UNIVERSITY OF THE AEGEAN
Department of Shipping Trade and Transport

THESIS

<< Shipping strategies of listed companies during peaks and troughs >>

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Abstract

The aim of this study is to investigate the strategic profile of shipping companies during peak and trough periods. For that purpose, 12 shipping companies, listed on the International Stock Exchange System, have been selected; specifically four from every shipping sector, namely bulk, tanker and container. The strategies of these particular companies have been examined for the periods between 2005 and 2008 (peak period) and between 2009 and 2015 (trough period). The study uses two financial ratios and two shipping ratios in order to examine how these strategies affect companies’ performance.

According to the findings companies appear to adapt their strategic profile during trough period. More specifically they focus on how to reduce operation costs and obtain stable cash flow. The findings also suggest that shipping companies during trough period continue to invest into new vessels, in order to have strategic advantage when the trough period ends.
Acknowledgments

This thesis is in my father’s honor, who encouraged me to study shipping.

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Chapter 1: Introduction

With roughly three-quarters of the earth’s surface covered by water, shipping plays a major role in world trade.

The shipping industry has experienced extraordinary changes over the last few years. The global landscape is shifting, with emerging nations driving global demand, and until recently, the industry had enjoyed an unprecedented period of sustained profitability and increased investment. With its heavy exposure to global market mechanisms, the shipping industry is both unique and fascinating, attracting some of the world’s most risk-taking and charismatic entrepreneurs and visionaries.

Shipping companies, in recent years, have sought to enter into International Financial Markets in order to exploit the advantages of the International markets and to remain competitive in sea transportation. As a result, a growing number of shipping companies have proceeded to Initial Public offerings on International stock markets.

Shipping is a service industry whose demand is closely correlated to International trade levels and patterns. As a consequence shipping may be subject to unpredictable swings in demand requiring the operator to make strategic planning decisions while navigating through the economic cycle. While boom economies generate rising freight rates and encourage investments, ship operators may also have to face falling freight demand and declining freight rates, often deteriorating to unprofitable levels for extended periods.

The shipping industry, has suffered greatly during the ongoing financial crisis. As it is known, shipping is a capital intensive industry, which requires financial support, both for the acquisition of vessels as well as for servicing its bank debt.

It’s obvious that after the shipping market collapse in 2009, shipping companies had to change their strategic plan in order to remain competitive in the new market period.

According to the literature, a gap seems to exist in the investigation of the adopted strategies of shipping companies before and after the crisis of 2008.

This study aims to address this particular gap by investigating the different strategies that shipping companies followed during the peak and the trough periods. In that respect, the study will try to answer the following research questions:

- What are the companies’ strategies on fleet during peak and trough period?
• What is the chartering strategy of companies during peak and trough period?
• What is the dividend policy before and after 2008 crisis?
• What are the investigations that shipping companies follow during peak and trough periods?

For this purpose, 12 shipping companies, listed in the International Stock Exchange System, have been selected; specifically, four from every shipping sector, namely bulk, tanker and container. The strategies of these particular companies have been examined for the periods between 2005 and 2009 (peak period) and between 2010 and 2015 (trough period).

The study uses two financial ratios and two shipping ratios, in order to examine how these strategies affect the companies’ performance. The two financial ratios are Ebitda and Debt ratio and the two shipping ratios are fleet utilization ratio and time charter equivalent rate.

The following part of this study is divided in three main sections, the literature review, the methodology and the findings.

Chapter 2: Literature review

There has been much research into topics related to Shipping Strategy and Shipping Finance. Mason and Nair (2013) mentioned that shipping is considered to be the lifeblood of the global economy as more than 80% of the world goods are carried by ship.

As for Panayides and Wiedmer (2011) the shipping business environment is increasingly becoming unstable, competition is on the rise, profit margins are decreasing, expected service quality is increasing and demand is becoming more uncertain.

According to Agarwal and Ergun (2008), the shipping industry is comprised of three main divisions: industrial shipping, tramp shipping and liner shipping. Industrial shipping aims at minimizing shipping costs as shipper and owner are one and the same. In tramp shipping activities, the carrier engages in contracts with shippers to transport cargo bulk between specific points within a specific time frame. Liner shipping involves carriers deciding on a set of trips, making schedule available to shippers and then operating it.
Goulielmos and Psifia (2006) carried out a research on shipping loans. By using the method of Hurst Exponent, they revealed three paradoxes. Firstly, banks incur the majority of the loan risk; secondly, they deal shipping loans almost exclusively during boom periods and lastly they create overcapacity and dampen the freight market.

Leggate (2000), explores bond finance in the maritime industry. He mentioned that bonds offer a number of cash flow advantages but the maritime industry has limited experience in these markets. The industry would benefit from larger more established companies following this route, or even from a wave of acquisitions and mergers.

Syriopoulos and Tsatsaronis (2011) investigated the impact of key corporate governance mechanisms on the financial performance of shipping firms. Their findings support the hypothesis that a founding family CEO can positively impact shipping firm financial performance.

Grammenos and Marcoulis (1996) explored whether the cross-sectional returns performance of a sample of shipping companies is related to the following factors: the company’s beta with stock exchange, the financial leverage of the company, the average age of the company’s fleet and the dividend yield using the Fama-MacBeth methodology. They found that the cross-sectional returns are positively related to the stock market index beta, and the financial leverage when measured in book value terms are negatively related to the average age of the fleet whether measured on a per vessel or on a per deadweight basis and to the dividend yield. Sharpe (1983), started with the hypothesis that returns would be affected by the following factors: a stock's beta with S&P index, it's dividend yield, the size of the firm, it's beta with long terms bonds, it's past value of alpha and eight sector membership variables. The result of applying this model to 2197 stocks on a monthly basis for all months between 1931 and 1979 revealed that the additional factors, beyond the stock’s beta with a proxy for the market portfolio, may be useful for explaining the cross-sectional returns over time.

According to Jorion and Loudon, the degree to which fluctuations in exchange rates impinge on the performance of an industry depends on its level of international business, the competitive nature of its input markets and its foreign investments.

Marsy, Olugbode and Pointon (2010), investigated the exposure of shipping stocks returns to exchange rates, interest rates and oil price risks. They found that the stock returns of shipping firms are more greatly affected by exchange rate exposure rather than interest rate exposure or even oil price exposure.

Bendall and Stent’s (2007) paper presented an application of real option analysis applied to the shipping industry. They state that the results support three main conclusions. Firstly, the greater the volatility of the underlying base projects, the more value the strategies will have. Secondly, the more alternate strategies
present, the more value in general will be added and thirdly, the more correlated the underlying projects are, the less net value will be added.

Syriopoulos and Theotokas (2007), mentioned that shipping companies in recent years have been seeking to enter international financial markets to exploit the advantages of the international markets and to remain competitive in sea transportation. As a result, a growing number of shipping companies have proceeded to Initial Public Offerings (IPOs) on international stock markets.

Solomon (2007) redefined corporate governance as the system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all their stakeholders and act in a socially responsible way in all areas of their business activity.

Merikas, Gounopoulos and Nounis (2009) mentioned that capital markets play a crucial role in promoting shipping company growth and creating value since they act as intermediaries in providing the funds needed to finance new investments projects and sustain business growth.

Bendall and Stent (2003) demonstrated the use of Real Option Analysis (ROA) in their paper in order to provide guidelines for decisions about closing operation in adverse market conditions. They concluded that using ROA provides a better framework for valuing strategic, recognizing the fact that management does not operate in a ceteris paribus world and makes decisions under uncertainty. They mention furthermore that once the project is underway often new information comes along indicating that it may be more appropriate to switch to a new strategy. Management must not think of strategic choice in terms of mutually exclusive scenarios but rather as a switching option exercise, providing that the cost of switching is lower than the benefit from altering cost.

Drobetz, Schilling and Tegtcehir (2010), investigated the risk return profile of listed companies in the shipping industry and its three sectors: container, tanker and bulker shipping. Their findings suggest that the shipping industry exhibits lower risk in terms of beta than the overall stock market.

Kavusannos and Visvikis (2006) mentioned that by using derivatives products, ship-owners and charterers can secure the level of their future income or costs and reduce uncertainty and unforeseen volatility of their cash-flow.

Thanopoulou (1995) mentioned that shipping had been inexorably marked by two interrelated phenomena, meaning the ascent of developing countries to shipping and the persistence of the maritime crisis of the 1970s and 1980s. Thanopoulou (1988) researched the terms of competitiveness in shipping. She discovered that the contribution of policy measures to address any erosion of shipping competitiveness is limited nowadays, especially for European Fleets.

Stephen Y.Gong , Heng-Qing Ye and Yvunne Yiyi Zeng's paper (2013) presented bank practices in Hong Kong and policies regarding shipping loans before and after the recent financial crisis. They revealed that after the financial
crisis banks have become more concerned about quality and attach greater importance to security, whereas less emphasis is placed on marketing.

