the IPO will be evaluated. The discussion will focus on the risks and pricing of the deals.

4.2 - Financial Analysis

Financial analysis involves the use of ratios to evaluate a firm's financial performance in the context of its stated goals and strategy.[57] The review of past financial performance is essential in readily comparing companies and building sensible forecasts about future performance. There are numerous ratios and ways to perform financial analysis. This section will explain the ratios that will be used in analyzing tanker companies in subsequent chapters of this thesis (Table 1).

The most common overall measure of profitability is the return on equity (ROE), i.e. the ratio of net income to shareholder's equity. ROE is a measure of the overall profitability of a company and the efficiency with which the owner's capital is employed. ROE can also be expressed as the product of the three drivers of a firm's profitability: the profit margin, the asset turnover and the financial leverage. The decomposition of ROE implies that a company's performance depends on the way it manages revenues and expenses, assets, and liabilities and equity.

The profit margin, defined as the ratio of net income over sales, is a way to capture the firm's competence in managing revenues and expenses. It reflects a company's pricing strategy and its ability to control costs. The profit margin measures the contribution to net income of every dollar of sales. To distinguish between fixed and variable costs, the gross profit margin can be used, defined as the ratio of the gross profit, i.e. sales minus the cost of goods sold (COGS), over sales. The gross profit, measures the contribution to fixed costs and profits of each dollar of sales. Any item on the income statement expressed as a ratio over sales is a margin. Therefore, in a similar way the operating margin or EBITD margin can also be defined. These margins reflect the ability of companies to control operating costs. Sometimes to better analyze margins, common-sized income statements can be used were all items are expressed as a percentage of sales. This facilitates comparison across firms of different size.[58]

Asset turnover, defined as the ratio of sales over assets, captures the firm's ability to utilize assets efficiently. It measures sales generated per dollar of assets. A high asset turnover ratio points to an "asset light" strategy or industry. A low asset turnover ratio implies the opposite. Asset turnover varies inversely with the profit margin. It is unusual for a company to sustain a

[57] Ibid., 9-1.
[58] Robert C. Higgins, Analysis for Financial Management, 6th ed. (Boston: Irwin/McGraw-Hill, 2001), 61.

high profit margin and a high asset turnover ratio at the same time. To distinguish between fixed and current assets, the fixed asset turnover can be used, defined as the ratio of sales to net fixed assets.

Table 1: Financial Ratios

Ratio	Formula	Purpose
Overall Measures Of Financial Performance		
Return On Equity (ROE)	Net Income / Shareholder's Equity	Overall measure of profitability
	Profit Margin x Asset Turnover x Financial Leverage	
Return On Assets (ROA)	Net Income / Assets	Overall measure of the efficiency in allocating resources
	Profit Margin x Asset Turnover	
Revenue and Expenses Management		
Gross Margin	Gross Profit / Sales	Provides a distinction between fixed and variable costs
Operating Margin	EBIT / Sales	Reflects the ability to control operating costs
Profit Margin	Net Income / Sales	Reflects the ability to control all costs including interest charges
Asset Management		
Asset Turnover	Sales / Assets	Measures capital intensity
Fixed Asset Turnover	Sales / Net Fixed Assets	Measures capital intensity but focuses on fixed assets
Liabilities and Equity Management		
Financial Leverage	Assets / Shareholder's Equity	Reflects the financial policy of the firm
Debt-to-assets ratio	Total Liabilities / Total Assets	Provides insight to the capital structure of the company
Debt-to-equity ratio	Total Liabilities / Shareholder's Equity	Provides insight to the capital structure of the company
Times interest earned	EBIT / Interest Expense	Reflects the ability of the firm to pay interest
Times burden covered	EBIT / (Interest + Principal Repayment / (1-Tax Rate))	Reflects the ability of the firm to repay interest bearing debt
Debt-to-equity ratio market	Market Value of Debt / Market Value of Equity	Since market values are used, this ratio provides a more accurate description of capital structure
Debt-to-assets ratio market	Market Value of Debt / Market Value of Debt and Equity	Since market values are used, this ratio provides a more accurate description of capital structure
Net Debt-to-Capitalization Ratio	(Total Liabilities-Cash and Marketable Securities) / Total Assets	A more accurate description of the net capital structure of a company
Net Debt-to-Capitalization Ratio market	(Total Liabilities-Cash and Marketable Securities) / Market Value of Debt and Equity	Since market values are used, this ratio provides a more accurate description of net capital structure
Current Ratio	Current Assets / Current Liabilities	Measure of a firm's liquidity
Average Cost Of Debt	Net Interest Expense / Average of LT Debt and Current Portion of LT debt of current and previous period	A way to calculate the net interest expense of a company going forward
Alternative Measures of Overall Profitability		
Return On Invested Capital (ROIC)	EBIT (1-Tax Rate) / (Interest Bearing Debt + Equity)	Compared to ROE it filters the distorting effect of leverage
Price-to-earnings ratio (P/E)	Price per Share / Earnings per Share	Gives a sense of investor's expectations
Price-to-NAV ratio	Price Per Share / (Net Long-term Assets + Operating Working Capital)	Used as a comparable in the shipping industry
EV-to-EBITDA ratio	Enterprise Value per Share / EBITDA	Used as a comparable in ratio valuation

Return on assets (ROA) is defined as the ratio of net income over assets. ROA decomposes to the product of the profit margin and asset turnover. Therefore, it is similar to the ROE as a measure of profitability. In contrast to the ROE, it measures profit as a percentage of the capital provided by both shareholders and creditors alike.

Financial leverage, defined as the ratio of assets over shareholder's equity, is a way to summarize the firm's management of liabilities and equity. Financial leverage increases by increasing the firm's debt. An increase in financial leverage, results in higher ROE. Nevertheless, increasing leverage is not always a ratio to be maximized, since increased debt might create other problems, discussed in Chapter 3 of the thesis.

To further analyze the management of liabilities and equity there is a number of other ratios that can be used. The debt-to-assets ratio, net debt-to-capitalization ratio and the debt-to-equity ratio, provide an insight to the capital structure of the company. It is important to distinguish between book values and market values of equity and debt. Market values are generally considered superior to book values because they reflect the current stake of creditors and shareholders in the business, as opposed to book values which are historical. Therefore, market values are generally preferred over book values. As far as debt is concerned, its book value can be used as an approximation of its market value, unless there is a significant change in interest rates or the risk of the debt. Equity book values and market values can be greatly apart, since the equity market value also reflects future prospects of a company's value. The market value of equity is computed by multiplying the outstanding shares of company stock with the current stock price.

The current ratio, defined as the ratio of current assets over current liabilities, is a measure of the firm's short-term liquidity. The higher this ratio is the more comfortable the company is to meet its short-term obligations. Coverage ratios,[59] such as the times interest earned ratio (defined in Table 1) and the times burden covered ratio (defined in Table 1), are indicators of the firm's ability to service interest bearing debt. The higher these ratios, the healthier the financial position of the company. The average cost of debt is an artificial ratio used to predict net interest expense going forward.

Although ROE provides a neat way to summarize overall business profitability, it does have its limitations.[60] For example, it takes a static perspective looking at a single year's earnings only, it does not provide information on business risk and it does not accurately reflect value, since book equity is usually used. To address some of these deficiencies, alternative measures of overall profitability have been developed. The return on invested capital[61] (ROIC), also known as return on net assets (RONA), completely eliminates the bias of leverage (defined in Table 1). ROIC looks explicitly at the operating performance of a company and in this way, companies following

[59] Krishna G. Palepu, Paul M. Healy, and Victor L. Bernard, Business Analysis & Valuation, 2nd ed. (Cincinnati: South-Western College Publishing, 2000), 9-17.
[60] Higgins Robert C. Higgins, Analysis for Financial Management, 6th ed. (Boston: Irwin/McGraw-Hill, 2001), 49-52.
[61] Many analysts use a very close variant to ROIC the return on capital employed (ROCE), defined as the ratio of EBIT over capital employed. Capital employed is usually defined as total assets minus current liabilities.

different financing strategies can be more readily compared. Analysts often use the price-to-earnings ratio, defined as the price per share over the earnings per share. This ratio does not provide any information about the company's financial performance, but it does reflect the investment community's beliefs about its future potential. The price-to-NAV ratio and EV-to-EBITDA ratios are often used as benchmarks when performing comparables valuation.

It is easy to get lost with all of the ratios discussed above. Note that there are no definitive answers to what a specific ratio should be to indicate something positive or negative. A good starting point would be to compare the ratios to some general benchmark, such as the historical ROE of US companies. This comparison should be extended to industry averages and peer performance. It is also useful to observe the trend in these ratios over time in order to explain whether changes are the result of bad management, a different strategy or just the business cycle. Furthermore, each ratio should be evaluated in the context of the company's business plan and stated objectives. A robust analysis should expand beyond just the numbers and also try to explain their significance.

Ratio analysis is usually complemented by an analysis of a company's cash flow statement. The cash flow statement is useful in identifying sources and uses of funds. An increase in an asset is a use of funds while an increase in liabilities is considered a source of cash. Moreover, the cash flow statement distinguishes cash flow from operations, cash flow related to investments and cash flow from financing activities.[62] In this way, further insight into the firm's finances can be gained.

4.3 - Valuation

Valuing a company, using a traditional discounted cash flow (DCF) methodology, involves a number of steps: making sensible forecasts about the firm's future performance, computing free cash flow (FCF), estimating terminal values and deciding on the appropriate discount rate. The goal of valuation is to provide a fair opinion on what the company is really worth and to identify overvalued or undervalued companies relative to market prices. This section will try and explain the basic principles and mechanics of DCF analysis and focus on selected key assumptions required. An alternative approach using comparables will also be developed.

Forecasting

Valuation of a company has to reflect not only the current financial position of a company but also its future prospects. The goal of forecasting is to project a firm's future earnings for a specified period in the future. Past financial performance, historical trends and strategy analysis are all critical in producing reasonable forecasts.

Forecasting is usually based on pro forma statements. A pro forma statement is a projection of the firm's financial statements at the end of a forecast period.[63] The most common approach in generating pro forma statements is the percentage-of-sales method, i.e. expressing items of the

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[62] Krishna G. Palepu, Paul M. Healy, and Victor L. Bernard, Business Analysis & Valuation, 2nd ed. (Cincinnati: South-Western College Publishing, 2000), 9-23.
[63] Robert C. Higgins, Analysis for Financial Management, 6th ed. (Boston: Irwin/McGraw-Hill, 2001), 86.

income statement and balance sheet as a percentage of sales. The underlying logic is that most current assets, liabilities and variable costs vary directly with sales.[64] Therefore, the estimate of how revenue increases or decreases becomes essential. For items that do not vary directly with sales, such as fixed assets, individual assumptions have to be made based on the firm's strategy, accounting and financial analysis. For example, examining some of the financial ratios, observing how they change over time and assuming a value for the ratios going forward, implicitly forecasts items on the balance sheet or income statement.

To test the dependence of forecasts on the various assumptions, sensitivity analysis can be used. Sensitivity analysis measures the difference in the value of a forecast, as a result of the change in one of the underlying assumptions. In this way, information about the possible range of a forecast is provided. Furthermore, sensitivity analysis evaluates the importance of an assumption. The bigger the change in forecasts produced by a small change in the value of an assumption, the more important this assumption is.

Scenario analysis goes a step further. Instead of changing one assumption at a time, different sets of assumptions are considered, corresponding to a particular economic event.[65] For example, consider a shipping company being at the bottom of the shipping cycle. Three scenarios can be identified: a scenario of fast recovery leading to prosperity, a scenario of prolonged depression and a scenario of recovery in the medium turn. For each economic reality a set of underlying assumptions can be created. Based on these assumptions three corresponding pro forma estimates are computed. Assigning probabilities to each scenario, a weighted average estimate, encompassing all three scenarios, can be calculated.[66] Instead of manually performing a scenario analysis, a simulation procedure can be used on a PC. To perform simulation process, each assumption is assigned a probability distribution and all possible outcomes are recorded, providing a probability distribution for the value of the company. In this way, a more complete picture of the outcome is presented.

A forecast cannot extend to infinity. It is impossible to create accurate pro forma statements for many years ahead. The forecast period should extend up to the point in time when the firm's incremental return on investment reaches equilibrium.[67] At this point the firm is unable to sustain any competitive advantage. For most firms, a five-year or ten-year forecast horizon is more than sufficient.

The DCF Model[68]

Correct valuation is not based on earnings. Instead, the cash flow to the stakeholders or the free cash flow (FCF) has to be calculated (Figure 10). Caution must be taken to use the marginal tax

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[64] Ibid.
[65] Ibid.
[66] Top Copeland, Tim Koller, and Jack Murrin, Measuring and Managing the Value of Companies, 3rd ed. (New York: John Wiley & Sons, 2000), 333.
[67] Krishna G. Palepu, Paul M. Healy, and Victor L. Bernard, Business Analysis & Valuation, 2nd ed. (Cincinnati: South-Western College Publishing, 2000), 12-12.
[68] The DCF model explained in this section is a very basic version. Although there are a number of finance textbooks that develop such models, the model in this section was developed based on David Scharfstein, "Valuing Companies," (15.402-Finance Theory 2 lecture notes, MIT, 2001).

rate, instead of calculating the after-tax profit using taxes paid on the income statement, and to include only incremental cash flows.

Seldom is a company all equity financed. Therefore, the effect of financing on value must also be computed. One method could be to adjust cash flows to reflect financing decisions (Adjusted Presented Value or APV method) and compute the value of debt tax shields separately. Alternatively, the discount rate can be adjusted to reflect the effect of leverage (Weighted Average Cost of Capital or WACC method). It can be shown that these two methods are virtually identical.[69] The WACC approach (Figure 10) is more suitable for stable capital structures and the APV method is mostly used in bankruptcy cases or leveraged buy outs. For the purposes of this thesis, the WACC method will be used. Using WACC as the discount rate reflects the opportunity cost of capital of the firm.[70]

For the time period beyond the forecast horizon simplifying assumptions have to be made. A terminal value, reflecting the contribution to the value of the firm of the years beyond the forecast period has to be computed. One assumption could be that the firm is liquidated at the end of the forecast horizon (Figure 10). This could be true for a self-liquidating shipping company that plans to sell its vessels after a set period of years. Another assumption could allow for continued steady growth forever, i.e. calculate the terminal value as a growing perpetuity (Figure 10). This could be true for a company in a high growth industry or a company restructuring. A more conservative approach is to assume a zero growth beyond the forecast period, i.e. calculate the terminal value as a flat perpetuity (Figure 10). This is more conservative and is suitable for mature industries.

To calculate the enterprise value of the firm, i.e. the value to shareholders and creditors alike, a present value approach is used (figure 10). The FCF of each year is discounted to the present using as a discount rate the WACC. The other component of the enterprise value is the terminal value also discounted using the WACC. The value of the equity can be easily computed by subtracting from the enterprise value the value of the long-term debt of the company (Figure 10).

Sensitivity and simulation analysis naturally extends to the DCF model as well. Parameters of the DCF model, such as the terminal value growth rate and the discount rate, can be varied to determine the effect on the value of the company. Nevertheless, the building block of DCF is an accurate estimate of FCF. The effect of the discount rate is of the second order compared to the effect of a change in the projected FCF. Therefore, it is worth emphasizing again, that the DCF model is as good as the assumptions it is based on. There lies the value of industry and financial analysis in providing information to make reasonable forecasts and reliable assumptions.

The DCF model is widely used to estimate the value of the company. However it does have its limitations. The DCF approach is a static approach. It assumes that decisions have to be made now or never and that management has no flexibility to respond to changing economic conditions. In other words, it ignores some of the options management might have in pursuing a project. For example, the company might postpone the building of a plant or abandon the development of an oilfield after conducting initial exploration. These options can add great value

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[69] David Scharfstein, "Cost of Capital," (15.402-Finance Theory 2 lecture notes, MIT, 2001), 14-16.
[70] Robert C. Higgins, Analysis for Financial Management, 6th ed. (Boston: Irwin/McGraw-Hill, 2001), 281.

to the firm and are not captured by DCF. Real options analysis addresses this shortcoming of DCF.

Free Cash Flow

$$FCF = (1-t) \times EBIT - \Delta NETASSETS$$

t: marginal tax rate
EBIT: earnings before interest and taxes
ΔNet assets: change in net assets

Discount Rate

$$WACC = k_D (1-t) \frac{D}{D+E} + k_E \frac{E}{D+E}$$

t: marginal tax rate
k_D: cost of debt, approximated with the interest charged by lenders if the debt is not risky
D/(D+E): the target or equilibrium capital structure of the firm
k_E: cost of equity

Cost of Equity

To calculate the cost of equity the following steps are needed:

- Identify comparable companies
- Un-lever each company's equity beta (β_E) to estimate its asset beta (β_A), using the D/(D+E) ratio of each comparable company:

$$\beta_A = \beta_E \frac{E}{D+E}$$

- Estimate the firm's asset beta by averaging the asset betas of the comparables
- Re-lever the firm's asset beta (β_A) to estimate the firm's equity beta (β_E) using the D/(D+E) ratio of the firm:

$$\beta_E = \left(1 + \frac{D}{E}\right)\beta_A$$

- Use the CAPM to estimate the firm's cost of equity (k_E):

k_E= *risk free rate* + β_E x *market risk premium*

Terminal Values

Liquidation

TV_T= *After Tax Salvage Value* (estimated using asset values)

Growth Perpetuity

$$TV_T = \frac{FCF_{T+1}}{WACC - g}$$

Flat Perpetuity

$$TV_T = \frac{FCF_{T+1}}{WACC}$$

TV_T: the terminal value at the end of the forecast period (i.e. perpetuities begin one year later)
T: the last year in the forecast period
T+1: the first year after the end of the forecast period
g: the assumed growth rate beyond the forecast period

Putting It All Together

$$EV = \sum_0^T \frac{FCF_t}{(1+WACC)^t} + \frac{TV_T}{(1+WACC)^T}$$

Equity Value = EV – Debt of the Firm

Price Per Share= Equity Value / Number of Shares Outstanding

EV: Enterprise value (the value of the whole firm)

Figure 10: The DCF Model

Comparables Valuation

Valuation based on comparable multiples is widely used by analysts, partly because of its simplicity. Multiples often provide a good ball park estimate of a firm's value. Of course, comparables valuation lacks the insight the DCF model provides since it does not deal with the drivers of value creation.

The first step in comparables or multiples valuation is to identify firms similar to the company that has to be analyzed. Of course, if a perfect match could be found, comparable valuation would yield superior results. In practice it is difficult to find perfect comparables. Consider a shipping company that operates both dry bulk carriers and tankers. A pure tanker company would be an imperfect comparable since it would ignore the dry bulk side of the business. Nevertheless, such a comparable might be the best available. In other instances a firm might be so specialized that there exist few companies in the same niche. In this case, maybe a division of a conglomerate might be an appropriate comparable. Generally companies in the same industry or sector are considered suitable comparables.

Having identified a comparable group of companies, multiples valuation involves the following steps:[71]

- Choose a measure of performance, e.g. earnings.
- Estimate the price to this measure of performance measure multiple for the comparable companies and get the average value.
- Multiply this average value with the same measure of performance for the firm being analyzed. This is the value of the company.

Common multiples used are the P/E ratio, the price-to-book value ratio and price-to-NAV ratio and EV-to-EBITDA ratio.

For the purposes of this thesis, valuation will center on the DCF model developed previously. The emphasis will be in making justifiable assumptions and understanding what drives value creation, by performing sensitivity and simulation analysis, using the Monte-Carlo method and a triangular distribution in defining assumptions, specifying a most likely value and an upper and lower limit. Comparables valuation will also be used as a rough estimate. Real options analysis will be ignored.

[71] Krishna G. Palepu, Paul M. Healy, and Victor L. Bernard, Business Analysis & Valuation, 2nd ed. (Cincinnati: South-Western College Publishing, 2000), 11-7.

Chapter 5: The Tanker Industry

Shipping is a truly global business comprising segments of great diversity. It would be unfair to treat the maritime industry in a uniform way, since each shipping sector has its own unique characteristics. For instance, although container ships and dry bulk carriers are part of the maritime industry, there exist tremendous differences between container operators and dry bulk carrier operators, not only from an operational aspect but also in terms of business strategy and financial characteristics. The qualitative analysis in this chapter will focus in understanding the distinctive characteristics of the bulk shipping industry and in particular of the tanker sector.

5.1 - General Characteristics

Any operation, large or small, involved in bulk shipping participates or is affected by the four shipping markets: the freight market, the sale and purchase (S&P) market, the newbuilding market and the demolition market. In the freight market, sea transport is traded. Shipowners provide the ships to be chartered in by shippers to transport some type of cargo for some freight rate. In the S&P market second-hand vessels are traded between different shipowners. In the newbuilding market new vessels are traded, ordered by shipowners and built by shipbuilders. In the demolition market, ships are sold for scrap to demolition yards, when the ship cannot be traded profitably any longer or it is not seaworthy.

Although each market is distinct, shipping companies participate in all four markets and their activities are closely correlated. It is important to recognize the cash flow relationships implied for the industry as a whole[72]. Freight revenue is the major cash inflow for shipping and a much smaller part is contributed by scrapping activity, especially during recessions. The S&P market is really a zero sum game. Since ships change hands between shipowners there is no net cash outflow for the industry as a whole. Nevertheless, there are winners and losers between companies trading in second-hand vessels. The only real industry outflow is when newbuildings are ordered, transferring money to shipyards to pay for labor and materials costs. Freight rates are the primary driver for shipping investment: when rates rise or fall, the changing sentiment ripples through the rest of the markets as well.

The supply of sea transport is largely determined by the size and composition of the world fleet. Since each cargo has its own unique nature, the shipping industry operates vessels specialized to carry a specific type of cargo. Also, the parcel size of cargoes is different, which has resulted in the development of most common ship sizes. In some instances, the constraints on ship size (e.g. Panama Canal) have determined the shipment size. The useful life of a ship is between 20 to 25 years, with mandatory scrapping typically no later than 30 years.

Tanker vessels represent the largest part of the world fleet in terms of deadweight tonnage (about 39%)[73]. They transport mostly crude oil and oil products. The most common ship sizes are the Handymax (from 10,000DWT to 49,999DWT), the Panamax (from 50,000DWT to

[72] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 80.
[73] Andreas Vergotis et al., Global Shipping: An Investor's Guide (London: UBS Warburg, 2001), 19.

69,999DWT), the Aframax (from 70,000DWT to 99,999DWT), the Suezmax (from 100,000DWT to 199,999DWT), the VLCC (from 200,000DWT to 299,999DWT) and the ULCC (from 300,000DWT+). When they carry oil products such as gasoline or petrochemicals they are called product tankers (clean or dirty depending on the degree of distillation). Product tankers are usually Handymax and Panamax vessels, with a few larger sizes available as well. Loading and unloading is performed by a high speed piping system on board the vessel. Sometimes oil and oil products are carried by combination carriers. They represent a small fraction of the world fleet (about 1.9% in terms of deadweight tonnage)[74] and are ships that are designed to carry both liquid and dry bulk commodities in different legs of a trip, combining the capabilities of tankers and bulk carriers. They are often referred to as OBO's (ore/bulk/oil) and ship sizes vary.

The demand for ship transport is directly linked with the world economic conditions. Tanker demand is closely tied to the demand for oil in the world economy and is affected the price of oil. Political events, such wars or instability in the Middle East, can also greatly impact tanker demand, often with profound consequences. As described in Chapter 1 of this paper, the interaction between demand and supply of sea transport results in the cyclical nature of the shipping industry, which is particularly evident in the tanker sector. The cyclicality of the shipping industry is exacerbated by the low barriers to entry, since all that is needed to become a shipowner is to secure financing. The operation of the vessels can always be handed to ship management companies.

To understand what makes a bulk shipping company successful one has to look at what determines a vessel's profitability and how it affects cash flow and effectively the value of the company.

Costs can be divided in three main categories:

- *Operating costs,* which include administrative expenses, crewing, insurance, stores, repair and maintenance and range from 25% to 40% of total costs.[75]
- *Voyage costs*, which include bunkers, port fees and canal dues and range from 30% to 60% of total costs.[76]
- *Capital costs*, which include principal and interest repayment on debt and range from 30% to 40% of total costs, depending on the degree of leverage.[77]

The three main types of employment are:

- *Spot operation through voyage charter* (both operating and voyage costs paid by the shipowner). The vessel is chartered in at the prevailing freight rate for a specific voyage and thus revenue can present great fluctuation, following the market cycle. The freight rate is usually quoted Worldscale (W/S) points for tankers.
- *Time charter* (only operating expenses paid by the shipowner). This refers to period employment of a vessel at a fixed freight rate quoted in dollars per day. They offer insurance against downturns but they will also fail to capture any upside potential. They can vary in length from less than a year, to up to ten years, and are usually offered by

[74] Ibid., 19.
[75] Martin Stopford, Maritime Economics, 2nd ed. (London: Routledge, 1997), 161.
[76] Ibid., 166.
[77] Ibid., 172.

large industrial shippers or for specific projects. The vessel during this time is operated by the shipowner but will undertake any voyages the charterer specifies. Sometimes period employment takes the form of contracts of affreightment (COA), which commit a shipowner to fulfill charterers' needs for a specified amount of cargo between any ports chosen, but the shipowner has the option to use any available ship in his fleet.

- *Bareboat charter* (the shipowner is only responsible for capital costs). This is purely a financial transaction and a way to keep vessels off the balance sheet of charterers. They range between five to no more than fifteen years in duration and the vessel's management and operation are completely separated by the shipowner and transferred to the charterers. The charterers many times have the option to purchase back the ship upon expiration of the charter at a specified price.

The level of costs, revenues and vessel's value depends on the vessel's age, size and type, maintenance practices, the choice of flag, the classification society and the financial leverage mix. A new vessel is expensive, has definitely less off-hire days, lower operating costs and can usually obtain higher freight rates and period employment. On the other hand, a second-hand vessel can be put in operation sooner, has less capital costs but it will be more difficult to secure employment, especially on a time charter. Maintenance policy is an important choice for the shipowner. He can follow a comprehensive maintenance policy and thus have a better maintained ship with a higher hull value and be able to find employment easier, but with higher operating costs, or he can do only minimal repairs, risking an accident, a lower hull value and being turned down by charterers but have lower operating costs. The classification society and flag state will impact the flexibility of the shipowner in this respect. Moreover, the choice of flag has direct implications concerning taxes and crew wages. Note that the type of vessel is also important. A non-standard vessel will be more difficult to charter and sell but might be necessary to obtain a long time charter. Tankers being technically demanding are more expensive, have higher operating costs but also achieve a higher freight rate compared to bulk carriers. Ship size and fleet specialization can also offer economies of scale advantages and higher bargaining power. On the other hand fleet diversification offers less exposure in downturns since each sector faces different demand and supply patterns. Leverage can also have a significant effect, since too much might result in default during downturns and too little might not yield the required returns on investment.

In the end the profitability of the shipping company will depend on the strategy chosen by the shipowner in selecting the mix of his fleet, the maintenance policy, flag state, classification society, type of employment and degree of leverage in order to ride the shipping cycle. Therefore, the management of a shipping company adds value through its experience (skills), reputation (relationships with charterers) and track record (performance and access to capital) in the shipping business.

The earnings of a shipping company, from trading its vessels, are often complemented by S&P activity. Buying and selling ships at the right time (asset play) for many companies has been a significant component of their cash flow, especially in the past. Of course, such speculative practices, unless backed by strategic incentives (e.g. growth or asset repositioning), are very risky and shortsighted.

During recessions, scrap sales to demolition yards also contribute to cash flow. Scrap prices depend on the prevailing prices for scrap metal in the steel industry and are a function of the lightweight (LDT) of the ship i.e. the amount of steel of a ship.

From the discussion above it becomes clear that shipping is definitely an exciting business but that it requires a lot of experience and involves many risks. The combinations of ship types, sizes, cargoes, trade routes and type of employment are infinite. Cargoes are matched to vessels through a network of shipbrokers specializing in specific trades, circulating shipper's cargoes and receiving bids from interested shipowners. Shipowners and charterers negotiate through shipbrokers, which receive a commission (in the order of 1%-3%) for their services. S&P shipbrokers perform a similar function in the market for second-hand vessels. Shipbrokers are also often consulted to ascertain ship's values and give market forecasts for investors, shipowners and financial institutions.

Bulk shipping is a truly international business. A shipowner might be located in Hong Kong, own ships flying a Liberian flag and trade between the US and the Arabian Gulf. The common currency is the US dollar for revenues and, except for administrative expenses, for costs as well. Companies are organized in holding companies that own ships through single ship companies incorporated in the flag state of the vessel. The so-called flags of convenience often used by most shipowners allow shipping companies to pay minimal taxes. It is an industry highly fragmented, with low barriers to entry, fierce competition and just about no product differentiation. It is almost a textbook example of what economists would call perfect competition. Therefore, shipowners trading spot are price takers and cannot affect the prevailing freight rate, thus being at the mercy of the market cycle. The S&P activity and newbuilding ordering are many times speculative, which creates problems of oversupply and volatility. Timing is therefore crucial. Shipowners can make and lose money very quickly. It has been said that in shipping "You need a big fortune to make a small fortune."

It is an industry of insiders, where reputation is very important and news spreads by word of mouth. Most companies are private, many times family owned and often owning not more than two vessels. But even large companies are family owned. They are run in an autocratic style, do not have a clear corporate structure and are obsessed with secrecy. It therefore comes as no surprise that it is an industry that has been slow to innovate and adapt to take advantage of new technologies and concepts in running a business. Of course, there are companies that are public (about 32.5% of the tanker companies),[78] but these are either large shipping corporations (not more than five) or listed in local stock exchanges (e.g. Oslo), with the majority of the shares still held in a close family circle.

In the last few years shipping has been struggling to evolve. Shipping for many years relied on self-regulation concerning safety. A few highly publicized disasters (Exxon Valdez, Erika) have prompted closer scrutiny by the authorities. New regulations have been passed from the International Maritime Organization (IMO) that imposed the International Safety Management Code (ISM) on all shipping companies and the mandatory replacement of single hull tankers with double hulls (Regulation 13G). Port authorities, classifications societies, flag states and insurance companies have been ever more active in their inspections. Charterers are also more

[78] Andreas Vergotis et al., Global Shipping: An Investor's Guide (London: UBS Warburg, 2001), 5.

concerned with safety that has resulted in a two-tier market with older ships achieving lower freight rates. As a result the cost of doing business has gone up. The most recent trend is an industry consolidation. Many companies now trade their ships in pools through profit sharing agreements, yielding greater bargaining power against charterers. A wave of takeovers and mergers has been underway in search for economies of scale. Developments have been more evident in the tanker sector, which was always more specialized. This trend is being reinforced by the scarcity of charterers, after the oil industry mega-mergers (e.g. Exxon-Mobil), which prompted a response by shipowners. Despite these hopeful signs, things are moving at a slow pace since many shipowners are reluctant to transform to modern shipping corporations and abandon the veil of secrecy and family mentality.

5.2 - Financial Characteristics

To examine the financial characteristics of the tanker industry, it is necessary to look at past financial performance and compare it with other sectors of the economy. Table 2 presents financial data related to the S&P 500, the transportation sector, the maritime transportation industry and the tanker stocks listed in the US.

The water transportation segment is a very small (USD 15.50 billion market cap) subcategory of the transportation sector of the economy (USD 266.1 billion market cap). The transportation sector is also the smallest sector of the economy, compared to sectors such as technology (USD 3043 billion market cap) or services (USD 3931 billion market cap).[79] The tanker companies represent about a third of the water transportation in terms of market capitalization (USD 4.5 billion market cap). In other words, the combined market size of all active shipping companies in the US is more than 10 times smaller than Microsoft alone! Tanker stocks are considered "small caps" and even the largest shipping group, Teekay (USD 1.5 billion market cap),[80] would barely make the "mid cap" segment of the market. Therefore, it comes as no surprise that the percentage of ownership of tanker stocks by institutional investors (about 30%) compared to the S&P500 (about 60%) is much lower. The result is that few people trade in tanker stocks, research is scarce and the vast majority of investors are ignorant of the shipping markets. In my view, this creates two implications for shipping: an IPO is much more difficult to place and the stock price might be lagging the value of the company, as a result of limited liquidity. In fact, evidence exists to support that "paper values" react slower than "steel values".[81]

The low P/E ratio of tanker companies (P/E of 5.47) compared to the rest of the shipping sector (P/E of 13.10), the transportation industry (P/E of 26.49) and the S&P 500 (P/E of 30.88), indicates that investors place little emphasis on the future prospects of tanker companies and the added value created by brand imaging, reputation and expertise. This is not surprising if the cyclicality, commodity nature of shipping and the low barriers to entry are taken into account. Also, considering that the tanker industry is coming out of a peak, it makes sense for the P/E ratio to be low. Going in to a trough, it should be expected that the P/E ratio becomes higher to reflect that.[82]

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[79] http://www.yahoo.com.
[80] Ibid.
[81] James R. Lawrence, "Please Mine the Gap," Marine Money Magazine (September 1998): 12-13.
[82] Anthony Argyropoulos, "The World According to GAARP," Marine Money Magazine (January 2002): 35.

Shipping is considered to be a low growth industry. Indeed the 6.83% average sales growth of water transportation companies, in the last five years, is almost half the 13.17% sales growth of S&P 500 companies, for the same time period. What is surprising is the sales growth rate of the tanker companies, which averaged 26.58% the last five years, almost double that of the S&P 500! Nevertheless, this number needs a number of qualifications. On one hand, it reflects the fact that in the last 2 years tanker companies have enjoyed unprecedented high freight rates, unlikely to be repeated for many years to come. During the same period, many tanker companies engaged in extensive S&P transactions, newbuilding ordering and mergers activity. Therefore, to a large extent the high growth rate can be attributed to the rapid expansion of some of the public tanker companies.

Table 2: Financial Data on the Tanker Industry[83]

	Tanker Stocks	Water Transportation	Transportation	S&P 500
Market Cap (billion)	4.50	15.50	266.10	n/a
% owned by institutions	32.85	52.51	54.73	60.71
P/E (TTM)	5.47	13.10	26.49	30.88
Sales (5yr. avg.)	26.58	6.83	8.31	13.17
Total Debt-to-Equity (MRQ)	0.92	0.50	0.77	1.02
Gross Margin (5yr. avg.)	69.27	40.23	74.05	47.83
Operating Margin (5yr. avg.)	32.81	18.13	11.56	18.03
Net Profit Margin (5yr. avg.)	17.20	11.83	5.80	11.29
Effective Tax Rate (5yr. avg.)	7.10	31.16	40.11	35.70
ROA (5yr. avg.)	4.48	6.66	6.11	7.97
ROE (5yr. avg.)	8.75	11.51	14.58	21.62
Asset Turnover (TTM)	0.29	0.49	1.07	0.96

TTM: Trailing twelve months

MRQ: Most recent quarter

The debt-to-equity ratio of tanker companies is about 0.9, indicating a relatively balanced capital structures. Although tanker companies seem more aggressively leveraged than the rest of the water transportation (D/E of 0.50) and transportation segments (D/E of 0.72), they are in line with the S&P 500 (D/E of 1.02). Since most of these companies pay little taxes (the average effective tax rate is about 7%), the tax shield benefits of debt are not so important. Coupled with the cyclicality of the industry a balanced capital structure provides security in bad times. This also provides greater flexibility to take on more debt in the future.

The competitive nature of the shipping industry would imply low profit margins. On the contrary, the last five years tanker companies have much higher gross margins (69.27%),

[83] Data compiled from http://www.yahoo.com.

operating margins (32.81%) and net profit margins (17.20%) than the water transportation sector (40.23% average gross margin, 18.13% average operating margin, 11.83% average net profit margin), the transportation segment (74.05% average gross margin, 11.56% average operating margin, 5.80% average net profit margin) and the S&P 500 (47.83% average gross margin, 18.03% average operating margin, 11.29% average net profit margin).The high gross margins are a reflection of the high fixed costs involved in shipping. The high operating and net profit margins are in part explained by the high freight rates of the last two years. At the same time, although competition is certainly fierce in the industry, the public tanker companies own modern tonnage which often commands a premium in the market. Moreover, the cost of transporting oil and oil products is low, compared to the value of the cargo, therefore it makes sense for margins to be generous. Competition affects more the chartering of the vessel than its profitability.

The high margins of tanker companies are in stark contrast with their low five-year average ROE of only 8.62% and ROA 4.46%. During the same time, the water transportation sector produced an ROE of 11.51% and an ROA of 6.66%, the transportation industry an ROE of 14.58% and an ROA of 6.11% and the S&P 500 an ROE of 21.62% and an ROA of 7.97%. The low returns are in part a result of the low asset turnover of tanker companies of 0.29 compared to 0.49 for the shipping sector, 1.07 for the transportation industry and 0.96 for the S&P 500. But, in light of the leverage of the tanker companies, asset turnover explains only a few percentage points of the difference. Risk also cannot explain the difference, since shipping companies, and especially tankers, present great volatility.

The most convincing explanation has to do with timing. As it was pointed out before, the timing element of shipping investments is critical. Therefore, shipping cannot yield adequate returns with a buy and hold strategy. In other words, there exist short periods of extremely high returns and much more prolonged periods of poor results. The ROE measured as an average of the last five years reflects exactly this. If only the last year is considered, i.e. 2001, the ROE of tanker companies comes up to 26%,[84] which is much higher than the five-year average S&P 500 ROE. It seems that shipping, in the long-term, cannot yield returns in line with the underlying risks. Nevertheless, short-term returns can be very high when investment is timed properly relative to the shipping cycle.[85] Getting the time right can yield superior returns, while getting the timing wrong could lead to catastrophe.

5.3 - Current Market Conditions and Future Outlook[86]

After almost two years of unprecedented high freight rates, i.e. since 2000, the tanker market is bracing for a difficult next couple of years. Despite the dramatic drop in freight rates following September 11, overall 2001 was a very good year for tanker owners. Going into 2002, freight rates still have some way to go before reaching the extremely low rates observed in 1999. The outlook for the future seems uncertain.

The slowdown expected at the beginning of 2001 turned out to be much more severe than anticipated. In fact, latest estimates point to growth of about 2.4%, compared to the

[84] http://www.yahoo.com.
[85] David Berge et al., The Shipping Industry: A Field Guide for Investors (Greenwich: DVB, 2001), 3.
[86] Data related to the current market condition and future outlook are contained in Appendix A.

unprecedented high 12.4% growth in world economic output (Figure A2) in 2000.[87] At the same time world seaborne trade (Figure A1) stagnated and is estimated to have increased by just 1% in 2001.[88] Seaborne oil trade declined by 0.5%, but at the same time transport distances were shortened, so total tanker demand is estimated to have dropped by 1%.[89] Similarly, the utilization of the tanker fleet fell from 90% in 2000, to 88% in 2001 and 86% in the 4th quarter of 2001.[90] The weak economic growth, the high crude oil prices that averaged USD 25 dollars per barrel in 2001 (Figure A3) and the September 11 attacks, all contributed to hamper world oil consumption. It is interesting to note that in today's global economy the downturn was almost synchronized among all geographical regions.[91] The September 11 attacks certainly helped accelerate the downturn, but it is widely believed that their effect should be short-term in nature.[92] Turning to OPEC, its vigilant stance to maintain the oil price in the USD 22 to 28 dollars per barrel, led to production cuts aimed at reducing the supply of oil. Looking back, it seems that the consequences of the consumption cuts are short-lived. In other words, the effect of the drop in demand for oil is much more important than fiddling with supply.[93] Therefore it seems that the cut of 2 million barrels per day (1.5 million OPEC and 0.5 million non-OPEC), announced in January 2002, could have limited success.[94]

The tanker fleet (Figure A4) from 2000 to 2001 increased by about 0.8%.[95] Deliveries of new tankers reached 13 million DWT in 2001, compared to 21 million DWT tons in 2000.[96] Scrapping (Figure A6) resulted in 15 million DWT to be removed from the fleet in 2001, compared to 13 million DWT in 2000.[97]

In light of the drop in tanker demand, it should come as to no surprise that freight rates (Figures A9, A10, A11 and A12) have plunged. Modern VLCCs obtained an average TCE of USD 35,000 per day in 2001 compared to USD 53,000 per day in 2000, while older units reached an average TCE of USD 20,000 per day compared to USD 33,000 per day in 2000.[98] This drop in rates has prompted owners to transfer tonnage to the West Africa region to the detriment of the traditional traffic that belonged to Suezmaxes.[99] Suezmax vessels obtained an average TCE of USD 32,000 per day in 2001 compared to the USD 40,000 per day in 2000.[100] The greater flexibility of the Suezmax class has allowed owners to stabilize their returns. Aframax vessels obtained an average TCE of USD 35,000 per day in 2001, compared to USD 37,000 per day in 2000.[101] The flexibility of Aframaxes is what kept rates from collapsing. Product tankers rates peaked in 2001, instead of 2000 as the freight rates for the rest of the tanker fleet. Freight rates for

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[87] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 2.
[88] Ibid.
[89] Ibid.
[90] Ibid.
[91] Ibid., 11.
[92] BRS, Shipping and Shipbuilding Markets 2002 (Paris: Barry Rogliano Salles Shipbrokers, 2002), 28.
[93] Ibid., 28-29.
[94] Ibid.
[95] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 14.
[96] Ibid.
[97] Ibid.
[98] Ibid., 11.
[99] BRS, Shipping and Shipbuilding Markets 2002 (Paris: Barry Rogliano Salles Shipbrokers, 2002), 30.
[100] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 11.
[101] Ibid.

Handysize and Handymax vessels peaked at a TCE of over USD 30,000 per day in 2001, while freight rates for larger vessels achieved TCEs in excess of USD 50,000 per day.[102] At the same time, the recent trend of pooling seems to have accelerated the drop in freight rates, much as it stimulated the recovery in 2000.[103] Going in 2002, freight rates for all sizes and types have dropped considerably, with TCEs around USD 20,000 per day for VLCCs, less than USD 20,000 per day for Suezmaxes, around USD 20,000 per day for Aframaxes, around USD 10,000 per day for Handysize products tankers, around 16,000 per day for Handymax product tankers and around USD 20,000 per day for larger product tankers.[104]

S&P activity during 2001 reached a record number of transactions. Nevertheless, the drop in freight rates has affected ship values (Figure A13) to a great extent. Modern tanker units have dropped between 15% and 30% in value since the beginning of 2001.[105] Product tanker prices have finished about 15% to 20% lower than the beginning of 2001.[106] At the same time, and in light of the new IMO phasing-out schedule (Figure A8) of single hull tankers, there seems to be little or no interest for tonnage built in the 1970's and early 1980's. Therefore, it should not be surprising that older units have dropped more 45% of their value during the year.[107] Asset values are now close to 1999 levels.

Going forward, there seems to be great uncertainty. On the supply side it is important to look at the orderbook (Figure A7) and the estimated level of scrapping activity. At the end of 2001, the orderbook for tankers stood at 62 million DWT, for delivery up to 2004.[108] The large orderbook is the result of the buoyant freight markets of 2000. In the current climate of low freight rates, orders for new ship have slowed down significantly,[109] despite the drop in newbuilding prices (Figure A14) of between 5% and 7%.[110] Therefore, contracting is expected to be much lower than the 26.9 million DWT of tankers ordered in 2001.[111] Scrapping is largely dictated by the level of freight rates. More important is the fact that in the last two years oil majors refuse to charter any ship built in the 1970's and 1980's.[112] It seems that once again the industry is self-regulating itself in anticipation of regulatory changes. Given these facts, estimates of scrapping of about 18 million DWT for the next few years do not seem unreasonable, especially taking into account the new IMO phasing-out schedule of single hull tankers and the age profile (Figure A5) of the tanker fleet (the average age of tankers is 17.9 years).[113] In total, tonnage supply is expected to increase modestly in 2001 (around 1%)[114] and more sharply in 2002 and 2003 (around 3%)[115]. From then on, a lot depends on actions shipowners take the next several years. The declining newbuilding prices, the depreciation of the Japanese and Korean currency against

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[102] BRS, Shipping and Shipbuilding Markets 2002 (Paris: Barry Rogliano Salles Shipbrokers, 2002), 38.
[103] Ibid.
[104] Ibid., 27-40.
[105] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 12.
[106] Ibid.
[107] BRS, Shipping and Shipbuilding Markets 2002 (Paris: Barry Rogliano Salles Shipbrokers, 2002), 33-34.
[108] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 8.
[109] Mike Payne, Market Overview and Outlook (London: Maritime Strategies International, 2002), 1.
[110] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 8.
[111] Ibid.
[112] Tom Weibell, "The Crude Tanker Market: What Happened?," Marine Money Magazine (April 2001): 3.
[113] ISL, Shipping Statistics and Market Analysis 2001 (Bremen: Institute of Shipping Logistics, 2002), 1.
[114] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 16.
[115] Ibid.

the dollar and the low level of interest rates might tempt a lot of owners to order too many vessels. This of course would accelerate the increase in the tanker fleet. On the other hand, a prolonged recession could lead to higher scrapping activity aimed at balancing supply.

The demand picture is even more confusing. There are signs that the world economy, led by the US, is recovering. At the same time, oil demand is also affected by the price of oil. OPEC seems determined to keep the price of oil at about USD 25 dollars per barrel and has indicated that it plans to introduce further production cuts. A strong economic recovery, i.e. 4% or more world GDP growth, could render this target price achievable.[116] A recovery in the range of 2% growth, would probably lead to USD 20 dollars per barrel price of oil.[117] In any case, oil consumption is not projected to grow more than 1% in 2002 and could pick-up after that. Demand for tankers is expected to drop by 2% which could lead to further deterioration of the utilization rate of the tanker fleet.[118] After 2002, a full recovery of the world economic output would result in increased tanker demand thereafter.

Against this backdrop it is important to make the following points:

- Rates in 2002 are expected to be significantly lower than the average in 2001. In 2003, if world economy indeed recovers, freight rates are expected to rebound as a result of increased tanker demand. Nevertheless, it will be a surprise if freight rates rise to the levels of 2000 in the next five years.

- VLCC rates are closely tied to OPEC production. If OPEC stops cutting production, or even increases it, then VLCC rates could skyrocket. More importantly, a high price of oil out of the Arabian Gulf, i.e. a low demand for Middle East oil, means that VLCCs enter Suezmax territory in West Africa. This of course helps depress the Suezmax freight rates further. At the same time, Suezmax vessels and Aframaxes often compete in the same geographical regions, in effect linking the freight rates in these markets too. Therefore, although not all sectors recover or decline at the same time, spillover effects exist and it becomes clear that the revival of VLCCs could drive the rest of the sectors.[119]

- The next ten years on average are expected to be much better than the trailing ten years. The phasing-out of single hull vessels required by the IMO is the main reason for optimism in the tanker market going forward, despite the size of the orderbook. It is a chance to renew the fleet, focus more on quality, rationalize the shipping cycle and get rid of over-aged vessels built in the frenzy of the 1970's, which has troubled the tanker industry ever since.[120] The danger is that at the same time, this can be used as an excuse to over-build ships, creating over-supply, with long-term implications. It is up to the shipowners and their lenders to avoid the mistakes of the past.

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[116] Ibid., 15.
[117] Ibid.
[118] Ibid., 16.
[119] Jeff Goetz, Tankers Waiting on World Upturn (New York: Poten & Partners, 2002), 3.
[120] Tom Weibell, "The Crude Tanker Market: What Happened?," Marine Money Magazine (April 2001): 7.

Chapter 6: The Public Tanker Companies Listed in the US

6.1 - Teekay Shipping Corp. (NYSE: TK)

Brief History and Company Facts

The Teekay Shipping Group was founded in New York, in 1973, by Torben Karlshoej as a manager and operator of chartered-in tankers from independent shipowners.[121] The company's headquarters were subsequently moved to the West Coast and it was not until 1985 that Teekay purchased its first vessel. By 1990, Teekay had a fleet of 30 Aframax vessels focused in the Pacific routes. In 1991 to take advantage of favorable tax laws, Teekay moved to Vancouver, Canada and continued to grow. In 1993, Teekay underwent significant restructuring and was renamed to Teekay Shipping Corporation.[122] In 1995, the company went public by issuing shares in the NYSE in a successful IPO underwritten by Goldman Sachs.[123] Teekay sold a compelling story, not of the traditional bulk shipping company, but rather that of a dynamic organization, with a dominant fleet position, a modern fleet and capable management, focused on growth.[124]

Since then, Teekay continued to grow by focusing in timely acquisitions that fit its business strategy. Most notably, in June of 1999, Teekay acquired Bona Shipholding Ltd. for a total of USD 450.3 million.[125] At the time, Bona was the third largest medium-sized tanker vessels operator and its fleet of 15 modern Aframaxes in the Atlantic routes presented Teekay with an excellent opportunity to expand in a dominant fashion in this geographic region. In May 2001, Teekay also acquired Ugland Nordic Shipping ASA for USD 222.8 million.[126] UNS is the largest operator of shuttle tankers in the North Sea region (18 vessels plus three newbuildings on order) and also owns about 13.8% in the publicly traded Nordic American Tankers listed in the US.

Teekay today is considered the premier Aframax tanker operator in the world, with a large and modern fleet, managing all operations in-house, with a clear separation of management and ownership, and a transparent capital structure. It employs 3,645 people in offices around the world and on the company's vessels.[127] It is the largest publicly traded tanker company in the US with a market capitalization of about USD 1.5 billion.[128]

The Fleet

Teekay has one of the largest and younger tanker fleets in the world. Teekay has grown its fleet rapidly in the last 5 years (Figure 11). Today, Teekay has a fleet of 96 vessels, with a total cargo

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[121] http://www.teekay.com.
[122] http://www.teekay.com.
[123] Ibid.
[124] Marine Money, "Teekay Returns Triumphant," Marine Money Magazine (August 1995): 2.
[125] Deutsche Bank Equity Research, Teekay Shipping Corp.: Dynamic Growth Through Changing Tides (New York: Deutsche Bank Alex Brown, 2002), 13.
[126] Ibid., 14.
[127] Ibid., 51.
[128] http://www.yahoo.com.

carrying capacity of 9,700,000 million DWT, making it one of the largest tanker companies in the world[129].

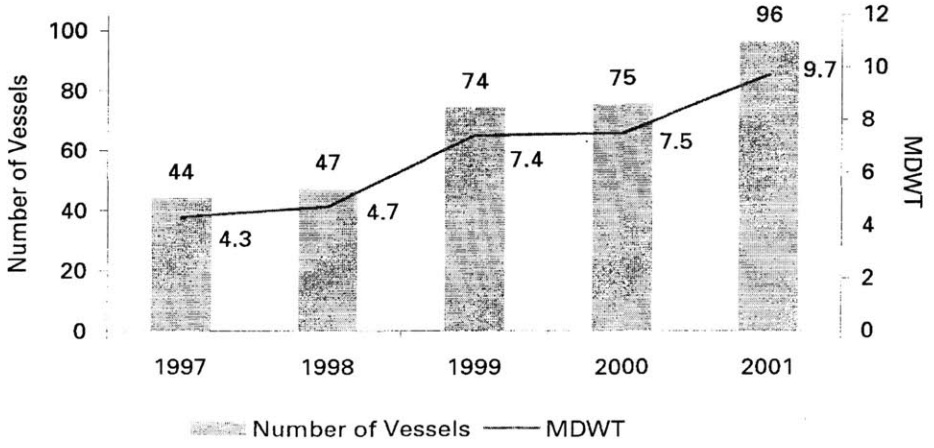

Figure 11: Teekay's Fleet Growth[130]

Its fleet can be broken down in the following segments (Figure 12 and Figure 13):

- The Aframax fleet, comprising of 63 vessels with an average age of 9.76 years and a world market share of 12.5%, contributing about 69.7% of overall revenues in 2001. The main geographical areas of operation are the Indo-Pacific Basin and the Mediterranean trade routes. About half of the Aframax fleet is double hull.[131]
- The Shuttle fleet, comprising of 15 shuttle tankers with an average age of 10.17 years and a world market share of 25%, contributing about 9.6% of overall revenues in 2001. The main geographical area of operation is the North Sea. About 80% of the fleet is double hull.[132]
- The OBO fleet, comprising of 8 vessels with an average age of 19.63 years and a world market share of 12.3%, operated in a pool, and contributing 14.1% of the overall revenues in 2001. They OBO vessels operate out of Algeria and the UK moving cargo to Europe and the US.
- The Australian fleet, comprising of 5 vessels (2 product carriers, an Aframax and 2 FSO vessels) with an average age of 12.1 years and contributing about 6.7% of overall revenues in 2001. All of these ships are on long-term time charters serving clients in Australia.[133]
- Teekay also has 8 newbuildings on order: 3 shuttle tankers, 2 Aframaxes and 3 Suezmax vessels. The 3 shuttle tankers, scheduled for delivery in 2002 and 2003, are part of the UNS deal and will join the Shuttle fleet in the North Sea. The rest of the vessels, scheduled for delivery in 2003, are part of a deal with Tosco, which is committed to time-charter the vessels at fixed rates for a minimum of 12 years.[134]

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[129] Deutsche Bank Equity Research, Teekay Shipping Corp.: Dynamic Growth Through Changing Tides (New York: Deutsche Bank Alex Brown, 2002), 41.
[130] Ibid., 42.
[131] Ibid., 43.
[132] Ibid., 44.
[133] Ibid., 45.
[134] Ibid., 46.

Type	Number	Dwt
International Tanker Fleet:		
100% Owned Aframaxes	53	5,302,300
Time-Chartered-In Aframaxes	6	621,000
VLCC	1	280,700
Newbuilding Aframaxes On Order	2	224,000
Newbuilding Suezmaxes On Order	3	456,000
OBO Fleet (1)	8	625,900
Australian Fleet	5	382,000
UNS Fleet:		
Shuttle Tankers (2)	15	1,508,300
Newbuilding Shuttle Tankers On Order	3	331,500
Total:	96	9,731,700

(1) Includes one 67% owned OBO carrier and one 52% owned OBO carrier
(2) Includes six shuttle tankers of which Teekay's ownership interest ranges from 50% to 89%

Figure 12: Teekay's Fleet Breakdown[135]

	Average Age	World Market Share	% of Fleet under Long-term fixed-rate contracts	Average Remaining Term of Fixed-Rate Contract (Years)	Regions of Operation	Major Clients	% of Overall Revenues 9 Months 2001
Aframax Fleet	9.76	12.5%	7.8%	1.3	Mediterrananean, Atlantic, and the Indo-Pacific Basin	Shell, ExxonMobil, BP, ChevronTexaco	69.7%
Shuttle Fleet	10.17	25.0%	88.9%	4.5	North Sea	Navion, PGS	9.6%
O/B/O's	19.63	12.3%	Pool	Pool	Algeria to Europe and the United States, and the United Kingdom to the United States	Dow Chemical	14.1%
Australian Fleet	12.10	N/A	100.0%	6.0	Australia	Apache Energy, Woodside Energy, Caltex	6.7%

Excludes 8 Newbuildings On Order: 2 Aframaxes, 3 Suezmaxes, 3 Shuttle Tankers
As of Sep. 30, 2001

Figure 13: Further Breakdown of Teekay's Fleet[136]

In regard to the IMO new phase-out schedule, it is expected that Teekay will be able to continue the operation of all its vessels for the remainder of their economic lifespan, before being forced to scrap them in accordance with the new regulations.[137] Teekay has only 13 vessels over 15 years-old that will have to be scrapped in 2007. Of particular importance is the OBO fleet, which

[135] Ibid.
[136] Ibid.
[137] Ibid., 24.

is on average about 19 years old and Teekay will have to make a decision about whether to scrap, sell or continue operations in the next couple of years.

Strategy

From the time Teekay went public, the company understood that it had to appeal to the capital markets. To that end, Teekay's strategy has revolved around two goals[138]: (1) To focus on gaining a competitive advantage in the shipping markets, in order to maximize the ROIC, and (2) To make the company attractive to investors, by having a focused business strategy and achieve trading liquidity of its stock through critical mass, in order to minimize the cost of capital.

Teekay's revenue is driven by the Aframax market, with 81% of Teekay's net voyage revenues in 2001 derived by spot voyages or time-charters and COAs priced on a spot market basis.[139] Therefore, Teekay still remains vulnerable to the shipping cycle. Teekay realizing this, has a stated goal of reducing spot market exposure to 60% of its total revenues by 2004,[140] and points to the Tosco deal as evidence of its willingness to position some of its assets to profitable fixed long-term employment.

At the same time, Teekay has managed to create a number of competitive advantages through its size, fleet specialization and business practices. Teekay's fleet has about 25% market share in the Indo-Pacific Aframax market, 10% in the Atlantic Aframax Market and 25% share in the world shuttle tanker market.[141] In a fragmented industry like shipping, this has allowed Teekay to achieve comprehensive coverage of charterer's requirements and enhance its capacity utilization. Teekay through an effective backhaul strategy, vessel substitution and close customer relationships, has managed to command a premium in the Indo-Pacific region in the order of USD 3,000 per day and in the Atlantic of USD 1,000 per day in 2001.[142] Teekay's advantage in the Indo-Pacific region is expected to be maintained in the future. As for the Atlantic region, it remains to be seen if this is a sustainable trend.

Teekay has been focused in creating a homogeneous modern fleet, with emphasis on safety, for example by requiring self-imposed company vessel inspections 2 to 4 times a year, regardless of regulatory requirements.[143] These characteristics of the fleet, allow for flexible scheduling, "sister-vessel efficiencies" in maintenance and repair,[144] and increased purchasing power in ordering of bunker and spare parts through the establishment of the MARCAS purchasing co-op in 1999[145]. It seems that Teekay has managed to create cost savings by means economies of scale.

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[138] Bjorn Moller, "Maintaining Shareholder Value in a Company That Has Reached Critical Mass," Marine Money Magazine (August 1999): 11.
[139] Deutsche Bank Equity Research, Teekay Shipping Corp.: Dynamic Growth Through Changing Tides (New York: Deutsche Bank Alex Brown, 2002), 8.
[140] Ibid., 11.
[141] Ibid., 8.
[142] Ibid., 43.
[143] Ibid., 52.
[144] Ibid., 13.
[145] Teekay, Annual Report 1999 (Vancouver: Teekay Shipping Corp., 2000), 6.

During these years, the breadth of Teekay's shipping activities has created strong customer relationships, with top-notch charterers, many times giving Teekay the opportunity to deal directly with clients or on a first call basis. Historically about only one-third of Teekay's spot voyages were transacted by market cargoes.[146] This is evidence of the success Teekay's strategy of customer satisfaction has achieved. Note, that historically, the top-ten customers of Teekay have contributed more than 50% of the firm's overall revenues.[147]

The company has also benefited from an experienced management team that seems to understand not only the shipping industry, but the capital markets as well. Teekay has demonstrated in the past that it is able to time its acquisitions properly and create "synergistic growth" through enhanced capacity utilization and cost savings.[148] Bona, for example, was a perfect fit for Teekay to complement its Pacific fleet and done at a time of low rates. The Bona acquisition was expected to generate cost savings of about USD 20 million by 2000, and indeed it has.[149] The UNS acquisition was also critical, in that it provided fixed-contract coverage at a time when rates started going south, while at the same time providing the company with a dominant position in the world shuttle tanker market. Teekay is expected to grow in the future and perhaps even expand in other segments of the tanker industry. In any case, Teekay's acquisitions will be selective and must fit the criteria of being able to add value for the shareholders. Teekay is against diversifying into other segments of the shipping markets, such as the dry bulk market, since it believes that investors would not reward a company for something they could do themselves,[150] and rightly so. A competitive long-term strategy and not asset play is eventually rewarded by investors.

Perhaps the most important advantage Teekay has against its competitors is its proven access to capital, even in bad market conditions, as the latest debt issue is testament to. Teekay in June 2001 announced the issue of USD 250 million of 8.875% Senior Notes due in 2011.[151] Subsequently, in November the company declared an additional USD 100 million principal amount.[152] The proceeds will be use to eliminate Teekay's secured revolving facility and allow the company grater flexibility and control over its vessels. Teekay, with its strong balance sheet and proper capitalization, is in a unique position to benefit form the current downturn in the shipping markets, by being able to "grab" the fleets of companies that are forced to sell their vessels to survive the cycle. The expected distressed sales can play right into Teekay's strategy, as the industry's leading consolidator, by enabling it to create value from modern second-hand vessels.

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[146] Deutsche Bank Equity Research, Teekay Shipping Corp.: Dynamic Growth Through Changing Tides (New York: Deutsche Bank Alex Brown, 2002), 47.
[147] Ibid, 17.
[148] Bjorn Moller, "Maintaining Shareholder Value in a Company That Has Reached Critical Mass," Marine Money Magazine (August 1999): 12.
[149] Teekay, Annual Report 1999 (Vancouver: Teekay Shipping Corp., 2000), 8.
[150] Bjorn Moller, "Maintaining Shareholder Value in a Company That Has Reached Critical Mass," Marine Money Magazine (August 1999): 14.
[151] Deutsche Bank Equity Research, Teekay Shipping Corp.: Dynamic Growth Through Changing Tides (New York: Deutsche Bank Alex Brown, 2002), 15.
[152] Ibid.

