



UNIVERSITY OF PIRAEUS

DEPARTMENT OF MARITIME STUDIES

M.Sc. in Maritime Studies



SHIPPING FINANCE

*Prevailing ship financing methods applied to major
dry-bulk companies*

Angeliki Christodoulou

Thesis

submitted to the department of maritime studies of the University of Piraeus as
part of the requirements for the acquisition of the M.Sc. title with specialization in
Shipping.

Piraeus

September 2015

© Copyright Angeliki Christodoulou 2015

All rights reserved

“The individual conducting the present thesis bears the full responsibility to determine the right use of the data, a responsibility stipulated according to the following factors: the scope and nature of the use (commercial, non-profitable or educational), the nature of the data processed (part of text, tables, various charts and graphs, images or maps), the percentage and significance of the part used compared to the whole copyright text and the potential consequences of this use in the market or in the general value of the copyright text.”

Committee's Approval

“The present thesis has been unanimously approved by the Three-member Examination Committee appointed by the Special Purpose General Assembly of the Maritime Studies Department of the University of Piraeus in accordance with the Regulations governing the Master in Science in Shipping. The members of the Committee were:

Eleftherios Thalassinos (Supervisor)

Andreas Merikas

Kwnstantinos Liapis

The approval of the thesis by the Maritime Studies' Department of the University of Piraeus does not indicate the acceptance of the writer's own opinion.”

ACKNOWLEDGEMENTS

I would like to thank sincerely my supervisor, Professor Eleftherios Thalassinos, that without his valuable assistance I would have not been able to conduct this thesis. I would also like to thank the other members of the supervisory committee, Professors Andreas Merikas and Konstantinos Liapis. Not only have they supported me substantially during the writing of this dissertation but they also provided through their courses the stimulus to love shipping finance and to embark on this specific topic. Apart from the supervisory committee, I would like to thank the Professor of Banking and Finance department of the Piraeus' University Mr. Antzoulatos who contributed in the research by providing me the access to the Bloomberg terminal, an indispensable tool for my research. Finally, I acknowledge and appreciate the valuable and continuous support of my family and beloved ones.

Shipping Finance

CONTENT

Abstract.....	1
Introduction	2
Part One	7
Financing Types	8
Debt Financing	9
Commercial Loans.....	9
Critical Points.....	11
Advantages & Drawbacks.....	16
Current commercial lending market condition.....	19
Panel Companies' Findings.....	20
Conclusions	22
Bonds	23
Main Bond Types	25
Nominal interest rate determinants	30
Requirements needed for issuing bonds.....	31
Advantages & Drawbacks.....	33
Panel companies' Findings.....	35
Conclusions	37
Leasing.....	38
Ship-Loan versus Ship-leasing.....	40
Conclusions	42

Mezzanine Financing.....	43
Senior Subordinated Debt.....	44
Advantages & Drawbacks.....	45
Convertible Bonds	47
Advantages & Drawbacks.....	49
Panel Findings.....	51
Convertible Preferred Stock.....	59
Advantages & Drawbacks.....	61
Panel Findings	64
Conclusions.....	66
Equity Financing	67
Initial Public Offering (IPO).....	67
IPO requirements.....	67
IPO performance determinants.....	73
Advantages & Drawbacks.....	75
Panel companies' Findings.....	78
Conclusions	80
Special Purpose Acquisition Company (SPAC).....	81
SPAC's Structure	82
Advantages & Drawbacks.....	83
Panel Companies' Findings.....	85
Private Equity	91
Critical Points for PE Joint Venture.....	92
Advantages & Drawbacks.....	94
Panel Companies' Findings.....	96
Conclusions	100

Part Two	104
Panel Companies' Capital Structure.....	105
Key Financial Ratios	111
Performance Indicators	111
Profitability Ratios	113
Liquidity Ratios	117
Solvency Ratios	119
Weighted Average Cost of Capital (WACC)	125
WACC's Computation.....	125
Estimating the Rate of Debt (r_D)	128
Estimating the Return of preferred stock (R_{PS})	132
Estimating the Return of Equity (r_E)	134
Optimal Capital Structure.....	139
Miller-Modigliani theorem	139
Pecking order theory.....	141
Panel Companies' Findings	142
Valuation ratios	143
Valuating the stock	143
Enterprise value and Market capitalization	146
Valuating the company	149
Economic & Market Value Added	152
Dividend Yield & Capital Gains	155
Dividend Yield.....	155
Capital Gains.....	156
Conclusion.....	159
References	163

Appendix	166
Figure 1: DSX Revenues vs. aggregate operating expenses	4
Figure 2: 3-month USD Libor	12
Figure 3: Greek shipping portfolio (2001-2013)	19
Figure 4: Panel companies' weight of loans	20
Figure 5: Non-weighted average rate of loans.....	21
Figure 6: DRYS rate of loans vs. YTM.....	35
Figure 7: DRYS rate of loans vs. bonds' coupon rate	35
Figure 8: NM's rate of loans vs. bonds' coupon rate.....	36
Figure 9: DRYS convertibles' value and YTM	57
Figure 10: Panel companies' IPO offering price.....	78
Figure 11: IPO cost compared to total capital raised.....	79
Figure 12: Indicative SPAC's structure	82
Figure 13: SBLK fleet growth pre and post PE investment	97
Figure 14: Pappas investors and PE ownership evolution.....	99
Figure 15: Starbulk capital structure in 2008	105
Figure 16: Starbulk capital structure in 2013	105
Figure 17: DSX capital structure in 2008	106
Figure 18: DSX capital structure in 2013	106
Figure 19: DRYS capital structure in 2008	107
Figure 20: DRYS capital structure in 2013	107
Figure 21: Dryships percentage of revenues for each segment	108
Figure 22: Dryships revenues breakdown	108
Figure 23: NM capital structure in 2008	109
Figure 24: NM capital structure in 2013	109
Figure 25: Panel companies key performance indicators	111
Figure 26: Panel companies main profitability ratios.....	113
Figure 27: DRYS borrowings evolution.....	114
Figure 28: Panel companies main liquidity ratios	117
Figure 29: Panel companies main solvency ratios	120
Figure 30: Panel companies main coverage ratios	123

Figure 31: Linear regression for Diana Shipping stock (DSX)	136
Figure 32: Panel companies' betas calculated with simple regression	137
Figure 33: Panel companies' re-levered betas, based on A. Damodaran's method	138
Figure 34: Panel companies' minimum estimated WACC	142
Figure 35: Panel companies' main valuation ratios (1/2)	144
Figure 36: Enterprise value and market cap of examined companies	146
Figure 37: Panel companies' main Valuation ratios (2/2).....	149
Figure 38: Dividend yield of examined firms' stocks.....	155
Figure 39: Annual capital gains for investors holding the selected stocks.....	156
Equation 1: Non-weighted rate of loans	21
Equation 2: Yield to maturity	24
Equation 3: Nominal rate's determinants.....	30
Equation 4: Bond's value	52
Equation 5: Black and Scholes formula for valuating an option.....	54
Equation 6: Return of the preferred stock	64
Equation 7: Stock's initial return	73
Equation 8: Weighted average cost of capital (WACC).....	125
Equation 9: Rate of debt	128
Equation 10: Rate for loans (non-weighted).....	129
Equation 11: Gordon Shapiro dividend growth model.....	132
Equation 12: Preferred stock valuation based on Gordon Shapiro model.....	132
Equation 13: CAPM, valuation of common equity's return	135
Equation 14: Economic Value Added (EVA)	152
Equation 15: Market Value Added (MVA).....	153
Table 1: Commercial loan vs. financial leasing	41
Table 2: DRYS convertible senior notes' main data	51
Table 3: Valuating the straight component of DRYS' convertible bonds due in 2014..	53
Table 4: Valuating the option embedded in the DRYS convertible notes due in 2014..	56
Table 5: Estimating the total value of the DRYS convertible notes due in 2014.....	57
Table 6: Estimating the fair value of DRYS convertible debt due in 2014.....	58

Table 7: Total cost of International Shipping Enterprises (SPAC) IPO.....	85
Table 8: Other expenses of issuance and distribution of ISE' IPO.....	86
Table 9: Underwriters' percentage of shares in ISE' IPO.....	87
Table 10: Starbulk cost of private placement.....	88
Table 11: Starbulk IPO main data, capital raised.....	89
Table 12: Starbulk IPO's other expenses than underwriting fees.....	89
Table 13: Underwriters' percentage of shares in SBLK IPO.....	90
Table 14: Reckoning the PE funds' annual dividends and yield.....	98
Table 15: Starbulk percentage ownership.....	99
Table 16: Starbulk 4Q 2014 unaudited main financial data.....	100
Table 17: Panel companies profitability ratios data.....	115
Table 18: Panel companies main solvency ratios (data).....	121
Table 19: Panel companies TIE and EBITDA to interest expenses ratios.....	124
Table 20: Panel companies average WACC for the years 2008 through 2013.....	126
Table 21: Components of average WACC for panel companies.....	127
Table 22: Rough estimation of NM total interest paid for outstanding loans.....	130
Table 23: Calculation of NM return of preferred stock.....	133
Table 24: Panel companies' main valuation ratios (1/2) data.....	145
Table 25: Enterprise value and market cap of examined companies, data.....	148
Table 26: Panel companies' main valuation ratios data (2/2).....	151
Table 27: Panel companies' EVA & MVA.....	153
Table 28: Annual dividend, dividend yield, dividend payout and annual capital gains of the selected stocks.....	157

ABSTRACT

Shipping finance of 2014 has altered substantially regarding that of last decades and the shipping companies' traditional capital structure of bank lending along with shareholders equity gives way to sophisticated and innovative financing methods forming a new capital structure which is more complicated but serves better the present-day financial needs. Not only constitutes the scope of this dissertation to exhibit the current ship-financing instruments but also to seek the optimal capital structure in terms of cost of capital, economic value added to shareholders and growth prospects that a shipping firm should achieve.

The first part of this thesis is dedicated to the display of the most common, available financing methods used on raising funds for either supporting the firm's operations or financing growth investments and their application in a group of four major dry-bulk shipping companies, *Star Bulk Carriers Corp.*, *Diana Shipping Inc.*, *Dryships Inc.* and *Navios Maritime Holdings Inc.* The reason why this shipping segment has been chosen lies on its large volume, market fundamentals and information plethora. Bank lending, bonds' issuing, equity offering and private equity funds are placed under the microscope for disclosing their benefits and costs may bring about (induce).

The second part, being more applied, is concentrated on the abovementioned selected companies analyzing their capital structure and main financial ratios, estimating their Weighted Average Cost of Capital (WACC), seeking for the optimal structure and finally figuring out the outcome of the financing methods implemented. Has their performance been affected by the financial decisions taken and to what extent? Is there a financing method serving as panacea? Which capital structure can minimize a firm's WACC leading to the maximization of the firm's own value?

INTRODUCTION

The hereby thesis aims to examine the financing methods used widely in shipping industry, especially in the dry-bulk segment from a both theoretical and applied standpoint. During the theoretical part, the most commonly used financing methods in the dry-bulk sector will be examined in order to underline their most significant characteristics as well as the advantages and drawbacks that their implementation entails. During the applied part, a group of four shipping companies operating in the dry-bulk sector has been chosen and analyzed so as the outcome of different financing methods and the significance of the capital structure in a firm's financial performance to be assessed.

The group of companies consists of *Star Bulk Carriers Corp.*, *Diana Shipping Inc.*, *Dryships Inc.* and *Navios Maritime Holdings Inc.* having based their selection on some specific criteria:



In order to have a group of four comparable companies most of their characteristics are similar. They have all been operating in the dry-bulk sector, a rather fragmented sector than for instance that of LNG, involving numerous ship-owners and charterers, providing information plethora and having easier to interpret market fundamentals. All companies are of Greek interests with established headquarters in Greece giving the chance to incorporate Greek shipping tradition and to have cultural uniformity in the sample. They are large-scale companies providing significant capacity in the market or alternatively absorbing great proportion of dry-bulk market's share. They are all public companies listed in the United States on either NYSE or NASDAQ, thus, data mining in financial statements reported and filed with Securities Exchange Commission (SEC) is becoming feasible and the listing standards and provisions are in common. Being well-established firms they sheer transact with AAA counterparties limiting the risk of payment's default or the breach of charter parties. They are developing continuously economies of scale reaping the benefits entailed such as the decreased cost per cargo unit transferred. Their management operates efficiently the fleet by utilizing properly and not draining the available resources.

However, some differentiations appear between the companies enabling to examine whether these will bring about substantial changes in each firm's performance. There is a variety of strategic plans each company follows, ranging from vertical integration to differentiation, according to which different actions and financing methods have been chosen. Furthermore, these enterprises have alterations in the types of the capital invested leading to a panel's capital structure variation.

Before proceeding to the various financing methods, it is essential the global status quo be roughly outlined and the peculiarities of shipping be referred on the grounds of better understanding the significance of funding in nowadays shipping landscape.

Due to the fact that shipping firms operate and compete on a worldwide basis, having no borders just like the oceans, shipping industry is affected by international and not national factors. Lying in 2014, the global financial crisis burst in 2008 has left its scars especially in the European countries some of which have not yet been relieved of it. Bank institutions being the first to suffer from crisis have had to face lack of liquidity or, even worse, numerous non-performing loans. As an aftereffect of that, banks have followed conservative strategy, new loans have been treated with discourage and rigid covenants have been imposed to the existing ones. Global trade did not take long to be afflicted and global demand's growth especially for raw materials has slowed down. Shipping industry not only has had to deal with restrained bank lending and declining capacity's demand but also with immense vessels' oversupply, as an outcome of the increased orderbook filled up the previous bull years. Shipping, therefore, has to face its hardest times ever and the shipping companies have to struggle for survival and for not getting shipwrecked, a sorely disappointed situation considering shipping's contribution in the global economy.

Shipping industry, indeed, plays a vital role in global economy considering that approximately the 80%¹ of the global trade in terms of volume is carried on ships and the selected dry-bulk segment, the backbone of the international seaborne trade, absorbed in 2013 its 70.2%. Seaborne trade's contribution to the global GDP is undoubtedly significant despite the fact that its estimation in a monetary basis is rather difficult. The seaborne transportation owes its dominance mainly to the low cost per

¹ Unctad: Review of Maritime Transport 2014

cargo transferred ratio together with the amplified safety and the low environmental degradation offering. It affects and is affected by the key macroeconomic figures denoting its inherent trait of *derived demand*.

Apart from that, there are other features delineating the peculiar nature of shipping and distinguishing the ship from a mere transportation mean. Global demand for commodities together with energy fluctuate the demand for seaborne transportation causing great volatility to freight rates. The later, in their turn, affect both the new building (NB) and second-hand markets driving *asset values in a continuous swinging* between highs, when freight market is bullish, and lows, when same is bearish. Therefore, *cyclicality* and *volatility* are key words describing shipping and shaping a greatly *risky, unpredictable* environment. Hence, shipping is rather unattractive for potential investments, if rational and risk-averse investors are the case. When all these attributes refer to such a *capital-intensive* industry as shipping, ship-finance finds its utmost utility!

Indeed, the coexistence of *unpredictable revenues, high fixed operating expenses* and as *expensive assets* as vessels creates a difficult to manage situation with the major bet to be the abatement of the large fixed expenses. Profoundly, when fixed expenses are greater than revenues there is a de facto net loss for every company but this risk of loss is a day-to-day threat in shipping operations given that the augmented fixed expenses coincides by definition with the highly volatile revenues.

Fixed expenses in a shipping firm consist of two basic components, the *operating* and the *financial expenses*. Fixed operating expenses include in essence wages, class fees, insurance expenses and all other expenses related to maintain the vessel in a fully operational condition. A potential increase in operating expenses is one of the risks a shipping company has to face. The chart, figure 1, illustrates the operational expenses (OPEX) together with the revenues of one of the panel companies, Diana Shipping. While revenues are quite volatile through the years

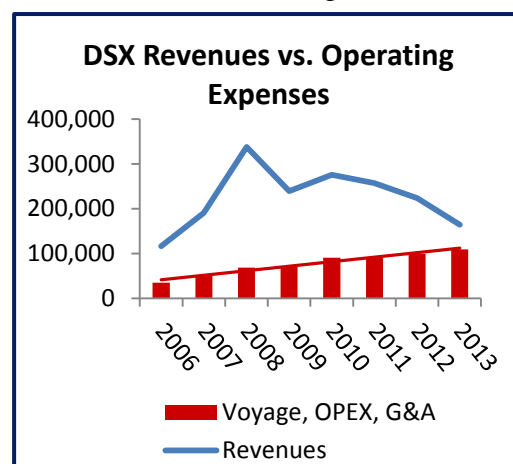


Figure 1: DSX Revenues vs. aggregate operating expenses

2006-2013, OPEX maintain an upward tendency even in the years of revenues' downside.

Provided the revenues depend mainly on market's and not on company's performance and that the efficient vessels' management which minimizes operating expenses has been achieved, the difference in the company's performance and profit generation lies on the financial expenses' constraint. The key for the latter is a cheap and simultaneously flexible ship financing.

Interpreting cheap financing, not only shall the cost of invested capital be at low levels, but also the vessel's value financed with capital borrowed or invested shall be low too for preventing huge impairment losses during a potential bear market.

From the fixed financial expenses' aspect, vessels shall be financed with relatively low interest rates providing to the company the ability to operate and meet its obligations to creditors even in harsh market conditions. When a high interest rates' period or a high company's risk or a combination of two make it not feasible, Earnings Before Interest and Tax (EBIT) substantially diminishes resulting in a rather low, if not negative, profit. Low profits or losses make the firm's shareholders dissatisfied and its market capitalization to decline.

On the other hand, vessels shall be bought at reasonable prices for many reasons. Firstly, when vessels are bought at normal prices the company will not likely be subject to vessel's value adjustments, as for instance to impair its fleet according to the accounting and financial standards that it follows. Furthermore, the firm will not owe disproportional capital to creditors leading to various implications. Without purpose leverage augmentation, limited ability of raising additional capital, repayment schedule's extension and posed threat of not being able to meet its obligations would be a few of them. In case also of interest payment's default, the damage will probably be mitigated to just one vessel since the creditors will take their capital back by selling this, not such impaired, vessel. Finally, if the vessel's sale is the company's preferable option, gains would be realized or in a worst-case scenario, the losses would be less.

For a fleet to be bought at reasonable prices, the company shall follow an anticyclical policy by purchasing cheap or even distressed vessels from a recessed market and by selling them at a recovered market. Indeed, *anticyclical policy* is a favorable strategy for

increasing profits and improving liquidity and seems to be rather preferred by both the traditional ship-owner and the “asset-player”¹. The former follows this policy wishing to operate efficiently his fleet and the latter aiming to make earnings by perceiving the vessels as assets to play with.

Despite being desirable, neither interest rates can remain always at low levels nor can all vessels be bought inexpensively, since in reality most of the times the opposite takes place. Imagine what will occur in the aftermath of a freight market’s downturn: Ships’ value and therefore firm’s assets value will substantially decrease while, *ceteris paribus*, the fleet’s operating costs and the financial expenses will remain mostly fixed. Hence, the ship-owner will keep on facing the same operating expenses of a vessel that generates lower income, sometimes below break-even, to meet the same financial obligations and to be in the adverse position of not being able to sell his asset at even book value, if need be. On the other hand, the lending bank, if the ship owner is unable to repay his debt, will lose money and will be exposed to great financial risk since the financed and mortgaged vessel currently costs less than the loan amount. Such conditions have led many shipping companies to lose a part of their fleet or even to bankrupt bound by the loan agreement’s terms. Simultaneously, such conditions have led many banks involved in shipping industry to lose their money and to decide the rapid shrinking of their shipping portfolios.

What happens when banks, the major shipping lender retreat? Who is going to fill the missing financial gap? Alternative methods of financing, almost new in shipping, each one with different characteristics and addressed to different companies, have come to fill the gap. Consequently, firms’ capital structure has changed, in some instances even company’s policy has changed in order to be in line with the requirements that a newly implemented financing method stipulates. Is the outcome of such changes positive for the firms? Which particular points shall the ship-owners be aware of when deciding which method to implement? Did a type of funding emerge as the most advantageous for every company? Is there a specific capital structural catering the needs of all companies? These are some of the inquiries the hereby thesis is trying to cast light on.

¹ “Asset player” is a common term used by shipping practitioners referring to ship-owners or simply investors not having tradition or experience in shipping industry and therefore they seek to profit from the vessel’s fluctuations in price.

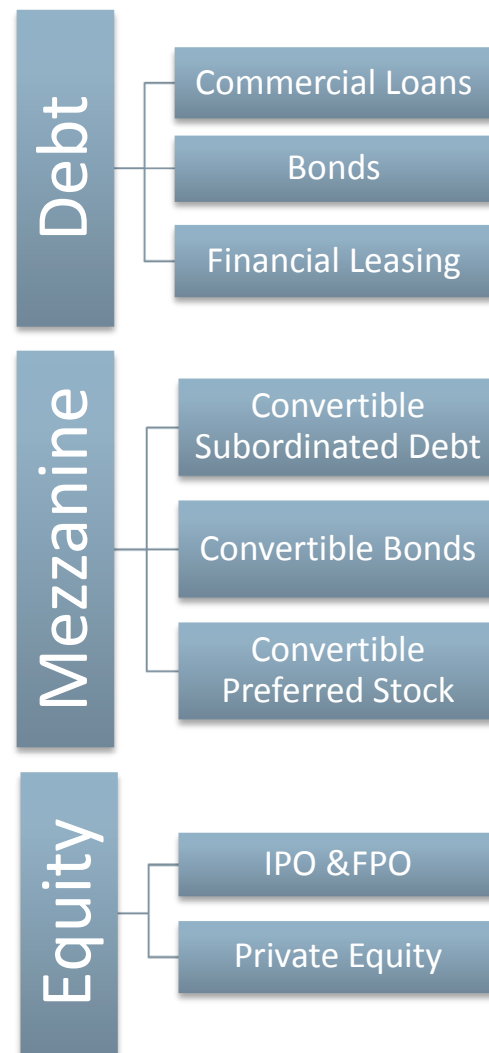
PART ONE

The aim of this thesis' first part is to examine the prevailing financing methods of the current dry-bulk shipping segment maybe in a more theoretical way. This is not to say that instances or real applications have not been included, since in every single method the findings of the panel companies are stated and analyzed separately. This part is structured so as to firstly present the features of each financing method or type, secondly to refer to the relevant advantages and drawbacks and, thirdly, to present the methods' application in the firms composing the panel. Regarding the advantages and disadvantages of all types of financing looked into, the have all been stated from a ship-owners' point of view.

FINANCING TYPES

The most commonly used financing methods in the dry-bulk shipping segment are exhibited in the right graphic having been categorized according with the three major types of capital: 1) Debt financing, 2) Mezzanine Financing, 3) Equity Financing.

Although financing through Debt and Equity capital has been a common practice for years, financing by raising Mezzanine capital is almost a new entry in the ship-finance. The tradition, the seafarer's culture and the nepotism have led shipping operations to be governed by simple practices and the vessels' daily operations to be ship-owners major task. However, this situation has altered the last decades making space for new types of funding to come. Particularly, the economic crisis has triggered many mergers and acquisitions (M&A's), mega-players to be inserted in the market and numerous investors to be interested in shipping and, eventually, penetrate in. The new circumstances mark the beginning of a new era in which Mezzanine capital, Private Equity funds and other financial instruments find their place in shipping.



The hierarchy implied refers to an ascending order of risk and cost, from the less risky and cheaper debt financing to the most risky and costly equity financing. Additionally, the categories of capital are displayed with the same order as they appear on a firm's balance sheet. Each capital together with its subcategories is analyzed separately in the pages to follow.