Lagoudis, Lalwani and Naim (2006) put forward an operation management approach aiming at the identification of value-adding attributes that characterize the ocean transportation industry. In their paper they utilized the multi-attribute utility theory (MAUT) in order to measure and compare the value of different processes of various sectors of the ocean transportation industry. Results of their research suggest that a strong emphasis is placed by ocean transportation companies on quality and that there is differentiating importance put on service and cost by different sectors.

Thetokas and Progoulaki (2007) examined the way Greek Shipping companies and Greek Seafarers perceive culture, and how this affects their approach to crew management and ship operation. The analysis focuses on the manning strategies employed by the companies, on the operational problems that might occur on board, and on any possible disturbance of the relation between the ship, the office at shore and third parties. Results show that some of the predominant problems encountered abroad, as far as communication with multicultural crews is concerned, are rooted in cultural and linguistic incompatibility, as well as in inadequate and inappropriate training.

Triantafylli and Ballos (2010), explored how management control systems (MCS) enhance the performance of shipping companies. Based on data collected from interviews, they distinguished MCS in three categories according to the purposes they fulfill. Firstly, basic MCS are implemented in order to set standards and support Basic operations of the business, secondly, Cost MCS collect information about cost minimization and thirdly, External Information MCS focus on compliance with the requirement of the cargo owners. Furthermore, evidence collected through a survey instrument for shipping companies located in Greece suggests that the choice of MCS is contingent upon the strategy pursued by the shipping companies. Moreover, their paper tests whether shipping companies with an optimal fit between their strategies and their MCS experience superior business performance and a higher perceived usefulness of MCS. Results reinforce the notion that the performance of the shipping companies is contingent on the use of those control systems which are consistent with their strategies and a number of control variables such as experience of the person implemented the MCS, the size, and age of company.

Evans (1994) analyzed the productivity of fleets carrying dry and wet cargo in both short and long terms as well as the factors affecting it.

Lullinane (2002) and Barros (2003) used the method of data envelopment analysis in order to analyze efficiency in transportation systems.

Goss (1982) analyzed the term productivity by separating it into ‘natural indices’ and ‘economic indices’ of productivity. These indices suggested by Goss can be
applied to the maritime industry in general, to a shipping company and to a ship’s operation.

For Johnson, Christensen and Kagerman (2008) business model innovations are often the key to capitalizing on new technologies of responding to shifting bases of competition.

Pollert and Glickman (2001) discussed how corporations are pressured by Shareholders to optimize long term returns by utilizing corporate assets in the most cost-efficient manner.

Porter along with Mintzberg both covered, much ground in strategy theories. Porter’s emphasis is on a more deliberate approach to strategy, whilst Mintzberg has a more emergent approach. One of the most common models used by Porter, is his 5 forces model.

Oswald has mentioned that shipping lines use diversification in order to protect their businesses against cyclability and volatility.

The majority of Greek owned publicly listed companies apply a corporate governance model based on a concentrated ownership structure with major shareholders directly represented on the Board of Directors or even holding managerial positions themselves (Harlaftis and Theotokas 2004). The family tends to have a high degree of control, either through large ownership stakes or through strong influence on decisions.

Grammenos and Papapostolou (2012) found that shipping IPOs in the United States have on average a 2.69% return on the first day.

For Haralambides (1996) a shipping pool is a joint venture in which ship owners market their ships as a single entity and share revenues. The primary purpose is to increase the capacity to undertake large contracts of affreightment, but other motives include the use of improved capacity and technology sharing.

Lorange and Fjeldstad claim that while owning a ship is a simple business model, complexity is introduced by the high stakes and volatility of the chartering and financial markets. Sound portfolio management is therefore very important in ship owning.

As for Porter (1985) and Porter – Siggelkaw (2008), activities and resources respectively set the stage for strategic choices the firms make about its relationship to its environment, it’s location in the extended value systems, and relationship with other actors on whom the firm depends on for strategically critical resources.

Also Lorange (2009) identified four distinct strategic foci for shipping companies: owning, using, operating, and innovating around steel.

North (1991) and Teece (2006) mentioned that Shipping plays an important role to both the upstream and the downstream sections of a global supply chain, but the shipping company itself provides a networking service, it is part of a large
global logistics grid that links buyers and suppliers along a multitude of value chains.

Mitsuhashi and Greve (2009) found that alliances based on market complementarities related to expanding network size and, when the partners had compatible ships that would allow flexible capacity adjustments, improved the performance of the alliance partners. Their findings are very much in line with the network business models of the shipping industry.

Shipping investors have historically been drawn to shipping as it has offered opportunities to make exceptional profits, but also considerable losses. Shipping has benefitted and suffered from the inherent volatility and cyclical nature. Stopford’s study on shipping cycles revealed that a shipping cycle is driven by an undercurrent of supply and demand economic fundamentals which determines the market tone at any point in time. Also Stopford said that a statistical analysis for the period 1869 to 2002 identified a total of 15 cycles, with an average length of 7.1 years (peak to peak) and a standard deviation of 2.3 years.

Zannetos (1996) mentioned that despite the boom years of elevated freight rates, inevitably followed by market corrections during which rates appear ever downwards, mistakes are repeated time and again by ship-owners.

Continuing to this view, Scarsi (2007) mentioned that ship-owners often ignore or undervalue market trends, following their own personal intuition of following the actions of their competitors, causing mistakes to be periodically repeated. Scarsi (2007) has also stated that timing has been identified as the main decision driver for investment decisions. The cyclical course of the market with the downward stage preceding the ascending phase, does not explain the length of each phase or the amplitude of the negative/positive peaks. The lack of synchrony between the market cycle and the investment decision timing on buying/selling ships at the right moment can mean the difference between success and mere survival.

Chapter 3: Methodology

The shipping companies studied in this paper have been categorized into three sectors. Shipping companies that operate dry bulk fall into the first sector. Shipping companies that operate liquid bulk and shipping companies that operate containers comprise the second and third sectors respectively. These shipping companies share the following characteristics:

- Operate a fleet of at least ten vessels
- Operate a fleet of at least 200,000 dwt of capacity
- Operate globally
- Are listed shipping companies at the stock exchange system
- Market capitalization 50 million or more.

The decision for selecting shipping companies that operate a fleet of at least ten vessels and of at least 200,000 dwt of capacity was based on the fact that the focus of this study is on medium and large companies. The reason for selecting listed shipping companies was based on the accessibility and validity of the available data since the stock exchange system requires companies to publish financial reports. This research study focuses on shipping companies that operate globally, thus companies operating locally have been excluded as they serve a different market with different characteristics. Lastly, the reason for selecting shipping companies that have market capitalization of 50 million or more was in order to exclude nano market capitalization shipping companies.

Twelve companies have been selected and studied over a ten-year time period, from 2005 up to 2015. The main focus of the study is the strategic analysis of the selected companies, the comparison of the different strategies and the impact of these strategies on the overall performance of the companies.

Dry Bulk Shipping companies studied include:
- Diana Shipping Inc
- Dry Ships Inc
- Genco Shipping and Trading Limited
- Navios Maritime Holdings Inc

Liquid Bulk Shipping Companies studied include:
- General Maritime Inc
- Nordic American Tankers
- Tsakos Energy Navigation Ltd (Ten Ltd)
- Stealthgas Inc

Container Shipping Companies studied include:
- Danaos Corporation
- Seaplan Corporation
- Costamare Inc
- Diana Containerships Inc
3.1 Information for each company

**Diana Shipping Inc (NYSE:DSX):** Diana Shipping specializes in the ownership of dry bulk carriers. In 2005, Diana Shipping Inc was listed in the New York’s Stock Exchange under the symbol “DSX”. The company owns 48 dry bulk vessels with total capacity of 5.7 million dwt with average age of 7.6 years. The fleet is managed by Diana Shipping Services S.A. and from a newly established 50/50 joint venture with Wilhelmsen Ship Management named Diana Wilhelmsen Management Limited in Cyprus. Diana Shipping Inc. also owns approximately 25.7% of the issued and outstanding shares of Diana Containerships Inc. Diana Shipping Inc has a market capitalization of 305.01 Million.

**Dry Ships Inc (NASDAQ:DRYS):** DryShips Inc. is an owner of dry bulk carriers and offshore support vessels that operate worldwide. DryShips owns a fleet of 13 Panamax dry bulk carriers with a combined deadweight tonnage of approximately 1.0 million tons, and six offshore supply vessels, comprising two platform supply and four oil spill recovery vessels. The company is listed in Nasdaq National Market under the symbol “DRYS” and has a market capitalization of 117.139 million.

**Genco Shipping And Trading Limited (NYSE:GNK):** Genco shipping and Trading Limited specializes in dry bulk vessels. In 2004, the company was listed on New York’s Stock Exchange. The company owns a fleet of 70 dry bulk carriers with an average age of 8.8 and an aggregate capacity of approximately 5,159,000 dwt. A merger with Baltic Trading Limited was completed on July 17, 2015. In accordance with the terms of the merger agreement, Baltic Trading is now an indirect wholly-owned subsidiary of Genco Shipping and Trading Limited. Since July 20, 2015, following the completion of the merger, Genco Shipping and Trading Limited Shares has been trading on the NYSE under the symbol “GNK” with a market capitalization of 59.55 million.