To the credit of Teekay, the company seems to be very transparent about its business strategy and financials and being very cooperative in explaining the shipping markets to investors. At the same time, the management team has shown an increased sensitivity in creating investor confidence. For example, in September 2001, Teekay announced that the Board of Directors has authorized the repurchase of up to 2,000,000 shares of its common stock.[153] Of course, it can be argued that the company saw an opportunity to buy back some of its vessels at a bargain, since at that time Teekay stock traded at a discount to net asset value (NAV). Furthermore, since 1995 Teekay has managed to pay a quarterly cash dividend of USD 0.215 cents per share, through good times and bad.[154] Teekay is also making efforts to become an investment grade company, in order to further enhance its access to the financial markets. To that extent, the company has reduced it debt-to-capital ratio from 56.6% in 1999 to around 40% by the end of 2000, and has a target ratio of 20% to 40%.[155]

6.2 - Nordic American Tanker Shipping Ltd. (AMEX: NAT)

Nordic American Tankers was incorporated in 1995 in Bermuda, i.e. its income is not taxable, and issued 11.7 million warrants at an offering price of USD 5 dollars per warrant.[156] The warrants were exercised in 1997 for an exercise price of USD 10.21 dollars in exchange for one share in Nordic American Tankers. The shares of the company are listed mostly in the US, in the American Stock Exchange (AMEX), with a market cap of about USD 150 million, and in Norway, in the Oslo Stock Exchange (OSE).[157] The company was created with the purpose of being the owner of three double hull Suezmax newbuildings (150,000 DWT each), built by Samsung in Korea, purchased at USD 56.9 million each. The three vessels were delivered in autumn of 1997 and went on a long-term charter to BP Shipping (BP).[158] The vessels are registered in the Isle of Man and fly the British Flag.[159]

The charter party has duration of 7 years, expiring in the beginning of 2004, with BP retaining the option to extend the contract for up to seven successive one-year periods.[160] Under the contract agreement, the vessels are chartered in at a minimum and guaranteed fixed USD 22,000 per day TCE rate.[161] On top of this, if the average TCE rate in the market, computed with a specified market average formula, exceeds USD 22,000 per day, then NAT is entitled to the difference. [162] It follows, that if TCE rates are below this level, the company will receive no extra income. The base hire is paid in advance each quarter, while the additional hire is paid in arrears. Furthermore, under this contract, also known as "hell and high waters" contract, the charter hire is assured for 365 days a year, whether the ship sinks or not.[163] The contract is guaranteed by BP

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[153] Ibid.
[154] Ibid., 39.
[155] Ibid., 34.
[156] http://www.uns.no/nat.htm.
[157] Ibid.
[158] Ibid.
[159] Ibid.
[160] Nordic American Tankers, 2000 Annual Report to Shareholders (Bermuda: Nordic American Tanker Shipping Ltd., 2001), 2.
[161] Ibid.
[162] Ibid.
[163] http://www.yahoo.com.

Amoco.[164] NAT has delegated the management of the vessels to Ugland Nordic Shipping ASA, which also owns about 13.8% of the company's common stocks, for a fixed annual fee per year.[165] Note that now Teekay is effectively the manager of NAT, since they bought Ugland. NAT has a policy to distribute all free cash flow as dividend each quarter, including the extra charter hire.[166]

In 1998, the company signed a loan agreement of USD 30 million, non-amortizing loan agreement at 5.8% fixed interest, in order to repurchase 2,107,244 shares of the company at a price of USD 12.50 dollars per share, through a Dutch auction.[167] The repurchase brought the number of outstanding shares to 9,706,606 shares and was aimed at leveraging the transaction and increasing the minimum annual yield.[168] Based on these numbers, the company, having an almost fixed expense structure, is expected to pay a guaranteed minimum annual dividend of USD 1.35 dollars per share.[169]

From the discussion above, it is clear that NAT is not a company with an active business or growth strategy, but rather a passive investment vehicle to the tanker industry. Its appeal seems to be its constant dividend stream and more importantly that shareholders, despite the fact that the vessels are in long-term charters, still maintain the benefits of market upswings. Another feature of this deal is its potentially limited life. In the case BP does not renew the contracts in 2004 the management of the company has to present to the shareholders three alternatives[170] and get their approval to: (1) Pursue another long-term charter agreement with BP or another charterer, and continue operating in the same way. (2) Enter the vessels in the spot market if rates are favorable. (3) Liquidate the company by selling the vessels. To BP the deal is also attractive,[171] since it got vessels matching its exact specifications, pays a reasonable charter hire, only USD 4,000 per day over a historical 10-years average,[172] the ships are off its balance sheet, thus avoiding environmental scrutiny, and maintains the option to renew or cancel the option in 2004.

NAT is a transparent and clear cut investment proposition. Nevertheless, it is important to stress the underlying risks of such a deal. In reality, the arrangement is a bareboat charter, financed through the US capital markets. The company's value is closely tied to what happens in 2004 and the market conditions (in the freight market, the S&P market and the newbuilding market) that will prevail around that time. Furthermore, consider that each dividend payment effectively takes value out of the company. This means that as the termination date is approaching, and uncertainty about BP's decision still exists, the stock price should approach the PV of the estimated price the Suezmax vessels would fetch in 2004, and exhibit great volatility, in sync

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[164] Nordic American Tankers, 2000 Annual Report to Shareholders (Bermuda: Nordic American Tanker Shipping Ltd., 2001), 3.
[165] http://www.uns.no/nat.htm.
[166] Ibid.
[167] Nicolai Heidenreich, "Nordic American Tankers," Marine Money Magazine (September 2000): 9.
[168] Ibid.
[169] http://www.uns.no/nat.htm.
[170] Nicolai Heidenreich, "Nordic American Tankers," Marine Money Magazine (September 2000): 10.
[171] Alan Ginsberg, "Tally Ho: Oil Major Fleet Renewal Marches On," Marine Money Magazine (April 1997): 1-6.
[172] Nicolai Heidenreich, "Nordic American Tankers," Marine Money Magazine (September 2000): 10.

with the tanker market's movements. The valuation and investment in NAT should take into account these considerations.

6.3 - Knightsbridge Tankers Ltd. (NASDAQ: VLCCF)

Knightsbridge Tankers was incorporated in 1996 in Bermuda, i.e. its income is not taxable.[173] The company was created with the sole purpose of acquisition, disposition, ownership, leasing and chartering of five double-hull VLCC vessels, build by Daewoo in 1995 and 1996 on order by Shell.[174] The company offered and sold 17,100,000 million common shares at USD 20 per share.[175] The shares are listed in the US, in the NASDAQ market, with a market cap of USD 310 million.[176] The proceeds from the offering, USD 320 million,[177] were leveraged, by borrowing USD 145.6 million through a credit facility arranged by a syndicate of banks.[178] The loan consisted of two portions: an amortizing loan of USD 20.2 million, amortized until 2000 by equal quarterly installments at a fixed interest rate of 6.51%, and a primary loan of USD 125.4 million to be repaid in 2004 at a fixed interest rate of 7.14%.[179] The company then paid Daewoo, a total of USD 439.8 million to acquire the vessels. The amortizing loan, made up the difference between the price Knightsbridge paid for the vessel (about USD 88 million per vessel) and the price Shell contracted the vessels for (about USD 92 million per vessel).[180] As such, Shell was obliged to provide supplemental hire for repayment of this loan. Each wholly-owned subsidiary entered in sale/leaseback arrangements with U.K. financial institutions, selling to the lessor the vessels and leasing them back for 25 years.[181] These leases unwind if Knightsbridge is dissolved. This structure is estimated to have benefited Shell to the amount of USD 36.1 million.[182] The vessels, upon delivery, were immediately chartered to Shell, under long-term "hell and high water" contracts for 7 years, until 2004.[183] Shell guarantees the contracts and maintains the option of extending the contracts for 7 more years upon expiration.[184] The deal is similar to that of NAT, with the distinction that it was a refinancing/restructuring transaction.

In a similar fashion to NAT, under the contract agreement the vessels are chartered in at a minimum and guaranteed fixed USD 32,569 per day TCE rate.[185] On top of this, if the average TCE rate in the market, computed with a specified market average formula, exceeds USD 32,569 per day, then Knightsbridge is entitled to the difference.[186] It follows, that if TCE rates are below this level the company will receive no extra income. Knightsbridge has delegated the management of the vessels to ICB Shipping, which also owns a minimal amount of the

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[173] http://www.knightsbridgetankers.com.
[174] Knightsbridge Tankers Ltd., Annual Report 2000 (Bermuda: Knightsbridge Tankers Limited, 2001), 15.
[175] http://www.knightsbridgetankers.com.
[176] http://www.yahoo.com.
[177] Geoff Uttmark, "King's Pawn or Knightsbridge?," Marine Money Magazine (February 2002): 2.
[178] Ibid.
[179] Knightsbridge Tankers Ltd., Annual Report 2000 (Bermuda: Knightsbridge Tankers Limited, 2001), 18.
[180] Geoff Uttmark, "King's Pawn or Knightsbridge?," Marine Money Magazine (February 2002): 2.
[181] Knightsbridge Tankers Ltd., Annual Report 2000 (Bermuda: Knightsbridge Tankers Limited, 2001), 16.
[182] Geoff Uttmark, "King's Pawn or Knightsbridge?," Marine Money Magazine (February 2002): 2.
[183] http://www.knightsbridgetankers.com.
[184] Ibid.
[185] Ibid.
[186] Ibid.

company's common stocks, for a fixed annual fee per year.[187] Note that now Frontline Ltd. is effectively the manager of Knightsbridge, since they bought ICB. Knightsbridge has a policy to distribute all free cash flow as dividend each quarter, including the extra charter hire.[188] Based on these numbers, the company, having an almost fixed expense structure is expected to pay a guaranteed minimum annual dividend of USD 1.78 dollars per share.[189]

The comments for NAT and BP also apply for Knightsbridge and Shell. This deal is bit riskier to investors, since it is stipulated in the contract that should Shell decide to renew the charters, then the guaranteed fixed rate would be reduced by USD 4,400 per day, [190] to account for increased operating expenses. This of course would imply a lower minimum dividend yield going forward, should Shell extend the contracts.

6.4 - Stelmar Shipping Ltd. (NYSE: SJH)

Brief History and Company Facts

Stelmar Shipping was founded in 1992 by Stellios Haji-Ioannou,[191] a very successful Cypriot entrepreneur, who among other things is the owner and founder of Easy Jet, a no-frills airline in Europe. Stelmar is set up as a Liberian holding company for the purposes of avoiding taxation and has offices in Athens and London.[192] From the outset Stelmar was created with focus on a modern fleet, safety and quality, a clear corporate structure, and the eventual listing of the company in a stock exchange.[193] To that extent, Mr. Haji-Ioannou, assembled an experienced professional management team to run the company and all vessel related services (operations, chartering, financing, crewing, technical management) are provided in-house. The company started out in 1993, with three modern second-hand vessels, and soon thereafter was the first shipping company to receive ISM certification from ABS in 1994, long before this became the mandatory requirement from IMO.[194] The same year Stelmar entered the newbuilding arena ordering a double-hull Handysize product tanker.[195] Since then, the company has consistently grown its fleet, with focus on the product tanker market and particularly the Handysize and Panamax sizes. At the same time, Stelmar consciously relied on time charter employment to create stable earnings and thus making the company attractive to investors.

After two unsuccessful attempts to tap the capital markets, in 1998 in the NYSE and in 2000 in Cyprus, in March 2001 the company launched its IPO in the NYSE, offering 8 million shares at USD 12 dollars per share. The proceeds from the offering, USD 88.5 million, along with USD 140 million from bank loans were used to finance the acquisition of 10 second-hand Handymax vessels from Osprey Maritime Ltd.[196] The offering was managed by Jefferies, and was a

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[187] Knightsbridge Tankers Ltd., Annual Report 2000 (Bermuda: Knightsbridge Tankers Limited, 2001), 17.
[188] http://www.knightsbridgetankers.com.
[189] Geoff Uttmark, "King's Pawn or Knightsbridge?," Marine Money Magazine (February 2002): 3.
[190] Ibid., 4.
[191] http://www.stelmar.com.
[192] Ibid.
[193] Kevin Oates, "What Shipping Should Learn from Stelmar," Marine Money Magazine (April 2000):1.
[194] http://www.stelmar.com.
[195] Ibid.
[196] Alpha Finance Equity Research, Stelmar Shipping (Athens: Alpha Finance S.A., 2002), 6.

tremendous success. Following the offering, Stelmar almost doubled the total fleet of the company totaling 22 vessels.[197] After the offering Mr. Haji-Ioannou's stake in the company was reduced to 34%.[198] This aspect of the deal, i.e. the relinquishing of the control of the company to shareholders, was intended to enhance the liquidity of the shares of the company and distinguish the company from the speculative Greek high-yield issuers of the past.

Today, Stelmar is considered a high quality operator, with a very good reputation in quality and safety, a focused business strategy and a substantial modern fleet of 27 vessels.[199] Stelmar is expected to continue to grow and use its access to the equity markets to become the leading industry consolidator in the highly fragmented product tanker market. Its market cap is around USD 186 million.[200]

The Fleet

Year End	Handymax Tankers	Panamax Tankers	Aframax Tankers	Total Fleet	DWT (weighted)	Y-o-Y Change
1996A	5	0	0	5	204 587	n/a
1997A	5	1	2	8	270 618	32%
1998A	5	2	4	11	564 246	109%
1999A	5	2	5	12	814,399	44%
2000A	5	2	4	11	744,639	-9%
2001A	16	2	4	22	1 004 111	35%
2002F	17	6	4	27	1,431,243	43%
2003F	17	6	4	27	1,526,490	7%

Figure 14: Stelmar's Fleet[201]

Stelmar has a modern fleet (Figure 14) of 27 vessels, with a total cargo carrying capacity of 1,526,490 DWT and has grown rapidly (Figure 15) in the last few years. The average age of Stelmar's fleet is 8.5 years,[202] significantly below the tanker industry's average. Its fleet can be broken down in the following segments:

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[197] Ibid., 7.
[198] Nicolai Heidenreich, "This Little Piggy Goes to Market," Marine Money Magazine (March 2001):32.
[199] http://www.stelmar.com.
[200] http://www.yahoo.com.
[201] Alpha Finance Equity Research, Stelmar Shipping (Athens: Alpha Finance S.A., 2002), 7.
[202] http://www.stelmar.com.

- The Handymax/Handysize product tanker fleet, comprising 17 vessels (9 are double hull), with an average age of 8.3 years and a world market share of 2.6%.[203] Stelmar's Handysize/Handymax fleet is one of the youngest and largest in the world in the highly fragmented product tanker segment. Most of the vessels operate in the Asia Pacific region.[204]
- The Panamax fleet, comprising of 6 vessels (all double hull),including four newbuildings delivered to be delivered in the first half of 2002, with an average age of 3 years,[205] making it one of the youngest fleets in its class. The Panamax fleet is mainly employed in the US/Caribbean routes for product tankers.[206]
- The Aframax fleet comprising 4 vessels (3 double hull), with an average age of 7.25 years.[207] These vessels carry crude oil and operate in Asia Pacific.

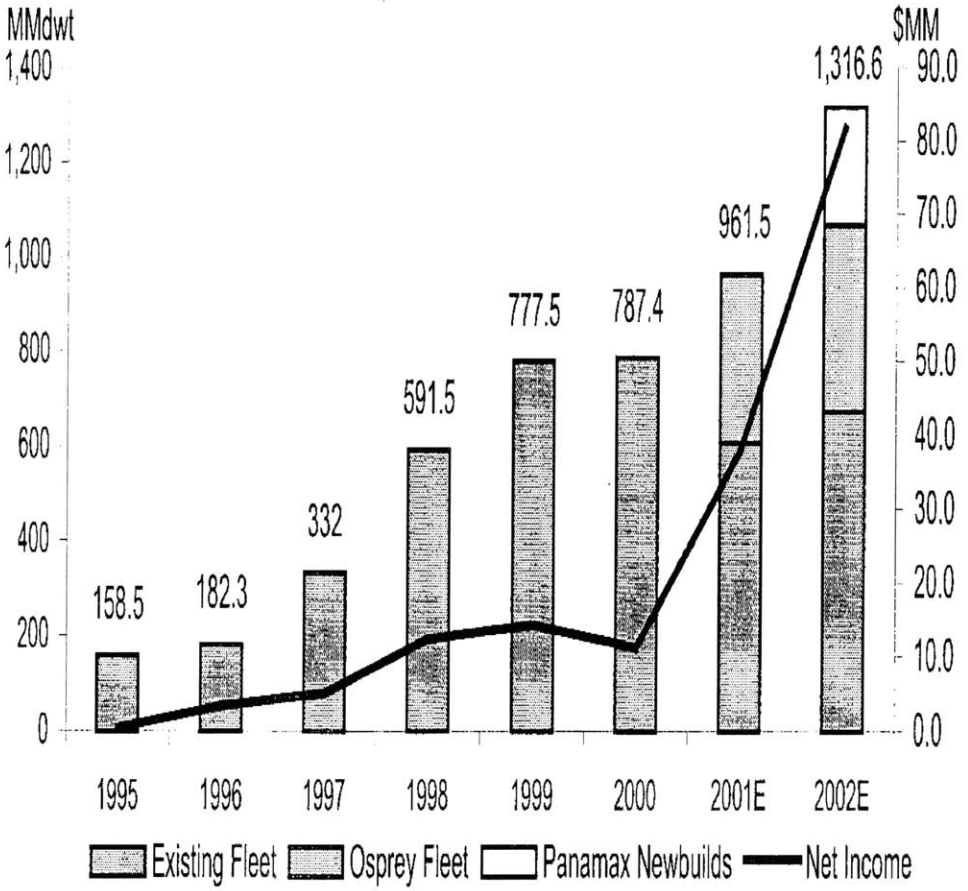

Figure 15: Stelmar's Fleet Growth vs. Earnings Growth[208]

[203] Alpha Finance Equity Research, Stelmar Shipping (Athens: Alpha Finance S.A., 2002), 6.
[204] Magnus S. Fyhr, Stelmar Shipping Ltd. (New York: Jefferies & Company Inc., 2001), 6.
[205] http://www.stelmar.com.
[206] Magnus S. Fyhr, Stelmar Shipping Ltd. (New York: Jefferies & Company Inc., 2001), 6.
[207] http://www.stelmar.com.
[208] Magnus S. Fyhr, Stelmar Shipping Ltd. (New York: Jefferies & Company Inc., 2001), 6.

The IMO new phase-out schedule is not expected to affect Stelmar's operations. Only one ship will have to be scrapped by 2010.[209] The rest of the vessels are expected to reach their economic lifespan before having to be scrapped under IMO regulation 13G.

Strategy

The company since its inception aimed at becoming public. To that extent it has developed a long-term strategy aimed at attracting investors and growing the company. The first step in this direction has been an emphasis in time charters. Contrary to its peers, Stelmar's goal is to maintain between 70% and 80% of its net operating days under time charters.[210] In 2001, 75% of the company's revenues were contributed by time charters and the company has already covered 64% of its revenues for 2002. [211] In this way, the company has managed to maintain superior fleet utilization and remain profitable. Since 1995 it has never had a losing quarter. Furthermore, the company's income is much more stable compared to the rest of the tanker sector, since it is affected much less by the shipping cycle volatility. This has resulted in the company being able to secure loans at attractive interest rates and sustain a relatively higher debt-to-equity ratio of 66%, without any concern going into the trough expected in 2002.[212] The downside to this strategy is that the company participates to a much lesser degree in tanker market upswings. Nevertheless, it does maintain some operating leverage since 20% of its revenue is expected to be derived by the spot markets. Given that Stelmar does not yet possess the size and breadth of fleet that Teekay or Frontline have, this could prove to be a successful strategy to reach the critical size that would enable Stelmar to be exposed more to the spot markets without jeopardizing the company's balance sheet.

Stelmar's growth strategy is also focused in attractive niche markets. The company is expected to continue investing in the Handymax/Handysize and Panamax product tanker markets in order to create the size to generate economies of scale.[213] The modernity and homogeneity of the fleet is aimed at offering better customer service and producing "sister vessels efficiencies" enhancing utilization by substitution of similar vessels. The company, having access to the capital markets and a significant presence in the markets it operates in, is in a unique position to become the leading product tankers consolidator by taking advantage of the expected recession in the near-term and the recent trends in the market (phase-out, pooling and two-tier freight rates).

Stelmar plans to capitalize on its reputation as an operator dedicated to safety, while at the same time maintaining cost efficiency. Stelmar closely monitors the performance of its vessel and carries out preventive maintenance to avoid breakdowns and accidents. At the same time the company has a "lean" operational structure, which is translated in lower than average operating costs.[214] The low level of Stelmar's operating expenses is also attributed to the company's excellent safety record, allowing it to receive better rates in the insurance of hull and machinery.

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[209] Alpha Finance Equity Research, Stelmar Shipping (Athens: Alpha Finance S.A., 2002), 20.
[210] Ibid., 8.
[211] Stelmar Shipping, 2001 4th Quarter Earnings Release (New York: Stelmar Shipping Ltd., 2002), 2.
[212] Magnus S. Fyhr, Stelmar Shipping Ltd. (New York: Jefferies & Company Inc., 2001), 15.
[213] Alpha Finance Equity Research, Stelmar Shipping (Athens: Alpha Finance S.A., 2002), 9.
[214] Ibid. 10.

Stelmar seems to concentrate in developing long-term relationships with major charterers. It is estimated, that approximately 50% of Stelmar's revenue is generated by its top 4 charterers.[215] This is a testament to the company's ability to offer excellent service quality. On the other hand, should one of these customers decides to switch, then this could have a significant impact on Stelmar's earnings.

It is still early to judge Stelmar's success since it became public. The fact that Stelmar has a well articulated long-term business plan, an experienced and professional management team, and clear corporate structure are hopeful signs. It remains to be seen whether the company will continue to grow taking advantage of the industry trends and attract the investors' interest.

6.5 - General Maritime Corporation (NYSE: GMR)

Brief History and Company Facts

General Maritime was founded in 1997, by company CEO Peter Georgiopoulos, and is based in New York.[216] The company is set up as a Marshall Islands holding corporation and qualifies for exemption of tax responsibilities in the US.[217] General Maritime's initial fleet comprised of 2 Aframax vessels.[218] From that point forward, the company has followed a very aggressive growth strategy focusing on modern second-hand mid-size tanker tonnage. With Mr. Georgiopoulos' contacts in the financial community in New York, General Maritime by 2000 had a modern fleet of 14 Aframaxes and 5 Suezmaxes.[219] On the way, the company tried to acquire the likes of Bona, Benor and Golden Ocean, albeit unsuccessfully.

In June of 2001, in order for the company to continue to grow General Maritime went public, offering 8,000,000 million shares (25% of the company) at USD 18 dollars per share for a listing in the NYSE.[220] The proceeds from the IPO were used to acquire 10 identified modern second-hand Aframax vessels.[221] Furthermore, United Overseas Tankers Ltd., based in Greece, was purchased that used to provide the technical management for General Maritime's vessels.[222] In this way, General Maritime provides all services for its vessels in-house, with a clear corporate structure. The IPO was a success, in the sense that it was oversubscribed,[223] but the share price has slipped significantly since then. Although this could mean that the offer price was too high, it also coincided with a drop in freight rates, which could have played a significant role in the decline of the stock price. The deal has also been criticized for offering only a minority of the

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[215] Ibid., 11.
[216] http://www.generalmaritimecorp.com.
[217] Lehman Brothers Global Equity Research, General Maritime: Leading Growth and Returns at a Compelling Value (New York: Lehman Brothers Inc., 2001), 19.
[218] Matt McCleery, "Into Thin Air with Peter G.," Marine Money Magazine (September 2000): 3.
[219] Ibid., 6.
[220] http://www.generalmaritimecorp.com.
[221] Lehman Brothers Global Equity Research, General Maritime: Leading Growth and Returns at a Compelling Value (New York: Lehman Brothers Inc., 2001), 15.
[222] Ibid.
[223] Urs M. Dur, "General Maritime: Going Public," Marine Money Magazine (April 2001): 17.

shares of the company, but there are provisions[224] that restrict insiders from selling their stock for about a year after the IPO.

Today, General Maritime has a modern and large mid-size tanker fleet concentrated in the Atlantic Basin. The greatest strength of General Maritime's management team, except for its track record in shipping, is its proven ability to sell a story to investors. The company is planning to use its strengths and aggressively expand its asset base. General Maritime's market cap is USD 438 million.[225]

The Fleet

	Vessel Name	Year Built	DWT	Hull Type	Charter Status	Estimated Value ($MM)
Existing Fleet	Genmar Ajax	1996	96,183	DH	Time	$42.0
	Genmar Agamemnon	1995	96,226	DH	Spot	40.0
	Genmar Minotaur	1995	96,226	DH	Spot	40.0
	Genmar Constantine	1992	102,335	DH	Spot	34.0
	Genmar Gabriel	1990	94,993	DS	Spot	28.5
	Genmar George	1989	94,955	DS	Time	25.0
	Genmar Commander	1989	96,578	SH	Time	22.0
	Genmar Boss	1985	89,601	DS	Spot	16.5
	Genmar Sun	1985	89,696	DS	Time	16.5
	Genmar Spartiate	1991	155,150	SH	Spot	33.0
	Genmar Zoe	1991	152,402	SH	Spot	33.0
	Genmar Macedon	1990	155,527	SH	Spot	31.0
	Genmar Alta	1990	146,251	SH	Spot	31.0
	Genmar Harriet	1989	146,184	SH	Spot	29.0
Acquired Vessels	Genmar Champion	1992	96,027	DH	Spot	30.5
	Genmar Spirit	1992	96,027	DH	Spot	30.5
	Genmar Star	1992	96,027	DH	Spot	30.5
	Genmar Trust	1992	96,027	DH	Spot	30.5
	Genmar Challenger	1991	96,043	DH	Spot	30.0
	Genmar Endurance	1991	96,043	DH	Spot	30.0
	Genmar Trader	1991	96,043	DH	Spot	30.0
	Genmar Leonidas	1991	96,043	DS	Spot	27.1
	Genmar Nestor	1990	97,002	DS	Spot	25.8
	Genmar Prince	1979	88,868	SH	Spot	7.6
	Genmar Alexandra	1992	102,262	DH	Spot	34.0
	Genmar Hector	1992	96,027	DH	Spot	30.5
	Genmar Pericles	1992	96,027	DH	Spot	30.5
	West Virginia	1981	89,000	SH	Spot	9.5
	Kentucky	1980	89,225	SH	Spot	9.0
Total:			3,038,998			$808.0

Figure 16: General Maritime's Fleet List[226]

General Maritime has a modern fleet (Figure 16) of 29 mid-size tankers, with a total cargo carrying capacity of about 3,000,000 DWT and has grown rapidly (Figure 17) in the last few years. [227] The average age of General Maritime's fleet is 11.6 years,[228] and is below the tanker industry's average. Its fleet can be broken down in the following segments:

[224] Ibid., 23.
[225] http://www.yahoo.com.
[226] Magnus S. Fyhr, General Maritime Corporation (New York: Jefferies & Company, Inc., 2001), 7.
[227] Ibid.

- The Aframax fleet, comprising 24 vessels (14 are double hull), with an average age of 11.5 years.[229] Most of the vessels, with the exception of two vessels over 20 years, operate in the Atlantic Basin.[230]
- The Suezmax fleet, comprising of 5 vessels (all single hull), with an average age of 11.8 years.[231] Most of the vessels are employed in the Atlantic Basin.[232]

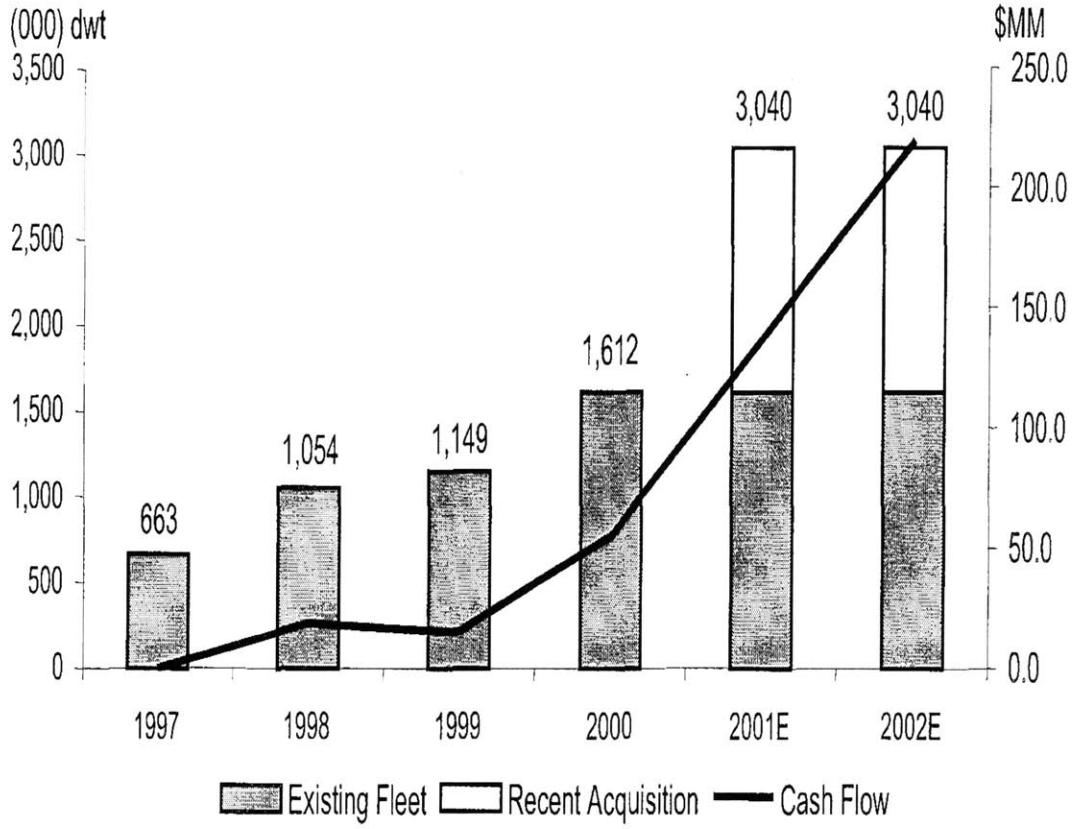

Figure 17: General Maritime's Fleet Growth vs. Cash Flow[233]

The IMO new phase-out schedule is not expected to greatly affect General Maritime's operations. Three older Aframax single hull vessels can trade through 2006 and 2007, while the Suezmax vessels can trade until 2015.[234] The rest of the vessels are expected to reach their economic lifespan before having to be scrapped under IMO regulation 13G.

Strategy

General Maritime's revenue is driven by the spot markets for mid-size tankers (Aframaxes and Suezmaxes). The company, in 2001, derived about 70% of the total revenue from spot

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[228] Ibid., 6.
[229] Ibid., 6-7.
[230] Ibid.
[231] Ibid.
[232] Ibid.
[233] Ibid., 6.
[234] Ibid.

voyages.[235] Historically General Maritime has maintained a 50/50 split between spot and time charter employment,[236] but the buoyant freight markets of the last two years have obviously shifted the spit towards more spot exposure. The company is expected to maintain a nimble balance between spot and time charter contracts in order to take advantage of potential upswings in the tanker market, to the benefit of shareholders.

Furthermore, the company's strong balance sheet and modest financial leverage with a debt-to-equity ratio of 48%[237] does not pose any dangers going into a turbulent 2002. The company plans to capitalize on the size and focus of its modern fleet by aggressively pursuing modern second-hand mid-size tankers. The company does not plan to enter the newbuilding arena,[238] since it believes that modern second-hand vessels can yield better returns than new vessels that do not involve the time lag between ordering and delivery. The downside to General Maritime's strategy, except that its earnings are subject to the cyclicality of the tanker market, is that in order to maintain the age profile of its fleet low, it has to engage in numerous S&P transactions, which means that getting the timing wrong could prove disastrous.

The ability of General Maritime's management to raise capital and the company's large borrowing capacity and access to the capital markets, are General Maritime's strongest competitive advantages, entering a downturn in the tanker markets. General Maritime believes that expanding the company's fleet will allow the company to generate economies of scale and benefit from flexibility in scheduling, "sister vessel efficiencies" and lower operating expenses.[239]

While the company is growing, General Maritime is dedicated to maintaining low-cost operations without compromising quality. The company points out its well respected charterers that appreciate safe and modern tonnage.[240] A larger fleet would help General Maritime cement and expand its customer base, offering better customer service by having a large and homogeneous fleet.

General Maritime is unique in that it was created from scratch, with a lot of connections on Wall Street, good ideas and a clear strategy aimed at creating a transparent shipping company in New York. Like Stelmar, it is still early to judge General Maritime's success, but it is refreshing to see a young company focused on growth with a clear long-term strategy.

6.6- Frontline Ltd. (NYSE: FRO)

Brief History and Company Facts

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[235] ABN-AMRO, General Maritime Corporation (New York: ABN-AMRO Inc., 2002), 2.
[236] Ibid.
[237] Magnus S. Fyhr, General Maritime Corporation (New York: Jefferies & Company, Inc., 2001), 13.
[238] Lehman Brothers Global Equity Research, General Maritime: Leading Growth and Returns at a Compelling Value (New York: Lehman Brothers Inc., 2001), 15.
[239] Ibid., 16.
[240] Ibid.

Frontline has its origins in Frontline AB, founded in 1985 and listed in the Stockholm Stock Exchange in 1989.[241] By 1996, John Fredriksen, through his holding company Hemen Holding Ltd., became the largest and controlling shareholder in Frontline AB.[242] In 1997, the company moved its domicile to Bermuda, for taxation purposes, left the Stockholm Stock Exchange and listed its shares in the Oslo Stock Exchange (OSE), changing the name of the company to Frontline Ltd.[243] Between 1996 and 1997, Frontline acquired 7 tankers and options for 10 newbuildings from companies related to Hemen Holdings.[244] Since then, led by the aggressive strategy of Mr. Fredriksen, Frontline has been actively involved in the consolidation of the tanker industry, focusing on the Suezmax and VLCC sectors, aiming at creating shareholder value.

To that extent, Frontline has engaged in a number of important transactions:

- In 1997, Frontline "merged" with London Overseas Freighter (LOF), acquiring 7 tankers. Despite the fact that Frontline effectively bought LOF, the surviving company was LOF, and shares of Frontline were exchanged for shares of LOF. The new company was named Frontline and was listed in the OSE, the London Stock Exchange and through an ADR scheme, in NASDAQ. The multiple listings were justified to enhance liquidity.
- The same year, Frontline targeted the Swedish listed tanker company ICB in a protracted battle[245] that lasted until 1999. With the completion of this deal, Frontline increased its fleet by 2 VLCCs and 6 Suezmax tankers.[246] It also became the manager of the publicly traded Knightsbridge Tankers (NASDAQ:VLCCF).
- Between 1999 and 2000 the company engaged in strategic acquisitions of modern tonnage acquiring 4 VLCCs and 4 Suezmaxes.[247]
- In 2000, Frontline set to acquire the assets of bankrupt Golden Ocean Carriers of Mr. Fred Cheng. This deal added 13 VLCCs and 10 bulk carriers to Frontline's fleet, at a bargain price.[248]
- To enhance the liquidity of Frontline's stock, the company de-listed from the NASDAQ, and listed its shares in the New York Stock Exchange (NYSE). The shares still trade in the OSE and the LSE, but now the NYSE is the company's primary listing.[249]
- 2001 has been a very active year for the company, continuing to accumulate modern tonnage and even entering the newbuilding arena ordering vessels for delivery in 2002 and 2003.[250]

Today, Frontline Ltd. is one of the largest shipping companies in the world,[251] with one of the youngest and more focused fleets around, and offices in Oslo, London and Bermuda. Frontline has a dynamic and committed leader in the face of Mr. Fredriksen and his management team

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[241] http://www.frontline.bm.
[242] Ibid.
[243] Ibid.
[244] Matt McCleery, and Nicolai Heidenreich, "Anatomy of a Front Runner," Marine Money Magazine (November 1999): 5.
[245] Ibid., 4-14.
[246] http://www.frontline.bm.
[247] Ibid.
[248] Frontline, Annual Report 2000 (Bermuda: Frontline Ltd., 2001), 13.
[249] Handelsbanken Securities, Frontline (Stockholm: Svenska Handelsbanken, 2002), 26.
[250] http://www.frontline.bm.
[251] Ibid.

(note that insiders have not sold stock since 1996),[252] a unique strategy, financial resources and access to the capital markets. Furthermore, the company has displayed an understanding of the capital markets, has used its stock as a purchasing currency and does not hesitate to engage in creative financial engineering, [253] which is routine in other industries, to enhance the strength of its balance sheet. Frontline's market cap is estimated at USD 846 million.[254]

The Fleet

Vessel type	Owned	Partly owned	Comm. managed	Time charter (TC)	New buildings	Total	Avge. age (yrs)
VLCC	27	6			8	41	6.5
Suezmax	22	2	4	1	2	31	6.0
Suezmax OBO	8	0				8	9.6
Dry bulk	8	2				10	3.1
Total	65	10	4	1		90	
Total dwt						14.3	

Figure 18: Frontline's Fleet[255]

Frontline has a large, focused modern fleet (Figure 18) comprising of 90 vessels (including newbuildings), with a cargo carrying capacity of about 14,300,000 million DWT and an average age of about 6 years.[256] The fleet can be divided in the following segments:

- The VLCC fleet, comprising of 41 vessels (8 are newbuildings to be delivered mostly in 2002 and 2003), with an average age of 5.3 years, operating out of the Arabian Gulf.[257]
- The Suezmax fleet, comprising of 31 vessels, with an average age of 7.5 years, operating in various trade routes.[258]
- The OBO Suezmax fleet, comprising of 8 vessels, with an average age of 10.6 years, operating in various trade routes, sometimes carrying coal as backhaul.[259]

[252] Matt McCleery, and Nicolai Heidenreich, "Anatomy of a Front Runner," Marine Money Magazine (November 1999): 7.
[253] Urs M. Dur, "Frontline/Scotia Share Swap Benefits," Marine Money Magazine (October 2001): 29.
[254] http://www.yahoo.com.
[255] WestLB Panmure, Frontline- "King of VLCC" (London: WestLB Panmure, Inc, 2001), 1.
[256] Ibid..
[257] http://www.frontline.bm.
[258] Ibid.
[259] Ibid.

- The dry bulk fleet, comprising of 10 vessels (2 Capesizes, 2 Panamaxes and 5 Handymaxes), with an average age of 4 years. This part of the fleet is considered non-core and is expected to be divested in the near future.[260]

Of the company's total tanker fleet 66% consists of double hull vessels.[261] In regard to the IMO new phase-out schedule, it is expected that Frontline will be able to continue the operation of the vast majority of its vessels for the remainder of their economic lifespan, before being forced to scrap them in accordance with the new regulations.[262]

Strategy

Frontline's revenue is driven by the VLCC and Suezmax markets. Almost all of the company's vessels trade in the spot market.[263] Management believes that this is the only way to enhance the profitability of the company and add real value to the company when tanker markets are healthy. To balance the volatility of the spot markets, Frontline believes that fleet size is very important. Therefore, Frontline has entered into agreements with other companies to form trading pools, jointly handling the chartering of their vessels. The Suezmax vessels trade in the Alliance Chartering pool that controls about 30% of the world spot Suezmax capacity.[264] The VLCC vessels trade in the Tankers International pool that controls about 40% of the worlds VLCC spot capacity.[265] Frontline has been instrumental in the formation of these pooling arrangements in 1998 and 1999.[266] The strategy of pooling aims at increasing fleet utilization, offering greater flexibility, better service, obtaining COAs and increasing the bargaining power of shipowners. Frontline's vision is to create a flexible and reliable transportation system with emphasis on a modern fleet and adherence to the strictest environmental standards.[267] In this way, Frontline plans to develop strong relationships with blue-chip charterers.

To that extent, Frontline is committed to continuing to consolidate the tanker market. In fact, Frontline's strategy is unique, in that it does not manage the vessels in-house.[268] Instead, the company employs big ship management companies, like Wallem, Acomarit and V Ships, to take care of the vessel's technical management, crewing and operation. Of course, commercial management stays with Frontline. To control costs, Frontline believes that by dividing the fleet among competing ship management companies it creates incentives to minimize costs. The goal is to create a "lean" organization that will focus not on running the ships on a day to day basis, but rather on creating shareholder value by identifying ahead of the pack that great value can be extracted from the acquisition of small, dysfunctional and illiquid public companies that fit in the company's fleet profile.[269]

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[260] Ibid.
[261] Handelsbanken Securities, Frontline (Stockholm: Svenska Handelsbanken, 2002), 28.
[262] Ibid.
[263] http://www.frontline.bm.
[264] WestLB Panmure, Frontline- "King of VLCC" (London: WestLB Panmure, Inc, 2001), 1.
[265] Ibid.
[266] http://www.frontline.bm.
[267] Ibid.
[268] Ibid.
[269] Matt McCleery, and Nicolai Heidenreich, "Anatomy of a Front Runner," Marine Money Magazine (November 1999): 8.

Critical to the success of this simple, but powerful concept, is access to the capital markets. Management believes that the capital markets systematically undervalue shipping stocks and through a number of measures has tried to restore confidence in the sector. The NYSE listing was aimed at enhancing liquidity and the board has authorized a stock repurchase program of up to 7,500,000 million shares of the company. Moreover, the company for the first time in its history has decided to pay a dividend in the last three quarters of 2001. Frontline will seek to establish a dividend payment on a regular basis.[270]

The tanker industry faces a difficult year ahead. Frontline's financial gearing, with a debt-to-equity ratio of 1.1,[271] could create a liquidity crunch. Given Frontline's balance sheet and management's ability to find innovative solutions in order to enter into competitive financing arrangements, unless a recession lasts for a very long time, financial gearing should not threaten Frontline's consolidation strategy. In the past, the company has not hesitated to issue stock to fund parts of acquisitions or to restructure debt to allow for more financial flexibility. The question for Frontline, as well as Teekay, the two largest public tanker companies and the lead consolidators in their respective segments, is whether they will be able to exercise any price control through scale, apart from the creation of relationships which is certainly happening, and whether, in the meantime, the investment community will demonstrate the patience and understanding necessary in pursuing this exercise in consolidation.

6.7 - OMI Corporation (NYSE: OMM)

Brief History and Company Facts

OMI's history can be traced back to Oriental Exporters Inc.[272] In 1968, Odgen Corporation, through Odgen Marine Inc. established in Delaware, purchased assets of Oriental Exporter. In 1983, Odgen Marine was renamed OMI Corp.[273] The company was initially listed in the NASDAQ, moved to the AMEX and eventually to the NYSE.[274] Since then, the company expanded rapidly, operating both U.S. tonnage (Jones Act vessels) and international flag tankers and dry bulk carriers. In the process the company engaged in various joint ventures with international and domestic shipowners, and the US government. Despite the fact that the company had established a very high reputation and was quite successful, management felt the company was lacking direction and decided to focus expansion on Suezmax tankers and Handysize product carriers. In 1998, OMI Corp. "spun off" OMI Corporation, which was established as a Marshall Islands holding company, for taxation purposes.[275] OMI Corp. retained the US flag vessels, and acquired Marine Transport Lines Inc. changing its name to Marine Transport Corporation.[276] OMI Corporation was left with the international flag vessels, and

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[270] Frontline, Annual Report 2000 (Bermuda: Frontline Ltd., 2001), 16.
[271] Handelsbanken Securities, Frontline (Stockholm: Svenska Handelsbanken, 2002), 3.
[272] http://www.omicorp.com.
[273] Ibid.
[274] Ibid.
[275] Ibid.
[276] Ibid.

acceded to the NYSE listing under the OMM symbol and is now headquartered in Stamford, Connecticut.[277]

The transition and reorganization of the company has not been easy and the bad tanker market of 1999 created speculation that the company might be a takeover target by Frontline.[278] Nevertheless, OMI has managed to stage a comeback and refocus the company, while engaging in an extensive fleet renewal program. Today, OMI provides all vessel related services in-house, is well respected in the industry and owns one of the youngest and most specialized tanker fleets in the world. OMI's market cap is USD 287 million.

The Fleet

Name	Flag	Hull	Built	Deadweight MT	Length Metres	Breadth Metres	Draft Metres	Class
Suezmax								
Columbia	MI	Double	1999	157,327	274	48	16.82	DNV
Max Jacob	MI	Double	2000	157,449	274	48	16.82	DNV
Pecos	MI	Double	1998	157,406	274	48	16.82	DNV
Sabine	MI	Double	1998	157,411	274	48	16.82	DNV
Sacramento	MI	Double	1998	157,411	274	48	16.82	DNV
Somjin	MI	Double	2001	160,183	274	48	17.02	DNV
ULCC								
Settebello	Liberia	Single	1986	322,446	346.24	57.35	22.35	ABS
Panamax								
Elbe	Liberia	Single	1984	66,800	230.5	32.2	12.82	LRS
Nile	Liberia	Single	1981	65,755	228.6	32.24	12.83	ABS
Volga	Liberia	Single	1981	65,755	228.6	32.24	12.83	ABS
Product / Chemical Carriers								
Amazon	MI	Double	2002	47,037	182.5	32.2	12.67	ABS
Alma	Liberia	Single	1988	29,999	165.8	27.4	10.4	DNV
Ashley	MI	Double	2001	37,230	182.55	27.4	11.21	DNV
Bandar Ayu	Panama	Double Side	1993	36,345	179.93	28	11.02	NK
Charente	MI	Double	2001	35,751	183	27.4	11.02	DNV
Guadalupe	MI	Double	2000	47,037	182.5	32.2	12.67	ABS
Isere	MI	Double	1999	35,407	184.6	27.4	11.02	DNV
Limar	Liberia	Single	1988	29,999	165.8	27.4	10.4	DNV
Madison	Liberia	Double	2000	35,827	183.07	27.4	11.01	ABS
Marne	MI	Double	2001	37,230	182.55	27.4	11.21	DNV
Neches	MI	Double	2000	47,052	182.5	32.2	12.67	ABS
Ohio	MI	Double	2001	37,230	182.55	27.4	11.21	DNV
Orontes	MI	Double	2002	37,230	182.55	27.4	11.21	DNV
Patricia	Liberia	Single	1984	29,992	174	25.4	10.67	LRS
Paulina	Liberia	Single	1984	29,992	174	25.4	10.68	LRS
Racer	Liberia	Single	1989	29,998	167	27.4	10.26	DNV
Rain	Liberia	Single	1990	29,998	167	27.4	10.26	DNV
Rhone	MI	Double	2000	35,775	183	27.4	11.02	DNV
San Jacinto	MI	Double	2002	47,037	182.5	32.2	12.67	ABS
Seine	MI	Double	1999	35,407	184.6	27.4	11.02	DNV
Severn	Liberia	Single	1988	29,998	165.8	27.4	10.26	NK
Shannon	Liberia	Single	1991	29,999	167	27.4	10.3	NK
Tandjung Ayu	Panama	Double Side	1993	36,362	179.93	28	11.02	NK
Trinity	Liberia	Double	2000	35,834	183.07	27.4	11.01	ABS

To Be Named	Yard	Hull Number	Deadweight M.T.	Class	Expected Delivery Date
New Buildings					
Dakota	HHI	1373	160,000	DNV	Sep-02
Delaware	HHI	1374	160,000	DNV	Oct-02
Moselle	Onomichi	484	47,000	ABS	Feb-03
Rosetta	Onomichi	490	47,000	ABS	Mar-03
Ottawa	DSME	5233	70,100	DNV	Apr-03
Tamar	DSME	5234	70,100	DNV	May-03

Figure 19: *OMI's Fleet*[279]

OMI has a revitalized and focused fleet of modern tankers and is actively engaged in an extensive fleet renewal program. OMI's fleet comprises of 40 vessels (including 8 newbuildings)

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[277] Ibid.
[278] Urs Dur, "OMI: Phoenix-Like," Marine Money Magazine (October 2001): 10.
[279] http://www.omicorp.com.

with an average age of 7.6 years (excluding newbuildings) and a total cargo carrying capacity of about 2,833,000 DWT.[280] OMI's fleet can be broken down in the following segments:

- The Suezmax fleet comprising of 6 double hull vessels with an average age of 3 years. All of the Suezmax vessels trade spot and are part of the Alliance pool along with Frontline vessels.[281] The Suezmax vessels operate mainly in the Atlantic basin.[282]
- The Handysize product tanker fleet comprising of 24 vessels (14 are double hull) and an average age of 6.3 years.[283] The majority of the product tankers are on time charters. The Handysize fleet trades mostly off the east cost of the United States.
- The remaining crude oil fleet, comprising of a single VLCC, three Panamax tankers and two Handysize vessels, all single hull and with an average age of about 15 years.[284] With the exception of the Handysize vessels, which are on time charter, the rest of the vessels trade spot and the Panamax vessels participate in the Star Tankers pool.[285]
- OMI also has 6 newbuildings on order, 2 Suezmaxes, 2 Panamax tankers and 2 Handysize products carriers, to be delivered in the latter half of 2002 and in 2003. All vessels are double hull and with the exception of the two Handysize vessels which are committed to time charters the rest of the vessels are expected to trade spot.[286]

In regard to the IMO new phase-out schedule, it is expected that OMI will be able to continue the operation of the majority of its vessels for the remainder of their economic lifespan, before being forced to scrap them in accordance with the new regulations. Of course, some of the oldest vessels are candidates for sale or scrapping, but in light of the company's newbuilding deliveries, it is not expected to affect the fleet size of the company.[287]

Strategy

Following the refocusing of the company in 1998 and heavy losses in 1999, the company has a strategy with an emphasis on time charters. OMI's goal is to achieve a 65/35 balance between time charter and spot exposure.[288] In 2001, only 45% of the company's revenues were contributed by time charters but the company has already secured more than 70% term employment for 2002 and 2003.[289] It is a similar profile that Stelmar has opted for. In this way the company aims to maintain superior fleet utilization and remain profitable through the difficult next few years. Furthermore, the company's income is much more stable compared to the rest of the tanker sector, since it is affected much less by the shipping cycle volatility. The downside to this strategy is that the company participates to a much lesser degree in tanker market upswings. There is also the risk on having to renew time charters at low rates, if expiration coincides with bad markets. Nevertheless, the company maintains a significant degree of operating leverage by its Suezmax and Panamax vessels trading spot, through pooling

[280] OMI Corporation, Form 10-K 2001 (New York: OMI Corporation, 2002), 4.
[281] Ibid.
[282] Ibid.
[283] Ibid.
[284] Ibid.
[285] Ibid.
[286] Ibid.
[287] Urs Dur, "OMI: Phoenix-Like," Marine Money Magazine (October 2001): 11.
[288] Ibid., 14.
[289] OMI Corporation, Form 10-K 2001 (New York: OMI Corporation, 2002), 6.

arrangements. OMI is committed to the pools and believes in the benefits they can offer in terms of fleet utilization, greater flexibility, better service, obtaining COAs and increasing the bargaining power of shipowners.[290] Through this strategy the company has been able to secure loans at attractive interest rates for all of the newbuilding deliveries.[291] In some cases stock was issued in relation to vessel acquisitions.[292]

For the moment, although OMI has authorized a stock repurchase program the priority of the company is to de-lever the company and enhance liquidity.[293] To that extent, the company has managed to lower the debt-to-equity ratio from 52% in 2000 to 48% in 2001 hoping to lower it even more.[294] Given that OMI may not possess the financial muscle of some of its competitors, this might be a prudent thing to do. OMI does not have any intent at the moment to distribute dividends.[295]

OMI's growth strategy is focused in attractive niche markets and maintaining the focus of the company's fleet. The goal is to generate economies of scale and through a homogeneous and modern fleet enhance customer service and produce "sister vessels efficiencies" improving utilization by substitution of similar vessels.[296] OMI plans to take advantage of its reputation as an operator dedicated to safety, while at the same time maintaining cost efficiency. Moreover, OMI seems determined to develop long-term relationships with major charterers. The fact that OMI did not receive more than 10% of its 2001 revenue from a single customer,[297] is a testament to the company's ability to offer excellent service quality and maintain a diverse customer base.

OMI is a company that is coming out of a fleet renewal program with a coherent business strategy and a significant and modern fleet. Management has taken steps to improve the company's financial situation and is expected to enhance its profile with investors via its time charter strategy. In this way, OMI could be in a position to benefit and continue growing the business in the next market cycle, capitalizing on its access to the capital markets.

6.8 - Overseas Shipholding Group Inc. (NYSE: OSG)

Brief History and Company Facts

OSG is one of the oldest and most respectable public shipping companies in the US. In fact, OSG is the last remaining US based operator with a substantial international fleet, incorporated in Delaware and headquartered in New York. Until 1996, the company operated a very diversified fleet of bulk carriers and tankers both in the US and in the international market. OSG had even made an ill-timed investment in the cruise industry. Since then, OSG has come a long

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[290] Urs Dur, "OMI: Phoenix-Like," Marine Money Magazine (October 2001): 15.
[291] Ibid., 10.
[292] Ibid.
[293] Ibid., 15.
[294] ABN-AMRO, OMI Corporation (New York: ABN-AMRO Inc., 2001), 2.
[295] OMI Corporation, Form 10-K 2001 (New York: OMI Corporation, 2002), 10.
[296] Ibid., 4.
[297] Ibid., 6.

way and is now refocused in the foreign flag segments. In 1998, OSG announced an extensive fleet renewal program consisting of 21 vessels aimed at revitalizing the company and divested many of its older tankers and bulk carriers.[298]

Today, OSG operates in-house, one of the largest, youngest and most diversified fleets in the world and employs about 1,510 employees.[299] Its capable management team, clear corporate structure, long standing access to the capital markets, and focus on customers and safety, has made OSG the largest independent US shipping company in the world.[300] OSG has a market cap of about USD 810 million.[301]

The Fleet

International Fleet Totals	Number of Vessels	DWT	DWT by % Ownership
Operating Fleet:	40	7,055,017	5,646,400
Vessels on Order, 100% owned:	5	960,686	960,686
Vessels on Order, JVs:	2	582,652	194,198
Total:	47	8,598,355	6,801,284
Domestic Fleet Totals	Number of Vessels	DWT	DWT by % Ownership
Operating Fleet:	10	665,464	665,464
Vessels on Order:	0	–	–
Total:	10	665,464	665,464
Total Operating Fleet DWT:		7,720,481	6,311,864
Total Operating Fleet + Vessels on Order DWT:		9,263,819	7,466,748
Total Ships in Fleet + New Builds:		57	50.5

Figure 20: OSG's Fleet[302]

OSG has one of the largest and most modern tanker fleets (Figure 20) in the world. OSG's fleet consists of 50 vessels, with a total cargo carrying capacity of 7,700,000 million DWT, making it the sixth largest tanker company in the world.[303] OSG's fleet can be broken down to the following segments:

- The Foreign Flag VLCC fleet, comprising of 17 vessels (13 are double hull), with an average age of 4.4 years.[304] OSG's VLCC vessels are traded in the spot market via the Tankers International pool.[305]
- The Foreign Flag Aframax fleet, comprising 12 vessels (9 are double hull), with an average age of 8.1 years.[306] OSG's Aframaxes trade in the OSG/PDVM pool.[307]

[298] http://www.osg.com.
[299] OSG, Form 10-K 2001 (New York: OSG. 2002), 3.
[300] Ibid., 1.
[301] http://www.yahoo.com.
[302] http://www.osg.com.
[303] OSG, Form 10-K 2001 (New York: OSG. 2002), 1
[304] http://www.osg.com.
[305] OSG, Form 10-K 2001 (New York: OSG. 2002), 3.

- The Foreign Flag product tanker, comprising of 4 Panamax size vessels with an average age of 15.4 years and 4 Handysize/Handymax vessels with an average age of 12,9 years.[308] All of these vessels are single hull and trade in the spot market, the larger vessels in the Pacific and the smaller vessels in the Atlantic.[309]
- The US flag crude carrier fleet consisting of 4 single hull Aframaxes with an average age of over 25 years, 2 single hull Handysize product carriers with an average age of 18.5 years, 3 dry bulk carriers and 1 Car Carrier.[310] All of these vessels are Jones Act ships. 4 of the company's crude carriers are bareboat chartered to BP, through the Alaska Tanker Company pool and the rest of the ships are mostly time chartered to the US government.[311]
- OSG also owns 1 foreign flag Suezmax crude carrier built in 1989 on a long-term charter and 2 foreign flag dry bulk Capesize vessels built in1997 operated in a Capesize pool.[312]
- The company also has on order 7 newbuilding vessels, 4 double hull VLCCs and 3 double hull Aframax tankers.[313] The ships are scheduled to be delivered between 2002 and 2004.

In regard to the IMO new phase-out schedule, it is expected that by the completion of the fleet renewal program, when all of the newbuildings will have been delivered, 93% of OSG's foreign flag fleet will be double hull.[314] Therefore, OSG is expected to be able to continue the operation of the majority of its vessels for the remainder of their economic lifespan, before being forced to scrap them in accordance with the new regulations. Of course, some of the oldest vessels are candidates for sale or scrapping, especially the product tankers.

Strategy

It is obvious that OSG is a much more diversified company than its peers. Nevertheless, 85% of the company's revenue in 2001 was generated by its tanker fleet.[315] The company manages to run profitably its US flag vessels which are mostly employed under term employment. This provides a cushion to its foreign flag tankers strategy that trade mostly in the spot markets. The company, in 2001, derived about 73% of the total revenue from spot voyages.[316] The company is expected to maintain the present balance between spot and time charter contracts in order to take advantage of potential upswings in the tanker market, to the benefit of shareholders. OSG markets its VLCCs and Aframaxes through the Tankers International and the OSG/PGVD pools respectively, enhancing utilization, offering greater flexibility, better service, obtaining COAs and increasing its bargaining power. The downside to OSG's strategy is that earnings are subject to the cyclicality of the tanker market, despite the cushion of the limited term employment. To

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[306] http://www.osg.com.
[307] OSG, Form 10-K 2001 (New York: OSG. 2002), 4.
[308] http://www.osg.com.
[309] OSG, Form 10-K 2001 (New York: OSG. 2002), 10.
[310] http://www.osg.com.
[311] OSG, Form 10-K 2001 (New York: OSG. 2002), 6.
[312] http://www.osg.com.
[313] Ibid.
[314] Goldman Sachs Equity Research, Overseas Shipholding Group (New York: Goldman Sachs& Co., 2002), 3.
[315] OSG, Form 10-K 2001 (New York: OSG. 2002), 7.
[316] Ibid.

make the company more attractive to investors, OSG has paid reliable dividends in the last 5 years and in engaged in a stock repurchase program.[317] A major disadvantage OSG faces opposite the competition is the fact that it pays taxes since it is domiciled in the US.

The company plans to capitalize on the size, age and diversity of its fleet by focusing its renewal program on the VLCC and Aframax segments. The goal is to generate economies of scale and through a homogeneous and modern fleet enhance customer service and produce "sister vessels efficiencies" improving utilization by substitution of similar vessels. OSG plans to take advantage of its reputation as an operator dedicated to safety, while at the same time maintaining cost efficiency. Furthermore, OSG seems determined to develop long-term relationships with major charterers. To that respect ODG has invested significantly in IT in order to streamline operations and provide added value services to charterers.[318]

OSG's strong balance sheet and modest financial leverage with a debt-to-equity ratio of 42.6% does not pose any dangers going into a turbulent 2002.[319] The company, having access to the capital markets and a significant presence in the markets it operates in, is in a position to take advantage of the expected recession in the near-term and the recent trends in the market (phase-out, pooling and two-tier freight rates) and focus its fleet even more by appropriately timing acquisitions. OSG is a company that is coming out of a fleet renewal program with a strong balance sheet, significant market presence and established commercial relationships. The expected near term trough, could be an opportunity for OSG to use its strengths and access to the capital markets to further focus its fleet by acquiring distressed tonnage and divesting some of its assets.

[317] http://www.yahoo.com.
[318] http://www.osg.com.
[319] OSG, Form 10-K 2001 (New York: OSG. 2002), 4.

Chapter 7: Valuation Results and Discussion

This chapter consists of two main parts. The first part goes through the valuation process and underlying assumptions of the DCF model. The second part contains the results of the valuation, sensitivity analysis and a comparison of the financial performance of the tanker companies.

7.1 - The DCF model and Underlying Assumptions

The Assumptions to the Model

The details of the valuation procedure and theory were discussed in detail in Chapter 4 of this paper. This section is aimed at guiding the reader through the assumptions and calculations actually performed in order to understand how the final numbers where produced.

The financial analysis and valuation where based on the financial statements of the eight public tanker companies investigated for the fiscal years ending December of 1997 through 2001.[320] The first step was to form a basis of making plausible assumptions in order to be able to create the pro forma statements for the companies. To that end, common-sized financial statements[321] for the companies were created, expressing each item as a percentage of gross revenues. Furthermore, the financial statements were re-cast in a condensed form and financial ratios, [322] as explained in Chapter 4, were computed for each fiscal year. The assumptions for creating the pro forma statements were then derived from this data. The main goal was to make sure that going forward the forecasted numbers preserved the way each company was structured and functioned. For example, it would not make sense to assume a profit margin 10 times higher than the historical average going forward.