DEBT FINANCING

Although the term debt is widely used to refer to banking institutions, a company may raise funds through debt from either commercial lending markets or international capital markets. Thus, this chapter is dedicated to the forms of financing treated as debt on a firm's balance sheets. Generally speaking, debt financing charges interest rates, which are in principal lower than the shareholders' required return, thus, making instantly the debt's cost of capital lower than the equity's. The latter briefly explains why shipping companies have historically preferred borrowing debt capital than raising equity, magnifying their leverage and sometimes facing adverse effects. Moreover, financing methods via debt enjoy payment priority in each fiscal year, simply because of the payment ranking in a shipping company. In particular, in a first to last order, the labor gets paid, creditors get paid, tax authorities get paid and finally shareholders get paid. This simple citation clarifies again why the required return of equity capital is higher. According to the basic finance and investment principal, the higher the risk the higher is the return required. Based on this, shareholders are entitled for the residual income (net income), given in the form of dividends, if any. Debt financing comprises Commercial loans, Bonds and Leasing.

COMMERCIAL LOANS

Commercial loans encompass every loan granted by a bank or syndicate of banks to a borrower. In financing through commercial loans, the ship-owning company borrows money (the loan) from the commercial lending institutions (banks) on an either floating or fixed interest rate for a shorter or a longer period of time. The terms, clauses and types of each loan differ to a great extent depending on several factors analyzed below, as each case is treated separately.

➤ Bilateral & Syndicated Loan

In bilateral loan there is a single lending institution, which loans a single borrower; consequently there are just two contractual parties. The whole amount of money derives by only one source obliging the creditor to bear the entire credit risk. Factors as the credibility of the borrower, the market's momentum, the desirable exposure to a particular market, the investment proposal as well as the level of funds required, are

determinants of whether the loan will be concluded or not. The difference between syndicated and bilateral loans lies on the fact that the debtor does not borrow the entire capital from just one financial institution but from more, thus forming a syndicate. In other words, there is one borrower but many lenders. Subsequently, the risk is apportioned according to each bank's contribution. The syndicate may consist of many banks sharing the risk and the loan offered, but the debtor transacts mainly with the bank leading the syndicate since it has the greater loan proportion. In capital-intensive industries, such as shipping, syndicated loans are a rather common practice enabling banks to mitigate potential financial damages.

➤ Senior & Subordinated debt or loan

If a company liquefies or goes bankrupt the first debt paid will be the senior, consequently, senior debt ensures the creditor that he will get *repaid at priority*. There is a worth mentioning exception though, marine liens are paid always at first. Meaning that any maritime claim that arises either a cargo or a ship lien will automatically put in a second position the loan's repayment. For instance, in the case that a ship-owner owes money to a bunker supplier, the latter, by the supply contract, has a lien on the ship. Therefore, in the unfortunate situation of a liquidation of the shipping company the first party to be repaid will be the bunker supplier. Contrary to senior debt, subordinated debt stipulates that its repayment will take effect after that of senior's. Undoubtedly, the creditor has to bear greater risk and for that reason he normally charges higher interest rate.

➤ Secured & Unsecured loan

The debtor may secure the loan by *providing a guarantee* to the creditor. When a loan is secured and if a debtor's default occurs, the creditor will be eligible to seize the collateral, serving as guarantee. The collateral can be either the vessel per se or other vessels or even other company's assets (cross-collateral). Without regards to exceptions, the ship-owner will pay lower interest rate by concluding secured loans and higher by concluded unsecured. Whether the debt should be secured or not is a controversial issue that depends on various factors. As a general rule, robust shipping companies not facing default risk will secure their loan so as to take advantage of the lower interest rate. In contrast, struggling companies will try to conclude an unsecured loan but they will be

charged with a higher interest rate. As regards to shipping loans, it is quite unusual to be unsecured due to the high risk they bear and as a matter of fact there is no loan concluded without collateral in the panel companies. From the banks' perspective, should they lend secured or unsecured loans and based on which specific criteria, remains at their own concern and discretion.

➤ **Recourse & Non-Recourse loan**

This differentiation occurs when the debtor has already defaulted and the creditor, after seizing the collateral(s) securing the loan, has not yet gained his money back from the sale. Commonly, this situation appears in a bear market when the vessel's market value stands at lower levels than the initial loan amount spent for purchasing the vessel; such a period was in 2009-2011. The difference between purchase and market value of the vessel, provided the former coincides with the loan value, constitutes the money actually owed by the borrower to the lender. If it comes to recourse loan the lender has the right to go after the borrower's other assets until the loan is fully repaid. Otherwise, in non-recourse loan, the lender does not have the same right and his actions are limited to collaterals' seizure. Profoundly, recourse loans are preferable from creditors while non-recourse loans from debtors. As for interest rates, a non-recourse loan will normally charge a higher rate than the recourse owing that to the higher risk entailed.

All the above definitions are in essence features that specify the rights of the contractual parties as well as the loan in general and they can simultaneously exist without annulling one another. For instance, one loan can be bilateral, senior, secured and non-recourse or similarly syndicated, senior, secured and recourse.

CRITICAL POINTS

When it comes to conclude a loan, ship-owners shall be aware of some specific terms and points incorporated in the agreement. They determine and significantly affect the borrower's liquidity position, the ability to meet his financial obligations and to generate profit, as well as the level of his exposure to risk. Some of these crucial points are presented below:

Interest rate: One of the most important issues of a loan, if not the most, constitutes the cost of the capital lent, called interest rate. The lender charges the borrower with the interest rate in order to be remunerated for not having the right to use the amount he has loaned. Debt can be issued on an either floating or fixed rate according to each separate case, but the former seems to be more common. Loan concluded on a floating rate does not restrain its swapping to fixed rate in the future or vice versa. In general, fixed rates seem to be higher than the floating yet this does not surely constitute a rule. In periods of high interest rates, the loans arranged with fixed ones are defended against market's hikes and enjoy lower cost of debt capital. On the opposite, when the rates are low these borrowers by having locked the rate encumber with higher cost. The floating or adjustable-rate loans in most cases are tied to the London Interbank Offered Rate (LIBOR) or Europe Interbank Offered Rate (EURIBOR) plus a spread payable quarterly, semiannually or annually depending on the agreement. The spread's level beyond Libor is determined mainly by the company's credit risk as well as the risk of the country in which the firm operates (country's risk). Shipping firms do not normally have to bear high country risk since shipping has no borders, affecting and being affected by various factors other than those tied with the firm's headquarters location.

The figure 2 shows the 3-month USD Libor from 2006 through 2014 based on monthly intervals. The 3-month USD Libor has chosen since it is the common rate pursuant to which the most shipping loans are concluded. The US dollar Libor, which is calculated based on the estimations of the most reputable, leading banks in London, gives the rate in which one of these banks can borrow Eurodollar funds with a 3-month maturity from another bank included in the banks' panel. Recall that Eurodollar is every dollar deposited in banks outside of the United States, therefore, there are not subject to the Federal Reserve's regulations.

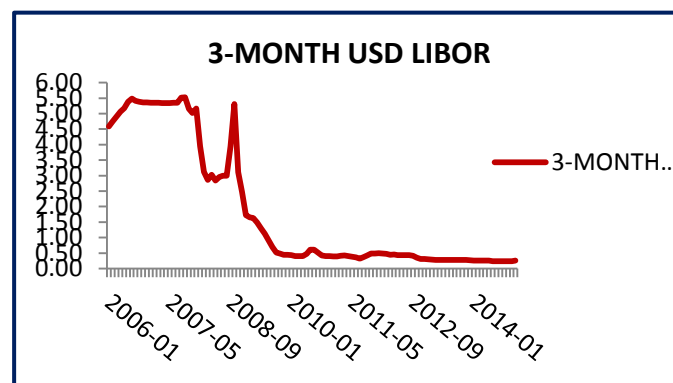


Figure 2: 3-month USD Libor
Source: ICE BA Libor

Regarding the companies analyzed in this thesis, almost all of their loans' terms bear Libor plus a spread fluctuating from 1.00% to 3.00% depending on market's condition, firm's credibility etc.

Repayment Schedule and Tenor: Loan's repayment schedule determines when the installments have to be paid. In London, same shall be paid either semiannually or quarterly. Tenor is another important point for a loan indicating the exact time of its repayment. For example, a 20-year senior mortgage debt has a 20-year tenor. Tenor is for loans what maturity is for bonds and other fixed-income instruments. Not only defines the initial length of a loan, but also the remaining, meaning that a senior debt issued with a 20-year tenor after a 5-year period will have a 15-years tenor. Another important issue is that when a loan's tenor is prolonged then the installments are reduced.

Loan Amortization Schedule: The comprehensive analysis of all the installments payable during the loan's tenor is illustrated by the amortization schedule. Through this schedule both the borrower and the lender can monitor what proportion of the installment goes toward interest and what toward principal repayment. In essence, it is a quite simple table, which provides a breakdown of the periodic installments. Whether this will be available on each payment or on all in advance depends on the loan's rate nature, fixed or floating. One borrower with a fixed rate loan will be well in advance informed of both interest and principal amount since the interest payable is calculated by multiplying a fixed rate with the loan balance. Similarly, another borrower having an adjustable rate loan will not be able to know beforehand all the payments' analysis since the rate, with which the payment is reckoned, fluctuates every day. Another important issue the borrower should consider is the loan's amortization profile. The most known are the fully amortizing, the negative amortizing and the non-amortizing loan. Having a fully amortizing loan means that each installment consists of both interest and principal, thus the principal diminishes on every single periodic payment and the debtor will eventually benefit from paying less interest. As for the negative amortization profile, it initially benefits the debtor with tranches even smaller than the interest, but the remaining unpayable interest is added to the principal inflating the loan balance and making the borrower to owe more in the end. Finally, the non-amortizing loan

resembles to the bullet and the 100% balloon payment since the borrower throughout the tenor period does not pay principal at all leaving this amount to be paid on a lump sum basis at the last tranche.

Payment methods: The contractual parties, upon agreement, set the method with which the loan repayment will be executed. Despite having been defined from the conclusion, loan's repayment method is not irrevocable but may be renegotiated during the loan's tenor. There are plenty ways for loan repayment, each one benefits and addresses to different debtor's profile. The most common repayment methods are:

- **Stable tranche:** Tranche is predefined, equal and stable upon maturity. Each installment consists of both interest and principal, leading to an interest reduction during time due to less principal outstanding. Therefore, stable installments not only allow borrowers to manage their quarterly financial obligations, but they also result to less over all interest payable.
- **Bullet payment:** Each installment goes toward only interest and the entire principal is paid at maturity date. Repaying the loan by this way ends up to a great cost since the interest rate is multiplied with the initial large amount of debt. This way of payment refers to a non-amortizing loan. In spite of the fact that it entails a greater amount of interest payable, under certain conditions it may be not so prohibitive a proposal. For instance, assume a long-term investment with high initial capital needs and proceeds substantially volatile like a loan concluded for purchasing distressed vessels in a bear freight market. The debtor of this loan will probably not be able or not benefit by paying a large installment comprised by both interest and principal, since he will face liquidity shortage due to low freights' collection. Therefore, it may be the right investment decision to purchase cheap vessels in a low market, to pay relatively small tranche and to expect the market's upturn so as to receive abnormal gains and repay the debt with a lump sum amount. Nevertheless, should this be turned for the debtor's own benefit, a great attention must be paid on the market's conditions. Abnormal proceeds either shall be generated closely to loan's maturity or, if earlier, shall be given for principal repayment in advance with a provision of renegotiation.

- **Balloon payment:** “Balloon” is the pre-agreed principal given as a lump sum amount at the loan’s maturity. It is reckoned as a percentage of loan payable at the end of the term. Loan concluded with a 50% balloon payment means that the half principal will be paid at the last tranche and all the other periodic payments will consist of the other half principle allocated equally plus the interest. Note that the interest is calculated on the loan’s balance, which decreases only by the principle payable until its term. This type of payment is quite preferable by shipping companies especially when the freight market downturns.

Gearing (loan to asset value ratio): The ratio given from the bank varies depending on several factors. The most popular among them are the bank’s own economic situation, the name and credibility of the borrower, the age and type of the ship (new-building or second-hand), the collateral given, the right to recourse other assets or not, the overall lending policy and the competition between banks. Not only determines this ratio how much capital will be provided by the bank but also how much it remains and needs to be funded by other ways of financing. In historically high freight market this ratio regarding the reputable clients has surged to 80% requiring from the owner to place only another 20% to materialize the investment. Nowadays, yet at the shadow of global economic crisis, the hitherto dominant players of commercial lending are endeavoring either to decrease their shipping portfolio or to give a quite low gearing.

Currency Risk: There is a risk for the borrower in regards to the currency in which the debt is issued. Banks usually lend in dollars, euros or other major currencies thus the expected cash flow must be in the same currency so as the borrower not to be exposed to currency risk. Verily, most shipping companies borrow money with the three-month Libor in US-dollar since their revenues and operating cash flows are in the same currency. Due to freight market’s volatility and high risk, few are the borrowers opting to bear concurrently both the financial and the currency risk. The strategy of finding a stronger currency and swapping the debt from USD from example to CHF may seem attractive, but the hazard of CHF currency decrease lurks. The borrower the moment of swapping maybe owes less to the lender but in a potential CHF fall he will owe more than prior to swapping.

ADVANTAGES & DRAWBACKS

The most important advantages and drawbacks of commercial lending from the ship-owning side are presented in the table below:

<p>Advantages</p> <ul style="list-style-type: none">• Lower cost of financing• Negotiable payment methods & terms• No need for public exposure. No management intrusion• No risk of losing firm's control• Partner on vessel purchased by loan
<p>Drawbacks</p> <ul style="list-style-type: none">• Partner on vessel purchased by loan• Prerequisite collateral, Strict covenants imposed• No ample source of capital• Risk on property• Restrained flexibility of vessel's operations

ADVANTAGES

Lower cost of financing: Bearing in mind the simple payment hierarchy prevailing in every shipping company, «labor gets paid, debt gets paid, taxes get paid and finally shareholders get paid» it is clear why bank lending has the lower cost. Debtors, such as bankers, are exposed to the lowest risk among the other capital providers, thus they normally charge the lowest cost. Apart from preceding in the payment hierarchy, bankers most of the times grant secured loans having as a mortgage at least the purchased vessel, if not even more vessels or other assets as cross-collateral. Thus, they bear lower risk compared, for instance, to the bondholder of an unsecured bond. Indeed, all loans in the examined companies have embedded vessels' mortgages and stand senior in ranking. As for their cost of commercial lending, it ranges between 3.9% - 4.6% with DSX having achieved the lower of 1.5% averagely in the last 4 fiscal years.

Negotiable payment methods and terms: The ship-owner along with the banker's own consent may choose the terms and payment method that suit better his interests and business. Stable installments, balloon or bullet payments are some of the methods a bank can offer, always depending on each company's profile. After the loan has been granted the two counterparties can renegotiate on the terms, if need be, or certain circumstances taken place. Undeniably, the commerciality that a loan may offer enhances the company's flexibility, a rather crucial fact when considering the volatile shipping market.

No need for public exposure, no management intrusion: In contrast to bonds or equity capital raised from markets, commercial lending does not only address to publicly traded companies but to every single company, from a small scale traditional private shipping company to the most sophisticated and complex public shipping enterprise. Therefore, there is no need for public exposure; a private company has access to loans without having to enter the capital markets. Additionally, the company has the privilege to share with the bank only certain, predefined in the agreement activities, for instance selling the vessel, and not every management movement and decision. Traditional ship-owners really appreciate this advantage due to the fact that privacy, hands-on approach and intuitive knowledge have always been precious attributes for them.

No risk of losing firm's control: In case of a breach on the agreement, the firm's control will not be at stake unless differently stipulated in the agreement. If the ship-owner cannot fulfill his obligations against the bank then the latter shall run after the embedded in the loan collaterals so as to be remunerated.

Partner on vessel purchased by loan: The bank being a partner on the vessel purchased protects the ship against potential third party claims. There have not been a few times that Banks intervened in disputes between ship-owners and third parties so as to guarantee or even to pay third parties for dismissing the vessel. Since disputes are in day-to-day life of ship's operation and may raise significant expenses, this advantage is quite important for ship-owners leading even those in no need of financial aid to ask for a loan. Consider only that the charterer has the right to seize either the cargo (voyage charter) or the vessel (time charter) thus causing the vessel to lose hires for days.

DRAWBACKS

Partner on vessel purchased by loan: Being a partner is not only a blessing but also a curse considering that if the loan to asset's value ratio drops below the accepted level then the Banker has the right to force the sale of the vessel to mitigate damages.

Prerequisite collateral, strict covenants imposed: No loan can be concluded without collateral, the least collateral that a Bank will require for lending money will be the ship purchased, or alternatively, more ships or other assets (cross-collaterals). Covenants on corporate governance issues and certain financial ratios are usually imposed restricting management's flexibility. The most commonly imposed covenants, as noticed in the panel companies, are certain members of the Board of Directors to remain in their positions and ratios such as loan to asset value, debt to equity, quick ratio as well as restricted cash to maintain at specified levels.

No ample source of capital: Bank lending is not an ample source of capital but the amount lent depends on various factors both microeconomic and macroeconomic. The various factors affecting Banks and determining whether they shall invest in shipping or not, are stated above.

Risk on property: As aforementioned, in a default case the lender may seize or sell the mortgaged property and even chase other assets in case of recourse right or cross collateral. Furthermore, many loans have incorporated provisions of a corporate guarantor or a personal guarantor to compensate the bank if the collateral's sale has proven not to be enough.

Restrained flexibility of vessel's operations: The flexibility's restriction derives not only from the covenants imposed, stated above, but also from some cases that the bank does not permit the vessel to trade freely wherever the management elects to, for instance the bank sets specific trade zones exclusions.

CURRENT COMMERCIAL LENDING MARKET CONDITION

The conditions governed the commercial lending market have altered in a great extent the last decade leading the major banking institutions to follow a different policy regarding shipping industry's funding. According to the Bank Research released by Petrofin on April 2014 the Greek shipping portfolio was augmented and gradually increased from 2001 to 2009 while the following years till 2013 same has decreased. As the table 1¹ displays, there has been a retreatment and reluctance from the banks to finance shipping the last years.

The total Greek shipping portfolio encompasses all the loans concluded between Greek interests' shipping companies and Greek as well as foreign banks with or without presence in Greece.

Figure 3: Greek shipping portfolio (2001-2013)

	December 2001	December 2002	December 2003	December 2004	December 2005	December 2006	December 2007	December 2008	December 2009	December 2010	December 2011	December 2012	December 2013
Growth percentage		28.66%	20.19%	26.61%	11.62%	28.45%	44.31%	9.39%	-8.478%	-1.17%	2.20%	-2.83%	-6.51%
Total Greek Shipping Portfolio	\$16,525m	\$21,261m	\$25,554m	32,353m	\$36,112m	\$46,387m	\$66,941m	\$73,228m	\$67,020m	\$66,235	\$67,694	\$65,780	\$61,498
Petrofin Bank Research © - April 2014													

It seems that banks decreased their exposure in shipping industry when a series of detrimental for both financial and shipping sector incidents took place. The financial crisis burst out in 2007 to 2008 in the United States with Lehman Brothers' collapse resulted in a domino effect carrying away other major economies and leading Banks to employ conservatism as a shield against economic crisis. In the wake of this crisis, the Basel Committee on the banking supervision imposed and agreed in 2010 the implementation of Basel III, a set of rules for correcting deficiencies in regulation and for protecting banking institutions against potential future financial issues. Basel III,

¹ Source: Petrofin Bank Research

which stipulates more stringent capital requirements to banks, improves risk management and shapes a more comprehensive regulatory framework, will be put in effect in 2019. Other than that, the shipping markets faced their hardest times commencing with the plummeted freight rates of 2008 and continuing after the ordered in bullish market vessels got delivered in 2010-2011. As an aftereffect, the overcapacity formed led freight rates to collapse once again. Such a bear market constitutes a rather unattractive business for the existing ship-owners, let alone those willing to enter into the market. As a result, vessels' values have greatly dropped and bankers not only have had to confront the possibility of client's default but also the undervaluation of vessel, the loan's guarantee. Considering the existing circumstances then, banks' retreatment seemed to be a wise option if not the only one. Up until now, early 2015, the ships operating in dry-bulk market are struggling to achieve above breakeven hire rates and the banks are keeping up their hesitancy to invest in shipping. How this financial gap is going to be filled? Bond's issuance and private equity (PE) are the first runners up!

PANEL COMPANIES' FINDINGS

COMMERCIAL LENDING WEIGHT (WL)

Is there any bank lending decrease?

Panel companies do not constitute a rather representative sample of loans' decline due to the fact that they are well-established, they transact only with AAA counterparties thus they face no difficulties in concluding loans even with quite beneficial terms.

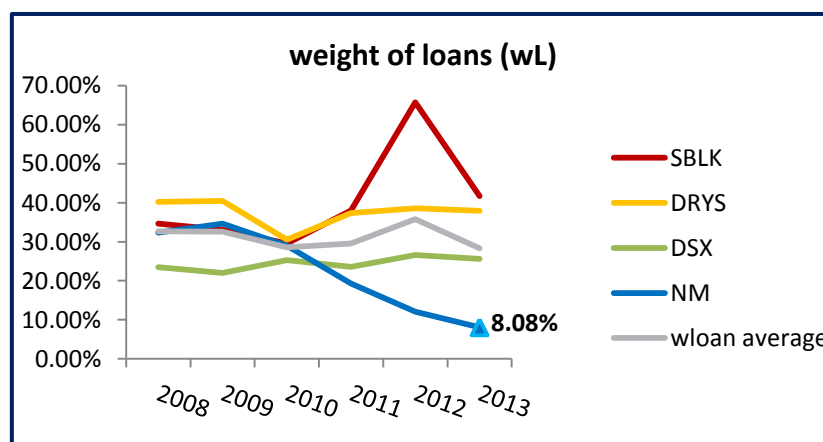


Figure 4: Panel companies' weight of loans

The diagram, figure 3, illustrates the loan's weight in all panel companies. Clearly, Dryships and Diana Shipping Inc. tend to maintain a rather stable proportion of bank capital, whereas Starbulk Carriers Corp. has decreased same by approximately 36.5% from 2012 to 2013. Navios Maritime Holding Inc.' has been diminishing the loan proportion since 2009. From a loan's weight of approximately 32% in 2008 to 8.08% in 2013, a decrease of 74.7% in just 5 years.

COST OF COMMERCIAL LENDING

Commercial lending cost has been calculated by taking the interest expenses recorded at each company's Income Statement, subtracting any yearly coupon payments and then dividing it with the average outstanding debt of the t and t-1 years. Despite resulting in a relative outcome, the non-weighted average cost of commercial lending has selected due to lack of internal information regarding the interest rate of each loan separately.

Equation 1: Non-weighted rate of loans

$$\text{Non weighted average cost of loans} = \frac{(\text{inter. exp} - \text{coupon payments})}{\text{average outstanding debt } (t, t - 1)}$$

The below graph, figure 4, depicts the non-weighted average cost of loans (rl) for all panel companies.

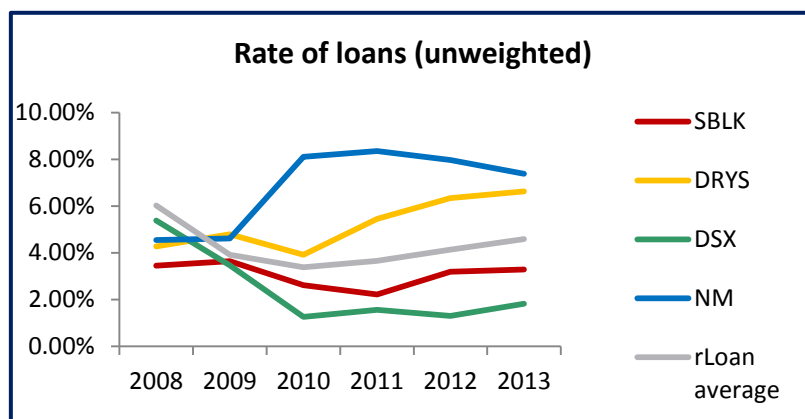


Figure 5: Non-weighted average rate of loans

The cost of loans ranged between 3.9% and 4.6% with the Diana Shipping Inc. to achieve, the lowest of all, 1.5% averagely in the last 4 fiscal years.