**Navios Maritime Holdings (NYSE:NM):** Navios Maritime Holdings Inc is one of the leading global brands in seaborne shipping specializing in the worldwide carriage, trading, storage and related logistics of international bulk cargoes. Navios Maritime Holdings Inc. owns a fleet of 40 dry bulk carriers with total capacity of 3.855.359 Dwt. The company also operates a long-term chartered in fleet, which is consisted of 19 vessels with total capacity of 1.911.856 Dwt.
Navios Maritime Holdings Inc is listed in the New York System Exchange under the symbol “NM” and has a market capitalization of 183.63 Million.

**General Maritime (NYSE:GNRT):** General Maritime Inc is a leading U.S.-based provider of international seaborne crude oil transportation services. General’s 43-vessel fleet is comprised of 26 VLCCs, including three newbuildings, 11 Seuzmaxes, four Aframax and two Panamax tankers. On a fully-delivered basis, General Maritime’s fleet has a total carrying capacity of approximately 10.2 million Dwt and an average age of less than 6 years on a DWT basis. In 2001 was listed in the New York’s system exchange. General Maritime has a market capitalization of 388.6 million.

**Nordic American Tankers (NYSE:NAT):** Nordic American Tankers is an owner of Tankers Vessels. The fleet consists of 30 Suezmax Tankers with an aggregate capacity of 4.77 Million Dwt. The company shares are listed on the New York System Exchange under the symbol “NAT”. Nordic American Tankers has a market capitalization of 885.1 Million.

**Tsakos Energy Navigation LTD (TEN LTD):** Tsakos Energy Navigation Ltd. (TEN) is one of the largest independent transporters of energy in the world controlling a versatile fleet of modern crude and product tankers with strong ice-class capabilities and liquefied natural gas (“LNG”) vessels. Ten’s fleet consists of 65 double-hull vessels, constituting a mix of crude tankers, product tankers and LNG carriers, totaling 7.2 million dwt. Of these, 45 vessels trade in crude, 15 in products, three are shuttle tankers and two are LNG carriers. TEN Limited is incorporated in Bermuda, managed out of Athens Greece, and listed in the New York Stock Exchange (NYSE) under the symbol “TNP”, and in the Bermuda Stock Exchange (BSX) under the symbol “TEN”. Ten Ltd has a market capitalization of 422.88 million.

**Stealthgas INC (NASDAQ:GAS):** Stealthgas Inc. is an International shipping transportation company specialized in the transportation of various petroleum and petrochemical gas products in liquefied form. Owns a fleet of 44 Lpg Carriers with total vessel size of 212.751 cbm and four tankers with total capacity of 255.804 Dwt. 2005 Company started to trade on Nasdaq National Market under the symbol “GAS”. Stealthgas Inc has a market capitalization of 136.14 Million.

**Danaos Corporation (NYSE:DAC):** Danaos Corporation is one of the world’s largest containership charter owners. The Company owns a fleet of 59 container vessels with an aggregate capacity of 353,586 TEUs. This includes four vessels acquired by Gemini Shipholdings Corporation, in which Danaos holds a 49% equity interest. On October 6, 2006, Danaos Corporation began trading on the
New York Stock Exchange under the symbol “DAC”. The Company has a market capitalization of 299.2 Million.

**Seaspan Corporation (NYSE:SSW):** Seaspan Corporation is an independent owner, operator and manager of containerships. It owns and operates a fleet of 84 containerships with an aggregate capacity of 607,900 TEUs and manages a fleet of 15 Containerships with total capacity of 170,000 TEUs. Seaspan Corporation is a publicly traded company, listed on the New York Stock Exchange (NYSE) under the symbol “SSW”. Seaspan Corporation has a market capitalization of 1.02 Billion.

**Costamare Inc (NYSE:CMRE):** Costamare Inc is an international owner of Containerships, owning a fleet of 71 Containerships aggregating approximately 462,000 Teu. Since 2010 the company’s common stock is trading on the New York System Exchange under the symbol “CMRE” Costamare Inc has a market capitalization of 473.95 Million.

**Diana Containerships Inc (NASDAQ:DCIX):** Diana Containerships Inc is a global provider of shipping transportation services through its ownership of containerships. The Company’s vessels are employed primarily on time charters with leading liner companies carrying containerized cargo along worldwide shipping routes. The company owns and operates 12 container vessels with an aggregate capacity of 61,517 TEUs. The fleet is managed by Diana’s Containerships wholly-owned subsidiary Unitized Ocean Transport Limited. Diana Containerships started to trade on Nasdaq National Market since 2011 under the symbol “DCIX”. The company has a market capitalization of 28.55 Million.

### 3.2 Shipping Strategies

As Martin Stopford (1997) accurately explains in his book “Maritime Economics” the market cycle pervades the shipping industry. The shipping market’s extreme volatility is directly related to the world economy. The long cycles of the global economy have profound repercussions on the shipping market and on the economy as a whole. In this study shipping strategies have been categorized into two economic periods. The first economic period, 2005 to 2008, is considered to be a peak economic period while the second economic period, 2009 to 2015, is considered to be an economically trough time period for the shipping market.
The Baltic Dry Index (BDI) was taken into consideration when determining the time period categories.

Diagram 1: Baltic Dry Index

As shown in the chart period 2005 to 2008 seems to be a peak period for shipping industry. The Baltic Dry Index has an increasing trend during this time period with hitting an all time high in 2008. In the end of 2008 there is a downward trend in the Baltic Dry Index that continues through the following years. In 2015 Baltic Dry Index hits record low, as evidence that the shipping industry is still into trough period.

The Newbuilding Vessels Value was also utilized in establishing the time period categories.

Diagram 2: Newbuilding Vessels Value

As shown in the newbuilding chart, vessels value increased in the years 2005 to 2008 with 2008 being a peak year. Vessels subsequently lost much of their value in the years 2009 to 2015. Specifically, the cost of a newbuilding oil tanker was
above 150 million dollars in 2008, while the cost fell under 100 million dollars by the end of 2015.

The third determining factor considered for time period categorization is the market value of a five year old vessel.

Diagram 3: Bulk Vessel Value 5 Year Old

Diagram 4: Tankers Vessel Value 5 Years Old
As illustrated in the chart, in all three shipping sectors second hand vessel value increased in years 2005 up to year 2008. Once again, 2008 was a peak year, in this case for second hand vessel market value while the market showed a decline in value in the years 2009 to 2015.

3.3 Ratios

In the last segment of the study the impact of the companies’ strategies on the financial results of each company is analyzed by utilizing two financial ratios. Also, in the study are used two Shipping ratios that measure the company’s performance into the shipping industry. All data used for calculating the financial ratios is based on the annual reports of the shipping companies.

**EBITDA**

\[ \text{Ebitda} = \text{Net Profit} + \text{Interest} + \text{Taxes} + \text{Depreciation} + \text{Amortization} \]

Ebitda can be used to analyze and compare profitability between companies and industries because it eliminates the effects of financing and accounting decisions. Ebitda is often used in valuation ratios and compared to enterprise value and revenue.

**Debt Ratio**

\[ \text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Assets or Total Liabilities/Total Assets}} \]

Debt ratio is a financial ratio that measures the extent of a company’s or consumer’s leverage. The debt ratio is defined as the ratio of total – long-term and short-term – debt to total assets, expressed as a decimal or percentage.

**Fleet Utilization**

\[ \text{Fleet utilization rate} = \frac{\text{Vessel Operating Days}}{\text{Vessel Calendar Days}} \]
Fleet Utilization rate is calculated by dividing the numbers of operating days during a period by the number of available days during the period. The shipping industry uses fleet utilization rate to measure a company’s efficiency in finding suitable employment for its vessels and minimizing the amount of days its vessels are off-hire for reasons other than scheduled repairs, vessels upgrades and special surveys.

**Time Charter Equivalent Rate (TCE)**

\[
\text{TCE} = \frac{\text{Voyage Revenues} - \text{Voyage Expenses}}{\text{Round Trip Duration in Days}}
\]

A shipping industry standard used to calculate the average daily revenue performance of a vessel. Time charter equivalent is calculated by taking voyage revenues, subtracting voyage expense and then dividing the entire total by the round-trip voyage duration in days. It gives shipping companies a tool to measure period-to-period changes.

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**Chapter 4: Results**

**4.1 Dry Bulk Sector**

**4.1.1 Diana Shipping Inc**

During the years 2005 to 2008, Diana Shipping focused on fleet growth due to the positive market condition. More specifically, in 2005 Diana’s Shipping owned a fleet of 12 Dry Bulk Carriers, consisting of 11 Panamax and one Capesize, and while by 2008 they owned a fleet of 19 Dry Bulk Carriers, consisting of 13 Panamax and nine Capesize. The company chartered vessels in long term time charters because of fixed freight rates. Diana Shipping financed capital requirements with cash flow from operations, equity contributions from stockholders and long-term bank debt. Main uses of funds have been capital expenditures for the acquisition of new vessels, repayments of bank loans and payments of dividends. In 2005 Diana Shipping successfully completed the Initial Public Offering. The company’s policy is to pay dividends quarterly. At
the end of 2008 the company decided to suspend the payment of future dividends as a result of market conditions.