The most important assumptions made to create the pro forma statements concern the following:[323]

- **Voyage Revenue / Voyage Expenses / Net Voyage Revenue**[324]

These are by far the most important parameters in the valuation module. These depend to a great extent on the company's strategy for fleet expansion, the fleet age and composition, the ability to control voyage costs and the prevailing freight rate. The TCE per ship per day for each of the past five years was calculated (Appendix D) for every company, by dividing the net voyage revenue by the number of ships in that year and 365 days. This figure was used as a benchmark of the earning capacity of each of the company's vessels going forward. A probability distribution was assigned to this value, specifying the most likely value to be the average of the past five years TCE per ship per day and a lower and upper limit consisting of the lowest and highest TCE recorded in the last five years. For the companies with significant period

[320] Appendix B contains the income statements, balance sheets and selected cash flow items for each company.
[321] Appendix C contains the common-sized financial statements for each company.
[322] Appendix D contains the selected financial data and financial ratios for each company.
[323] Appendix F contains the Excel spreadsheet showing a snapshot of the assumptions, pro formas and valuation for each company.
[324] Appendices G through N contain the simulation results and the exact specifications of the assumptions for each company.

employment coverage (OMI and Stelmar) the lower limit was set somewhat higher than the lowest recorded value. Then for each of the forecast years a specific number of ships were assumed, which when multiplied with the TCE per ship per day would give the net voyage revenue. The starting point for the number of ships was the number of ships the company currently has, the newbuildings on order and the strategy of growth. These numbers should not be taken literally, in the sense that their full effect can only be evaluated by looking at the net voyage revenue, which also includes the effect of rates. The voyage expenses and voyage revenue were calculated from this number, using the common-sized financial statements, i.e. as a % of sales. A probability distribution was assigned, specifying the most likely value to be the average of the past five years margins and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers the number of ships is not really an assumption, since these companies are self-liquidating funds not expected to add or delete ships from their fleet. Therefore, the voyage revenue, voyage expenses and net voyage revenue were calculated using three and five vessels throughout the forecast period. Furthermore, these two companies have a set lower limit as a TCE which was accounted for in the lowest value of the probability distribution. For Knightsbridge Tankers, there is a different TCE per ship per day assumption when valuing the company past 2004, since in the charter party it is stipulated that the operating expenses will increase by a set amount (Chapter 6), i.e. the TCE floor level increases.

- **Operating Expenses**[325]

The operating expenses going forward were computed using the common-sized financial statements, i.e. the percentage of sales method. A probability distribution was assigned, specifying the most likely value to be the average of the past five years operating expenses as % of sales and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers these costs are fixed and hence the 2001 values were used.

- **Depreciation and Amortization**[326]

Depreciation and amortization going forward were computed as a % of fixed assets (Appendix D). A probability distribution was assigned, specifying the most likely value to be the average of the past five years depreciation and amortization as % of fixed assets and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers this item was assumed constant and hence the 2001 values were used.

- **Other Income**[327]

Other income going forward was computed using the common-sized financial statements, i.e. the percentage of sales method. A probability distribution was assigned, specifying the most likely value to be the average of the past five years other income as % of sales and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers other income was assumed constant and hence the 2001 values were used.

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[325] Appendices G through N contain the simulation results and the exact specifications of the assumptions for each company.

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- **Net Interest Expense**[328]

The net interest expense was computed using the average cost of debt value. This does not really reflect the cost of debt of the firm, but rather it is a way to compute the net interest expense for each company. The net interest expense can be calculated by multiplying the average cost of debt of the company with the average of the previous and current years' long-term debt and current portion of long-term debt. A probability distribution was assigned, specifying the most likely value to be the average of the past five years average cost of debt and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers these items were assumed constant and hence the 2001 values were used.

- **Extraordinary Items/Income Taxes**[329]

The majority of the companies do not pay taxes, thus only extraordinary items were considered. Going forward, since these items are usually one-time events, they were assumed to be zero. For OSG which does pay normal US corporation taxes, a marginal tax rate of 35% was used to compute income taxes.

- **Cash and Marketable Securities**[330]

Cash and marketable securities going forward were computed using the common-sized financial statements, i.e. the percentage of sales method. A probability distribution was assigned, specifying the most likely value to be the average of the past five years cash and marketable securities as % of sales and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers these items were assumed constant and hence the 2001 values were used.

- **Other Current Assets**[331]

Other current assets (accounts receivable and prepaid expenses) going forward were computed using the common-sized financial statements, i.e. the percentage of sales method. A probability distribution was assigned, specifying the most likely value to be the average of the past five years other current assets as % of sales and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers these items were assumed constant and hence the 2001 values were used.

- **Fixed Assets**[332]

The fixed assets represented a major challenge in the assumption process. Although they do not impact operating results directly, they affect valuation through the change in net assets. Depending on the company's strategy a figure was placed on the expected increase/decrease in fixed assets. This was related to the assumptions on the number of vessels the company is expected to own in the future. Therefore, the fixed assets of each forecast period where the sum of the fixed assets of the previous period fixed assets plus the assumed figure. To allow for some latitude in the investments of the company a probability distribution was assigned to the increase/decrease in fixed assets, specifying a most likely value and a lower and upper limit. The

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[328] Appendices G through N contain the simulation results and the exact specifications of the assumptions for each company.

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[332]

range of values assumed was aimed at ensuring that the asset turnover of each company would remain within the turnover ratios recorded in the last five years. For Nordic American Tankers and Knightsbridge Tankers fixed assets were calculated by assuming no investments on the part of the company, thus subtracting the annual figure for depreciation.

- **Other Long-Term Assets**[333]

Other long-term assets (investments in joint ventures, other assets and/or goodwill) going forward were computed using the common-sized financial statements, i.e. the percentage of sales method. A probability distribution was assigned, specifying the most likely value to be the average of the past five years other long-term assets as % of sales and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers these items were assumed constant and hence the 2001 values were used.

- **Non-interest Bearing Liabilities**[334]

Non-interest bearing liabilities (accounts payable and accrued liabilities) going forward were computed using the common-sized financial statements, i.e. the percentage of sales method. A probability distribution was assigned, specifying the most likely value to be the average of the past five years non-interest bearing liabilities as % of sales and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers these items were assumed constant and hence the 2001 values were used.

- **Current portion of long-term debt**[335]

The current portion of long-term debt going forward was computed as a % of the long-term debt of the previous year (Appendix D). A probability distribution was assigned, specifying the most likely value to be the average of the past five years current portion of long-term debt as % of long-term debt and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers this item was assumed to zero, since the loan agreements include balloon repayments of the long-term debt.

- **Long-term debt**[336]

The long-term debt going forward was computed using the long-term debt over stockholder's equity ratio (Appendix D). In this way a target capital structure was preserved. A probability distribution was assigned, specifying the most likely value to be the average of the past five years long-term debt over stockholder's equity ratio and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. For Nordic American Tankers and Knightsbridge Tankers this item was assumed constant and the 2001 values were used.

- **Stockholder's Equity**[337]

The stockholder's equity was the "plug" of the pro forma statements. In other words, it was used to match liabilities with assets, calculated using the fundamental accounting relationship that

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[333] Appendices G through N contain the simulation results and the exact specifications of the assumptions for each company.

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assets should equal liabilities and stockholder's equity. This was done through an iterative process though Excel's circular reference feature, since the stockholder's equity was linked with the long-term debt. The alternative would have been a trial-and-error approach.

Based on the assumptions explained above, the pro forma statements were created. The forecast period was selected to be 5 years, i.e. until 2006 and a sixth year was also computed, i.e. 2007, in order to calculate a terminal value in the end of 2006. To double-check the assumptions, financial ratios were calculated to make sure they were in-line with historical values (Appendix F). For Nordic American Tankers and Knightsbridge Tankers, two different forecast periods were examined, one extending until 2004 and another extending to 2011 in order to look at the possibility that BP or Shell might not renew their charters and the companies have to liquidate early.

The Valuation and Simulation Process

The WACC for each company was computed as prescribed in Chapter 4 of this thesis.[338] Only two companies, Stelmar and General Maritime, required levering and de-levering since they very recently went public and no data on their beta was available. For the rest of the companies, the equity beta was directly used from market information. The comparables for Stelmar and General Maritime were the rest of the tanker companies, and the de-levering was done using the average of the net debt to capitalization figure for the rest of the tanker companies, averaged over the last 5 years. As the risk-free rate the 10-year treasury rate was used and as the market risk premium a figure of 7% was used in-line with common practice. The cost of the debt of the company was estimated from the annual reports of each company, implicitly assuming that it does not differ tremendously from market values. As the debt to capital ratio, the net debt to capitalization (based on market values) was used. A probability distribution was assigned, specifying the most likely value to be the average of the past five years net debt to capitalization ratio (market) and a lower and upper limit consisting of the lowest and highest values recorded in the same time period. So, instead of making an assumption on a range of possible WACCs, a range was specified for the net debt to capitalization ratio, which has the same effect.

The terminal value for each company was computed as a growing perpetuity, as described in Chapter 4, after 2006, using the free cash flow (FCF hereafter) of 2007. The terminal value growth was assigned a probability distribution, specifying the most likely value to be 1% growth and a lower and upper limit of 0% and 3% growth respectively. This implicitly assumes that after the 5 years of the forecast periods the companies will grow in line with tanker demand historical growth rates. For Nordic American Tankers and Knightsbridge Tankers, the terminal value was estimated assuming liquidation. In this case, the terminal value is equal to the value the Suezmax vessels and VLCC vessels respectively can obtain in the market when they will be 7 or 14 years depending on whether the charter parties are renewed or not. The value per ship was assigned a probability distribution, specifying a most likely second-hand price and a lower and upper limit. The data for this range was derived by information on historical prices of second-hand vessels with similar size and age[339] from http://www.clarksons.net .

[338] Appendix E contains the WACC computation and assumptions for each company.
[339] Appendices H and I contain the simulation results and exact specifications of the assumptions.

With the WACC and terminal value the valuation process, as described in Chapter 4, can be completed. The FCF can be estimated using the pro formas, the WACC can be used to discount the FCF and the discounted terminal value can be added to reach the enterprise value of each company. By subtracting the net debt and dividing by the number of shares outstanding the value per share of each company can be computed.

To account for the cyclicality of the tanker industry the probability distributions were defined in order to simulate the forecasted stock price. Instead of dealing with a base case, high and low scenarios, by assigning probabilities to the various parameters of the model to capture the effect of the cyclical nature of shipping, a more complete picture of the possible outcomes can be obtained. The simulation was defined and performed in Excel, following the DCF model outlined above and using the Crystal Ball software package to define the assumptions and probability distributions, and to run the simulation. This is why Appendix F contains just a snapshot of the pro formas, assumptions and valuation results for each company, i.e. only one possible combination of the different values the assumptions can take is depicted.

The Comparables Valuation

The comparables valuation process described in Chapter 4 was followed. The comparable companies used were the tanker companies themselves. It can be argued that perhaps Nordic American Tankers and Knightsbridge Tankers are quite different to the rest of the group, or that Stelmar has little in common with the VLCC fleet of Frontline, but for all intents and purposes the tanker companies as a group represent the best comparable available. For example, the rest of the water transportation industry or the transportation sector could be used but as explained in Chapter 5 these industries have quite different characteristics than the tanker companies.

The ratios used to perform the comparables valuation were the following:

- **P/E ratio**

The P/E ratio used as a comparable was calculated by averaging the P/E ratios of all eight companies over the last five years. It was then applied to the EPS of each company to derive the respective price per share. The P/E ratio is a good indication of what the market thinks about the future prospects of each firm and how these prospects differ from company to company.

- **Price to NAV ratio**

The price to NAV used as a comparable was calculated by averaging the price to NAV ratio of all eight companies in 2001. It was then applied to the NAV per share of each company to derive the respective price per share. The value that makes sense for such a ratio is at least 1. This means that a company is valued at least as much as its net assets. In that sense it gives an idea of the added value or destruction the management of the company has created or destroyed above or below NAV. The price to NAV ratio has the advantage that it is market based and avoids the distortions of different earnings streams across companies. However, NAV is quite volatile since it is related to freight rates and is not suitable for long-term predictions.

- **Price to Book Value ratio**

The price to book value ratio used as a comparable was calculated by averaging the price to book value ratios of all eight companies over the last five years. It was then applied to the book value per share of each company to derive the respective price per share. The price to book value ratio is a good indication of the difference between the book value of equity and its market value and

how the market perceives the premium each company should receive. The disadvantage of the price to book value ratio is that it does not account for losses or gains from vessel acquisitions and dispositions, since it is not market based.

- **EV to EBITDA ratio**

The enterprise value (EV hereafter) to EBITDA ratio used as a comparable was calculated by averaging the EV to EBITDA ratios of all eight companies over the last five years. It was then applied to the EV per share of each company to derive the respective EV per share. By subtracting the net debt per share, the price per share of each company was computed. The EV to EBITDA ratio is a good indication of how the value of the firm relates to the generation of revenues. The problem of EV to EBITDA is that it might overstate or understate the value of companies that have different operating strategies, since it assumes a similar earnings stream.

Although the stock price using comparables was calculated using four different ratios, the final comparables price presented as a result was derived by averaging the different estimates. In this way, the advantages and disadvantages of each ratio that might favor one company over another tend to cancel out, giving a more reliable estimate of the stock price. Figure 21 shows the comparable valuation ratios used and results for each company. It is important to keep in mind that although this method can produce accurate results, especially to determine whether a company is under-valued or over-valued relative to its peers, it does not provide an insight of what drives the value of each company and where the strengths and weaknesses of each company lie. This is the benefit of the much more laborious DCF valuation.

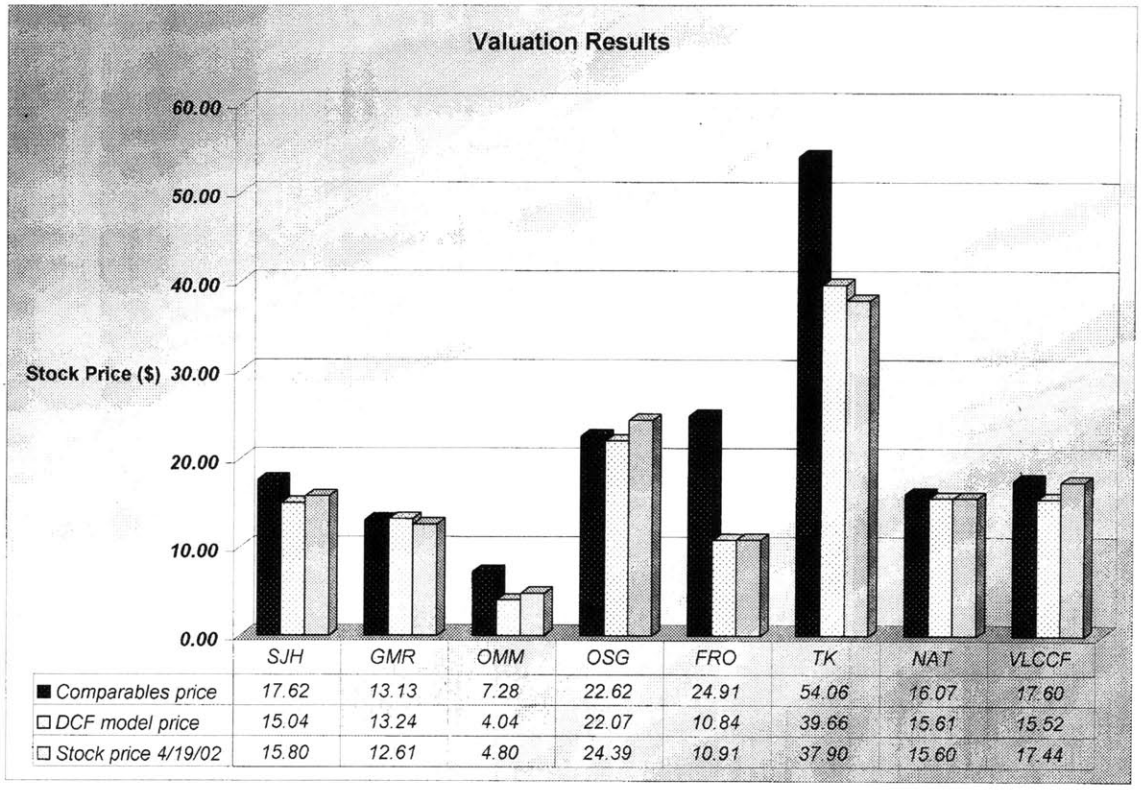
	SJH	GMR	OMM	OSG	FRO	TK	NAT	VLCCF	Tankers
P/Book value	0.78	0.84	1.09	0.91	0.67	0.96	1.00	0.86	0.89
P/NAV	0.91	0.91	0.95	0.97	0.89	1.31	-	-	0.99
EV/EBITDA	7.09	6.64	11.96	11.85	5.15	7.11	10.51	7.46	8.47
P/E (average)	4.81	8.16	8.39	13.32	2.20	2.60	15.73	11.15	8.30
EPS	3.29	1.38	1.21	2.92	4.99	8.31	2.00	1.95	-
NAV per share	17.40	12.36	6.00	27.00	12.33	28.61	-	-	-
Book value per share	20.26	13.40	5.90	23.41	16.42	35.00	11.60	15.90	-
EBITDA per share	1.69	3.06	1.69	5.77	6.14	12.83	2.87	3.53	-
Net debt per share	6.42	9.05	6.42	30.24	20.61	20.91	3.03	7.44	-
Stock Price (book value ratio)	**18.04**	**11.93**	**5.25**	**20.84**	**14.62**	**31.16**	**10.33**	**14.15**	
Stock Price (NAV ratio)	**17.26**	**12.26**	**5.95**	**26.78**	**12.23**	**28.38**	-	-	
Stock Price (P/E ratio)	**27.29**	**11.45**	**10.04**	**24.22**	**41.39**	**68.94**	**16.59**	**16.18**	
EV per share (EV/EBITDA ratio)	14.32	25.92	14.32	48.87	52.01	108.68	24.31	29.90	
Stock price (EV/EBITDA ratio)	**7.90**	**16.87**	**7.90**	**18.63**	**31.40**	**87.77**	**21.28**	**22.46**	
Comparables Price	**17.62**	**13.13**	**7.28**	**22.62**	**24.91**	**54.06**	**16.07**	**17.60**	

Figure 21: The Comparables Valuation Process

7.2 - The Results

DCF Model vs. Comparables Valuation vs. Actual Market Prices

Since a simulation process was used, a range of possible stock prices was obtained instead of just a single value. The mean of the distribution of stock prices was considered the best estimate of the DCF model and the value that will be used to compare the results to the comparables valuation and the actual market price of the stock of each company. A summary of the results showing the DCF model mean price, the comparables price as computed previously and the actual market price on April 19th, 2002 is presented in Figure 22.



	SJH	GMR	OMM	OSG	FRO	TK	NAT	VLCCF
■ Comparables price	17.62	13.13	7.28	22.62	24.91	54.06	16.07	17.60
□ DCF model price	15.04	13.24	4.04	22.07	10.84	39.66	15.61	15.52
□ Stock price 4/19/02	15.80	12.61	4.80	24.39	10.91	37.90	15.60	17.44

Figure 22: Summary of Valuation Results

For Teekay the average stock price the DCF model returned was USD 39.66 per share with a range of possible values from USD -33.18 per share to USD 163.33 per share (Figure G3). Of course, a negative stock value is not possible and should be interpreted as instances the company could go bankrupt, in a worst case scenario. The percentiles statistics (Figure G2) show that 50% of the simulation runs of Teekay's stock price fell between about USD 25 per share and USD 50 per share. The comparables price for Teekay was estimated at USD 54.06 per share, about USD 15 per share off the DCF model. Compared to the current price of Teekay's stock of USD 37.90 per share, the DCF model seems to yield better results. Nevertheless, Teekay's comparables price is in-line with estimates from brokerage houses that also use comparables to value Teekay and peg Teekay's price at USD 50 per share by the end of 2002. According to the DCF model statistics, a price of more than USD 50 per share was observed in about 30% of the simulation

runs. Looking in more detail at the comparables numbers of Teekay (Figure 21), it is important to observe that Teekay is the only company trading at a premium to NAV, but its P/E ratio is significantly lower than the tanker industry average, giving Teekay a higher valuation based on the P/E ratio and a lower valuation based on the price to NAV ratio. The price to book value ratio is much closer to the industry average, providing results similar to the current market valuation. The EV to EBITDA ratio gives a very high stock price, evidence to the commitment of Teekay to maintain manageable levels of debt. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths and weaknesses of the company. In a declining tanker industry, it is interesting to see the market's reaction to Teekay's stock price. If Teekay's stock does not collapse along with freight rates but only falls back to the USD 30 per share level, a target price for Teekay above the USD 40 dollar mark in the next market upturn would not look unreasonable.

The sensitivity chart (Figure G1) provides an insight in which assumptions influence Teekay's stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining Teekay's value. This makes sense, especially since Teekay trades the majority of its vessels in the spot market. Operating expenses and the net voyage revenue assumptions are also crucial and have significant impact on Teekay's stock. This implies that cost control is of paramount importance in the tanker industry. The value of Teekay's stock is also affected by the depreciation and amortization charge and increase in fixed assets, which on one hand reduce the EBIT of the company and on the other hand determine the asset turnover of Teekay. The terminal value (TV hereafter) growth rate also affects the price of Teekay, which shows that it is better to be conservative in TV growth assumptions, especially in an industry where growth comes from market share, rather than from growth of the industry itself. The rest of the parameters of the model affect results to a much lesser degree.

For Nordic American Tankers the average stock price the DCF model returned was USD 15.61 per share with a range of possible values from USD 8.67 per share to USD 23.15 per share, assuming liquidation in 2004 (Figure H3). Assuming liquidation in 2011, the average stock price the DCF model returned was USD 25.17 per share with a range of possible values from USD 14.70 per share to USD 38.19 per share (Figure H5). The percentiles statistics (Figure H2 and H4) show that 50% of the simulation runs of Nordic American Tankers' stock price fell between about USD 14 per share and USD 18 per share, assuming liquidation in 2004, and between about USD 23 per share and USD 29 per share, assuming liquidation in 2011. The comparables price for Nordic American Tankers was estimated at USD 16.07 per share, close to the DCF results, assuming liquidation in 2004, but below the DCF results, assuming BP renews the charters. Compared to the current price of Nordic American Tankers' stock of USD 15.60 per share, the DCF model, assuming liquidation in 2004, is right on the money, with the comparables valuation and DCF results, assuming BP renews the charters, giving a higher estimate. Looking in more detail at the comparables numbers of Nordic American Tankers (Figure 21), it is important to observe that almost all of the company's valuation ratios are above the industry average, probably an appreciation of the stable earnings stream. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths and weaknesses of the company. It will be very interesting to watch what happens in 2004. The valuation hinges on whether BP will renew the charters or not. It seems that at the

moment the market has not yet made a decision and it remains to be seen if the renewal will impact positively Nordic American Tankers' stock.

The sensitivity chart (Figure H1) provides an insight in which assumptions influence Nordic American Tankers' stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining Nordic American Tankers' value, since they provide the upward potential of the stock, despite the guaranteed minimum rate. The value the company's vessel can fetch is also important since the liquidation value affects the income stream to a self-liquidating fund at the end of its life.

For Knightsbridge Tankers the average stock price the DCF model returned was USD 15.52 per share with a range of possible values from USD 8.29 per share to USD 23.37 per share, assuming liquidation in 2004 (Figure I3). Assuming liquidation in 2011, the average stock price the DCF model returned was USD 21.60 per share with a range of possible values from USD 15.92 per share to USD 29.88 per share (Figure H5). The percentiles statistics (Figure I2 and I4) show that 50% of the simulation runs of Knightsbridge Tankers' stock price fell between about USD 14 per share and USD 18 per share, assuming liquidation in 2004, and between about USD 20 per share and USD 24 per share, assuming liquidation in 2011. The comparables price for Knightsbridge Tankers was estimated at USD 17.60 per share, above the DCF results, assuming liquidation in 2004, but below the DCF results, assuming Shell renews the charters. Compared to the current price of Knightsbridge Tankers' stock of USD 17.44 per share, comparables valuation is right on the money and the DCF results giving lower and higher estimates. Looking in more detail at the comparables numbers of Knightsbridge Tankers (Figure 21), it is important to observe that almost all of the company's valuation ratios are above the industry average, probably an appreciation of the stable earnings stream. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths and weaknesses of the company. It will be very interesting to watch what happens in 2004. The valuation hinges on whether Shell will renew the charters or not. It seems that at the moment the market is optimistic on the renewal prospects but it remains to be seen if the renewal will impact positively Knightsbridge Tankers' stock.

The sensitivity chart (Figure I1) provides an insight in which assumptions influence Knightsbridge Tankers' stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining Knightsbridge Tankers' value, since they provide the upward potential of the stock, despite the guaranteed minimum rate. The value the company's vessel can fetch is also important since the liquidation value affects the income stream to a self-liquidating fund at the end of its life.

For Stelmar the average stock price the DCF model returned was USD 15.04 per share with a range of possible values from USD -11.08 per share to USD 56.52 per share (Figure J3). Of course, a negative stock value is not possible and should be interpreted as instances the company could go bankrupt, in a worst case scenario. The percentiles statistics (Figure J2) show that 50% of the simulation runs of Stelmar's stock price fell between about USD 12 per share and USD 23 per share. The comparables price for Stelmar was estimated at USD 17.62 per share, only about USD 2 per share off the DCF model. Compared to the current price of Stelmar's stock of USD 15.8 per share the DCF model seems to be right on the money and the comparables price slightly

higher. According to the DCF model statistics, a price of more than USD 17 per share was observed in about 40% of the simulation runs. Looking in more detail at the comparables numbers of Stelmar (Figure 21), it is important to observe that Stelmar is trading at a discount to NAV and a P/E ratio that is lower than the tanker industry average, giving Stelmar a higher valuation based on the P/E ratio and the price to NAV ratio. The price to book value ratio is much closer to the industry average and provides results above the current market valuation. The EV to EBITDA ratio gives a low stock price estimate, evidence to the increased leverage Stelmar can afford due to period coverage. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths and weaknesses of the company. In a declining tanker industry, it is interesting to see the market's reaction to Stelmar's stock price. Stelmar has significant time charter coverage through 2002 and should fare better than its peers. Provided that Stelmar continues to expand its fleet at a reasonable rate, the company could hope for a higher valuation above NAV as a reward of its predictable earnings stream and focus in niche markets.

The sensitivity chart (Figure J1) provides an insight in which assumptions influence Stelmar's stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining Stelmar's value. This makes sense, despite the extensive time charter approach, since Stelmar could be locked in unprofitable term employment. Operating expenses and the net voyage revenue assumptions are also crucial and have significant impact on Stelmar's stock. As expected, the net voyage revenue assumption is less crucial than for a company trading its vessels spot. The value of Stelmar's stock is also affected by the depreciation and amortization charge and increase in fixed assets, which on one hand reduce the EBIT of the company and on the other hand determine the asset turnover of Stelmar. The TV growth rate also seems to have a large effect on the price of Stelmar, which is probably evidence to the fact that Stelmar is a young company undergoing rapid growth and much of the value is expected to come later rather than sooner. The rest of the parameters of the model affect results to a much lesser degree.

For General Maritime the average stock price the DCF model returned was USD 13.24 per share with a range of possible values from USD -13.84 per share to USD 47.22 per share (Figure K3). Of course, a negative stock value is not possible and should be interpreted as instances the company could go bankrupt, in a worst case scenario. The percentiles statistics (Figure K2) show that 50% of the simulation runs of General Maritime's stock price fell between about USD 9 per share and USD 22 per share. The comparables price for General Maritime was estimated at USD 13.13 per share, almost identical to the DCF model. Compared to the current price of General Maritime's stock of USD 12.61 per share, the DCF model and comparables valuation are extremely close. According to the DCF model statistics, a price of more than USD 15 per share was observed in about 40% of the simulation runs. Looking in more detail at the comparables numbers of General Maritime (Figure 21), it is important to observe that General Maritime is trading at a discount to NAV and a P/E ratio that is lower than the tanker industry average, giving General Maritime a higher valuation based on the P/E ratio and the price to NAV ratio. The price to book value ratio is much closer to the industry average, providing results closer to the current market valuation. The EV to EBITDA ratio gives a higher stock price estimate, evidence to the expected growth of the company. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths

and weaknesses of the company. In a declining tanker industry, it is interesting to see the market's reaction to General Maritime's stock price. General Maritime trades most of its vessels spot, which could punish the stock in the short-term. Furthermore, coming out of a recent IPO at USD 18 per share many investors could be disappointed, which means that General Maritime's stock price might fail to translate the next upswing in freight rates in a price higher than the USD 18 per share IPO level.

The sensitivity chart (Figure K1) provides an insight in which assumptions influence General Maritime's stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining General Maritime's value. This makes sense, especially since General Maritime trades a large portion of its vessels in the spot market. Operating expenses and the net voyage revenue assumptions are also crucial and have significant impact on General Maritime's stock. This implies that cost control is of paramount importance in the tanker industry. The value of General Maritime's stock is also affected by the depreciation and amortization charge and increase in fixed assets, which on one hand reduce the EBIT of the company and on the other hand determine the asset turnover of General Maritime. The TV growth rate also seems to have a large effect on the price of General Maritime, which is probably evidence to the fact that General Maritime is a young company undergoing rapid growth and much of the value is expected to come later rather than sooner. The rest of the parameters of the model affect results to a much lesser degree.

For Frontline the average stock price the DCF model returned was USD 10.84 per share with a range of possible values from USD -42.73 per share to USD 79.13 per share (Figure L3). Of course, a negative stock value is not possible and should be interpreted as instances the company could go bankrupt, in a worst case scenario. The percentiles statistics (Figure L2) show that 50% of the simulation runs of Frontline's stock price fell between about USD 4 per share and USD 29 per share. The comparables price for Frontline was estimated at USD 24.91 per share, about USD 15 per share off the DCF model. Compared to the current price of Frontline's stock of USD 10.91 per share, the DCF model seems to yield better results. According to the DCF model statistics, a price of more than USD 20 per share was observed in about 30% of the simulation runs. Looking in more detail at the comparables numbers of Frontline (Figure 21), it is important to observe that Frontline is trading at a significant discount to NAV and a P/E ratio that is much lower than the tanker industry average, giving Frontline a higher valuation based on the P/E ratio and the price to NAV ratio. The price to book value ratio is also lower than the industry average, providing results above the current market valuation. The EV to EBITDA ratio gives a higher stock price estimate, as a result of the lower EV to EBITDA ratio of Frontline. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths and weaknesses of the company. In a declining tanker industry, it is interesting to see the market's reaction to Frontline's stock price. Frontline operates a fleet of large vessels, Suezmaxes and VLCCs. Especially the VLCCs are expected to suffer more than its peers until OPEC production increases. Coupled with the fact that all of the vessels trade spot, and the relatively high leverage of the company, Frontline stock can plummet and recover at the whim of the freight markets. From all the tanker companies, Frontline's stock should be expected to be the most volatile and the percentiles statistics, which have many negative stock values and many very high stock prices confirm this.

The sensitivity chart (Figure L1) provides an insight in which assumptions influence Frontline's stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining Frontline's value. This makes sense, especially since Frontline trades almost all of its vessels in the spot market. Operating expenses and the net voyage revenue assumptions are also crucial and have significant impact on Frontline's stock. This implies that cost control is of paramount importance in the tanker industry. The value of Frontline's stock is also affected by the depreciation and amortization charge and increase in fixed assets, which on one hand reduce the EBIT of the company and on the other hand determine the asset turnover of Frontline. The TV growth rate also affects the price of Frontline, which shows that it is better to be conservative in TV growth assumptions, especially in an industry where growth comes from market share, rather than from growth of the industry itself. The rest of the parameters of the model affect results to a much lesser degree.

For OMI the average stock price the DCF model returned was USD 4.04 per share with a range of possible values from USD -6.42 per share to USD 47.61 per share (Figure M3). Of course, a negative stock value is not possible and should be interpreted as instances the company could go bankrupt, in a worst case scenario. The percentiles statistics (Figure M2) show that 50% of the simulation runs of OMI's stock price fell between about USD 3.50 per share and USD 8 per share. The comparables price for OMI was estimated at USD 7.28 per share, about USD 3 per share off the DCF model. Compared to the current price of OMI's stock of USD 4.80 per share, the DCF model seems to be closer while the comparables price indicates that OMI stock is undervalued. According to the DCF model statistics, a price of more than USD 7 per share was observed in about 20% of the simulation runs. Looking in more detail at the comparables numbers of OMI (Figure 21), it is important to observe that OMI is trading at a discount to NAV and a P/E ratio that is almost equal to the tanker industry average, giving OMI a higher valuation based on the price to NAV ratio and the P/E ratio. The price to book value ratio is higher than the industry average, providing results close to the current market valuation. The EV to EBITDA ratio gives a high stock price estimate, evidence to the disciplined debt policy of OMI. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths and weaknesses of the company. In a declining tanker industry, it is interesting to see the market's reaction to OMI's stock price. OMI seems to be positioned to limit the impact of the low freight markets with most of its product tanker fleet under time charters, while at the same time retaining flexibility trading the Suezmaxes spot to maintain sufficient operating leverage. If OMI's stock price is maintained in the USD 4 to 5 per share level, in the next upswing it could head higher.

The sensitivity chart (Figure M1) provides an insight in which assumptions influence OMI's stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining OMI's value despite significant term employment coverage. The TV growth assumption for OMI has a very significant impact on OMI's value. This could be interpreted in light of the restructuring of OMI since 1998, which has provided the company with a clear vision for the future. Operating expenses and the net voyage revenue assumptions are also important and impact OMI's stock. This implies that cost control is of paramount importance in the tanker industry. The value of OMI's stock is also affected by the depreciation and amortization charge and increase in fixed assets, which on one hand reduce the EBIT of the company and on the other hand determine the asset turnover of

OMI. It also seems that the leverage of the company affects valuation, through affecting the WACC. This might provide support for OMI's comparative disadvantage in tapping financial resources. The rest of the parameters of the model affect results to a much lesser degree.

For OSG the average stock price the DCF model returned was USD 22.07 per share with a range of possible values from USD 9.34 per share to USD 40.74 per share (Figure N3). The percentiles statistics (Figure N2) show that 50% of the simulation runs of OSG's stock price fell between about USD 20 per share and USD 26 per share. The comparables price for OSG was estimated at USD 22.62 per share, about only USD 3 per share off the DCF model. Compared to the current price of OSG's stock of USD 24.39 per share, both the DCF model and comparables valuation seems to slightly understate OSG's value. According to the DCF model statistics, a price of more than USD 24 per share was observed in about 30% of the simulation runs. Looking in more detail at the comparables numbers of OSG (Figure 21), it is important to observe that OSG is trading at a slight discount to NAV and a P/E ratio that is higher than the tanker industry average, giving OSG a lower valuation based on the P/E ratio and a higher valuation based on the price to NAV ratio. The price to book value ratio is close to the industry average, providing results close to the current market valuation. The EV to EBITDA ratio gives a lower stock price estimate, as a result of the higher EV to EBITDA ratio of OSG. Any discrepancies between actual prices and the DCF model or comparables really lie in the assumptions and the perception of the strengths and weaknesses of the company. In a declining tanker industry, it is interesting to see the market's reaction to OSG's stock price. OSG recently underwent a fleet renewal program. The stock is expected to suffer from the exposure of OSG to the spot markets. The problem for OSG is that it is the only company that pays taxes in the group and perhaps this proves to be a hindrance for the stock price to stay at current levels.

The sensitivity chart (Figure N1) provides an insight in which assumptions influence OSG's stock the most and whether their effect is positive or negative. As expected, the TCE rates assumption is the single most important factor in determining OSG's value. This makes sense, especially since OSG trades most of its vessels in the spot market. Surprisingly, the TV growth assumption for OSG has a very significant impact on OSG's value. This could be interpreted in light of the fleet renewal program which should provide the asset base for many years down the line. Operating expenses and the net voyage revenue assumptions are also important and impact OSG's stock. This implies that cost control is of paramount importance in the tanker industry. The value of OSG's stock is also affected by the depreciation and amortization charge and increase in fixed assets, which on one hand reduce the EBIT of the company and on the other hand determine the asset turnover of OSG. The rest of the parameters of the model affect results to a much lesser degree.

Overall the DCF model seems to give results close to actual market prices most of the times and the comparables valuation also seems to yield results that are consistent with the DCF model percentiles. Based on the sensitivity analysis it seems that the key value drivers are the level of TCE rates in the freight markets, the ability to control costs, the fleet expansion policy and the long-term growth prospects of the tanker industry (TV growth). The thing to keep in mind is that at least as far as the DCF model is concerned, unless new information is used, this price should represent a target stock price over the long-run. Short-term fluctuation caused mainly due to market sentiment and corrections in the long-run should not affect the value of the company. Of

course, having in mind this "intrinsic" value the DCF model yields is useful in timing the cycle and understanding at which point stocks seem undervalued or overvalued. It is not really a stock prediction model, but rather a tool in assessing the stock performance of each company and comparing it to its peers. The sensitivity analysis is also a way to understand the influence of the most important parameters which upon further investigation could reduce uncertainty.

Financial Performance Comparison

To fully evaluate the impact of each company's strategy it is worth comparing the financial performance of the eight tanker companies analyzed. Figure 23 presents the financial ratios of each company from 1997 to 2001 as well as some of these ratios for the maritime industry, the transportation sector and the S&P 500. In part, this discussion complements the discussion of Chapter 5 concerning the financial characteristics of the tanker industry compared to other segments of the economy.

Financial Ratios												
	SJH	GMR	OMM	OSG	FRO	TK	NAT	VLCCF	Tankers	Water Transportation	Transportation	S&P 500
Gross margin	91.67%	82.83%	82.37%	78.26%	78.26%	73.26%	100.00%	100.00%	85.83%	41.07%	73.47%	47.64%
Operating margin	39.25%	29.84%	20.65%	17.24%	31.10%	25.43%	63.01%	64.43%	36.37%	18.63%	11.62%	17.95%
Profit margin	19.61%	10.98%	8.15%	7.99%	18.11%	17.16%	59.54%	46.85%	23.55%	12.54%	5.88%	11.25%
Asset turnover	0.19	0.20	0.28	0.24	0.22	0.33	0.13	0.13	0.22	0.48	1.07	0.97
Fixed asset turnover	0.21	0.22	0.36	0.29	0.26	0.40	0.13	0.14	0.25	-	-	-
Financial leverage	3.70	2.75	2.19	2.49	2.73	1.98	1.19	1.46	2.31	-	-	-
ROA	3.76%	2.59%	2.76%	1.94%	4.50%	6.81%	8.30%	6.36%	4.63%	6.49%	6.16%	7.94%
ROE	13.42%	5.50%	3.82%	4.77%	11.19%	12.27%	10.23%	9.31%	8.81%	7.03%	7.89%	21.43%
ROIC	7.79%	6.11%	6.12%	2.78%	7.38%	9.67%	8.90%	8.54%	7.16%	11.47%	14.64%	12.69%
Net debt/ capitalization	70.61%	59.99%	50.38%	57.67%	58.88%	43.35%	14.70%	30.85%	48.30%	-	-	-
D/A	0.72	0.61	0.53	0.60	0.63	0.49	0.16	0.32	0.51	-	-	-
D/E	2.70	1.75	1.19	1.49	1.73	0.98	0.19	0.46	1.31	0.47	0.74	1.04
Current ratio	1.31	0.64	1.38	2.36	0.98	2.17	69.32	9.02	2.55	1.88	1.28	1.67
Times interest earned	2.08	2.05	2.13	1.53	2.31	3.42	43.85	2.70	2.32	5.67	10.81	7.77
Times burden covered	0.92	0.83	0.85	1.69	0.60	1.68	43.85	0.15	0.96	-	-	-
Average interest expense	12.50%	14.40%	12.03%	9.58%	13.00%	12.09%	7.92%	7.24%	11.09%	-	-	-
P/Book value	0.78	0.84	1.09	0.91	0.67	0.96	1.00	0.86	0.89	1.58	3.91	5.34
P/NAV	0.91	0.91	0.95	0.97	0.89	1.31	-	-	0.99	-	-	-
EV/EBITDA	7.09	6.64	11.96	11.85	5.15	7.11	10.51	7.46	8.47	-	-	-
P/E (average)	4.81	8.16	8.39	13.32	2.20	2.60	15.73	11.15	8.30	13.64	26.93	30.00
Other Ratios												
Sales growth	38.17%	140.80%	14.08%	1.26%	34.51%	30.39%	80.32%	16.50%	44.50%	11.74%	8.07%	12.88%
Sustainable growth rate	51.97%	79.85%	15.64%	1.52%	28.84%	20.19%	-9.32%	-3.56%	23.14%	-	-	-
Depreciation as % of fixed assets	6.77%	8.24%	6.43%	4.94%	6.01%	7.10%	4.31%	4.41%	6.02%	-	-	-
Fixed asset growth	36.91%	47.87%	28.69%	1.67%	27.84%	13.13%	-4.31%	-4.41%	18.42%	-	-	-
Current portion of LT debt as % of LT debt	12.50%	17.46%	17.81%	1.85%	21.66%	7.74%	0.00%	0.00%	9.88%	-	-	-
LT debt / Stockholder's equity	2.45	1.59	0.97	1.41	1.38	0.86	0.19	0.45	1.16	0.44	0.67	0.65
Beta	-	-	0.56	0.77	0.04	0.66	0.15	0.60	0.46	0.81	0.76	1.00

Figure 23: Financial Performance Comparison of the Tanker Companies

The margins of the tanker companies hint at the ability of the firms to control costs and successfully implement their strategies (Figure 23). Nordic American Tankers and Knightsbridge Tankers seem to have significantly higher gross margins (100% both), operating margins

(63.01% and 64.43% respectively) and profit margins (59.54% and 46.55% respectively) than the rest of the group. This is due to the structure of the companies for the sole purpose of owning vessels bareboat chartered to oil majors. The higher margins are justifiable since these companies really only face general and administrative expenses and interest charges. The gross margins are really a sign of the type of chartering policy the companies follow and therefore Stelmar has the highest gross margin (91.67%) of the group because of its extensive time charter operations. Frontline, Teekay and OSG have the lowest gross margins (78.26%, 73.26% and 78.26% respectively) evidence to their extensive spot trading. OMI and General Maritime are somewhere in the middle (82.37% and 82.83% respectively) reflecting their distinct chartering mix. Operating margins reflect the efficiency in the operations of the companies and the control of overheads. Stelmar and Frontline do the best job in this aspect (39.25% and 31.10% respectively), Stelmar due to its lean structure and smaller size and Frontline due to its outsourcing of the technical management and operation of its vessels. OSG seems to have a significant cost disadvantage compared to its peers with the lowest operating margin of the group (17.24%). Teekay, OMI and General Maritime (25.43%, 20.65% and 29.84% respectively) seem to do a better job. The profit margin incorporates the effect of interest payments and taxes in generating profits. It therefore comes as no surprise that OSG has the lowest profit margin of the group (7.99%), since it is the only company paying taxes. Teekay, Frontline and Stelmar have similar margins (17.15%, 18.11% and 19.61% respectively) while General Maritime and OMI have lower profit margins (10.97% and 8.15% respectively). Probably, the restructuring at OMI and the sudden increase in the size of General Maritime are the reasons these two companies have lower margins than their peers.

The asset turnover ratios are testament to a company's ability to generate revenue with as few assets as possible (Figure 23). Due to the capital intensive nature of the industry, the asset turnover of shipping companies is much lower than the transportation sector companies and the S&P 500 firms. Teekay has the highest asset turnover (0.33) probably being able to capitalize on the sheer size and specialization of its fleet. OMI also seems to be doing a very good job (0.28), balancing its period employment with successful commercial operations via pooling for its Suezmax fleet. Frontline, OSG and General Maritime seem to have similar turnover ratios (0.20, 0.24 and 0.22 respectively) close to the tanker industry average. Stelmar, probably because of its time charter policy, has a below average turnover (0.19). Nordic American Tanker and Knightsbridge Tankers also have much lower asset turnover ratios (0.13 both) than the rest of the group, since they are close to purely financial transactions.

The financial leverage, debt to capital ratios, interest and burden coverage provide indications as to the financial health of the shipping companies (Figure 23). Nordic American Tankers seems to have a minimal amount of debt and thus the lowest leverage (1.19), and net debt to capitalization (14.70%), debt to assets (0.16), debt to equity (0.19) and the highest interest coverage (43.45), burden coverage (43.85) and current ratio (69.32). Knightsbridge tankers, is also significantly less leveraged than the rest of the competition (30.85% net debt to capitalization). Stelmar on the other hand, is the most highly leveraged company (net debt to capitalization 70.61%) but because it is a small company its interest coverage (2.08) and burden coverage (0.92) are close to the industry norm. In a way, Stelmar can afford to take on more debt than its competitors since it is growing fast and has extensive time charter coverage. Frontline and General Maritime and OSG also have higher debt to capital ratios (58.88%, 59.99% and 57.67% net debt to capitalization

ratios respectively) and especially Frontline has a very low burden coverage ratio (0.60), making it vulnerable to a prolonged freight market depression. Teekay seems to be successful in lowering its net debt to capitalization ratio (43.35%) and seems to have the strongest balance sheet of the tanker companies. OMI is following a careful financial policy aiming at reducing debt levels (50.38% net debt to capitalization ratio) in order to prepare for the rough next year ahead.

Looking at the revenue growth in the last five years, it seems that with the exception of OSG, which has renewed it fleet, the rest of the companies have grown dramatically by an average of about 45%. This is due to the consolidation taking place and each of these companies trying to create a significant market present in the niche they operate in order to improve efficiency and generate economies of scale. Nevertheless, the ROE of the tanker industry in the same period has been abysmal (8.81%). None of the companies has achieved ROE higher than the S&P 500 companies, and three of the companies have done worse than the rest of the water transportation and transportation segments. The ROIC of the tanker industry (7.16%) is even worse compared to other segments of the economy. Teekay seems to be the only company doing a fair job (12.27% ROE and 9.67% ROIC), but still given the risk involved in spot trading an ROE close to 15% would be better. Nordic American Tankers and Knightsbridge Tankers seem to be the best of the rest in terms of ROE (10.23% and 9.31% respectively) and ROIC (8.90% and 8.54% respectively), with Frontline having similar results (11.19% ROE and 7.38% ROIC). Stelmar and General Maritime cannot really be judged yet since they recently became public, and it remains to be seen whether this helped them or not. Nevertheless their past performance, especially in ROIC (7.79% and 6.11% respectively) terms leaves a lot to be desired for, although in line with the industry average. OSG and OMI seem to have the lowest ROE (3.82% and 4.77% respectively) and ROIC (6.12% and 2.78% respectively), which is somewhat misleading since in the last couple years these companies have yielded much better results than the past and they have undergone major changes.

All the companies must do a better job in order to create shareholder value. The surprising thing to note is that the beta of the industry is below 1 which means that the market considers tanker stocks to move in opposite directions to the rest of the economy. This has the effect of lowering the WACC, thus the low ROE and ROIC can still create value. As the companies mature and realize their potential as industry leaders, they will have to generate higher returns since the perceived risk profile of these companies will change and investors will demand better results. It might be worth taking a look at Appendix D, which contains the same ratios presented in Figure 23, but for each company individually, in order to see the progress made in the last five years. The industry might not be there yet in terms of ultimate performance, but it has made great strides.

Chapter 8: Conclusion

8.1 - Final Comments on the Tanker Companies

Company Specific Remarks

Each company has its own fleet characteristics, chartering policy, business strategy, vision and financial plan. The valuation assumptions and results have highlighted the strengths and weaknesses of each company. This section puts everything together in a final effort to judge the promise of each company in light of their current performance and future prospects:

- **Teekay**

Teekay is the largest shipping company of the group, in terms of market capitalization, and has a young specialized fleet, dominant in the Aframax and shuttle tanker markets. The majority of its Aframax vessels trade spot, while the shuttle tankers are employed under long-term charters. The Aframax vessels are the workhorse of the tanker markets and provide the greatest flexibility in terms of port access and trade routes. Therefore, it is not surprising that the Aframax freight rates are less volatile than VLCCs. The choice of expansion to the shuttle tanker market is interesting and provides Teekay with a cushion for earnings, since the shuttle tankers are under period employment, in an effort to make Teekay's revenue less volatile. Furthermore, they provide an option for Teekay in the future to convert the Aframaxes into shuttle tankers instead of disposing of older tonnage, depending on market conditions. Teekay also seems to have taken advantage of the access to the capital markets by proving it can raise capital even in bad times. This could be the key in continuing the consolidation in the tanker industry and allow Teekay to benefit from a possible liquidity crunch. According to the DCF model the markets seem to slightly undervalue Teekay, while the comparables valuation indicates a significant underpricing. In my opinion, at this time Teekay's stock is fully valued and as freight rates and asset values drop, Teekay could trade at even larger price to NAV premium. The financial analysis shows that although Teekay certainly manages cost competently, it has not generated significant direct cost savings relative to its competitors. Rather, the economies of scale have benefited Teekay in providing it with improved customer relationships, direct access to charterers and better fleet utilization. This shipping cycle is critical. Although there is no danger of Teekay going under, quite the contrary, some investors might be disappointed if they bought into the stock in the first half of 2001. On the other hand, the next decade for tankers is expected to be better than the previous one and Teekay will surely be the industry leader in terms of growth and consolidation.

- **Nordic American Tankers and Knightsbridge Tankers**

These two companies are unique investment vehicles. In a way, although these companies are pure tanker plays, it can be convincingly argued that they are not really peers to the rest of the tanker group. They are a self-liquidating fund that has all of its vessels in long-term bareboat charters to an oil major. The advantage of such a structure, especially in lieu of the floor rate and escalation clauses, is that it provides a stable income stream, while maintaining part of the upside in the markets. Nordic American Tankers and Knightsbridge Tankers provide a passive investment strategy and benefit from the good terms of the deal. On the other hand, the future of these companies is limited. Part of the value is a bet on whether the oil majors will renew the charters. At the same time, there is inherent speculation as to what price the vessels can be disposed at, whenever liquidation comes, i.e. in 2004 or 2011. The dividend payments transfer

value from the company to its shareholders. Therefore, there is constant leaking in value which is balanced by the option to renew the charters and the price the vessels can fetch in the market if liquidation is in order. Given the tax disadvantage of dividends and the small amount of money involved by Wall Street standards, such a deal could have been more successful with a private equity structure or as a private company altogether. Moreover, these companies are the ones that can afford to be the most highly leveraged but on the contrary they have the lowest net debt to capitalization ratios. The DCF results and comparables show the market has not yet decided on whether the oil majors will renew the bareboat charters. In the meantime, these companies have managed to appeal to investors who are content in owning an income stock in an industry with small real growth.

- **Stelmar**

Stelmar just recently went public in 2001. The interesting thing about this company is that its founder and primary owner Mr. Haji-Ioannou had a clear focus from the inception of the company: to take the company public in order to grow beyond the natural limits of a privately held enterprise. Stelmar also has a distinct operating strategy aimed at a low-cost structure and extensive time charter coverage. In this way, Stelmar believes that it can provide a more stable stream of earnings to its investors and allow the company to pursue its expansion policy without any hindrances. Furthermore, this has allowed Stelmar to leverage the company more compared to its peers, without really increasing the risk of the debt on its balance sheet. Stelmar's fleet operates in the specific niche markets of the Handysize and Panamax size sectors and is one of the largest operators of such tonnage. The product tanker sector has historically been less volatile than crude tankers and the modern tonnage of Stelmar is a definite advantage in light of the IMO phase-out schedule and the relatively old age profile of product tankers. It seems that the DCF model provides results very close to the market price, while the comparables price indicates that Stelmar stock is undervalued relative to its competitors. The IPO price also seems to be in line with the valuation results. As the financial analysis showed, Stelmar has indeed managed to control costs much better than its competitors and has capitalized on its equity offering by doubling the size of its fleet. Moreover, I think Stelmar's stable income stream in 2002 when the freight rates for all tanker sectors are plummeting, will create a favorable impression on Wall Street. Only a few days ago, in April of 2002, Stelmar has issued additional stock to finance the acquisition of two more Panamax newbuildings. The significance of this is that Stelmar has used its access to the equity markets to expand at a time when many private companies are trying to cut losses. Stelmar is well on its way to become the premier product tanker operator in the world, and its strategy for the moment seems to work.

- **General Maritime**

General Maritime is also a newcomer in the public equity markets, going public shortly after Stelmar. General Maritime is different, in the sense that it developed from scratch into your typical tanker operator, with a fleet focus and strong backing by private investors in Wall Street. The IPO has enabled the company to double its size and transform into a corporate shipping group intent in consolidating the industry and establish a significant market presence in the Aframax and Suezmax sector. It has a policy of not investing in newbuildings, but rather on modern second-hand tonnage. Furthermore, most of the vessels are employed in the spot market. In a way, General Maritime seems to be the closest to the typical private company, which engages in asset play to renew its fleet and/or complement its freight revenue. The DCF model and comparables valuation show that General Maritime might be slightly undervalued by the market, but cannot justify the USD 18 per share offering price of the IPO. In terms of financial

performance, General Maritime has not done better than industry leaders like Teekay or Frontline or even the newcomer Stelmar. I think that General Maritime is a company in transition, from operating with a private shipping company philosophy to transforming to a clear corporate structure. General Maritime must maintain its fleet focus and grow its fleet in order to improve fleet utilization and expand customer ties. Should it manage to stay on track in the declining freight rate environment, its access to capital markets might give General Maritime an edge relative to private companies. If the stock collapses, a takeover attempt or a private buy out is not out of the question.

- **Frontline**

Frontline is the largest company of the group in terms of tonnage. The aggressive nature of its CEO and principal shareholder, Mr. Fredriksen, has allowed the company to develop into the largest operator of Suezmax and VLCC vessels in the world, during a very short time. Frontline's strategy of outsourcing all management functions except chartering and financing has proved successful and allowed the company to contain costs relative to its competitors, as the financial analysis showed. At the same time, Frontline is hoping to capitalize on its size by employing its vessels spot, through pooling arrangements. The DCF model points to the market fairly valuing Frontline, while the comparables valuation indicates that the stock might be undervalued. In my opinion, although Frontline has the greatest potential of the group due to its successful strategy, and size, composition and age of its fleet, it is a tricky company for investors. On one hand, the larger size of its vessels, and especially its VLCCs, are subject to a great variation in freight rates. The fact that the vessels trade in the spot markets, only exacerbates the situation. This could create liquidity problems if a downturn is prolonged. Furthermore, the ownership structure is suspect, in the sense that Mr. Fredriksen essentially controls the company. This could create conflicts of interest, especially in transactions involving affiliated companies owned by management. Frontline is in a position to be the industry lead consolidator of larger tankers and is expected to go down that road at full speed. The question is whether on this journey any games will be played on the back of smaller shareholders. A possible secondary issue that would relinquish control to the market could solve this problem and allow Frontline to be valued higher than its current price. At the same time, this would expand the equity capital of the company which could serve as the basis for greater expansion and access to the capital markets.

- **OMI**

OMI is one of the smallest companies of the group in terms on fleet size. In the space of a few years, OMI has managed to re-focus its strategy and offer to investors a shipping company with a clear heading and a transparent corporate structure. OMI's chartering policy is a mix between spot trading and time charter employment. In this way management believes that OMI will be able to provide a stable earnings stream, ala Stelmar, while at the same time maintain a significant operating leverage to take advantage of improvements in freight rates. The concentration of its fleet in the product tanker sector and Suezmax vessels is evidence of the management's effort to diversify, while maintaining its focus. The financial analysis shows that OMI must do a better job in pursuing its strategy but the improvement in the last few years is evident and on the right track. The DCF model results are very close to the market price, while the comparables valuation indicates that OMI's stock might be undervalued. In my opinion, OMI is a small company that is trying to grow and at the same time appeal to investors. If the company is successful and the market consistently values OMI above NAV it will then be able to capitalize on its access to the capital markets and increase its fleet size significantly. Should the

price stays below NAV for a long time OMI could be a possible takeover target by Frontline, something that had been rumored in 1999 when OMI was in dire straits.[340]

- **OSG**

OSG is a very well respected shipping group, the only company domiciled in the US, and with a big, modern and diversified fleet. In fact, it can be argued that OSG is perhaps a little too diversified. It has a significant presence in product tankers, Aframaxes, VLCCs and Jones Act vessels. OSG seems to be doing a very good job in the commercial side of the business, employing its vessel in the spot market through successful pooling arrangements, but as the financial analysis shows, it faces two major drawbacks. OSG seems to do a poor job controlling costs, especially overheads, and is the only company that pays corporate income taxes to the IRS. Both the DCF results and comparables valuation indicate that the stock is probably overvalued by the market. OSG is nearing the completion of its fleet renewal program which will provide the company a solid asset base for years to come. This will probably allow OSG to better manage its assets and improve its returns. In my opinion, I would not expect OSG to be a lead consolidator in the industry, but rather continue the strategic repositioning of its assets and at some point in the future disposing of its US tonnage and changing its domicile to a tax haven, in-line with the rest of the sector. At the same time, this would allow the company to grow its core fleet. The current downturn in freight rates might expose OSG to its weaknesses and lead to a lower stock price, but for the long-term, if the company overcomes its two drawbacks, OSG is in good shape.

IPO remarks

It is interesting to look at the recent IPOs in 2001 of Stelmar and General Maritime. By summarizing the specifics and the differences, a lot of the peculiarities of tanker IPOs will become apparent. Figure 24 and Figure 25 show the "guts of the deal" for each company.

Guts of the Deal

Company	Stelmar Shipping Ltd
Incorporated	Liberia
Underwriters	Jefferies & Co., Alpha Finance
Offering	7,000,000 shares of common stock
Pricing	$12-$14
Over Allotment Option	1,050,000 shares of common stock
Net Proceeds	$83,400,000
Use Of Proceeds	Finance Equity Portion of $216 million purchase of Osprey's 10 Product tankers
Advisors	Drewry Shipping Consultants Ltd.
Legal Adviser	Company: Seward & Kissel LLP Underwriters: Cravath, Swain & Moore
Accountants	Arthur Andersen
Stock Symbol	NYSE: SJH
Flag of Vessels	Panama (2), Cyprus (9), Singapore (6), Liberia (2), Bahamas (2)
Major Customers	SK Shipping, NYK Line, Qatar Oil, Pertamina, Glencore (total 61%)
Average age	7.4 years (excluding 4 x 70,000 newbuildings)
Operating Strategy	75% Time Charter
Total Tonnage	1,455,021 dwt (including newbuildings)
Number of Vessels	21 (includes 10 Osprey ships)
Debt to Total Capital	66.3% Post offering
Commercial Management	In House
Technical Management	In House
Dilution	65%
Valuation Method	Book Value
Pricing to Book Value	81%
Dry-Docking Amortization	2 1/2 years
Depreciation	Straight Line 25 years
Average Cost of Bank Debt	3.1% (pre offering)
Total Debt	$340.8 million (post offering)

Figure 24: The Details of the Stelmar IPO[341]

[340] http://www.tradewinds.no.

[341] Nicolai Heidenreich, "This Little Piggy Goes to Market," Marine Money Magazine (March 2001):29.

GUTS OF THE GENERAL MARITIME IPO	
Company	General Maritime Ship Holding Ltd.
Incorporated	Marshall Islands
Underwriters	ING Barings, Lehman Brothers and Jefferies&Co.
Offering	7,000,000 shares of common stock
Pricing	$15-$19
Over Allotment Option	1,050,000 shares of common stock
Net Proceeds	$108.2m - $124.8m*
Use Of Proceeds	Reduce debt; Corporate operations, acquisitions
Technical Advisors	Clarkson Research
Legal Adviser	Company: Kramer, Levin, Naftalis & Frankel LLP Underwriters: Stroock & Stroock&Lavan LLP
Accountants	Deloitte & Touche
Stock Symbol	GMR
Flag of Vessels	Marshall Islands, Liberia, Malta, Bermuda
Major Customers	Chevron, Citgo, Skaugen, ExxonMobil, Texaco
Average age	10.6yrs
Operating Strategy	Largely spot Aframax operators, some TC/BB, Atlantic Basin
Total Tonnage	1564465dwt
Number of Vessels	20 post-offering
Debt to Total Capital	61% pre-offering
Commercial Management	in-house
Technical Management	in-house and Universe Tankships
Dilution	25%
Valuation Method	Book Value
Pricing to Book Value	n/a
Dry-Docking Amortization	2-5 year survey cycle
Depreciation	25year straight line
Average Cost of Bank Debt	8.20%
Total Debt	unknown at this time

Figure 25: The Details of the General Maritime IPO[342]

Stelmar went public in March of 2001 and offered 8 million shares (including the over-allotment option) at USD 12 per share, with gross proceeds of USD 96 million and net proceeds of about USD 88.5 million.[343] This implies that the direct underwriting fees were around USD 7.5 million, about 7.8% of the gross proceeds. The lead underwriter was Jefferies with Alpha Bank of Greece co-sponsoring the deal. The goal of the offering was to finance the acquisition of 10 product tankers in an effort to grow the company and keep the focus of Stelmar on the niche markets it operated. The company was listed on the NYSE under the symbol SJH. General Maritime went public in June of 2001 and offered 8 million shares (including the over-allotment option) at USD

[342] Urs M. Dur, "General Maritime: Going Public," Marine Money Magazine (April 2001): 22.
[343] Nicolai Heidenreich, "This Little Piggy Goes to Market," Marine Money Magazine (March 2001):32.