CONCLUSIONS

Regardless the latest decrease of banks' shipping portfolios, commercial lending will continue to be a fundamental source of capital for shipping. Every shipping company, either public or private, has borrowed funds from a spectrum of international as well as national banks. This preference is not haphazard at all. Banks provide a relatively low cost of debt capital through a variety of financial instruments tailored to firm's unique needs without, at the same time, having any ownership to company's own equity. Moreover, if need be and when circumstances allow it, re-negotiations of loan terms are permitted. On the other hand, the limited source of funding, the properties that may be at stake, if default occurs or certain covenants are breached, do constitute disadvantages that shall be considered. Yet, the advantages far outweigh the drawbacks of commercial lending making bank financing a crucial and dominant source of funding for the shipping industry. This does not mean that there will be no periods of shipping portfolio decline like that experienced in 2009 and 2010, but that the bank will still be the major capital provider for shipping companies. The funding gap created lately by the banks' retreatment has been filled by alternative sources of funding mainly debt issuances, stock issuances and Private Equity joint ventures. All these sources have formed a new trend of raising money in the industry. Whether these alternatives will benefit the firms it remains to be proven.

BONDS

A rather not traditional way of shipping financing but currently quite popular constitutes bonds. Bonds appear lot of differences related to commercial loans with the most evident being the nature of lender. With this financial instrument lenders are not banks but investors and the borrower does not address to commercial lending markets but to international capital markets. Primarily, the bond is a debt security issued by the shipping company itself in a nominated value called par value or face value. The investors willing to place their money in this company purchase its bonds having as an incentive to be paid semiannually or annually the interest, where here same called coupon, and at bond's maturity the bond's face value. There are a variety of bonds each one caters different needs and investing profiles but before proceed on their analysis a citation of the main bond's terms might be useful.

Face value or par value: Is simply the bond's nominal value at which was issued. Bond's face value is paid at maturity date provided there is not an opposite provision like in callable bonds explaining below.

Coupon rate: It is the rate whereby the coupon payment is reckoned, similar to loan's interest rate. Coupon rate may be fixed or floating by linking it to Libor or Euribor, more often though coupon rate is fixed. Another important point underlined by coupon rated is whether bonds are traded at premium or at discount. A bond trading at a premium means that same bonds tradable at secondary markets have rates below its coupon rate. On the opposite, were bonds' rates at secondary market are higher than a bond's coupon rate this bond is trading at a discount.

Coupon or Coupon payment: Is the bond's interest payment. In more detail, the bond's issuer is obliged to pay at a predefined regular basis, usually semiannually or annually, the interest determined by bond's coupon rate, unless bonds are zero-coupon.

Maturity date: It is the predefined date at which the bond's face value is redeemed. Depending on the maturity there are short-term bonds called bills, medium term bonds called notes and long term bonds called just bonds. At maturity date the bondholder is to receive along with the money given for purchasing bond the last interest payment (coupon payment), unless explicitly defined otherwise like in zero- coupon bonds

explaining below. Maturity date differs from the bond's duration since the former refers to when the principal is paid to bondholder while the latter refers to when the bondholder will get its money back from bond's cash flows. Apparently, in some bonds, like zero-coupon, maturity and duration coincide whereas in others like in straight or vanilla bonds duration is less than maturity. Bonds with less duration are preferable from investors due to their less risk entailed.

Yield to maturity: A quite useful way of valuating a bond is through yield to maturity. In essence, an investor holding a bond wants to know beforehand what would be the bond's present value if he intended to hold it until maturity and not sell it at secondary market. As it is apparent in the equation 2, the present value of a bond is found like this of an annuity plus the present value of the face value paid at maturity.

Equation 2: Yield to maturity

$$\sum_{t=1}^n \frac{INTt}{(1+rp)^n} + \frac{Mn}{(1+rp)^n} = INT \left(\frac{1}{rp} - \frac{1}{rp(1+rp)^n} \right) + \frac{Mn}{(1+rp)^n}$$

Where: **INT:** interest or coupon payment

rp: periodic interest rate

Mn: bond's face value payment at maturity date

n: number of periodic coupon payments

The interest rate used for discounting the coupon payments is the periodic, in wit, the nominal annual bond's interest rate divided by the number of payments through a year. As interest rates fluctuate every trading day so does the bonds' value, thus, whenever an investor wants to evaluate his bonds until maturity, he shall put into practice the above equation. Moreover, by using this equation investors can compare the value of bonds with same maturity.

Yield to call: In the case of callable bonds, investors may find the bonds' yield until the call date instead of maturity date in order to evaluate them. Finding the yield to call is similar to finding yield to maturity but the difference lies on the number of payments received and the principal paid at the call date. When it comes to callable bonds and provided the issuing company will exercise its call option, then the periodic payments is

going to be less and the principal paid at the end will be augmented by a call premium, specified from the bonds issuance.

MAIN BOND TYPES

➤ Zero-coupon bond

The holder of this bond does not receive regular payments during the bond's tenor but does receive the interest payment either discounted at the beginning or, more frequently, lump sum at the end together with the face value repayment (future zero-coupon bonds). Due to the lack of regular payments, zero-coupon bonds are normally issued with a relatively high coupon rate serving as an incentive for the investors to buy them. Furthermore, this type of bonds entails a higher risk than, for instance, the straight bonds making them not likely to appear on a risk averse investor's portfolio.

➤ Vanilla or straight bond

Vanilla bonds pay their holders the coupon payment regularly either semiannually or annually, providing them with a constant source of income. Through this stable cash flow stream, investors are more likely to collect their initial capital even before bond's maturity and consequently they are to face less risk but to gain fewer yields. Vanilla bonds are quite preferable from risk-averse investors requiring regular yield with relatively low risk.

➤ Floating rate bond

In contrast to bonds having fixed coupon rate, therefore, stable coupon payment, there are bonds whose coupon rate and similarly coupon payment fluctuate according to the variations of the major interest rates such as Libor and Euribor. Volatile though the bond's coupon payments may be, they are paid regularly providing to its investors certain income. The bond's coupon rate is the predefined interest rate (Libor, Euribor) plus a spread and the interest paid is computed by multiplying this coupon rate with the bond's face value. Floating rate bonds protect investors from interest rate risk becoming attractive to investors reluctant to take great risks.

➤ High-yield or Junk bonds

High-yield bonds, also called junk bonds, address to rather risk-taker investors. Companies ranked by the international credit rating agencies as below investment grade usually issue these bonds. Particularly, companies rated by Moody's and S&P as below "Baa" and "BBB" respectively are considered to be of high risk and in order to remunerate the investors bearing this risk they offer very high yields. A below investment grade company does not imply necessarily a company on the brink of bankruptcy or default, which would probably be ranked as D and not be able to list on US exchange¹, but may denote a volatile, high leveraged, thus, risky company. On account of that, there are many shipping companies issuing high-yield bonds and a lot of investors worldwide willing to invest in and take the risk. Concerning also the present financial shortage of bank's market, shipping companies by issuing high-yield bonds can gain access to larger funds than by borrowing from the commercial banks. High-yield bonds usually constitute a non-amortizing debt meaning that the periodic payment refers only to interest and not to principal repayment, as the general rule for bonds. In some cases, in order the company to be facilitated of not paying a huge capital outflow at maturity the sinking fund provision has been embedded.

➤ Callable bond

The issuing company with this bond has embedded the right of repurchasing the bonds under specified conditions and during a pre-established time span before reaching their maturity date. The bond's call ability constitutes merely an option for the issuer and not an obligation whatsoever. During periods with lower interest rates than bonds' coupon rate companies are highly likely to exercise their option and call back their bonds. Companies issuing these bonds are protected or have the option to be protected from paying more interest to the bondholders than the interest prevailing at the market and this right is charged with a higher repurchase (call option) price than the one paid at maturity date. The difference between call price and maturity price is called call premium and in essence is the "premium" paid to the bondholders for indemnification. The vast majority of the bonds issued both Dryships and Navios Maritime Holdings are callable allowing the company to repurchase them back if interest rates go up and bonds

¹ US stock exchange requires for non-us companies not be rated less from the S&P rating of "B"

are cheaper realizing thus capital gains. Indeed, selling expensive bonds in low interest rates and repurchasing them back when interest rates go up and same are cheaper constitutes a quite common practice to materialize gains in shipping firms' involved in bond markets.

➤ Redeemable bond

In contrast to callable bonds, redeemable bonds offer the right to investor to sell (put option) his bonds back to the issuing company under certain conditions and during a predefined time frame before maturity date. Same to the callable bonds, redeemable bonds have embedded only an option not an obligation for investors. The put option embedded is highly likely to be exercised in case of market's high interest rates where investors possessing bonds paying lower coupon rates and in case of company's involvement to unpredictable high risk operations. On account of this protection against potential lower rates and/or unforeseen losses, put price is usually lower than maturity price.

➤ Mortgage bond

Mortgage bonds offer the same right to investors as mortgage loans to commercial banks. Both owe the right to seize and sell the collateral securing the bonds if the likelihood of company's default occurs. Particularly, companies owning many assets and wishing to lend money at a lower cost issue bonds with an asset embedded as collateral. Thus, investors are secured from losing their money and on account of lower risk they normally accept a lower yield. Mortgage bonds and mortgage debt in general are widely used in shipping owing that to many assets' possession, vast capital needs to purchase more assets or to assist the operation of existing and volatility of freight market. In shipping the bond's mortgage is usually either the vessel purchased by the bonds issuance or firm's other vessels which solely serve as a security of bonds.

➤ Debentures

High-yield bonds without being secured by collateral and with paying off at a long-term maturity date are called debentures. Manifestly, it is about a highly risky investment whose investors shall be compensated by a high yield and is addressed mainly to institutional and not individual investors. Debentures are usually issued by large corporations or well-established companies whose name and fame constitute their

guarantee and in shipping language their “word is their bond”. Under circumstances of liquidation or bankruptcy, debentures may be executed either with priority, but always after maritime liens, or without. Those executed with priority are called senior debentures whereas those following senior are called subordinated debentures, just like in loans. Obviously, subordinated debentures shall pay higher coupon rate than senior ones.

➤ Bonds with sinking fund provision

Essentially, sinking funds stipulate an obligation of the company issuing such bonds to set aside money in order to repurchase or redeem some of its outstanding bonds before reaching maturity. More clearly, an independent corporation, else, a trustee is appointed to receive and deposit regularly payments made by the issuing company for future bonds’ redemption. Thus, the sinking fund is increasing gradually until the trustee goes forward to invest in purchasing the bonds back and, consequently, to retire a debt’s portion. The price at which the trustee is buying back the bonds is either specified in advance (redemption price) or is that of open market, whichever is less. Other than repurchasing a fraction of outstanding bonds, the issuing company owes the right to make merely incremental payments to investors so as to decrease the capital obliged to pay at maturity. Bonds with a sinking fund provision benefit both the company and the investor in terms of principal’s decreasing and default’s risk diminishing respectively. Due to less default risk these bonds entail, they can normally be offered at a lower interest rate. As for accounting treatment, sinking fund is deemed as a restricted asset shown in firm’s balance sheets just below its current assets, if method of decreasing liquidity is applied. Sinking fund provision can be embedded in many types of bonds like high-yield, debentures etc.

➤ Convertible bonds

Convertible bonds, as their name witnesses, may be converted from debt securities into equity stocks. Bond’s conversion into equity is carried out under predetermined conditions and during certain time spans. Thus, the issuing company by converting to equity a fraction of bonds can decrease debt and increase equity equivalently. Whether this conversion shall only be an option by the investor, by the issuer or shall be done

mandatorily constitutes an issue agreed reciprocally but in the majority of cases is up to investor's own decision.

➤ Perpetual Bonds

Unlikely with other bonds, these bonds pay interest to their holder to perpetuity, to wit, forever. Before becoming overenthusiastic with this fixed income security's feature, paying forever interest means having forever debt outstanding, or more precisely not having stated a specific date of redemption. Although perpetual bonds may seem rather sophisticated and unfathomable securities but their origins go back to approximately 1600s when firstly issued by the Dutch republic as "perpetual annuities" and thereafter to 1752 when issued by the Bank of England the so called "consols"¹ for serving the World War I debt. After then the United Kingdom has many times used bonds with maturity to perpetuity, called consols or gilts, for several reasons such as funding infrastructure projects. Perpetual bonds have usually embedded redemption rights so as the company can repurchase them back repaying in whole the bondholders. Redemption rights will normally be exercised if interest rates go significantly down or if the issuer wishes to wipe away the bonds' debt. In the former case the issuer will be benefited by issuing a new bond at lower coupon rate whilst in the latter case by not having to make the coupon payments.

➤ Bond with warrants

Some companies issue bonds with warrants attached wishing to grip attention of potential investors. Warrants grant the investor the right to purchase the common stock of the company issuing the bonds at a specified price and usually during an also specified time period. That said, warrants serve as a sweetener for investors. At the time of bonds issuance, warrants' exercise price is usually higher than the current market's price but in highly fluctuating stocks, like those of shipping sector and especially of dry-bulk subsector, the high possibility of market's steep upturn add to bonds with warrants a quite appealing feature. Bonds by incorporating warrants become a hybrid financial instrument sharing properties from both debt and equity financing.

¹ Title: Explorations in Economic Research, Volume 2, number 3 (Regional Stock Exchanges in a Central Market System), Chapter Title: The Historical Evolution of Today's Bond Market, Sidney Homer, NBER, <http://www.nber.org/books/conf75-1>, 1975

NOMINAL INTEREST RATE DETERMINANTS

What are really the factors determining the appropriate level of a bond's interest rate? A general rule for determining a bond's interest rate charged or, interchangeably, a yield offered can be consider the simple statement "the riskier the bond the higher the yield". But what are the key factors affecting and determining the riskiness of a corporate bond? The risk's components are contained in the equation below.

Equation 3: Nominal rate's determinants

$$rN = rFR + IP + DRP + LP + MRP$$

Where: rN = nominal (quoted) interest rate

rFR = Risk-Free rate

IP = Inflation premium

DRP = Default risk premium

LP = Liquidity premium

MRP = Maturity risk premium

Evidently, all factors have a linear relationship where each factor's increase leads to rate's respective increase. Elaborating the equation, the rate charged must be plainly higher than the rate given by a free-risk investment and such is considered the 10-year governmental or other institutional bonds difficult to default like the 10-year US treasury notes. The default risk premium clearly indicates the bondholder to be paid a premium for bearing the bond's default risk, therefore the higher likelihood of default the higher the premium, thus the interest, paid. However, bondholders shall also be remunerated for the liquidity loss as liquidity premium denotes. The last but not least interest rate determinant is bond's maturity. A longer redemption date means in most case higher maturity premium paid to bondholders for longer time money's deprivation.

REQUIREMENTS NEEDED FOR ISSUING BONDS

Despite bonds' attractiveness owing to the variety of different types to choose among and the, normally, cheaper cost of debt financing compared to that of commercial bank lending, bonds' issuance poses some substantial requirements to be satisfied. The requirements stated shortly below refer only to listings on NYSE¹, on which all companies analyzing in this thesis are traded. Being the companies of Greek interests, as foreign issuers they are categorized to non-USA listings.

Debt' size: The debt issue must have an aggregate market value or principal amount of no less than \$5,000,000. Therefore raising debt through bonds' issuance is not applicable when it comes to minor capital needs.

Securities' characteristic²s: Firstly, the company issuing the debt securities shall already have equity securities listed on the Exchange. Secondly, provided the first condition is satisfied, this issuer directly or indirectly shall own a majority interest in, or be under common control with, the issuer of the debt security. Thirdly, an issuer of equity securities listed on the Exchange must have guaranteed the debt security.

Convertible Bonds: The underlying stock of the convertible debt securities must have been subject to real-time last sale reporting in the United States otherwise no convertible debt securities can be issued.

Securities' ratings: The debt securities being about to be listed on the Exchange shall be currently rated by a nationally recognized securities rating organization ("NRSRO") with a rating of at least an S&P "B" or another's NRSRO equivalent rating. In case that the debt securities have not yet been rated by an NRSRO, there must be assigned by an NRSRO an investment grade rating to a senior issues or, alternatively, a rating that is no lower than an S&P Corporation "B" rating, or an equivalent rating by another NRSRO, to a pari passu or junior issue.

Accounting Standards: All companies' financial statements shall be either prepared in accordance with or be reconciled to US generally accepted accounting principles (US GAAP) otherwise same are prepared in accordance with the International Financial

¹NYSE listings standards: Section 103.00 Foreign Private Issuers

² and more particularly, Section 103.05 Minimum Numerical Standards Non-US

Reporting Standards (IFRS). Apart from that, auditing procedure shall be in compliance with the Sarbanes-Oxley Act of 2002 (SOX 2002), which, among others, imposes an independent public accountant¹ to conduct the auditing.

Financial Statements: All companies wishing to list a debt on NYSE shall provide their financial statements of not less than three (3) fiscal years earlier and as for the last one, the statements shall be provided twice.

Legal requirements: All corporate securities must be registered under Securities Exchange Act of 1934 and be complied with all Exchange standards as well as the SEC.

Disclosure and Documents filling: As companies are seeking investors in the international debt capital markets, the company's core business and major financial issues shall be in the public domain.

Even though all the aforementioned requirements have completely been met, this does not connote an assured debt listing will be in effect since the Exchange maintains the right to deem a company as eligible according to its own sound judgment and under its sole discretion. As it has become evident, raising funds through debt listing constitutes neither a child's play nor an applicable to everyone procedure. It is crucial company's management consider meticulously and weigh all advantages and drawbacks of this financing method.

¹ Section 102 of the Sarbanes-Oxley Act of 2002, see Appendix

ADVANTAGES & DRAWBACKS

Advantages

- Normally **higher amount raised** than that of a loan concluded
- **No mortgages prerequisite**
- **Increased flexibility**
- **Lower interest rate can be achieved** (early redemption right needed)
- **Capital gains can be acquired** (repurchase bonds when YTM higher)

Drawbacks

- **Higher cost** coupon rate > average interest rate imposed by banking institutions
- **Higher cost when interest rates are lower** (when no redemption provision available)

ADVANTAGES

Higher amount raised than that of a loan concluded: Normally the amount of money raised by the companies from debt markets by issuing bonds is higher due to no capital lend limitation and multiple investors being about to share the risk. Profoundly, when it comes to loans, there is a cap in the money that the bank can lend a firm and the level of this cap differs not only from one bank to another but also regarding each company's credit profile. On the other hand, bonds are addressed to the public from the large institutional investors to the individual bondholder.

No mortgages prerequisite: Bonds do not have to be secured; companies can raise money from the debt markets without collaterals embedded but by paying higher yield (coupon rate) to the bondholders. Once again, the higher the risk entailed the higher the yield had to be paid. Therefore, the company after weighing the pros and cons of a financial decision will opt whether to issue secured or not secured bonds.

Increased flexibility: Bonds compared with the commercial loans, usually, offer higher flexibility to the company owning that to the fewer and less stringent covenants imposed. That is not to say that there are instances where bonds' covenant are the same with that of loans.

Lower interest rate can be achieved: Provided an early redemption right is incorporated in the indenture, the issuer can achieve lower interest rate by exercising this right when interest rates go down. In more detail, the issuer will repurchase back the outstanding bonds and will issue new ones with lower coupon rate than that of the previous bonds. All panel companies having raised money through bonds have incorporated this right in their indenture.

Capital gains can be acquired: Another advantage the issuer may reap when the indenture includes an early redemption right is the capital gains realization. When interest rates go up the outstanding bond is by definition undervalued, thus the issuing company can realize gains by repurchasing the bonds with less money than the required at maturity date.

DRAWBACKS

Higher cost: Financing through bonds incurs higher cost compared to financing through commercial lending owing that the coupon rate is greater than the average interest rate imposed by banking institutions. Therefore, the comparison is made between the methods of debt financing, bank lending, and not between the very different mezzanine and equity financing. Is compared to them, debt financing in general incurs by definition lower cost.

Higher cost when interest rates are lower: Provided no redemption provision is available, when interest rates go down so as that the bond's coupon rate is higher than that of a similar risk level bond, the company is obliged to pay more due to the fixed character of the coupon rate. Indeed the firm has locked its financial position with the coupon rate unless redemption right granted and exercised.

PANEL COMPANIES' FINDINGS

Wishing to examine the application of bond's financing in the panel companies the first issue to measure is the cost. For comprehending and evaluating the cost of a bond, two different rates must be found: the bond's coupon rate and the yield to maturity (YTM). The coupon rate as mentioned before is the nominal bond's rate stated in the indenture while the yield to maturity is the effective rate of the investment reflecting the investment's risk. It seems that the actual cost of bond's financing refers to coupon rate showing how much a firm shall pay in a constant basis but that is not exactly the case. Surely coupon payments constitute the actual outflow in respect for a company's financing but the yield to maturity is not indifferent at all since it represents the company's risk as perceived by the debt market investors. To make it clear, a high yield to maturity may not mean an instant firm's outflow but it does mean that the investors deem the company of higher risk and, consequently, they require a higher yield in the next bond issuance. Same has been proven in Dryships panel company.

The above left graph depict the YTM of Dryships several bond securities and the right graph illustrates the corresponding coupon rate whereas both charts are compared with the company's rate of commercial loans (rLoan). As it is clearly seen, convertible bonds issued in 2009 at a 5% coupon rate had a yield to maturity jumped sky high at approximately 20% in 2011 and approached the coupon rate only when maturity date was close, in 2013.

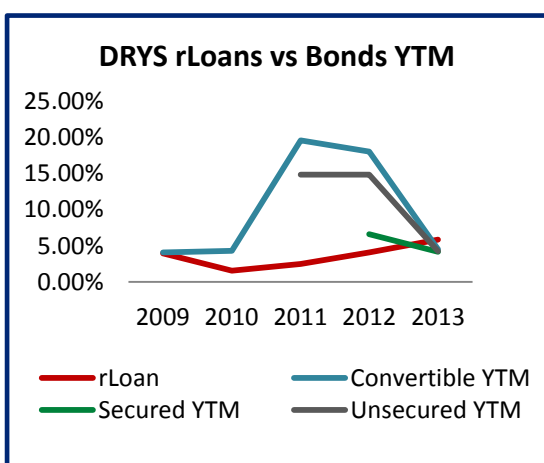


Figure 6: DRYS rate of loans vs. YTM

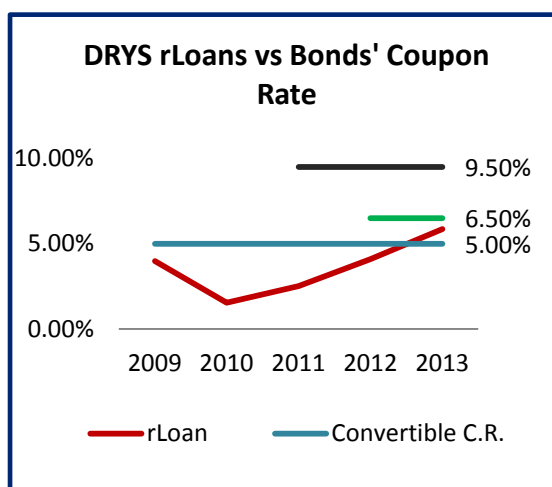
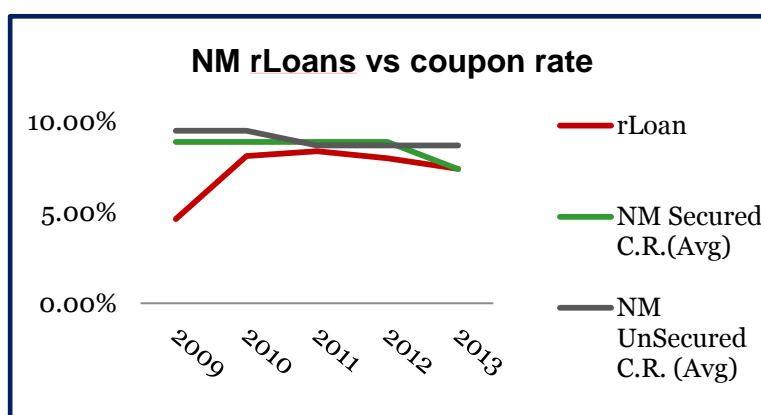


Figure 7: DRYS rate of loans vs. bonds' coupon rate

In other words, market's sentiment about Dryships was that the company had a substantially riskier profile than that of 2009 when convertibles were first issued and they will require a higher yield in a future bond. Indeed, the 5% convertibles of 2009 gave their place to the 9.5% unsecured bonds of 2011 and the 6.5% secured bonds of 2012. Consequently, the today's market sentiment will be close to the actual cost of tomorrow.