As for the years 2009 up to 2015, through period, Diana Shipping continued fleet growth strategy. In 2009 Diana Shipping owned a fleet of 20 Dry Bulk Vessels consisting of 13 Panamax and one Capesize while in the end of 2015 the company owned a fleet of 45 Vessels, consisting of 22 Panamax, four Kamsarmax, three Post-Panamax, 14 Capesize and two Newcastlemax. Diana Shipping continued to charter vessels on long term charters because of stable cash flows and higher utilization rate. During this period Diana Shipping choose not to pay dividends funneling dividend’s cash flow for investments. In 2010 Diana Shipping established a wholly-owned subsidiary Diana Containerships with the purpose of acquiring Containerships. Diana Shipping owned 26.08% of the share capital of Diana Containerships. In 2015 the company and Wiehelmsen Management Limited, established Diana Wilhelmsen Management Limited, a 50/50 joint venture with the purpose of providing management services to a number of vessels in Diana’s fleet and to third party vessels operator. The company used the offering of Senior Notes and secondary public offering as a new source of capital resources.

Table 1: Diana Shipping Inc Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time charter equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>99.7%</td>
<td>27,838</td>
<td>78.686</td>
<td>3.76%</td>
</tr>
<tr>
<td>2006</td>
<td>99.9%</td>
<td>22,661</td>
<td>82.691</td>
<td>27%</td>
</tr>
<tr>
<td>2007</td>
<td>99.3%</td>
<td>31,272</td>
<td>167.733</td>
<td>10.14%</td>
</tr>
<tr>
<td>2008</td>
<td>99.6%</td>
<td>46,777</td>
<td>271.577</td>
<td>22.5%</td>
</tr>
<tr>
<td>2009</td>
<td>98.9%</td>
<td>32,811</td>
<td>170.419</td>
<td>21.3%</td>
</tr>
<tr>
<td>2010</td>
<td>99.7%</td>
<td>32,049</td>
<td>187.085</td>
<td>24.1%</td>
</tr>
<tr>
<td>2011</td>
<td>99.3%</td>
<td>28,920</td>
<td>168.730</td>
<td>23.2%</td>
</tr>
<tr>
<td>2012</td>
<td>98.7%</td>
<td>21,255</td>
<td>125.699</td>
<td>26.3%</td>
</tr>
<tr>
<td>2013</td>
<td>99.3%</td>
<td>19,959</td>
<td>53.476</td>
<td>25.3%</td>
</tr>
<tr>
<td>2014</td>
<td>99.4%</td>
<td>12,081</td>
<td>72.289</td>
<td>27%</td>
</tr>
<tr>
<td>2015</td>
<td>99.3%</td>
<td>9,739</td>
<td>30.327</td>
<td>32%</td>
</tr>
</tbody>
</table>
4.1.2 DryShips Inc

Dryships maintained a growth strategy during the years 2005 to 2008. In 2005 Dry Ships owned and operated a fleet of 27 Dry Bulk Carriers, consisting of four Capesize drybulk carriers, 21 Panamax drybulk carriers and two Handymax drybulk carriers. In the end of 2008 the company owned a fleet of 37 Dry Bulk vessels. The fleet is comprised of seven Capesize, 28 Panamax and two Supramax. The company used public capital market and bank finance in order to fund fleet growth. Due to high charter rate, Dry Ships employed its vessels in spot market or in short period charters and in pool arrangements in order to maximize revenues. In December 2007 Dry Ships announced the acquisition of a strategic stake of 30.4% in Ocean Rig, an offshore drilling contractor. In 2008 revenues from drilling rig contracts amounted to $219.4 Million. In February 2005, DryShips successfully concluded its Initial Public Offering raising approximately USD 269 million of new equity, and maintained a stable quarterly dividend policy. At the end of 2008 the company decided to suspend the payment of future dividends as a result of market conditions.

In the following years, DryShips invested in the acquisition of new vessels and in new shipping sectors. In 2010 Dryships expanded into the oil tanker sector with construction contracts for six Aframax and six Suezemax for an aggregate purchase price of $771.0 million. Dryships pursued a strategy to operate tankers vessel on spot market. During 2015, the entire tanker fleet was sold for an aggregate sales price of $536.0 million. In reference to their dry bulk fleet in the end of 2014 they own a fleet of 39 dry bulk vessels, comprised of 13 Capesize, 24 Panamax and two Supramax. In 2015 DryShips sold 19 Dry Bulk Vessels and its fleet consisted of 20 dry bulk vessels, comprised of 20 Panamax. Dry Ships actively managed the deployment of its drybulk fleet between short-term time charters or spot charters. As a new method to obtain capital resources they offered senior notes. They continued not to pay dividends in order to secure cash flow for investments. In 2010 Dryships owned 78% of the outstanding common shares of Ocean Rig UDW and in 2015 the company held 59.2% of Ocean Rig.

Table 2: Dryships Inc Ratios
<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time charter equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>98%</td>
<td>28,446</td>
<td>170.393</td>
<td>57.9%</td>
</tr>
<tr>
<td>2006</td>
<td>97.70%</td>
<td>21,918</td>
<td>153.024</td>
<td>56.6%</td>
</tr>
<tr>
<td>2007</td>
<td>98.71%</td>
<td>45,417</td>
<td>600.994</td>
<td>53%</td>
</tr>
<tr>
<td>2008</td>
<td>98.46%</td>
<td>58,155</td>
<td>(100.350)</td>
<td>65.2%</td>
</tr>
<tr>
<td>2009</td>
<td>98.17%</td>
<td>30,336</td>
<td>263.913</td>
<td>46.2%</td>
</tr>
<tr>
<td>2010</td>
<td>98.45%</td>
<td>32,045</td>
<td>446.613</td>
<td>38.9%</td>
</tr>
<tr>
<td>2011</td>
<td>98.19%</td>
<td>26,912</td>
<td>384.021</td>
<td>49.1%</td>
</tr>
<tr>
<td>2012</td>
<td>99.78%</td>
<td>15,896</td>
<td>296.747</td>
<td>49.4%</td>
</tr>
<tr>
<td>2013</td>
<td>99.13%</td>
<td>12,062</td>
<td>523.566</td>
<td>54.9%</td>
</tr>
<tr>
<td>2014</td>
<td>98.35%</td>
<td>12,354</td>
<td>984.510</td>
<td>53.2%</td>
</tr>
<tr>
<td>2015</td>
<td>96.19%</td>
<td>9,171</td>
<td>(316.241)</td>
<td>71.5%</td>
</tr>
</tbody>
</table>

### 4.1.3 Navios Maritime Holdings

In 2005, International Shipping Company acquired Navios through the purchase of all of the outstanding shares of common stock. As a result of this acquisition, Navios become a wholly-owned subsidiray of International Shipping Company. International Shipping Company effected a reincorporation through a downstream merger with and into its newly acquired wholly-owned subsidiary, maintaining the name Navios Maritime Holdings. As a result of the incorporation International Shipping Company transitioned from a shell company to an operating business and the operation of Navios become those of a publicly traded company. From year 2005 up to year 2008 Navios Maritime Holdings pursued expansion. As for 2005 Navios Maritime Holdings core fleet consisted of a total 32 vessels. Navios Maritime Holdings owned 10 Ultra- Handymax, six Panamax and operated 16 Panamax and Ultra- Handymax. In 2007 Navios Maritime Holdings acquired a Belgian Maritime Transportation named Kleimar. After the acquisition of Kleimar the company’s core fleet consisted of 45 vessels. Navios Maritime Holdings owned ten Ultra- Handymax, nine Panamax, one Capesize, one Handysize Product tanker and operated four Ultra- Handymax, one Handysize, 14 Panamax and five Capesize. In the end of 2008 Navios Maritime
Holdings core fleet consisted of 53 vessels. The company owned 12 Ultra-Handymax, five Capesize, one Product Handysize and operated a fleet of six Ultra-Handymax, two Handysize, 11 Panamax and nine Capesize. Navios Maritime holdings in 2007 formed Navios Maritime Partners, a company engaged in the seaborne transportation services of a wide range of Dry bulk commodities. In 2008 Navios Maritime Holdings formed a South America logistics business named Navios South America Logistics Inc that specializes in the transportation and storage of liquid cargoes and the transportation of dry bulk cargoes in South America. Navios Maritime Holdings paid a quarterly cash dividend. The company financed its capital requirements with cash flow from operation, equity contribution from shareholders and bank loans. Since 2006 the company has used the offering of senior notes as a new way for capital resources. Navios Maritime Holdings chartered its vessel through a mix of spot charters, time charters and COAs.