18 per share, with gross proceeds of USD 145 million and net proceeds of about USD 133.5 million.[344] This implies that the direct underwriting fees were around USD 11.5 million, about 7.9% of the gross proceeds. The deal was sponsored by Jefferies, ING Barings and Lehman Brothers. The goal of the offering was to finance the acquisition of 10 Aframax vessels in an effort to grow the company and keep the focus of General Maritime in the mid-size crude vessels sector. The company was listed on the NYSE under the symbol GMR. Both deals were a success, in the sense that they were subscribed in full and the over-allotment options were exercised and were completed in buoyant freight markets and a receptive Wall Street community. The companies also seem to have comparable direct costs at about 8% of the gross proceeds. The money raised in both cases was used to finance unaffiliated vessels in-line with each company's market focus. This is really where the similarities end.

At the time of the offering, Stelmar stock was offered at around a 20% discount to NAV[345] and it does not seem it was subject to significant underpricing, since the stock in the first month of trading did not rise above USD 14 per share.[346] Of course, the discount to NAV is really subjective since it depends to a large degree on how the company computes net debt and ship values. During the second month of trading, the stock did rise to a USD 20 per share level, but since then it has retracted and traded in April of 2002 at about USD 15.80.[347] In light of the DCF price calculated at USD 15 per share, it seems that Jefferies did a good job of pricing the issue. Of course there was some underpricing, but for the small size of the issue and in hindsight, looking at the subsequent stock performance, this was small. At the same time, Stelmar made sure that the ownership profile post-issue would relinquish control by Mr. Haji-Ioannou, something that in combination with the business strategy of the Stelmar made the company attractive to investors. Stelmar seems to have used the money as promised, and for the moment is on track to take advantage of the falling freight rates and continue to expand its fleet in order to become the largest medium range product tanker operator. A recent offering of additional shares in April of 2002 at USD 14 per share[348] proves that Stelmar has indeed benefited from its access to the capital markets and is broadening its equity base even more. In my opinion, the Stelmar IPO was a success for everyone involved. The original shareholders were paid a fair amount, Stelmar doubled its fleet successfully and was better positioned for the future, the investors got an upside and the investment bankers pocketed their fees. Had Stelmar opted for a debt issue, the net debt to capitalization would increase to over 80% something that could create liquidity problems in a down market. Stelmar has now achieved the coveted access to the capital markets and has rewarded investors. In the future, the time-charter policy of Stelmar will prove to be invaluable and set it apart from its competitors.

The General Maritime offering could not be more different. At the time of the offering, the General Maritime stock was offered at a premium to NAV of about 25%[349] and never traded over the USD 18 per share after that.[350] In fact it dropped to USD 14 per share after two months of trading, reached USD 8 per share by the end of the year, and in April of 2002 traded around the

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[344] Urs M. Dur, "General Maritime: Going Public," Marine Money Magazine (April 2001): 17.
[345] Nicolai Heidenreich, "This Little Piggy Goes to Market," Marine Money Magazine (March 2001):27.
[346] http://www.yahoo.com.
[347] Ibid.
[348] http://www.tradewinds.no.
[349] Urs M. Dur, "General Maritime: Going Public," Marine Money Magazine (April 2001): 18.
[350] http://www.yahoo.com.

USD 13 per share level.[351] The DCF model price cannot really justify the offering price, since it calculated a price of about USD 13 per share. It seems that not only underpricing was not observed, but rather a scandalous overpricing took place. To make matters worse, the company offered only 25% of the company's share to the IPO investor's, but at least none of the original shareholder's owned a controlling stake. The underwriters did a poor job in valuing the company and the issue must certainly have left the investors with a sour taste. In my opinion, the General Maritime IPO was an attempt for initial private equity investors to cash out of the venture with Mr. Georgiopoulos. The issue was perfectly timed to coincide with a peek in freight rates and the valuation probably assumed that rates would remain high for the future as well. The underwriters of course got their fat fees, but investors did not really understand what they were getting themselves into. The story might have been a good one, in terms of fleet specialization and business strategy, but the associated risks were not properly explained or captured in the offer price. What's worst, many of General Maritime's peers traded at much smaller premiums to NAV, or no premiums at well. The underwriters and management probably pushed the spot market operations, as an ability of the company to capitalize on upswings, too far, and investors bought into that story without asking questions. Had they looked at the Stelmar IPO maybe they would have wished they had put the money elsewhere. From the company's perspective going forward the equity offering was not a failure. The company managed to double its size, and despite the disappointment for investors, the short-term memory of US investors might not deter General Maritime from tapping the US capital markets again, either in the form of a secondary offering or junk bonds.

General Remarks

This thesis apart from valuing the tanker sector, set out to answer whether equity has helped the tanker companies realize their goals, whether equity has been the optimal financing choice, what motivates companies to go public and what are the future prospects for the sector and private shipowners considering equity offerings. This section will summarize these questions which have been answered in various parts of this paper, looking at the tanker sector as a whole:

- It is important to understand that although all of the tanker companies investigated were pure tanker plays, each company is different and has its own strengths and weaknesses. For example Nordic American Tankers and Frontline have a completely different strategy and risk profile. Therefore, although it is constructive to look to the tanker sector as a group to draw some general conclusions about the market, when it comes down to investing it is more important to understand what distinguishes each company from its peers and what are the implications of the chosen fleet mix, chartering policy, strategy, growth prospects and capital structure. Understanding the key value drivers is the most important contribution of the DCF model as a tool to investment, in a quest to time investments and discover the industry winners.
- The most important advantage equity offers to the public shipping companies is the access to the US capital markets. Despite the fact that a private shipowner might be unwilling to relinquish control, going public provides a company with tremendous flexibility in its financing options. By broadening its equity base, the company can safely assume more debt and lead consolidation in order to create shareholder value through a

[351] Ibid.

dominant market share. Of course, the capital markets will punish the bad performers and therefore it is critical that companies contemplating going public do it the "right way" with a clear strategy and a definite commitment. Although the tanker companies might have different motives for going public, the flexibility issue should be the most compelling argument.

- Nevertheless, life as a public company also has its problems. A public company requires a completely different mentality than a private shipping group. In the private shipping group, the shipowner can engage in extensive asset play without any accountability and is primarily interested in his own pocket. In a public company the focus must be the shareholders, which many times have no understanding of shipping. The transition from private to public might be difficult since a new mindset is required from top to bottom. Many investors are looking for companies that are growing and have good earnings. Shipping seems to deviate from that norm with its inherent volatility. The management of a public company has to balance the need for growth with the stable earnings, while at the same time strategically position its assets. If markets are good and the company sells a vessel, investors assuming management is good, would also like to sell the stock. Therefore, the bread-and-butter of many private shipowners, namely asset play, is not really a strategy. Such a strategy would probably be better suited to a self-liquidating private fund with clear and stated objectives.
- Compared to other sectors of the economy, the tanker industry's financial performance and risk/reward profile in the last decade have been poor. Although this is certainly the case, the sector as a whole has made significant steps forward in a relative short time period, and there are positive signs in the horizon. For one, most of the public tanker companies have realized that the main focus must be the investor. There is an effort to make investors understand the risks involved in shipping and the quality of most annual reports is very good. In the same context, many companies have taken a critical view of their performance and have modified their strategies to make shipping more attractive to Wall Street.
- Bankers must also do their homework and cover the industry more extensively and with greater responsibility. They must really inform investors instead of promoting companies they do investment banking deals with. Investors also have a role to play. They must understand that shipping is not suitable for momentum investing, but rather timing is much more important. At the same time, they must reward the good performers and punish companies that do not deliver. This is the only way to eventually separate the good from the bad. Only then liquidity in shipping stocks is likely to increase substantially.
- It is too early to judge whether the tanker sector has managed to capture Wall Street's attention. For the moment, one of the obstacles is the small size of the companies. Unless a company crosses the USD 1 billion market cap level, few institutional investors will really take notice. The answer to that is consolidation. As the tanker companies grow and achieve a significant market presence, Wall Street will pay attention. At the same time, the sooner Wall Street understands shipping and assigns to the companies prices above NAV, the sooner consolidation will occur. Consolidation is critical in transforming the whole tanker markets and only then the private shipowner will be at a serious disadvantage, lacking access to the capital markets.

- As the recent IPO by Tsakos Energy Navigation indicates, the tanker sector is still active and more companies might enter the public arena soon. In my opinion, in the next ten years, the real winners will have emerged. The losers will be absorbed and the tanker industry will become more rational, demonstrating better performance and achieving higher valuations.

8.2 - Extensions and Improvements

This paper has provided a great amount of information on the tanker sector and has created the foundation for a solid valuation tool for public tanker companies. The work in this thesis can be extended or improved by pursuing a number of different avenues:

- Any valuation or financial analysis of a company ultimately depends on the available information on a company's financial numbers, which is communicated to the public through the firm's financial statements and SEC fillings. The purpose of accounting analysis is to evaluate the degree to which a firm's accounting practices capture the underlying business reality.[352] The next step would be to recast the firm's accounting numbers using cash flow and footnotes before proceeding to financial ratios and valuation. Accounting analysis is very important and many times has been neglected even by professional analysts, as the recent Enron scandal indicates. The value of accounting analysis lies in identifying cases where management has exceeded its discretion and reported numbers are significantly biased. In this way, a skillful accountant could alter the financial statements to produce a more accurate picture of the company's operations.
- The qualitative analysis could be further improved by delving deeper into each company's business strategy. This would require visiting the companies under investigation and speaking with senior management about their opinions. This process would be similar to the due diligence investment bankers and consultants go through before advising clients. It is the only way to really understand what makes each company tick. Of course, this in practice would require much more time and connections to the shipping companies. Do not forget that shipping companies, even public corporations, are reluctant to divulge every detail of their operation. It is interesting that I sent e-mails requesting information to all eight companies and only two bothered to reply, Teekay and Knightsbridge Tankers.
- The DCF model, although definitely robust, does not really include any forecasting in a rigorous statistical manner. This paper could be easily combined with an econometric modeling of the underlying variables that affect the results. For the sake of simplicity, a triangular probability distribution was assumed for all underlying assumptions, specifying the most likely value and a lower and upper limit. Instead, I could have collected more extensive industry data and constructed statistical models that fit the data in order to forecast the results. Moreover, these variables could be correlated in order to further improve accuracy. The sensitivity analysis would be the guide in pointing out which variables need more investigation. The combination of the DCF model with a full-fledged statistical analysis of the assumptions would indeed be a very powerful valuation predictor.

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[352] Krishna G. Palepu, Paul M. Healy, and Victor L. Bernard, Business Analysis & Valuation, 2nd ed. (Cincinnati: South-Western College Publishing, 2000), 3-1.

- This thesis is limited in its scope in the sense that it only covers public tanker companies. Given more time and resources, the comparison could be extended to other public companies in other countries, most notably Norway. Furthermore, private companies could also be included to reach conclusive arguments about the effect of equity on tanker companies. In practice, this could be almost impossible, given the reluctance of private shipowners to reveal their tricks of the trade.
- As explained previously, the DCF model is based on NPV calculations. Therefore, by definition the DCF model is a static model that does not account for management flexibility in a changing business environment. In an industry like shipping that is very volatile, shipowners face difficult decisions all the time. They have to decide which charter is better at any given time, when to fix spot, when to look for period employment, when is the right time to buy or sell an asset and whether it is time to lay-up or scrap older tonnage. Volatility is not bad especially if it can be quantified. There exists a financial theory, namely real options, which is capable of modeling real-life investment and operating decisions in a way similar to financial options. In its simplest form, the value of a ship can be modeled as a call option on freight rates. The mathematics for such an approach is very complicated. Nevertheless, real options as a concept is a powerful tool in quantifying uncertainty and understanding why some firms make investments that an NPV analysis would reject. A real options extension to the DCF model developed, would be able to quantify the so-called "gut feeling" of many successful shipowners.

Appendix A: Market Data

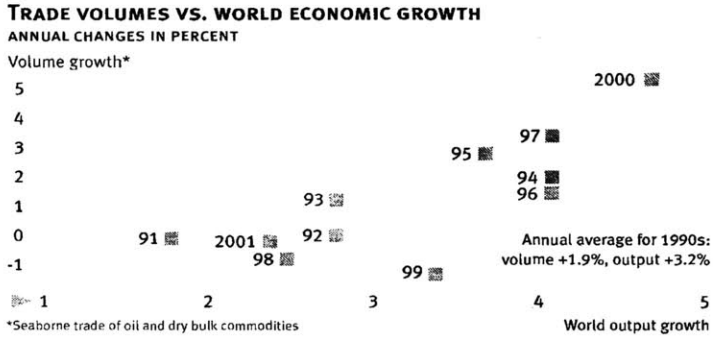

Figure A1: Trade Volume vs. World Economic Growth[353]

ANNUAL GROWTH IN REAL GDP
Percentage change from previous year

	2000	2001	2002
ADVANCED ECONOMIES	3.9	1.1	0.8
USA	4.1	1.0	0.7
Japan	2.2	-0.4	-1.0
EU	3.4	1.7	1.3
DEVELOPING COUNTRIES	5.8	4.0	4.4
Africa	2.8	3.5	3.5
Asia	6.8	5.6	5.6
M East and Europe	5.9	1.8	3.9
W Hemisphere	4.1	1.0	1.7
TRANSITION COUNTRIES	6.3	4.9	3.6
C and E Europe	3.8	3.1	3.2
Russia	8.3	5.8	3.6
WORLD	4.7	2.4	2.4

Source: IMF Dec 2001

Figure A2: Annual Growth in Real GDP[354]

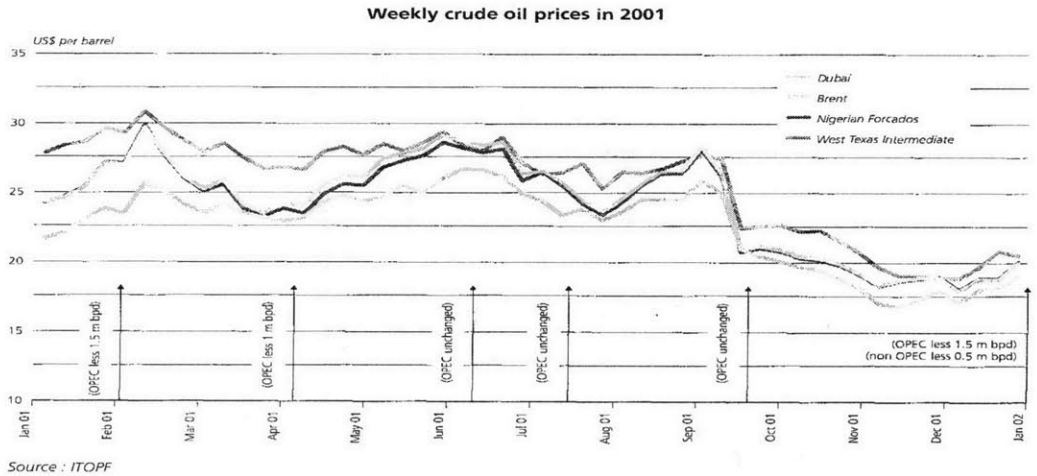

Figure A3: Weekly Crude Oil Prices in 2001[355]

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[353] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 3.
[354] Ibid., 4.
[355] BRS, Shipping and Shipbuilding Markets 2002 (Paris: Barry Rogliano Salles Shipbrokers, 2002), 28.

TANKER FLEET BY SIZE
Mill dwt

Start	10-69,999	70-119,999	120-199,999	200,000+	Total
1992	50.1	44.7	38.2	122.4	255.4
1993	50.6	45.7	40.6	124.8	261.7
1994	50.9	45.7	40.9	129.4	266.9
1995	51.2	46.8	40.8	126.2	265.0
1996	51.2	47.1	40.1	124.8	263.2
1997	52.4	48.3	39.8	126.7	267.2
1998	53.3	49.7	40.2	125.5	268.7
1999	54.6	52.3	41.5	125.2	273.6
2000	56.6	55.9	41.6	127.1	281.2
2001	57.5	56.5	42.4	127.7	284,1
2002	59.1	56.9	41.6	125.9	283.5

Figure A4: Tanker Fleet by Size[356]

AGE PROFILE OF TANKERS
Mill dwt - 1.1.2002

	YEAR BUILT					
	-81	82-86	87-91	92-96	97-2001	Total
10-69,999	21.7	13.9	8.1	8.7	6.7	59.1
70-119,999	13.4	6.0	10.6	11.4	15.5	56.9
120-199,999	10.8	1.6	7.2	9.6	12.4	41.6
200,000+	34.7	4.0	16.1	37.0	34.1	125.9
Total	80.6	25.5	42.0	66.7	68.7	283.5

Figure A5: Age Profile of Tankers[357]

TANKERS SOLD FOR SCRAPPING BY SIZE
Mill dwt

	10-69,999	70-119,999	120-199,999	200,000+	Total
1992	1.4	2.5	1.4	5.1	10.4
1993	0.6	2.7	1.4	6.0	10.7
1994	0.6	1.3	1.3	8.6	11.8
1995	0.9	0.5	1.4	7.8	10.6
1996	1.0	0.6	1.1	4.1	6.8
1997	0.3	0.7	0.4	2.0	3.4
1998	0.5	0.7	1.6	4.2	7.0
1999	0.6	2.6	2.9	10.3	16.4
2000	2.0	1.7	2.6	7.1	13.4
2001	1.2	1.9	3.7	8.3	15.1

Figure A6: Tanker Scrapping Activity by Size[358]

ORDERBOOK BY YEAR OF DELIVERY – TANKERS
Mill dwt – 1.1.2002

Size	Total on order	Delivery schedule		
		2002	2003	2004+
10-69,999	10.1	3.3	4.9	1.9
70-119,999	16.0	5.2	8.8	2.0
120-199,999	9.5	3.8	4.2	1.5
200,000+	26.4	13.8	9.6	3.0
Total	62.0	26.0	27.6	8.4

Figure A7: Tanker Orderbook by Year of Delivery[359]

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[356] R.S. Platou, The Platou Annual Report 2002 (Oslo: R.S. Platou Shipbrokers a.s., 2002), 36.
[357] Ibid., 40.
[358] Ibid., 38.
[359] Ibid., 41.

Comparative Phasing-out schedule for single-hull tankers between IMO & OPA 90

	IMO		OPA 90	
Year	non-SBT	SBT	SH	DB or DS
To be deleted in	pre-Marpol : over 20,000 twt crude & 30,000 dwt products	Marpol : over 20,000 dwt crude & 30,000 dwt products	over 30,000 gt	over 30,000 gt
2001			1978	1973
2002			1979	1974
2003	1973	1973	1980	1975
2004	1974-1975	1974-1975	1981	1976
2005	1976-1977	1976-1977	1982	1977
2006	1978-1979-1980	1978-1979	1983	1978
2007	1981 & after	1980-1981	1984	1979
2008		1982	1985	1980
2009		1983	1986	1981
2010		1983	after 31/12/1986	1982
2011		1985		1983
2012		1986		1984
2013		1987		1985
2014		1988		1986
2015		1989 & after		after 31/12/1986
	No later than anniversary date		At anniversary date	

Specific schedules for smaller ships have not been included in this table.

Figure A8: Phasing-Out Schedule of Single Hull Tankers (IMO vs. OPA 90)[360]

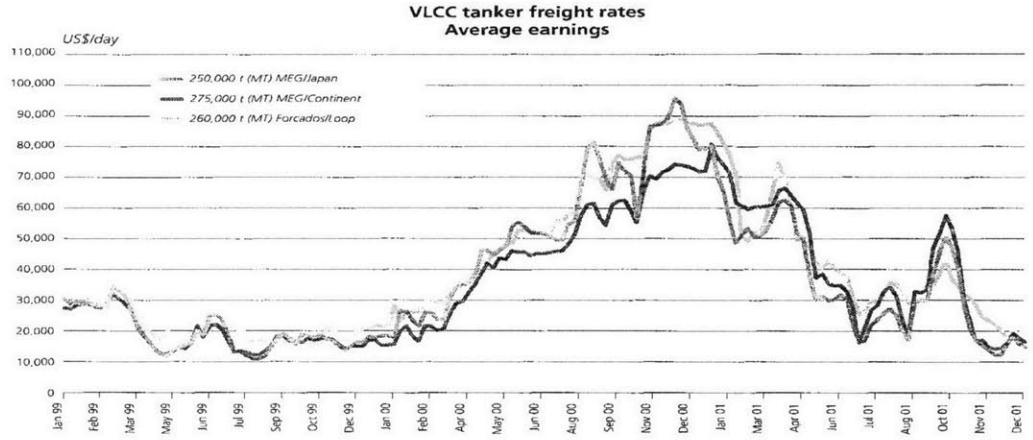

Figure A9: VLCC Average Freight Rates (TCEs)[361]

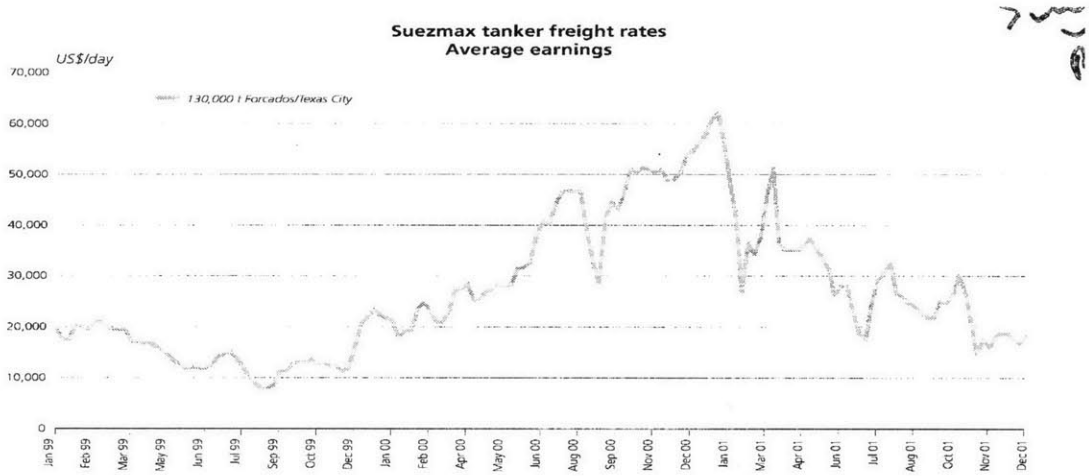

Figure A10: Suezmax Average Freight Rates (TCEs)[362]

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[360] BRS, Shipping and Shipbuilding Markets 2002 (Paris: Barry Rogliano Salles Shipbrokers, 2002), 34.
[361] Ibid., 29.
[362] Ibid., 30.

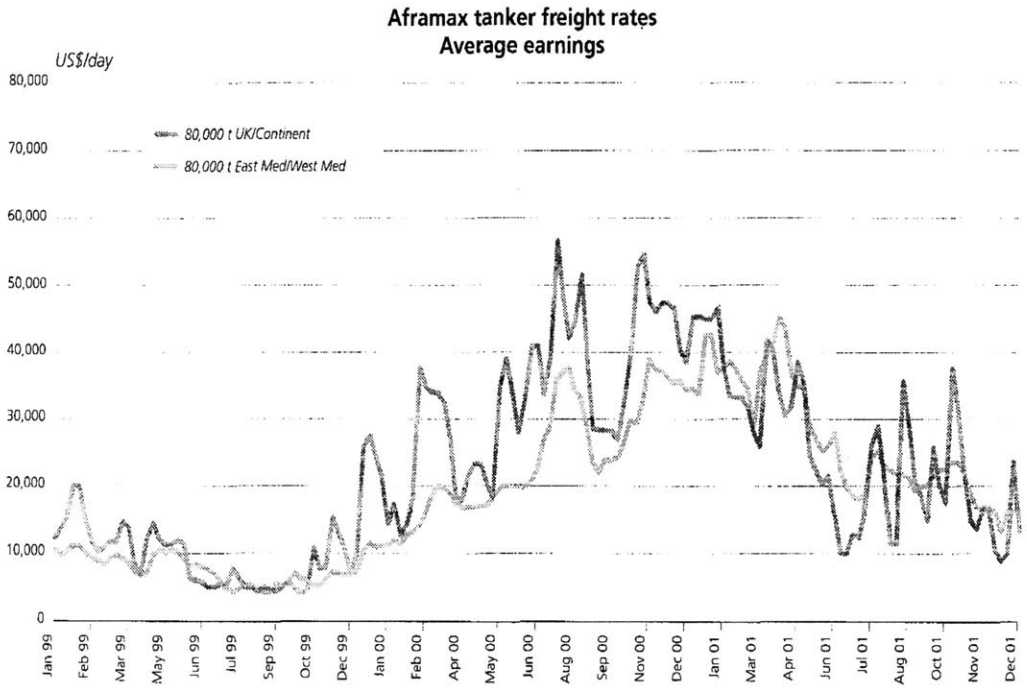

Figure A11: Aframax Average Freight Rates (TCEs)[363]

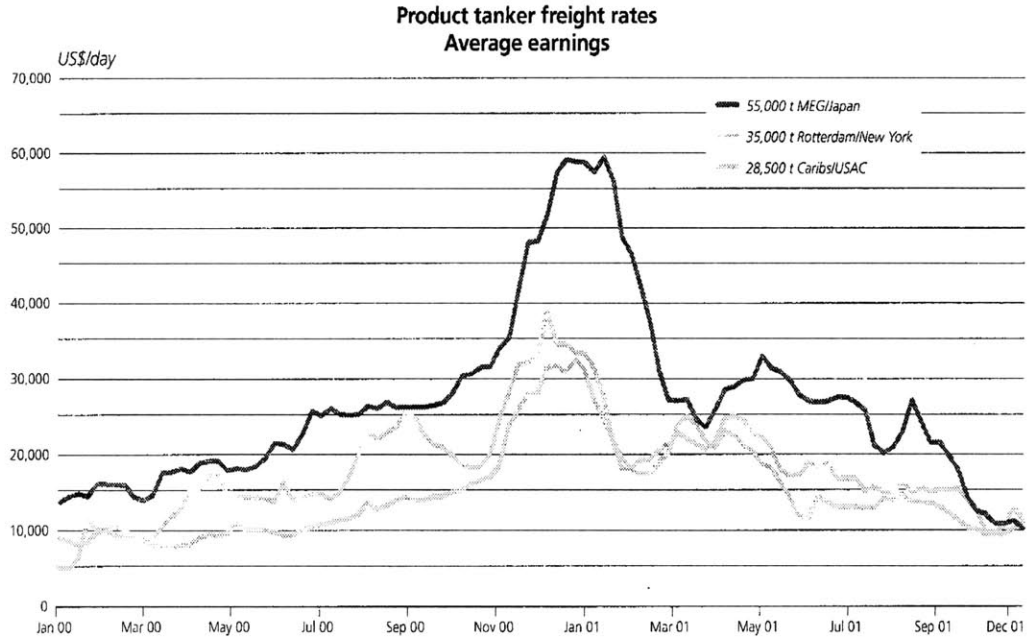

Figure A12: Products Average Freight Rates (TCEs)[364]

[363] Ibid., 31.
[364] Ibid., 38.

SECOND HAND PRICES OF 5 YEAR OLD TANKERS

Mill $

Start	MR Product	Aframax	Suezmax	VLCC
1992	23.5	32.0	37.3	64.5
1993	17.0	26.0	27.0	51.0
1994	20.0	31.0	32.0	55.0
1995	21.0	30.0	33.0	53.0
1996	24.0	31.0	36.0	54.0
1997	24.0	32.0	38.0	60.0
1998	25.0	37.0	42.0	65.0
1999	16.0	26.0	36.0	47.0
2000	19.0	24.0	35.5	53.0
2001	25.5	41.0	49.0	70.0
2002	21.0	33.0	40.0	61.0

Figure A13: Second-Hand Prices for Tankers[365]

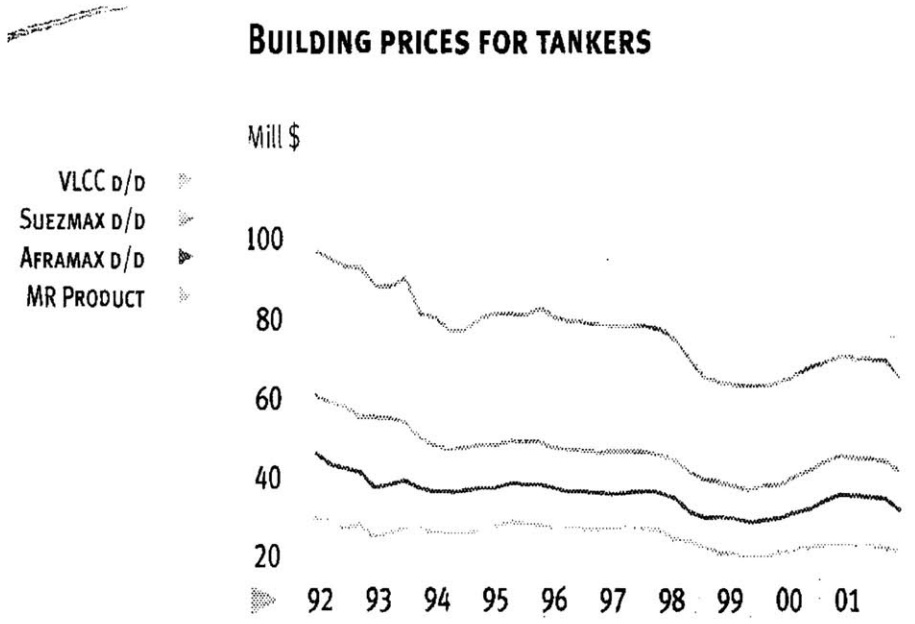

Figure A14: Newbuilding Prices for Tankers[366]

[365] Ibid., 41.
[366] Ibid., 10.

APPENDIX B: Financial Statements

INCOME STATEMENT

	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	406,036	411,922	472,353	893,226	1,039,056
Voyage Expenses	100,776	93,511	161,915	248,957	249,562
Net voyage revenues	**305,260**	**318,411**	**310,438**	**644,269**	**789,494**
OPERATING EXPENSES					
Vessel operating expenses	70,510	84,397	123,475	125,415	154,831
Time charter hire expenses	10,627	29,666	38,351	53,547	66,019
Depreciation and amortization	94,941	93,712	85,374	100,153	136,283
General and Administrative	21,542	25,002	33,773	37,479	48,898
Total operating expenses	**197,620**	**232,777**	**280,973**	**316,594**	**406,031**
INCOME FROM VESSEL OPERATION	**107,640**	**85,634**	**29,465**	**327,675**	**383,463**
OTHER ITEMS					
Interest Expense	(56,269)	(44,797)	(56,245)	(74,540)	(66,249)
Interest Income	7,897	6,369	7,303	13,021	9,196
Other Income (loss)	11,236	5,506	(5,016)	3,864	10,108
Total other items	**(37,136)**	**(32,922)**	**(53,959)**	**(57,655)**	**(46,945)**
Net income (loss) before extraordinary loss	**70,504**	**52,712**	**(24,494)**	**270,020**	**336,518**
Extraordinary loss on bond redemption	0	(7,306)	0	0	0
Net income (loss)	**70,504**	**45,406**	**(24,494)**	**270,020**	**336,518**
EPS					
Basic	2.46	1.46	(0.68)	7.02	8.48
Diluted	2.44	1.46	(0.68)	6.86	8.31
# of shares	**28895**	**31100**	**36287**	**39362**	**40496**
Average stock price	27.08	21.99	14.93	30.53	37.46
Average volume	18117	38433	81092	239842	297583
Average market capitalization	**782431**	**683889**	**541886**	**1201707**	**1516896**

BALANCE SHEET

ASSETS					
Current					
Cash and cash equivalents	87,953	118,435	220,327	181,300	174,950
Marketable securities	13,448	8,771	0	8,081	5,028
Restricted cash	0	0	0	0	7,833
Accounts Receivable	24,327	22,995	30,753	80,158	57,519
Prepaid expenses and other expenses	13,786	16,195	29,579	25,966	22,139
Total current assets	**139,514**	**166,396**	**280,659**	**295,495**	**267,469**
Marketable securities	13,853	5,050	6,054	33,742	16,026
Vessels and equipment					
At Cost	1,798,662	1,776,862	2,291,482	2,288,472	2,727,829
Accumulated Depreciation	500,779	557,946	624,727	680,756	801,985
Advances on newbuilding contracts	0	55,623	0		117,254
Total vessels and equipment	**1,297,883**	**1,274,539**	**1,666,755**	**1,607,716**	**2,043,098**
Investments in joint ventures	0	0	19,402	20,474	27,352
Other assets	8,933	6,235	9,814	16,672	26,757
Goodwill	0	0	0	0	87,079
Total assets	**1,460,183**	**1,452,220**	**1,982,684**	**1,974,099**	**2,467,781**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	16,164	11,926	20,431	22,084	24,484
Accrued liabilities	29,195	19,285	39,515	44,081	51,011
Current portion of long-term debt	52,932	39,058	66,557	72,170	51,830
Total current liabilities	**98,291**	**70,269**	**126,503**	**138,335**	**127,325**
Long-term debt	672,437	602,661	1,018,610	725,314	883,872
Other long-term liabilities	0	1,900	3,400	7,368	39,407
Total long-term liabilities	**672,437**	**604,561**	**1,022,010**	**732,682**	**923,279**
Total Liabilities	**770,728**	**674,830**	**1,148,513**	**871,017**	**1,050,604**
Minority interest	0	0	2,104	4,570	18,977
Stockholders' equity					
Capital Stock	261,353	330,493	427,937	452,808	467,341
Retained earnings	428,102	446,897	404,130	641,149	935,660
Accumulated other comprehensive (loss) income	0	0	0	4,555	(4,801)
Total stockholders' equity	**689,455**	**777,390**	**832,067**	**1,098,512**	**1,398,200**
Commitments and contigencies	0	0	0	0	0

CASH FLOW ITEMS

NWC	**(7,246)**	**7,979**	**386**	**39,949**	**4,163**
Change in NWC	-	**15,225**	**(7,593)**	**39,563**	**(35,786)**
Net cash flow from operating activities	**161,119**	**137,708**	**63,941**	**333,255**	**520,150**
Net cash flow from investing activities (CAPX)	**(202,900)**	**(60,454)**	**19,726**	**(79,439)**	**(355,612)**
Net cash flow from financing activities	**12,211**	**(46,772)**	**43,248**	**(292,843)**	**(170,888)**
(Decrease) increase in cash and cash equivalents	**(29,570)**	**30,482**	**126,915**	**(39,027)**	**(6,350)**

Figure B1: Teekay's Financial Statements (1997-2001)[367]

[367] Data compiled from Teekay's SEC fillings that can be found at http://www.sec.gov.

INCOME STATEMENT

	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	5,265,880	16,006,199	14,782,500	36,577,262	28,359,568
Voyage Expenses	0	0	0	0	0
Net voyage revenues	**5,265,880**	**16,006,199**	**14,782,500**	**36,577,262**	**28,359,568**
OPERATING EXPENSES					
Shipbrokers Commisions	47,081	184,781	184,781	185,288	184,781
Time charter hire expenses	0	0	0	0	0
Depreciation and amortization	1,707,807	6,831,039	6,831,039	6,831,040	6,831,040
General and Administrative	461,674	412,779	411,504	373,291	353,739
Total operating expenses	**2,216,562**	**7,428,599**	**7,427,324**	**7,389,619**	**7,369,560**
INCOME FROM VESSEL OPERATION	**3,049,318**	**8,577,600**	**7,355,176**	**29,187,643**	**20,990,008**
OTHER ITEMS					
Interest Expense	0	(43,781)	(1,767,449)	(1,770,808)	(1,770,808)
Interest Income	147,504	105,999	214,532	277,552	189,244
Other income (loss)	(330)	(10,306)	(27,583)	(25,423)	(22,968)
Total other items	**147,174**	**51,912**	**(1,580,500)**	**(1,518,679)**	**(1,604,532)**
Net income (loss) before extraordinary loss	**3,196,492**	**8,629,512**	**5,774,676**	**27,668,964**	**19,385,476**
Extraordinary items	0	0	0	0	0
Net income (loss)	**3,196,492**	**8,629,512**	**5,774,676**	**27,668,964**	**19,385,476**
EPS					
Basic	0.27	0.89	0.59	2.85	2.00
Diluted	0.27	0.89	0.59	2.85	2.00
# of shares	**11,813,850**	**9,706,606**	**9,706,606**	**9,706,606**	**9,706,606**
Average stock price	8.14	14.23	11.31	16.60	15.40
Average volume	0	0	0	0	0
Average market capitalization	**96,164,739**	**138,125,003**	**109,781,714**	**161,129,660**	**149,481,732**

BALANCE SHEET

ASSETS					
Current					
Cash and cash equivalents	19,499	3,637,758	2,507,017	1,922,925	630,868
Marketable securities	0	0	0	0	0
Restricted cash	0	0	0	0	0
Accounts Receivable	1,499,380	0	0	10,228,286	0
Prepaid expenses and other expenses	95,836	170,208	143,228	116,248	283,615
Total current assets	**1,614,715**	**3,807,966**	**2,650,245**	**12,267,459**	**914,483**
Marketable securities	0	0	0	0	0
Vessels and equipment					
At Cost	169,068,163	162,237,124	155,406,085	148,575,045	141,744,005
Accumulated Depreciation	0	0	0	0	0
Advances on newbuilding contracts	0	0	0	0	0
Total vessels and equipment	**169,068,163**	**162,237,124**	**155,406,085**	**148,575,045**	**141,744,005**
Investments in joint ventures	0	0	0	0	0
Other assets	0	0	0	0	0
Goodwill	0	0	0	0	0
Total assets	**170,682,878**	**166,045,090**	**158,056,330**	**160,842,504**	**142,658,488**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	1,181,385	675,384	0	0	0
Accrued liabilities	0	43,781	77,333	43,500	38,666
Current portion of long-term debt	0	0	0	0	0
Total current liabilities	**1,181,385**	**719,165**	**77,333**	**43,500**	**38,666**
Long-term debt	0	30,000,000	30,000,000	30,000,000	30,000,000
Other long-term liabilities	0	0	0	0	0
Total long-term liabilities	**0**	**30,000,000**	**30,000,000**	**30,000,000**	**30,000,000**
Total Liabilities	**1,181,385**	**30,719,165**	**30,077,333**	**30,043,500**	**30,038,666**
Minority interest	0	0	0	0	0
Stockholders' equity					
Capital Stock	118,138	97,066	97,066	97,066	97,066
Other shareholder's equity	169,383,355	135,228,859	127,881,931	130,701,938	112,522,756
Accumulated other comprehensive (loss) income	0	0	0	0	0
Total stockholders' equity	**169,501,493**	**135,325,925**	**127,978,997**	**130,799,004**	**112,619,822**
Commitments and contigencies	0	0	0	0	0

CASH FLOW ITEMS

NWC	**413,831**	**(548,957)**	**65,895**	**10,301,034**	**244,949**
Change in NWC	**122,187**	**(962,788)**	**614,852**	**10,235,139**	**(10,056,085)**
Net cash flow from operating activities	**4,782,112**	**16,423,339**	**11,990,863**	**24,264,865**	**36,272,601**
Net cash flow from investing activities (CAPX)	**0**	**0**	**0**	**0**	**0**
Net cash flow from financing activities	**(4,782,112)**	**(16,423,339)**	**(11,990,863)**	**(24,264,865)**	**(36,272,601)**
(Decrease) increase in cash and cash equivalents	**0**	**0**	**0**	**0**	**0**

Figure B2: Nordic American Tankers' Financial Statements (1997-2001)[368]

[368] Data compiled from Nordic American Tankers' SEC fillings that can be found at http://www.sec.gov.

INCOME STATEMENT	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	42,138,180	45,039,385	40,275,925	76,335,975	61,200,000
Voyage Expenses	0	0	0	0	0
Net voyage revenues	**42,138,180**	**45,039,385**	**40,275,925**	**76,335,975**	**61,200,000**
OPERATING EXPENSES					
Management Fee	630,308	750,000	750,000	750,000	750,000
Time charter hire expenses	0	0	0	0	0
Depreciation and amortization	14,856,193	17,592,860	17,592,860	17,592,860	17,592,860
General and Administrative	77,993	91,140	91,022	57,357	96,000
Total operating expenses	**15,564,494**	**18,434,000**	**18,433,882**	**18,400,217**	**18,438,860**
INCOME FROM VESSEL OPERATION	**26,573,686**	**26,605,385**	**21,842,043**	**57,935,758**	**42,761,140**
OTHER ITEMS					
Interest Expense	(8,400,000)	(9,686,142)	(9,249,110)	(8,933,869)	(9,200,000)
Interest Income	1,737,023	888,120	401,087	185,476	189,244
Other Income (loss)	(431,412)	(421,543)	(421,544)	(463,620)	(463,620)
Total other items	**(7,094,389)**	**(9,219,565)**	**(9,269,567)**	**(9,212,013)**	**(9,474,376)**
Net income (loss) before extraordinary loss	**19,479,297**	**17,385,820**	**12,572,476**	**48,723,745**	**33,286,764**
Extraordinary loss on bond redemption	0	0	0	0	0
Net income (loss)	**19,479,297**	**17,385,820**	**12,572,476**	**48,723,745**	**33,286,764**
EPS					
Basic	1.61	1.02	0.74	2.85	1.95
Diluted	1.61	1.02	0.74	2.85	1.95
# of shares	**12,127,021**	**17,100,000**	**17,100,000**	**17,100,000**	**17,100,000**
Average stock price	15.49	15.68	11.68	14.19	19.16
Average volume	919136	66225	66408	99800	161358
Average market capitalization	**187,836,531**	**268,156,500**	**199,656,750**	**242,577,750**	**327,607,500**
BALANCE SHEET					
ASSETS					
Current					
Cash and cash equivalents	217,374	315,223	70,695	247,370	245,000
Notes Receivable	6,726,151	6,726,152	1,681,538	0	0
Restricted cash	0	0	0	0	0
Accounts Receivable	15,449,599	10,268,805	10,175,142	31,116,700	43,245,677
Prepaid expenses and other expenses	14,000	14,000	14,525	16,574	45,000
Total current assets	**22,407,124**	**17,324,180**	**11,941,900**	**31,380,644**	**43,535,677**
Notes Receivable	8,407,690	1,681,538	0	0	0
Vessels and equipment					
At Cost	424,965,352	407,372,491	389,779,632	372,186,772	354,593,912
Accumulated Depreciation	0	0	0	0	0
Capitilized financing fees and expenses	2,287,056	1,915,513	1,543,969	1,172,426	1,172,426
Total vessels and equipment	**427,252,408**	**409,288,004**	**391,323,601**	**373,359,198**	**355,766,338**
Investments in joint ventures	0	0	0	0	0
Other assets	0	0	0	0	0
Goodwill	0	0	0	0	0
Total assets	**458,067,222**	**428,293,722**	**403,265,501**	**404,739,842**	**399,302,015**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	0	0	0	0	0
Accrued liabilities	2,377,736	2,300,568	2,206,021	2,124,154	2,000,000
Current portion of long-term debt	6,726,151	6,726,151	1,681,538	0	0
Total current liabilities	**9,103,887**	**9,026,719**	**3,887,559**	**2,124,154**	**2,000,000**
Long-term debt	133,805,088	127,078,936	125,397,399	125,397,399	125,397,399
Other long-term liabilities	0	0	0	0	0
Total long-term liabilities	**133,805,088**	**127,078,936**	**125,397,399**	**125,397,399**	**125,397,399**
Total Liabilities	**142,908,975**	**136,105,655**	**129,284,958**	**127,521,553**	**127,397,399**
Minority interest	0	0	0	0	0
Stockholders' equity					
Capital Stock	171,000	171,000	171,000	171,000	171,000
Additional paid-in capital	314,987,247	292,017,067	273,809,543	277,047,289	271,733,616
Accumulated other comprehensive (loss) income	0	0	0	0	0
Total stockholders' equity	**315,158,247**	**292,188,067**	**273,980,543**	**277,218,289**	**271,904,616**
Commitments and contigencies	0	0	0	0	0
CASH FLOW ITEMS					
NWC	**13,085,863**	**7,982,237**	**7,983,646**	**29,009,120**	**41,290,677**
Change in NWC	**13,085,863**	**(5,103,626)**	**1,409**	**21,025,474**	**12,281,557**
Net cash flow from operating activities	**21,249,627**	**40,082,306**	**30,163,927**	**45,291,131**	**38,598,067**
Net cash flow from investing activities (CAPX)	**0**	**0**	**0**	**0**	**0**
Net cash flow from financing activities	**(21,249,627)**	**(40,082,306)**	**(30,163,927)**	**(45,291,131)**	**(38,598,067)**
(Decrease) increase in cash and cash equivalents	**0**	**0**	**0**	**0**	**0**

Figure B3: Knightsbridge Tankers' Financial Statements (1997-2001)[369]

[369] Data compiled from Knightsbridge Tankers' SEC fillings that can be found at http://www.sec.gov.

INCOME STATEMENT

	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	32,683	55,255	66,790	66,704	108,647
Voyage Expenses	3,928	3,106	5,194	5,450	8,743
Net voyage revenues	**28,755**	**52,149**	**61,596**	**61,254**	**99,904**
OPERATING EXPENSES					
Vessel operating expenses	8,398	12,126	15,188	14,969	23,093
Other Expenses	0	0	6,500	0	0
Depreciation and amortization	6,872	12,956	16,179	16,557	22,715
General and Administrative	2,126	2,490	2,925	2,861	4,583
Total operating expenses	**17,396**	**27,572**	**40,792**	**34,377**	**50,391**
INCOME FROM VESSEL OPERATION	**11,359**	**24,577**	**20,804**	**26,877**	**49,513**
OTHER ITEMS					
Interest Expense	(6,308)	(11,937)	(13,025)	(15,428)	(17,089)
Interest Income	0	0	0	0	1,555
Other income (loss)	95	(146)	29	(199)	34
Total other items	**(6,213)**	**(12,083)**	**(12,996)**	**(15,627)**	**(15,500)**
Net income before taxes	**5,146**	**12,494**	**7,808**	**11,250**	**34,013**
Income taxes	0	(80)	(14)	(15)	0
Net income (loss)	**5,146**	**12,414**	**7,794**	**11,235**	**34,013**
EPS					
Basic	-	-	-	-	3.31
Diluted	-	-	-	-	3.29
# of shares	-	-	-	-	**10338**
Average stock price	-	-	-	-	15.82
Average volume	-	-	-	-	-
Average market capitalization	-	-	-	-	**163552**

BALANCE SHEET

ASSETS					
Current					
Cash and cash equivalents	10,456	13,331	14,741	26,464	34,417
Marketable securities	0	0	0	0	0
Restricted cash	0	0	0	0	0
Accounts Receivable	0	2,352	6,981	4,806	9,142
Prepaid expenses and other expenses	0	808	1,446	756	2,605
Total current assets	**10,456**	**16,491**	**23,168**	**32,026**	**46,164**
Marketable securities	0	0	0	0	0
Vessels and equipment					
Vessels	196,468	302,508	338,719	321,306	569,978
Accumulated Depreciation	9,876	31,506	46,588	56,610	78,151
Advances for newbuildings and vessels	0	4,315	0	84	46,555
Total vessels and equipment	**186,592**	**275,317**	**292,131**	**264,780**	**538,382**
Investments in joint ventures	0	0	0	0	0
Other assets	0	1,977	2,526	2,409	7,637
Goodwill	0	0	0	0	0
Total assets	**197,048**	**293,785**	**317,825**	**299,215**	**592,183**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	1,234	2,398	3,245	2,151	4,985
Accrued liabilities	56	4,912	4,984	6,706	10,566
Current portion of long-term debt	2,300	15,665	17,889	17,710	40,322
Total current liabilities	**3,590**	**22,975**	**26,118**	**26,567**	**55,873**
Long-term debt	145,968	200,055	213,292	183,082	326,862
Other long-term liabilities	0	0	0	0	0
Total long-term liabilities	**145,968**	**200,055**	**213,292**	**183,082**	**326,862**
Total Liabilities	**149,558**	**223,030**	**239,410**	**209,649**	**382,735**
Minority interest	0	0	0	0	0
Stockholders' equity					
Capital Stock	35	75	76	76	237
Paid-In Capital	41,355	55,065	55,064	55,064	149,970
Retained Earnings	6,100	15,615	23,275	34,426	59,241
Total stockholders' equity	**47,490**	**70,755**	**78,415**	**89,566**	**209,448**
Commitments and contigencies	0	0	0	0	0

CASH FLOW ITEMS

NWC	**(1,290)**	**(4,150)**	**198**	**(3,295)**	**(3,804)**
Change in NWC	-	**(2,860)**	**4,348**	**(3,493)**	**(509)**
Net cash flow from operating activities	**13,551**	**28,185**	**26,078**	**31,255**	**50,233**
Net cash flow from investing activities (CAPX)	**(88,559)**	**(107,513)**	**(39,878)**	**11,146**	**(295,462)**
Net cash flow from financing activities	**76,532**	**82,203**	**15,210**	**(30,678)**	**253,182**
(Decrease) increase in cash and cash equivalents	**1,524**	**2,875**	**1,410**	**11,723**	**7,953**

Figure B4: Stelmar's Financial Statements (1997-2001)[370]

[370] Data compiled from Stelmar's SEC fillings that can be found at http://www.sec.gov.

INCOME STATEMENT					
	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	12,436	62,031	71,476	132,012	217,128
Voyage Expenses	465	10,247	16,742	23,996	52,099
Net voyage revenues	**11,971**	**51,784**	**54,734**	**108,016**	**165,029**
OPERATING EXPENSES					
Vessel operating expenses	3,010	15,684	19,269	23,857	42,140
Other Expenses	0	0	0	5,272	0
Depreciation and amortization	3,402	16,493	19,810	24,808	42,820
General and Administrative	1,101	2,828	3,868	4,792	9,550
Total operating expenses	**7,513**	**35,005**	**42,947**	**58,729**	**94,510**
INCOME FROM VESSEL OPERATION	**4,458**	**16,779**	**11,787**	**49,287**	**70,519**
OTHER ITEMS					
Interest Expense	(3,016)	(14,654)	(16,525)	(19,900)	(17,728)
Interest Income	0	0	0	895	1,436
Other income (loss)	0	0	0	0	(1,822)
Total other items	**(3,016)**	**(14,654)**	**(16,525)**	**(19,005)**	**(18,114)**
Net income (loss) before extraordinary items	**1,442**	**2,125**	**(4,738)**	**30,282**	**52,405**
Extraordinary income (loss)	0	0	0	0	(1,184)
Net income (loss)	**1,442**	**2,125**	**(4,738)**	**30,282**	**51,221**
EPS					
Basic	-	-	-	-	1.70
Diluted	-	-	-	-	1.70
# of shares	-	-	-	-	**37000**
Average stock price	-	-	-	-	11.30
Average volume	-	-	-	-	-
Average market capitalization	-	-	-	-	**418100**
BALANCE SHEET					
ASSETS					
Current					
Cash and cash equivalents	0	6,411	6,842	23,523	17,186
Marketable securities	0	0	0	0	0
Restricted cash	0	2,534	1,388	149	0
Accounts Receivable	0	2,056	2,538	9,601	18,958
Prepaid expenses and other expenses	0	1,036	2,510	4,657	7,108
Total current assets	**0**	**12,037**	**13,278**	**37,930**	**43,252**
Marketable securities	0	0	0	0	0
Vessels and equipment					
Vessels, net	191,093	329,763	332,873	392,230	784,596
Accumulated Depreciation	0	0	0	0	0
Other fixed assets	0	465	831	974	1,022
Total vessels and equipment	**191,093**	**330,228**	**333,704**	**393,204**	**785,618**
Investments in joint ventures	0	0	0	0	0
Other assets	0	3,284	4,164	7,788	13,039
Goodwill	0	0	0	0	5,806
Total assets	**191,093**	**345,549**	**351,146**	**438,922**	**847,715**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	0	2,597	8,268	6,701	9,082
Accrued liabilities	0	1,677	0	2,129	420
Current portion of long-term debt	0	15,000	17,000	33,050	73,000
Total current liabilities	**0**	**19,274**	**25,268**	**41,880**	**82,502**
Long-term debt	135,550	226,625	200,000	208,735	266,600
Other long-term liabilities	0	0	0	1,397	2,923
Total long-term liabilities	**135,550**	**226,625**	**200,000**	**210,132**	**269,523**
Total Liabilities	**135,550**	**245,899**	**225,268**	**252,012**	**352,025**
Minority interest	0	0	0	0	0
Stockholders' equity					
Capital Stock	0	0	0	215	370
Paid-in Capital	54,101	96,083	127,049	157,584	416,095
Retained Earnings	1,442	3,567	(1,171)	29,111	79,225
Total stockholders' equity	**55,543**	**99,650**	**125,878**	**186,910**	**495,690**
Commitments and contigencies	0	0	0	0	0
CASH FLOW ITEMS					
NWC	0	(1,182)	(3,220)	5,428	16,564
Change in NWC	-	(1,182)	(2,038)	8,648	11,136
Net cash flow from operating activities	**6,042**	**15,915**	**16,605**	**47,720**	**83,442**
Net cash flow from investing activities (CAPX)	**(189,716)**	**(159,456)**	**(22,762)**	**(85,865)**	**(261,803)**
Net cash flow from financing activities	**186,965**	**146,661**	**5,588**	**54,826**	**172,024**
(Decrease) increase in cash and cash equivalents	**3,291**	**3,120**	**431**	**16,681**	**(6,337)**

Figure B5: General Maritime's Financial Statements (1997-2001)[371]

[371] Data compiled from General Maritime's SEC fillings that can be found at http://www.sec.gov.

INCOME STATEMENT					
	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	259,695	270,405	369,876	697,260	757,345
Voyage Expenses	62,498	66,545	116,662	97,316	110,000
Net voyage revenues	**197,197**	**203,860**	**253,214**	**599,944**	**647,345**
OPERATING EXPENSES					
Vessel operating expenses	48,076	55,586	92,708	88,455	121,452
Time charter hire expenses	25,734	14,889	31,719	34,351	41,858
Depreciation and amortization	56,721	51,659	91,435	92,880	121,725
General and Administrative	11,190	7,757	11,783	9,326	13,176
Total operating expenses	**141,721**	**129,891**	**227,645**	**225,012**	**298,211**
INCOME FROM VESSEL OPERATION	**55,476**	**73,969**	**25,569**	**374,932**	**349,134**
OTHER ITEMS					
Interest Expense	(45,945)	(59,320)	(88,728)	(96,174)	(91,800)
Interest Income	3,126	2,998	7,561	8,858	12,953
Other income (loss)	4,781	14,236	(31,307)	28,292	112,887
Total other items	**(38,038)**	**(42,086)**	**(112,474)**	**(61,024)**	**34,040**
Net income (loss) taxes	**17,438**	**31,883**	**(86,905)**	**313,908**	**383,174**
Income Taxes	(43)	(30)	9	(41)	(444)
Net income (loss)	**17,395**	**31,853**	**(86,896)**	**313,867**	**382,730**
EPS					
Basic	0.48	0.59	(1.76)	4.28	4.99
Diluted	0.48	0.59	(1.76)	4.27	4.99
# of shares	**36240**	**53988**	**49373**	**73505**	**76699**
Average stock price	-	-	-	-	11.00
Average volume	-	-	-	-	-
Average market capitalization	-	-	-	-	**843693**
BALANCE SHEET					
ASSETS					
Current					
Cash and cash equivalents	86,870	74,034	65,467	116,094	186,402
Marketable securities	165	0	10,867	4,045	1,159
Restricted cash	0	1,916	800	800	800
Accounts Receivable	26,840	28,885	56,985	123,876	67,000
Prepaid expenses and other expenses	6,762	1,554	3,628	48,164	17,332
Total current assets	**120,637**	**106,389**	**137,747**	**292,979**	**272,693**
Marketable securities	187,066	110,157	0	0	0
Vessels and equipment					
Vessels, net	970,590	1,078,956	1,523,112	2,363,308	2,514,167
Accumulated Depreciation	0	0	0	0	0
Advances on newbuilding contracts	48,474	75,681	32,777	36,327	102,781
Total vessels and equipment	**1,019,064**	**1,154,637**	**1,555,889**	**2,399,635**	**2,616,948**
Investments in joint ventures	3,754	3,837	16,274	27,361	109,898
Other assets	2,603	4,501	4,680	46,628	14,709
Goodwill	0	0	12,203	14,385	14,049
Total assets	**1,333,124**	**1,379,521**	**1,726,793**	**2,780,988**	**3,028,297**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	6,211	7,724	8,001	24,367	29,157
Accrued liabilities	29,546	20,228	44,397	45,369	35,698
Current portion of long-term debt	247,072	170,551	116,814	220,655	231,132
Total current liabilities	**282,829**	**198,503**	**169,212**	**290,391**	**295,987**
Long term debt	526,078	712,470	962,880	1,331,372	1,177,946
Other long-term liabilities	4,933	10,867	18,450	123,665	295,140
Total long-term liabilities	**531,011**	**723,337**	**981,330**	**1,455,037**	**1,473,086**
Total Liabilities	**813,840**	**921,840**	**1,150,542**	**1,745,428**	**1,769,073**
Minority interest	0	0	18,951	6,070	6,822
Stockholders' equity					
Capital Stock	115,265	115,267	152,405	195,172	195,345
Paid-In Capital	435,932	435,932	462,474	576,677	935,660
Accumulated other comprehensive (loss) income	(31,913)	(93,518)	(57,579)	257,641	121,397
Total stockholders' equity	**519,284**	**457,681**	**557,300**	**1,029,490**	**1,252,402**
Commitments and contigencies	0	0	0	0	0
CASH FLOW ITEMS					
NWC	**(2,155)**	**2,487**	**8,215**	**102,304**	**19,477**
Change in NWC	-	**4,642**	**5,728**	**94,089**	**(82,827)**
Net cash flow from operating activities	**67,449**	**74,916**	**46,486**	**271,582**	**477,988**
Net cash flow from investing activities (CAPX)	**(283,299)**	**(149,279)**	**175,532**	**(496,918)**	**(106,732)**
Net cash flow from financing activities	**244,717**	**61,527**	**(230,585)**	**263,383**	**(300,950)**
(Decrease) increase in cash and cash equivalents	**28,867**	**(12,836)**	**(8,567)**	**38,047**	**70,306**

Figure B6: Frontline's Financial Statements (1997-2001)[372]

[372] Data compiled from Frontline's SEC fillings that can be found at http://www.sec.gov.

INCOME STATEMENT					
	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	141,985	149,228	115,992	187,044	209,936
Voyage Expenses	26,589	27,546	25,513	25,919	31,730
Net voyage revenues	**115,396**	**121,682**	**90,479**	**161,125**	**178,206**
OPERATING EXPENSES					
Vessel operating expenses	51,097	54,822	38,892	29,297	42,344
Time charter hire expenses	8,906	25,529	15,234	16,184	8,416
Depreciation and amortization	22,675	24,314	26,272	18,323	32,688
General and Administrative	12,540	10,773	10,486	11,269	12,420
Total operating expenses	**95,218**	**115,438**	**90,884**	**75,073**	**95,868**
INCOME FROM VESSEL OPERATION	**20,178**	**6,244**	**(405)**	**86,052**	**82,338**
OTHER ITEMS					
Interest Expense	(11,756)	(11,118)	(17,945)	(27,260)	(20,921)
Interest Income	2,222	1,346	1,455	2,893	2,071
Other income (loss)	885	5,603	(63,901)	(11,827)	18,634
Total other items	**(8,649)**	**(4,169)**	**(80,391)**	**(36,194)**	**(216)**
Net income (loss) before extraordinary loss	**11,529**	**2,075**	**(80,796)**	**49,858**	**82,122**
Income taxes (99,98,97) and extraordinary income (loss) (00,01)	5,393	43,372	491	3,227	222
Net income (loss)	**16,922**	**45,447**	**(80,305)**	**53,085**	**82,344**
EPS					
Basic	0.39	1.01	(1.90)	0.94	1.22
Dilluted	0.39	1.00	(1.90)	0.93	1.21
# of shares	**43390**	**45447**	**42266**	**57081**	**68053**
Average stock price	10.27	6.86	2.22	4.80	5.73
Average volume	150950	170158	1062792	542975	495858
Average market capitalization	**445793**	**311539**	**93619**	**274177**	**389716**
BALANCE SHEET					
ASSETS					
Current					
Cash and cash equivalents	30,608	22,698	7,381	35,328	17,730
Marketable securities	0	0	0	0	6,218
Restricted cash	0	0	0	0	13,120
Accounts Receivable	11,108	15,575	18,381	25,173	22,376
Prepaid expenses and other expenses	6,189	5,272	95,433	5,676	5,316
Total current assets	**47,905**	**43,545**	**121,195**	**66,177**	**64,760**
Marketable securities	0	0	0	0	0
Vessels and equipment					
Vessels at cost	425,644	544,447	334,342	534,814	781,895
Accumulated Depreciation	138,648	150,585	42,926	50,304	76,865
Advances on newbuilding contracts	56,032	34,733	25,340	2,905	84,736
Total vessels and equipment	**343,028**	**428,595**	**316,756**	**487,415**	**789,766**
Investments in joint ventures	27,810	25,507	11,519	5,610	237
Other assets	17,260	28,930	22,945	31,928	15,121
Drydocking	4,705	3,550	0	374	5,743
Total assets	**440,708**	**530,127**	**472,415**	**591,504**	**875,627**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	1,512	2,520	7,017	6,349	8,842
Accrued liabilities	13,975	21,167	15,388	10,747	21,132
Current portion of long-term debt	5,575	21,494	54,834	40,577	40,238
Total current liabilities	**21,062**	**45,181**	**77,239**	**57,673**	**70,212**
Long-term debt	48,424	225,653	212,913	275,986	392,316
Other long-term liabilities	87,664	14,110	10,497	3,142	11,283
Total long-term liabilities	**136,088**	**239,763**	**223,410**	**279,128**	**403,599**
Total Liabilities	**157,150**	**284,944**	**300,649**	**336,801**	**473,811**
Minority interest	0	0	0	0	0
Stockholders' equity					
Capital Stock	21,533	21,838	24,697	30,712	35,124
Retained earnings	217,610	224,943	218,869	243,445	303,117
Accumulated other comprehensive (loss) income	44,415	(1,598)	(71,800)	(19,454)	63,575
Total stockholders' equity	**283,558**	**245,183**	**171,766**	**254,703**	**401,816**
Commitments and contigencies	0	0	0	0	0
CASH FLOW ITEMS					
NWC	**1,810**	**(2,840)**	**91,409**	**13,753**	**(2,282)**
Change in NWC	**-**	**(4,650)**	**94,249**	**(77,656)**	**(16,035)**
Net cash flow from operating activities	**19,567**	**17,671**	**9,326**	**63,031**	**121,529**
Net cash flow from investing activities (CAPX)	**15,650**	**(99,788)**	**(44,965)**	**(95,890)**	**(249,354)**
Net cash flow from financing activities	**(20,755)**	**74,207**	**20,322**	**60,806**	**110,227**
(Decrease) increase in cash and cash equivalents	**14,462**	**(7,910)**	**(15,317)**	**27,947**	**(17,598)**

Figure B7: OMI's Financial Statements (1997-2001)[373]

[373] Data compiled from OMI's SEC fillings that can be found at http://www.sec.gov.