Having said that from the panel companies only Dryships Inc. and Navios Maritime



Holdings Inc. have employed bonds' financing until the examined time period, the cost of NM' bonds follows.

Regarding NM's cost of bonds the average YTM and coupon rate from the then outstanding bonds has been used instead of each one bond's rate separately due to many new bonds' issuances and exchanges the company has materialized. In fact, NM may issue a bond in 2009 and in 2011 when the interest rates have been decreased repurchase the initial bonds back or exchange them with bonds issued in 2011 having lower coupon rates.

Figure 8: NM's rate of loans vs. bonds' coupon rate

Owing to that, the coupon rate as well as the YTM are blended having only distinguished the secured from the unsecured ones since they have different risk level. In contrast to Dryships, market's perception about NM's risk is much closer to the actual rate it has borrowed money, the coupon rate. Both secured and unsecured bonds' YTM presents fluctuations around their coupon rate, as it always happens, but by seeing

secured bonds for instance it is clear that the YTM goes from approximately 7% to 10% when the corresponding coupon rate stands at 9% for all years except of 2013 where the interest rates were lower at 7%. Interpreting that, investors maintain a rather stable estimate for the NM risk with no spikes and troughs in YTM and no gradual increase in coupon rates. Looking at YTM diagram there is an uprising in 2011 for all bonds but this is attributable mainly to 2011 and 2012 bear dry-bulk market and not in NM's performance. Undeniably, having achieved stability it has been crossed more than the half way for building investors' trust, something of paramount importance for continuing the company's operations and growth plans.

CONCLUSIONS

Bonds and debt capital markets constitute an entry into a deep source of funding without though bearing the high cost of equity. Despite not addressing to all sizes and culture companies, corporate notes is an indispensable financing tool for repaying their indebtedness, acquiring vessels and support their operations and growth plans. In harsh times where traditional bank lending has retreated from shipping or is available under unfavorable terms, notes seem to be firms' favorite type of financing since they encompass many advantages without concurrently the companies having to surrender their privacy, management or control. In opposition to loans, bonds can be issued with or without collateral required making them once again an attractive option. Moreover, when designed properly, notes may incorporate terms that benefits a shipping company like the early redemption right. In fact, this right contained in all companies' bonds functions protectively against interest rates' drop giving the right to the issuing corporation of redeeming its notes earlier than maturity. Therefore, when the interest rates are below the bonds' coupon rate the firms with this right can redeem them and issue new ones with lower interest rate. In every case though the financing cost of bonds are higher than that of commercial lending and their issuance' requirements block the path for many firms making the corporate bonds a preferable but usually second in a row funding solution.

LEASING

Ship financing through leasing constitutes a non-conventional way of financing having more similarities to debt rather than equity financing. Leasing does not entail any firm's equity dilution, since the lender, called the lessor, has no ownership of company's shares but does have ownership only of the ship or the ships he has financed. Analyzing lease-financing structure, on the one hand, there is a company, called *the lessee*, that wishes to operate or purchase a vessel but has no capital and on the other hand, there is a financial provider, called *the lessor*, being able to purchase the vessel and lease it through a lease deed to the lessee. Apparently, the legal owner of the vessel(s) is the one that has purchased them, hence the lessor, bestowing the vessel's operating and/or management rights to the lessee in return of a regular payment called *lease payment*. Having said that, who actually plays the role of lessor and what is his prerequisite of proceeding to that transaction?

Lessors may be banking and other financial institutions' affiliates, ship-yards' affiliates aiming to facilitate shipping companies to acquire vessels and, finally, other standalone entities engaged in providing leasing solutions. As for prerequisites, lessors normally do not require any lessee's asset serving as cross collateral neither any mortgage to secure their leasing agreement but the vessel(s) leased stands as the only collateral.

To be specific there are two main leasing schemes, analyzed below: the financial lease and the operating lease, both typically structured in the form of bareboat charters and rarely in the form of time charter period.

➤ Financial lease

The lessor purchases the vessel, usually as nominated by the lessee, and offers her to the lessee on a defined, long-term bareboat charter. For this period of charter, the lessor receives defined lease payments, paid by the lessee. The terms governing the bareboat charter are agreed between the contractual parties, but in every case the bareboat charterer, who identifies with the lessee, has to bear all the expenses and risks that the vessel's operation entails. As for the lease payment, this customarily constitutes a fixed, set by the lessor, rate, which incorporates a portion of asset's value and his own profit. This rate is normally priced by taking also into consideration timing benefits, if any.

Ship-lease's duration is determined by combining lessor's perspective regarding vessel's cash flow projection and lessee's historical performance records. Financial lease ordinarily is concluded with a 10 to 15-year lease deed, therefore, covering a long portion of vessel's useful life. By considering that the average useful life of bulk carriers stands at approximately 25 years, a 15-year lease contract covers above of the half vessel's useful life. When the financial lease agreement ends, the lessee, normally after paying a specified capital amount, will gain the vessel's proprietorship hence is to be the *residual risk taker*. Residual risk refers to the risk the vessel's owner has to bear when lease contract is due. Should the market is bull and the vessel's market value is higher than the required purchase price of the lease contract the owner will report profits, on the opposite he will report losses. Considering now the accounting treatment¹ of a financially leased vessel, same will be reported on lessee's balance sheets, instead of on lessor's, due to the lessee's fully operating and purchasing rights on the leasing's termination. The lessor benefits from the "big ticket" depreciation, while the lessee benefits from the off-balance sheet financing, in wit, by having assets without these being financed through liabilities. The lessee, by using off-balance sheet financing, employs the vessels currently acquired, but not owned, without having to either increase the company's leverage or sell shares.

➤ Operating leasing

The major differences of operating and financial leasing are summing up to three critical points: the duration of the lease agreement, the balance sheet treatment and the residual risk. Owing to the operating leasing own nature of granting the right to the lessor merely for operational management, such agreements concern shorter time-periods than that of financial leasing, normally ranging between 5 and 7-year contracts. Vessels with operating leasing do not present on lessor's balance sheets, leaving lessee without off balance sheet financing privileges. Due to, usually, not incorporating the lessee's right of purchasing the vessel in the lease deed the residual risk is directed to the lessor at the leasing expiration. As for the operating risk, it normally burdens the lessee, but in order to avoid any misinterpretation of the costs that a ship or machinery

¹ Accounting treatment is referred solely to US accounting standards and principals

breakdown entails, a separate contract, which incorporates operating issues, is worth being attached.

SHIP-LOAN VERSUS SHIP-LEASING

If a comparison was to be made between leasing and another form of financing sharing some relatively similar attributes, that would be with financing through commercial loan. By comparing these two ship-finance methods, the advantages and drawbacks of leasing will be adequately presented. Suppose that a shipping company pursues to acquire a brand new fuel-efficient vessel and has only two ways to achieve it, either by concluding a loan or by engaging in a leasing agreement.

Generally, commercial banks will charge the shipping company an interest rate for a loan assignment, probably on a floating basis, linked to either the Libor or Euribor, and they will require collateral in order to be secured from a potential loan's default. The levels of interest rate charged as well as the value of collateral required depend on many factors, with the requested gearing and the borrower's credibility to prevail. Nowadays, a well-established shipping company with prosperous projections and sound financial statements is about to receive a loan to asset value ratio of 60 to 70% maximum at an interest rate of roughly 2.5 to 3.5 % and for that is to be required either a recourse right or a mortgage over more than the vessels purchased from the loan's reimbursement. Apart from that, the company will increase its leverage and ergo will present its long-term liabilities augmented. The interest payments, paid typically in a quarterly basis, as for IFRS and US GAAP are tax deductible but the principal paid is not. Note that loans are amortizing until reaching their tenor and these amortization expenses are the tax-deductible ones not the principal paid per se. Alternatively, in a leasing scheme the same company will gain a 100 % financing by having the lessor paying the whole amount needed for the vessel's acquisition without being obliged to secure the lease deed with any cross-collateral. However, the lease payment will normally be higher than the loan installment. Due to the company's need of acquiring a vessel, the financial leasing suits better than the operating one. In this case, the company (lessee) will report a new vessel on its balance sheet, depreciated year-to-year, and will enjoy tax merits according to the tax allowance nature of entire lease payments. The key points of the comparison made are listed on the table below:

Table 1: Commercial loan vs. financial leasing

	Commercial Loan	Financial Leasing
%vessel's value	60-70	100
Rate	2-3.5%	Fixed hire (lease payment)
Ownership	Ship-owner	Lessor
Cross collateral	Possibly YES	NO
Covenants	YES	NO
Operating risk	Borrower	Lessee (terms agreed)
Residual risk	Borrower	Lessee
Tax allowance	Interest payment	Entire lease payment

Summarizing, financing a vessel through a leasing structure provides flexibility in various ways. Firstly, by enabling to opt at the expiration whether the vessel will be purchased or not (financial leasing), by financing 100% of the vessel, by offering freedom of choice in vessel's chartering strategy, by allowing the management to operate the vessel and by providing an off-balance sheet financing and tax shield. Having said that, it seems to be the identical scenario but this is not exactly the case for every company seeking ship-finance. The flexibility is restrained by the time the lease deed expires; indeed, in many cases the leasing termination has coincided with the markets' downturn, leaving the lessees exposed to higher lease payments than the average time charter hires received from charterers. That might also be the case with commercial loans, with the borrower having to pay loan installments greater than the hire payments received. The difference, though, lies on the fact that the borrower, upon negotiations with the lending bank, will probably achieve to alter the loan terms, like extending the repayment, setting a balloon payment at maturity etc. Bank institutions can more commercially negotiate the terms in harsh market conditions due to the greater security they enjoy by mortgaging other assets or by concluding senior or recourse loans. On the other side, a company highly leveraged may not reap benefits from contracting one more loan but it shall lease a vessel instead and maintain the right to leave her in adverse economic conditions. Furthermore, in such capital-intensive industries as shipping, tax effects play a key role on the financing decisions, even though shipping in some countries enjoys tax allowances and in some others, called tax haven, pays no taxes at all.

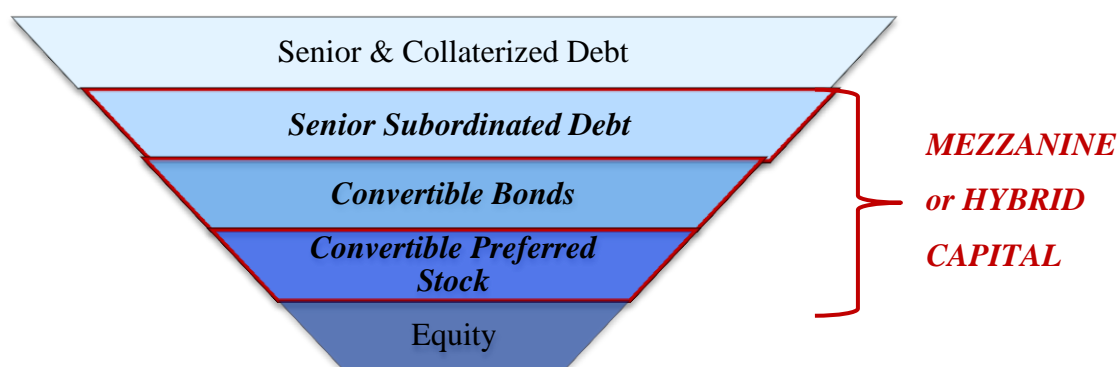
CONCLUSIONS

As long as the commercial banks are narrowing the margins of financing and imposing more stringent terms on loans, lease financing is going to gain ground and provide an advantageous financial solution. However, bank's credit facilities will continue to be the first choice leaving the leasing to be another financing option to consider under unfavorable banking conditions or in highly geared corporations. The advantages though that leasing encompasses shall not be neglected since they form a financing solution rather preferable under certain conditions. Recall the bull market of 2007 when freight rates had jumped sky high and almost every shipping company sought to increase its fleet. The purchase of second-hand vessels proved to be not such wise decision since their value had surged too, the shipping firms had to pay a large amount to purchase them and the market one year after, in 2008, collapsed, leaving the ship-owners to face a disaster. Would leasing have proven a more lucrative solution?

It depends on various factors but there are lots of them giving a positive answer. By leasing vessels, the company would have to make high lease payments taking into account that the market is bull but concurrently would receive abnormal hire rates without increasing its leverage at all. In a first stage, as long as the lease payments are lower than the hire rates, the company generates profit. Furthermore, when the market plummeted, the company that had leased the vessel will give her back to the lessor, while if this company had opted to acquire the vessel by concluding loan it will have to continue servicing its obligations. In this particular case, if the company defaults to pay its installments, the bank will not only force it to sell the vessel but will also chase firm's other assets since the loan value will be higher than the vessel's current market price. Having said that, leasing seems to be a supplementing financial solution, yet advantageous if employed under specific conditions, rather than a firm's basic source of funding.

MEZZANINE FINANCING

Between the conventional debt and equity financing there is another form intervening and sharing characteristics from both, the so-called mezzanine or hybrid financing. In essence, any type of financing that borrows features simultaneously from both core types of financing constitutes a hybrid financial instrument. Such instruments in their initial form may be towards either the debt side or the equity side. Based on this distinction they are categorized in debt mezzanine capital and in equity mezzanine capital. Capitals being included in both categories have the same decisive characteristic of being able to convert into common shares, thus embracing the attributes of common equity capital. The most widely used hybrid securities are the senior subordinated debt with tied warrants, the convertible bonds and the convertible preferred stock. As illustrated below, mezzanine financing fills the gap between debt and equity, having the senior subordinated and convertible debt as the debt mezzanine capital and the convertible preferred stock as the equity mezzanine capital.



As stated at the beginning of this thesis there is an ascending relationship of risk, priority of payment and consequently cost, between the three major financing methods. Going from senior and collateralized debt to convertible bonds and finally equity the corresponding risk and cost substantially increases. Regarding the priority of payments, either regularly or in a liquidation scenario, mezzanine capital is subordinate to senior debt, like commercial lending and bonds, while it is senior to common equity capital.

The rank goes as follows, senior debt will get paid, mezzanine capital will get paid and finally common equity stock will get paid, having the latter to confirm its preference to the residual but not capped value.

SENIOR SUBORDINATED DEBT

Subordinated debt is by definition the debt, which in a default or liquidation scenario will be paid after the senior or collateralized debt. Therefore, it bears greater risk and requires higher rate as a compensation for undertaking it. The adjective senior before the subordinated has been put to express that this debt will be serviced prior all the other subordinated types of capital. Given that in most cases senior subordinated loans do not have embedded mortgages or if they do, these mortgages are junior in ranking too (second in-a-row mortgage), borrowers normally give an extra incentive for making this type of debt appealing to investors. This incentive is usually the tied in the loan agreement warrants granting the right to investors to exercise them and, therefore, gain ownership of the borrowing company. Warrants and other forms of bestowing a firm's equity rights are the so-called among practitioners "equity kickers". Hence, the presence of equity kickers is the one that distincts a simple subordinated debt from a hybrid financial instrument. Whether the embedded warrants will, in fact, be exercised is a matter within the investors sole discretion but most likely they will be in a loan's default payment case. The basic documentation governing this type of debt is similar to that of a simple senior or subordinated debt without warrants, in plain words it is a loan agreement, provided the term debt connotes a loan and not a bond.

ADVANTAGES & DRAWBACKS

Advantages

- **Lower required return than common equity**, until warrants, if any, will be exercised
- **No need to repay borrowings**, if conversion put into effect
- **Less dilution effect in common shareholders**, if warrants embedded
- **Tax-deductible payment**, like any other debt obligations

Drawbacks

- **Higher financing cost than bank's senior loans**
- **Downward pressure on share's price**, due to potential dilution, if warrants embedded
- **Covenants imposed mainly by firm's senior lenders**

ALL IN FAVOR

Lower required return than common equity: As long as the senior subordinated debt remains debt capital and is not converted into equity by exercising the embedded to it warrants, if any, it requires lower rate than the common equity. As it has become clear, creditors bears lower risk than equity investors and the firm employing debt financing instead of equity enjoys lower cost of capital.

No need to repay borrowings if conversion put into effect: In case of a senior subordinated debt with embedded warrants, when the lender decides to exercise its conversion option the borrower cease of being obliged to pay him interests or principal amount. The debtor has switched to shareholder and the borrowing firm shall make him payments under the form of dividends not of interests. Suffice it to say, all warrants have been exercised and the company will no longer owe money to its debtors. Despite of the latter quite low possibility, it remains a potential benefit for the firm to consider.

Less dilution effect in common shareholders' capital: This advantage refers again to the subordinated debt with incorporated warrants. Because the warrants, at their issuance, are sold at a premium over the underlying stock, its exercise is making harder

to be put in effect. This prevents massive conversions to take place and, in essence, functions as a shield against an over dilution of the common equity capital.

Tax-deductible payment: Interest payments of the senior subordinated debt constitute tax-deductible like any other debt obligations. Interest and finance costs, since they are considered expenses, reduce the operating income according to which the corporate tax is estimated and the company has to pay less for taxes. Needless to say, this advantage applies more to companies being subject to taxation.

ALL AGAINST

Higher financing cost than bank's senior loans: Since the lenders of subordinated debt are lower in the payment ranking than they are that of senior or mortgaged loans, they will require higher interest rate for undertaking the higher risk. Therefore, the company may not have to mortgage its vessels for borrowing funds but it will pay more for interests.

Downward pressure on share's price: The firm's shareholders will be concerned about potential dilution of their capital by the time the warrants accompany the debt is announced. Being unwilling of experiencing a further dilution, they will put downward pressure on the share's price by selling their own.

Covenants imposed mainly by firm's senior lenders: Since the subordinated debt lenders are junior than the other debt capital lenders, not only will they impose their own covenants to the firm but also these shall be in compliance with those of senior debt. Consequently, the borrowing company is obliged to adhere to both the terms and conditions of senior and junior debt capital provider, thus limiting its flexibility.

CONVERTIBLE BONDS

A widely used sub-category of bonds' financing is that of convertible bonds. As their name implies, these bonds provide the ability to be converted, under certain terms though, to common shares of the issuing company. At their issuance, they are simple bonds functioning just like a straight bond and making coupon payments regularly, usually in a semi-annual basis. When a conversion into shares takes place, the same bonds will cease acting as a fixed income security by paying coupons but they may pay dividends according to what the convertibles' initial reported prospectus stipulates.

Conversion provisions incorporated in the bonds' indenture make the creditor to become shareholder and the debt instrument to become hybrid respectively. As long as the bondholder has not yet exercised his conversion option he receives fixed income under coupon payment form, while at the time he decides to convert all or a part of his bonds into shares, he may receive discretionary dividends or realize capital gains. When these bonds are outstanding are subject to YTM fluctuations, while if they convert into shares they are going to be subject to stock's fluctuations. The indenture governing the convertible bonds stipulates in detail when and how the bonds' conversion into shares shall take place. Apart from the most important terms of convertibles, such as exercise time, conversion price and ratio etc, the convertible bond's prospectus contains every other related detail as well as the cost of the bonds' issuance breakdown.

The period that a conversion option can be exercised is usually a few years after the bonds' issuance and until the maturity date. Will every convertible bond be converted into common shares? No! These bonds grant the investor the right and the option, not the obligation. The investor will normally exercise this right and convert his bonds in whole or partially into shares if the company's share market price is higher than the specified in the indenture conversion price. The current market price of the firm's stock at the time of bonds issuance is in most cases lower than the conversion price stated in the indenture, or alternatively, the conversion price is at premium of the underlying security for protecting against excessive equity's dilution. A widely used term in the convertibles' market is the conversion ratio, which in fact is nothing more than the simple division of the bond's face value with the conversion price.

Given the option of ownership they provide, the convertible bonds bear normally lower coupon rate than that of a “plain vanilla” corporate bond. The reason is clear, because of their lower risk! Contrary, their coupon rate is usually higher than the firm’s dividend yield so as to induce debt and not equity investment.

It is worth saying that most of the convertible bonds have also incorporated the issuer’s right to purchase back his bonds, given the circumstances and in all cases abiding the prospectus and its specified provisions. This right is nothing but the call provision incorporated in most of the bonds. In fact, the call option gives the right to the issuer to repurchase his outstanding bonds under certain terms though. Call right, as has already been mentioned in bonds’ section, is most probable to take place when interest rates are considerably lower, therefore, the company will call back the higher yield bonds and will issue new ones with lower rate. This call option granted to the issuing company raises the bondholders’ concern due to potential fixed income and portfolio planning disruption.

Convertibles’ pricing is not exactly the same as for the straight bonds considering there is an embedded option, which shall be priced too. Consequently, convertibles’ fair price will be the sum of the straight bond and the option fair prices. For a straight bond the fair price equals to the sum of the future coupon payments discounted with the appropriate YTM, while for an option to be priced, a more complicated formula is usually applied.

Convertible bonds are not so widely spread in the shipping industry; however, some shipping companies familiar to bonds’ issuance have also included in their capital structure this type of financing. Additionally, considering the prevailing financial and market situation in shipping generally more and more shipping entities are tending to explore this type of funding.

ADVANTAGES & DRAWBACKS

Advantages

- **Lower coupon rate than "plain vanilla" notes**
- **Lower required return than common equity**, until converted into common stocks
- **No management involvement**, bonds' holders do not have voting power
- **No need to repay borrowings if conversion put into effect**
- **Less dilution effect in common shareholders**, they are sold at a premium over underlying stock
- **Tax-deductible payment**, like any other debt obligations

Drawbacks

- **Higher financing cost than bank loans**
- **Downward pressure on share's price**, due to potential dilution
- **Covenants imposed mainly by firm's senior lenders**
- **Fixed payment and principal's return**, if notes not converted

ADVANTAGES

Lower coupon rate than "plain vanilla" notes: The conversion option, else, the "equity kicker" embedded on the company's notes reduces the risk which a "plain vanilla" note bears and consequently the company's convertible notes are issued at a lower coupon rate.

Lower required return than common equity: At their issuance and before being converted the convertible notes constitute debt securities and their holder is one of the company's creditors. Given this, convertible notes, like any other type of debt financing, cost less for the company compared with the financing through equity. Obviously, this is not the case if the notes convert into common stocks where they will encompass all the pros and cons of a common equity share.

No management involvement: Bonds' holders, as it is abovementioned, are firm's creditors and creditors, normally, have no voting power. In convertibles, though, the scenario changes when the conversion option is exercised and the notes actually become common shares encompassing voting right and all the other corresponding features.

No need to repay borrowings if conversion put into effect: The conversion option will normally be put into effect when and if the firm's common share, else, the note's underlying security outperforms. In other words, if the market price of the share is higher than the specified exercise price. When this takes place, the company will be obliged to repay its indebtedness to those who have not exercised their conversion option and they are still holding the notes, if any.

Less dilution effect in common shareholders: Given that convertible notes are issued with a higher exercise price than the share's current market price, the company's shares will have to substantially perform so as the option's exercise to be materialized. This serves as a kind of protection against over dilution in common equity shareholders.