In the following years Navios Maritime Holdings continued the growth strategy through the acquisition of vessels as way as from investing in new companies. 2009 Core fleet consisted of 60 vessels. The company owned 15 Capesize, 13 Ultra Handymax, four Panamax, one Product Handysize tanker and operated a fleet of five Ultra Handymax, two Handysize, ten Panamax, and ten Capesize vessels. In the end of 2015 the company’s core fleet consisted of 61 Vessels. The company owned 13 Capesize, 14 Ultra-Handymax, 12 Panamax, one Handysize and operates four Ultra-Handymax, one Handysize, nine Panamax and seven Capesize. In 2013 Navios Holdings established the company Navios Europe in order to acquire container and tanker vessels. On February 2015 Navios Maritime Holdings established the company Navios Europe II. Navios Europe II owned container and dry bulk vessels. As for the dividend policy for the period 2009 to 2014 Navios Maritime Holdings paid a quarterly cash dividend. In the end of 2015 the company decided to suspend the dividend payment in order to conserve cash and improve liquidity. The company’s sources of funds are cash from operations, long term borrowings and other debt or equity financings proceeds from assets sales and proceeds from the sale of their stake in their investments.

Table 3: Navios Maritime Holdings Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time charter equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>99,6%</td>
<td>22,760</td>
<td>82,253</td>
<td>62,5%</td>
</tr>
<tr>
<td>2006</td>
<td>99,5%</td>
<td>16,906</td>
<td>103,177</td>
<td>60,1%</td>
</tr>
</tbody>
</table>
Genco Shipping and Trading Limited maintained a growth strategy for the period 2005 to 2008. In 2005 the fleet consisted of 17 vessels, five Panamax and 12 Handymax. In the end of 2008 the company had an operating fleet of 32 vessels, consisting of six capesize, eight Panamax, four Supramax, six Handymax and eight Handysize. Genco Shipping and Trading Limited chartered its vessels on a long term charter contracts in order to have stable cash flows. 2005 the company completed a $247 million public offering. They paid dividends quarterly. Genco shipping and Trading Limited financed its capital requirements and investments with cash flow from operation, equity offering and bank debt.

Genco Shipping and Trading Limited continue fleet expansion during the period from 2009 to 2015. As for 2009 Genco Shipping and Trading Limited adjusted its fleet on 35 Dry Bulk vessels, consisting of nine Capesize, eight Panamax, six Handymax, eight Handysize and four Supramax. On April 2014 Genco Shipping and Trading Limited presented difficulties for remaining in compliance with its credit facility and as a result the company filled voluntary cases under the bankruptcy code in the United States bankruptcy code. On July 2014 the company subsequently emerged from bankruptcy, converting $1.06 billion credit facility into about 81.1% of company’s stock. In 2015 Genco Shipping and Trading Limited entered into a definite merger agreement with their indirect, partially-owned subsidiary Baltic Trading Limited under which they agreed to acquire Baltic Trading Limited in a stock for stock transaction. After the agreement Genco Shipping and Trading Limited Shareholder’s owned approximately 84.5% of the combined company and Baltic Trading’s Shareholders owned approximately 15.5% of the combined company. After the merger the company owned a fleet of 70 dry bulk vessels. Company’s chartering strategy was to operate its vessels on time charter, spot market-related time charters or pool agreements. Since 2010 Genco Shipping and Trading Limited aside from cash flow from operation, equity

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Coverage</th>
<th>Free Cash Flow</th>
<th>Net Income</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>99.9%</td>
<td>30,843</td>
<td>349.875</td>
<td>31.1%</td>
</tr>
<tr>
<td>2008</td>
<td>99.7%</td>
<td>45,566</td>
<td>165,478</td>
<td>39.3%</td>
</tr>
<tr>
<td>2009</td>
<td>99.3%</td>
<td>25,821</td>
<td>206,801</td>
<td>55.2%</td>
</tr>
<tr>
<td>2010</td>
<td>99.5%</td>
<td>25,527</td>
<td>356,126</td>
<td>56.4%</td>
</tr>
<tr>
<td>2011</td>
<td>98.7%</td>
<td>23,064</td>
<td>260,826</td>
<td>49.8%</td>
</tr>
<tr>
<td>2012</td>
<td>98.2%</td>
<td>18,167</td>
<td>399,483</td>
<td>45.6%</td>
</tr>
<tr>
<td>2013</td>
<td>98.4%</td>
<td>12,029</td>
<td>107,909</td>
<td>51.2%</td>
</tr>
<tr>
<td>2014</td>
<td>99.8%</td>
<td>11,830</td>
<td>176,698</td>
<td>51.5%</td>
</tr>
<tr>
<td>2015</td>
<td>98.6%</td>
<td>7,846</td>
<td>112,756</td>
<td>53.4%</td>
</tr>
</tbody>
</table>
offering and bank debt used convertible notes as a way of capital resources. Since the end of 2008 the company has suspended the payment of dividends.

### Table 4: Genco Shipping And Tarding Limit Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time charter equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>99.2%</td>
<td>20,903</td>
<td>91.068</td>
<td>26.6%</td>
</tr>
<tr>
<td>2006</td>
<td>99.3%</td>
<td>20,455</td>
<td>97.406</td>
<td>36.6%</td>
</tr>
<tr>
<td>2007</td>
<td>98.7%</td>
<td>24,650</td>
<td>164.183</td>
<td>56.6%</td>
</tr>
<tr>
<td>2008</td>
<td>98.9%</td>
<td>37,824</td>
<td>208.807</td>
<td>58.9%</td>
</tr>
<tr>
<td>2009</td>
<td>99.0%</td>
<td>31,656</td>
<td>298.330</td>
<td>56.7%</td>
</tr>
<tr>
<td>2010</td>
<td>99.1%</td>
<td>27,419</td>
<td>330.711</td>
<td>54.8%</td>
</tr>
<tr>
<td>2011</td>
<td>99.2%</td>
<td>17,644</td>
<td>249.080</td>
<td>54.3%</td>
</tr>
<tr>
<td>2012</td>
<td>99.2%</td>
<td>9,706</td>
<td>82.537</td>
<td>53.6%</td>
</tr>
<tr>
<td>2013</td>
<td>99.3%</td>
<td>9,539</td>
<td>83.041</td>
<td>53.9%</td>
</tr>
<tr>
<td>2014</td>
<td>98.5%</td>
<td>8,785</td>
<td>752.241</td>
<td>24.5%</td>
</tr>
<tr>
<td>2015</td>
<td>98.6%</td>
<td>5,445</td>
<td>(93.598)</td>
<td>34.1%</td>
</tr>
</tbody>
</table>

4.1.5 Dry Bulk Shipping Companies Comparison

The four Dry Bulk Shipping companies that are studied in this research seem to behave in the same way throughout the market changes. Firstly the main strategy adopted by the four companies is fleet expansion. For the period 2005 up to 2008 the main reason of acquiring vessels was the good market condition and the high charter rates. The period 2009 up to 2015 the companies continued to acquire vessels due to the low vessels value. Diana Shipping, Navios Maritime Holdings and Dryships invested into other shipping sectors throughout the trough period. More specifically, Diana Shipping invested into the Containerships, Navios Maritime Holdings invested in the tanker vessels as well as in the containerships and Dryships invested in Drillships and in Tanker vessels. Regarding charter contracts the Companies, during peak period seem to operate a great number of their vessels into the spot market due to the high charter rates. Since the end of 2008 the companies preferred time charters contract due to the stable cash flow. Since 2008 the shipping companies also charters their vessels into pool arrangements in order to reduce the high operating expenses. During the period 2005-2008 shipping companies listed on the stock exchange system in order to
obtain capital. Since 2008 the companies used the offering of senior notes as a new way of capital resources. Aside from Navios Maritime Holdings that continued to pay dividends up to the end of 2014 the other companies suspended the dividend payment since the end of 2008.

Diagram 6: Fleet Utilization Ratio of Dry Bulk Shipping Companies

Diana Shipping charters its vessel into time charters contract and seem to have a high and stable fleet utilization rate. Dryships fleet utilization ratio has a high fluctuation because of the company’s strategy to charter its vessels into spot market.

Diagram 7: Time Charter Equivalent Rate of Dry Bulk Shipping Companies

On the other hand, DryShips seemed to have the highest average daily charters revenue during the period 2005 - 2008. Daily charters revenue exhibited a downward trend from year to year. For the period 2009-2015 Diana Shipping had the best performance as far as the daily charters revenue.
Diagram 8: Debt Ratio of Dry Bulk Shipping Companies

The shipping company’s debt ratio had an increasing trend through the years. On the one hand companies use bank loans in order to acquire vessels and on the other hand charter rates and vessels value has dropped significantly. Diana Shipping had the lowest and most stable increasing debt ratio and Dryships at the end of 2015 had the highest Debt Ratio.