INCOME STATEMENT	1997	1998	1999	2000	2001
NET VOYAGE REVENUES					
Voyage revenues	477,950	412,384	350,545	467,618	469,333
Voyage Expenses	97,580	85,865	97,328	97,537	88,315
Net voyage revenues	**380,370**	**326,519**	**253,217**	**370,081**	**381,018**
OPERATING EXPENSES					
Vessel operating expenses	194,984	168,483	92,395	81,929	84,058
Time charter hire expenses	0	0	22,288	41,326	43,956
Depreciation and amortization	77,940	70,806	75,860	70,138	69,912
General and Administrative	44,944	46,180	39,308	42,622	52,406
Total operating expenses	**317,868**	**285,469**	**229,851**	**236,015**	**250,332**
INCOME FROM VESSEL OPERATION	**62,502**	**41,050**	**23,366**	**134,066**	**130,686**
OTHER ITEMS					
Interest Expense	(82,983)	(62,200)	(45,257)	(47,470)	(45,035)
Interest Income	0	0	0	0	0
Other income (loss)	51,648	(14,072)	41,406	45,590	68,794
Total other items	**(31,335)**	**(76,272)**	**(3,851)**	**(1,880)**	**23,759**
Net income before taxes	**31,167**	**(35,222)**	**19,515**	**132,186**	**154,445**
Income taxes	(12,150)	(2,698)	(4,751)	(41,795)	(53,004)
Net income (loss)	**19,017**	**(37,920)**	**14,764**	**90,391**	**101,441**
EPS					
Basic	0.52	(1.03)	0.41	2.67	2.97
Diluted	0.52	(1.03)	0.41	2.63	2.92
# of shares	**36571**	**36816**	**36010**	**34369**	**34740**
Average stock price	18.19	17.06	12.68	21.85	26.21
Average volume	75650	56700	43483	183992	85667
Average market capitalization	**665168**	**628196**	**456544**	**750938**	**910392**
BALANCE SHEET					
ASSETS					
Current					
Cash and cash equivalents	113,195	51,005	56,727	15,781	30,256
Marketable securities	26,792	10,684	32,266	54,985	69,958
Restricted cash	0	0	0	0	0
Accounts Receivable	30,806	33,785	18,456	58,954	38,054
Prepaid expenses and other expenses	26,379	9,137	13,534	9,315	8,354
Total current assets	**197,172**	**104,611**	**120,983**	**137,035**	**146,622**
Marketable securities	0	0	0	0	0
Vessels and equipment					
Vessels, net	1,308,125	1,229,110	1,237,513	1,293,958	1,345,719
Accumulated Depreciation	0	0	0	0	0
Capital Construction Fund	174,892	176,154	181,933	213,440	232,971
Total vessels and equipment	**1,483,017**	**1,405,264**	**1,419,446**	**1,507,398**	**1,578,690**
Investments in joint ventures	255,811	91,942	75,914	84,742	149,775
Other assets	87,224	93,698	104,602	94,738	89,188
Goodwill	0	0	0	0	0
Total assets	**2,023,224**	**1,695,515**	**1,720,945**	**1,823,913**	**1,964,275**
LIABILITIES AND STOCKHOLDERS EQUITY					
Current					
Accounts payable	6,099	5,800	3,073	3,451	3,132
Accrued liabilities	36,649	26,746	27,188	31,083	58,636
Current portion of long-term debt	28,297	24,438	14,947	14,294	23,764
Total current liabilities	**71,045**	**56,984**	**45,208**	**48,828**	**85,532**
Long-term debt	1,056,306	833,893	827,372	836,497	854,929
Other long-term liabilities	116,076	97,016	187,307	188,421	210,388
Total long-term liabilities	**1,172,382**	**930,909**	**1,014,679**	**1,024,918**	**1,065,317**
Total Liabilities	**1,243,427**	**987,893**	**1,059,887**	**1,073,746**	**1,150,849**
Minority interest	0	0	0	0	0
Stockholders' equity					
Capital Stock	39,591	39,591	39,591	39,591	39,591
Retained earnings	739,558	679,419	633,511	710,680	800,118
Accumulated other comprehensive (loss) income	648	(11,388)	(12,044)	(104)	(26,283)
Total stockholders' equity	**779,797**	**707,622**	**661,058**	**750,167**	**813,426**
Commitments and contigencies	0	0	0	0	0
CASH FLOW ITEMS					
NWC	**14,437**	**10,376**	**1,729**	**31,735**	**(15,360)**
Change in NWC	-	**(4,061)**	**(8,647)**	**30,006**	**(47,095)**
Net cash flow from operating activities	**59,854**	**56,296**	**37,033**	**100,292**	**181,716**
Net cash flow from investing activities (CAPX)	**25,013**	**251,851**	**43,124**	**(121,084)**	**(175,726)**
Net cash flow from financing activities	**(80,792)**	**(370,337)**	**(74,435)**	**(20,154)**	**8,485**
(Decrease) Increase in cash and cash equivalents	**4,075**	**(62,190)**	**5,722**	**(40,946)**	**14,475**

Figure B8: OSG's Financial Statements (1997-2001)[374]

[374] Data compiled from OSG's SEC fillings that can be found at http://www.sec.gov.

APPENDIX C: Common-Sized Financial Statements

% of Sales

	1997	1998	1999	2000	2001	Average
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	24.82%	22.70%	34.28%	27.87%	24.02%	**26.74%**
Net voyage revenues	75.18%	77.30%	65.72%	72.13%	75.98%	**73.26%**
OPERATING EXPENSES						
Vessel operating expenses	17.37%	20.49%	26.14%	14.04%	14.90%	**18.59%**
Time charter hire expenses	2.62%	7.20%	8.12%	5.99%	6.35%	**6.06%**
Depreciation and amortization	23.38%	22.75%	18.07%	11.21%	13.12%	**17.71%**
General and Administrative	5.31%	6.07%	7.15%	4.20%	4.71%	**5.49%**
Operating expenses except depreciation	25.29%	33.76%	41.41%	24.23%	25.96%	**30.13%**
Total operating expenses	48.67%	56.51%	59.48%	35.44%	39.08%	**47.84%**
INCOME FROM VESSEL OPERATION	26.51%	20.79%	6.24%	36.68%	36.90%	**25.43%**
OTHER ITEMS						
Interest Expense	-13.86%	-10.88%	-11.91%	-8.35%	-6.38%	**-10.27%**
Interest Income	1.94%	1.55%	1.55%	1.46%	0.89%	**1.48%**
Other income (loss)	2.77%	1.34%	-1.06%	0.43%	0.97%	**0.89%**
Total other items	-9.15%	-7.99%	-11.42%	-6.45%	-4.52%	**-7.91%**
Net income (loss) before extraordinary loss	17.36%	12.80%	-5.19%	30.23%	32.39%	**17.52%**
Extraordinary loss on bond redemption	0.00%	-1.77%	0.00%	0.00%	0.00%	**-0.35%**
Net income (loss)	17.36%	11.02%	-5.19%	30.23%	32.39%	**17.16%**

BALANCE SHEET

ASSETS

Current

Cash and cash equivalents	21.66%	28.75%	46.64%	20.30%	16.84%	**26.84%**
Marketable securities	3.31%	2.13%	0.00%	0.90%	0.48%	**1.37%**
Restricted cash	0.00%	0.00%	0.00%	0.00%	0.75%	**0.15%**
Accounts Receivable	5.99%	5.58%	6.51%	8.97%	5.54%	**6.52%**
Prepaid expenses and other expenses	3.40%	3.93%	6.26%	2.91%	2.13%	**3.73%**
Total current assets	34.36%	40.40%	59.42%	33.08%	25.74%	**38.60%**
Marketable securities	3.41%	1.23%	1.28%	3.78%	1.54%	**2.25%**
Vessels and equipment						
At Cost	442.98%	431.36%	485.12%	256.20%	262.53%	**375.64%**
Accumulated Depreciation	123.33%	135.45%	132.26%	76.21%	77.18%	**108.89%**
Advances on newbuilding contracts	0.00%	13.50%	0.00%	0.00%	11.28%	**4.96%**
Total vessels and equipment	319.65%	309.41%	352.86%	179.99%	196.63%	**271.71%**
Investments in joint ventures	0.00%	0.00%	4.11%	2.29%	2.63%	**1.81%**
Other assets	2.20%	1.51%	2.08%	1.87%	2.58%	**2.05%**
Goodwill	0.00%	0.00%	0.00%	0.00%	8.38%	**1.68%**
	2.20%	1.51%	6.19%	4.16%	13.59%	**5.53%**
Total assets	359.62%	352.55%	419.75%	221.01%	237.50%	**318.08%**

LIABILITIES AND STOCKHOLDERS EQUITY

Current

Accounts payable	3.98%	2.90%	4.33%	2.47%	2.36%	**3.21%**
Accrued liabilities	7.19%	4.68%	8.37%	4.94%	4.91%	**6.02%**
Current portion of long-term debt	13.04%	9.48%	14.09%	8.08%	4.99%	**9.94%**
Total current liabilities	24.21%	17.06%	26.78%	15.49%	12.25%	**19.16%**
Long-term debt	165.61%	146.30%	215.65%	81.20%	85.06%	**138.77%**
Other long-term liabilities	0.00%	0.46%	0.72%	0.82%	3.79%	**1.16%**
Total long-term liabilities	165.61%	146.77%	216.37%	82.03%	88.86%	**139.93%**
Total Liabilities	189.82%	163.82%	243.15%	97.51%	101.11%	**159.08%**
Minority interest	0.00%	0.00%	0.45%	0.51%	1.83%	**0.56%**
Stockholders' equity						
Capital Stock	64.37%	80.23%	90.60%	50.69%	44.98%	**66.17%**
Retained earnings	105.43%	108.49%	85.56%	71.78%	90.05%	**92.26%**
Accumulated other comprehensive (loss) income	0.00%	0.00%	0.00%	0.51%	-0.46%	**0.01%**
Total stockholders' equity	169.80%	188.72%	176.15%	122.98%	134.56%	**158.44%**

CASH FLOW ITEMS

Changes in NWC		3.70%	-1.61%	4.43%	-3.44%	**0.77%**
Net cash flow from operating activities	39.68%	33.43%	13.54%	37.31%	50.06%	**34.80%**
Net cash flow from investing activities (CAPX)	-49.97%	-14.68%	4.18%	-8.89%	-34.22%	**-20.72%**
Net cash flow from financing activities	3.01%	-11.35%	9.16%	-32.78%	-16.45%	**-9.68%**
(Decrease) increase in cash and cash equivalents	-7.28%	7.40%	26.87%	-4.37%	-0.61%	**4.40%**

Figure C1: Teekay's Common-Sized Financial Statements (1997-2001)

% of Sales

	1997	1998	1999	2000	2001	Average
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Net voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
OPERATING EXPENSES						
Vessel operating expenses	0.89%	1.15%	1.25%	0.51%	0.65%	**0.89%**
Time charter hire expenses	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Depreciation and amortization	32.43%	42.68%	46.21%	18.68%	24.09%	**32.82%**
General and Administrative	8.77%	2.58%	2.78%	1.02%	1.25%	**3.28%**
Operating expenses except depreciation	9.66%	3.73%	4.03%	1.53%	1.90%	**4.17%**
Total operating expenses	42.09%	46.41%	50.24%	20.20%	25.99%	**36.99%**
INCOME FROM VESSEL OPERATION	57.91%	53.59%	49.76%	79.80%	74.01%	**63.01%**
OTHER ITEMS						
Interest Expense	0.00%	-0.27%	-11.96%	-4.84%	-6.24%	**-4.66%**
Interest Income	2.80%	0.66%	1.45%	0.76%	0.67%	**1.27%**
Other income (loss)	-0.01%	-0.06%	-0.19%	-0.07%	-0.08%	**-0.08%**
Total other items	2.79%	0.32%	-10.69%	-4.15%	-5.66%	**-3.48%**
Net income (loss) before extraordinary loss	60.70%	53.91%	39.06%	75.65%	68.36%	**59.54%**
Extraordinary loss on bond redemption	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Net income (loss)	60.70%	53.91%	39.06%	75.65%	68.36%	**59.54%**
BALANCE SHEET						
ASSETS						
Current						
Cash and cash equivalents	0.37%	22.73%	16.96%	5.26%	2.22%	**9.51%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Restricted cash	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Accounts Receivable	28.47%	0.00%	0.00%	27.96%	0.00%	**11.29%**
Prepaid expenses and other expenses	1.82%	1.06%	0.97%	0.32%	1.00%	**1.03%**
Total current assets	30.66%	23.79%	17.93%	33.54%	3.22%	**21.83%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Vessels and equipment						
At Cost	3210.63%	1013.59%	1051.28%	406.20%	499.81%	**1236.30%**
Accumulated Depreciation	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Advances on newbuilding contracts	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total vessels and equipment	3210.63%	1013.59%	1051.28%	406.20%	499.81%	**1236.30%**
Investments in joint ventures	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Other assets	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Goodwill	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total assets	3241.30%	1037.38%	1069.21%	439.73%	503.03%	**1258.13%**
LIABILITIES AND STOCKHOLDERS EQUITY						
Current						
Accounts payable	22.43%	4.22%	0.00%	0.00%	0.00%	**5.33%**
Accrued liabilities	0.00%	0.27%	0.52%	0.12%	0.14%	**0.21%**
Current portion of long-term debt	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total current liabilities	22.43%	4.49%	0.52%	0.12%	0.14%	**5.54%**
Long-term debt	0.00%	187.43%	202.94%	82.02%	105.78%	**115.63%**
Other long-term liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total long-term liabilities	0.00%	187.43%	202.94%	82.02%	105.78%	**115.63%**
Total Liabilities	22.43%	191.92%	203.47%	82.14%	105.92%	**121.18%**
Minority interest	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Stockholders' equity						
Capital Stock	2.24%	0.61%	0.66%	0.27%	0.34%	**0.82%**
Retained earnings	3216.62%	844.85%	865.09%	357.33%	396.77%	**1136.13%**
Accumulated other comprehensive (loss) income	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total stockholders' equity	3218.86%	845.46%	865.75%	357.60%	397.11%	**1136.96%**
CASH FLOW ITEMS						
Changes in NWC		-6.02%	4.16%	27.98%	-35.46%	**-2.33%**
Net cash flow from operating activities	90.81%	102.61%	81.12%	66.34%	127.90%	**93.76%**
Net cash flow from investing activities (CAPX)	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Net cash flow from financing activities	-90.81%	-102.61%	-81.12%	-66.34%	-127.90%	**-93.76%**
(Decrease) increase in cash and cash equivalents	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**

Figure C2: Nordic American Tankers' Common-Sized Financial Statements (1997-2001)

% of Sales

	1997	1998	1999	2000	2001	Average
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Net voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
OPERATING EXPENSES						
Vessel operating expenses	1.50%	1.67%	1.86%	0.98%	1.23%	**1.45%**
Time charter hire expenses	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Depreciation and amortization	35.26%	39.06%	43.68%	23.05%	28.75%	**33.96%**
General and Administrative	0.19%	0.20%	0.23%	0.08%	0.16%	**0.17%**
Operating expenses except depreciation	1.68%	1.87%	2.09%	1.06%	1.38%	**1.62%**
Total operating expenses	36.94%	40.93%	45.77%	24.10%	30.13%	**35.57%**
INCOME FROM VESSEL OPERATION	63.06%	59.07%	54.23%	75.90%	69.87%	**64.43%**
OTHER ITEMS						
Interest Expense	-19.93%	-21.51%	-22.96%	-11.70%	-15.03%	**-18.23%**
Interest Income	4.12%	1.97%	1.00%	0.24%	0.31%	**1.53%**
Other income (loss)	-1.02%	-0.94%	-1.05%	-0.61%	-0.76%	**-0.87%**
Total other items	-16.84%	-20.47%	-23.02%	-12.07%	-15.48%	**-17.57%**
Net income (loss) before extraordinary loss	46.23%	38.60%	31.22%	63.83%	54.39%	**46.85%**
Extraordinary loss on bond redemption	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Net income (loss)	46.23%	38.60%	31.22%	63.83%	54.39%	**46.85%**
BALANCE SHEET						
ASSETS						
Current						
Cash and cash equivalents	0.52%	0.70%	0.18%	0.32%	0.40%	**0.42%**
Marketable securities	15.96%	14.93%	4.18%	0.00%	0.00%	**7.01%**
Restricted cash	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Accounts Receivable	36.66%	22.80%	25.26%	40.76%	70.66%	**39.23%**
Prepaid expenses and other expenses	0.03%	0.03%	0.04%	0.02%	0.07%	**0.04%**
Total current assets	53.18%	38.46%	29.65%	41.11%	71.14%	**46.71%**
Marketable securities	19.95%	3.73%	0.00%	0.00%	0.00%	**4.74%**
Vessels and equipment						
At Cost	1008.50%	904.48%	967.77%	487.56%	579.40%	**789.54%**
Accumulated Depreciation	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Advances on newbuilding contracts	5.43%	4.25%	3.83%	1.54%	1.92%	**3.39%**
Total vessels and equipment	1013.93%	908.73%	971.61%	489.10%	581.32%	**792.94%**
Investments in joint ventures	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Other assets	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Goodwill	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total assets	1087.06%	950.93%	1001.26%	530.21%	652.45%	**844.38%**
LIABILITIES AND STOCKHOLDERS EQUITY						
Current						
Accounts payable	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Accrued liabilities	5.64%	5.11%	5.48%	2.78%	3.27%	**4.46%**
Current portion of long-term debt	15.96%	14.93%	4.18%	0.00%	0.00%	**7.01%**
Total current liabilities	21.60%	20.04%	9.65%	2.78%	3.27%	**11.47%**
	5.64%	5.11%	5.48%	2.78%	3.27%	**4.46%**
Long-term debt	317.54%	282.15%	311.35%	164.27%	204.90%	**256.04%**
Other long-term liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total long-term liabilities	317.54%	282.15%	311.35%	164.27%	204.90%	**256.04%**
Total Liabilities	339.14%	302.19%	321.00%	167.05%	208.17%	**267.51%**
Minority interest	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Stockholders' equity						
Capital Stock	0.41%	0.38%	0.42%	0.22%	0.28%	**0.34%**
Retained earnings	747.51%	648.36%	679.83%	362.93%	444.01%	**576.53%**
Accumulated other comprehensive (loss) income	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total stockholders' equity	747.92%	648.74%	680.26%	363.16%	444.29%	**576.87%**
CASH FLOW ITEMS						
Changes in NWC		-11.33%	0.00%	27.54%	20.07%	**9.07%**
Net cash flow from operating activities	50.43%	88.99%	74.89%	59.33%	63.07%	**67.34%**
Net cash flow from investing activities (CAPX)	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Net cash flow from financing activities	-50.43%	-88.99%	-74.89%	-59.33%	-63.07%	**-67.34%**
(Decrease) increase in cash and cash equivalents	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**

Figure C3: Knightsbridge Tankers' Common-Sized Financial Statements (1997-2001)

% of Sales

	1997	1998	1999	2000	2001	Average
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	12.02%	5.62%	7.78%	8.17%	8.05%	**8.33%**
Net voyage revenues	87.98%	94.38%	92.22%	91.83%	91.95%	**91.67%**
OPERATING EXPENSES						
Vessel operating expenses	25.70%	21.95%	22.74%	22.43%	21.26%	**22.81%**
Time charter hire expenses	0.00%	0.00%	9.73%	0.00%	0.00%	**1.95%**
Depreciation and amortization	21.03%	23.45%	24.22%	24.82%	20.91%	**22.89%**
General and Administrative	6.50%	4.51%	4.38%	4.29%	4.22%	**4.78%**
Operating expenses except depreciation	32.20%	26.45%	36.85%	26.72%	25.47%	**29.54%**
Total operating expenses	53.23%	49.90%	61.08%	51.54%	46.38%	**52.42%**
INCOME FROM VESSEL OPERATION	34.76%	44.48%	31.15%	40.29%	45.57%	**39.25%**
OTHER ITEMS						
Interest Expense	-19.30%	-21.60%	-19.50%	-23.13%	-15.73%	**-19.85%**
Interest Income	0.00%	0.00%	0.00%	0.00%	1.43%	**0.29%**
Other income (loss)	0.29%	-0.26%	0.04%	-0.30%	0.03%	**-0.04%**
Total other items	-19.01%	-21.87%	-19.46%	-23.43%	-14.27%	**-19.61%**
Net income (loss) before taxes	15.75%	22.61%	11.69%	16.87%	31.31%	**19.64%**
Income taxes	0.00%	-0.14%	-0.02%	-0.02%	0.00%	**-0.04%**
Net income (loss)	15.75%	22.47%	11.67%	16.84%	31.31%	**19.61%**
BALANCE SHEET						
ASSETS						
Current						
Cash and cash equivalents	31.99%	24.13%	22.07%	39.67%	31.68%	**29.91%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Restricted cash	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Accounts Receivable	0.00%	4.26%	10.45%	7.20%	8.41%	**6.07%**
Prepaid expenses and other expenses	0.00%	1.46%	2.16%	1.13%	2.40%	**1.43%**
Total current assets	31.99%	29.85%	34.69%	48.01%	42.49%	**37.41%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Vessels and equipment						
At Cost	601.13%	547.48%	507.14%	481.69%	524.61%	**532.41%**
Accumulated Depreciation	30.22%	57.02%	69.75%	84.87%	71.93%	**62.76%**
Advances on newbuilding contracts	0.00%	7.81%	0.00%	0.13%	42.85%	**10.16%**
Total vessels and equipment	570.91%	498.27%	437.39%	396.95%	495.53%	**479.81%**
Investments in joint ventures	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Other assets	0.00%	3.58%	3.78%	3.61%	7.03%	**3.60%**
Goodwill	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	0.00%	3.58%	3.78%	3.61%	7.03%	**3.60%**
Total assets	602.91%	531.69%	475.86%	448.57%	545.05%	**520.82%**
LIABILITIES AND STOCKHOLDERS EQUITY						
Current						
Accounts payable	3.78%	4.34%	4.86%	3.22%	4.59%	**4.16%**
Accrued liabilities	0.17%	8.89%	7.46%	10.05%	9.73%	**7.26%**
Current portion of long-term debt	7.04%	28.35%	26.78%	26.55%	37.11%	**25.17%**
Total current liabilities	10.98%	41.58%	39.10%	39.83%	51.43%	**36.58%**
Long-term debt	446.62%	362.06%	319.35%	274.47%	300.85%	**340.67%**
Other long-term liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total long-term liabilities	446.62%	362.06%	319.35%	274.47%	300.85%	**340.67%**
Total Liabilities	457.60%	403.64%	358.45%	314.30%	352.27%	**377.25%**
Minority interest	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Stockholders' equity						
Capital Stock	0.11%	0.14%	0.11%	0.11%	0.22%	**0.14%**
Retained earnings	126.53%	99.66%	82.44%	82.55%	138.03%	**105.84%**
Accumulated other comprehensive (loss) income	18.66%	28.26%	34.85%	51.61%	54.53%	**37.58%**
Total stockholders' equity	145.30%	128.05%	117.41%	134.27%	192.78%	**143.56%**
CASH FLOW ITEMS						
Changes in NWC		-5.18%	6.51%	-5.24%	-0.47%	**-1.09%**
Net cash flow from operating activities	41.46%	51.01%	39.04%	46.86%	46.24%	**44.92%**
Net cash flow from investing activities (CAPX)	-270.96%	-194.58%	-59.71%	16.71%	-271.95%	**-156.10%**
Net cash flow from financing activities	234.16%	148.77%	22.77%	-45.99%	233.03%	**118.55%**
(Decrease) increase in cash and cash equivalents	4.66%	5.20%	2.11%	17.57%	7.32%	**7.37%**

Figure C4: Stelmar's Common-Sized Financial Statements (1997-2001)

% of Sales

	1997	1998	1999	2000	2001	Average
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	3.74%	16.52%	23.42%	18.18%	23.99%	**17.17%**
Net voyage revenues	96.26%	83.48%	76.58%	81.82%	76.01%	**82.83%**
OPERATING EXPENSES						
Vessel operating expenses	24.20%	25.28%	26.96%	18.07%	19.41%	**22.79%**
Time charter hire expenses	0.00%	0.00%	0.00%	3.99%	0.00%	**0.80%**
Depreciation and amortization	27.36%	26.59%	27.72%	18.79%	19.72%	**24.03%**
General and Administrative	8.85%	4.56%	5.41%	3.63%	4.40%	**5.37%**
Operating expenses except depreciation	33.06%	29.84%	32.37%	25.70%	23.81%	**28.95%**
Total operating expenses	60.41%	56.43%	60.09%	44.49%	43.53%	**52.99%**
INCOME FROM VESSEL OPERATION	35.85%	27.05%	16.49%	37.34%	32.48%	**29.84%**
OTHER ITEMS						
Interest Expense	-24.25%	-23.62%	-23.12%	-15.07%	-8.16%	**-18.85%**
Interest Income	0.00%	0.00%	0.00%	0.68%	0.66%	**0.27%**
Other income (loss)	0.00%	0.00%	0.00%	0.00%	-0.84%	**-0.17%**
Total other items	-24.25%	-23.62%	-23.12%	-14.40%	-8.34%	**-18.75%**
Net income (loss) before extraordinary items	11.60%	3.43%	-6.63%	22.94%	24.14%	**11.09%**
Extraordinary items	0.00%	0.00%	0.00%	0.00%	-0.55%	**-0.11%**
Net income (loss)	11.60%	3.43%	-6.63%	22.94%	23.59%	**10.98%**
BALANCE SHEET						
ASSETS						
Current						
Cash and cash equivalents	0.00%	10.34%	9.57%	17.82%	7.92%	**9.13%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Restricted cash	0.00%	4.09%	1.94%	0.11%	0.00%	**1.23%**
Accounts Receivable	0.00%	3.31%	3.55%	7.27%	8.73%	**4.57%**
Prepaid expenses and other expenses	0.00%	1.67%	3.51%	3.53%	3.27%	**2.40%**
Total current assets	0.00%	19.40%	18.58%	28.73%	19.92%	**17.33%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Vessels and equipment						
At Cost	1536.61%	531.61%	465.71%	297.12%	361.35%	**638.48%**
Accumulated Depreciation	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Advances on newbuilding contracts	0.00%	0.75%	1.16%	0.74%	0.47%	**0.62%**
Total vessels and equipment	1536.61%	532.36%	466.88%	297.85%	361.82%	**639.10%**
Investments in joint ventures	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Other assets	0.00%	5.29%	5.83%	5.90%	6.01%	**4.60%**
Goodwill	0.00%	0.00%	0.00%	0.00%	2.67%	**0.53%**
	0.00%	5.29%	5.83%	5.90%	8.68%	**5.14%**
Total assets	1536.61%	557.06%	491.28%	332.49%	390.42%	**661.57%**
LIABILITIES AND STOCKHOLDERS EQUITY						
Current						
Accounts payable	0.00%	4.19%	11.57%	5.08%	4.18%	**5.00%**
Accrued liabilities	0.00%	2.70%	0.00%	1.61%	0.19%	**0.90%**
Current portion of long-term debt	0.00%	24.18%	23.78%	25.04%	33.62%	**21.32%**
Total current liabilities	0.00%	31.07%	35.35%	31.72%	38.00%	**27.23%**
Long-term debt	1089.98%	365.34%	279.81%	158.12%	122.78%	**403.21%**
Other long-term liabilities	0.00%	0.00%	0.00%	1.06%	1.35%	**0.48%**
Total long-term liabilities	1089.98%	365.34%	279.81%	159.18%	124.13%	**403.69%**
Total Liabilities	1089.98%	396.41%	315.17%	190.90%	162.13%	**430.92%**
Minority interest	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Stockholders' equity						
Capital Stock	0.00%	0.00%	0.00%	0.16%	0.17%	**0.07%**
Retained earnings	435.04%	154.90%	177.75%	119.37%	191.64%	**215.74%**
Accumulated other comprehensive (loss) income	11.60%	5.75%	-1.64%	22.05%	36.49%	**14.85%**
Total stockholders' equity	446.63%	160.65%	176.11%	141.59%	228.29%	**230.65%**
CASH FLOW ITEMS						
Changes in NWC		-1.91%	-2.85%	6.55%	5.13%	**1.73%**
Net cash flow from operating activities	48.58%	25.86%	23.23%	36.15%	38.43%	**34.41%**
Net cash flow from investing activities (CAPX)	-1525.54%	-257.06%	-31.85%	-65.04%	-120.58%	**-400.01%**
Net cash flow from financing activities	1503.42%	236.43%	9.22%	41.53%	79.23%	**373.96%**
(Decrease) increase in cash and cash equivalents	26.46%	5.03%	0.60%	12.64%	-2.92%	**8.36%**

Figure C5: General Maritime's Common-Sized Financial Statements (1997-2001)

% of Sales

	1997	1998	1999	2000	2001	Averag
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	24.07%	24.61%	31.54%	13.96%	14.52%	**21.74%**
Net voyage revenues	75.93%	75.39%	68.46%	86.04%	85.48%	**78.26%**
OPERATING EXPENSES						
Vessel operating expenses	18.51%	20.56%	25.06%	12.69%	16.04%	**18.57%**
Time charter hire expenses	9.91%	5.51%	8.58%	4.93%	5.53%	**6.89%**
Depreciation and amortization	21.84%	19.10%	24.72%	13.32%	16.07%	**19.01%**
General and Administrative	4.31%	2.87%	3.19%	1.34%	1.74%	**2.69%**
Operating expenses except depreciation	32.73%	28.93%	36.83%	18.95%	23.30%	**28.15%**
Total operating expenses	54.57%	48.04%	61.55%	32.27%	39.38%	**47.16%**
INCOME FROM VESSEL OPERATION	21.36%	27.35%	6.91%	53.77%	46.10%	**31.10%**
OTHER ITEMS						
Interest Expense	-17.69%	-21.94%	-23.99%	-13.79%	-12.12%	**-17.91%**
Interest Income	1.20%	1.11%	2.04%	0.98%	1.71%	**1.41%**
Other income (loss)	1.84%	5.26%	-8.46%	4.06%	14.91%	**3.52%**
Total other items	-14.65%	-15.56%	-30.41%	-8.75%	4.49%	**-12.98%**
Net income (loss) before taxes	6.71%	11.79%	-23.50%	45.02%	50.59%	**18.12%**
Income taxes	-0.02%	-0.01%	0.00%	-0.01%	-0.06%	**-0.02%**
Net income (loss)	6.70%	11.78%	-23.49%	45.01%	50.54%	**18.11%**

BALANCE SHEET

ASSETS						
Current						
Cash and cash equivalents	33.45%	27.38%	17.70%	16.65%	24.61%	**23.96%**
Marketable securities	0.06%	0.00%	2.94%	0.58%	0.15%	**0.75%**
Restricted cash	0.00%	0.71%	0.22%	0.11%	0.11%	**0.23%**
Accounts Receivable	10.34%	10.68%	15.41%	17.77%	8.85%	**12.61%**
Prepaid expenses and other expenses	2.60%	0.57%	0.98%	6.91%	2.29%	**2.67%**
Total current assets	46.45%	39.34%	37.24%	42.02%	36.01%	**40.21%**
Marketable securities	72.03%	40.74%	0.00%	0.00%	0.00%	**22.55%**
Vessels and equipment						
At Cost	373.74%	399.01%	411.79%	338.94%	331.97%	**371.09%**
Accumulated Depreciation	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Advances on newbuilding contracts	18.67%	27.99%	8.86%	5.21%	13.57%	**14.86%**
Total vessels and equipment	392.41%	427.00%	420.65%	344.15%	345.54%	**385.95%**
Investments in joint ventures	1.45%	1.42%	4.40%	3.92%	14.51%	**5.14%**
Other assets	1.00%	1.66%	1.27%	6.69%	1.94%	**2.51%**
Goodwill	0.00%	0.00%	3.30%	2.06%	1.86%	**1.44%**
Total assets	513.34%	510.17%	466.86%	398.85%	399.86%	**457.81%**
LIABILITIES AND STOCKHOLDERS EQUITY						
Current						
Accounts payable	2.39%	2.86%	2.16%	3.49%	3.85%	**2.95%**
Accrued liabilities	11.38%	7.48%	12.00%	6.51%	4.71%	**8.42%**
Current portion of long-term debt	95.14%	63.07%	31.58%	31.65%	30.52%	**50.39%**
Total current liabilities	108.91%	73.41%	45.75%	41.65%	39.08%	**61.76%**
Long-term debt	202.58%	263.48%	260.33%	190.94%	155.54%	**214.57%**
Other long-term liabilities	1.90%	4.02%	4.99%	17.74%	38.97%	**13.52%**
Total long-term liabilities	204.47%	267.50%	265.31%	208.68%	194.51%	**228.10%**
Total Liabilities	313.38%	340.91%	311.06%	250.33%	233.59%	**289.85%**
Minority interest	0.00%	0.00%	5.12%	0.87%	0.90%	**1.38%**
Stockholders' equity						
Capital Stock	44.38%	42.63%	41.20%	27.99%	25.79%	**36.40%**
Retained earnings	167.86%	161.21%	125.03%	82.71%	123.54%	**132.07%**
Accumulated other comprehensive (loss) income	-12.29%	-34.58%	-15.57%	36.95%	16.03%	**-1.89%**
Total stockholders' equity	199.96%	169.26%	150.67%	147.65%	165.37%	**166.58%**

CASH FLOW ITEMS

Changes in NWC		1.72%	1.55%	13.49%	-10.94%	**1.46%**
Net cash flow from operating activities	25.97%	27.71%	12.57%	38.95%	63.11%	**33.66%**
Net cash flow from investing activities (CAPX)	-109.09%	-55.21%	47.46%	-71.27%	-14.09%	**-40.44%**
Net cash flow from financing activities	94.23%	22.75%	-62.34%	37.77%	-39.74%	**10.54%**
(Decrease) increase in cash and cash equivalents	11.12%	-4.75%	-2.32%	5.46%	9.28%	**3.76%**

Figure C6: Frontline's Common-Sized Financial Statements (1997-2001)

% of Sales

	1997	1998	1999	2000	2001	Average
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	18.73%	18.46%	22.00%	13.86%	15.11%	**17.63%**
Net voyage revenues	81.27%	81.54%	78.00%	86.14%	84.89%	**82.37%**
OPERATING EXPENSES						
Vessel operating expenses	35.99%	36.74%	33.53%	15.66%	20.17%	**28.42%**
Time charter hire expenses	6.27%	17.11%	13.13%	8.65%	4.01%	**9.83%**
Depreciation and amortization	15.97%	16.29%	22.65%	9.80%	15.57%	**16.06%**
General and Administrative	8.83%	7.22%	9.04%	6.02%	5.92%	**7.41%**
Operating expenses except depreciation	51.09%	61.08%	55.70%	30.34%	30.09%	**45.66%**
Total operating expenses	67.06%	77.36%	78.35%	40.14%	45.67%	**61.71%**
INCOME FROM VESSEL OPERATION	14.21%	4.18%	-0.35%	46.01%	39.22%	**20.65%**
OTHER ITEMS						
Interest Expense	-8.28%	-7.45%	-15.47%	-14.57%	-9.97%	**-11.15%**
Interest Income	1.56%	0.90%	1.25%	1.55%	0.99%	**1.25%**
Other income (loss)	0.62%	3.75%	-55.09%	-6.32%	8.88%	**-9.63%**
Total other items	-6.09%	-2.79%	-69.31%	-19.35%	-0.10%	**-19.53%**
Net income (loss) before taxes	8.12%	1.39%	-69.66%	26.66%	39.12%	**1.13%**
Income taxes/Extraordinary items	3.80%	29.06%	0.42%	1.73%	0.11%	**7.02%**
Net income (loss)	11.92%	30.45%	-69.23%	28.38%	39.22%	**8.15%**
BALANCE SHEET						
ASSETS						
Current						
Cash and cash equivalents	21.56%	15.21%	6.36%	18.89%	8.45%	**14.09%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	2.96%	**0.59%**
Restricted cash	0.00%	0.00%	0.00%	0.00%	6.25%	**1.25%**
Accounts Receivable	7.82%	10.44%	15.85%	13.46%	10.66%	**11.64%**
Prepaid expenses and other expenses	4.36%	3.53%	82.28%	3.03%	2.53%	**19.15%**
Total current assets	33.74%	29.18%	104.49%	35.38%	30.85%	**46.73%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Vessels and equipment						
At Cost	299.78%	364.84%	288.25%	285.93%	372.44%	**322.25%**
Accumulated Depreciation	97.65%	100.91%	37.01%	26.89%	36.61%	**59.81%**
Advances on newbuilding contracts	39.46%	23.28%	21.85%	1.55%	40.36%	**25.30%**
Total vessels and equipment	241.59%	287.21%	273.08%	260.59%	376.19%	**287.73%**
Investments in joint ventures	19.59%	17.09%	9.93%	3.00%	0.11%	**9.94%**
Other assets	12.16%	19.39%	19.78%	17.07%	7.20%	**15.12%**
Drydocking	3.31%	2.38%	0.00%	0.20%	2.74%	**1.73%**
Total assets	310.39%	355.25%	407.28%	316.24%	417.09%	**361.25%**
LIABILITIES AND STOCKHOLDERS EQUITY						
Current						
Accounts payable	1.06%	1.69%	6.05%	3.39%	4.21%	**3.28%**
Accrued liabilities	9.84%	14.18%	13.27%	5.75%	10.07%	**10.62%**
Current portion of long-term debt	3.93%	14.40%	47.27%	21.69%	19.17%	**21.29%**
Total current liabilities	14.83%	30.28%	66.59%	30.83%	33.44%	**35.20%**
Long-term debt	34.11%	151.21%	183.56%	147.55%	186.87%	**140.66%**
Other long-term liabilities	61.74%	9.46%	9.05%	1.68%	5.37%	**17.46%**
Total long-term liabilities	95.85%	160.67%	192.61%	149.23%	192.25%	**158.12%**
Total Liabilities	110.68%	190.95%	259.20%	180.07%	225.69%	**193.32%**
Minority interest	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Stockholders' equity						
Capital Stock	15.17%	14.63%	21.29%	16.42%	16.73%	**16.85%**
Retained earnings	153.26%	150.74%	188.69%	130.15%	144.39%	**153.45%**
Accumulated other comprehensive (loss) income	31.28%	-1.07%	-61.90%	-10.40%	30.28%	**-2.36%**
Total stockholders' equity	199.71%	164.30%	148.08%	136.17%	191.40%	**167.93%**
CASH FLOW ITEMS						
Changes in NWC		-3.12%	81.25%	-41.52%	-7.64%	**7.25%**
Net cash flow from operating activities	13.78%	11.84%	8.04%	33.70%	57.89%	**25.05%**
Net cash flow from investing activities (CAPX)	11.02%	-66.87%	-38.77%	-51.27%	-118.78%	**-52.93%**
Net cash flow from financing activities	-14.62%	49.73%	17.52%	32.51%	52.51%	**27.53%**
(Decrease) increase in cash and cash equivalents	10.19%	-5.30%	-13.21%	14.94%	-8.38%	**-0.35%**

Figure C7: OMI's Common-Sized Financial Statements (1997-2001)

% of Sales

	1997	1998	1999	2000	2001	Average
NET VOYAGE REVENUES						
Voyage revenues	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Voyage Expenses	20.42%	20.82%	27.76%	20.86%	18.82%	**21.74%**
Net voyage revenues	79.58%	79.18%	72.24%	79.14%	81.18%	**78.26%**
OPERATING EXPENSES						
Vessel operating expenses	40.80%	40.86%	26.36%	17.52%	17.91%	**28.69%**
Time charter hire expenses	0.00%	0.00%	6.36%	8.84%	9.37%	**4.91%**
Depreciation and amortization	16.31%	17.17%	21.64%	15.00%	14.90%	**17.00%**
General and Administrative	9.40%	11.20%	11.21%	9.11%	11.17%	**10.42%**
Operating expenses except depreciation	50.20%	52.05%	43.93%	35.47%	36.44%	**44.02%**
Total operating expenses	66.51%	69.22%	65.57%	50.47%	53.34%	**61.02%**
INCOME FROM VESSEL OPERATION	13.08%	9.95%	6.67%	28.67%	27.85%	**17.24%**
OTHER ITEMS						
Interest Expense	-17.36%	-15.08%	-12.91%	-10.15%	-9.60%	**-13.02%**
Interest Income	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Other income (loss)	10.81%	-3.41%	11.81%	9.75%	14.66%	**8.72%**
Total other items	-6.56%	-18.50%	-1.10%	-0.40%	5.06%	**-4.30%**
Net income (loss) before taxes	6.52%	-8.54%	5.57%	28.27%	32.91%	**12.94%**
Income taxes	-2.54%	-0.65%	-1.36%	-8.94%	-11.29%	**-4.96%**
Net income (loss)	3.98%	-9.20%	4.21%	19.33%	21.61%	**7.99%**
BALANCE SHEET						
ASSETS						
Current						
Cash and cash equivalents	23.68%	12.37%	16.18%	3.37%	6.45%	**12.41%**
Marketable securities	5.61%	2.59%	9.20%	11.76%	14.91%	**8.81%**
Restricted cash	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Accounts Receivable	6.45%	8.19%	5.26%	12.18%	8.11%	**8.04%**
Prepaid expenses and other expenses	5.52%	2.22%	3.86%	1.99%	1.78%	**3.07%**
Total current assets	41.25%	25.37%	34.51%	29.30%	31.24%	**32.34%**
Marketable securities	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Vessels and equipment						
At Cost	273.69%	298.05%	353.03%	276.71%	286.73%	**297.64%**
Accumulated Depreciation	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Capital construction fund	36.59%	42.72%	51.90%	45.64%	49.64%	**45.30%**
Total vessels and equipment	310.29%	340.77%	404.93%	322.36%	336.37%	**342.94%**
Investments in joint ventures	53.52%	22.30%	21.66%	18.12%	31.91%	**29.50%**
Other assets	18.25%	22.72%	29.84%	20.26%	19.00%	**22.01%**
Goodwill	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total assets	423.31%	411.15%	490.93%	390.04%	418.52%	**426.79%**
LIABILITIES AND STOCKHOLDERS EQUITY						
Current						
Accounts payable	1.28%	1.41%	0.88%	0.74%	0.67%	**0.99%**
Accrued liabilities	7.67%	6.49%	7.76%	6.65%	12.49%	**8.21%**
Current portion of long-term debt	5.92%	5.93%	4.26%	3.08%	5.06%	**4.85%**
Total current liabilities	14.86%	13.82%	12.90%	10.44%	18.22%	**14.05%**
Long-term debt	221.01%	202.21%	236.02%	178.88%	182.16%	**204.06%**
Other long-term liabilities	24.29%	23.53%	53.43%	40.29%	44.83%	**37.27%**
Total long-term liabilities	245.29%	225.74%	289.46%	219.18%	226.99%	**241.33%**
Total Liabilities	260.16%	239.56%	302.35%	229.62%	245.21%	**255.38%**
Minority interest	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Stockholders' equity						
Capital Stock	8.28%	9.60%	11.29%	8.47%	8.44%	**9.22%**
Retained earnings	154.74%	164.75%	180.72%	151.98%	170.48%	**164.53%**
Accumulated other comprehensive (loss) income	0.14%	-2.76%	-3.44%	-0.02%	-5.60%	**-2.34%**
Total stockholders' equity	163.15%	171.59%	188.58%	160.42%	173.32%	**171.41%**
CASH FLOW ITEMS						
Changes in NWC		-0.98%	-2.47%	6.42%	-10.03%	**-1.77%**
Net cash flow from operating activities	12.52%	13.65%	10.56%	21.45%	38.72%	**19.38%**
Net cash flow from investing activities (CAPX)	5.23%	61.07%	12.30%	-25.89%	-37.44%	**3.05%**
Net cash flow from financing activities	-16.90%	-89.80%	-21.23%	-4.31%	1.81%	**-26.09%**
(Decrease) increase in cash and cash equivalents	0.85%	-15.08%	1.63%	-8.76%	3.08%	**-3.65%**

Figure C8: OSG's Common-Sized Financial Statements (1997-2001)

APPENDIX D: Selected Data and Financial Ratios

Condensed Income Statement						
	1997	**1998**	**1999**	**2000**	**2001**	
Voyage revenue	406,036	411,922	472,353	893,226	1,039,056	
Voyage expenses	100,776	93,511	161,915	248,957	249,562	
Net Voyage revenue	305,260	318,411	310,438	644,269	789,494	
OPEX except depreciation	102,679	139,065	195,599	216,441	269,748	
EBITDA	202,581	179,346	114,839	427,828	519,746	
Depreciation and Amortization	94,941	93,712	85,374	100,159	136,283	
EBIT	107,640	85,634	29,465	327,675	383,463	
Interest expense	(56,269)	(44,797)	(56,245)	(74,540)	(68,248)	
Interest income	7,897	6,389	7,303	13,021	9,196	
Net interest expense	(48,372)	(38,428)	(48,943)	(61,519)	(57,053)	
Other income (loss)	11,236	5,506	(5,016)	3,864	10,108	
Extraordinary items	0	(7,306)	0	0	0	
Net income (loss)	70,504	45,406	(24,494)	270,020	336,518	
Number of shares outstanding	28,895	31,100	36,287	39,362	40,496	
EPS	2.44	1.46	(0.68)	6.86	8.31	
Vessel Data						
						Average
Number of vessels	43	47	65	71	82	-
Average Revenue per ship	25,870	24,012	19,909	34,468	34,716	27,795
Average TCE per ship	19,450	18,561	13,085	24,861	26,378	20,467
Condensed Balance Sheet						
Assets						
Cash and marketable securities	115,254	132,256	226,381	223,123	203,837	
Other current assets	38,113	39,190	60,332	106,114	79,658	
Current assets	153,367	171,446	286,713	329,237	283,495	
Fixed assets	1,297,883	1,274,539	1,666,755	1,607,716	2,043,098	
Other long-term assets	8,933	6,235	29,216	37,146	141,188	
Total long-term assets	1,306,816	1,280,774	1,695,971	1,644,862	2,184,286	
Total assets	1,460,183	1,452,220	1,982,684	1,974,099	2,467,781	
Liabilities						
Non-interest bearing liabilities	45,359	31,211	59,946	66,165	75,495	
Current portion of long-term debt	52,932	39,058	66,557	72,170	51,830	
Current Liabilities	98,291	70,269	126,503	138,335	127,325	
Long term debt	672,437	604,561	1,022,010	732,682	923,279	
Total liabilities	770,728	674,830	1,148,513	871,017	1,050,604	
Stockholder's equity						
Capital Stock	261,353	330,493	427,937	452,808	487,341	
Accumulated Retained Earnings	428,102	446,897	406,234	650,274	949,836	
Total stockholders equity (book value)	689,455	777,390	834,171	1,103,082	1,417,177	
Net addition to stockholder's equity	-	87,935	56,781	268,911	314,095	
Other Data						
Tax rate	0	0	0	0	0	
Average stock price	27.08	21.99	14.93	30.53	37.46	
Book value per share	23.86	25.00	22.99	28.02	35.00	
Market cap	782,431	683,889	541,886	1,201,707	1,516,896	
Net debt	655,474	542,574	922,132	647,894	846,767	
Operating Working Capital	(7,246)	7,979	386	39,940	4,160	
Net long-term assets	1,297,883	1,274,539	1,666,755	1,607,716	2,043,098	
Net Assets	1,290,637	1,282,518	1,667,141	1,647,656	2,047,261	
Change in net assets	-	(8,119)	384,623	(19,478)	399,598	
EV	1,437,905	1,226,463	1,464,018	1,849,601	2,363,663	
EV per share	49.76	39.44	40.35	46.99	58.37	
NAV per share	-	-	-	-	28.61	
EBITDA per share	7.01	5.77	3.16	10.87	12.83	
Net debt per share	22.68	17.45	25.41	16.46	20.91	
Dividend per share	0.86	0.86	0.86	0.86	0.86	
Dividend payout ratio	36.26%	58.90%	-127.41%	12.54%	10.35%	
Financial Ratios						
						Average
Gross margin	75.18%	77.30%	65.72%	72.13%	75.98%	**73.26%**
Operating margin	26.51%	20.79%	6.24%	36.68%	36.90%	**25.43%**
Profit margin	17.36%	11.02%	-5.19%	30.23%	32.39%	**17.16%**
Asset turnover	0.28	0.28	0.24	0.45	0.42	**0.33**
Fixed asset turnover	0.31	0.32	0.28	0.55	0.51	**0.40**
Financial leverage	2.12	1.87	2.38	1.79	1.74	**1.98**
ROA	4.83%	3.13%	-1.24%	13.68%	13.64%	**6.81%**
ROE	10.23%	5.84%	-2.94%	24.48%	23.75%	**12.27%**
ROE (market based)	9.01%	6.64%	4.52%	22.47%	22.18%	**11.16%**
ROIC	7.61%	5.03%	1.53%	17.17%	16.03%	**9.67%**
ROIC (market based)	7.14%	6.45%	1.81%	16.33%	15.38%	**9.42%**
Net debt/ capitalization	48.74%	41.11%	52.50%	37.00%	37.40%	**43.35%**
Net debt/ capitalization, market	45.59%	44.24%	62.99%	35.03%	35.82%	**44.73%**
D/A	0.53	0.46	0.58	0.44	0.43	**0.49**
D/A (market)	0.50	0.50	0.68	0.42	0.41	**0.50**
D/E	1.12	0.87	1.38	0.79	0.74	**0.98**
D/E (market)	0.99	0.99	2.12	0.72	0.69	**1.10**
Current ratio	1.56	2.44	2.27	2.38	2.23	**2.17**
Times interest earned	2.23	2.23	0.60	5.33	6.72	**3.42**
Times burden covered	1.06	1.11	0.26	2.45	3.52	**1.68**
Average cost of debt	-	11.23%	11.30%	13.00%	12.82%	**12.09%**
P/Book value	1.13	0.88	0.65	1.09	1.07	**0.96**
P/NAV	-	-	-	-	1.31	**1.31**
EV/EBITDA	7.10	6.84	12.75	4.32	4.55	**7.11**
P/E (average)	11.10	15.06	-22.12	4.45	4.51	**2.60**
Other Ratios						
Sales growth	-	1.45%	14.67%	89.10%	16.33%	**30.39%**
Sustainable growth rate	-	12.75%	7.30%	32.24%	28.47%	**20.19%**
Depreciation as % of fixed assets	-	7.22%	6.70%	6.01%	8.48%	**7.10%**
Fixed asset growth	-	-1.80%	30.77%	-3.54%	27.08%	**13.13%**
Current portion of LT debt as % of LT debt		5.81%	11.01%	7.06%	7.07%	**7.74%**
LT debt / Stockholder's equity	0.98	0.78	1.23	0.66	0.65	**0.86**

Figure D1: Selected Data and Financial Ratios for Teekay (1997-2001)

Condensed Income Statement

	1997	1998	1999	2000	2001	
Voyage revenue	5,265,880	16,006,199	14,782,500	36,577,262	28,359,568	
Voyage expenses	0	0	0	0	0	
Net Voyage revenue	5,265,880	16,006,199	14,782,500	36,577,262	28,359,568	
OPEX except depreciation	508,755	597,560	596,285	558,579	538,520	
EBITDA	4,757,125	15,408,639	14,186,215	36,018,683	27,821,048	
Depreciation and Amortization	1,707,807	6,831,039	6,831,039	6,831,040	6,831,040	
EBIT	3,049,318	8,577,600	7,355,176	29,187,643	20,990,008	
Interest expense	0	(43,781)	(1,767,449)	(1,770,808)	(1,770,808)	
Interest income	147,504	105,999	214,532	277,552	189,244	
Net interest expense	147,504	62,218	(1,552,917)	(1,493,256)	(1,581,564)	
Other income (loss)	(330)	(10,306)	(27,583)	(25,423)	(22,968)	
Extraordinary items	0	0	0	0	0	
Net income (loss)	3,196,492	8,629,512	5,774,676	27,668,964	19,385,478	
Number of shares outstanding	11,813,850	9,706,606	9,706,606	9,706,606	9,706,606	
EPS	0.27	0.89	0.59	2.85	2.00	
Vessel Data						
						Average
Number of vessels	3	3	3	3	3	-
Average Revenue per ship	-	14,618	13,500	33,404	25,899	21,855
Condensed Balance Sheet						
Assets						
Cash and marketable securities	19,499	3,637,758	2,507,017	1,922,925	630,868	
Other current assets	1,595,216	170,208	143,228	10,344,534	283,615	
Current assets	1,614,715	3,807,966	2,650,245	12,267,459	914,483	
Fixed assets	169,068,163	162,237,124	155,406,085	148,575,045	141,744,005	
Other long-term assets	0	0	0	0	0	
Total long-term assets	169,068,163	162,237,124	155,406,085	148,575,045	141,744,005	
Total assets	170,682,878	166,045,090	158,056,330	160,842,504	142,658,488	
Liabilities						
Non-interest bearing liabilities	1,181,385	719,165	77,333	43,500	38,666	
Current portion of long-term debt	0	0	0	0	0	
Current Liabilities	1,181,385	719,165	77,333	43,500	38,666	
Long term debt	0	30,000,000	30,000,000	30,000,000	30,000,000	
Total liabilities	1,181,385	30,719,165	30,077,333	30,043,500	30,038,666	
Stockholder's equity						
Capital Stock	118,138	97,066	97,066	97,066	97,066	
Accumulated Retained Earnings	169,383,355	135,228,859	127,881,931	130,701,938	112,522,756	
Total stockholders equity (book value)	169,501,493	135,325,925	127,978,997	130,799,004	112,619,822	
Net addition to stockholder's equity	-	(34,175,568)	(7,346,928)	2,820,007	(18,179,182)	
Other Data						
Tax rate	0	0	0	0	0	
Average stock price	8.14	14.23	11.31	16.60	15.40	
Book value per share	14.35	13.94	13.18	13.48	11.60	
Market cap	96,164,739	138,126,003	109,781,714	161,129,660	149,481,732	
Net debt	1,161,886	27,081,407	27,570,316	28,120,575	29,407,798	
Operating Working Capital	413,831	(548,957)	65,895	10,301,034	244,949	
Net long-term assets	169,068,163	162,237,124	155,406,085	148,575,045	141,744,005	
Net Assets	169,481,994	161,688,167	155,471,980	158,876,079	141,988,954	
Change in net assets	-	(7,793,827)	(6,216,187)	3,404,099	(16,887,125)	
EV	97,326,625	165,206,410	137,352,030	189,250,235	178,889,530	
EV per share	8.24	17.02	14.15	19.50	18.43	
NAV per share	-	-	-	-	-	
EBITDA per share	0.40	1.59	1.46	3.71	2.87	
Net debt per share	0.10	2.79	2.84	2.90	3.03	
Dividend per share	0.30	1.43	1.35	2.56	3.87	
Dividend payout ratio	110.88%	160.85%	228.92%	89.81%	193.78%	
Financial Ratios						
						Average
Gross margin	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Operating margin	57.91%	53.59%	49.76%	79.80%	74.01%	**63.01%**
Profit margin	60.70%	53.91%	39.06%	75.65%	68.36%	**59.54%**
Asset turnover	0.03	0.10	0.09	0.23	0.20	**0.13**
Fixed asset turnover	0.03	0.10	0.10	0.25	0.20	**0.13**
Financial leverage	1.01	1.23	1.24	1.23	1.27	**1.19**
ROA	1.87%	5.20%	3.65%	17.20%	13.59%	**8.30%**
ROE	1.89%	6.38%	4.51%	21.15%	17.21%	**10.23%**
ROE (market based)	3.32%	6.25%	5.26%	17.17%	12.97%	**8.99%**
ROIC	1.80%	5.19%	4.66%	18.15%	14.72%	**8.90%**
ROIC (market based)	3.17%	5.10%	5.26%	15.27%	11.69%	**8.10%**
Net debt/ capitalization	0.68%	16.67%	17.72%	17.89%	20.71%	**14.70%**
Net debt/ capitalization, market	1.19%	16.39%	20.07%	14.86%	16.44%	**13.79%**
D/A	0.01	0.19	0.19	0.19	0.21	**0.16**
D/A (market)	0.01	0.18	0.22	0.16	0.17	**0.15**
D/E	0.01	0.23	0.24	0.23	0.27	**0.19**
D/E (market)	0.01	0.22	0.27	0.19	0.20	**0.18**
Current ratio	1.37	5.29	34.27	282.01	23.65	**69.32**
Times interest earned	-	137.86	4.74	19.55	13.27	**43.85**
Times burden covered	-	137.86	4.74	19.55	13.27	**43.85**
Average cost of debt	-	0.83%	10.35%	9.96%	10.54%	**7.92%**
P/Book value	0.57	1.02	0.86	1.23	1.33	**1.00**
P/NAV	-	-	-	-	-	-
EV/EBITDA	20.46	10.72	9.68	5.25	6.43	**10.51**
P/E (average)	30.08	16.01	19.01	5.82	7.71	**15.73**
Other Ratios						
Sales growth	-	203.96%	-7.65%	147.44%	-22.47%	**80.32%**
Sustainable growth rate	-	-20.16%	-5.43%	2.20%	-13.90%	**-9.32%**
Depreciation as % of fixed assets	-	4.04%	4.21%	4.40%	4.60%	**4.31%**
Fixed asset growth	-	-4.04%	-4.21%	-4.40%	-4.60%	**-4.31%**
LT debt / Stockholder's equity	0.00	0.22	0.23	0.23	0.27	**0.19**

Figure D2: Selected Data and Financial Ratios for Nordic American Tankers (1997-2001)

Condensed Income Statement

	1997	1998	1999	2000	2001	
Voyage revenue	42,138,180	45,039,385	40,275,925	76,335,975	61,200,000	
Voyage expenses	0	0	0	0	0	
Net Voyage revenue	42,138,180	45,039,385	40,275,925	76,335,975	61,200,000	
OPEX except depreciation	708,301	841,140	841,022	807,357	846,000	
EBITDA	41,429,879	44,198,245	39,434,903	75,528,618	60,354,000	
Depreciation and Amortization	14,856,193	17,592,860	17,592,860	17,592,860	17,592,860	
EBIT	26,573,686	26,605,385	21,842,043	57,935,758	42,761,140	
Interest expense	(8,400,000)	(9,686,142)	(9,249,110)	(8,933,869)	(9,200,000)	
Interest income	1,737,023	888,120	401,087	185,476	189,244	
Net interest expense	(6,662,977)	(8,798,022)	(8,848,023)	(8,748,393)	(9,010,756)	
Other income (loss)	(431,412)	(421,543)	(421,544)	(463,620)	(463,620)	
Extraordinary items	0	0	0	0	0	
Net income (loss)	19,479,297	17,385,820	12,572,476	48,723,745	33,286,764	
Number of shares outstanding	12,127,021	17,100,000	17,100,000	17,100,000	17,100,000	
EPS	1.61	1.02	0.74	2.85	1.95	