Tax-deductible payment: Like any other debt obligation, the regular coupon payments of the convertible notes derive from the company's pre-tax income and, therefore, are tax-deductible, provided they have not been converted into common shares.

DRAWBACKS

Higher financing cost than bank loans: Convertible notes may have lower coupon rate than that of the "plain vanilla" notes, but they are still notes and as notes they bear higher risk and cost compared with that of commercial bank lending.

Downward pressure on share's price: Due to the potential common shareholders' dilution the conversion option of these notes entail, there is a downward pressure on the share's price. Some of the existing shareholders in the light of a potential dilution of their portion may decide to sell their shares leading the share's price to fall. Additionally, some of the potential equity investors may be discouraged to put their money for purchasing a portion of ownership that in a while may be smaller, leading again the share's price and the firm's market capitalization to fall.

Fixed payment and principal's return: Another feature of convertible that may be deemed as a disadvantage is the fact that if the shares do not outperform and consequently are not be converted into common shares, the issuing company shall continue to meet its debt obligations. Particularly it shall continue to make its coupon payments during all the notes' tenor and repay the note's face value or principal at whole at the maturity day.

Covenants imposed mainly by firm's senior lenders: Considering that this debt mezzanine capital ranks junior to almost all other types of debt financing, the covenants included shall be in accordance with that of senior debt capital. Apart from the new covenants, former covenants already being imposed by senior lenders may be included in the notes' indenture. Hence, a thorough examination of the covenants imposed directly or indirectly by the firm's senior lenders would be beneficial for the mezzanine capital providers before investing. The most common covenants' package incorporated in mezzanine debt securities refers to restrictions in sale of assets, change of control, liens, restricted payments and affiliate transactions.

PANEL FINDINGS

Dryships Inc

Among the examined shipping companies, only Dryships embarked on financing through convertible bonds' issuance during the period from 2006 through 2013. Indeed, on November 2011 and on June 2010 Dryships issued convertible senior notes to raise capital up to \$460 million and \$240 million respectively. The amounts do not constitute a separate agreement but they refer to the same notes having a total amount of \$700 million outstanding. In the below table the important features of this issuance are stated.

Table 2: DRYS convertible senior notes' main data

DRYS' Convertible Senior Notes	
Amount	\$460 million plus \$240 million
Book Runner	Deutsche Bank Securities
Issuance Date	November 2009 and June 2010
Maturity Date	1/12/2014
Coupon Rate	5% Fixed
Payment Date	Commencing 1/06/2010, semi-annual
Principal Note	\$1,000
Conversion Price	\$7.19
Share's market price on November 2009 (average)	\$6.37

DRYS' convertible notes holders were paid 2.5% (5%/2) of the face value of the bond, or \$25 (2.5%*\$1,000), at a semi-annual basis and they did have the right to convert each one to a common share at the price of \$7.19. Note that on November 2009 DRYS share market price traded at an average price of \$6.37, thus, lower than the conversion price and rather expectable fact on the grounds of averting excessive shareholders' dilution. DRYS convertibles were paying to their holders a fixed coupon of 5%, payable semi-annually, a relatively low coupon rate for a shipping company achieved mainly due to the embedded "equity kicker" of converting the bond into common shares.

DRYS Convertible Senior Notes' Pricing

DRYS convertibles' fair value is calculated by valuating both the fixed income or straight bond component and the conversion option. The sum of these separate calculations would be the convertibles' fair value. Undoubtedly, in a general frame, any option given to either the one or the other counterparty of an agreement has to be valued and included to the total value of the security or project.

Commencing with the straight bond's fair value calculation, three steps shall be followed:

1st step: The present value of all the coupon payments made each single year since issuance is reckoned by using as the discount rate the corresponding yield to maturity (YTM).

2nd step: Bond's value through maturity calculation by using the equation 4:

Equation 4: Bond's value

$$Bond's\ value = \frac{Face\ Value}{\left(1 + \frac{YTM}{n}\right)^{(n * p)}}$$

Where: n = number of coupons or payments during the year

p = number of years or periods until maturity date

3rd step: Addition of the results found in steps 1 and 2.

Table 3: Valuating the straight component of DRYS' convertible bonds due in 2014

Valuating DRYS convertibles' straight component						
	12/2009	12/2010	12/2011	12/2012	12/2013	12/2014
Face value	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Coupon rate	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Frequency of coupons	2	2	2	2	2	2
Time to maturity	5	4	3	2	1	0
Bond's rate (YTM)	4.10%	4.30%	19.54%	18.02%	4.51%	4.88%
1st PV of coupons	\$223.98	\$181.96	\$109.62	\$80.98	\$48.4	-
2nd Maturity value	\$816.34	\$843.52	\$571.61	\$708.17	\$956.4	\$1,000
3rd Straight Bond's value	\$1,040.32	\$1,025.47	\$681.23	\$789.14	\$1,005	\$1,000

The above table extracted from the thesis' Excel file shows the value of each step followed to get the straight bond component's calculation (3rd step). The year of issuance, 2009, and the next year, 2010, DRYS convertibles' risk was lower than the coupon resulting to bond's trade at premium. In contrast, in 2011 and 2012 the debt capital markets deemed DRYS' securities of great risk, given also that time's prevailing company's and market's conditions, leading the YTM to jump sky high at 19.54% and 18.02% respectively and the bond's value at discount. Finally, in 2013 and 2014 the YTM decrease at close to the coupon rate's levels was mainly attributable to the bond's maturity approaching.

CONVERSION OPTION VALUATION

In order to estimate the conversion option value embedded to DRYS' bond the Black-Scholes Model, hereafter BS, has been used. This model, firstly introduced in 1973, was a part of the paper "The Pricing of Options and Corporate Liabilities" published in

the “Journal of Political Economy”. The model has been widely used for valuating options despite including some assumptions that limit its application. The main assumptions on which BS options’ pricing is based are¹:

- a. The rate used as the risk-free rate is given, continuous compounded and constant.
- b. The underlying asset’s return calculated with log is normally distributed in continuous time (Lognormal probability distribution). The standard deviation of the asset’s log return measuring the volatility is given and constant too.
- c. Neither transaction costs nor taxes are taken into account.
- d. The model is usually implemented for pricing European options, the exercise of which has to take place only at their expiration date.
- e. No dividends or other form of cash flow is given to the holder from the underlying asset before exercising his option.

BS model has been opted to value DRYS convertibles bonds’ option due to the fact that almost every assumption made above is satisfied. There is a concern though regarding these options not being European, but this issue has tried to be overcome on the basis that the majority of options tied in a debt mezzanine instrument tend to be exercised close to their maturity. Another issue that could be deemed is the transactions costs, which almost in every case do exist, but due to their low value thus low materiality level, they do not affect substantially the result.

The conversion option pricing has been calculated by using the below formula:

Equation 5: Black and Scholes formula for valuating an option

$$\text{Value of option} = P[N(d_1)] - X_e^{-r_{RF}t}[N(d_2)]$$

$$d_1 = \frac{\ln\left(\frac{P}{X}\right) + \left[r_{RF} + \left(\frac{\sigma^2}{2}\right)t\right]}{\sigma\sqrt{t}}$$

$$d_2 = d_1 - \sigma\sqrt{t}$$

Where:

¹ As analyzed by the Certified Financial Analyst (CFA) Institute.

- V = Current value of the call option
- P = Current price of the underlying stock
- $N(d_i)$ = Probability that a deviation less than d_i will occur in a standard normal distribution. Thus, $N(d_1)$ and $N(d_2)$ represent areas under a standard normal distribution function
- X = Strike price of the option
- $e = 2.7183$
- r_{RF} = Risk-free interest rate, always expressed as a compounding rate as model's assumptions indicate
- t = Time until the option expires (the option period)
- $\ln(P/X)$ = Natural logarithm of P/X
- σ^2 = Variance of the rate of return on the stock

The Conversion option's valuation table extracted from the thesis' Excel file shows that as the price of the underlying asset, in this case the DRYS share price, decreases the option's value to convert the bond into shares decreases substantially too. Additionally, it is observed and becomes evident that when the price of DRYS underlying stock (P) falls below the option's strike price (X), or in this case the so-called conversion price, the option's value equals to zero. This would be expected given that no rational investor would convert/buy shares at a greater than the market's price. DRYS convertibles having a strike price in almost all years of \$7.19 per share make it quite difficult to be converted into common shares, given the stock's market performance of not exceeding the \$5.82 per share in any of the years being outstanding. Note that the stock price stated on the table represents the market price at the end of each fiscal year. Furthermore, it is worth noticing that there is a positive valuation of conversion option even when DRYS price is lower than the specified strike price as happened in years 2009, 2010 and 2013. This actually gives a margin for a case that irrespectively of the higher strike price an investor will do exercise its option and convert its bond into common shares.

Table 4: Valuating the option embedded in the DRYS convertible notes due in 2014

CONVERSION OPTION'S VALUATION						
	2009	2010	2011	2012	2013	2014
Stock Price	\$5.82	\$5.49	\$2.00	\$1.60	\$4.70	\$3.20
Strike Price	\$7.19	\$7.19	\$6.90	\$6.90	\$7.19	\$7.19
Expiration (in years)	5	4	3	2	1	0
rFR	3.85%	3.30%	1.89%	1.78%	3.04%	3.02%
σ^2	0.09921	0.02797	0.01247	0.03882	0.03988	0.0403
σ	31.50%	16.72%	11.17%	19.70%	19.97%	20.09%
Annualized dividend yield	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
d1	0.325324	-0.24461	-6.01307	-4.97840	-1.87676	
N(d1)	0.627532	0.40338	0.000000	0.000000	0.030275	
d2	-0.37897	-0.57910	-6.20648	-5.25702	-2.07646	
N(d2)	0.35236	0.28126	0.000000	0.000000	0.01893	
$e(-rRFt)$	0.82489	0.87634	0.94489	0.96503	0.97006	1.000
Value per call (per share)	\$1.56	\$0.44	\$0.00	\$0.00	\$0.01	\$0.00
Put Option	1.67	1.25	4.52	5.06	2.29	3.99
# of shares a bond can be converted into	139.082	139.082	144.927	144.927	139.082	139.08
Value of conversion option	\$217.305	\$61.525	\$0.00	\$0.00	\$1.43	\$0.00

Table 5: Estimating the total value of the DRYS convertible notes due in 2014

DRYS CONVERTIBLE BOND VALUE (in US \$)						
Straight Bond's value	\$1,040.32	\$1,025.47	\$681.23	\$789.14	\$1,004.74	\$1,000.00
+						
Conversion option's value	\$217.305	\$61.525	\$0.00	\$0.00	\$1.43	\$0.00
=						
Convertible Bond's total value	\$1,257.6	\$1,087.0	\$681.2	\$789.1	\$1,006.2	\$1,000.0

DRYS convertible note's total fair value is the outcome of the straight bond's addition with the conversion option's value, as illustrated above.

The total value of Dryships convertible notes is also depicted in the figure 7, which in essence provides a more comprehensive approach to this type of financing. Proving the very basic theory of bonds, this chart shows the reverted relationship between the YTM, colored green, and the convertible bond's total value, colored blue.

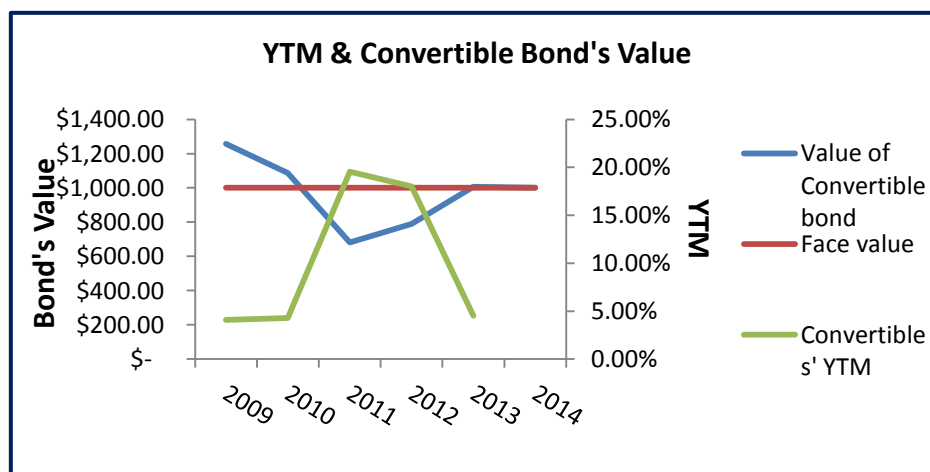


Figure 9: DRYS convertibles' value and YTM

Indeed, as the company's risk increases, reflected by YTM, the value of its bonds decreases given that no investor would be willing to buy a bond paying him a low coupon while in the market bonds of similar risk offer much higher yield. The value of

conversion option being minimal does not really affect the slope of the total value since neither conversion took place nor it would be reasonable to do so with the low stock's prices until maturity. Once again and when reaching maturity, the cautious investors, afraid of a payment's default, are eliminating leading the YTM and the note's fair value to drop at the coupon rate's and note's initial face value levels respectively.

Given no bond's conversions made during all the years of being outstanding, the number of convertible bonds remained unchanged. The total value of the convertible debt is found by simply multiplying the number of outstanding bonds with the each year's corresponding value of it.

Table 6: Estimating the fair value of DRYS convertible debt due in 2014

DRYS CONVERTIBLE DEBT VALUE (in thousands US \$ except per share data)						
	2009	2010	2011	2012	2013	2014
Convertible note's value	1.257	1.087	0.681	0.789	1.006	1.000
	*					
# of Convertibles outstanding	460,000	700,000	700,000	700,000	700,000	700,000
	=					
Convertible debt's value	578,505	\$760,899	\$476,859	\$552,398	\$704,319	\$700,000

Obviously 2011 and 2012 were not good fiscal years for both DRYS and its investors being the latter unable to do much since the stock's price was far below the strike and the risk had to bear far beyond their coupon payment received. From the company's side, there were little to none to do since in years where YTM had jumped sky high Dryships has locked a quite low coupon rate and in years where YTM was below coupon rate there was not call option embedded to the indenture to redeem the bonds.

Nevertheless, even if it do included such option it want be for the company's benefit to exercise it due to the YTM little spread from the coupon rate. Needless to say, after these convertibles being matured and repaid, DRYS next bonds, both secured and unsecured, were issued paying a higher coupon due to capital markets perceptions of bearing the company higher risk.

CONVERTIBLE PREFERRED STOCK

Convertible Preferred Stock is actually an equity mezzanine capital being more like an equity capital, but also sharing similarities with debt to the extent that its holder will receive promised dividends until he converts the preferred into common shares. In essence, by owning convertible preferred stock an investor owns a company's proportion just like a common equity shareholder with different, though, terms. A preferred stock shareholder actually holds a fixed income security given the fact that he is going to be paid regularly with the form of dividend. To clarify, there is a major difference between the preferred and the common shareholders regarding the dividend paid which to the formers is compulsory and to the common shareholders lies within the company's own discretion. The dividend paid to preferred shareholders is compulsory on the grounds that the preferred stock's dividend is a by the agreement a promised dividend. Some preferred stocks are issued in much higher prices than that of common shares, addressed mainly to institutional investors and traded usually over-the-counter (OTC). The most active preferred market for institutional investors seems to be that of designed at \$1,000 nominal value securities, without restricting though "preferreds" designed in larger sizes such the \$10,000 mandatorily convertible preferred series issued by Navios Maritime Holdings Inc. Same as in the common shares, the majority of companies issue preferred shares with the lower par value accepted by the exchange and allowed by other regulations governed the issuance. The reason is the same with that of common shares, to be protected over liabilities to shareholders that would arise when a potential below par share's market price takes place.

Preferred stock holders usually do not have voting rights in the company, thus they cannot participate in the decision-making procedures. Nevertheless, such provisions are always contained and interpreted solely in every single case and there is not a concrete

rule settling all these. In the vast majority of cases though, the only class of stock carrying full voting rights is the one of common shareholders.

The main document governing this type of financing is the certificate of designation, presenting in appendix. There are many different provisions incorporated in each certificate of designation altering the structure of preferred security as well as the entailed benefits and drawbacks. Firstly, the terms accompanying the conversion option may affect substantially the risk of the convertible preferred stock. The conversion of preferred securities into common shares may be optional, mandatory or a co-existence of both. Regarding the optional conversion, as its name witnesses, the holder of preferred securities may convert them at its own discretion at a pre-specified conversion price and during a usually not limited time span. In case of mandatory conversion, the issuer has beforehand explicitly stated and explained into the certificate of designation in light of which specific circumstances its “preferreds” will ex officio be converted into common shares. Mandatory conversion in fact imposes some limitations to the holders posing also threats of deteriorating their fixed income distribution and portfolio. For that, holders of mandatorily convertible preferred shares shall always be aware of and monitor the probability of a conversion.

Concerning the convertible preferred stock’s maturity, there is not an actual limitation but it could mature in rather short-term or it could have no maturity date at all extending it to the infinite. The latter case refers to the “*perpetual preferreds*” having no maturity date and consequently no date in which the principle amount will be paid. However, they do have a fixed stream of cash payable to perpetuity. It is about a rather distinct type of preferred security, addressed mainly to those investors who desire long term fixed income payments and really believe the company is creditworthy and has a long-term going concern prospects.

An important difference between the convertible bonds and the convertible preferreds is the priority of payment. As stated in convertible bonds’ paragraph, convertible bonds are a subordinated type of debt but still debt meaning that they are paid from the firm’s pre-tax income whereas the convertible preferreds are actually an equity security thus they get paid from the firm’s after-tax income as the common shareholders. Preferred

stocks keep the priority in payment though. In plain words, the convertible preferred stocks are junior to the convertible bonds but senior to the common stocks.

Investing in convertible preferreds requires the company to maintain a creditworthy profile, report satisfying financial results and give the impression of wishing to grow and prosper. Indeed, the company's profile is more important when seeking to raise funds through mezzanine capital rather than through debt because the investor can become a common shareholder and be involved in the company's management.

Why issuing preferreds?

One of the most important reasons of why a firm will be benefited by issuing preferred stock seems to be the improvement of debt-to-equity (D/E) solvency ratio. Companies heavily loaded by senior debt, having a debt-to-equity ratio far beyond the optimal of one, may desire to increase their equity side without leading to a common shareholders dilution or without granting new voting rights. Additionally, if it comes to bank institutions, issuing preferred stocks is a rather preferable practice for raising capital considering that preferreds do not increase bank's debt deteriorating its debt to equity ratio, do not cause shareholders' dilution but they do constitute Tier 1 capital needed in case of recapitalization.

ADVANTAGES & DRAWBACKS

In periods that ship-financing is hard-to-find, when banking institutions tend to maintain conservative policy of lending money, other forms of financing come to fill the missing gap. Even though financing through convertible preferred shares issuing has not spread widely in the Greek dry-bulk shipping market yet, it encompasses some substantial advantages over its drawbacks leading to the impression that the time it will be used regularly is not that far away.

Advantages

- **Improving Debt to Equity ratio**
- **Lower required return than common equity**, until converted into common stocks
- **No management involvement**, preferred shares' holders normally do not have voting power
- **No dilution effect in common shareholders**, until preferred shares convert into common
- **Constitute Tier 1 capital**, preferable to be issued by banks

Drawbacks

- **Higher financing cost than debt**
- **Limited liquidation ability**, until convert into common shares due to the narrow preferreds' market
- **Non deductible but promised payment**, derived from the after-tax income
- **Covenants imposed mainly by firm's senior lenders**

ALL IN FAVOR

Improving Debt to Equity ratio: When a company is highly leveraged, quite usual in capital-intensive shipping industry, the idea of raising additional capital needed by concluding new loan or issuing bonds seems to be not a beneficial option for both the company and the shareholders at all. The interest payments will be at even higher levels making it difficult for the company to meet its obligations to both its creditors and shareholders. Let alone that in light of this the shareholders will require higher return to compensate for the extra risk, leading to an overall increased cost of capital for the company. Having said that, by issuing convertible preferred shares the company can improve its Debt to Equity ratio since the preferreds will be recorded as equity items. Consequently, the equity will increase over the constant debt and the ratio will correspondingly decrease.

Lower required return than common equity: Despite being an equity item, convertible preferred shares do not bear the same risk as common shares since they promise a dividend to their holders and they give the right of converting them into common. Due to their lower risk, preferred shareholders require lower return than common shareholders do, else, financing by issuing preferred shares costs less than by common shares. Obviously, that is the case until converted into common stocks.

No management involvement entailed: Preferred shareholders normally do not have voting rights and they do not participate in the company's Board of Directors (BoD) and

the decision making process. Thus, the firm's management enjoys flexibility and privacy always until the conversion of preferred shares, if same is exercised.

No dilution effect in common shareholders: Until the time the preferred shares convert into common there is no dilution in the common shares. In any case, though, since there is a conversion option embedded to the preferred shares, common shareholders shall always be aware of when and under what conditions a conversion can take place.

Constitute Tier 1 capital: This advantage refers to banking institutions. Tier 1 Capital¹, the measurement of a Bank's capital strength or adequacy, is of critical importance for the good performance and sustainability of a bank. Regulations on Banking Institutions such as Basel I, II and III have set specific requirements a Bank shall be in compliance to. Since there is gradual increase in the level of required Tier 1 Capital of a bank, the issuance of preferred shares seems to be rather preferable.

ALL AGAINST

Higher financing cost than debt: Undoubtedly, since preferred capital is an equity item, preferred capital cost more for a company than borrowing money through debt. For this reason, companies usually opt mezzanine capital when either debt financing is not available or stringent terms are required for restricting much the company's operations.

Limited liquidation ability: Due to the narrow preferreds' market, they cannot be liquefied easily before converted into common shares. They indeed constitute more a fixed income security than a tradeable one, thus, their holders value them differently from the common shares.

Non tax-deductible but promised payment: From the issuing company's side, the dividend they have promised to pay to the preferred holders is not tax-deductible since it derives from the company's after-tax income and not from the pre-tax as all the other debt obligations do. Therefore, the company is obliged to make fixed and regular payments without though enjoying any tax concession.

¹ Tier 1 Capital: It is a bank's core capital, includes common stockholders' equity, qualified perpetual preferred stock, qualified trust preferred securities, qualified non-controlling interests. According to Basel II shall be at least 8% of its risk-weighted assets.

PANEL FINDINGS

Preferred stocks constitute a preferable financing tool for Navios Maritime Holdings witnessed by the numerous preferred stock issuances, and not such a usual way of financing for Dryships. The other two companies included in the samples have never used this method during the examined period.

Dryships Inc.

Dryships wishing to purchase drill rigs and refinance some of its debt, decided in 2009 to raise \$280 million by issuing preferred stock. These preferred stocks were purchased solely from Dryships' Chief Executive Officer (CEO) Mr. Economou who kept them for only two fiscal years. The promised dividend rate was 6.75%, the nominal price \$5.36 and the par value \$0.01. All preferred shares were converted into common shares in 2011 at a price of approximately \$5.8 with a preferred to common stock ratio of 1.3. By owning these preferred shares, Mr. Economou did not increase his voting power but he did increase his fixed income since he got paid the promised dividends. As for the return of preferred stock (rps), it was 6.9% each year. Rps was calculated following the equation indicated by the Gordon Shapiro dividend discount model adjusted though for zero dividend growth:

Equation 6: Return of the preferred stock

$$rps = \frac{DPS}{PPS * (1 - flot.rate)}$$

Dividend per share (DPS) was \$0.36 as derived from the multiplication of the 6.75% promised dividend with \$5.36 the preferred share's nominal value or price per preferred share (PPS). Flotation cost is the cost incurred for issuing the preferred shares and it has been reckoned by subtracting from the \$280 million gross proceeds the approximately \$268 million of preferred capital which was added in the additional paid-in capital of the company. The flotation rate is found by dividing the flotation cost with the gross proceeds resulting in a 4.29%. The flotation cost since incurred for issuing the shares and enjoying the benefits as long as they are outstanding, it shall be expensed during the same period and not in one fiscal year. In the Dryships case where the preferred shares were outstanding for the years 2009 and 2010 the flotation cost has been allocated in

these two fiscal years resulting in a flotation rate for each year of 2.14%. Having these two years an average invested capital of \$6 billion the preferred capital of Dryships had an average of 4.46% weight (wps¹).