Diagram 9: Ebitda of Dry Bulk Shipping Companies

Despite the market collapse in 2009 the Ebitda Ratio presents an increasing trend trough the years. The increasing Ebitda ratio is a result of the companies’ fleet growth strategy. Dryships Inc that charters its vessels mostly on the spot market does not have a stable ebitda ratio. More specifically, the year 2007 has an ebitda ratio of 600.000 million while in the following year the ebitda ratio is (100.000) million. As shown in the chart companies attained a high ebitda ratio in 2014, while the following year ebitda ratio had a significant decrease.
4.2 Liquid Bulk Sector

4.2.1 General Maritime Corporation

General Maritime Corporation sold all single hull vessels and transformed the company into an operator of fully double-hull fleet during 2005. In the end of 2006 the company owned a fleet of 26 Tanker vessels consists of 19 Aframax and seven Suezmax. In 2008 General Maritime Corporation entered into a stock for stock combination with Arlington Tankers resulting in General Maritime’s Shareholders owning approximately 73%. In the end of 2008 the company owned a fleet of 31 vessels consists of 12 Aframax, 11 Suezmax, two Vlccs, two Panamax and four Handymax. General Maritime Corporation declares quarterly dividends to shareholders. The company’s sources of funds included equity financings, issuance of long term debt securities, operating cash flows, long term bank borrowings and opportunistic sales of older vessels. During the period from 2005 to 2008 the company chartered its vessel mostly to spot market in order to benefit from high charter rates.

Since 2008 despite the shipping market crisis General Maritime Corporation continued the strategy of acquiring new vessels and selling older vessels. In 2010 the company entered into agreements to purchase seven tankers from Metrostar Management Corporation. During 2011 the company took delivery of the vessels. In the end of 2011 the company filed voluntary petitions for relief under Chapter 11 of the United States Bankruptcy Code. On May 2012 the company came out of Chapter 11 bankruptcy protection cutting its debt by about $600 million and receiving $175 million from private equity firm Oaktree Capital Management LP. In 2014 the company continued the expansion strategy purchasing seven eco Newbuild VLCCs from Scorpio Tankers Inc. In 2015 the company acquired 14 eco VLCCs newbuilding contracts through a merger with Navig8 Crude Tankers Inc. In the end of 2015 the company owned 31 vessels on the water consisting of 14 Vlccs, 11 Suezmax, four Aframax, 12 Panamax and 14 eco VLCCs under construction to be delivered in 2017. After 2008 General Maritime Corporation operates its vessel in spot market, long term charters and pool arrangements. The company strategically invested into Vlccs Vessels.
### Table 5: General Maritime Corporation Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time charter equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>94.5%</td>
<td>34,487</td>
<td>338,595</td>
<td>11.7%</td>
</tr>
<tr>
<td>2006</td>
<td>91.9%</td>
<td>30,605</td>
<td>197,771</td>
<td>5.9%</td>
</tr>
<tr>
<td>2007</td>
<td>93.7%</td>
<td>32,876</td>
<td>117,269</td>
<td>67.6%</td>
</tr>
<tr>
<td>2008</td>
<td>96%</td>
<td>32,876</td>
<td>116,133</td>
<td>62.8%</td>
</tr>
<tr>
<td>2009</td>
<td>94.4%</td>
<td>27,305</td>
<td>113,244</td>
<td>70.4%</td>
</tr>
<tr>
<td>2010</td>
<td>96.1%</td>
<td>20,243</td>
<td>(36,047)</td>
<td>80.9%</td>
</tr>
<tr>
<td>2011</td>
<td>94.8%</td>
<td>15,479</td>
<td>43,381</td>
<td>55.7%</td>
</tr>
<tr>
<td>2012</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>2013</td>
<td>96.4%</td>
<td>9,889</td>
<td>(20,527)</td>
<td>No data</td>
</tr>
<tr>
<td>2014</td>
<td>93.8%</td>
<td>17,328</td>
<td>28,883</td>
<td>58.6%</td>
</tr>
<tr>
<td>2015</td>
<td>95.6%</td>
<td>36,590</td>
<td>193,123</td>
<td>60.9%</td>
</tr>
</tbody>
</table>

### 4.2.2 Tsakos Energy Navigation

Tsakos Energy Navigation strategically expanded its fleet during the period 2005 to 2008. In the end of 2005 the company owned a fleet of 35 Tankers vessels consisting of 18 Crude oil Tankers and 17 Product Tankers while in the end of 2008 owned a fleet of 47 Tankers vessels comprised of 21 Crude oil Tankers and 26 Product Tankers. In 2006 the company acquired an Lng vessel. Tsakos energy Navigation chartered its vessels in three basic types of charters but the basic chartering strategy is based on long term charter contracts. Net cash flows were generated by operations are the company’s main source of liquidity. Additional sources of cash included proceeds from asset sales and borrowings. The dividend policy of Tsakos Energy navigation was to pay between 25% and 50% of the net income in any even year, payable in two installments.

During the period from 2009 up to 2015 the company continued to expand its fleet. In 2011 Tsakos Energy Navigation ordered two Suezmax Shuttle tankers. The company believed that shuttle tankers would provide high fixed rates charters. In the end of 2015 the company operated a fleet of 50 Tanker vessels consists of one VLcc, 13 Suezmax, two Suezmax DP2 Shuttle, 11 Aframax, nine Panamax, six Handymax, seven Handysize, one Lng and has a newbuilding plan of constructing nine Aframax, two LR1 Product Carriers, one Shuttle Tanker and one Lng Carrier. The company chartered its vessels primarily into long term contracts and secondary into spot market and pool arrangements.
Table 6: Tsakos Energy Navigation Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time Charter Equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>96.5%</td>
<td>28,645</td>
<td>214.890</td>
<td>39.9%</td>
</tr>
<tr>
<td>2006</td>
<td>97.4%</td>
<td>30,154</td>
<td>302.820</td>
<td>57.5%</td>
</tr>
<tr>
<td>2007</td>
<td>96.6%</td>
<td>29,421</td>
<td>348.810</td>
<td>58.8%</td>
</tr>
<tr>
<td>2008</td>
<td>97.3%</td>
<td>34,600</td>
<td>379.290</td>
<td>58.1%</td>
</tr>
<tr>
<td>2009</td>
<td>97.7%</td>
<td>22,329</td>
<td>176.960</td>
<td>58.9%</td>
</tr>
<tr>
<td>2010</td>
<td>97.6%</td>
<td>19,825</td>
<td>185.180</td>
<td>57.8%</td>
</tr>
<tr>
<td>2011</td>
<td>97.1%</td>
<td>16,047</td>
<td>75.880</td>
<td>59.7%</td>
</tr>
<tr>
<td>2012</td>
<td>94.9%</td>
<td>17,163</td>
<td>55.480</td>
<td>58.8%</td>
</tr>
<tr>
<td>2013</td>
<td>97.8%</td>
<td>17,902</td>
<td>108.910</td>
<td>55.5%</td>
</tr>
<tr>
<td>2014</td>
<td>97.7%</td>
<td>19,834</td>
<td>173.620</td>
<td>52.5%</td>
</tr>
<tr>
<td>2015</td>
<td>97.9%</td>
<td>25,940</td>
<td>294.050</td>
<td>48.2%</td>
</tr>
</tbody>
</table>

4.2.3 Nordic American Tankers Limited

Nordic American Tankers maintained a growth strategy from the year 2005 up to the year 2008. In the end of 2005 the company owned nine Suezmax Tankers while in the end of 2008 owned a fleet of 15 Suezmax Tankers. The company strategically operated its vessels in the spot market in order to take advantage of potentially higher market rates. Company’s capital resources were based on cash flow from operations, bank loans and secondary public offers. Nordic American Tankers paid quarterly dividend.

Regarding the period 2009 to 2015, Nordic American Tankers continued to expand its fleet. In this period the company acquired 11 Suezmax Tankers, so in the end of 2015 the company owned a fleet of 26 Suezmax Tankers. Nordic American Tankers invested only in Suezmax Tankers. The company’s strong belief was that Suezmax Vessels are highly versatile, able to be utilized on most long haul trade routes and that a homogenous fleet streamlines operating and administration costs. As for its chartering strategy, the company chartered its vessels only in the spot market in order to maximize cash flows. Since 2013 the company employed all of its vessels in the spot market through the Orion pool which increased the utilization of the fleet. Nordic American Tankers continued to pay quarterly dividend despite the Shipping market negative trend.
Table 7: Nordic American Tankers Limited Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet utilization ratio</th>
<th>Time Charter Equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>No data</td>
<td>39,274</td>
<td>68,020</td>
<td>25,6%</td>
</tr>
<tr>
<td>2006</td>
<td>No data</td>
<td>44,500</td>
<td>103,390</td>
<td>21,6%</td>
</tr>
<tr>
<td>2007</td>
<td>No data</td>
<td>35,600</td>
<td>96,770</td>
<td>13,1%</td>
</tr>
<tr>
<td>2008</td>
<td>No data</td>
<td>54,900</td>
<td>170,520</td>
<td>1,8%</td>
</tr>
<tr>
<td>2009</td>
<td>No data</td>
<td>26,600</td>
<td>57,480</td>
<td>0%</td>
</tr>
<tr>
<td>2010</td>
<td>91,3%</td>
<td>22,800</td>
<td>63,710</td>
<td>6,93%</td>
</tr>
<tr>
<td>2011</td>
<td>98,1%</td>
<td>12,777</td>
<td>(4,355)</td>
<td>20,4%</td>
</tr>
<tr>
<td>2012</td>
<td>92,4%</td>
<td>13,601</td>
<td>2,238</td>
<td>23%</td>
</tr>
<tr>
<td>2013</td>
<td>86,6%</td>
<td>11,099</td>
<td>(19,378)</td>
<td>21,9%</td>
</tr>
<tr>
<td>2014</td>
<td>96,9%</td>
<td>20,517</td>
<td>79,790</td>
<td>21,2%</td>
</tr>
<tr>
<td>2015</td>
<td>94,0%</td>
<td>37,228</td>
<td>208,206</td>
<td>26,5%</td>
</tr>
</tbody>
</table>

4.2.4 Stealthgas Inc

Stealthgas Inc strategically expanded its fleet during the period from 2005 to 2008. In October 2005 the company completed an initial public offering on the Nasdaq National Market. In the end of 2005 the company owned a fleet of 21 Lpg carriers. The following years Stealthgas Inc acquired 17 Lpg carriers and two Product Tankers so in the end of 2008 the company owned a fleet of 38 Lpg Carriers and two Product Tankers. Stealthgas Inc deployed product carriers on bareboat charters and Lpg Carriers on time charter, spot charter and bareboat charter. The majority of Lpg carriers are deployed on time charters contracts. Company’s source of funds has been proceeds from initial public offering, cash generated by operations and bank borrowings. As for dividend policy, Stealthgas paid quarterly dividend.