Vessel Data

						Average
Number of vessels	5	5	5	5	5	-
Average Revenue per ship	-	24,879	22,069	41,828	33,534	30,528

Condensed Balance Sheet

Assets

Cash and marketable securities	15,351,215	8,722,913	1,752,233	247,370	245,000
Other current assets	15,463,599	10,282,805	10,189,667	31,133,274	43,290,677
Current assets	30,814,814	19,005,718	11,941,900	31,380,644	43,535,677
Fixed assets	427,252,408	409,288,004	391,323,601	373,359,198	355,766,338
Other long-term assets	0	0	0	0	0
Total long-term assets	427,252,408	409,288,004	391,323,601	373,359,198	355,766,338
Total assets	458,067,222	428,293,722	403,265,501	404,739,842	399,302,015

Liabilities

Non-interest bearing liabilities	2,377,736	2,300,568	2,206,021	2,124,154	2,000,000
Current portion of long-term debt	6,726,151	6,726,151	1,681,538	0	0
Current Liabilities	9,103,887	9,026,719	3,887,559	2,124,154	2,000,000
Long term debt	133,805,088	127,078,936	125,397,399	125,397,399	125,397,399
Total liabilities	142,908,975	136,105,655	129,284,958	127,521,553	127,397,399

Stockholder's equity

Capital Stock	171,000	171,000	171,000	171,000	171,000
Accumulated Retained Earnings	314,987,247	292,017,067	273,809,543	277,047,289	271,733,616
Total stockholders equity (book value)	315,158,247	292,188,067	273,980,543	277,218,289	271,904,616
Net addition to stockholder's equity	-	(22,970,180)	(18,207,524)	3,237,746	(5,313,673)

Other Data

Tax rate	0	0	0	0	0	
Average stock price	15.49	15.68	11.68	14.19	19.16	
Book value per share	25.99	17.09	16.02	16.21	15.90	
Market cap	187,836,531	268,156,500	199,656,750	242,577,750	327,607,500	
Net debt	127,557,760	127,382,742	127,532,725	127,274,183	127,152,399	
Operating Working Capital	13,085,863	7,982,237	7,983,846	29,009,120	41,290,677	
Net long-term assets	427,252,408	409,288,004	391,323,601	373,359,198	355,766,338	
Net Assets	440,338,271	417,270,241	399,307,247	402,368,318	397,057,015	
Change in net assets	-	(23,068,030)	(17,962,994)	3,061,071	(5,311,303)	
EV	315,394,291	395,539,242	327,189,475	369,851,933	454,759,899	
EV per share	26.01	23.13	19.13	21.63	26.59	
NAV per share	-	-	-	-	-	
EBITDA per share	3.42	2.58	2.31	4.42	3.53	
Net debt per share	10.52	7.45	7.46	7.44	7.44	
Dividend per share	1.61	1.02	0.74	2.85	1.95	
Dividend payout ratio	100.00%	100.00%	100.00%	100.00%	100.00%	

Financial Ratios

						Average
Gross margin	100.00%	100.00%	100.00%	100.00%	100.00%	**100.00%**
Operating margin	63.06%	59.07%	54.23%	75.90%	69.67%	**64.43%**
Profit margin	46.23%	38.60%	31.22%	63.83%	54.39%	**46.85%**
Asset turnover	0.09	0.11	0.10	0.19	0.15	**0.13**
Fixed asset turnover	0.10	0.11	0.10	0.20	0.17	**0.14**
Financial leverage	1.45	1.47	1.47	1.46	1.47	**1.46**
ROA	4.25%	4.06%	3.12%	12.04%	8.34%	**6.36%**
ROE	6.18%	5.95%	4.59%	17.58%	12.24%	**9.31%**
ROE (market based)	10.37%	6.48%	6.30%	20.09%	10.16%	**10.68%**
ROIC	5.83%	6.25%	5.45%	14.39%	10.76%	**8.54%**
ROIC (market based)	8.09%	6.62%	6.68%	15.74%	9.44%	**9.32%**
Net debt/ capitalization	28.81%	30.36%	31.76%	31.47%	31.86%	**30.85%**
Net debt/ capitalization, market	40.44%	32.20%	38.98%	34.41%	27.96%	**34.80%**
D/A	0.31	0.32	0.32	0.32	0.32	**0.32**
D/A (market)	0.43	0.34	0.39	0.34	0.28	**0.36**
D/E	0.45	0.47	0.47	0.46	0.47	**0.46**
D/E (market)	0.76	0.51	0.65	0.53	0.39	**0.57**
Current ratio	3.38	2.11	3.07	14.77	21.77	**9.02**
Times interest earned	-	-3.02	2.47	6.62	4.75	**2.70**
Times burden covered	-	-12.84	2.07	6.62	4.75	**0.15**
Average cost of debt	-	-12.83%	13.57%	13.86%	14.37%	**7.24%**
P/Book value	0.60	0.92	0.73	0.88	1.20	**0.86**
P/NAV	-	-	-	-	-	-
EV/EBITDA	7.61	8.95	8.30	4.90	7.53	**7.46**
P/E (average)	9.64	15.42	15.88	4.90	9.64	**11.15**

Other Ratios

Sales growth	-	6.88%	-10.58%	89.53%	-19.83%	**16.50%**
Sustainable growth rate	-	-7.29%	-6.23%	1.18%	-1.92%	**-3.58%**
Depreciation as % of fixed assets	-	4.12%	4.30%	4.50%	4.71%	**4.41%**
LT debt / Stockholder's equity	0.42	0.43	0.46	0.45	0.46	**0.45**

Figure D3: Selected Data and Financial Ratios for Knightsbridge Tankers (1997-2001)

Condensed Income Statement

	1997	1998	1999	2000	2001	
Voyage revenue	32,883	55,255	66,790	66,704	108,647	
Voyage expenses	3,928	3,106	5,194	5,450	8,743	
Net Voyage revenue	28,755	52,149	61,596	61,254	99,904	
OPEX except depreciation	10,524	14,616	24,613	17,820	27,676	
EBITDA	18,231	37,533	36,983	43,434	72,228	
Depreciation and Amortization	6,872	12,956	16,179	16,557	22,715	
EBIT	11,359	24,577	20,804	26,877	49,513	
Interest expense	(6,308)	(11,937)	(13,025)	(15,428)	(17,089)	
Interest income	0	0	0	0	1,555	
Net interest expense	(6,308)	(11,937)	(13,025)	(15,428)	(15,534)	
Other income (loss)	95	(145)	29	(199)	34	
Extraordinary items	0	(80)	(14)	(15)	0	
Net income (loss)	5,146	12,414	7,794	11,235	34,013	
Number of shares outstanding	-	-	-	-	10,338	
EPS	-	-	-	-	3.29	

Vessel Data

						Average
Number of vessels	8	11	12	11	17	-
Average Revenue per ship	11,193	13,762	15,249	16,614	17,510	14,865
Average TCE per ship	9,848	12,989	14,063	15,256	16,101	13,651

Condensed Balance Sheet

Assets

Cash and marketable securities	10,456	13,331	14,741	26,464	34,417
Other current assets	0	3,160	8,427	5,562	11,747
Current assets	10,456	16,491	23,168	32,026	46,164
Fixed assets	186,592	275,317	292,131	264,780	538,382
Other long-term assets	0	1,977	2,526	2,409	7,637
Total long-term assets	186,592	277,294	294,657	267,189	546,019
Total assets	197,048	293,785	317,825	299,215	592,183

Liabilities

Non-interest bearing liabilities	1,290	7,310	8,229	8,857	15,551
Current portion of long-term debt	2,300	15,665	17,889	17,710	40,322
Current Liabilities	3,590	22,975	26,118	26,567	55,873
Long term debt	145,968	200,055	213,292	183,082	326,862
Total liabilities	148,558	223,030	239,410	209,648	382,735

Stockholder's equity

Capital Stock	35	75	76	76	237
Accumulated Retained Earnings	47,455	70,680	78,339	89,490	209,211
Total stockholders equity (book value)	47,490	70,755	78,415	89,566	209,448
Net addition to stockholder's equity	-	23,265	7,660	11,151	119,882

Other Data

Tax rate	0	0	0	0	0	
Average stock price	-	-	-	-	15.82	
Book value per share	-	-	-	-	20.26	
Market cap	-	-	-	-	163,552	
Net debt	138,102	209,699	224,669	183,185	348,318	
Operating Working Capital	(1,290)	(4,150)	198	(3,295)	(3,804)	
Net long-term assets	186,592	275,317	292,131	264,780	538,382	
Net Assets	185,302	271,167	292,329	261,485	534,578	
Change in net assets	-	85,865	21,162	(30,844)	273,093	
EV	-	-	-	-	511,870	
EV per share	-	-	-	-	49.51	
NAV per share	-	-	-	-	17.40	
EBITDA per share	-	-	-	-	6.99	
Net debt per share	-	-	-	-	33.69	
Dividend per share	0.00	0.00	0.00	0.00	0.00	
Dividend payout ratio	0.00%	0.00%	0.00%	0.00%	0.00%	

Financial Ratios

						Average
Gross margin	87.98%	94.38%	92.22%	91.83%	91.95%	**91.67%**
Operating margin	34.76%	44.48%	31.15%	40.29%	45.57%	**39.25%**
Profit margin	15.75%	22.47%	11.67%	16.84%	31.31%	**19.61%**
Asset turnover	0.17	0.19	0.21	0.22	0.18	**0.19**
Fixed asset turnover	0.18	0.20	0.23	0.25	0.20	**0.21**
Financial leverage	4.15	4.15	4.05	3.34	2.83	**3.70**
ROA	2.61%	4.23%	2.45%	3.75%	5.74%	**3.76%**
ROE	10.84%	17.55%	9.94%	12.54%	16.24%	**13.42%**
ROE (market based)	-	-	-	-	20.80%	**20.80%**
ROIC	5.80%	8.58%	6.72%	9.26%	8.59%	**7.79%**
ROIC (market based)	-	-	-	-	9.33%	**9.33%**
Net debt/ capitalization	74.55%	74.77%	74.13%	67.16%	62.45%	**70.61%**
Net debt/ capitalization, market	-	-	-	-	68.05%	**68.05%**
D/A	0.76	0.76	0.75	0.70	0.65	**0.72**
D/A (market)	-	-	-	-	0.70	**0.70**
D/E	3.15	3.15	3.05	2.34	1.83	**2.70**
D/E (market)	-	-	-	-	2.34	**2.34**
Current ratio	2.91	0.72	0.89	1.21	0.83	**1.31**
Times interest earned	1.80	2.06	1.60	1.74	3.19	**2.08**
Times burden covered	1.32	0.89	0.67	0.81	0.88	**0.92**
Average cost of debt	-	13.12%	11.66%	14.29%	10.94%	**12.50%**
P/Book value	-	-	-	-	0.78	**0.78**
P/NAV	-	-	-	-	0.91	**0.91**
EV/EBITDA	-	-	-	-	7.09	**7.09**
P/E (average)	-	-	-	-	4.81	**4.81**

Other Ratios

Sales growth	-	68.06%	20.88%	-0.13%	62.88%	**38.17%**
Sustainable growth rate	-	48.99%	10.83%	14.22%	133.85%	**51.97%**
Depreciation as % of fixed assets	-	6.94%	5.88%	5.67%	8.58%	**6.77%**
Fixed asset growth	-	47.55%	6.11%	-9.36%	103.33%	**36.91%**
Current portion of LT debt as % of LT debt		10.73%	8.94%	8.30%	22.02%	**12.50%**
LT debt / Stockholder's equity	3.07	2.83	2.72	2.04	1.56	**2.45**

Figure D4: Selected Data and Financial Ratios for Stelmar (1997-2001)

Condensed Income Statement

	1997	1998	1999	2000	2001	
Voyage revenue	12,436	62,031	71,476	132,012	217,128	
Voyage expenses	465	10,247	16,742	23,996	52,099	
Net Voyage revenue	11,971	51,784	54,734	108,016	165,029	
OPEX except depreciation	4,111	18,512	23,137	33,921	51,690	
EBITDA	7,860	33,272	31,597	74,095	113,339	
Depreciation and Amortization	3,402	16,493	19,810	24,808	42,820	
EBIT	4,458	16,779	11,787	49,287	70,519	
Interest expense	(3,016)	(14,654)	(16,525)	(19,900)	(17,728)	
Interest income	0	0	0	895	1,436	
Net interest expense	(3,016)	(14,654)	(16,525)	(19,005)	(16,292)	
Other income (loss)	0	0	0	0	(1,822)	
Extraordinary items	0	0	0	0	(1,184)	
Net income (loss)	1,442	2,125	(4,738)	30,282	51,221	
Number of shares outstanding	-	-	-	-	37,000	
EPS	-	-	-	-	1.38	

Vessel Data

						Average
Number of vessels	6	10	11	14	24	-
Average Revenue per ship	5,679	16,995	17,802	25,834	24,786	18,219
Average TCE per ship	5,466	14,187	13,632	21,138	18,839	14,653

Condensed Balance Sheet

Assets

Cash and marketable securities	0	8,845	8,230	23,672	17,188	
Other current assets	0	3,092	5,048	14,258	26,066	
Current assets	0	12,037	13,278	37,930	43,252	
Fixed assets	191,093	330,228	333,704	393,204	785,618	
Other long-term assets	0	3,284	4,164	7,788	18,845	
Total long-term assets	191,093	333,512	337,868	400,992	804,463	
Total assets	191,093	345,549	351,146	438,922	847,715	

Liabilities

Non-interest bearing liabilities	0	4,274	8,268	8,830	9,502	
Current portion of long-term debt	0	15,000	17,000	33,050	73,000	
Current Liabilities	0	19,274	25,268	41,880	82,502	
Long term debt	135,550	226,625	200,000	210,132	269,523	
Total liabilities	135,550	245,899	225,268	252,012	352,025	

Stockholder's equity

Capital Stock	0	0	0	215	370	
Accumulated Retained Earnings	55,543	99,650	125,878	186,695	495,320	
Total stockholders equity (book value)	55,543	99,650	125,878	186,910	495,690	
Net addition to stockholder's equity	-	44,107	26,228	61,032	308,780	

Other Data

Tax rate	0	0	0	0	0	
Average stock price	-	-	-	-	11.30	
Book value per share	-	-	-	-	13.40	
Market cap	-	-	-	-	418,100	
Net debt	135,550	236,954	217,038	228,340	334,839	
Operating Working Capital	0	(1,182)	(3,220)	5,428	16,564	
Net long-term assets	191,093	330,228	333,704	393,204	785,618	
Net Assets	191,093	329,046	330,484	398,632	802,182	
Change in net assets	-	137,953	1,438	68,148	403,550	
EV	-	-	-	-	752,939	
EV per share	-	-	-	-	20.35	
NAV per share	-	-	-	-	12.36	
EBITDA per share	-	-	-	-	3.06	
Net debt per share	-	-	-	-	9.05	
Dividend per share	0.00	0.00	0.00	0.00	0.00	
Dividend payout ratio	0.00%	0.00%	0.00%	0.00%	0.00%	

Financial Ratios

						Average
Gross margin	86.26%	83.48%	76.58%	81.82%	76.01%	**82.83%**
Operating margin	35.85%	27.05%	16.49%	37.34%	32.48%	**29.84%**
Profit margin	11.60%	3.43%	-6.63%	22.94%	23.59%	**10.98%**
Asset turnover	0.07	0.18	0.20	0.30	0.26	**0.20**
Fixed asset turnover	0.07	0.19	0.21	0.34	0.28	**0.22**
Financial leverage	3.44	3.47	2.79	2.35	1.71	**2.76**
ROA	0.75%	0.61%	-1.35%	6.90%	6.04%	**2.59%**
ROE	2.60%	2.13%	-3.76%	16.20%	10.33%	**5.50%**
ROE (market based)	-	-	-	-	12.25%	**12.25%**
ROIC	2.33%	4.92%	3.44%	11.46%	8.41%	**6.11%**
ROIC (market based)	-	-	-	-	9.27%	**9.27%**
Net debt/ capitalization	70.93%	70.40%	63.29%	54.99%	40.32%	**59.98%**
Net debt/ capitalization, market	-	-	-	-	44.47%	**44.47%**
D/A	0.71	0.71	0.64	0.57	0.42	**0.61**
D/A (market)	-	-	-	-	0.46	**0.46**
D/E	2.44	2.47	1.79	1.35	0.71	**1.75**
D/E (market)	-	-	-	-	0.84	**0.84**
Current ratio	-	0.62	0.53	0.91	0.52	**0.64**
Times interest earned	1.48	1.15	0.71	2.59	4.33	**2.05**
Times burden covered	1.48	0.57	0.35	0.96	0.79	**0.83**
Average cost of debt	-	15.54%	14.41%	16.52%	11.13%	**14.40%**
P/Book value	-	-	-	-	0.84	**0.84**
P/NAV	-	-	-	-	0.91	**0.91**
EV/EBITDA	-	-	-	-	6.64	**6.64**
P/E (average)	-	-	-	-	8.16	**8.16**

Other Ratios

Sales growth		308.80%	15.23%	84.69%	64.48%	**140.80%**
Sustainable growth rate	-	79.41%	26.32%	48.49%	165.20%	**79.85%**
Depreciation as % of fixed assets	-	8.63%	6.00%	7.43%	10.89%	**8.24%**
Fixed asset growth	-	72.81%	1.06%	17.83%	99.80%	**47.87%**
Current portion of LT debt as % of LT debt		11.07%	7.50%	15.53%	34.74%	**17.45%**
LT debt / Stockholder's equity	2.44	2.27	1.59	1.12	0.54	**1.59**

Figure D5: Selected Data and Financial Ratios for General Maritime (1997-2001)

Condensed Income Statement

	1997	1998	1999	2000	2001	
Voyage revenue	259,695	270,405	369,876	697,260	757,345	
Voyage expenses	62,498	66,545	116,662	97,316	110,000	
Net Voyage revenue	197,197	203,860	253,214	599,944	647,345	
OPEX except depreciation	85,000	78,232	136,210	132,132	176,486	
EBITDA	112,197	125,628	117,004	467,812	470,859	
Depreciation and Amortization	56,721	51,659	91,435	92,880	121,725	
EBIT	55,476	73,969	25,569	374,932	349,134	
Interest expense	(45,945)	(59,320)	(88,728)	(96,174)	(91,800)	
Interest income	3,126	2,998	7,561	6,858	12,953	
Net interest expense	(42,819)	(56,322)	(81,167)	(89,316)	(78,847)	
Other income (loss)	4,781	14,236	(31,307)	28,292	112,887	
Income taxes	(43)	(30)	9	(41)	(444)	
Net income (loss)	17,395	31,853	(86,896)	313,867	382,730	
Number of shares outstanding	36,240	53,988	49,373	73,505	76,689	
EPS	0.48	0.59	(1.76)	4.27	4.99	

Vessel Data

						Average
VLCC TCE per ship	32,700	31,800	20,000	46,300	40,800	34,320
Suezmax TCE per ship	24,800	22,400	16,700	35,500	30,700	26,020
Suezmax OBO per ship	25,500	21,800	16,800	33,300	28,900	25,260
Average TCE per ship	27,667	25,333	17,833	38,367	33,467	28,533

Condensed Balance Sheet

Assets

Cash and marketable securities	274,101	186,107	77,134	120,939	188,361	
Other current assets	33,602	30,439	80,613	172,040	84,332	
Current assets	307,703	216,546	137,747	292,979	272,693	
Fixed assets	1,019,064	1,154,637	1,555,889	2,399,635	2,616,948	
Other long-term assets	6,357	8,338	33,157	88,374	138,656	
Total long-term assets	1,025,421	1,162,975	1,589,046	2,488,009	2,755,604	
Total assets	1,333,124	1,379,521	1,726,793	2,780,988	3,028,297	

Liabilities

Non-interest bearing liabilities	35,757	27,952	52,398	69,736	64,855	
Current portion of long-term debt	247,072	170,551	116,814	220,655	231,132	
Current Liabilities	282,829	198,503	169,212	290,391	295,987	
Long term debt	531,011	723,337	981,330	1,455,037	1,473,086	
Total liabilities	813,840	921,840	1,150,542	1,745,428	1,769,073	

Stockholder's equity

Capital Stock	115,265	115,267	152,405	195,172	195,345	
Accumulated Retained Earnings	404,019	342,414	423,846	840,388	1,063,879	
Total stockholders equity (book value)	519,284	457,681	576,251	1,035,560	1,259,224	
Net addition to stockholder's equity	-	(61,603)	118,570	459,309	223,664	

Other Data

Tax rate	0	0	0	0	0	
Average stock price	-	-	-	-	11.00	
Book value per share	14.33	8.48	11.67	14.09	16.42	
Market cap	-	-	-	-	843,693	
Net debt	539,739	735,733	1,073,408	1,624,489	1,580,712	
Operating Working Capital	(2,155)	2,487	8,215	102,304	19,477	
Net long-term assets	1,019,064	1,154,637	1,555,889	2,399,635	2,616,948	
Net Assets	1,016,909	1,157,124	1,564,104	2,501,939	2,636,425	
Change in net assets	-	140,215	406,980	937,835	134,486	
EV	-	-	-	-	2,424,405	
EV per share	-	-	-	-	31.61	
NAV per share	-	-	-	-	12.31	
EBITDA per share	-	-	-	-	6.14	
Net debt per share	-	-	-	-	20.61	
Dividend per share	-	-	0.10	-	1.50	
Dividend payout ratio	-	-	-	-	30.10%	

Financial Ratios

						Average
Gross margin	75.93%	75.39%	68.46%	86.04%	85.48%	**78.26%**
Operating margin	21.36%	27.35%	6.91%	53.77%	46.10%	**31.10%**
Profit margin	6.70%	11.78%	-23.49%	45.01%	50.54%	**18.11%**
Asset turnover	0.19	0.20	0.21	0.25	0.25	**0.22**
Fixed asset turnover	0.25	0.23	0.24	0.29	0.29	**0.26**
Financial leverage	2.57	3.01	3.00	2.69	2.40	**2.73**
ROA	1.30%	2.31%	-5.03%	11.29%	12.64%	**4.50%**
ROE	3.35%	6.96%	-15.08%	30.31%	30.39%	**11.19%**
ROE (market based)	-	-	-	-	45.36%	**45.36%**
ROIC	4.28%	5.47%	1.53%	13.83%	11.78%	**7.38%**
ROIC (market based)	-	-	-	-	13.70%	**13.70%**
Net debt/ capitalization	50.97%	61.65%	65.07%	61.07%	55.66%	**58.88%**
Net debt/ capitalization, market	-	-	-	-	65.20%	**65.20%**
D/A	0.61	0.67	0.67	0.63	0.58	**0.63**
D/A (market)	-	-	-	-	0.68	**0.68**
D/E	1.57	2.01	2.00	1.69	1.40	**1.73**
D/E (market)	-	-	-	-	2.10	**2.10**
Current ratio	1.09	1.09	0.81	1.01	0.92	**0.98**
Times interest earned	1.30	1.31	0.32	4.20	4.43	**2.31**
Times burden covered	0.19	0.33	0.13	1.21	1.13	**0.60**
Average cost of debt	-	13.47%	16.30%	12.88%	9.33%	**13.00%**
P/Book value	-	-	-	-	0.87	**0.87**
P/NAV	-	-	-	-	0.89	**0.89**
EV/EBITDA	-	-	-	-	5.15	**5.15**
P/E (average)	-	-	-	-	2.20	**2.20**

Other Ratios

Sales growth	-	4.12%	36.79%	88.51%	8.62%	**34.51%**
Sustainable growth rate	-	-11.86%	25.91%	79.71%	21.60%	**28.84%**
Depreciation as % of fixed assets	-	5.07%	7.92%	5.97%	5.07%	**6.01%**
Fixed asset growth	-	13.30%	34.75%	54.23%	9.06%	**27.84%**
Current portion of LT debt as % of LT debt	-	32.12%	16.15%	22.49%	15.88%	**21.66%**
LT debt / Stockholder's equity	1.02	1.58	1.70	1.41	1.17	**1.38**

Figure D6: Selected Data and Financial Ratios for Frontline (1997-2001)

Condensed Income Statement						
	1997	1998	1999	2000	2001	
Voyage revenue	141,985	149,228	115,992	187,044	209,936	
Voyage expenses	26,589	27,546	25,513	25,919	31,730	
Net Voyage revenue	115,396	121,682	90,479	161,125	178,206	
OPEX except depreciation	72,543	91,124	64,612	56,750	63,180	
EBITDA	42,853	30,558	25,867	104,375	115,026	
Depreciation and Amortization	22,675	24,314	26,272	18,323	32,688	
EBIT	20,178	6,244	(405)	86,052	82,338	
Interest expense	(11,756)	(11,118)	(17,945)	(27,260)	(20,921)	
Interest income	2,222	1,346	1,455	2,893	2,071	
Net interest expense	(9,534)	(9,772)	(16,490)	(24,367)	(18,850)	
Other income (loss)	885	5,603	(63,901)	(11,827)	18,634	
Extraordinary items	5,393	43,372	491	3,227	222	
Net income (loss)	16,922	45,447	(80,305)	53,085	82,344	
Number of shares outstanding	43,390	45,447	42,266	57,081	68,063	
EPS	0.39	1.00	(1.90)	0.93	1.21	
Vessel Data						
						Average
Number of vessels	20	20	20	22	31	-
Average Revenue per ship	19,450	20,442	15,889	23,293	18,554	19,526
Average TCE per ship	15,808	16,669	12,394	20,085	15,750	16,137
Condensed Balance Sheet						
Assets						
Cash and marketable securities	30,608	22,698	7,381	35,328	37,068	
Other current assets	17,297	20,847	113,814	30,849	27,692	
Current assets	47,905	43,545	121,195	66,177	64,760	
Fixed assets	343,028	428,595	316,756	487,415	789,766	
Other long-term assets	49,775	57,987	34,464	37,912	21,101	
Total long-term assets	392,803	486,582	351,220	525,327	810,867	
Total assets	440,708	530,127	472,415	591,504	875,627	
Liabilities						
Non-interest bearing liabilities	15,487	29,687	22,405	17,096	29,974	
Current portion of long-term debt	5,575	21,494	54,834	40,577	40,238	
Current Liabilities	21,062	45,181	77,239	57,673	70,212	
Long term debt	136,088	239,763	223,410	279,128	403,599	
Total liabilities	157,150	284,944	300,649	336,801	473,811	
Stockholder's equity						
Capital Stock	21,533	21,838	24,687	30,712	35,124	
Accumulated Retained Earnings	262,025	223,345	147,069	223,991	366,692	
Total stockholders equity (book value)	283,558	245,183	171,756	254,703	401,816	
Net addition to stockholder's equity	-	(38,375)	(73,417)	82,937	147,113	
Other Data						
Tax rate	0	0	0	0	0	
Average stock price	10.27	5.86	2.22	4.80	5.73	
Book value per share	6.54	5.39	4.06	4.46	5.90	
Market cap	445,793	311,539	93,819	274,177	389,716	
Net debt	126,542	252,246	293,268	301,473	436,743	
Operating Working Capital	1,810	(2,840)	91,409	13,753	(2,282)	
Net long-term assets	343,028	428,595	316,755	487,415	789,766	
Net Assets	344,838	425,755	408,166	501,168	787,484	
Change in net assets	-	80,917	(17,590)	93,003	286,316	
EV	572,335	573,785	386,887	575,650	826,459	
EV per share	13.19	12.63	9.15	10.08	12.14	
NAV per share	-	-	-	-	6.00	
EBITDA per share	0.99	0.67	0.61	1.83	1.69	
Net debt per share	2.92	5.77	6.94	5.28	6.42	
Dividend per share	0	0	0	0	0	
Dividend payout ratio	0.00%	0.00%	0.00%	0.00%	0.00%	
Financial Ratios						
						Average
Gross margin	81.27%	81.54%	78.00%	86.14%	84.89%	**82.37%**
Operating margin	14.21%	4.18%	-0.35%	46.01%	39.22%	**20.65%**
Profit margin	11.92%	30.45%	-69.23%	28.38%	38.22%	**8.15%**
Asset turnover	0.32	0.28	0.25	0.32	0.24	**0.28**
Fixed asset turnover	0.41	0.35	0.37	0.38	0.27	**0.36**
Financial leverage	1.55	2.16	2.75	2.32	2.18	**2.19**
ROA	3.84%	8.57%	-17.00%	8.97%	9.40%	**2.76%**
ROE	5.97%	18.54%	-46.75%	20.84%	20.49%	**3.82%**
ROE (market based)	3.80%	14.59%	-85.78%	19.36%	21.13%	**-5.38%**
ROIC	4.75%	1.23%	-0.09%	14.98%	9.74%	**6.12%**
ROIC (market based)	3.43%	1.09%	-0.11%	14.49%	9.88%	**5.76%**
Net debt/ capitalization	30.86%	51.68%	63.06%	54.20%	52.08%	**50.38%**
Net debt/ capitalization, market	22.11%	45.70%	75.80%	52.37%	52.85%	**49.77%**
D/A	0.36	0.54	0.64	0.57	0.54	**0.53**
D/A (market)	0.26	0.48	0.76	0.55	0.55	**0.52**
D/E	0.55	1.16	1.75	1.32	1.18	**1.19**
D/E (market)	0.35	0.91	3.21	1.23	1.22	**1.38**
Current ratio	2.27	0.96	1.57	1.15	0.92	**1.38**
Times interest earned	2.12	0.64	-0.02	3.53	4.37	**2.13**
Times burden covered	1.34	0.20	-0.01	1.33	1.39	**0.85**
Average cost of debt	-	9.70%	12.23%	16.30%	9.88%	**12.03%**
P/Book value	1.57	1.27	0.55	1.08	0.97	**1.09**
P/NAV	-	-	-	-	0.95	**0.95**
EV/EBITDA	13.36	18.78	14.96	5.52	7.18	**11.96**
P/E (average)	26.34	6.86	-1.17	5.16	4.73	**8.39**
Other Ratios						
Sales growth	-	5.10%	-22.27%	61.26%	12.24%	**14.08%**
Sustainable growth rate	-	-13.53%	-29.94%	48.28%	57.76%	**15.64%**
Depreciation as % of fixed assets	-	7.09%	6.13%	5.78%	6.71%	**6.43%**
Fixed asset growth	-	24.94%	-26.09%	53.88%	62.03%	**28.69%**
Current portion of LT debt as % of LT debt		15.79%	22.87%	18.15%	14.42%	**17.81%**
LT debt / Stockholder's equity	0.48	0.98	1.30	1.10	1.00	**0.97**

Figure D7: Selected Data and Financial Ratios for OMI (1997-2001)

Condensed Income Statement						
	1997	**1998**	**1999**	**2000**	**2001**	
Voyage revenue	477,950	412,384	350,545	467,618	469,333	
Voyage expenses	97,580	85,865	97,328	97,537	88,315	
Net Voyage revenue	380,370	326,519	253,217	370,081	381,018	
OPEX except depreciation	239,928	214,663	153,991	165,877	180,420	
EBITDA	140,442	111,856	99,226	204,204	200,598	
Depreciation and Amortization	77,940	70,806	75,860	70,138	69,912	
EBIT	62,502	41,050	23,366	134,066	130,686	
Interest expense	(82,983)	(62,200)	(45,257)	(47,470)	(45,035)	
Interest income	0	0	0	0	0	
Net interest expense	(82,983)	(62,200)	(45,257)	(47,470)	(45,035)	
Other income (loss)	51,646	(14,072)	41,406	45,590	68,794	
Income Taxes	(12,150)	(2,698)	(4,751)	(41,795)	(53,004)	
Net income (loss)	19,017	(37,920)	14,764	90,391	101,441	
Number of shares outstanding	36,571	36,816	36,010	34,369	34,740	
EPS	0.52	(1.03)	0.41	2.63	2.92	
Vessel Data						
						Average
Number of vessels	49	51	39	43	41	-
Average Revenue per ship	26,724	22,153	24,626	29,794	31,362	26,932
Average TCE per ship	*21,268*	*17,541*	*17,788*	*23,590*	*25,461*	21,127
Condensed Balance Sheet						
Assets						
Cash and marketable securities	139,087	61,689	88,993	70,766	100,214	
Other current assets	57,185	42,922	31,990	66,269	46,408	
Current assets	197,172	104,611	120,983	137,035	146,622	
Fixed assets	1,483,017	1,405,264	1,419,446	1,507,398	1,578,690	
Other long-term assets	*343,035*	*185,640*	*180,516*	*179,480*	*238,963*	
Total long-term assets	1,826,052	1,590,904	1,599,962	1,686,878	1,817,653	
Total assets	2,023,224	1,695,515	1,720,945	1,823,913	1,964,275	
Liabilities						
Non-interest bearing liabilities	42,748	32,546	30,261	34,534	61,768	
Current portion of long-term debt	28,297	24,438	14,947	14,294	23,764	
Current Liabilities	71,045	56,984	45,208	48,828	85,532	
Long term debt	1,172,382	930,909	1,014,679	1,024,918	1,065,317	
Total liabilities	1,243,427	987,893	1,059,887	1,073,746	1,150,849	
Stockholder's equity						
Capital Stock	39,591	39,591	39,591	39,591	39,591	
Accumulated Retained Earnings	740,206	668,031	621,467	710,576	773,835	
Total stockholders equity (book value)	779,797	707,622	661,058	750,167	813,426	
Net addition to stockholder's equity	-	(72,175)	(46,564)	89,109	63,259	
Other Data						
Tax rate	0.35	0.35	0.35	0.35	0.35	
Average stock price	18.19	17.06	12.68	21.85	26.21	
Book value per share	21.32	19.22	18.36	21.83	23.41	
Market cap	665,168	628,196	456,544	750,938	910,392	
Net debt	*1,103,440*	*926,204*	*970,894*	*1,002,980*	*1,050,635*	
Operating Working Capital	14,437	10,378	1,729	31,735	(15,360)	
Net long-term assets	1,483,017	1,405,264	1,419,446	1,507,398	1,578,690	
Net Assets	1,497,454	1,415,640	1,421,175	1,539,133	1,563,330	
Change in net assets	-	(81,814)	5,535	117,958	24,197	
EV	1,768,608	1,554,400	1,427,438	1,753,918	1,961,027	
EV per share	48.36	42.22	39.64	51.03	56.45	
NAV per share	-	-	-	-	27.00	
EBITDA per share	3.84	3.04	2.76	6.94	5.77	
Net debt per share	30.17	25.16	26.96	29.18	30.24	
Dividend per share	0.60	0.60	0.60	0.60	0.80	
Dividend payout ratio	115.38%	-58.25%	146.94%	22.81%	20.55%	
Financial Ratios						
						Average
Gross margin	79.58%	79.18%	72.24%	79.14%	81.18%	**78.26%**
Operating margin	13.08%	9.95%	6.67%	28.67%	27.85%	**17.24%**
Profit margin	3.98%	-9.20%	4.21%	19.33%	21.61%	**7.99%**
Asset turnover	*0.24*	*0.24*	*0.20*	*0.26*	*0.24*	**0.24**
Fixed asset turnover	0.32	0.29	0.25	0.31	0.30	**0.29**
Financial leverage	2.59	2.40	2.60	2.43	2.41	**2.49**
ROA	*0.94%*	*-2.24%*	*0.86%*	*4.96%*	*5.16%*	**1.94%**
ROE	2.44%	-5.36%	2.23%	12.05%	12.47%	**4.77%**
ROE (market based)	2.86%	-6.04%	3.23%	12.04%	11.14%	**4.65%**
ROIC	2.05%	1.60%	0.90%	4.87%	4.46%	**2.78%**
ROIC (market based)	2.18%	1.68%	1.02%	4.87%	4.25%	**2.80%**
Net debt/ capitalization	58.59%	56.69%	59.49%	57.21%	56.36%	**57.67%**
Net debt/ capitalization, market	*62.39%*	*59.59%*	*68.02%*	*57.19%*	*53.58%*	**60.15%**
D/A	0.61	0.58	0.62	0.59	0.59	**0.60**
D/A (market)	0.65	0.61	0.70	0.59	0.56	**0.62**
D/E	1.59	1.40	1.60	1.43	1.41	**1.49**
D/E (market)	1.87	1.57	2.32	1.43	1.26	**1.69**
Current ratio	2.78	1.84	2.68	2.81	1.71	**2.36**
Times interest earned	0.75	0.66	0.52	2.82	2.90	**1.53**
Times burden covered	0.86	0.73	0.60	3.34	2.92	**1.69**
Average cost of debt	-	11.54%	9.12%	9.18%	8.46%	**9.58%**
P/Book value	0.85	0.89	0.69	1.00	1.12	**0.91**
P/NAV	-	-	-	-	0.97	**0.97**
EV/EBITDA	12.59	13.90	14.39	8.59	9.78	**11.85**
P/E (average)	34.98	-16.57	30.92	8.31	8.97	**13.32**
Other Ratios						
Sales growth	-	-13.72%	-15.00%	33.40%	0.37%	**1.26%**
Sustainable growth rate	-	-9.26%	-6.58%	13.48%	8.43%	**1.62%**
Depreciation as % of fixed assets	-	4.77%	5.40%	4.94%	4.64%	**4.94%**
Fixed asset growth	-	-5.24%	1.01%	6.20%	4.73%	**1.67%**
Current portion of LT debt as % of LT debt	-	2.08%	1.61%	1.41%	2.32%	**1.85%**
LT debt / Stockholder's equity	1.50	1.32	1.53	1.37	1.31	**1.41**

Figure D8: Selected Data and Financial Ratios for OSG (1997-2001)

APPENDIX E: Cost of Capital

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E	0.68	
k_E	9.96%	
k_D	8.35%	(annual report)
D/(D+E)	44.73%	(Net debt/capitalization, market)
E/(D+E)	55.27%	
WACC	**9.24%**	

Figure E1: Teekay's Cost of Capital

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E	0.15	
k_E	6.25%	
k_D	5.80%	(annual report)
D/(D+E)	13.79%	(Net debt/capitalization, market)
E/(D+E)	86.21%	
WACC	**6.19%**	

Figure E2: Nordic American Tankers' Cost of Capital

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E	0.6	
k_E	9.40%	
k_D	7.00%	(annual report)
D/(D+E)	34.80%	(Net debt/capitalization, market)
E/(D+E)	65.20%	
WACC	**8.56%**	

Figure E3: Knightsbridge Tankers' Cost of Capital

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E (tanker industry)	0.68	
D/(D+E) (tanker industry)	48.30%	
E/(D+E) (tanker industry)	51.70%	
β_A	0.35	
β_E	1.10	
k_E	12.90%	
k_D	7.00%	(annual report)
D/(D+E)	68.05%	(Net debt/capitalization, market)
E/(D+E)	31.95%	
WACC	**8.89%**	

Figure E4: Stelmar's Cost of Capital

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E (tanker industry)	0.68	
D/(D+E) (tanker industry)	48.30%	
E/(D+E) (tanker industry)	51.70%	
β_A	0.35	
β_E	0.63	
k_E	9.63%	
k_D	7.81%	(annual report)
D/(D+E)	44.47%	(Net debt/capitalization, market)
E/(D+E)	55.53%	
WACC	**8.82%**	

Figure E5: General Maritime's Cost of Capital

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E	0.04	
k_E	5.48%	
k_D	7.81%	(annual report)
D/(D+E)	55.80%	(Net debt/capitalization)
E/(D+E)	44.20%	
WACC	**6.78%**	

Figure E6: Frontline's Cost of Capital

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E	0.56	
k_E	9.12%	
k_D	6.98%	(annual report)
D/(D+E)	49.97%	(Net debt/capitalization, market)
E/(D+E)	50.03%	
WACC	**8.05%**	

Figure E7: *OMI's Cost of Capital*

Cost of capital

r_f	5.20%	(10-year treasury)
Risk-premium	7.00%	(historical)
β_E	0.77	
k_E	10.59%	
k_D	8.25%	(annual report)
D/(D+E)	60.15%	(Net debt/capitalization, market)
E/(D+E)	39.85%	
WACC	**9.18%**	

Figure E8: *OSG's Cost of Capital*

APPENDIX F: DCF Model

Parameters	
WACC	9.24%
TCE per ship per day	20,000
Net voyage revenue as % of sales	73.26%
Voyage expenses as % of sales	26.74%

	2002	2003	2004	2005	2006	2007
Number of Ships	96	105	110	120	130	140
Net Voyage Revenue	700,800	766,500	803,000	876,000	949,000	1,022,000
Voyage Revenue	888,194	971,462	1,017,722	1,110,242	1,202,763	1,295,283
OPEX except D&A as % of sales	30.19%					
D&A as % of fixed assets	7.10%					
Average interest expense	7.09%					
Other income as % of sales	0.39%					
Extraordinary items as % of sales	0					
Cash and marketable securities as % of sales	30.89%					
Other current assets as % of sales	10.24%					
Fixed assets increase	120,000					
Other long term assets as % of sales	5.89%					
Non-interest bearing liabilities as % of sales	9.22%					
Current portion of LT debt as % LT debt	5.24%					
LT debt/Stockholder's equity	0.86					
TV growth	1.00%					

	2000	2001	2002	2003	2004	2005	2006	2007
Voyage revenue	893,226	1,039,056	888,194	971,462	1,017,722	1,110,242	1,202,763	1,295,283
Voyage expenses	248,957	249,562	237,503	259,769	272,139	296,879	321,619	346,359
Net Voyage revenue	644,269	789,494	650,691	711,693	745,583	813,364	881,144	948,924
OPEX except depreciation	216,441	269,748	267,613	292,702	306,640	334,516	362,392	390,269
EBITDA	427,828	519,746	383,078	418,992	438,944	478,848	518,752	558,655
Depreciation and Amortization	100,153	136,283	145,060	153,580	162,100	170,620	179,140	187,660
EBIT	327,675	383,463	238,018	265,412	276,844	308,228	339,612	370,996
Net interest expense	(61,619)	(57,053)	(65,474)	(74,360)	(78,712)	(82,943)	(87,421)	(91,910)
Other income (loss)	3,864	10,108	7,905	8,646	9,058	9,881	10,705	11,528
Extraordinary items	0	0	0	0	0	0	0	0
Net income (loss)	270,020	336,518	180,449	199,698	207,189	235,166	262,895	290,614
Number of shares outstanding	39,392	40,496	40,496	40,496	40,496	40,496	40,496	40,496
EPS	6.86	8.31	4.46	4.93	5.12	5.81	6.49	7.18
Condensed Balance Sheet								
Assets								
Cash and marketable securities	223,123	293,837	271,787	297,267	311,423	339,734	368,045	396,357
Other current assets	106,114	79,658	90,951	99,478	104,215	113,689	123,163	132,637
Current assets	329,237	283,495	362,738	396,745	415,638	453,423	491,208	528,993
Fixed assets	1,607,716	2,043,098	2,163,098	2,283,098	2,403,098	2,523,098	2,643,098	2,763,098
Other long-term assets	37,146	141,188	49,117	53,722	56,280	61,396	66,513	71,629
Total long-term assets	1,644,862	2,184,286	2,212,215	2,336,820	2,459,378	2,584,494	2,709,611	2,834,727
Total assets	1,974,099	2,467,781	2,574,954	2,733,565	2,875,016	3,037,917	3,200,819	3,363,721
Liabilities								
Non-interest bearing liabilities	66,165	75,495	81,801	89,569	93,834	102,364	110,895	119,425
Current portion of long-term debt	72,170	51,830	71,462	86,662	91,520	96,255	101,610	106,943
Current Liabilities	138,335	127,325	153,353	176,231	185,354	198,620	212,505	226,368
Long term debt	732,682	923,279	1,119,665	1,182,423	1,243,607	1,312,794	1,381,694	1,450,604
Total liabilities	871,017	1,050,604	1,273,018	1,358,654	1,428,961	1,511,413	1,594,199	1,676,972
Stockholder's equity								
Stockholder's equity	1,103,082	1,417,177	1,301,936	1,374,911	1,446,055	1,526,504	1,606,620	1,686,749
Net addition to stockholder's equity	-	314,095	(115,241)	72,975	71,144	80,449	80,116	80,128
Total liabilities and stockholder's equity	1,974,099	2,467,781	2,574,954	2,733,565	2,875,016	3,037,917	3,200,819	3,363,721
Balance	0	0	0	0	0	0	0	0
Other Data								
Tax rate	0	0	0	0	0	0	0	0
Net debt	647,894	846,767	1,001,231	1,061,387	1,117,538	1,171,879	1,226,153	1,280,615
Operating Working Capital	39,949	4,163	9,060	9,909	10,381	11,324	12,268	13,212
Net long-term assets	1,607,716	2,043,098	2,163,098	2,283,098	2,403,098	2,523,098	2,643,098	2,763,098
Net Assets	1,647,665	2,047,261	2,172,158	2,293,007	2,413,479	2,534,422	2,655,366	2,776,310
Change in net assets	-	399,596	124,897	120,849	120,472	120,944	120,944	120,944
Dividend per share	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Dividend payout ratio	12.54%	10.35%	19.30%	17.44%	16.81%	14.81%	13.25%	11.98%
Financial Ratios								
Gross margin	72.13%	75.98%	73.26%	73.26%	73.26%	73.26%	73.26%	73.26%
Operating margin	36.68%	36.90%	26.80%	27.32%	27.20%	27.76%	28.24%	28.64%
Profit margin	30.23%	32.39%	20.32%	20.56%	20.36%	21.18%	21.86%	22.44%
Asset turnover	0.45	0.42	0.34	0.36	0.35	0.37	0.38	0.39
Fixed asset turnover	0.56	0.51	0.41	0.43	0.42	0.44	0.46	0.47
Financial leverage	1.79	1.74	1.68	1.99	1.99	1.99	1.99	1.99
ROA	13.68%	13.64%	7.01%	7.31%	7.21%	7.74%	8.21%	8.64%
ROE	24.48%	23.75%	13.86%	14.52%	14.33%	15.41%	16.36%	17.23%
ROIC	17.17%	16.03%	9.55%	10.04%	9.95%	10.50%	10.99%	11.44%
Net debt/ capitalization	37.00%	37.40%	43.47%	43.57%	43.59%	43.42%	43.28%	43.16%
D/A	0.44	0.43	0.49	0.50	0.50	0.50	0.50	0.50
D/E	0.79	0.74	0.98	0.99	0.99	0.99	0.99	0.99
Current ratio	2.38	2.23	2.37	2.25	2.24	2.28	2.31	2.34
Times interest earned	5.33	6.72	3.64	3.57	3.52	3.72	3.88	4.04
Times burden covered	2.45	3.52	1.74	1.65	1.59	1.72	1.80	1.87
Average cost of debt	-	12.82%	12.09%	12.09%	12.09%	12.09%	12.09%	12.09%
Sales growth		16.33%	-14.52%	9.38%	4.76%	9.09%	8.33%	7.69%

Valuation							
	0	1	2	3	4	5	6
	2001	2002	2003	2004	2005	2006	2007
EBIT	383,463	238,018	265,412	276,844	308,228	339,612	370,996
Change in Net Assets	399,596	124,897	120,849	120,472	120,944	120,944	120,944
Tax Rate	0	0	0	0	0	0	0
FCF	(16,133)	113,122	144,562	156,372	187,284	218,668	250,052
WACC	9.24%	9.24%	9.24%	9.24%	9.24%	9.24%	9.24%
Dicounted FCF	(16,133)	103,563	121,141	119,954	131,515	140,566	147,144
TV						3,034,666	
Discounted TV	1,950,767						
Sum of discounted FCF	600,597						
Enterprise Value	2,551,364						
Net Debt	846,767						
Equity Value	1,704,597						
Number of Shares	40,496						
Price per share	42.09						

Figure F1: Assumptions, Proformas and Valuation Snapshot for Teekay

Parameters	
WACC	6.19%
TCE per ship per day	39,000
Vessel opex per day	8,500
Hire rate	24,500
Net voyage revenue as % of sales	100.00%
Voyage expenses as % of sales	0.00%
OPEX except D&A	572,736
D&A as % of fixed assets	6,831,040
Average interest expense	(1,542,579)
Other income	(25,325)
Extraordinary items	0
Cash and marketable securities as % of sales	9.51%
Other current assets as % of sales	12.32%
Other long term assets	0
Non-interest bearing liabilities as % of sales	5.54%
Current portion of LT debt	0
LT debt	30,000,000
Price per ship in 2004	39,000,000

	2000	2001	2002	2003	2004
Voyage revenue	36,577,262	28,359,568	26,827,500	26,827,500	26,827,500
Voyage expenses	0	0	0	0	0
Net Voyage revenue	36,577,262	28,359,568	26,827,500	26,827,500	26,827,500
OPEX except depreciation	558,579	538,520	572,736	572,736	572,736
EBITDA	36,018,683	27,821,048	26,254,764	26,254,764	26,254,764
Depreciation and Amortization	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040
EBIT	29,187,643	20,990,008	19,423,725	19,423,725	19,423,725
Net interest expense	(1,493,256)	(1,581,564)	(1,542,579)	(1,542,579)	(1,542,579)
Other income (loss)	(25,423)	(22,968)	(25,325)	(25,325)	(25,325)
Extraordinary items	0	0	0	0	0
Net income (loss)	27,668,964	19,385,476	17,855,821	17,855,821	17,855,821
Number of shares outstanding	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606
EPS	2.85	2.00	1.84	1.84	1.84
Condensed Balance Sheet					
Assets					
Cash and marketable securities	1,922,925	630,868	2,550,679	2,550,679	2,550,679
Other current assets	10,344,534	283,615	3,305,530	3,305,530	3,305,530
Current assets	12,267,459	914,483	5,856,209	5,856,209	5,856,209
Fixed assets	148,575,045	141,744,005	134,912,966	128,081,926	121,250,887
Other long-term assets	0	0	0	0	0
Total long-term assets	148,575,045	141,744,005	134,912,966	128,081,926	121,250,887
Total assets	160,842,504	142,658,488	140,769,175	133,938,135	127,107,096
Liabilities					
Non-interest bearing liabilities	43,500	38,666	1,486,574	1,486,574	1,486,574
Current portion of long-term debt	0	0	0	0	0
Current Liabilities	43,500	38,666	1,486,574	1,486,574	1,486,574
Long term debt	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000
Total liabilities	30,043,500	30,038,666	31,486,574	31,486,574	31,486,574
Stockholder's equity					
Stockholder's equity	130,799,004	112,619,822	109,282,601	102,451,561	95,620,522
Net addition to stockholder's equity	-	(18,179,182)	(3,337,221)	(6,831,040)	(6,831,040)
Total liabilities and stockholder's equity	160,842,504	142,658,488	140,769,175	133,938,135	127,107,096
Balance	0	0	0	0	0
Other Data					
Tax rate	0	0	0	0	0
Net debt	28,120,575	29,407,798	28,935,895	28,935,895	28,935,895
Operating Working Capital	10,301,034	244,949	1,818,956	1,818,956	1,818,956
Net long-term assets	148,575,045	141,744,005	134,912,966	128,081,926	121,250,887
Net Assets	158,876,079	141,988,954	136,731,921	129,900,882	123,069,842
Change in net assets	-	(16,887,125)	(5,257,033)	(6,831,040)	(6,831,040)
Financial Ratios					
Gross margin	100.00%	100.00%	100.00%	100.00%	100.00%
Operating margin	79.80%	74.01%	72.40%	72.40%	72.40%
Profit margin	75.65%	68.36%	66.56%	66.56%	66.56%
Asset turnover	0.23	0.20	0.19	0.20	0.21
Fixed asset turnover	0.25	0.20	0.20	0.21	0.22
Financial leverage	1.23	1.27	1.29	1.31	1.33
ROA	17.20%	13.59%	12.68%	13.33%	14.05%
ROE	21.15%	17.21%	16.34%	17.43%	18.67%
ROIC	18.15%	14.72%	13.95%	14.66%	15.46%
Net debt/ capitalization	17.69%	20.71%	20.93%	22.02%	23.23%
D/A	0.19	0.21	0.22	0.24	0.25
D/E	0.23	0.27	0.29	0.31	0.33
Current ratio	282.01	23.65	3.94	3.94	3.94
Times interest earned	19.55	13.27	12.59	12.59	12.59
Times burden covered	19.55	13.27	12.59	12.59	12.59
Average cost of debt	-	10.54%	10.28%	10.28%	10.28%
Sales growth		-22.47%	-5.40%	0.00%	0.00%

Valuation				
	0	1	2	3
	2001	2002	2003	2004
EBIT	20,990,008	19,423,725	19,423,725	19,423,725
Change in Net Assets	(16,887,125)	(5,257,033)	(6,831,040)	(6,831,040)
Tax Rate	0	0	0	0
FCF	37,877,133	24,680,757	26,254,764	26,254,764
WACC	6.19%	6.19%	6.19%	6.19%
Dicounted FCF	37,877,133	23,242,524	23,284,008	21,927,168
TV				105,000,000
Discounted TV	87,692,758			
Sum of discounted FCF	106,330,833			
Enterprise Value	194,023,591			
Net Debt	29,407,798			
Equity Value	164,615,793			
Number of Shares	9,706,606			
Price per share	16.96			

Figure F2: Assumptions, Proformas and Valuation Snapshot for NAT (2004)

Parameters	
WACC	6.19%
TCE per ship per day	34,000
BP OPEX per day	8,500
Hire rate	24,500
Net voyage revenue as % of sales	100.00%
Voyage expenses as % of sales	0.00%
OPEX except D&A	572,736
D&A as % of fixed assets	6,831,040
Average interest expense	(1,542,579)
Other income	(25,325)
Extraordinary items	0
Cash and marketable securities as % of sales	9.51%
Other current assets as % of sales	12.32%
Other long term assets	0
Non-interest bearing liabilities as % of sales	5.54%
Current portion of LT debt	0
LT debt	30,000,000
Price per ship in 2011	75,000,000

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Voyage revenue	36,577,262	28,359,568	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500
Voyage expenses	0	0	0	0	0	0	0	0	0	0	0	0
Net Voyage revenue	36,577,262	28,359,568	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500	26,827,500
OPEX except depreciation	558,579	538,520	572,736	572,736	572,736	572,736	572,736	572,736	572,736	572,736	572,736	572,736
EBITDA	36,018,683	27,821,048	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764
Depreciation and Amortization	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040	6,831,040
EBIT	29,187,643	20,990,008	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725
Net interest expense	(1,493,256)	(1,581,564)	(1,542,579)	(1,542,579)	(1,542,579)	(1,542,579)	(1,542,579)	(1,542,579)	(1,542,579)	(1,542,579)	(1,542,579)	(1,542,579)
Other income (loss)	(25,423)	(22,968)	(25,325)	(25,325)	(25,325)	(25,325)	(25,325)	(25,325)	(25,325)	(25,325)	(25,325)	(25,325)
Extraordinary items	0	0	0	0	0	0	0	0	0	0	0	0
Net income (loss)	27,668,964	19,385,476	17,855,821	17,855,821	17,855,821	17,855,821	17,855,821	17,855,821	17,855,821	17,855,821	17,855,821	17,855,821
Number of shares outstanding	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606	9,706,606
EPS	2.85	2.00	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Condensed Balance Sheet												
Assets												
Cash and marketable securities	1,922,925	630,868	2,550,679	2,550,679	2,550,679	2,550,679	2,550,679	2,550,679	2,550,679	2,550,679	2,550,679	2,550,679
Other current assets	10,344,534	283,615	3,305,530	3,305,530	3,305,530	3,305,530	3,305,530	3,305,530	3,305,530	3,305,530	3,305,530	3,305,530
Current assets	12,267,459	914,483	5,856,209	5,856,209	5,856,209	5,856,209	5,856,209	5,856,209	5,856,209	5,856,209	5,856,209	5,856,209
Fixed assets	148,575,045	141,744,005	134,912,966	128,081,926	121,250,887	114,419,847	107,588,808	100,757,768	93,926,729	87,095,689	80,264,650	73,433,610
Other long-term assets	0	0	0	0	0	0	0	0	0	0	0	0
Total long-term assets	148,575,045	141,744,005	134,912,966	128,081,926	121,250,887	114,419,847	107,588,808	100,757,768	93,926,729	87,095,689	80,264,650	73,433,610
Total assets	160,842,504	142,658,488	140,769,175	133,938,135	127,107,096	120,276,056	113,445,017	106,613,977	99,782,938	92,951,898	86,120,859	79,289,819
Liabilities												
Non-interest bearing liabilities	43,500	38,666	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574
Current portion of long-term debt	0	0	0	0	0	0	0	0	0	0	0	0
Current Liabilities	43,500	38,666	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574	1,486,574
Long term debt	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000
Total liabilities	30,043,500	30,038,666	31,486,574	31,486,574	31,486,574	31,486,574	31,486,574	31,486,574	31,486,574	31,486,574	31,486,574	31,486,574
Stockholder's equity												
Stockholder's equity	130,799,004	112,619,822	109,282,601	102,451,561	95,620,522	88,789,482	81,958,443	75,127,403	68,296,364	61,465,324	54,634,285	47,803,245
Net addition to stockholder's equity	-	(18,179,182)	(3,337,221)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)
Total liabilities and stockholder's equity	160,842,504	142,658,488	140,769,175	133,938,135	127,107,096	120,276,056	113,445,017	106,613,977	99,782,938	92,951,898	86,120,859	79,289,819
Balance	0	0	0	0	0	0	0	0	0	0	0	0
Other Data												
Tax rate	0	0	0	0	0	0	0	0	0	0	0	0
Net debt	28,120,575	29,407,798	28,935,895	28,935,895	28,935,895	28,935,895	28,935,895	28,935,895	28,935,895	28,935,895	28,935,895	28,935,895
Operating Working Capital	10,301,034	244,949	1,818,956	1,818,956	1,818,956	1,818,956	1,818,956	1,818,956	1,818,956	1,818,956	1,818,956	1,818,956
Net long-term assets	148,575,045	141,744,005	134,912,966	128,081,926	121,250,887	114,419,847	107,588,808	100,757,768	93,926,729	87,095,689	80,264,650	73,433,610
Net Assets	158,876,079	141,988,954	136,731,921	129,900,882	123,069,842	116,238,803	109,407,763	102,576,724	95,745,684	88,914,645	82,083,605	75,252,566
Change in net assets	-	(16,887,125)	(5,257,033)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)
Financial Ratios												
Gross margin	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating margin	79.80%	74.01%	72.40%	72.40%	72.40%	72.40%	72.40%	72.40%	72.40%	72.40%	72.40%	72.40%
Profit margin	75.65%	68.36%	66.56%	66.56%	66.56%	66.56%	66.56%	66.56%	66.56%	66.56%	66.56%	66.56%
Asset turnover	0.23	0.20	0.19	0.20	0.21	0.22	0.24	0.25	0.27	0.29	0.31	0.34
Fixed asset turnover	0.25	0.20	0.20	0.21	0.22	0.23	0.25	0.27	0.29	0.31	0.33	0.37
Financial leverage	1.23	1.27	1.29	1.31	1.33	1.35	1.38	1.42	1.46	1.51	1.58	1.66
ROA	17.20%	13.59%	12.68%	13.33%	14.05%	14.85%	15.74%	16.75%	17.89%	19.21%	20.73%	22.52%
ROE	21.15%	17.21%	16.34%	17.43%	18.67%	20.11%	21.79%	23.77%	26.14%	29.05%	32.68%	37.35%
ROIC	18.15%	14.72%	13.95%	14.86%	15.46%	16.35%	17.35%	18.48%	19.76%	21.24%	22.95%	24.97%
Net debt/ capitalization	17.69%	20.71%	20.93%	22.02%	23.23%	24.58%	26.09%	27.81%	29.76%	32.01%	34.62%	37.71%
D/A	0.19	0.21	0.22	0.24	0.25	0.26	0.28	0.30	0.32	0.34	0.37	0.40
D/E	0.23	0.27	0.29	0.31	0.33	0.35	0.38	0.42	0.46	0.51	0.58	0.66
Current ratio	282.01	23.65	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94
Times interest earned	19.55	13.27	12.59	12.59	12.59	12.59	12.59	12.59	12.59	12.59	12.59	12.59
Times burden covered	19.55	13.27	12.59	12.59	12.59	12.59	12.59	12.59	12.59	12.59	12.59	12.59
Average cost of debt	-	10.54%	10.28%	10.28%	10.28%	10.28%	10.28%	10.28%	10.28%	10.28%	10.28%	10.28%
Sales growth		-22.47%	-5.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Valuation

	0	1	2	3	4	5	6	7	8	9	10
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EBIT	20,990,008	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725	19,423,725
Change in Net Assets	(16,887,125)	(5,257,033)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)	(6,831,040)
Tax Rate	0	0	0	0	0	0	0	0	0	0	0
FCF	37,877,133	24,680,757	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764	26,254,764
WACC	6.19%	6.19%	6.19%	6.19%	6.19%	6.19%	6.19%	6.19%	6.19%	6.19%	6.19%
Discounted FCF	37,877,133	23,242,524	23,284,008	21,927,168	20,649,396	19,446,084	18,312,894	17,245,738	16,240,769	15,294,363	14,403,108
TV											45,000,000
Discounted TV	24,586,562										
Sum of discounted FCF	227,923,186										
Enterprise Value	252,509,748										
Net Debt	29,407,798										
Equity Value	223,201,950										
Number of Shares	9,706,606										
Price per share	22.99										