Navios Maritime Holdings

In 2009 Navios Maritime Holdings Inc. has issued preferred shares for the first time since being public in order to finance its newbuilding program. According to the certificate of designation² the promised dividend was 2% per preferred share, had a nominal value of \$10.000, a par value of \$0.0001 and were mandatorily convertible under certain provisions. Therefore, each holder of preferred stock is entitled to receive an annual dividend equal to 2% on the nominal value of the preferred stock, \$200 per preferred share, payable quarterly, until the preferred stock converts into common stock. Five years after the issuance date, 30% of the then outstanding preferred stock shall convert into shares of common stock at a conversion price equal to \$10.00 per preferred share and the remaining outstanding amounts will convert on August 19, 2020 at a price per share of common stock not less than \$10.00.

As their size indicates, these mandatorily convertible preferred shares are addressed to institutional markets and are not freely traded on the exchange. For this reason, the price per preferred share used for calculating the return for each year equals to the nominal price of \$10.000 and their issuance cost is \$1.8 million as stated in the company's Cash Flow Statement. As for their priority in payment, they rank junior to debt capital but senior to common stock as the preferred stock of Dryships does.

Worth reminding that, the nominal value of \$10.000 per preferred share shall not be confused with the minimum par value of \$0.0001 per same. Navios Maritime Holdings, as the majority of public companies, sets for both its preferred and common stock the least legally acceptable par value in order to avoid realizing liabilities to shareholders should the stock price trade below par. As the company's Cash Flow Statement indicates particularly in the non-cash investing and financing activities' section, the preferred capital related to the issuance of preferred stock in connection with the acquisition of vessels was \$40.3 million and \$69.3 million in 2009 and 2010

¹ Wps is the abbreviation for the weight of preferred stock

² See Appendix for the full description of NM's Convertible Preferred Shares

respectively. The preferred shares are recorded at fair market value on issuance and not at the \$10,000 nominal value. For determining the fair market value has been used a binomial valuation model. This model has taken into account the credit spread of the Company, the volatility of its stock and the price of its stock at the issuance date.

CONCLUSIONS

Although the mezzanine financial instruments are not so popular among shipping companies, they are gradually gaining ground since they are coming to fill the gap between debt and equity capital in a continuously altering national and international economic landscape. There are indeed, many cases that a mezzanine financial product is the most advantageous as regards to the other types of financing. When, for instance, it comes to a highly leveraged company seeking to raise additional funds but either not willing or not able to issue more shares, the financial solution that suits it better is that of mezzanine capital. The improvement of debt to equity ratio, the lower cost than the equity capital and the flexibility they provide, with all the terms and clauses, constitute some of the major advantages. The fact though that the mezzanine financing includes many different features, since it shares characteristics from both debt and equity capital, is either a benefit or shortcoming for a firm considering that the flexibility the company enjoys from these hybrid attributes can be switched to complex operations. Indeed, with no careful handling and no well-educated personnel to be in charge of the finance department, adverse effects might occur. Being closer either to debt or to equity, mezzanine financing constitutes a valuable tool for the shipping companies provided the management has weighed in advance the benefits and shortcomings each type of this hybrid instrument entails.

EQUITY FINANCING

Equity financing addresses to every single company, from a small-scale private company to a large public corporation, since equity capital refers to every capital invested in the company for acquiring in return a proportional ownership of the company. Therefore, equity investors can be a single entrepreneur investing his own money to set a business, a venture capitalist¹ investing in a promising start-up or a public investor wishing to invest his money in a public entity for receiving dividends and realizing capital gains. Given the fact that the present thesis refers to public shipping companies this chapter concentrates on the capital invested from the public investors and the private equity investors. A firm can raise capital from the equity markets by either entering in them forming an Initial Public Offering (IPO) or by searching equity funds, which from their own side are seeking to invest their money.

INITIAL PUBLIC OFFERING (IPO)

The Initial Public Offering (IPO) is a private company's first offer of its shares to the public investors. In other words, IPO is the first sale of its shares to the public getting thus access to capital markets. Entering though in the equity markets is not a one-day task but it needs a lot of time and effort instead so as the private company not only to become, but also to remain, public. In fact, there are two stages, the Pre-IPO and Post-IPO stages incorporating certain requirements, which shall be met for firstly preparing the company for the IPO and secondly continuing to trade as a public entity. A corporation, after entering via IPO into the equity capital markets it can sell more of its shares to the public through Follow-on Public Offerings (FPO). Therefore, FPO is every following sale of a public company's stocks.

IPO REQUIREMENTS

On the grounds that IPO requirements are not uniform for all exchanges but they depend on the sole discretion of each exchange and this thesis is not concentrated solely

¹ A risk taker investor since he provides financing to companies being unable to obtain other forms of financing. The financing can take the form of common stock, convertible preferred stock or convertible debentures. PricewaterhouseCoopers definition for venture capital.

on IPO, in this section are about to be stated the main prerequisites for a firm to be listed in New York Stock Exchange (NYSE). NYSE has not been arbitrarily selected since it is the exchange on which the panel companies are listed.

What it really takes for a private company to go public?

Having decided that going public is the most appropriate solution for raising the additional funds needed, there are several procedures that have to be followed and several adjustments that have to be done. The time required for a company to get ready for being public depends mainly on the company's own structure and on how far the way it operates is from that of a public company. To give a timeframe, according to PricewaterhouseCoopers (PwC) report¹, it takes averagely 6 to 12 months for a company to prepare for its IPO. Fundamental changes and updates on subjects including but not limited to internal controls, accounting & finance effectiveness, legal framework, tax imposed, human resources management, risk management, technology applied, investors relations, shall be made on this time span. More specifically:

- a. **Legal framework:** The company wishing to be listed on NYSE shall have all its operations governed by and be in compliance with the prevailing legal framework, especially with the regulations imposed by the Security Exchange Committee (SEC), the listing standards NYSE, the United States General Accepted Accounting Principles (US GAAP) or IFRS and the Sarbanes-Oxley (SOX) Act of 2002. In essence, all structural changes are determined by the above regulations of which many sections overlap.
- b. **Accounting and finance effectiveness:** The financial statements apart from being in accordance with US GAAP or IFRS, if the latter is permitted, shall be audited by independent external auditors so as to verify their accuracy and their truthful character. Indeed, the existence of independent external auditors is imposed by the majority of regulations and it is crucial not only for a public but for every well-established company. Financial statements shall be closed and reported within a predefined usually pressing timespan and, if need be, acceleration of procedures shall be achieved. Accounting and finance

¹ Roadmap for an IPO, a guide to going public. PricewaterhouseCoopers (PwC) report

department shall be composed with knowledgeable and experienced personnel so as to accomplish their goals and operate effectively.

- c. *Reporting and Disclosures in periodic reports:*** For a private company to become public by definition means a forfeiture of its privacy translated into several disclosures in financial statements and reports registered regularly. Any movement, act or change in the firm of materiality level shall be reported timely as regulations define for keeping investors informed. Furthermore, everything contained in the reports shall be accurate, true and clearly stated in order to avoid any omissions or veiled false statements. *Section 401*¹ of Sarbanes-Oxley Act of 2002 stipulates with clarity that “Financial statements are published by issuers are required to be accurate and presented in a manner that does not contain incorrect statements or admit to state material information. These financial statements shall also include all material off-balance sheet liabilities, obligations or transactions. The Commission was required to study and report on the extent of off-balance transactions resulting transparent reporting. The Commission is also required to determine whether generally accepted accounting principles or other regulations result in open and meaningful reporting by issuers.”
- d. *Reporting and Filing under SEC of 1934:*** All companies listed on NYSE have to file their financial statements both annually on Form 10-K with the SEC and quarterly/semiannually on Form 6-K with the SEC. However when it comes to non-U.S.A companies, they constitute foreign issuers and they have to file annually the Form 20-F and periodically the Form 6-K with the SEC. Shipping firms analyzed in the present thesis constitute foreign private issuers².
- e. *Internal controls:*** Internal controls shall be set, if not existed, and be assessed on a regular basis for their effectiveness by the management and external auditors. The importance of internal control is explicitly stated in *Section 404*³ of the *Sarbanes-Oxley Act of 2002* where: “Issuers are required to publish

¹Summary of the Section 401 as stated in SOX guide, <http://www.soxlaw.com/s401.htm>

²Foreign private issuer definition as set out in §240.3b-4 Definition of “foreign government,” “foreign issuer” and “foreign private issuer”. Code of Federal Regulations (CFR), PART 240—GENERAL RULES AND REGULATIONS, SECURITIES EXCHANGE ACT OF 1934, Definitions

³ Summary of Section 404 as stated in SOX guide, <http://www.soxlaw.com/s404.htm>

information in their annual reports concerning the scope and adequacy of the internal control structure and procedures for financial reporting. This statement shall also assess the effectiveness of such internal controls and procedures. The registered accounting firm shall, in the same report, attest to and report on the assessment on the effectiveness of the internal control structure and procedures for financial reporting.” Moreover, the management and the signing officers are obliged to review the reports, verify no misstatements set forth, evaluate internal controls existed and report any change that may lead in their ineffectiveness. The corporate responsibility for Financial Reports is defined in section 302¹ of Sarbanes-Oxley Act of 2002 where: “Periodic statutory financial reports are to include certifications that: The signing officers have reviewed the report, the report does not contain any material untrue statements or material omission or be considered misleading, the financial statements and related information fairly present the financial condition and the results in all material respects, the signing officers are responsible for internal controls and have evaluated these internal controls within the previous ninety days and have reported on their findings a list of all deficiencies in the internal controls and information on any fraud that involves employees who are involved with internal activities any significant changes in internal controls or related factors that could have a negative impact on the internal controls. Organizations may not attempt to avoid these requirements by reincorporating their activities or transferring their activities outside of the United States.”

- f. **Corporate governance:** The legislative framework within which public companies shall operate have set several rules regarding corporate governance. Especially the United States exchanges, NYSE and NASDAQ, have imposed quite rigorous rules to the companies being about to go public the compliance to which requires a rather time consuming and meticulous process. As per corporate governance standards imposed by NYSE, these are stated in clauses from 303A.00 through 303A.13 of the Section 3 referring to Corporate Responsibility. Some important regulations are: *Board of directors must in*

¹ Summary of Section 302 as stated in SOX guide, <http://www.soxlaw.com/s302.htm>

*majority be composed of independent directors*¹ so as they provide an objective opinion and eliminate potential conflicts of interests between shareholders and management. *There has to be a nominating/corporate governance committee that consists solely of independent directors*² in order to identify and nominate competent individuals to be part of the Board of Directors, to endorse a set of guidelines for improving corporate governance and besides other to oversee the management's evaluation. Further to corporate governance committee, *a compensation committee must be established solely by independent directors*³ so as to evaluate directors' compensation plans in relevance with their corporate goals and responsibility, suggest the Board alternatives whereas judged appropriate and assure the *shareholders' right to vote in favor or against a potential equity based compensation plan*⁴. Last but not least, the company shall adopt specific corporate governance rules⁵ and directions in order to eliminate potential conflicts of interest between management and shareholders, eradicate the phenomenon of employees exploiting corporate opportunities for their own benefit, ensure confidentiality and fair dealing with firm's counterparties, assure proper and efficient use of company's plant and machinery and promote the code of ethics.

- g. ***Human Resources (HR) management:*** Given the fact that human resources are firm's most valuable asset, determining its sustainability and growth prospects, proper procedures have to be established so as not only to recruit the most competent candidates for each position but also to maintain the personnel by

¹ "Listed companies must have a majority of independent directors." Section 303A.01, NYSE listing requirements

² "Listed companies must have a nominating/corporate governance committee composed entirely of independent directors." Section 3 Corporate Responsibility, Clause 303A.04, NYSE listing requirements

³ "Listed companies must have a compensation committee composed entirely of independent directors. Compensation committee members must satisfy the additional independence requirements specific to compensation committee membership set forth in Section 303A.02(a)(ii)." Section 3 Corporate Responsibility, Clause 303A.05, NYSE listing requirements

⁴ "Shareholders must be given the opportunity to vote on all equity-compensation plans and material revisions thereto, with limited exemptions explained below." Section 3 Corporate Responsibility, Clause 303A.08, NYSE listing requirements

⁵ "Listed companies must adopt and disclose corporate governance guidelines." Section 3 Corporate Responsibility, Clause 303A.10, NYSE listing requirements

providing competitive compensation packages, equal chances for step-ups and friendly environment. More specifically, a concrete recruitment process shall be implemented and followed for promoting equality, meritocracy and resulting in the best recruitment. As for compensation plans, they constitute key elements for a public company since through them may the management's and shareholders' interests kept aligned and concurrently productivity enhanced given the incentives granted. More specifically, equity based compensation plans stimulating the employees' interest to work more effectively owing to the fact that the company's benefit equals to their own benefit. Keeping valuable employees and officers satisfied and productive is crucial for the firm's profitability and sustainability. It is worth saying that when equity based awards are about to be given in employees, shareholders will face greater dilution and the exchange requires them to be subject to shareholder's approval¹.

Does an IPO suit every single company?

Surely not! Having referred to only some of the adjustments and regulations a company wishing to go public shall make and be complied with, it becomes evident that it is neither a simple nor for every firm procedure. All these changes not only require time and effort but also money. Consequently, forming an IPO is not a solution solely depending on company's need for additional funds but a conscientious and strategic management's decision affecting the firm's operations and performance in daily basis. As for capital required for going public is divided into capital for paying the company's internal modifications, such as to set up new departments and capital for paying the IPO process, such as to pay audit fees, advisory fees, printing expenses, listing expenses etc. Despite the latter being a lump sum amount usually as percentage of capital amount raised through IPO, the former, the capital related to firm's adjustments, is more or less an amount payable regularly for as long as the firm remains public. From a quantitative

¹ "Shareholders must be given the opportunity to vote on all equity-compensation plans and material revisions thereto, with limited exemptions explained below." Section 3 Corporate Responsibility, Clause 303A.08 Shareholder Approval of Equity Compensation Plans, NYSE listing requirements

approach, there are no findings regarding the company's internal and ongoing expenditure attributable to the listing on the exchange but there are findings regarding the IPO process. Clearly, to find out the company's overall internal cost, including wages of a specific department etc., needs access to the company and disclosures to specific information that have not been achieved in this dissertation.

IPO PERFORMANCE DETERMINANTS¹

As it has been aforementioned, IPO is not a solution for every company seeking financing, but certain requirements shall be fulfilled in order the company to benefited as much as possible from it. An element of substantial importance is the level of IPO price achieved. In plain words, IPO price or offering price is the price at which the shares of the company are sold. IPO price is determined by underwriters together with the issuing firm after taking into account several factors including the market's existed demand for these shares, the firm's valuation and future prospects, the ability to generate positive cash flow etc. Therefore, after deciding the IPO price by following most of the times the book building procedure there are several variables that may interfere in and alter IPOs performance. A question arising "Will the firm's IPO outperform or underperform?" The answer lies on the initial return of the IPO, on whether it will be positive. The initial return of the IPO is just a percentage change and is computed merely by dividing the difference between the after IPO trade price and the IPO price with the IPO price.

Equation 7: Stock's initial return

$$\text{Initial Return} = \frac{(\text{Post IPO price} - \text{IPO price})}{\text{IPO price}}$$

Where: Post IPO price = share's price the first day or few days after IPO
 IPO price = share's initial offering price

When Initial return is positive, the stock has outperformed while when negative it has underperformed or using the common term the IPO is underpriced. There are a lot of

¹Merikas Andreas/Department of Shipping, University of Piraeus, Andreas, Dimitrios Gounopoulos/School of Management, University of Surrey, and Christos Nounis/Department of Economics, University of Athens. "Global Shipping IPOs performance." Last modified 2007

variables affecting the performance and a company along with the underwriting firm shall consider before completing the IPO procedure.

Firm's size: Whether the share will under or outperformed is affected significantly by the issuing company's size. Large firms have higher possibilities of gaining positive initial returns than smaller ones. In fact, smaller companies wishing to raise money for their investment projects through an IPO of their shares may put them in a predicament that will be reflected by their stock's market price. Large companies give to the investors the essence of more stability, lower risk and that they eventually realize gains from investing in them.

Company's historical performance: there is not a concrete rule regarding how many years a company shall have history and maintain positive financial position so as to gain market's trust but depends to a great extent on the industry. Regarding quite capital-intensive industries, as shipping, when advancement follows a slower pace and company's market value comes near to its asset value, it is more likely these companies with history in the field to enjoy outperformance. According to Ritter (1991) claims, shares with the higher mean initial return are the one with the poorest returns in the long-run (overreaction hypothesis).

Underwriters' reputation: Underwriters are in essence investment banks appointed by the IPO candidate to undertake the whole IPO process. The selection of the underwriter is concluded after the assessment of all existing proposals (beauty contest). The whole IPO process may be taken over by a single investment bank or more often by a syndicate so as to share the risk. When large, well-established investment banks are in charge of a company's IPO they increase the possibilities of an outperformance. Undoubtedly their experience, the company's due diligence search conducted meticulously together with their augmented and sound clientele they provide better prospects for a company to achieve higher price not only at the IPO stage but also at the aftermarket.

Reputation of the stock exchange: Similarly with the above factor, major stock exchanges like New York Stock Exchange (NYSE), NASDAQ and the London Stock Exchange (LSE) probably have a positive linear relationship with the stock's initial

return. Their reputation, long history, large portfolio and vast number of investors may not lead to an underpricing of stock.

Market's conditions: A paramount factor affecting significantly every IPO's performance is the market's condition. In fact, many IPO have experienced underperformance and underpricing and the one to blame for was the bear market. Additionally, there have been many times that the wisest option was to postpone the IPO, instead of proceeding with an unfavorable market environment. Whether the market is "hot" or "cold", "bullish" and "bearish" respectively, is an issue every company shall consider of before materializing its IPO. As in every other aspect of life timing plays a critical role.

What about the listing standards required?

As analyzed in the "IPO requirements" section, is a matter within the discretion of each exchange separately! Each exchange requires several standards to be met both financial and distribution.

ADVANTAGES & DRAWBACKS¹

Advantages

- **Access to capital**, financing growth & expansion, repaying indebtedness
- **Enhancing liquidity**, shareholders monetize their shares in public marketplace
- **Improving reputation & prestige**, worldwide media coverage through financial markets
- **Benefited employees** (stock-based compensation plans)

Drawbacks

- **Increased cost for listing the securities**
- **Privacy & flexibility loss**
- **Obligation for filling annual & periodic reports**
- **Increased cost for continuing trade**
- **Up to 12-16 months** prior IPO **preparation period** for the company so as to meet the listing standards

¹Dempsey Timothy, Curran/NYSE Brian. "NYSE IPO Guide, Second Edition." Caxton Business & Legal, Inc. Last modified 2013.

https://www.nyse.com/publicdocs/nyse/listing/nyse_ipo_guide.pdf.

ADVANTAGES

Access to capital: Publicly traded companies have access to an ample and continuous source of capital. Not only are they able to raise primary capital through their IPO but also through Follow-on Public Offerings (FPO) of their shares. Both IPO and FPO add equity capital to the firm thus enabling it to increase its leverage without altering its capital structure. There is a concern though regarding the level of equity capital, which shall not be in excess of the debt financing, given equity's increased required return compared with debt.

Enhanced liquidity: Shareholders can reinforce their liquidity by monetizing their shares in public marketplace when circumstances are favorable. Shares of publicly traded companies can be sold in the market giving proceeds to the owners during the company's public life or even immediate, with the IPO, if such provision is incorporated in the structure.

Improved reputation & prestige: The worldwide media coverage through financial markets has shed light on the companies, thus, enabling them to improve their reputation and gain prestige. Road shows aim primarily to attract investors by communicate to the public company's historical performance, strategic growth plan and potential future cash flows. Analysts worldwide will be involved in closely monitoring the public companies, writing several reports regarding their performance regularly and all this focus will eventually lead to an extended market share of the company.

Benefited employees: Although stock-based compensation plans do not purely appear in public companies but also in private entities, in public companies tying compensation with equity is critical element for the firm's performance as well as its shareholders perspective for it. Indeed, by awarding valuable employees and officers with the company's shares functions as making these employees partner of the company. They do not work only for the company's sake any more but also for their own benefit. Consequently, they work more effectively, they are more satisfied, the company is manned with competent personnel producing lucrative results and at the end, the management's interest is in alignment with shareholders'. To all advantages mentioned can be added the equity based compensation plan's attractiveness for hiring new talents. Therefore, equity based compensation plans result to a win- win situation.

DISADVANTAGES

Increased cost for listing the securities: Listing shares on an exchange is not a costless procedure. As stated before, IPO has a great expense incurred, including the IPO direct cost of securities registration and the entailed cost of preparing and maintaining the company in such operational situation to meet the exacting and continuous requirements.

Privacy & flexibility loss: Privacy' surrendering constitutes the most significant burden for companies, especially for the traditional ship owning ones. Firm's sensitive information shall shed to light once it is going public and thereafter. This disclosure puts ship-owners in an awkward, uncomfortable position considering that decisions used to be made by instinct, spontaneity and discernment now must be explained in detail to a large public. Apart from the disclosure and explanation of actions, every movement made affects directly the shareholders' estimate for the firm's going concern and translates into fluctuations of its market capitalization. When combining these fluctuations with the focus on the quarterly results, adverse effects are brought about concerning firm's operational flexibility.

Obligation for filling annual & periodic reports: An entire accounting and finance department must be engaged to file financial statements with the SEC forms and to fill reports timely and in a regular basis. There is a rather pressing timespan in which all reports must be prepared, audited, in all respects sound and available to public, incompliance to which may cause serious sanctions. Hence, accounting and finance department must re-organized and if need be new experienced personnel must be recruited.

Increased cost for continuing trade: Not only is the firm's cost for going public increased but also the cost for continuing trading in the equity markets. Once a company is public then it is always public! As regards to both benefits and obligations which will not be ceased after IPO has been completed.

Extended preparation period: An approximately up to 12-16 months prior IPO preparation period is needed so that the company meets all the imposed listing standards. In this period, the company usually underperforms due to great attention paid in corporate structure, governance and in any necessary change for being ready for IPO.

In this case, the company shall face reduced revenues and profits other than the great effort made.

PANEL COMPANIES' FINDINGS

All panel companies went public in late 2004-2005 by either selling the shares of their private shipping companies to public equity markets or by using a Special Purpose Acquisition Company (SPAC) for the same purpose. SPAC's definition follows in the next chapter. Dryships and Diana Shipping have entered the equity markets with the conventional way while Starbulk Carriers Corp. and Navios Maritime Holding Inc. have formed a SPAC.

IPO PRICE AND AMOUNT RAISED

The figure 9 shows the IPO offering price of all panel companies. Obviously, the companies that sold their shares directly to the public had higher offering price whilst the companies used the SPAC had lower.