Regarding the period 2009 to 2015 the company strategically decided to not only acquire new vessels but also to proceed with the demolition and the sale of some of its oldest vessels so as to lighten its operating cost. Since 2009 the company suspended the payment of cash dividend as a result of weak market conditions in the international shipping industry and to preserve the company’s liquid cash resources. In the end of 2009 the company owned a fleet of 34 Lpg carriers and
three product carriers while in the end of 2015 owned a fleet of 51 Lpg carriers, three Product tankers and one Aframax Crude oil. The company also had five Lpg Carriers under construction with expected deliveries in the period 2016 to 2017. Since 2008 the company preferred to charter its vessels on long term charter contracts in order to enhance stable and visible cash flows.

Table 8: Stealthgas Inc Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time Charter Equivalent rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>98,9%</td>
<td>7,919</td>
<td>22,830</td>
<td>38%</td>
</tr>
<tr>
<td>2006</td>
<td>98,9%</td>
<td>7,174</td>
<td>37,470</td>
<td>44,1%</td>
</tr>
<tr>
<td>2007</td>
<td>99,0%</td>
<td>7,129</td>
<td>47,610</td>
<td>30,5%</td>
</tr>
<tr>
<td>2008</td>
<td>99,3%</td>
<td>7,588</td>
<td>63,340</td>
<td>44,7%</td>
</tr>
<tr>
<td>2009</td>
<td>99,4%</td>
<td>6,727</td>
<td>22,770</td>
<td>49,9%</td>
</tr>
<tr>
<td>2010</td>
<td>98,3%</td>
<td>7,064</td>
<td>45,900</td>
<td>50,1%</td>
</tr>
<tr>
<td>2011</td>
<td>97,5%</td>
<td>7,514</td>
<td>44,620</td>
<td>50,3%</td>
</tr>
<tr>
<td>2012</td>
<td>98,9%</td>
<td>7,983</td>
<td>67,140</td>
<td>48,3%</td>
</tr>
<tr>
<td>2013</td>
<td>98,6%</td>
<td>7,550</td>
<td>60,170</td>
<td>41,3%</td>
</tr>
<tr>
<td>2014</td>
<td>99,3%</td>
<td>7,355</td>
<td>55,810</td>
<td>34,3%</td>
</tr>
<tr>
<td>2015</td>
<td>99,5%</td>
<td>6,708</td>
<td>48,800</td>
<td>40,6%</td>
</tr>
</tbody>
</table>

4.2.5 Liquid Bulk Shipping Companies Comparison

The four Liquid Bulk Shipping companies studied maintain a fleet growth strategy. Despite the market collapse in the end of 2008 the companies continued to expand their fleet. Tsakos energy Navigation and General Maritime Corporation invested in all of types and sizes of tankers while Stealthgas Inc and Nordic American Tankers invested into a specific type and size of Tankers Vessels. As far as their chartering strategy, is concerned shipping companies seems to pursue different paths. Stealthgas Inc chartered its vessels into long term charter contracts in both peak – trough periods while Nordic American Tankers chartered its vessels only on the spot market in both market periods. Tsakos Energy Navigation and General Maritime Corporation seems to behave similarly into the two market periods, chartering their high range of vessels on the spot.
market during peak period and on long term charter during trough period. In addition the four shipping choose to employ their vessels into pool arrangements during the trough period. Tsakos Energy Navigation and Nordic American Tankers declared quarterly dividend payments into both market periods while Stealthgas Inc since 2009 suspended the dividend payment in order to preserve the liquid cash resources and General Maritime Corporation suspended the dividend payment due to liquidity problems.

Diagram 10: Fleet Utilization Ratio of Liquid Bulk Companies

Stealthgas Inc that charters its vessels on long term charter contracts presents a high and stable fleet utilization rate in both market periods. Despite the two different chartering strategies followed in the two market periods, Tsakos Energy Navigation has stable fleet utilization rate while General Maritime Corporation that employs its vessels mostly in the spot market presents the lowest fleet utilization.

Diagram 11: Time Charter Equivalent Rate of Liquid Bulk Shipping Companies
During the period from 2005 to 2008 the time charter equivalent rate had an increasing trend while the period 2009 to 2015 had a downward trend. In 2015 time charter equivalent rate seems to have an upward trend. Nordic American tankers seems to take advantage of spot market high rates as its present the highest Time charter equivalent rate while Stealthgas Inc had the lowest but stable time charter equivalent rate in both periods.

Diagram 12: Debt Ratio of Liquid Bulk Shipping Companies

Nordic American Tankers had the lowest debt ratio in both market periods. The company not only had the lowest but the most stable debt ratio. General Maritime Corporation seems to have a significant growth of debt ratio, culminating in 2010. The high debt ratio led the company in the end of 2011 to file voluntary petitions for relief under the United States bankruptcy code. Tsakos Energy Navigation and Stealthgas Inc had a stable debt ratio through the years.

Diagram 13: Ebitda of Liquid Bulk Shipping Companies
As the chart shows there is a clear decrease in the EBITDA ratio between the two market periods. In period 2005 to 2008 the companies presented a high ebitda ratio, with Tsakos Energy Navigation to presenting the best ratio. On the other hand since the market crisis in 2009 the companies’ ebitda ratio had a downward trend. Tsakos Energy Navigation exhibited the best ebitda ratio compared to the other companies in this market period. As well into the trough period General Maritime Corporation and Nordic American Tankers exhibit a negative ebitda ratio as a result of the weak market conditions.

4.3 Containerships Sector

4.3.1 Seaspan Corporation

In the period from 2005 to 2008 Seaspan Corporation maintained a growth fleet strategy. The company acquired 22 Containerships expanding its fleet in the end of 2008 to 35 Containerships. Seaspan Corporation deployed all vessels on long term, fixed rate time charters in order to take advantage of stable cash flows. In August 2005 the company completed an Initial public offering and since then has declared quarterly dividend payment. In order to finance its investments and working capital, the company used cash flow from operations, long term borrowings and equity contribution from shareholders.

Regarding the period from 2009 to 2015 the company continued the expansion strategy despite the weak market conditions in the shipping industry. In the end of 2009 the company owned a fleet of 42 Containerships while in the end of 2015 the company owned a fleet of 85 Containerships. The chartering policy remained the same as the period 2005 to 2008 and the company continued to declare quarterly dividend payments. Seaspan Corporation sources of funds are committed financings, credit facilities, lease obligations, additional equity offerings as well as cash from operations.

Table 9: Seaspan Corporation Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time charter Equivalent Rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>100,0%</td>
<td>9,540</td>
<td>62.419</td>
<td>46,0%</td>
</tr>
<tr>
<td>2006</td>
<td>99,0%</td>
<td>25,301</td>
<td>81.578</td>
<td>42,8%</td>
</tr>
<tr>
<td>2007</td>
<td>99,0%</td>
<td>20,474</td>
<td>77.890</td>
<td>51,9%</td>
</tr>
</tbody>
</table>
4.3.2 Danaos Corporation

Danaos Corporation maintained strategic fleet expansion during the period from 2005 to 2008. In the end of 2005 the company owned a fleet of 25 Containerships and 6 Dry Bulk vessels. In 2006 the company decided to sell all dry bulk vessels and to acquire only containerships. During the period the company acquired 13 Containerships expanding its fleet to 38 Containerships by the end of 2008. In October 2006 Danaos Corporation completed an Initial Public offering. The company chartered its vessels under multi-year, fixed rate time charters to a geographically diverse group of liner companies. Equity provided by stockholders, operating cash flows, vessels sales and long term bank borrowings, as well as proceeds from initial public offering in October 2006 have funded the company. Danaos Corporation declared quarterly dividend payments.