Figure F3: Assumptions, Proformas and Valuation Snapshot for NAT (2011)

Parameters	
WACC	8.56%
TCE per ship per day	30,569
Vessel opex per day	10,500
Hire rate	22,069
Net voyage revenue as % of sales	100.00%
Voyage expenses as % of sales	0.00%
OPEX except D&A	833,880
D&A as % of fixed assets	17,592,860
Average interest expense	(8,869,057)
Other income	(449,595)
Extraordinary items	0
Cash and marketable securities as % of sales	12.17%
Other current assets as % of sales	39.27%
Other long term assets	0
Non-interest bearing liabilities as % of sales	4.46%
Current portion of LT debt	0
LT debt	125,397,399
Price per ship in 2004	40,000,000

	2000	2001	2002	2003	2004
Voyage revenue	76,335,975	61,200,000	40,275,925	40,275,925	40,275,925
Voyage expenses	0	0	0	0	0
Net Voyage revenue	76,335,975	61,200,000	40,275,925	40,275,925	40,275,925
OPEX except depreciation	807,357	846,000	833,880	833,880	833,880
EBITDA	75,528,618	60,354,000	39,442,045	39,442,045	39,442,045
Depreciation and Amortization	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860
EBIT	57,935,758	42,761,140	21,849,185	21,849,185	21,849,185
Net interest expense	(8,748,393)	(9,010,756)	(8,869,057)	(8,869,057)	(8,869,057)
Other income (loss)	(463,620)	(463,620)	(449,595)	(449,595)	(449,595)
Extraordinary items	0	0	0	0	0
Net income (loss)	48,723,745	33,286,764	12,530,533	12,530,533	12,530,533
Number of shares outstanding	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000
EPS	2.85	1.95	0.73	0.73	0.73
Condensed Balance Sheet					
Assets					
Cash and marketable securities	247,370	245,000	4,903,425	4,903,425	4,903,425
Other current assets	31,133,274	43,290,677	15,816,246	15,816,246	15,816,246
Current assets	31,380,644	43,535,677	20,719,672	20,719,672	20,719,672
Fixed assets	373,359,198	355,766,338	338,173,478	320,580,618	302,987,758
Other long-term assets	0	0	0	0	0
Total long-term assets	373,359,198	355,766,338	338,173,478	320,580,618	302,987,758
Total assets	404,739,842	399,302,015	358,893,150	341,300,290	323,707,430
Liabilities					
Non-interest bearing liabilities	2,124,154	2,000,000	1,794,574	1,794,574	1,794,574
Current portion of long-term debt	0	0	0	0	0
Current Liabilities	2,124,154	2,000,000	1,794,574	1,794,574	1,794,574
Long term debt	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399
Total liabilities	127,521,553	127,397,399	127,191,973	127,191,973	127,191,973
Stockholder's equity					
Stockholder's equity	277,218,289	271,904,616	231,701,176	214,108,316	196,515,458
Net addition to stockholder's equity	-	(5,313,673)	(40,203,440)	(17,592,860)	(17,592,860)
Total liabilities and stockholder's equity	404,739,842	399,302,015	358,893,150	341,300,290	323,707,430
Balance	0	0	0	0	0
Other Data					
Tax rate	0	0	0	0	0
Net debt	127,274,183	127,152,399	122,288,548	122,288,548	122,288,548
Operating Working Capital	29,009,120	41,290,677	14,021,672	14,021,672	14,021,672
Net long-term assets	373,359,198	355,766,338	338,173,478	320,580,618	302,987,758
Net Assets	402,368,318	397,057,015	352,195,150	334,602,290	317,009,430
Change in net assets	-	(5,311,303)	(44,861,865)	(17,592,860)	(17,592,860)
Financial Ratios					
Gross margin	100.00%	100.00%	100.00%	100.00%	100.00%
Operating margin	75.90%	69.87%	54.25%	54.25%	54.25%
Profit margin	63.83%	54.39%	31.11%	31.11%	31.11%
Asset turnover	0.19	0.15	0.11	0.12	0.12
Fixed asset turnover	0.20	0.17	0.12	0.13	0.13
Financial leverage	1.46	1.47	1.55	1.59	1.65
ROA	12.04%	8.34%	3.49%	3.67%	3.87%
ROE	17.58%	12.24%	5.41%	5.85%	6.38%
ROIC	14.39%	10.76%	6.12%	6.44%	6.79%
Net debt/ capitalization	31.47%	31.86%	34.55%	36.35%	38.36%
D/A	0.32	0.32	0.35	0.37	0.39
D/E	0.46	0.47	0.55	0.59	0.65
Current ratio	14.77	21.77	11.55	11.55	11.55
Times interest earned	6.62	4.75	2.46	2.46	2.46
Times burden covered	6.62	4.75	2.46	2.46	2.46
Average cost of debt	-	14.37%	14.15%	14.15%	14.15%
Sales growth		-19.83%	-34.19%	0.00%	0.00%

	0	1	2	3
	2001	2002	2003	2004
EBIT	42,761,140	21,849,185	21,849,185	21,849,185
Change in Net Assets	(5,311,303)	(44,861,865)	(17,592,860)	(17,592,860)
Tax Rate	0	0	0	0
FCF	48,072,443	66,711,050	39,442,045	39,442,045
WACC	8.56%	8.56%	8.56%	8.56%
Dicounted FCF	48,072,443	61,448,139	33,464,268	30,824,234
TV				200,000,000
Discounted TV	156,301,396			
Sum of discounted FCF	173,809,084			
Enterprise Value	330,110,480			
Net Debt	127,152,399			
Equity Value	202,958,081			
Number of Shares	17,100,000			
Price per share	11.87			

Figure F4: Assumptions, Proformas and Valuation Snapshot for VLCCF (2004)

Parameters		
WACC	8.56%	
TCE per ship per day	22,069	22,069
BP OPEX per day	10,500	14,900
Hire rate	22,069	22,069
Net voyage revenue as % of sales	100.00%	
Voyage expenses as % of sales	0.00%	
OPEX except D&A	833,880	
D&A as % of fixed assets	17,592,860	
Average interest expense	(8,869,057)	
Other income	(449,595)	
Extraordinary items	0	
Cash and marketable securities as % of sales	12.17%	
Other current assets as % of sales	39.27%	
Other long term assets	0	
Non-interest bearing liabilities as % of sales	4.45%	
Current portion of LT debt	0	
LT debt	125,397,399	
Price per ship in 2011	25,000,000	

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Voyage revenue	76,335,975	61,200,000	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925
Voyage expenses	0	0	0	0	0	0	0	0	0	0	0	0
Net Voyage revenue	76,335,975	61,200,000	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925	40,275,925
OPEX except depreciation	807,357	848,000	833,880	833,880	833,880	833,880	833,880	833,880	833,880	833,880	833,880	833,880
EBITDA	75,528,618	60,354,000	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045
Depreciation and Amortization	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860	17,592,860
EBIT	57,935,758	42,761,140	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185
Net interest expense	(8,748,393)	(9,010,756)	(8,869,057)	(8,869,057)	(8,869,057)	(8,869,057)	(8,869,057)	(8,869,057)	(8,869,057)	(8,869,057)	(8,869,057)	(8,869,057)
Other income (loss)	(463,620)	(463,620)	(449,595)	(449,595)	(449,595)	(449,595)	(449,595)	(449,595)	(449,595)	(449,595)	(449,595)	(449,595)
Extraordinary items	0	0	0	0	0	0	0	0	0	0	0	0
Net income (loss)	48,723,745	33,286,764	12,530,533	12,530,533	12,530,533	12,530,533	12,530,533	12,530,533	12,530,533	12,530,533	12,530,533	12,530,533
Number of shares outstanding	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000	17,100,000
EPS	2.85	1.95	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Condensed Balance Sheet												
Assets												
Cash and marketable securities	247,370	245,000	4,903,425	4,903,425	4,903,425	4,903,425	4,903,425	4,903,425	4,903,425	4,903,425	4,903,425	4,903,425
Other current assets	31,133,274	43,290,677	15,816,246	15,816,246	15,816,246	15,816,246	15,816,246	15,816,246	15,816,246	15,816,246	15,816,246	15,816,246
Current assets	31,380,644	43,535,677	20,719,672	20,719,672	20,719,672	20,719,672	20,719,672	20,719,672	20,719,672	20,719,672	20,719,672	20,719,672
Fixed assets	373,359,198	355,766,338	338,173,478	320,580,618	302,987,758	285,394,898	267,802,038	250,209,178	232,616,318	215,023,458	197,430,598	179,837,738
Other long-term assets	0	0	0	0	0	0	0	0	0	0	0	0
Total long-term assets	373,359,198	355,766,338	338,173,478	320,580,618	302,987,758	285,394,898	267,802,038	250,209,178	232,616,318	215,023,458	197,430,598	179,837,738
Total assets	404,739,842	399,302,015	358,893,150	341,300,290	323,707,430	306,114,570	288,521,710	270,928,850	253,335,990	235,743,130	218,150,270	200,557,410
Liabilities												
Non-interest bearing liabilities	2,124,154	2,000,000	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574
Current portion of long-term debt	0	0	0	0	0	0	0	0	0	0	0	0
Current Liabilities	2,124,154	2,000,000	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574	1,794,574
Long term debt	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399	125,397,399
Total liabilities	127,521,553	127,397,399	127,191,973	127,191,973	127,191,973	127,191,973	127,191,973	127,191,973	127,191,973	127,191,973	127,191,973	127,191,973
Stockholder's equity												
Stockholder's equity	277,218,289	271,904,616	231,701,176	214,108,316	196,515,456	178,922,596	161,329,736	143,736,876	126,144,016	108,551,156	90,958,296	73,365,436
Net addition to stockholder's equity	-	(5,313,673)	(40,203,440)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)
Total liabilities and stockholder's equity	404,739,842	399,302,015	358,893,150	341,300,290	323,707,430	306,114,570	288,521,710	270,928,850	253,335,990	235,743,130	218,150,270	200,557,410
Balance	0	0	0	0	0	0	0	0	0	0	0	0
Other Data												
Tax rate	0	0	0	0	0	0	0	0	0	0	0	0
Net debt	127,274,183	127,152,399	122,288,548	122,288,548	122,288,548	122,288,548	122,288,548	122,288,548	122,288,548	122,288,548	122,288,548	122,288,548
Operating Working Capital	29,009,120	41,290,677	14,021,672	14,021,672	14,021,672	14,021,672	14,021,672	14,021,672	14,021,672	14,021,672	14,021,672	14,021,672
Net long-term assets	373,359,198	355,766,338	338,173,478	320,580,618	302,987,758	285,394,898	267,802,038	250,209,178	232,616,318	215,023,458	197,430,598	179,837,738
Net Assets	402,368,318	397,057,015	352,195,150	334,602,290	317,009,430	299,416,570	281,823,710	264,230,850	246,637,990	229,045,130	211,452,270	193,859,410
Change in net assets	-	(5,311,303)	(44,861,865)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)
Financial Ratios												
Gross margin	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating margin	75.90%	69.97%	54.25%	54.25%	54.25%	54.25%	54.25%	54.25%	54.25%	54.25%	54.25%	54.25%
Profit margin	63.83%	54.39%	31.11%	31.11%	31.11%	31.11%	31.11%	31.11%	31.11%	31.11%	31.11%	31.11%
Asset turnover	0.19	0.15	0.11	0.12	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.20
Fixed asset turnover	0.20	0.17	0.12	0.13	0.13	0.14	0.15	0.16	0.17	0.18	0.20	0.22
Financial leverage	1.46	1.47	1.55	1.59	1.65	1.71	1.79	1.88	2.01	2.17	2.40	2.73
ROA	12.04%	8.34%	3.49%	3.67%	3.87%	4.09%	4.34%	4.63%	4.95%	5.32%	5.74%	6.25%
ROE	17.58%	12.24%	5.41%	5.85%	6.38%	7.00%	7.77%	8.72%	9.93%	11.54%	13.78%	17.08%
ROIC	14.39%	10.76%	6.12%	6.44%	6.79%	7.18%	7.62%	8.12%	8.69%	9.34%	10.10%	10.99%
Net debt/ capitalization	31.47%	31.86%	34.55%	36.35%	38.36%	40.60%	43.12%	45.97%	49.22%	52.98%	57.35%	62.50%
D/A	0.32	0.32	0.35	0.37	0.39	0.42	0.44	0.47	0.50	0.54	0.58	0.63
D/E	0.46	0.47	0.55	0.59	0.65	0.71	0.79	0.88	1.01	1.17	1.40	1.73
Current ratio	14.77	21.77	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55	11.55
Times interest earned	6.62	4.75	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46
Times burden covered	6.62	4.75	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46
Average cost of debt	-	14.37%	14.15%	14.15%	14.15%	14.15%	14.15%	14.15%	14.15%	14.15%	14.15%	14.15%
Sales growth		-19.83%	-34.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Valuation	0	1	2	3	4	5	6	7	8	9	10
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EBIT	42,761,140	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185	21,849,185
Change in Net Assets	(5,311,303)	(44,861,865)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)	(17,592,860)
Tax Rate	0	0	0	0	0	0	0	0	0	0	0
FCF	48,072,443	66,711,050	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045	39,442,045
WACC	8.56%	8.56%	8.56%	8.56%	8.56%	8.56%	8.56%	8.56%	8.56%	8.56%	8.56%
Discounted FCF	48,072,443	61,448,139	33,464,268	30,824,234	28,392,474	26,152,559	24,089,354	22,188,917	20,438,408	18,825,998	17,340,794
TV											125,000,000
Discounted TV	54,955,562										
Sum of discounted FCF	331,237,588										
Enterprise Value	386,194,150										
Net Debt	127,152,399										
Equity Value	259,041,751										
Number of Shares	17,100,000										
Price per share	15.15										

Figure F5: Assumptions, Proformas and Valuation Snapshot for VLCCF (2011)

Parameters	
WACC	8.89%
TCE per ship per day	15,000
Net voyage revenue as % of sales	91.67%
Voyage expenses as % of sales	8.33%

	2002	2003	2004	2005	2006	2007
Number of Ships	27	29	30	30	32	33
Net Voyage Revenue	147,825	158,775	164,250	164,250	175,200	180,675
Voyage Revenue	160,139	172,001	177,932	177,932	189,794	195,725
OPEX except D&A as % of sales	29.64%					
D&A as % of fixed assets	11.11%					
Average interest expense	12.50%					
Other income as % of sales	0.04%					
Income taxes as % of sales	0					
Cash and marketable securities as % of sales	29.31%					
Other current assets as % of sales	7.20%					
Fixed assets increase	120,000					
Other long term assets as % of sales	3.60%					
Non-interest bearing liabilities as % of sales	11.42%					
Current portion of LT debt as % LT debt	12.50%					
LT debt/Stockholder's equity	1.70					
TV growth	1.00%					

	2000	2001	2002	2003	2004	2005	2006	2007
Voyage revenue	66,704	108,647	160,139	172,001	177,932	177,932	189,794	195,725
Voyage expenses	5,450	8,743	13,340	14,328	14,822	14,822	15,810	16,304
Net Voyage revenue	61,254	99,904	146,799	157,673	163,110	163,110	173,984	179,421
OPEX except depreciation	17,820	27,676	47,305	50,809	52,561	52,561	56,065	57,817
EBITDA	43,434	72,228	99,494	106,864	110,549	110,549	117,919	121,604
Depreciation and Amortization	16,557	22,715	36,448	37,802	39,156	40,510	41,864	43,218
EBIT	26,877	49,513	63,046	69,062	71,393	70,039	76,055	78,386
Net interest expense	(15,428)	(15,534)	(23,866)	(25,288)	(26,239)	(27,097)	(27,988)	(28,915)
Other income (loss)	(199)	34	(64)	(69)	(71)	(71)	(76)	(78)
Extraordinary items	(15)	0	0	0	0	0	0	0
Net income (loss)	11,235	34,013	39,115	43,705	45,083	42,871	47,991	49,392
Number of shares outstanding	-	10,338	10,338	10,338	10,338	10,338	10,338	10,338
EPS	-	3.29	3.78	4.23	4.36	4.15	4.64	4.78
Condensed Balance Sheet								
Assets								
Cash and marketable securities	26,464	34,417	47,898	51,445	53,219	53,219	56,767	58,541
Other current assets	5,562	11,747	12,010	12,900	13,345	13,345	14,235	14,679
Current assets	32,026	46,164	59,908	64,346	66,564	66,564	71,002	73,221
Fixed assets	264,780	538,382	558,382	578,382	598,382	618,382	638,382	658,382
Other long-term assets	2,409	7,637	5,765	6,192	8,406	6,406	6,833	7,046
Total long-term assets	267,189	546,019	564,147	584,574	604,788	624,788	645,215	665,428
Total assets	299,215	592,183	624,055	648,920	671,352	691,352	716,217	738,649
Liabilities								
Non-interest bearing liabilities	8,857	15,551	18,288	19,643	20,320	20,320	21,674	22,352
Current portion of long-term debt	17,710	40,322	40,858	44,460	46,027	47,616	49,065	50,801
Current Liabilities	26,567	55,873	59,146	64,103	66,347	67,936	70,740	73,153
Long term debt	183,082	326,862	355,684	368,218	380,929	392,521	406,411	419,016
Total liabilities	209,649	382,735	414,829	432,321	447,276	460,457	477,151	492,169
Stockholder's equity								
Stockholder's equity	89,566	209,448	209,226	216,599	224,076	230,895	239,066	246,480
Net addition to stockholder's equity	-	119,882	(222)	7,373	7,477	6,819	8,171	7,414
Total liabilities and stockholder's equity	299,215	592,183	624,055	648,920	671,352	691,352	716,217	738,649
Balance	0	0	0	0	(0)	(0)	(0)	(0)
Other Data								
Tax rate	0	0	0	0	0	0	0	0
Net debt	183,185	348,318	366,932	380,875	394,057	407,238	420,384	433,628
Operating Working Capital	(3,295)	(3,804)	(6,277)	(6,742)	(6,975)	(6,975)	(7,440)	(7,672)
Net long-term assets	264,780	538,382	558,382	578,382	598,382	618,382	638,382	658,382
Net Assets	261,485	534,578	552,105	571,640	591,407	611,407	630,942	650,710
Change in net assets	-	273,093	17,527	19,535	19,768	20,000	19,535	19,768
Dividend per share	0	0	0	0	0	0	0	0
Dividend payout ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Financial Ratios								
Gross margin	91.83%	91.95%	91.67%	91.67%	91.67%	91.67%	91.67%	91.67%
Operating margin	40.29%	45.57%	39.37%	40.15%	40.12%	39.36%	40.07%	40.05%
Profit margin	16.84%	31.31%	24.43%	25.41%	25.34%	24.09%	25.29%	25.24%
Asset turnover	0.22	0.18	0.26	0.27	0.27	0.26	0.26	0.26
Fixed asset turnover	0.25	0.20	0.29	0.30	0.30	0.29	0.30	0.30
Financial leverage	3.34	2.83	2.98	3.00	3.00	2.99	3.00	3.00
ROA	3.75%	5.74%	6.27%	6.74%	6.72%	6.20%	6.70%	6.69%
ROE	12.54%	16.24%	18.70%	20.18%	20.12%	18.57%	20.07%	20.04%
ROIC	9.26%	8.59%	10.41%	10.97%	10.97%	10.44%	10.95%	10.94%
Net debt/ capitalization	67.16%	62.45%	63.69%	63.75%	63.75%	63.82%	63.75%	63.76%
D/A	0.70	0.65	0.66	0.67	0.67	0.67	0.67	0.67
D/E	2.34	1.83	1.98	2.00	2.00	1.99	2.00	2.00
Current ratio	1.21	0.83	1.01	1.00	1.00	0.98	1.00	1.00
Times interest earned	1.74	3.19	2.64	2.73	2.72	2.58	2.72	2.71
Times burden covered	0.81	0.89	0.97	0.99	0.99	0.94	0.99	0.98
Average cost of debt	-	10.94%	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
Sales growth		62.88%	47.39%	7.41%	3.45%	0.00%	6.67%	3.13%

Valuation							
	0	1	2	3	4	5	6
	2001	2002	2003	2004	2005	2006	2007
EBIT	49,513	63,046	69,062	71,393	70,039	76,055	78,386
Change in Net Assets	273,093	17,527	19,535	19,768	20,000	19,535	19,768
Tax Rate	0	0	0	0	0	0	0
FCF	(223,580)	45,519	49,527	51,625	50,039	56,520	58,618
WACC	8.89%	8.89%	8.89%	8.89%	8.89%	8.89%	8.89%
Dicounted FCF	(223,580)	41,805	41,773	39,990	35,598	36,927	35,173
TV						743,336	
Discounted TV	485,656						
Sum of discounted FCF	(27,488)						
Enterprise Value	458,167						
Net Debt	348,318						
Equity Value	109,849						
Number of Shares	10,338						
Price per share	**10.63**						

Figure F6: Assumptions, Proformas and Valuation Snapshot for Stelmar

Parameters	
WACC	8.82%
TCE per ship per day	18,000
Net voyage revenue as % of sales	82.83%
Voyage expenses as % of sales	17.17%

	2002	2003	2004	2005	2006	2007
Number of Ships	29	33	35	38	42	45
Net Voyage Revenue	190,530	216,810	229,950	249,660	275,940	295,650
Voyage Revenue	223,244	254,036	269,432	292,527	323,319	346,413
OPEX except D&A as % of sales	28.95%					
D&A as % of fixed assets	6.44%					
Average interest expense	7.00%					
Other income as % of sales	0.73%					
Extraordinary items	0					
Cash and marketable securities as % of sales	10.58%					
Other current assets as % of sales	6.87%					
Fixed assets increase	20,000					
Other long term assets as % of sales	3.51%					
Non-interest bearing liabilities as % of sales	4.00%					
Current portion of LT debt as % LT debt	17.46%					
LT debt/Stockholder's equity	1.59					
TV growth	1.00%					

	2000	2001	2002	2003	2004	2005	2006	2007
Voyage revenue	132,012	217,128	223,244	254,036	269,432	292,527	323,319	346,413
Voyage expenses	23,996	52,099	38,331	43,618	46,262	50,227	55,514	59,479
Net Voyage revenue	108,016	165,029	184,913	210,418	223,171	242,300	267,805	286,934
OPEX except depreciation	33,921	51,690	64,629	73,544	78,001	84,686	93,601	100,287
EBITDA	74,095	113,339	120,284	136,875	145,170	157,613	174,204	186,647
Depreciation and Amortization	24,808	42,820	64,735	66,383	68,031	69,679	71,327	72,975
EBIT	49,287	70,519	55,549	70,492	77,139	87,934	102,877	113,672
Net interest expense	(19,005)	(16,292)	(31,546)	(39,504)	(41,052)	(42,083)	(43,216)	(44,347)
Other income (loss)	0	(1,822)	(380)	(432)	(458)	(497)	(550)	(589)
Extraordinary items	0	(1,184)	(1,184)	(1,184)	(1,184)	(1,184)	(1,184)	(1,184)
Net income (loss)	30,282	51,221	22,439	29,372	34,445	44,171	57,928	67,552
Number of shares outstanding	-	37,000	37,000	37,000	37,000	37,000	37,000	37,000
EPS	-	1.38	0.61	0.79	0.93	1.19	1.57	1.83
Condensed Balance Sheet								
Assets								
Cash and marketable securities	23,672	17,186	20,382	23,194	24,599	26,708	29,519	31,628
Other current assets	14,258	26,066	15,560	17,706	18,779	20,389	22,535	24,145
Current assets	37,930	43,252	35,942	40,900	43,379	47,097	52,054	55,773
Fixed assets	393,204	785,618	805,618	825,618	845,618	865,618	885,618	905,618
Other long-term assets	7,788	18,845	11,475	13,057	13,849	15,036	16,619	17,806
Total long-term assets	400,992	804,463	817,093	838,675	859,467	880,654	902,237	923,424
Total assets	438,922	847,715	853,035	879,575	902,845	927,751	954,291	979,196
Liabilities								
Non-interest bearing liabilities	8,830	9,502	13,171	14,988	15,897	17,259	19,076	20,438
Current portion of long-term debt	33,050	73,000	47,059	84,978	83,564	86,112	88,363	90,771
Current Liabilities	41,880	82,502	60,230	99,966	99,460	103,371	107,438	111,210
Long term debt	210,132	269,523	486,703	478,602	493,198	506,086	519,882	532,856
Total liabilities	252,012	352,025	546,933	578,568	592,658	609,458	627,321	644,066
Stockholder's equity								
Stockholder's equity	186,910	495,690	306,102	301,007	310,187	318,293	326,970	335,130
Net addition to stockholder's equity	-	308,780	(189,588)	(5,095)	9,180	8,106	8,677	8,160
Total liabilities and stockholder's equity	438,922	847,715	853,035	879,575	902,845	927,751	954,291	979,196
Balance	0	0	0	0	0	0	0	0
Other Data								
Tax rate	0	0	0	0	0	0	0	0
Net debt	228,340	334,839	526,551	555,375	568,059	582,750	597,802	612,439
Operating Working Capital	5,428	16,564	2,389	2,718	2,883	3,130	3,460	3,707
Net long-term assets	393,204	785,618	805,618	825,618	845,618	865,618	885,618	905,618
Net Assets	398,632	802,182	808,007	828,336	848,501	868,748	889,078	909,325
Change in net assets	-	403,550	5,825	20,329	20,165	20,247	20,329	20,247
Dividend per share	0	0	0	0	0	0	0	0
Dividend payout ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Financial Ratios								
Gross margin	81.82%	76.01%	82.83%	82.83%	82.83%	82.83%	82.83%	82.83%
Operating margin	37.34%	32.48%	24.88%	27.75%	28.63%	30.08%	31.82%	32.61%
Profit margin	22.94%	23.59%	10.05%	11.56%	12.78%	15.10%	17.92%	19.50%
Asset turnover	0.30	0.26	0.26	0.29	0.30	0.32	0.34	0.35
Fixed asset turnover	0.34	0.28	0.28	0.31	0.32	0.34	0.37	0.38
Financial leverage	2.35	1.71	2.79	2.92	2.91	2.91	2.92	2.92
ROA	6.90%	6.04%	2.63%	3.34%	3.82%	4.76%	6.07%	6.90%
ROE	16.20%	10.33%	7.33%	9.76%	11.10%	13.88%	17.72%	20.16%
ROIC	11.46%	8.41%	6.61%	8.15%	8.70%	9.66%	11.00%	11.86%
Net debt/ capitalization	54.99%	40.32%	63.24%	64.85%	64.68%	64.68%	64.64%	64.63%
D/A	0.57	0.42	0.64	0.66	0.66	0.66	0.66	0.66
D/E	1.35	0.71	1.79	1.92	1.91	1.91	1.92	1.92
Current ratio	0.91	0.52	0.60	0.41	0.44	0.46	0.48	0.50
Times interest earned	2.59	4.33	1.76	1.78	1.88	2.09	2.38	2.56
Times burden covered	0.95	0.79	0.71	0.57	0.62	0.69	0.78	0.84
Average cost of debt	-	11.13%	14.40%	14.40%	14.40%	14.40%	14.40%	14.40%
Sales growth		64.48%	2.82%	13.79%	6.06%	8.57%	10.53%	7.14%

Valuation							
	0	1	2	3	4	5	6
	2001	2002	2003	2004	2005	2006	2007
EBIT	70,519	55,549	70,492	77,139	87,934	102,877	113,672
Change in Net Assets	403,550	5,825	20,329	20,165	20,247	20,329	20,247
Tax Rate	0	0	0	0	0	0	0
FCF	(333,031)	49,724	50,162	56,975	67,687	82,548	93,425
WACC	8.82%	8.82%	8.82%	8.82%	8.82%	8.82%	8.82%
Discounted FCF	(333,031)	45,693	42,359	44,212	48,267	54,092	56,257
TV						1,194,455	
Discounted TV	782,699						
Sum of discounted FCF	(98,409)						
Enterprise Value	684,290						
Net Debt	334,839						
Equity Value	349,451						
Number of Shares	37,000						
Price per share	9.44						

Figure F7: Assumptions, Proformas and Valuation Snapshot for General Maritime

Parameters						
WACC	6.78%					
TCE per ship per day	28,500					
Net voyage revenue as % of sales	78.26%					
Voyage expenses as % of sales	21.74%					
	2002	2003	2004	2005	2006	2007
Number of Ships	55	65	70	75	85	95
Net Voyage Revenue	572,138	676,163	728,175	780,188	884,213	988,238
Voyage Revenue	696,520	823,160	886,480	949,800	1,076,440	1,203,080
OPEX except D&A as % of sales	26.13%					
D&A as % of fixed assets	6.07%					
Average interest expense	13.00%					
Other income as % of sales	2.92%					
Income taxes as % of sales	0					
Cash and marketable securities as % of sales	17.49%					
Other current assets as % of sales	15.25%					
Fixed Asset increase	200,000					
Other long term assets as % of sales	8.10%					
Non-interest bearing liabilities as % of sales	6.22%					
Current portion of LT debt as % LT debt	10.00%					
LT debt/Stockholder's equity	1.00					
TV growth	3.00%					

	2000	2001	2002	2003	2004	2005	2006	2007
Voyage revenue	697,260	757,345	696,520	823,160	886,480	949,800	1,076,440	1,203,080
Voyage expenses	97,316	110,000	151,423	178,955	192,721	206,487	234,018	261,550
Net Voyage revenue	599,944	647,345	545,097	644,205	693,759	743,314	842,422	941,531
OPEX except depreciation	132,132	176,486	196,070	231,720	249,544	267,369	303,018	338,667
EBITDA	467,812	470,859	349,026	412,486	444,215	475,945	539,404	602,864
Depreciation and Amortization	92,880	121,725	157,279	169,299	181,319	193,339	205,359	217,379
EBIT	374,932	349,134	191,748	243,187	262,897	282,606	334,046	385,485
Net interest expense	(89,316)	(78,847)	(121,051)	(137,268)	(148,118)	(157,907)	(168,414)	(179,741)
Other income (loss)	28,292	112,887	24,518	28,975	31,204	33,433	37,891	42,348
Extraordinary items	(41)	(444)	(444)	(444)	(444)	(444)	(444)	(444)
Net income (loss)	313,867	382,730	94,770	134,450	145,539	157,689	203,078	247,648
Number of shares outstanding	73,505	76,699	76,699	76,699	76,699	76,699	76,699	76,699
EPS	4.27	4.99	1.24	1.75	1.90	2.06	2.65	3.23
Condensed Balance Sheet								
Assets								
Cash and marketable securities	120,939	188,361	330,777	390,919	420,989	451,060	511,201	571,343
Other current assets	172,040	84,332	106,428	125,779	135,454	145,129	164,480	183,831
Current assets	292,979	272,693	437,206	516,698	556,444	596,190	675,682	755,174
Fixed assets	2,399,635	2,616,948	2,816,948	3,016,948	3,216,948	3,416,948	3,616,948	3,816,948
Other long-term assets	88,374	138,656	63,383	74,908	80,670	86,432	97,956	109,480
Total long-term assets	2,488,009	2,755,604	2,880,331	3,091,856	3,297,618	3,503,380	3,714,904	3,926,428
Total assets	2,780,988	3,028,297	3,317,537	3,608,553	3,854,061	4,099,569	4,390,586	4,681,602
Liabilities								
Non-interest bearing liabilities	69,736	64,855	64,219	75,895	81,733	87,572	99,248	110,924
Current portion of long-term debt	220,655	231,132	319,070	368,517	397,390	423,864	450,639	482,359
Current Liabilities	290,391	295,987	383,290	444,412	479,123	511,435	549,887	593,283
Long term debt	1,455,037	1,473,086	1,701,370	1,834,670	1,956,897	2,080,515	2,226,960	2,370,538
Total liabilities	1,745,428	1,769,073	2,084,660	2,279,082	2,436,020	2,591,950	2,776,847	2,963,821
Stockholder's equity								
Stockholder's equity	1,035,560	1,259,224	1,232,877	1,329,471	1,418,041	1,507,619	1,613,739	1,717,781
Net addition to stockholder's equity	-	223,664	(26,347)	96,594	88,570	89,578	106,119	104,042
Total liabilities and stockholder's equity	2,780,988	3,028,297	3,317,537	3,608,553	3,854,061	4,099,569	4,390,586	4,681,602
Balance	0	0	0	0	0	0	0	0
Other Data								
Tax rate	0	0	0	0	0	0	0	0
Net debt	1,624,469	1,580,712	1,753,883	1,888,163	2,015,031	2,140,890	2,265,645	2,392,478
Operating Working Capital	102,304	19,477	42,209	49,884	53,721	57,558	65,232	72,907
Net long-term assets	2,399,635	2,616,948	2,816,948	3,016,948	3,216,948	3,416,948	3,616,948	3,816,948
Net Assets	2,501,939	2,636,425	2,859,157	3,066,832	3,270,669	3,474,506	3,682,180	3,889,855
Change in net assets	-	134,486	222,732	207,674	203,837	203,837	207,674	207,674
Dividend per share	-	1.50	0	0	0	0	0	0
Dividend payout ratio	-	30.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Financial Ratios								
Gross margin	86.04%	85.48%	78.26%	78.26%	78.26%	78.26%	78.26%	78.26%
Operating margin	53.77%	46.10%	27.53%	29.54%	29.66%	29.75%	31.03%	32.04%
Profit margin	45.01%	50.54%	13.61%	16.33%	16.42%	16.60%	18.87%	20.58%
Asset turnover	0.25	0.25	0.21	0.23	0.23	0.23	0.25	0.26
Fixed asset turnover	0.29	0.29	0.25	0.27	0.28	0.28	0.30	0.32
Financial leverage	2.69	2.40	2.69	2.71	2.72	2.72	2.72	2.73
ROA	11.29%	12.64%	2.86%	3.73%	3.78%	3.85%	4.63%	5.29%
ROE	30.31%	30.39%	7.69%	10.11%	10.26%	10.46%	12.58%	14.42%
ROIC	13.83%	11.78%	5.89%	6.88%	6.97%	7.04%	7.78%	8.43%
Net debt/ capitalization	61.07%	55.66%	58.72%	58.68%	58.69%	58.68%	58.40%	58.21%
D/A	0.63	0.58	0.63	0.63	0.63	0.63	0.63	0.63
D/E	1.69	1.40	1.69	1.71	1.72	1.72	1.72	1.73
Current ratio	1.01	0.92	1.14	1.16	1.16	1.17	1.23	1.27
Times interest earned	4.20	4.43	1.58	1.77	1.77	1.79	1.98	2.14
Times burden covered	1.21	1.13	0.44	0.48	0.48	0.49	0.54	0.58
Average cost of debt	-	9.33%	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%
Sales growth		8.62%	-8.03%	18.18%	7.69%	7.14%	13.33%	11.76%

Valuation							
	0	1	2	3	4	5	6
	2001	2002	2003	2004	2005	2006	2007
EBIT	349,134	191,748	243,187	262,897	282,606	334,046	385,485
Change in Net Assets	134,486	222,732	207,674	203,837	203,837	207,674	207,674
Tax Rate	0	0	0	0	0	0	0
FCF	214,648	(30,984)	35,513	59,059	78,769	126,371	177,811
WACC	6.78%	6.78%	6.78%	6.78%	6.78%	6.78%	6.78%
Dicounted FCF	214,648	(29,017)	31,146	48,509	60,589	91,032	119,954
TV						3,076,233	
Discounted TV	2,215,985						
Sum of discounted FCF	416,907						
Enterprise Value	2,632,892						
Net Debt	1,580,712						
Equity Value	1,052,180						
Number of Shares	76,699						
Price per share	13.72						

Figure F8: Assumptions, Proformas and Valuation Snapshot for Frontline

Parameters	
WACC	8.05%
TCE per ship per day	18,750
Net voyage revenue as % of sales	82.37%
Voyage expenses as % of sales	17.63%

	2002	2003	2004	2005	2006	2007
Number of Ships	34	36	39	40	41	42
Net Voyage Revenue	200,422	212,211	229,895	235,700	241,685	247,580
Voyage Revenue	235,756	249,624	270,426	277,360	284,294	291,228
OPEX except D&A as % of sales	30.60%					
D&A as % of fixed assets	6.43%					
Average interest expense	12.00%					
Other income as % of sales	-9.63%					
Extraordinary items as % of sales	0					
Cash and marketable securities as % of sales	15.94%					
Other current assets as % of sales	30.73%					
Fixed asset increase	20,000					
Other long term assets as % of sales	4.81%					
Non-interest bearing liabilities as % of sales	13.80%					
Current portion of LT debt as % LT debt	13.81%					
LT debt/Stockholder's equity	0.97					
TV growth	1.00%					

	2000	2001	2002	2003	2004	2005	2006	2007
Voyage revenue	187,044	209,936	235,756	249,624	270,426	277,360	284,294	291,228
Voyage expenses	25,919	31,730	41,564	44,009	47,676	48,899	50,121	51,343
Net Voyage revenue	161,125	178,206	194,192	205,615	222,750	228,461	234,173	239,884
OPEX except depreciation	56,750	63,180	72,849	77,134	83,562	85,704	87,847	89,989
EBITDA	104,375	115,026	121,344	128,481	139,188	142,757	146,326	149,895
Depreciation and Amortization	18,323	32,688	50,782	52,068	53,354	54,640	55,926	57,212
EBIT	86,052	82,338	70,562	76,413	85,834	88,117	90,400	92,683
Net interest expense	(24,367)	(18,850)	(28,661)	(30,992)	(32,005)	(32,918)	(33,706)	(34,483)
Other income (loss)	(11,827)	18,634	(22,703)	(24,039)	(26,042)	(26,710)	(27,377)	(28,045)
Extraordinary items	3,227	222	0	0	0	0	0	0
Net income (loss)	53,085	82,344	19,197	21,383	27,788	28,489	29,316	30,154
Number of shares outstanding	57,081	68,053	68,053	68,053	68,053	68,053	68,053	68,053
EPS	0.93	1.21	0.28	0.31	0.41	0.42	0.43	0.44
Condensed Balance Sheet								
Assets								
Cash and marketable securities	35,328	37,068	37,579	39,790	43,106	44,211	45,316	46,422
Other current assets	30,849	27,692	72,589	76,859	83,264	85,399	87,534	89,669
Current assets	66,177	64,760	110,169	116,649	126,370	129,610	132,850	136,091
Fixed assets	487,415	789,766	809,766	829,766	849,766	869,766	889,766	909,766
Other long-term assets	37,912	21,101	63,159	66,874	72,447	74,305	76,162	78,020
Total long-term assets	525,327	810,867	872,925	896,640	922,213	944,071	965,928	987,786
Total assets	591,504	875,627	983,094	1,013,289	1,048,583	1,073,681	1,098,779	1,123,877
Liabilities								
Non-interest bearing liabilities	17,096	29,974	32,770	34,698	37,589	38,553	39,517	40,481
Current portion of long-term debt	40,577	40,238	71,881	77,034	79,061	81,725	83,608	85,559
Current Liabilities	57,673	70,212	104,651	111,732	116,650	120,278	123,124	126,040
Long term debt	279,128	403,599	432,533	443,914	458,870	469,442	480,398	491,321
Total liabilities	336,801	473,811	537,184	555,646	575,521	589,720	603,523	617,360
Stockholder's equity								
Stockholder's equity	254,703	401,816	445,910	457,643	473,062	483,961	495,256	506,516
Net addition to stockholder's equity	-	147,113	44,094	11,734	15,419	10,899	11,295	11,260
Total liabilities and stockholder's equity	591,504	875,627	983,094	1,013,289	1,048,583	1,073,681	1,098,779	1,123,877
Balance	0	0	0	0	0	0	0	0
Other Data								
Tax rate	0	0	0	0	0	0	0	0
Net debt	301,473	436,743	499,604	515,856	532,415	545,509	558,206	570,939
Operating Working Capital	13,753	(2,282)	39,819	42,161	45,675	46,846	48,017	49,188
Net long-term assets	487,415	789,766	809,766	829,766	849,766	869,766	889,766	909,766
Net Assets	501,168	787,484	849,585	871,927	895,441	916,612	937,783	958,954
Change in net assets	-	286,316	62,101	22,342	23,513	21,171	21,171	21,171
Dividend per share	0	0	0	0	0	0	0	0
Dividend payout ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Financial Ratios								
Gross margin	86.14%	84.89%	82.37%	82.37%	82.37%	82.37%	82.37%	82.37%
Operating margin	46.01%	39.22%	29.93%	30.81%	31.74%	31.77%	31.80%	31.82%
Profit margin	28.38%	39.22%	8.14%	8.57%	10.28%	10.27%	10.31%	10.35%
Asset turnover	0.32	0.24	0.24	0.25	0.26	0.26	0.26	0.26
Fixed asset turnover	0.38	0.27	0.29	0.30	0.32	0.32	0.32	0.32
Financial leverage	2.32	2.18	2.20	2.21	2.22	2.22	2.22	2.22
ROA	8.97%	9.40%	1.95%	2.11%	2.65%	2.65%	2.67%	2.68%
ROE	20.84%	20.49%	4.31%	4.67%	5.87%	5.89%	5.92%	5.95%
ROIC	14.98%	9.74%	7.43%	7.81%	8.49%	8.51%	8.53%	8.55%
Net debt/ capitalization	54.20%	52.08%	52.84%	52.99%	52.95%	52.99%	52.99%	52.99%
D/A	0.57	0.54	0.55	0.55	0.55	0.55	0.55	0.55
D/E	1.32	1.18	1.20	1.21	1.22	1.22	1.22	1.22
Current ratio	1.15	0.92	1.05	1.04	1.08	1.08	1.08	1.08
Times interest earned	3.53	4.37	2.46	2.47	2.68	2.68	2.68	2.69
Times burden covered	1.33	1.39	0.70	0.71	0.77	0.77	0.77	0.77
Average cost of debt	-	9.88%	12.09%	12.09%	12.09%	12.09%	12.09%	12.09%
Sales growth		12.24%	12.30%	5.88%	8.33%	2.56%	2.50%	2.44%

Valuation							
	0	1	2	3	4	5	6
	2001	2002	2003	2004	2005	2006	2007
EBIT	82,338	70,562	76,413	85,834	88,117	90,400	92,683
Change in Net Assets	286,316	62,101	22,342	23,513	21,171	21,171	21,171
Tax Rate	0	0	0	0	0	0	0
FCF	(203,978)	8,460	54,071	62,321	66,946	69,229	71,512
WACC	8.05%	8.05%	8.05%	8.05%	8.05%	8.05%	8.05%
Discounted FCF	(203,978)	7,830	46,314	49,403	49,115	47,006	44,938
TV						1,014,260	
Discounted TV	688,672						
Sum of discounted FCF	(4,311)						
Enterprise Value	684,361						
Net Debt	436,743						
Equity Value	247,618						
Number of Shares	68,053						
Price per share	$3.64						

Figure F9: Assumptions, Proformas and Valuation Snapshot for OMI

Parameters	
WACC	9.18%
TCE per ship per day	[illegible]
Net voyage revenue as % of sales	[illegible]
Voyage expenses as % of sales	21.74%

	2002	2003	2004	2005	2006	2007
Number of Ships	51	52	51	49	47	50
Net Voyage Revenue	393,707	401,427	393,707	378,268	362,828	385,988
Voyage Revenue	479,299	488,697	479,299	460,503	441,707	469,901
OPEX except D&A as % of sales	[illegible]					
D&A as % of fixed assets	4.94%					
Average interest expense	3.58%					
Other income as % of sales	[illegible]					
Income tax rate	0.35					
Cash and marketable securities as % of sales	[illegible]					
Other current assets as % of sales	11.11%					
Fixed assets	[illegible]					
Other long term assets as % of sales	[illegible]					
Non-interest bearing liabilities as % of sales	9.20%					
Current portion of LT debt as % LT debt	[illegible]					
LT debt/Stockholder's equity	[illegible]					
TV growth	[illegible]					

	2000	2001	2002	2003	2004	2005	2006	2007
Voyage revenue	467,618	469,333	479,299	488,697	479,299	460,503	441,707	469,901
Voyage expenses	97,537	88,315	104,200	106,243	104,200	100,113	96,027	102,157
Net Voyage revenue	370,081	381,018	375,100	382,454	375,100	360,390	345,680	367,745
OPEX except depreciation	165,877	180,420	184,243	187,855	184,243	177,017	169,792	180,630
EBITDA	204,204	200,598	190,857	194,599	190,857	183,372	175,888	187,115
Depreciation and Amortization	70,138	69,912	77,987	74,529	71,071	67,613	64,155	60,697
EBIT	134,066	130,686	112,870	120,070	119,786	115,759	111,732	126,417
Net interest expense	(47,470)	(45,035)	(52,433)	(51,819)	(49,854)	(47,582)	(45,210)	(43,329)
Other income (loss)	45,500	68,784	41,795	42,614	41,795	40,156	38,517	40,975
Income taxes	(41,795)	(53,004)	(53,004)	(53,004)	(53,004)	(53,004)	(53,004)	(53,004)
Net income (loss)	90,391	101,441	49,228	57,861	58,723	55,329	52,036	71,060
Number of shares outstanding	34,369	34,740	34,740	34,740	34,740	34,740	34,740	34,740
EPS	2.63	2.92	1.42	1.67	1.69	1.59	1.50	2.05
Condensed Balance Sheet								
Assets								
Cash and marketable securities	70,786	100,214	101,707	103,702	101,707	97,719	93,730	99,713
Other current assets	66,269	46,408	53,250	54,294	53,250	51,162	49,074	52,206
Current assets	137,035	146,622	154,957	157,996	154,957	148,881	142,804	151,919
Fixed assets	1,507,398	1,578,690	1,508,690	1,438,690	1,368,690	1,298,690	1,228,690	1,158,690
Other long-term assets	179,480	238,963	246,935	251,777	246,935	237,251	227,568	242,093
Total long-term assets	1,686,878	1,817,653	1,755,625	1,690,467	1,615,625	1,535,941	1,456,258	1,400,783
Total assets	1,823,913	1,964,275	1,910,582	1,848,463	1,770,582	1,684,822	1,599,061	1,552,702
Liabilities								
Non-interest bearing liabilities	34,534	61,768	44,096	44,960	44,096	42,366	40,637	43,231
Current portion of long-term debt	14,294	23,764	19,708	19,988	19,304	18,478	17,577	16,678
Current Liabilities	48,828	85,532	63,804	64,949	63,400	60,844	58,214	59,908
Long term debt	1,024,918	1,065,317	1,080,480	1,043,466	998,808	950,128	901,491	873,377
Total liabilities	1,073,746	1,150,849	1,144,284	1,108,415	1,062,208	1,010,972	959,706	933,286
Stockholder's equity								
Stockholder's equity	750,167	813,426	766,298	740,047	708,375	673,850	639,356	619,416
Net addition to stockholder's equity	-	63,259	(47,128)	(26,251)	(31,673)	(34,525)	(34,494)	(19,939)
Total liabilities and stockholder's equity	1,823,913	1,964,275	1,910,582	1,848,463	1,770,582	1,684,822	1,599,061	1,552,702
Balance	0	0	0	0	0	0	0	0
Other Data								
Tax rate	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Net debt	1,002,960	1,050,635	1,042,577	1,004,714	960,501	913,253	865,976	833,573
Operating Working Capital	31,735	(15,360)	9,155	9,334	9,155	8,796	8,437	8,975
Net long-term assets	1,507,398	1,578,690	1,508,690	1,438,690	1,368,690	1,298,690	1,228,690	1,158,690
Net Assets	1,539,133	1,563,330	1,517,845	1,448,024	1,377,845	1,307,486	1,237,127	1,167,665
Change in net assets	-	24,197	(45,485)	(69,820)	(70,180)	(70,359)	(70,359)	(69,461)
Dividend per share	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Dividend payout ratio	22.81%	20.55%	42.34%	36.02%	35.50%	37.67%	40.06%	29.33%
Financial Ratios								
Gross margin	79.14%	81.18%	78.26%	78.26%	78.26%	78.26%	78.26%	78.26%
Operating margin	28.67%	27.85%	23.55%	24.57%	24.99%	25.14%	25.30%	26.90%
Profit margin	19.33%	21.61%	10.27%	11.84%	12.25%	12.01%	11.78%	15.12%
Asset turnover	0.26	0.24	0.25	0.26	0.27	0.27	0.28	0.30
Fixed asset turnover	0.31	0.30	0.32	0.34	0.35	0.35	0.36	0.41
Financial leverage	2.43	2.41	2.49	2.50	2.50	2.50	2.50	2.51
ROA	4.96%	5.16%	2.58%	3.13%	3.32%	3.28%	3.25%	4.58%
ROE	12.05%	12.47%	6.42%	7.82%	8.29%	8.21%	8.14%	11.47%
ROIC	4.87%	4.46%	3.93%	4.33%	4.51%	4.58%	4.66%	5.44%
Net debt/ capitalization	57.21%	56.36%	57.64%	57.58%	57.55%	57.54%	57.53%	57.37%
D/A	0.59	0.59	0.60	0.60	0.60	0.60	0.60	0.60
D/E	1.43	1.41	1.49	1.50	1.50	1.50	1.50	1.51
Current ratio	2.81	1.71	2.43	2.43	2.44	2.45	2.45	2.54
Times interest earned	2.82	2.90	2.15	2.32	2.40	2.43	2.47	2.92
Times burden covered	2.17	1.90	1.56	1.67	1.73	1.75	1.78	2.11
Average cost of debt	-	8.46%	9.58%	9.58%	9.58%	9.58%	9.58%	9.58%
Sales growth		0.37%	2.12%	1.96%	-1.92%	-3.92%	-4.08%	6.38%

Valuation							
	0	1	2	3	4	5	6
	2001	2002	2003	2004	2005	2006	2007
EBIT	130,686	112,870	120,070	119,786	115,759	111,732	126,417
Change in Net Assets	24,197	(45,485)	(69,820)	(70,180)	(70,359)	(70,359)	(69,461)
Tax Rate	0.35	0.35	0.35	0.35	0.35	0.35	0.35
FCF	60,749	118,851	147,866	148,040	145,602	142,985	151,633
WACC	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%	9.18%
Discounted FCF	60,749	108,855	124,040	113,742	102,461	92,156	89,511
TV						1,853,137	
Discounted TV	1,194,380						
Sum of discounted FCF	602,003						
Enterprise Value	1,796,383						
Net Debt	1,050,635						
Equity Value	745,748						
Number of Shares	34,740						
Price per share	21.47						

Figure F10: Assumptions, Proformas and Valuation Snapshot for OSG

APPENDIX G: Simulation Results for Teekay

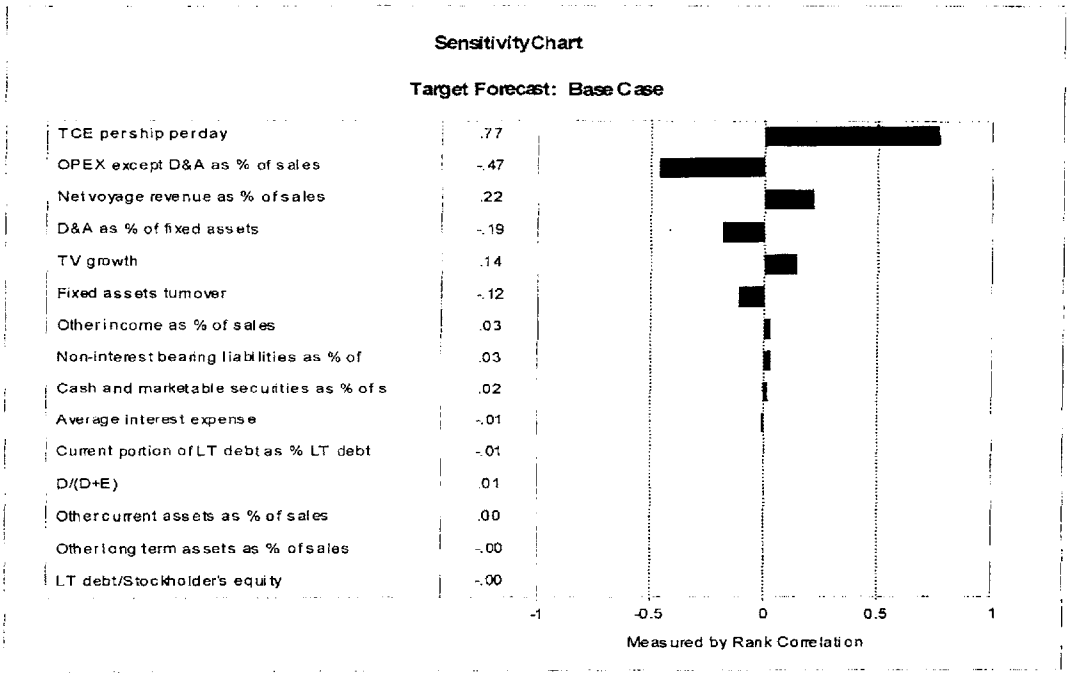

Figure G1: Sensitivity Chart for Teekay

Percentiles:

Percentile	Value
0%	-33.18
10%	5.26
20%	15.88
30%	24.48
40%	31.86
50%	39.12
60%	45.56
70%	53.57
80%	62.41
90%	75.81
100%	130.15

Figure G2: Percentiles Chart for Teekay

Summary:

Display Range is from -30.61 to 109.28
Entire Range is from -33.18 to 130.15
After 1,500 Trials, the Std. Error of the Mean is 0.69

Statistics:	Value
Trials	1500
Mean	39.66
Median	39.12
Mode	---
Standard Deviation	26.88
Variance	722.42
Skewness	0.20
Kurtosis	2.86
Coeff. of Variability	0.68
Range Minimum	-33.18
Range Maximum	130.15
Range Width	163.33
Mean Std. Error	0.69

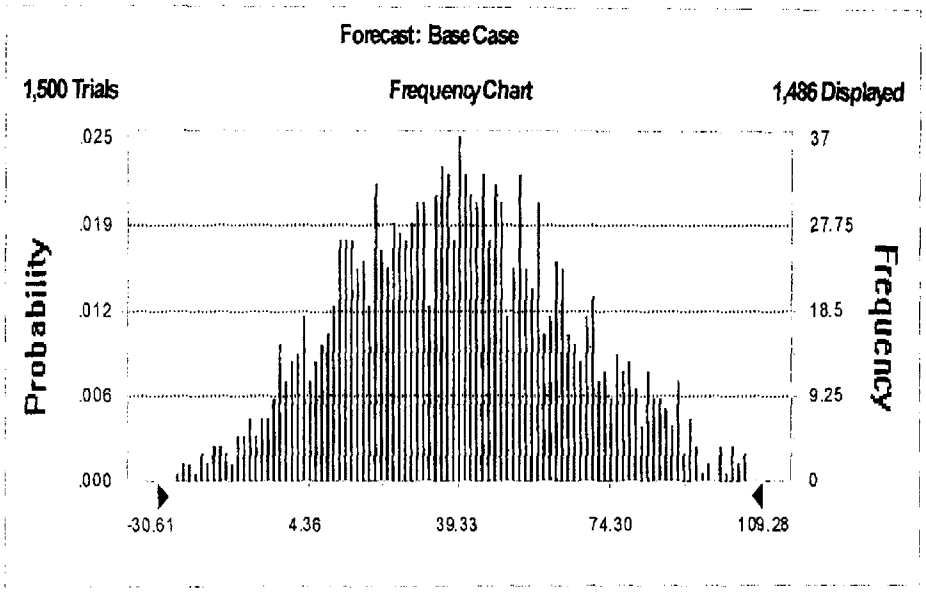

Figure G3: Forecast Statistics for Teekay

Assumptions

Assumption: D/(D+E) — [TK_final.xls]WACC - Cell: B8

Triangular distribution with parameters:

Minimum	35.82%
Likeliest	44.73%
Maximum	46.49%

Selected range is from 35.82% to 46.49%

Assumption: TCE per ship per day — [TK_final.xls]Valuation - Cell: B6

Triangular distribution with parameters:

Minimum	13,500
Likeliest	20,500
Maximum	28,000

Selected range is from 13,500 to 35,678

Assumption: Net voyage revenue as % of sales — [TK_final.xls]Valuation - Cell: B7

Triangular distribution with parameters:

Minimum	65.72%
Likeliest	75.00%
Maximum	77.30%

Selected range is from 65.72% to 77.30%

Assumption: OPEX except D&A as % of sales — [TK_final.xls]Valuation - Cell: B14

Triangular distribution with parameters:

Minimum	24.23%
Likeliest	30.13%
Maximum	41.41%

Selected range is from 24.23% to 41.41%

Assumption: D&A as % of fixed assets — [TK_final.xls]Valuation - Cell: B15

Triangular distribution with parameters:

Minimum	6.01%
Likeliest	7.10%
Maximum	8.48%

Selected range is from 6.01% to 8.48%

Assumption: Average interest expense — [TK_final.xls]Valuation - Cell: B16

Triangular distribution with parameters:

Minimum	11.23%
Likeliest	12.09%
Maximum	13.00%

Selected range is from 11.23% to 13.00%

Assumption: Other income as % of sales — [TK_final.xls]Valuation - Cell: B17

Triangular distribution with parameters:

Minimum	-1.06%
Likeliest	0.89%
Maximum	2.77%

Selected range is from -1.06% to 2.77%

Assumption: Cash and marketable securities as % of s — [TK_final.xls]Valuation - Cell: B19

Triangular distribution with parameters:

Minimum	19.62%
Likeliest	30.80%
Maximum	47.93%

Selected range is from 19.62% to 47.93%

Assumption: Other current assets as % of sales — [TK_final.xls]Valuation - Cell: B20

Triangular distribution with parameters:

Minimum	7.67%
Likeliest	10.24%
Maximum	12.77%

Selected range is from 7.67% to 12.77%

Assumption: Fixed assets turnover — [TK_final.xls]Valuation - Cell: B21

Triangular distribution with parameters:

Minimum	100,000
Likeliest	120,000
Maximum	150,000

Selected range is from 100,000 to 150,000

Assumption: Other long term assets as % of sales — [TK_final.xls]Valuation - Cell: B22

Triangular distribution with parameters:

Minimum	1.51%
Likeliest	5.53%
Maximum	13.59%

Selected range is from 1.51% to 13.59%

Assumption: Current portion of LT debt as % LT debt — [TK_final.xls]Valuation - Cell: B24

Triangular distribution with parameters:

Minimum	5.81%
Likeliest	7.74%
Maximum	11.01%

Selected range is from 5.81% to 11.01%

Assumption: LT debt/Stockholder's equity — [TK_final.xls]Valuation - Cell: B25

Triangular distribution with parameters:

Minimum	0.65
Likeliest	0.86
Maximum	1.23

Selected range is from 0.65 to 1.23

Assumption: Non-interest bearing liabilities as % of — [TK_final.xls]Valuation - Cell: B23

Triangular distribution with parameters:

Minimum	7.27%
Likeliest	9.22%
Maximum	11.17%

Selected range is from 7.27% to 11.17%

Assumption: TV growth — [TK_final.xls]Valuation - Cell: B26

Triangular distribution with parameters:

Minimum	0.00%
Likeliest	1.00%
Maximum	3.00%

Selected range is from 0.00% to 3.00%

Figure G4: Assumptions of the Forecast for Teekay

APPENDIX H: Simulation Results for Nordic American Tankers

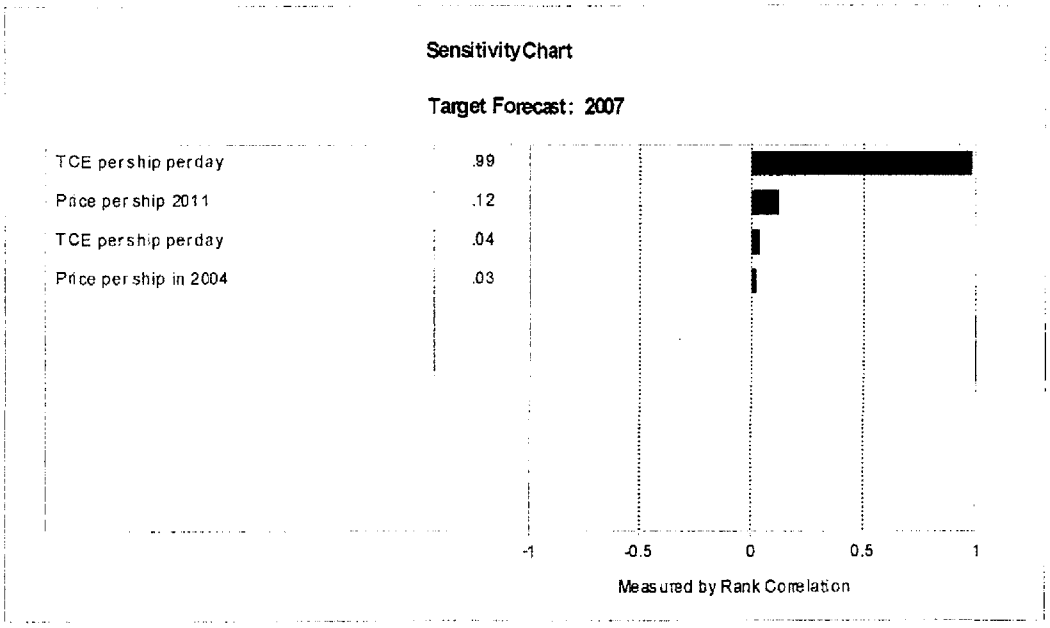

Figure H1: Sensitivity Chart for Nordic American Tankers

Percentiles:

Percentile	Value
0%	8.67
10%	12.23
20%	13.45
30%	14.19
40%	14.82
50%	15.65
60%	16.36
70%	17.05
80%	17.87
90%	18.98
100%	23.15

Figure H2: Percentiles Chart for Nordic American Tankers (2004)

Summary:

Display Range is from 8.99 to 22.31

Entire Range is from 8.67 to 23.15

After 1,500 Trials, the Std. Error of the Mean is 0.07

Statistics:	Value
Trials	1500
Mean	15.61
Median	15.65
Mode	---
Standard Deviation	2.57
Variance	6.62
Skewness	-0.01
Kurtosis	2.60
Coeff. of Variability	0.16
Range Minimum	8.67
Range Maximum	23.15
Range Width	14.48
Mean Std. Error	0.07

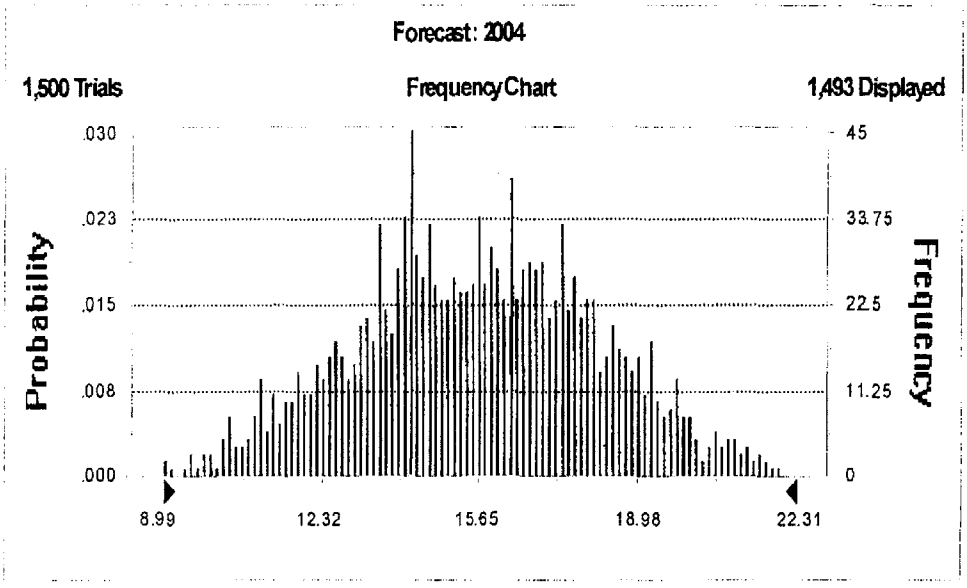

Figure H3: Forecast Statistics for Nordic American Tankers (2004)

Percentiles:

Percentile	Value
0%	14.70
10%	19.31
20%	21.02
30%	22.24
40%	23.42
50%	24.62
60%	25.94
70%	27.42
80%	29.47
90%	31.80
100%	38.19

Figure H4: Percentiles Chart for Nordic American Tankers (2011)

Summary:

Display Range is from 14.70 to 37.46
Entire Range is from 14.70 to 38.19
After 1,500 Trials, the Std. Error of the Mean is 0.12

Statistics:	Value
Trials	1500
Mean	25.17
Median	24.62
Mode	---
Standard Deviation	4.70
Variance	22.13
Skewness	0.38
Kurtosis	2.54
Coeff. of Variability	0.19
Range Minimum	14.70
Range Maximum	38.19
Range Width	23.49
Mean Std. Error	0.12

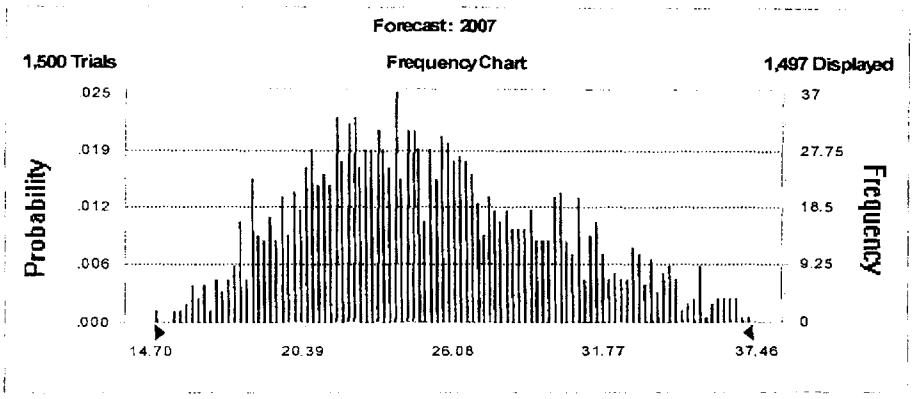

Figure H5: Forecast Statistics for Nordic American Tankers (2011)

Assumption: TCE per ship per day **[NAT_final.xls]2007 - Cell: B6**

Triangular distribution with parameters:

Minimum	22,000
Likeliest	30,000
Maximum	50,000

Selected range is from 22,000 to 50,000

Assumption: Price per ship 2011 **[NAT_final.xls]2007 - Cell: B22**

Triangular distribution with parameters:

Minimum	15,000,000
Likeliest	20,000,000
Maximum	35,000,000

Selected range is from 15,000,000 to 35,000,000

Assumption: TCE per ship per day **[NAT_final.xls]2004 - Cell: B5**

Triangular distribution with parameters:

Minimum	22,000
Likeliest	30,000
Maximum	50,000

Selected range is from 22,000 to 50,000

Assumption: Price per ship in 2004 **[NAT_final.xls]2004 - Cell: B21**

Triangular distribution with parameters:

Minimum	10,000,000
Likeliest	32,000,000
Maximum	44,000,000

Selected range is from 10,000,000 to 44,000,000

Figure H6: Assumptions of the Forecast for Nordic American Tankers

APPENDIX I: Simulation Results for Knightsbridge Tankers

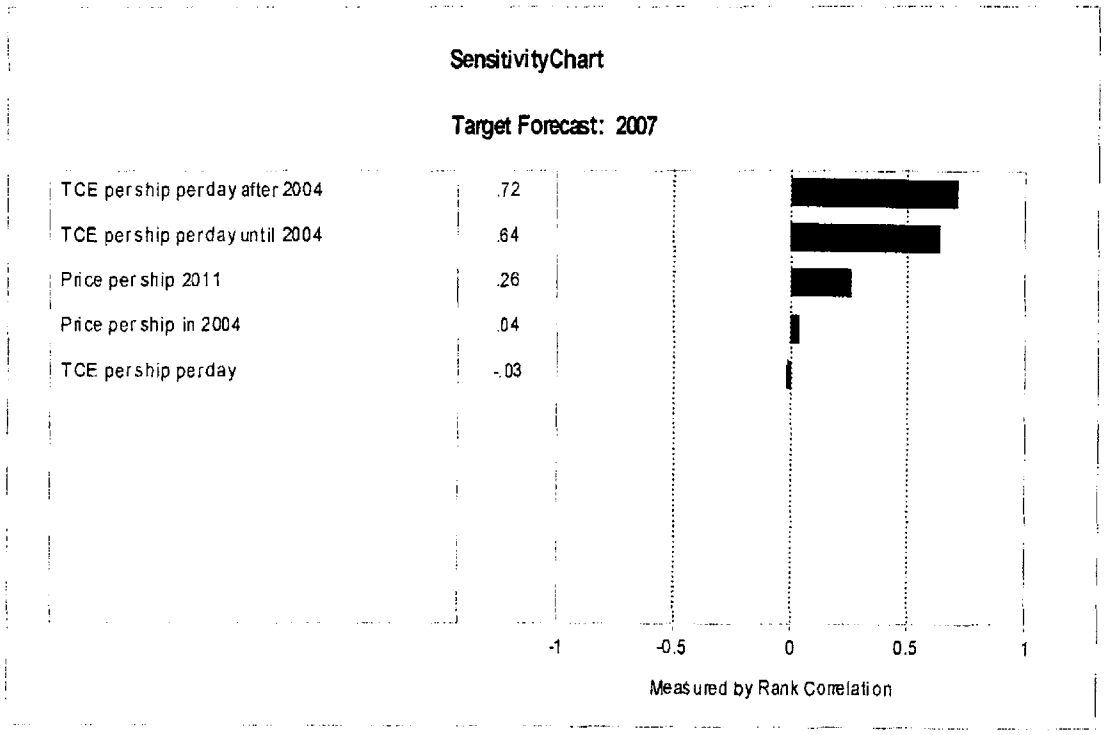

Figure I1: Sensitivity Chart for Knightsbridge Tankers

Percentiles:

Percentile	Value
0%	8.29
10%	12.06
20%	13.26
30%	14.06
40%	14.71
50%	15.47
60%	16.27
70%	17.05
80%	17.74
90%	19.12
100%	23.37

Figure I2: Percentiles Chart for Knightsbridge (2004)

Summary:

Display Range is from 8.60 to 22.73
Entire Range is from 8.29 to 23.37
After 1,500 Trials, the Std. Error of the Mean is 0.07

Statistics:	Value
Trials	1500
Mean	15.52
Median	15.47
Mode	---
Standard Deviation	2.67
Variance	7.14
Skewness	0.04
Kurtosis	2.65
Coeff. of Variability	0.17
Range Minimum	8.29
Range Maximum	23.37
Range Width	15.08
Mean Std. Error	0.07

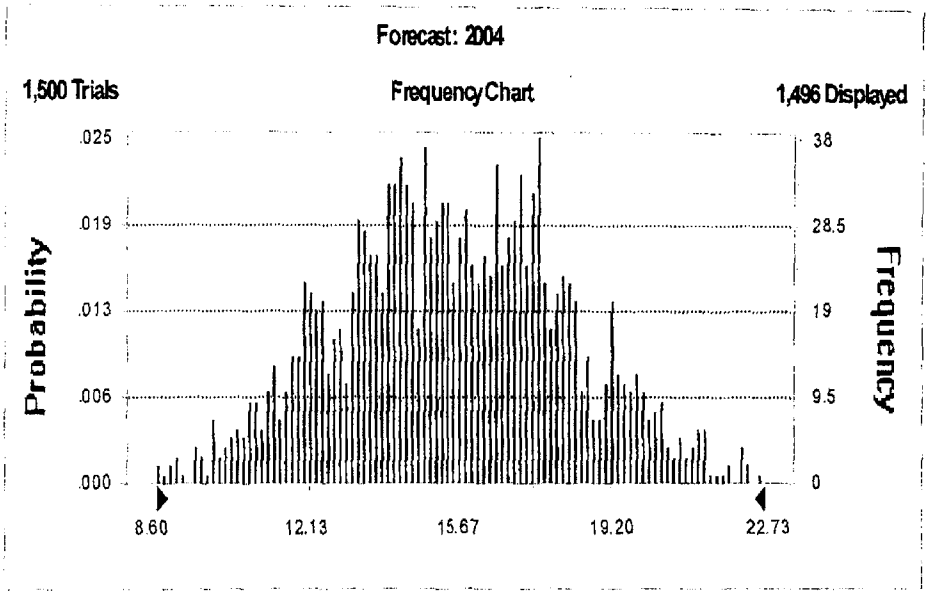

Figure I3: Forecast Statistics for Knightsbridge Tankers (2004)

Percentiles:

Percentile	Value
0%	15.92
10%	18.39
20%	19.30
30%	20.08
40%	20.82
50%	21.45
60%	22.15
70%	22.90
80%	23.69
90%	24.91
100%	29.88

Figure I4: Percentiles Chart for Knightsbridge Tankers (2011)

Summary:

Display Range is from 16.01 to 27.92
Entire Range is from 15.92 to 29.88
After 1,500 Trials, the Std. Error of the Mean is 0.06

Statistics:	Value
Trials	1500
Mean	21.60
Median	21.45
Mode	---
Standard Deviation	2.48
Variance	6.14
Skewness	0.33
Kurtosis	2.73
Coeff. of Variability	0.11
Range Minimum	15.92
Range Maximum	29.88
Range Width	13.96
Mean Std. Error	0.06

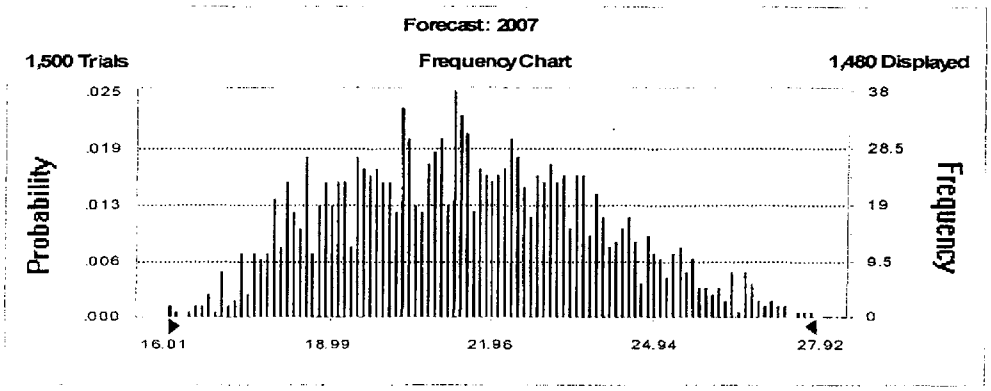

Figure I5: Forecast Statistics for Knightsbridge Tankers (2011)

Assumptions

Assumption: TCE per ship per day until 2004 **[VLCCF_final.xls]2007 - Cell: B5**

Triangular distribution with parameters:

Minimum	32,569
Likeliest	38,000
Maximum	60,000

Selected range is from 32,569 to 60,000

Assumption: Price per ship 2011 **[VLCCF_final.xls]2007 - Cell: B21**

Triangular distribution with parameters:

Minimum	20,000,000
Likeliest	30,000,000
Maximum	45,000,000

Selected range is from 20,000,000 to 45,000,000

Assumption: TCE per ship per day after 2004 **[VLCCF_final.xls]2007 - Cell: C5**

Triangular distribution with parameters:

Minimum	36,969
Likeliest	38,000
Maximum	56,000

Selected range is from 36,969 to 56,000

Assumption: TCE per ship per day **[VLCCF_final.xls]2004 - Cell: B5**

Triangular distribution with parameters:

Minimum	32,569
Likeliest	38,000
Maximum	60,000

Selected range is from 32,569 to 60,000

Assumption: Price per ship in 2004 **[VLCCF_final.xls]2004 - Cell: B21**

Triangular distribution with parameters:

Minimum	20,000,000
Likeliest	45,000,000
Maximum	68,000,000

Selected range is from 20,000,000 to 68,000,000

Figure 66: Assumptions of Knightsbridge Tankers

APPENDIX J: Simulation Results for Stelmar

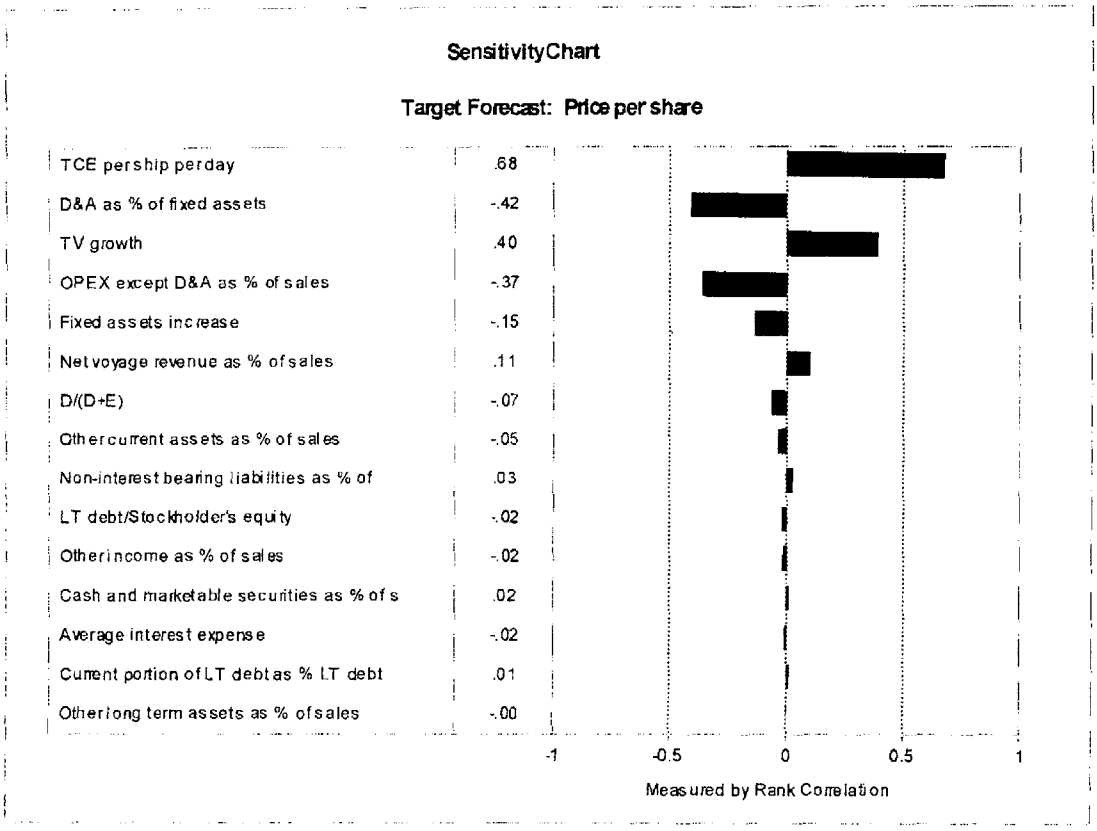

Figure J1: Sensitivity Chart for Stelmar

Percentiles:

Percentile	Value
0%	-11.08
10%	2.05
20%	6.12
30%	9.12
40%	11.69
50%	14.27
60%	16.90
70%	20.38
80%	23.85
90%	28.45
100%	56.52

Figure J2: Percentiles Chart for Stelmar

Summary:

Display Range is from -10.61 to 42.06

Entire Range is from -11.08 to 56.52

After 1,500 Trials, the Std. Error of the Mean is 0.27

Statistics:	Value
Trials	1500
Mean	15.04
Median	14.27
Mode	---
Standard Deviation	10.60
Variance	112.36
Skewness	0.38
Kurtosis	3.14
Coeff. of Variability	0.70
Range Minimum	-11.08
Range Maximum	56.52
Range Width	67.60
Mean Std. Error	0.27

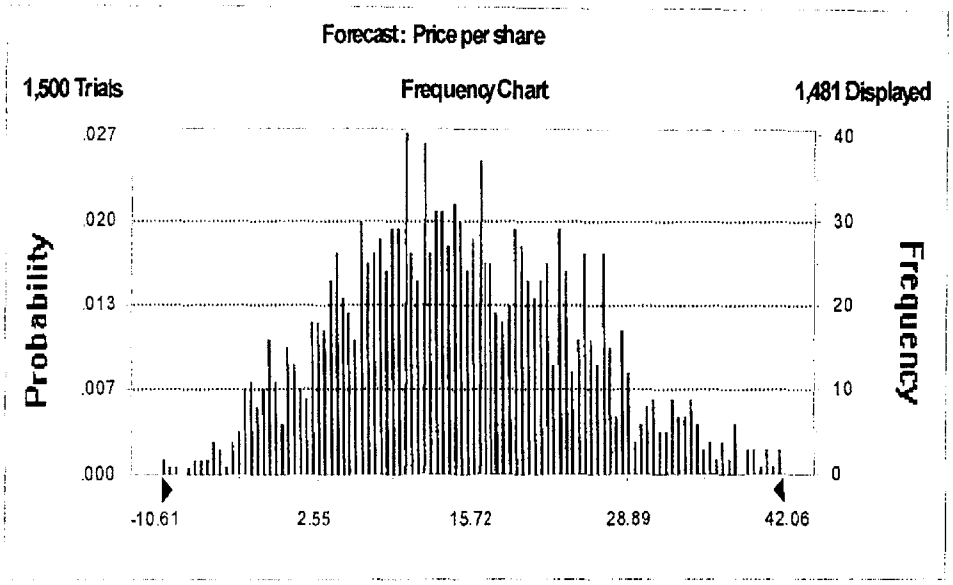

Figure J3: Forecast Statistics for Stelmar

Assumptions

Assumption: TCE per ship per day — [SJH_final.xls]Valuation - Cell: B5

Triangular distribution with parameters:

Minimum	14,000
Likeliest	15,000
Maximum	17,500

Selected range is from 14,000 to 17,500

Assumption: Net voyage revenue as % of sales — [SJH_final.xls]Valuation - Cell: B7

Triangular distribution with parameters:

Minimum	87.98%
Likeliest	91.67%
Maximum	94.38%

Selected range is from 87.98% to 94.38%

Assumption: OPEX except D&A as % of sales — [SJH_final.xls]Valuation - Cell: B14

Triangular distribution with parameters:

Minimum	25.47%
Likeliest	29.64%
Maximum	33.40%

Selected range is from 25.47% to 33.40%

Assumption: D&A as % of fixed assets — [SJH_final.xls]Valuation - Cell: B15

Triangular distribution with parameters:

Minimum	5.67%
Likeliest	6.77%
Maximum	8.58%

Selected range is from 5.67% to 8.58%

Assumption: Average interest expense — [SJH_final.xls]Valuation - Cell: B16

Triangular distribution with parameters:

Minimum	10.94%
Likeliest	12.50%
Maximum	14.29%

Selected range is from 10.94% to 14.29%

Assumption: Other income as % of sales — [SJH_final.xls]Valuation - Cell: B17

Triangular distribution with parameters:

Minimum	-0.30%
Likeliest	-0.04%
Maximum	0.29%

Selected range is from -0.30% to 0.29%

Assumption: Cash and marketable securities as % of s — [SJH_final.xls]Valuation - Cell: B19

Triangular distribution with parameters:

Minimum	22.07%
Likeliest	29.91%
Maximum	39.67%

Selected range is from 22.07% to 39.67%

Assumption: Other current assets as % of sales — [SJH_final.xls]Valuation - Cell: B20

Triangular distribution with parameters:

Minimum	6.00%
Likeliest	7.50%
Maximum	13.00%

Selected range is from 6.00% to 13.00%

Assumption: Fixed assets increase — [SJH_final.xls]Valuation - Cell: B21

Triangular distribution with parameters:

Minimum	18,000
Likeliest	20,000
Maximum	22,000

Selected range is from 18,000 to 22,000

Assumption: Other long term assets as % of sales — [SJH_final.xls]Valuation - Cell: B22

Triangular distribution with parameters:

Minimum	3.24%
Likeliest	3.60%
Maximum	7.03%

Selected range is from 3.24% to 7.03%

Assumption: Non-interest bearing liabilities as % of — [SJH_final.xls]Valuation - Cell: B23

Triangular distribution with parameters:

Minimum	3.95%
Likeliest	11.42%
Maximum	14.31%

Selected range is from 3.95% to 14.31%

Assumption: Current portion of LT debt as % LT debt — [SJH_final.xls]Valuation - Cell: B24

Triangular distribution with parameters:

Minimum	8.30%
Likeliest	12.50%
Maximum	22.00%

Selected range is from 8.30% to 22.00%

Assumption: LT debt/Stockholder's equity — [SJH_final.xls]Valuation - Cell: B25

Triangular distribution with parameters:

Minimum	1.58
Likeliest	1.70
Maximum	3.07

Selected range is from 1.58 to 3.07

Assumption: TV growth — [SJH_final.xls]Valuation - Cell: B26

Triangular distribution with parameters:

Minimum	0.00%
Likeliest	1.00%
Maximum	3.00%

Selected range is from 0.00% to 3.00%

Assumption: D/(D+E) — [SJH_final.xls]WACC - Cell: B12

Triangular distribution with parameters:

Minimum	61.25%
Likeliest	68.05%
Maximum	74.86%

Selected range is from 61.25% to 74.86%

Figure J4: Assumptions of the Forecast for Stelmar

APPENDIX K: Simulation Results for General Maritime

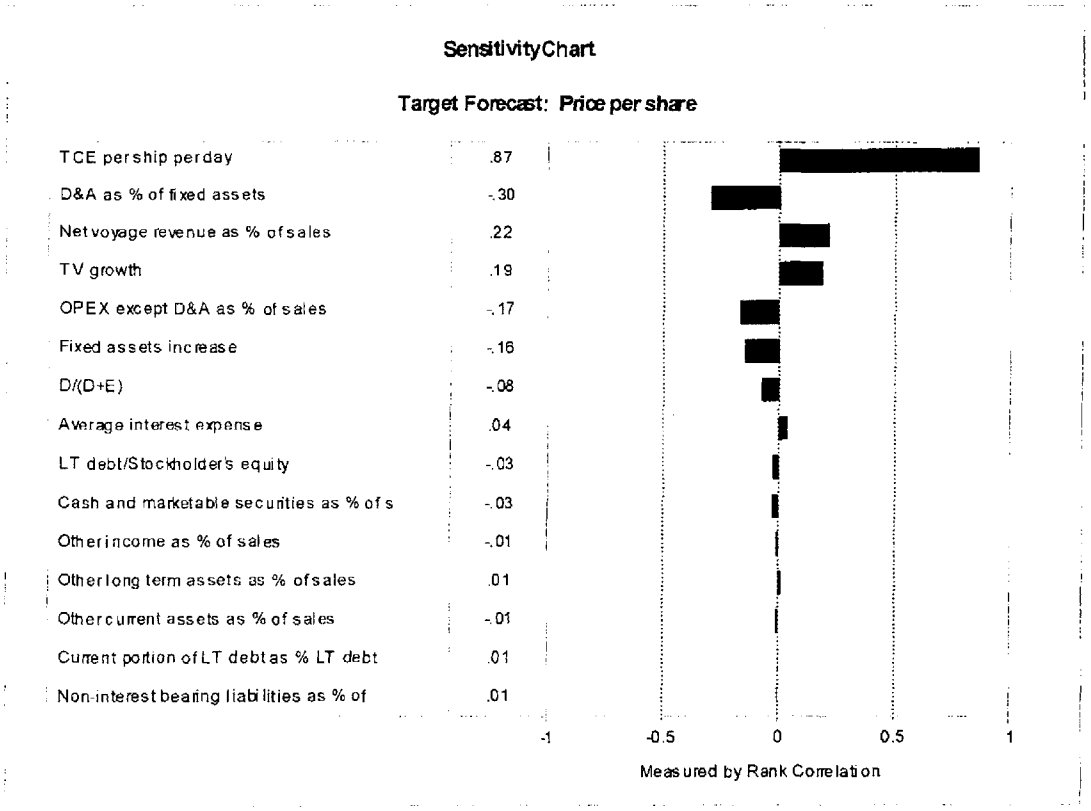

Figure K1: Sensitivity Chart for General Maritime

Percentiles:

Percentile	Value
0%	-13.84
10%	-0.87
20%	3.37
30%	6.52
40%	9.34
50%	12.22
60%	15.29
70%	18.46
80%	22.70
90%	29.05
100%	47.22

Figure K2: Percentiles Chart for General Maritime

Summary:

Display Range is from -13.84 to 40.66

Entire Range is from -13.84 to 47.22

After 1,500 Trials, the Std. Error of the Mean is 0.29

Statistics:	Value
Trials	1500
Mean	13.24
Median	12.22
Mode	---
Standard Deviation	11.25
Variance	126.67
Skewness	0.38
Kurtosis	2.70
Coeff. of Variability	0.85
Range Minimum	-13.84
Range Maximum	47.22
Range Width	61.06
Mean Std. Error	0.29

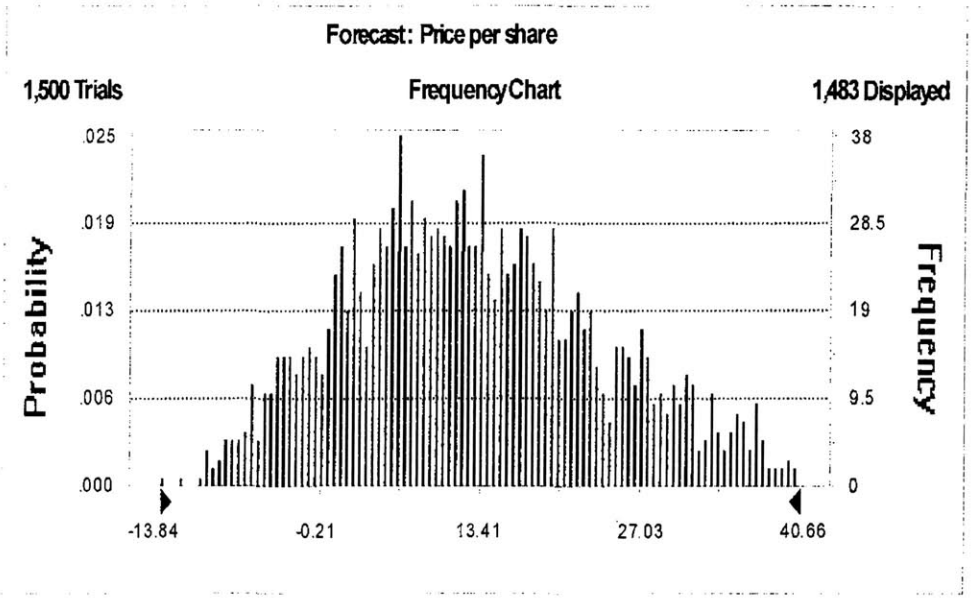

Figure K3: Forecast Statistics for General Maritime

Assumptions

Assumption: TCE per ship per day — [GMR_final.xls]Valuation - Cell: B6

Triangular distribution with parameters:

Minimum	14,000
Likeliest	18,000
Maximum	28,000

Selected range is from 14,000 to 28,000

Assumption: Net voyage revenue as % of sales — [GMR_final.xls]Valuation - Cell: B7

Triangular distribution with parameters:

Minimum	76.01%
Likeliest	82.83%
Maximum	98.26%

Selected range is from 76.01% to 98.26%

Assumption: OPEX except D&A as % of sales — [GMR_final.xls]Valuation - Cell: B14

Triangular distribution with parameters:

Minimum	23.81%
Likeliest	29.95%
Maximum	33.06%

Selected range is from 23.81% to 33.06%

Assumption: D&A as % of fixed assets — [GMR_final.xls]Valuation - Cell: B15

Triangular distribution with parameters:

Minimum	6.00%
Likeliest	8.24%
Maximum	10.89%

Selected range is from 6.00% to 10.89%

Assumption: Average interest expense — [GMR_final.xls]Valuation - Cell: B16

Triangular distribution with parameters:

Minimum	11.13%
Likeliest	14.40%
Maximum	16.25%

Selected range is from 11.13% to 16.25%

Assumption: Other income as % of sales — [GMR_final.xls]Valuation - Cell: B17

Triangular distribution with parameters:

Minimum	-0.19%
Likeliest	-0.17%
Maximum	-0.15%

Selected range is from -0.19% to -0.15%

Assumption: Cash and marketable securities as % of s — [GMR_final.xls]Valuation - Cell: B19

Triangular distribution with parameters:

Minimum	7.92%
Likeliest	9.13%
Maximum	17.82%

Selected range is from 7.92% to 17.82%

Assumption: Other current assets as % of sales — [GMR_final.xls]Valuation - Cell: B20

Triangular distribution with parameters:

Minimum	5.00%
Likeliest	5.97%
Maximum	12.00%

Selected range is from 5.00% to 12.00%

Assumption: Fixed assets increase — [GMR_final.xls]Valuation - Cell: B21

Triangular distribution with parameters:

Minimum	18,000
Likeliest	30,000
Maximum	40,000

Selected range is from 18,000 to 40,000

Assumption: Other long term assets as % of sales — [GMR_final.xls]Valuation - Cell: B22

Triangular distribution with parameters:

Minimum	5.14%
Likeliest	5.14%
Maximum	8.68%

Selected range is from 5.14% to 8.68%

Assumption: Non-interest bearing liabilities as % of — [GMR_final.xls]Valuation - Cell: B23

Triangular distribution with parameters:

Minimum	4.38%
Likeliest	5.90%
Maximum	11.57%

Selected range is from 4.38% to 11.57%

Assumption: Current portion of LT debt as % LT debt — [GMR_final.xls]Valuation - Cell: B24

Triangular distribution with parameters:

Minimum	7.50%
Likeliest	17.46%
Maximum	34.74%

Selected range is from 7.50% to 34.74%

Assumption: LT debt/Stockholder's equity — [GMR_final.xls]Valuation - Cell: B25

Triangular distribution with parameters:

Minimum	0.54
Likeliest	1.59
Maximum	2.44

Selected range is from 0.54 to 2.44

Assumption: TV growth — [GMR_final.xls]Valuation - Cell: B26

Triangular distribution with parameters:

Minimum	0.00%
Likeliest	1.00%
Maximum	3.00%

Selected range is from 0.00% to 3.00%

Assumption: D/(D+E) — [GMR_final.xls]WACC - Cell: B12

Triangular distribution with parameters:

Minimum	40.32%
Likeliest	44.47%
Maximum	70.93%

Selected range is from 40.32% to 70.93%

Figure K4: Assumptions of the Forecast for General Maritime

APPENDIX L: Simulation Results for Frontline

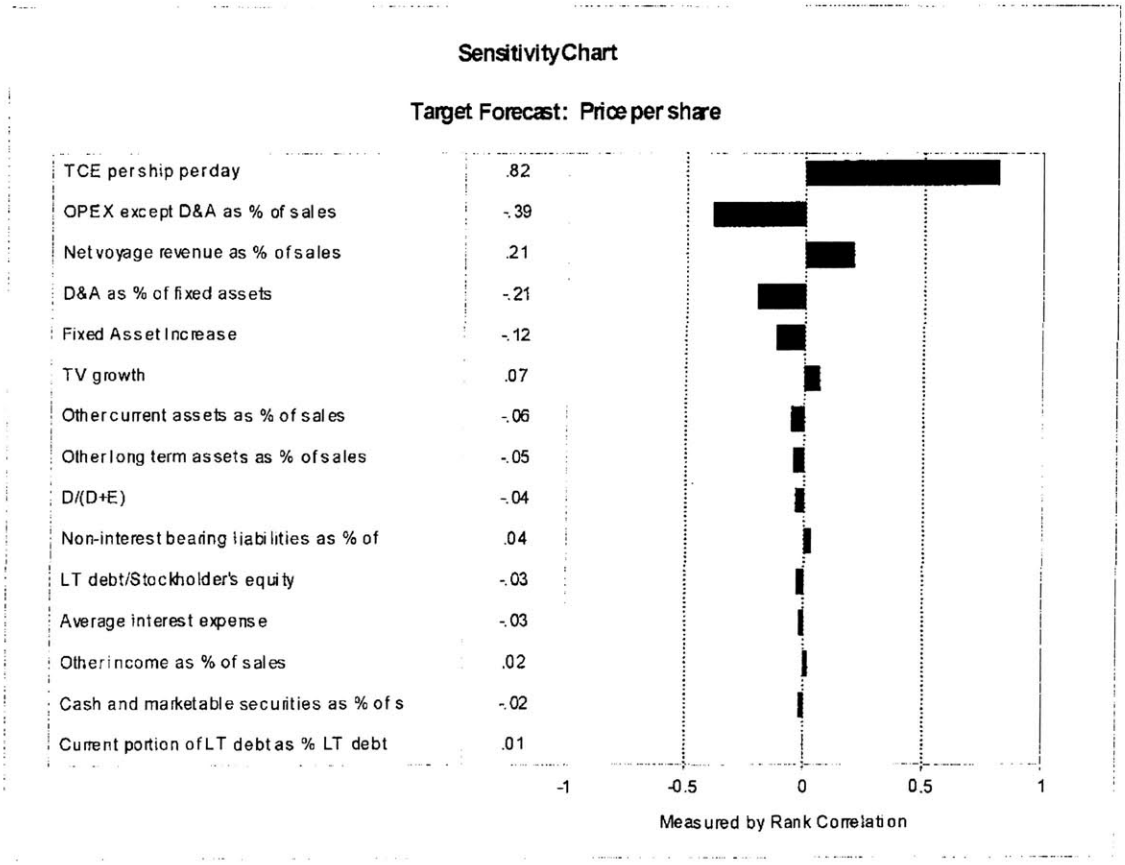

Figure L1: Sensitivity Chart for Frontline

Percentiles:

Percentile	Value
0%	-42.73
10%	-15.70
20%	-8.14
30%	-1.55
40%	3.96
50%	9.36
60%	15.17
70%	21.79
80%	29.02
90%	41.01
100%	79.13

Figure L2: Percentiles Chart for Frontline

Summary:

Display Range is from -42.73 to 79.13

Entire Range is from -42.73 to 79.13

After 1,500 Trials, the Std. Error of the Mean is 0.56

Statistics:	Value
Trials	1500
Mean	10.84
Median	9.36
Mode	---
Standard Deviation	21.59
Variance	466.24
Skewness	0.22
Kurtosis	2.68
Coeff. of Variability	1.99
Range Minimum	-42.73
Range Maximum	79.13
Range Width	121.86
Mean Std. Error	0.56

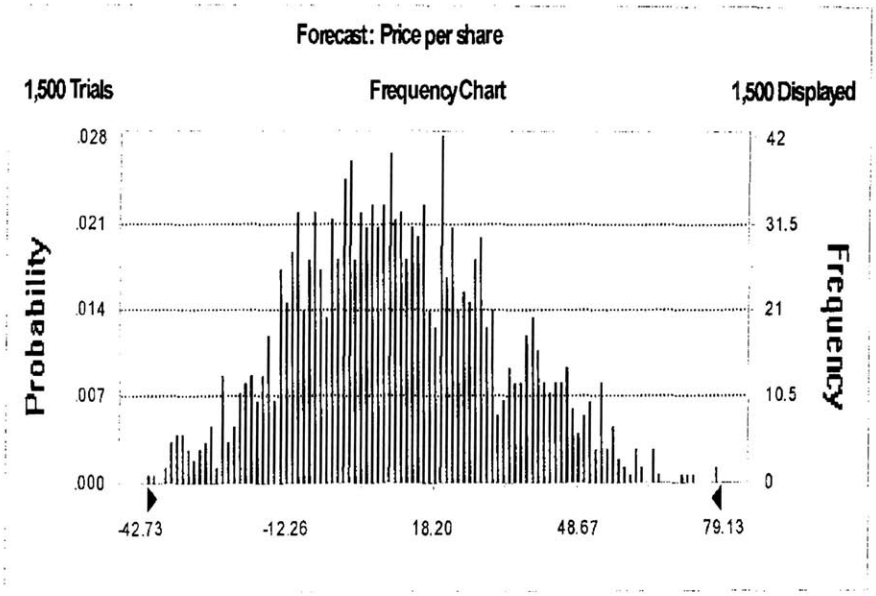

Figure L3: Forecast Statistics for Frontline

Assumptions

Assumption: TCE per ship per day — [FRO_final.xls]Valuation - Cell: B6

Triangular distribution with parameters:

Minimum	17,833
Likeliest	28,600
Maximum	38,300

Selected range is from 17,833 to 38,300

Assumption: Net voyage revenue as % of sales — [FRO_final.xls]Valuation - Cell: B7

Triangular distribution with parameters:

Minimum	68.46%
Likeliest	78.26%
Maximum	80.04%

Selected range is from 68.46% to 80.04%

Assumption: OPEX except D&A as % of sales — [FRO_final.xls]Valuation - Cell: B14

Triangular distribution with parameters:

Minimum	18.95%
Likeliest	23.15%
Maximum	36.83%

Selected range is from 18.95% to 36.83%

Assumption: D&A as % of fixed assets — [FRO_final.xls]Valuation - Cell: B15

Triangular distribution with parameters:

Minimum	5.07%
Likeliest	6.01%
Maximum	7.92%

Selected range is from 5.07% to 7.92%

Assumption: Average interest expense — [FRO_final.xls]Valuation - Cell: B16

Triangular distribution with parameters:

Minimum	9.33%
Likeliest	13.00%
Maximum	16.30%

Selected range is from 9.33% to 16.30%

Assumption: Other income as % of sales — [FRO_final.xls]Valuation - Cell: B17

Triangular distribution with parameters:

Minimum	-8.46%
Likeliest	3.52%
Maximum	14.91%

Selected range is from -8.46% to 14.91%

Assumption: Cash and marketable securities as % of s — [FRO_final.xls]Valuation - Cell: B19

Triangular distribution with parameters:

Minimum	17.34%
Likeliest	47.49%
Maximum	68.83%

Selected range is from 17.34% to 68.83%

Assumption: Other current assets as % of sales — [FRO_final.xls]Valuation - Cell: B20

Triangular distribution with parameters:

Minimum	11.14%
Likeliest	15.28%
Maximum	24.67%

Selected range is from 11.14% to 24.67%

Assumption: Fixed Asset Increase — [FRO_final.xls]Valuation - Cell: B21

Triangular distribution with parameters:

Minimum	180,000
Likeliest	220,000
Maximum	220,000

Selected range is from 180,000 to 220,000

Assumption: Other long term assets as % of sales — [FRO_final.xls]Valuation - Cell: B22

Triangular distribution with parameters:

Minimum	2.45%
Likeliest	9.10%
Maximum	16.31%

Selected range is from 2.45% to 16.31%

Assumption: Non-interest bearing liabilities as % of — [FRO_final.xls]Valuation - Cell: B23

Triangular distribution with parameters:

Minimum	8.56%
Likeliest	9.22%
Maximum	14.17%

Selected range is from 8.56% to 14.17%

Assumption: Current portion of LT debt as % LT debt — [FRO_final.xls]Valuation - Cell: B24

Triangular distribution with parameters:

Minimum	15.88%
Likeliest	21.66%
Maximum	32.12%

Selected range is from 15.88% to 32.12%

Assumption: LT debt/Stockholder's equity — [FRO_final.xls]Valuation - Cell: B25

Triangular distribution with parameters:

Minimum	1.02
Likeliest	1.38
Maximum	1.70

Selected range is from 1.02 to 1.70

Assumption: TV growth — [FRO_final.xls]Valuation - Cell: B26

Triangular distribution with parameters:

Minimum	0.00%
Likeliest	1.00%
Maximum	3.00%

Selected range is from 0.00% to 3.00%

Assumption: D/(D+E) — [FRO_final.xls]WACC - Cell: B8

Triangular distribution with parameters:

Minimum	58.55%
Likeliest	58.88%
Maximum	65.20%

Selected range is from 58.88% to 65.20%

Figure L4: Assumptions of the Forecast for Frontline

APPENDIX M: Simulation Results for OMI

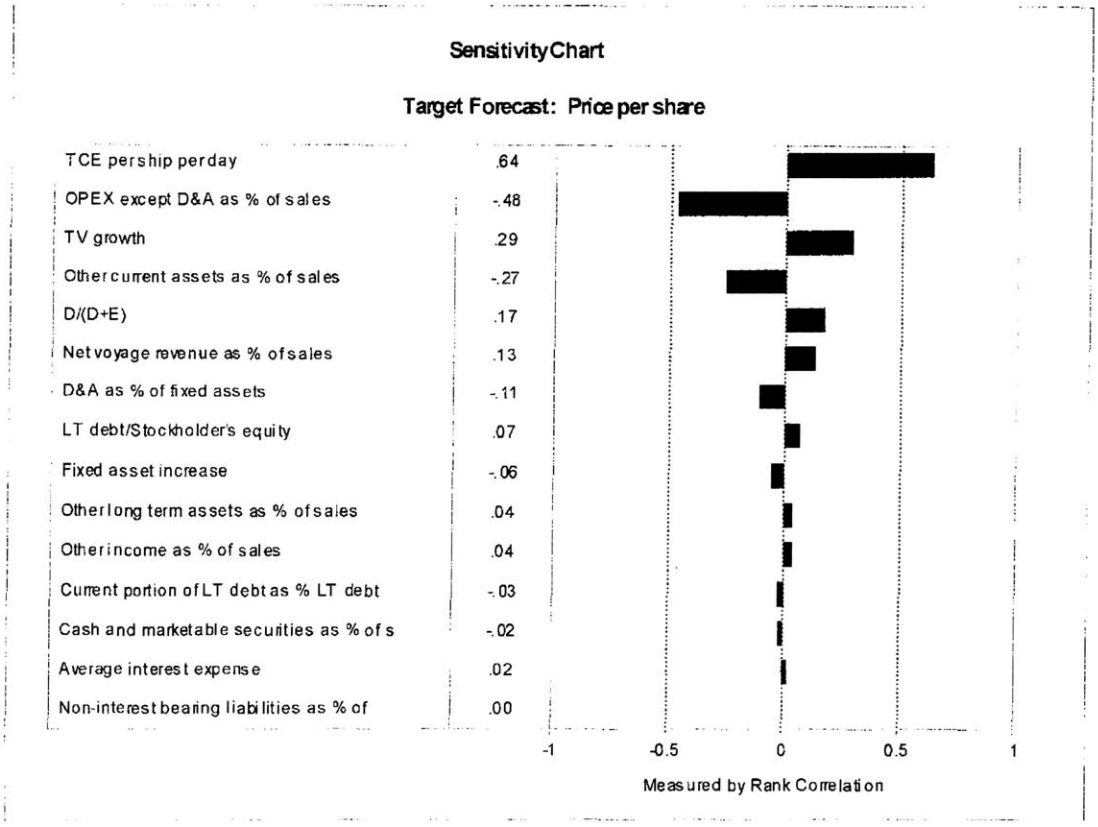

Figure M1: Sensitivity Chart for OMI

Percentiles:

Percentile	Value
0%	-6.42
10%	-0.31
20%	0.94
30%	1.97
40%	2.77
50%	3.57
60%	4.36
70%	5.32
80%	6.55
90%	8.39
100%	47.61

Figure M2: Percentiles Chart for OMI

Summary:

Display Range is from -6.42 to 14.62

Entire Range is from -6.42 to 47.61

After 1,500 Trials, the Std. Error of the Mean is 0.11

Statistics:	Value
Trials	1500
Mean	4.04
Median	3.57
Mode	---
Standard Deviation	4.28
Variance	18.32
Skewness	2.94
Kurtosis	22.85
Coeff. of Variability	1.06
Range Minimum	-6.42
Range Maximum	47.61
Range Width	54.03
Mean Std. Error	0.11

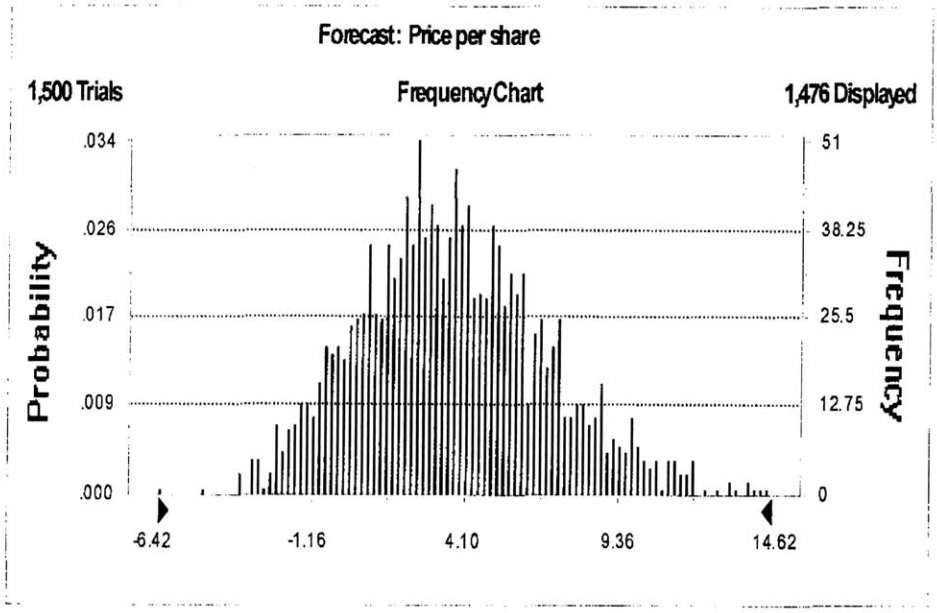

Figure M3: Forecast Statistics for OMI

Assumptions

Assumption: D/(D+E) — [OMI_final.xls]WACC - Cell: B8

Triangular distribution with parameters:

Minimum	22.11%
Likeliest	49.97%
Maximum	75.80%

Selected range is from 22.11% to 75.80%

Assumption: TCE per ship per day — [OMI_final.xls]Valuation - Cell: B6

Triangular distribution with parameters:

Minimum	14,500
Likeliest	16,150
Maximum	20,500

Selected range is from 14,500 to 20,500

Assumption: Net voyage revenue as % of sales — [OMI_final.xls]Valuation - Cell: B7

Triangular distribution with parameters:

Minimum	78.00%
Likeliest	82.37%
Maximum	86.14%

Selected range is from 78.00% to 86.14%

Assumption: OPEX except D&A as % of sales — [OMI_final.xls]Valuation - Cell: B14

Triangular distribution with parameters:

Minimum	27.81%
Likeliest	30.80%
Maximum	40.00%

Selected range is from 27.81% to 40.00%

Assumption: D&A as % of fixed assets — [OMI_final.xls]Valuation - Cell: B15

Triangular distribution with parameters:

Minimum	5.78%
Likeliest	6.43%
Maximum	7.08%

Selected range is from 5.78% to 7.08%

Assumption: Average interest expense — [OMI_final.xls]Valuation - Cell: B16

Triangular distribution with parameters:

Minimum	9.70%
Likeliest	12.09%
Maximum	16.30%

Selected range is from 9.70% to 16.30%

Assumption: Other income as % of sales — [OMI_final.xls]Valuation - Cell: B17

Triangular distribution with parameters:

Minimum	-55.09%
Likeliest	-9.63%
Maximum	8.88%

Selected range is from -55.09% to 8.88%

Assumption: Cash and marketable securities as % of s — [OMI_final.xls]Valuation - Cell: B19

Triangular distribution with parameters:

Minimum	6.36%
Likeliest	15.94%
Maximum	21.56%

Selected range is from 6.36% to 21.56%

Assumption: Other current assets as % of sales — [OMI_final.xls]Valuation - Cell: B20

Triangular distribution with parameters:

Minimum	12.18%
Likeliest	30.79%
Maximum	98.12%

Selected range is from 12.18% to 98.12%

Assumption: Fixed asset increase — [OMI_final.xls]Valuation - Cell: B21

Triangular distribution with parameters:

Minimum	18,000
Likeliest	20,000
Maximum	22,000

Selected range is from 18,000 to 22,000

Assumption: Other long term assets as % of sales — [OMI_final.xls]Valuation - Cell: B22

Triangular distribution with parameters:

Minimum	10.05%
Likeliest	25.79%
Maximum	38.86%

Selected range is from 10.05% to 38.86%

Assumption: Non-interest bearing liabilities as % of — [OMI_final.xls]Valuation - Cell: B23

Triangular distribution with parameters:

Minimum	9.14%
Likeliest	13.50%
Maximum	15.87%

Selected range is from 9.14% to 15.87%

Assumption: Current portion of LT debt as % LT debt — [OMI_final.xls]Valuation - Cell: B24

Triangular distribution with parameters:

Minimum	14.42%
Likeliest	17.81%
Maximum	22.87%

Selected range is from 14.42% to 22.87%

Assumption: LT debt/Stockholder's equity — [OMI_final.xls]Valuation - Cell: B25

Triangular distribution with parameters:

Minimum	0.48
Likeliest	0.97
Maximum	1.30

Selected range is from 0.48 to 1.30

Assumption: TV growth — [OMI_final.xls]Valuation - Cell: B26

Triangular distribution with parameters:

Minimum	0.00%
Likeliest	1.00%
Maximum	3.00%

Selected range is from 0.00% to 3.00%

Figure M4: Assumptions of the Forecast for OMI

APPENDIX N: Simulation Results for OSG

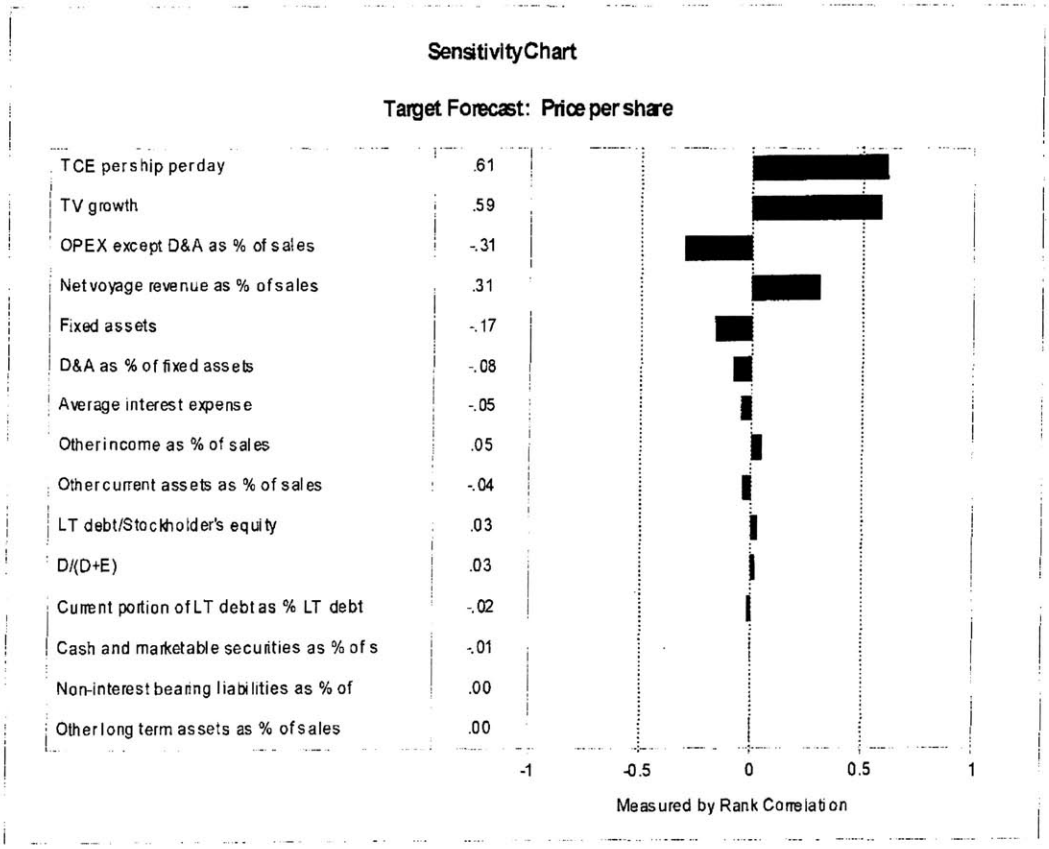

Figure N1: Sensitivity Chart for OSG

Percentiles:

Percentile	Value
0%	9.34
10%	15.77
20%	17.94
30%	19.35
40%	20.52
50%	21.72
60%	22.86
70%	24.25
80%	26.12
90%	28.89
100%	40.74

Figure N2: Percentiles Chart for OSG

Summary:

Display Range is from 10.23 to 35.48
Entire Range is from 9.34 to 40.74
After 1,500 Trials, the Std. Error of the Mean is 0.13

Statistics:	Value
Trials	1500
Mean	22.07
Median	21.72
Mode	---
Standard Deviation	4.97
Variance	24.68
Skewness	0.34
Kurtosis	3.05
Coeff. of Variability	0.23
Range Minimum	9.34
Range Maximum	40.74
Range Width	31.40
Mean Std. Error	0.13

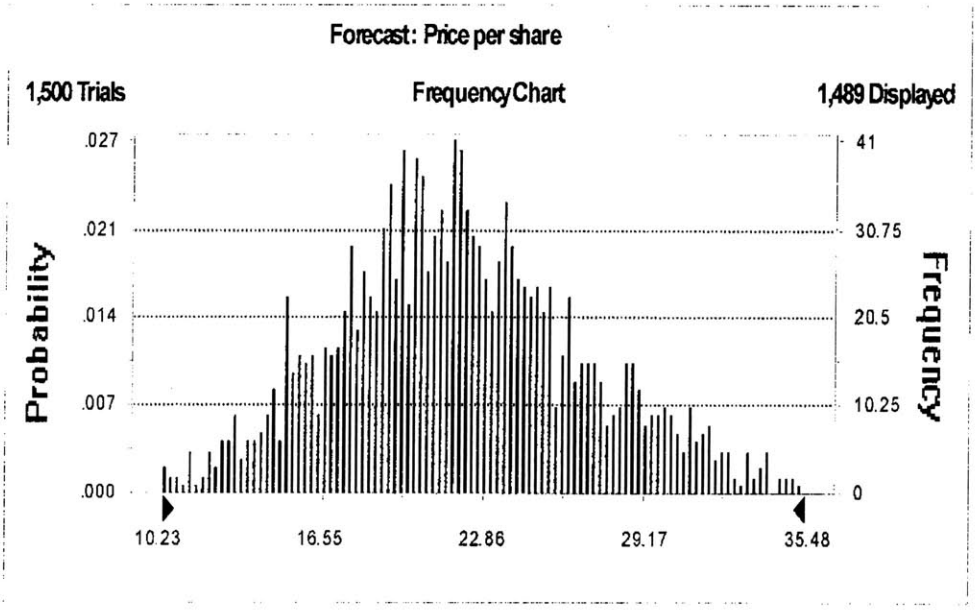

Figure N3: Forecast Statistics for OSG

Assumption: D/(D+E) — [OSG_final.xls]WACC - Cell: B9

Triangular distribution with parameters:

Minimum	53.58%
Likeliest	60.15%
Maximum	68.02%

Selected range is from 53.58% to 68.02%

Assumption: TCE per ship per day — [OSG_final.xls]Valuation - Cell: B5

Triangular distribution with parameters:

Minimum	17,550
Likeliest	21,150
Maximum	25,461

Selected range is from 17,550 to 25,461

Assumption: Net voyage revenue as % of sales — [OSG_final.xls]Valuation - Cell: B6

Triangular distribution with parameters:

Minimum	72.24%
Likeliest	78.26%
Maximum	81.18%

Selected range is from 72.24% to 81.18%

Assumption: OPEX except D&A as % of sales — [OSG_final.xls]Valuation - Cell: B13

Triangular distribution with parameters:

Minimum	35.47%
Likeliest	38.44%
Maximum	43.00%

Selected range is from 35.47% to 43.00%

Assumption: D&A as % of fixed assets — [OSG_final.xls]Valuation - Cell: B14

Triangular distribution with parameters:

Minimum	4.64%
Likeliest	4.94%
Maximum	5.40%

Selected range is from 4.64% to 5.40%

Assumption: Average interest expense — [OSG_final.xls]Valuation - Cell: B15

Triangular distribution with parameters:

Minimum	8.46%
Likeliest	9.58%
Maximum	11.54%

Selected range is from 8.46% to 11.54%

Assumption: Other income as % of sales — [OSG_final.xls]Valuation - Cell: B16

Triangular distribution with parameters:

Minimum	-3.41%
Likeliest	8.72%
Maximum	14.66%

Selected range is from -3.41% to 14.66%

Assumption: Cash and marketable securities as % of s — [OSG_final.xls]Valuation - Cell: B18

Triangular distribution with parameters:

Minimum	15.00%
Likeliest	21.22%
Maximum	30.00%

Selected range is from 15.00% to 30.00%

Assumption: Other current assets as % of sales — [OSG_final.xls]Valuation - Cell: B19

Triangular distribution with parameters:

Minimum	10.00%
Likeliest	11.11%
Maximum	14.00%

Selected range is from 10.00% to 14.00%

Assumption: Other long term assets as % of sales — [OSG_final.xls]Valuation - Cell: B21

Triangular distribution with parameters:

Minimum	40.00%
Likeliest	61.52%
Maximum	70.00%

Selected range is from 40.00% to 70.00%

Assumption: Non-interest bearing liabilities as % of — [OSG_final.xls]Valuation - Cell: B22

Triangular distribution with parameters:

Minimum	7.39%
Likeliest	9.20%
Maximum	13.18%

Selected range is from 7.39% to 13.18%

Assumption: Current portion of LT debt as % LT debt — [OSG_final.xls]Valuation - Cell: B23

Triangular distribution with parameters:

Minimum	1.41%
Likeliest	1.85%
Maximum	2.32%

Selected range is from 1.41% to 2.32%

Assumption: LT debt/Stockholder's equity — [OSG_final.xls]Valuation - Cell: B24

Triangular distribution with parameters:

Minimum	1.31
Likeliest	1.41
Maximum	1.50

Selected range is from 1.31 to 1.50

Assumption: TV growth — [OSG_final.xls]Valuation - Cell: B25

Triangular distribution with parameters:

Minimum	0.00%
Likeliest	1.00%
Maximum	3.00%

Selected range is from 0.00% to 3.00%

Assumption: Fixed assets — [OSG_final.xls]Valuation - Cell: B20

Triangular distribution with parameters:

Minimum	-77,000.00
Likeliest	-70,000.00
Maximum	-63,000.00

Selected range is from -77,000.00 to -63,000.00

Figure N4: Assumptions of the Forecast for OSG

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