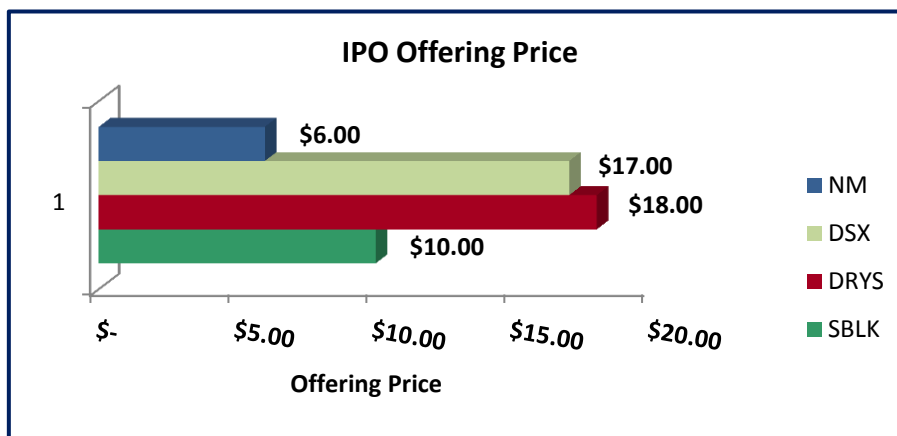


Figure 10: Panel companies' IPO offering price

For instance, when comparing NM's price with that of DRYS it is observed that NM was traded three times lower than DRYS. This large difference in price is not a matter of companies' underperformance but it is attributable to the formation of SPAC. More specifically, SPAC has standard structure and the price of units sold is in the most cases is predefined. Furthermore, the lower price of NM's and SBLK's units sold does not mainly result in lower amount raised but in more shares issued. However, the lower offering price and more shares issued may result in a delisting risk if the price plummets. Indeed, SBLK was on the brink of such risk in 2011 when the company

decided to proceed in a reverse stock split surrendering 15 stocks for just 1. As a consequence of this reverse-stock split, the number of outstanding shares decreased significantly and the stock's price increased.

IPO PROCESS COST

Considering the direct to IPO expenses of the examined companies, they became known by mining into the SEC filings, especially Form S-1¹.

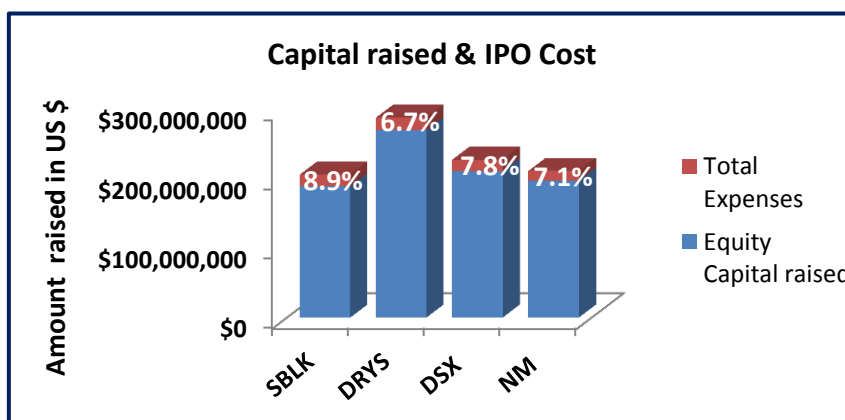


Figure 11: IPO cost compared to total capital raised

The above bar chart exhibits the IPO cost as percentage of the total amount raised for each panel company separately. Regarding IPO cost, it contains every fee required for an IPO like printing expenses, advisory fees, audit fees, listing fees as well as underwriting fees. The average IPO cost of the examined companies amounts to 7.6% of total equity capital raised.

Bearing in mind that all other expenses, excluding the underwriting fees, constitute only the 1% of the total IPO expenses, it is apparent that the selection of the underwriters is the one determining the total IPO cost. The IPO candidate company shall consider the tradeoff between the underwriters' reputation and the fees they charge and opt appropriately.

¹Registration statement under Securities Act

CONCLUSIONS

Financing through raising funds from the equity capital markets seems to be one-way solution if the firm's growth, the operations' expansion, the overall company's advancement seems to be the case. In a matter of fact in shipping and particularly in the fragmented dry-bulk segment with the numerous small-scale companies characterized by tradition, nepotism, privacy and intuition, equity financing seems to be far from the desirable. In the late years though, more and more companies are selecting the equity financing. Going public is, in fact, neither an overnight nor a simple decision. It needs a thorough consideration of the firm's life before and after traded publicly. If the answer is positive, it takes a lot of time and effort not only to make the first sale of the company's shares work but also to continue the share trading efficiently. The additional personnel employed and the new requirements the company shall adhere to form a new corporation with attention to detail, consistency of actions, due diligence and transparency of operations. It may sound like a painstaking procedure and it may be, but the access to an ample source of funding it may also be worth the consideration. Moreover, all the above-mentioned requirements along with the meticulous attention to the firm's day-to-day transactions they are definitely time-consuming actions but they usually lead to a more efficient performance. Should a firm raise capital through an IPO it remains a difficult and strategic decision that will be taken after considering the firm's future plans and its capability to operate within strict provisions. A company unable to meet the demanding obligations that equity capital markets impose is highly at stake.

SPECIAL PURPOSE ACQUISITION COMPANY (SPAC)

Special Purpose Acquisition Company is a blank check company formed for raising funds through an IPO & acquiring in specific due course vessels or an operating company. In other words some sponsors, in shipping for instance mainly the ship-owners or managing directors, create this company, which in essence is a Special Purpose Vehicle (SPV), in order to enter into the equity capital markets.

How this entrance in equity markets will be materialized?

The Sponsors appoint an underwriter or a syndicate of underwriters better specialized in this particular formation to undertake the registration and sale of the SPAC's stocks to public. The preparation for the SPAC's IPO takes less time than that of a conventional company considering only that the SPAC's does not usually contain even assets in its balance sheet while the conventional shipping company is encumbered with vessels. Essential point in the SPAC is that a future plan must be established and communicated to the public regarding the use of the IPO proceeds. In shipping examples, the plan was the acquisition of an operating company in shipping. After that, the underwriters will set the stock's offering price based on the structure the sponsors have selected. The proceeds from the IPO, subtracting or not the underwriting fees and any other related expenses depending on the agreement, are deposited in a trust account being able to be released only if an, accepted by the investors, business combination is accomplished within the predefined time span. Therefore, investors have the right to vote in favor or against of the upcoming business combination.

SPAC'S STRUCTURE

SPACs have usually various standard structures among which the sponsors can opt, but their common characteristic is that they offer units instead of stocks. Units consist of common shares and warrants both traded freely in the market. For better comprehending the SPAC's structure, below is exhibited a table with some of the most commonly used in shipping industry SPACs as released by the investment bank Maxim Group LLC in 2008. Maxim group's report¹ has intentionally been selected owing to its co-operation with both of the panel's companies that used SPAC formation to go public, Starbulk Carriers and Navios Maritime Holdings. Note that the structures shown in the table 8 are only indicative and they are not all SPACs possible structures.

Figure 12: Indicative SPAC's structure
Source: Maxim Group LLC

	Maxim SPAC Structure \$10.00 Unit	Alternative Structure \$8.00 Unit	SPACTM Structure*** \$6.00 Unit
▪ Composition of Units	▪ 1 common share ▪ 1 warrant ▪ Trade separately	▪ 1 common share ▪ 1 warrant ▪ Trade separately	▪ 1 common share ▪ 2 warrants ▪ Trade separately
▪ Warrant Strike Price	▪ \$7.00	▪ \$6.00	▪ \$5.00
▪ Warrant Exercise Period	▪ 4 year life from the IPO	▪ 4 year life from the IPO	▪ 4 year life from the IPO
▪ Call Provision	▪ ≥ \$14.25 for any 20 trading days within a 30 day period	▪ ≥ \$11.50 for any 20 trading days within a 30 day period	▪ ≥ \$8.50 for any 20 trading days within a 30 day period
▪ Proceeds Held in Trust	100%**	▪ 98.5%	▪ 98.5%
▪ Conversion Threshold	35% - 40%**	▪ 20% - 30%	▪ 20%

From the structures used by Maxim Group shown above, Star Maritime and International Shipping Enterprises Inc., the SPACs of Starbulk Carriers and Navios Maritime Holdings have implemented the first and the third structure respectively.

¹ Maxim Group LLC. "Special Purpose Acquisition Company (SPAC), Overview." Maxim Group LLC, Investment Banking, Last modified 2008
<http://forums.capitallink.com/shipping/2008/files/maxim032008.pdf>.

ADVANTAGES & DRAWBACKS

Entering the equity markets through the SPAC formation is not a conventional way of going public but shipping companies have applied it several times considering the advantages entailed.

A short examination of advantages and disadvantages as regards to ship-owners' side will take place having the most substantial of them included in the table below.

Advantages	Disadvantages
<ul style="list-style-type: none">• Lower cost of capital than IPO• Less bureaucratic procedures• Faster path to go public	<ul style="list-style-type: none">• Sponsors investment is at stake• Reputation risk• False choice of company acquired

ADVANTAGES

Lower cost of capital than IPO: As it has been abovementioned, the IPO preparation period having to file with the SEC and to make the company complied with all the prerequisite regulations translates into significant amount of money. With the SPACs though, this preparation is eliminated so does the capital needed, owing to SPAC's aim and reason to be set for purely raising money through the equity markets and therefore acquiring a lucrative business combination. In fact, the SPACs investors do not evaluate and invest in the company, as happening when an operating company forms an IPO, but in the management and growth plans of a future potential company! Additionally, some SPAC's structures include provision that all the money needed for underwriting and other fees are taken from the capital raised and deposited in escrow account and not by the sponsors.

Less bureaucratic procedures: Given the fact that there are almost none embedded assets in financial statements and the number of historical statements required is narrow, the procedures needed for filing the statements with SEC as well as other bureaucratic procedures are less.

Faster path to go public: Due to the previous advantage, the company can be traded publicly sooner, saving the sponsors as much time as effort. Given a minimum IPO preparation time of 6 to 12 months needed with the conventional way, the faster path to equity capital markets that SPACs provide is an advantage worth considering.

DRAWBACKS

Sponsors investment is at stake: Investors' capital may be secured and deposited in an escrow account as long as no business combination is concluded, but this does not seem to be the case for the sponsors. Sponsors' initial investment is not protected and if time elapses and a business combination accepted by the investors has not been completed then the sponsors will lose their money. Therefore, prior accomplishing business combination investors are in a more favorable position regarding their capital invested than the sponsors.

Reputation risk: On account of the fact that public investors trust and commit their money to the management, namely the sponsors, and its strategic plan, in case of no business combination has been completed within the specified time span investors may take their money back along with any interest accrued but they will lose faith to the management. Sponsors in this adverse situation will no longer enjoy their reputation and their ability to tap capital markets will be restrained.

False choice of company acquired: Just a business combination achieved is not sufficient. It also needs this combination to be fruitful and lucrative for the shareholders. A false choice of operating company acquired will disappoint investors, which consequently will deem management unreliable posing once again company's reputation at risk. Investors have still hold the right to disapprove the potential merger with an operating company but given their potential inexperience or even virginity in a particular industry or segment, the proposal and final decision burdens the initial shareholders or sponsors which will also be the emerging firm's management.

PANEL COMPANIES' FINDINGS

For better comprehending the Special Purpose Acquisition Company and its application in shipping the procedure followed by two panel companies, Navios Maritime Holdings & Star Bulk Carriers Inc. is presented below.

NAVIOS MARITIME HOLDINGS INC. (NM)

Navios Maritime Holdings Inc. was until the 2nd quarter of 2005 a private company owned mainly by Mrs. Angeliki Frangou. In 2004 and more specifically on the 16th December 2004 a SPAC named International Shipping Enterprises Inc. (ISE) has announced its IPO selling its shares to the public and aimed to raise money for acquiring an operating company. This company would eventually be Navios Maritime Holdings Inc., which after being merged with International Shipping Enterprises Inc., went public in the 3rd quarter of 2005. The surviving entity from this downstream merger was Navios Maritime Holdings Inc

Table 7: Total cost of International Shipping Enterprises (SPAC) IPO

NM EQUITY (stated in \$)	
Calculating Total Cost of Public Offering, (as Percentage of Gross Proceeds)	
1000	
SPAC's IPO	16/12/2004
Number of Common Stocks Issued	32,775,000
Common stock Capital added	\$182,621,291
Public Offering Price, as stated by the Company	\$6.00
Underwriting Discount, per share	\$0.36
Underwriting Discount, Total	\$13,509,000
Gross Proceeds from public offering	\$196,650,000
Underwriters' fees/Gross Proceeds	6.9%
Total Offering expenses for IPO	\$14,028,709
Total Cost/Capital received	7.13%
Number of Common Stocks outstanding after IPO (year ended)	39,900,000

The main data regarding the International Shipping Enterprises Inc. IPO are presented in the table 9. This SPAC has sold its shares for \$6.00/unit raising a total amount of \$196,650,000 after selling 32,775,000 units. In approximate amounts, after deducting the underwriting fees amounting \$13,509,000, they added \$182,621,291 in the company as common stock capital. From this money, having also subtracted the other expenses of issuance and distribution shown below along with some other unforeseen expenses, it ends up in the escrow account a capital equal to \$180,576,000.

Table 8: Other expenses of issuance and distribution of ISE' IPO

OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION (in US \$)	
	<u>16/12/2004</u>
Underwriting non-accountable expense allowance (1% of gross proceeds)	1,710,000
Legal fees and expenses (including blue sky services and expenses)	270,000
Miscellaneous expenses	8,059
Printing and engraving expenses	50,000
Accounting fees and expenses	25,000
SEC registration fee	66,441
NASD registration fee	30,500
Total other expenses (other than underwriting)	\$450,000
Other expenses/Gross proceeds	0.23%
Held in trust	\$180,576,000

This deposited amount has used for the merger with the Navios Maritime Holdings Inc. which from then would be the surviving entity and public company with the “NM” exchange ticker.

NM's management, by using the International Shipping Enterprises Inc. SPAC, has sold 32,775,000 units for \$6.00 per unit. Each unit consisted of one (1) common share and two (2) warrants traded separately having the warrants a four-year period to be exercised. By implementing this SPAC's structure the IPO expenses have not burdened solely the sponsors but they have been subtracted from the amount raised before being deposited in the escrow account.

International Shipping Enterprises Inc. IPO was undertaken by the below underwriters and was led by the Sunrise Securities Corp. which had the greater proportion of units offered and served as the sole book runner.

Table 9: Underwriters' percentage of shares in ISE' IPO

UNDERWRITERS (Number of Shares)	
	<u>Percentage</u>
Sunrise Securities Corp.	50.9%
Ramius Securities, LLC	29.2%
Maxim Group, LLC	7.0%
Dahlman Rose & Company, LLC	7.0%
I-Bankers Securities, Inc.	2.9%
Broadband Capital Management LLC	2.9%
Total	100%

STAR BULK CARRIERS INC.

Star Bulk Carriers Inc. has also used a SPAC for going public but with a different structure than that used in NM. In plain words, on the 15th December 2005, the sponsors of the SPAC, Star Maritime Acquisition Corp., concluded a private placement of \$11,325,000 gross proceeds. Having subtracted the private placement's expenses, the net proceeds, amounting \$10,532,200 approximately, were designated to pay the SPAC's IPO related expenses due to the fact that the sponsors have selected to implement a SPAC's structure according to which the money raised are going to be deposited at a 100% and not after being deducted by underwriting expenses. The next table presents the main data for this private placement.

Table 10: Starbulk cost of private placement

SBLK EQUITY (stated in \$)		
Private Placement's Cost Calculation (in \$)		
	1000	15/12/2005
Number of Common shares (units) issued for the Pr.Pl.		1,132,500
Common Stock capital added		\$ 11,325,000
Price Per Share		\$ 10
Gross Proceeds		\$ 11,325,000
Placement fee & expense allowance		\$ 566,250
Contingent placement fee		\$ 226,500
Total placement expenses		\$ 792,750
Net proceeds		\$ 10,532,250
Total placement fees/Gross Proceeds		7.0%

After the sponsors' private placement, on the 16th of December 2006, SPAC's IPO has taken place selling 18,867,500 units for \$10.00 per unit and held all \$188,675,000 in Lehman Brothers' trust account due to SPAC's structure of subtracting no expenses from the capital raised (100% held in trust). The units offered consisted of 1 common share and 1 warrant exercisable within 4 years after the IPO. Both shares and warrants could be traded separately.

The tables below show primarily the IPO main data and the related to IPO expenses breakdown as they have been presented in company's annual statements and in the securities' registration statement.

Table 11: Starbulk IPO main data, capital raised

Starbulk IPO capital raised and cost as % of Gross proceeds (in US \$)	
1000	16/12/2006
IPO	
Number of Common Stocks Issued	18,867,500
Common stock Capital added	188,675,000
Public Offering Price, as stated by the Company	10.00
Underwriting discount & compensation, per share	0.70
Underwriting discount & compensation, Total	13,207,250
Gross Proceeds from public offering	188,675,000
Underwriters' fees/Gross Proceeds	7.0%
Total Offering expenses for IPO	16,757,250
Total Cost/Capital received	8.88%
100% Amount held in trust account (Lehman Brothers)	188,675,000
Number of Common Stocks outstanding after IPO (year ended)	29,026,924¹

Table 12: Starbulk IPO's other expenses than underwriting fees

Other expenses of issuance and distribution (in US \$)	
	16/12/2006
Underwriting non-accountable expense allowance (1% of gross proceeds)	1,886,750
Legal fees and expenses	440,000
SEC registration fee	51,694
Advisory Fees	2,800,000
Printing and engraving expenses	100,000
NASDAQ Registration fee	44,420
Accounting fees and expenses	40,000
Miscellaneous expenses	73,886
Total	\$3,550,000

¹ Common stocks outstanding after IPO consist of 9,026,924 stocks issued at \$0.003/share, 1,132,500 shares from private placement and 18,867,500 shares from the SPAC's IPO.

From the tables above it can clearly be seen that the capital raised from the equity markets through the SPAC have been in whole deposited in a trust account and the payment of both underwriting fees and total other expenses were at the sponsors account.

As for the underwriters undertaken the Star Maritime Acquisition Corp. IPO, they are exhibited below together with their respective percentage participation. Having the greater proportion of shares offered Maxim Group, LLC was the sole book runner on this IPO.

Table 13: Underwriters' percentage of shares in SBLK IPO

UNDERWRITERS (Number of Shares)	
	<u>Percentage</u>
Maxim Group, LLC	47.70%
Ramious Securities, LLC	26.50%
EarlybirdCapital Inc.	23.59%
I-Bankers Securities, Inc.	1.95%
Chardan Capital Markets LLC	0.27%

PRIVATE EQUITY

Private Equity constitutes another sub-category of equity financing. In plain words, Private Equity, or abbreviated PE, is capital infused directly in companies without having to be listed on the public exchanges. PE can be either retail or institutional investors acting solely or pooling a fund. By financing through PE, companies remain private while enjoying liquidity, materialize their growing plans and refinance or repay their indebtedness.

Private Equity capital is categorized and recorded in balance sheet exactly as common equity capital but without this meaning that they are the same type of financing. They indeed share some similarities but in essence their characteristics truly distinct them. In particular, P.E resembles with common equity capital to the extent that investors are company's shareholders possessing ownership, they are benefited by dividends and they bear the risk of not declaring same.

On the opposite PE investors have voting right and are actively involved in firm's management by setting future targets, evaluating corporate governance, nominating members of the Board of Directors and generally deciding for all strategic issues. Hence, PE funds are not shareholders without voice but the company's new partner. Although it is often misconceived, when the shipping company comes to be financed by PE it actually arranges and concludes a Joint Venture (JV) having as project to be undertaken the firm's growth, outperformance and value creation for the shareholders where both contractual parties share the risk and benefit.

There are some particular features noticed in most PE funds operating especially in shipping, which companies shall take into consideration. PE funds will often require a high Internal Rate of Return (IRR) varying from 15 to 20% to compensate for the risk. Apart from that, they do have an exit policy within a specific period of time, usually a 3 to 5-year period for short investment horizon expanded in 10-year period for long-term investments.

CRITICAL POINTS FOR PE JOINT VENTURE

There are some critical points a shipping company shall consider and pay attention to before proceeding and after concluding the Joint Venture with a PE fund so as to achieve a smooth and flourish for both parties collaboration.

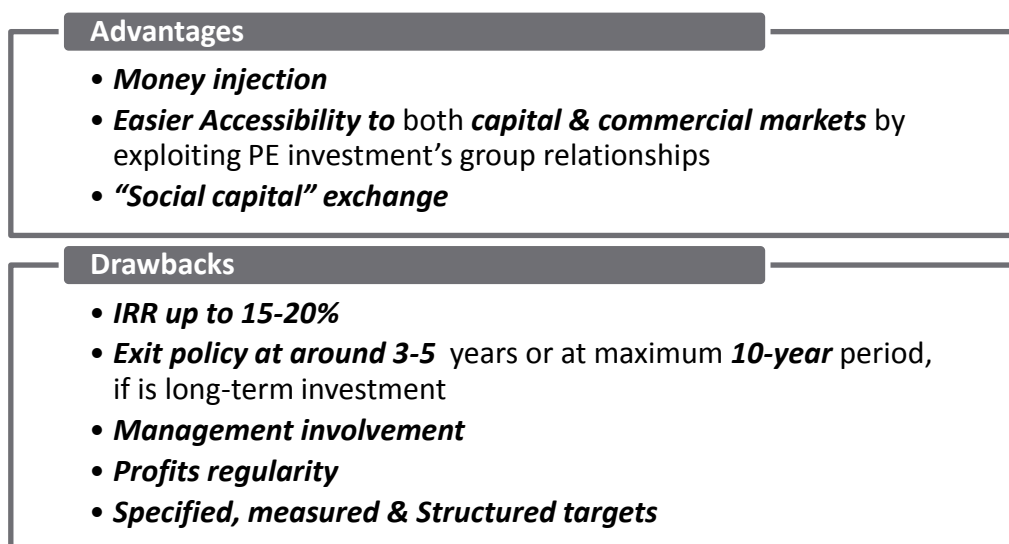
- **Provision for not taking over:** Given the increased number of shares the PE possesses, a provision of not allowing the PE to take over the company's control shall be incorporated. More specifically, even if the number of shares exceeds the 40% of the total, the agreement shall include a clause retraining the PE voting power below 40%. Thus, PE may possess for instance 40% of the firm's shares but its voting power will be limited to 30%, giving the preferable ownership of the company to the PE financed the project but simultaneously protecting the firm of the potential risk of losing the control. In Starbulk – Oaktree JV such a provision is incorporating in the agreement according to which the Oaktree fund is subject to a limitation of voting right of up to 30%.
- ***Strong legal & advisory team:*** Profoundly when it comes to create a JV, to wit a partnership, all the material as well as immaterial terms and conditions shall be agreed, fully comprehended by both contractual parties and included in a legal document. For that purpose, a competent legal and advisory team shall be in every case set up. Advisory team will undertake to delimit counterparties' relationship aiming the maximization of common benefit and minimization of common loss. Legal team will also undertake a demanding task given that the agreed terms must be written, complied truly with the prevailing legislative framework and presented with the highest possible clarity. In all cases both counterparties appoint their own trustworthy advisors or/and lawyers to compose the team.
- ***Aligned interests, clarified targets:*** For a partnership to be fruitful both parties shall have aligned interests and clarified targets. It is critical for a co-operation that no conflicts of interest exist but instead there is work to accomplish a

common target. If such condition cannot be fulfilled the JV is on the brink of failure.

- ***Mutual understanding of shipping's characteristics:*** Both ship-owner and PE funds shall be aware of the industry's peculiarities they intend to invest in. In fact, many PE funds involved in shipping JVs are not knowledgeable about shipping's own intricacies leading to an early disappointment stressing this way the agreement. PE Funds, comprised by professionals in seeking opportunities for realizing profits, may mainly invest in shipping due to the industry's high yield when the freight market is booming. However, neglecting shipping's volatility may turn today's smile into tomorrow's tear and PE funds shall tolerate these fluctuations and comprehend any unique characteristic if they wish their investment to end up lucrative. PE investors together with ship-owners shall be patient and ready to ride out the cycle when the circumstances allow having a specified but not very narrow investment horizon.
- ***Mutual undertaking of all risks:*** In every partnership not only shall the profits be shared but also all the risks the operation entails. PE funds bear the risk of losing their money invested in the firm and as a compensation they receive profits. Same as the ship-owner shall do. Ship-owner shall provide capital in the firm too, probably not the same amount but surely a proportion. Someone not investing capital in a firm cannot be deemed as a partner, but will only be deemed as a manager receiving management fees. Moreover, the capital contribution from both sides is not solely a matter of money but a matter of assuring that interest will maintain aligned and conflicts of interest will not arise between them. Additionally, they actually undertake all the risks mutually by investing in the firm because of the fact that both sides will strive to minimize deficiencies in operation and enhance productivity aiming to scale up their money.
- ***Predetermined duties & liabilities for each party:*** For avoiding disputes aroused by potential misunderstandings the duties and liabilities shall also be predefined and agreed. Both PE and ship-owner shall in advance clearly know what their obligations are.