For the next four years the company continued with fleet expansion and in the end of 2012 the company owned a fleet of 64 Containerships. Due to weak market conditions over the following three years, the company decided to sell vessels. In the end of 2015 the company operated a fleet of 56 Containerships. Danaos Corporation continues to charter its vessels on long term charter contracts. Since 2009 the company has suspend the cash payment dividends as a result of market conditions in the international shipping industry.

Table 10: Danaos Corporation Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time Charter Equivalent Rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>No data</td>
<td>No data</td>
<td>173.963</td>
<td>70,4%</td>
</tr>
<tr>
<td>2006</td>
<td>98,5%</td>
<td>20,847</td>
<td>160.583</td>
<td>49,3%</td>
</tr>
<tr>
<td>2007</td>
<td>97,6%</td>
<td>22,508</td>
<td>288.789</td>
<td>64,2%</td>
</tr>
<tr>
<td>2008</td>
<td>97,6%</td>
<td>22,267</td>
<td>217.842</td>
<td>72,6%</td>
</tr>
</tbody>
</table>
Costamare maintained a fleet expansion strategy in the period from 2005 to 2008. In 2006 the company owned a fleet of 43 Containerships while in the end of 2008 owned a fleet of 53 Containerships. The company deployed its vessels under long time charters with leading liner companies. Costamare principal sources of funds have been operating cash flows and long term bank borrowings.

In the period from 2009 to 2015 the company continued the fleet expansion. By the end of 2015 the company owned a fleet of 60 Containerships and 12 new buildings Containerships scheduled to be delivered through 2008. In 2010 the company successfully completed its initial public offering, issuing 13.3 Million Shares. Since then the company declare quarterly dividend payments. Costamare Inc uses secondary public equity offerings as a new source of fund. The company’s chartering strategy continued to include long term contracts in order to obtain stable cash flows and avoiding seasonal variations in demand.

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time Charter Equivalent Rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>2006</td>
<td>No data</td>
<td>No data</td>
<td>250.378</td>
<td>66,0%</td>
</tr>
<tr>
<td>2007</td>
<td>No data</td>
<td>No data</td>
<td>232.290</td>
<td>65,8%</td>
</tr>
<tr>
<td>2008</td>
<td>99,3%</td>
<td>22,069</td>
<td>246.030</td>
<td>84,2%</td>
</tr>
<tr>
<td>2009</td>
<td>99,9%</td>
<td>23,143</td>
<td>277.566</td>
<td>83,9%</td>
</tr>
<tr>
<td>2010</td>
<td>99,7%</td>
<td>22,804</td>
<td>225.509</td>
<td>73,3%</td>
</tr>
<tr>
<td>2011</td>
<td>99,3%</td>
<td>21,918</td>
<td>182.313</td>
<td>72,8%</td>
</tr>
<tr>
<td>2012</td>
<td>99,9%</td>
<td>22,567</td>
<td>237.691</td>
<td>67,5%</td>
</tr>
</tbody>
</table>
4.3.4 Diana Containerships Inc

Diana Containerships formed on January 2010. In the next years the company strategically expanded its fleet. In 2010 the company owned a fleet of two Containerships while in the end of 2015 the company owned a fleet of 14 Containerships. Diana Containerships Inc chartered its vessels on long term contracts in order to take advantage of stable cash flow. In 2011 Diana Containerships concluded a successful initial public offering and since then declared quarterly dividend payment. The company’s principal sources of funds include cash flow from operations, equity contributions from shareholders and long term bank debt.

### Table 12: Diana Containerships Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Fleet Utilization ratio</th>
<th>Time Charter Equivalent Rate</th>
<th>Ebitda (in million dollars)</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>97,5%</td>
<td>15,146</td>
<td>28</td>
<td>18,5%</td>
</tr>
<tr>
<td>2011</td>
<td>99,3%</td>
<td>19,895</td>
<td>11,325</td>
<td>-</td>
</tr>
<tr>
<td>2012</td>
<td>99,8%</td>
<td>17,499</td>
<td>21,584</td>
<td>27,2%</td>
</tr>
<tr>
<td>2013</td>
<td>97,9%</td>
<td>15,162</td>
<td>(41,650)</td>
<td>30,9%</td>
</tr>
<tr>
<td>2014</td>
<td>99,7%</td>
<td>16,803</td>
<td>20,427</td>
<td>24,0%</td>
</tr>
<tr>
<td>2015</td>
<td>92,0%</td>
<td>13,192</td>
<td>2,882</td>
<td>32,7%</td>
</tr>
</tbody>
</table>

4.3.5 Container Shipping Companies Comparison

The three Container Shipping companies, except for Diana Containerships that formed in 2010, seem to behave in the same way. In both market periods the companies had a growth fleet strategy except for Danaos Corporation that in 2013 decided to sell vessels due to weak market conditions. As far as the chartering strategy, is concerned shipping companies in both market periods charter their vessels on long term contracts. Since 2009 Danaos Corporation
suspended the cash dividend payment while the other 3 companies continued to declare quarterly dividend payments. Seaspan Corporation and Danaos Corporation completed an Initial Public offering during peak period while Diana Containerships Inc and Costamare Corporation completed an Initial public offering during trough period.

Diagram 14: Fleet Utilization Ratio of Containership Companies

The companies chartering their vessels only on long term contracts, presents a high fleet utilization rate. Seaspan Corporation and Costamare Inc exhibit a high and stable fleet utilization rate in both market periods while Danaos Corporation and Diana Containerships Inc presents ups and down during trough period.

Diagram 15: Time Charter Equivalent Rate of Containership Shipping Companies

The time Charter equivalent rate has an increasing trend through the years. Despite the market downward trend in 2009 time charter equivalent rate remained at a high level and the companies seems to have taken advantage of long term fixed charter rates. Seaspan Corporation presents the highest time
charter equivalent rate while Diana Containerships Inc presents the lowest time charter equivalent rate.

Diagram 16: Ebitda of Containership Shipping Companies

During the peak period the companies presents a positive ebitda ratio and despite the market downward trend in 2009, the companies continue to perform a positive and increasing ebitda ratio. Costamare Inc presents the more stable ebitda ratio with an increasing trend trough the years and Seaspan Corporation since 2009 in which it had a negative ebitda ratio, seems to have a highly increasing ebitda ratio.

Diagram 17: Debt Ratio of Containership Shipping Companies

Debt ratio seems to be stable through the years. The companies managed to sustain debt ratio into peak period rates despite the shipping market crisis in
2009. For example Seaspan Corporation and Costamare Inc have an average debt ratio of 50% and 70% respectively through the years. Aside from Diana Containerships that formed in 2010 and has a low debt ratio, Seaspan Corporation has the lowest debt ratio.

Chapter 5: Conclusion

This study aims to investigate the different strategic profiles of shipping companies during peak and trough period. The motivation behind this study is to address a gap in the maritime literature that seems to exist in the investigation of the adopted strategies of shipping companies before and after the financial crisis of 2008.

For that purpose, 12 shipping companies, listed on the International Stock Exchange System, have been selected; specifically, four from every shipping sector, namely bulk, tanker and container. The strategies of these particular companies have been examined for the periods between 2005 and 2009 (peak period) and between 2010 and 2015 (trough period). The study uses two financial ratios and two shipping ratios to examine how these strategies affect companies’ performance.

The separation of the market periods was based into three factors. The first factor is the Baltic Dry Index, the second factor is the market value of secondhand vessels and the third factor is the newbuilding vessels value. These three factors suggest that the period between 2005 and 2008 the shipping market has an upward trend while between 2009 and 2015 the shipping market has a downward trend.

The shipping companies in all three shipping sectors adopted a growth fleet strategy during both market periods. It seems that companies view the trough period as an opportunity for expansion and growth since they invested in the acquisition of vessels due to the low vessels price. Based on the findings, after the market crisis, shipping companies that operate in the Dry Bulk sector increased their investments in other shipping sectors. In addition the findings suggest that companies that chartered their vessels on long term contracts achieved higher utilization rate and better financial performance during the trough period. Since 2009, shipping companies operated their vessels into pool arrangements to reduce operation cost. During the peak period the high range of the sample companies proceeded to Initial Public offerings on International Stock markets, as a new way to access capital. Furthermore, the majority of the companies suspended dividend payments in order to obtain more liquidity, after the market collapse.
As far as their financial performance, it is observed that companies face an increasing debt ratio throughout the years. This is due to the fleet growth strategy that companies follow, the low freight rates and the difficulties that companies face in order to access bank lending. In contrast, the EBITDA ratio in the majority of the companies has an increasing trend through the years. The main reason of the increasing EBITDA is the fleet expansion combined with the high fleet utilization rate.

Future research may focus on further testing the methodology and revised by applying greater number of shipping companies or in a longer time period. For example a future research may focus on the bulk shipping sector, investigating all the listed bulk shipping companies for a time period from 2000 up to 2016.

In conclusion the findings of the study could be summarized in three points. First, companies see trough period as an opportunity, hence continuing the fleet growth strategy. Secondly, companies prefer to charter their vessels on long-term contracts which provide stable cash flow, and operate in pool arrangements to reduce operating costs during the trough period. Finally, companies adjusted their dividend policy during trough period, suspending the dividend payment in order to increase their liquidity.

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https://www.sec.gov/