- **Transparency of operations:** “In good faith” is a quote or better a principle widely used and truly governing the shipping sector. Considering that shipping is subject to English common law based on the legal precedent principle, stare decisis¹, and that existing volatility needs commerciality in operations, transactions in shipping sector need to be based in good faith. However, “in good faith” does not imply blind faith, but faith derived by sound and transparent operations and transactions between reliable parties without the need to scrutinize operations.
- **PE funds are NOT creditors:** PE funds shall not be confused with creditors. PE investors do not lend money to the company receiving interest in regular basis but they invest in the firm possessing voting & management rights, receiving dividends and claiming for the residual profits, namely net income. Consequently, Private Equity investors are not merely capital providers, facilitating the company in accomplishing its goals and having as the only cost the dividends like public common shareholders, they are company’s partners. After completing the Joint Venture (JV) the company will have to operate in a different framework and adapt any material changes if need be.

ADVANTAGES & DRAWBACKS



¹Stare decisis means “to stand by things decided” and it’s the basic principle of English common law. Cornell University Law School. "Stare Decisis definition." LII / Legal Information Institute. https://www.law.cornell.edu/wex/stare_decisis.

ADVANTAGES

Money injection: Once PE funds are involved in the shipping company, a normally large amount of money is injected so as to finance growth plans, repay indebtedness, provide liquidity and support operations.

Easier accessibility to capital & commercial markets: Apart from the capital infused, PE involvement provides easier accessibility to both capital and commercial markets by exploiting PE investment's group relationships. In most of the cases, PE funds have created a large network from affiliated companies to companies they have dealings with and influence. Therefore, by concluding a JV agreement with a PE fund a new, large and accessible network is opened to the firm.

“Social capital” exchange: By co-operating with PE investors, them being part of the Board of Directors and affecting the whole decision making of the firm, an exchange of knowledge between the counterparties takes place. This exchange, called “social exchange” in business literature, is rather beneficial for the firm as a whole because it creates a patchwork of different ideas and experiences stimulating the management to attempt looking outside of the box.

DRAWBACKS

IRR up to 15-20%: According to several announcements by PE experts, PE fund will normally require an investment's Internal Rate of Return (IRR) from at least 15 to 20%. Bearing in mind that IRR is the discount rate at which a project's Net Present Value (NPV) equals to zero, or in other words, the rate at which the expected cash inflows equal to related outflows, 15 to 20% IRR is quite high.

Exit policy at around 3-5: PE funds are not going to be firm's partners forever but for a specific time period ranging between 3 to 5 years when it comes to a short-term investment and 10-year period to a long-term investment. Given the fact that the ship-owner may not be even informed about the time the PE plans its exit, he may be exposed in harsh situations. Apart from that, shipping is by definition an unpredictable industry affected by a variety of macroeconomic factors that occur worldwide, thus many times making projections to come to nothing.

Management involvement: As it has been abovementioned, PE will actively be involved in firm's management by the time the agreement is concluded. Such an involvement in the shipping industry, which is normally governed by tradition, nepotism and intuition, may be interpreted by the ship-owner or former management merely as an intrusion and a necessary evil for remedying and growing the company. It may actually not be like this in all cases but for not translating PE involvement into invasion there shall be a careful selection of the investors participating in firm's management, strict and comprehensive setting of targets and finally friendliness and team spirit from both sides.

Profits regularity: Since many of the PE funds are publicly traded companies reporting financial statements in a quarterly basis they will usually require regularity of profits. Once again, the volatile shipping cannot generate profits every quarter but it may generate abnormal profits the 1st quarter and turn to losses the 2nd. PE funds shall be absolutely informed and ready to face such fluctuations.

Specified, measured & structured targets: PE funds, before indulging in shipping investment, already have a business plan in hand. They have their targets specified and quantified so as to regularly monitor the performance of the investment. Nevertheless, ship-owners do not usually follow a structured plan, their insight instead shows the way. Therefore, is not an easy task for ship-owners to explain every time the reason they do not want to follow a particular plan or they act alternatively from what seems to be right. Additionally, there are many factors and aspects of the shipping business that PE investors ignore and learning is a time consuming activity.

PANEL COMPANIES' FINDINGS

PE financing has been implemented in Star Bulk Carriers Corp. (SBLK). After having merged with the SPAC Star Maritime to go public, SBLK's management, Chief Executive Officer (CEO), Mr. Petros Pappas, and other founding members selected two PE funds for raising additional capital. The PE funds involved were Oaktree Capital Management and Monarch Alternative Capital L.P. having the former fund to possess the largest proportion of SBLK until today.

But who is Oaktree Capital Management LP.?

Oaktree Capital Management LP is a U.S equity giant with history in investment strategies back to 1995. Recently, it has been the largest equity investor in shipping industry involved in dry-bulk firms like Eagle Bulk (bought Eagle’s debt in the secondary loan market \$1.1b credit facility), Excel Maritime (36 ships), Ocean Bulk Shipping etc. As for the fiscal year ended 2013 its’ total asset under management (AUM) amounted \$90.8 billion raised from 77.1 billion the year before.

SBLK’s management has aimed for growth ab initio following an opportunistic, expansionary strategy and having a vision to be dry-bulk market’s leader. By looking at the below chart captured the firm’s fleet expansion, it becomes evident that for SBLK growth is the target.

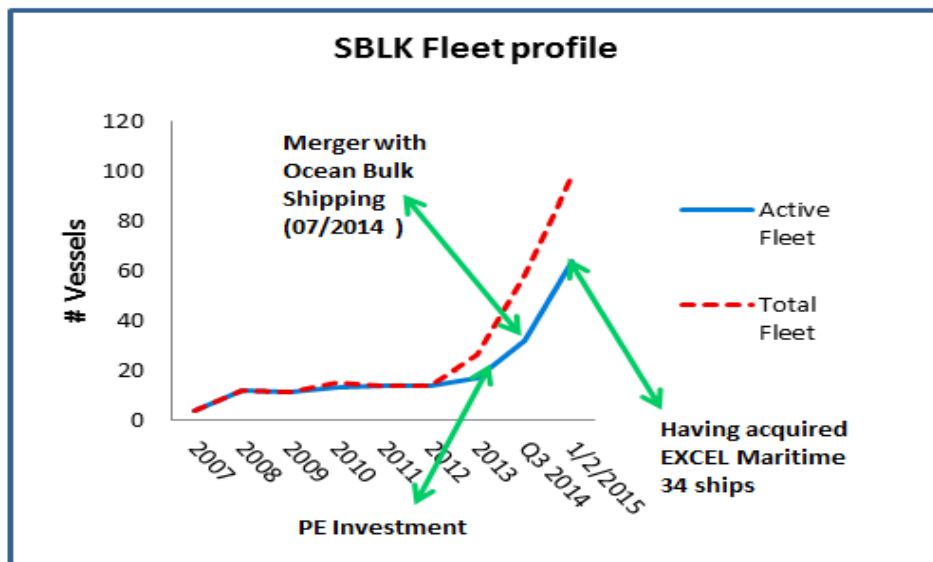


Figure 13: SBLK fleet growth pre and post PE investment

SBLK in 2012, prior invested by Oaktree Capital Management & Monarch Alternative Capital L.P, have controlled a fleet of 14 vessels while after PE funds’ investment same amounted 64 vessels, denoting a fleet’s increase of 357% in just a 2-year period (02/2013 - 02/2015). If the vessels to be delivered are added to the active fleet this will result in the total fleet or fleet fully delivered, shown with red line, and the fleet’s increase is even greater.

How this exponential growth has been achieved?

On the 3rd quarter of 2013 Oaktree Capital Management and Monarch Alternative Capital L.P invest in SBLK an aggregate amount of \$74,512,375, as reported in the annual financial statements of 2013, receiving a total of 11,934,911 shares. As for the fiscal year 2013, the company declared dividends payable to the PE investors amounting \$2,864,379 resulting in an annual yield of 3.8%. The table below shows the shares owned, the dividends paid, the amount raised and the yield received by each PE fund separately for the years 2013 and 2014. As it is clearly observed in the table, the number of shares owned by Oaktree Funds GP increased dramatically to 65,254,687 from 5,773,907 shares. This increase was not attributable to a private placement but to the merger with the Ocean Bulk Shipping on July 2014 and to the acquisition of 34 vessels previously owned by Excel Maritime.

Table 14: Reckoning the PE funds' annual dividends and yield

PE: Dividends and yield					
2013					
PRIVATE EQUITY	Annual Dividend per Share	Shares	Dividends paid	Amount raised	Yield
Oaktree Funds GP	0.24	5,773,907	1,385,738	36,047,820	3.8%
Monarch Group	0.24	6,161,004	1,478,641	38,464,555	3.8%
TOTAL		11,934,911	2,864,379	74,512,375	3.8%
2014					
Oaktree Funds GP	0.24	65,254,687	15,661,125	Stock-for-stock	
Monarch Group	0.24	6,138,943	1,473,346	Stock-for-stock	
TOTAL		71,393,629	17,134,471		

The key element in both activities constitutes Oaktree's presence. The Ocean Bulk Shipping, private company controlled by the Pappas family, has also been financed by the Oaktree fund emerging and disclosing a long-term relationship between these two investors. As for Excel Maritime, controlled previously by Mr. Panagiotidis, has currently been controlled by Oaktree again since Oaktree has acquired its vessels.

Table 15: Starbulk percentage ownership

Equity Ownership %				
	Pre PE (31/12/2012)	Post PE (31/12/2013)	Merger with Ocean Bulk (07/14)	Excel Maritime vessels' acquisition (Q32014)
Pappas Investors	4.1%	3.3%	12.5%	9.3%
Directors	1.7%	0.8%	0.6%	0.5%
Public	94.2%	54.8%	25.6%	27.4%
PE	0.0%	41.1%	61.3%	62.8%
Total	100.0%	100.0%	100.0%	100.0%

Observing the variation in SBLK’s equity ownership occurred from fiscal year 2013 to the 3rd quarter of 2014, the PE ownership has increased from the initial 41.1% after the agreement to 61.3% after the merger’s completion and to 62.8% after the Excel maritime vessels’ acquisition. Apparently, from 2013 onwards Oaktree fund stands as the major shareholder and Pappas family maintain an average 10% of SBLK’s share capital.

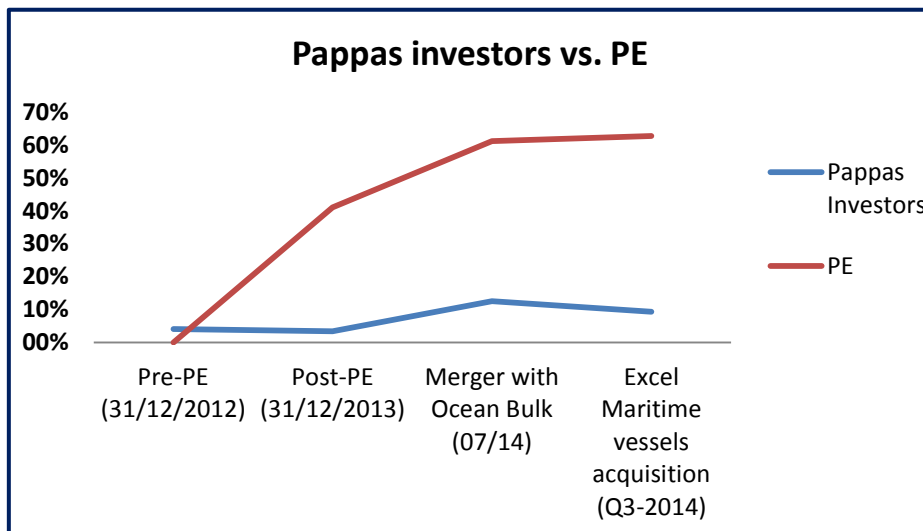


Figure 14: Pappas investors and PE ownership evolution

CONCLUSIONS

Although it is a fresh Joint Venture, counting only 2 years from the completion of the agreement until the examined time span, some conclusions have sprung to mind based mainly on some terms and on the unaudited core financial data of the company released at the 4th quarter of 2014.

Table 16: Starbulk 4Q 2014 unaudited main financial data

	December 31, 2013	September 30 2014	% change
Cash & restricted cash	44,298	96,104	117%
Advances for vessels' acquisitions	67,932	391,908	477%
Vessels	326,674	1,080,334	231%
Total Fixed assets	394,606	1,472,242	273%
Total Debt	190,334	576,255	203%
Net Debt	146,036	480,151	229%
Equity	266,106	1,010,315	280%
D/E	71.53%	57.04%	20%
Total Debt to Capitalization	28.91%	26.07%	10%
Capital Invested	456,640	1,570,880	244%
Revenues	68,296	79,541	16%
EBITDA	24,495	20,996	14%
Net income	1,850	3,649	297%
Net Cash Flow	17,911	16,861	6%

ALL IN FAVOR

Leverage improvement from equity's proportion increase: With the money injection from the PE investors and the correspondingly increase of equity capital, SBLK has improved its leverage resulting in a D/E ratio of 57.04% from a 71.53% prior to the PE JV. Given the fact that SBLK net debt has also increased by approximately 229% after the merger with the Ocean Bulk Shipping, it really seems to be an important improvement witnessing a greater amount of equity capital than debt capital.

Economy of scale achieved: By growing the company and increasing its fleet SBLK achieves economy of scale enjoying its benefits such as lower total cost per transported cargo unit. The absorption of Ocean Bulk Shipping and Excel Maritime fleets together with the contracts for newbuilding vessels have led SBLK's total fixed assets to increase by 273% from \$395 million to \$1.5 billion. Worth noticing that vessel's advances have raised immensely at approximately 477% indicating a new era for SBLK, an opportunistic, expansionary and developing period.

Accessibility to capital markets: Oaktree Capital Management undeniable wide range of transactions and acquaintances paves the way for entering and utilizing effectively the capital market's benefits.

Blue chip Partner, appear to be knowledgeable about Shipping's peculiarities: Both Monarch Group and Oaktree Funds consist blue chip partners with an immense aggregate of assets under management (AUM) and very well reputation, being able to build relationships and maintain top-tier stakeholders. Apart from that, particularly Oaktree Capital Management widely spread and long-term involvement in shipping industry indicates knowledge for shipping markets' and operations. This feature seems to be rather valuable in a PE JV considering shipping's inherent oddity and intricacy.

Merger with a firm controlled by both founder's family & Oaktree: Oaktree fund is neither unknown nor new partners for the Pappas family, SBLK's founders. In fact, Pappas family has been co-operating with Oaktree fund for a long time in Ocean Bulk Shipping, the family's private company. Therefore, by merging with Ocean Bulk Shipping a long partnership between Oaktree and Pappas' family has been unveiled. This strategic movement has enabled SBLK to grow by acquiring a fleet comprised of already known, operational wise, vessels and to operate effectively through an already well-established partnership. Additionally, Ocean Bulk Shipping through this merger can enter indirectly into equity capital markets and reap their benefits.

Reinforced liquidity: Undoubtedly, PE capital has reinforced SBLK's liquidity using the capital invested not only for growing plans but also for supporting the day-to-day obligations and operations.

Mutuality of risk: Not only have the PE fund invested capital but also the Pappas family. By both partners' engagement in company's equity capital and risk of

investment, even with different proportion, they have aligned interest due to the mutual risk they bear.

SOME CONCERNS

- ***P.E Dominance in capital share:*** Having exceeding of 60% of equity ownership, PE funds do dominate in SBLK's equity capital. Having such great proportion of common equity capital shares may pose serious threats regarding company's management and control. Despite the limit set in PE shares' voting power, not to exceed 30%, this PE's dominance in capital share may jeopardize company's control if certain circumstances take place. An approximately 50% of equity capital ownership would be a more sound choice.
- ***Management penetration:*** By having 3 out of 9 members of BoD nominated by PE, SBLK's management and decision-making policy have been influenced at a great extent by PE funds. This shall not be deemed as a by definition drawback for the company but this penetration in management shall be treated with the outmost diligence so as to create a management team operating efficiently and addressing immense challenges effectively. In case no smooth collaboration between partners is achieved, then the adverse effects for the company will be significant and numerous.
- ***Unknown required IRR:*** Due to lack of internal information, the IRR required by the PE funds is unknown and the 15 to 20% usually required is not as sufficient grounds to extract conclusions about this JV and to decide whether the PE involvement is for the benefit of all SBLK's shareholders or for PE investors only.
- ***Unknown exit policy and horizon of investment:*** Once again, there was no such information available during the conduction of this thesis making the JV's assessment not easy. After examining the co-operation though, it appears that the investment is for a greater time span than 3 to 5 years. Additionally, having not known how the PE funds will plan to leave SBLK the assessment is becoming even tougher.
- ***Threat of diseconomies of scale:*** By economic theory when the volume of operations or the size of a company grows the cost per unit decreases but this

happens up to a certain point. After this point, an increase in volume of production or services result in higher cost per unit due to the formation of diseconomies of scale. Although the point that diseconomy of scale is formed is not specific, the exponential growth in fleet and operations that SBLK has experienced since 2013 may cause threats to rise on whether this growth will continue to result in lower cost per unit or the benefits will turn to drawbacks.

To recapitulate, the long-term cooperation and synergy between PE funds and company's founders seemed to be concluding for mutual benefit but the immense divergence in capital invested along with the fleet's growth jumped sky high are factors investors should be aware of! *Can the company cater to the needs of the new, developed SBLK with such increased fleet?*

PART TWO

Having presented the most commonly used ship-financing methods together with their application in the group of the dry-bulk companies it is essential to follow with a corporate based analysis. In essence, this part is engaged in the pursuit of the outcome that several financial decisions have brought to the companies. Commencing from a piece-to-piece analysis, this thesis is about to conclude with a general review of all types, together composing each company's capital structure. Particularly, the main financial ratios, the Weighted Average Cost of Capital (WACC), the dividend policy and the Economic Value Added (EVA) of each panel company have been computed in order to examine the impact of the different financial management. What was the performance of these companies through the years traded publicly? Has the optimal capital structure been achieved? These are some of the queries this thesis is seeking an answer for.

PANEL COMPANIES' CAPITAL STRUCTURE

Each company of the group has different types of capital employed creating a different capital structure evolving during the examined time span. This capital structure differentiation lies on multiple factors such as future growth plans, management decisions, company's creditability, current shipping market's condition, existing interest rates etc. In fact, there is no focus on what were the reasons leading each company to its current capital structure, however they will be mentioned, but on whether this capital structure accommodates each company's needs bringing the maximum benefit with the least cost. Notice that cost refers to both money and loss of flexibility terms.

- Star Bulk Carriers Corp. (SBLK)

SBLK has only employed bank lending and equity for financing its operations the years from 2008 through 2013. The pies below show SBLK's capital structure for the years 2008 and 2013, the differentiation lies in the 20% increase of debt or loans outstanding appearing in 2013 while the almost 47% decrease in total capital is mainly attributable to a fleet's impairment loss of approximately \$ 303 million taken place in 2012.

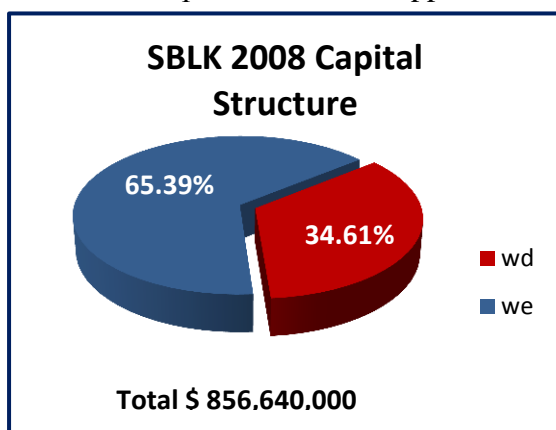


Figure 15: Starbulk capital structure in 2008

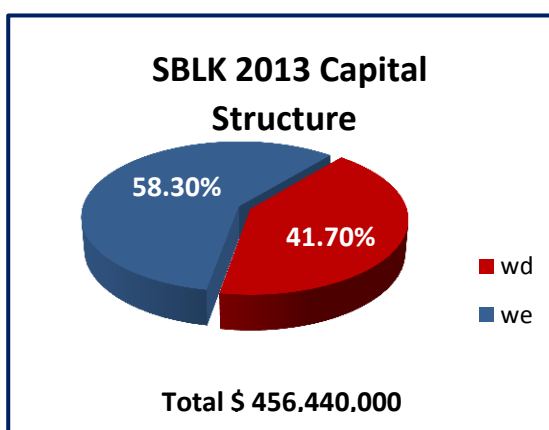


Figure 16: Starbulk capital structure in 2013

This impairment loss was recognized due to the expensive vessels acquired in 2007's bull dry-bulk market and according to the US GAAP regulations of reporting such loss in assets' value.¹ Although it cannot be observed in the pies, SBLK has altered

¹According to paragraphs 1.123-1.127 and especially 1.125 as the report "Comparable Study on Accounting Policies & KPIs in the Shipping Industry" issued in 2012 by "Moore Stephens | Chartered Accountants of Singapore indicates.

substantially its financing by introducing in its equity capital Private Equity funds like the Oaktree. By funding through PE its capital structure does not alter due to the fact that PE funds are considered equity capital but significant variations are made in company's management, control and therefore operations. The cost of equity is not actually the same as public common shareholders owning that to the increased yield or Internal Rate of Return (IRR) PE usually requires. This cost cannot be incorporated in the present thesis yet is undisclosed.

As for the strategy followed, SBLK remains to operate purely in the dry-bulk shipping sector having neither differentiation nor vertical integration strategy but wishing to become the leader of this market. For accomplishing this goal, SBLK keeps an *expansive policy* by exploiting every single potential opportunity and by *combining vessels' operation with asset-play*. *Horizontal integration* is the strategy that suits SBLK better as the merger with Ocean Bulk Shipping, a private company operating exactly in the same sector, indicates. By following horizontal integration, SBLK wants to develop and achieve economies of scale and enjoy their benefits, like reducing the company's marginal cost, increasing its market share and exchanging knowledge and know-how.

- Diana Shipping Inc. (DSX)

iana Shipping has not haphazardly been put second in the group's capital structure analysis but due to the similarities appearing in the types of capital used. As the pies below show, DSX has only been financed from commercial lending and common equity capital, like SBLK, but in its case there is no hidden PE in its equity capital. From 2008 to 2013, DSX has increased slightly, by **9%**, its debt weight while its total invested capital has also **increased by 66%**! Hence, the total capital's increase derives mainly from equity capital not from bank lending.

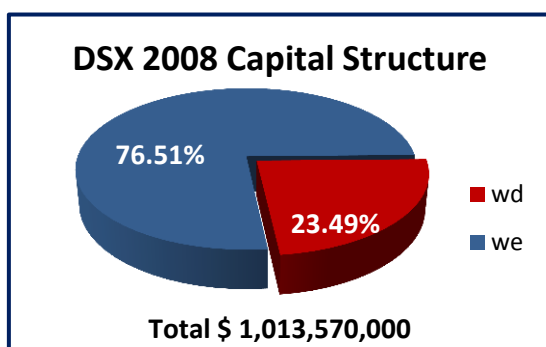


Figure 17: DSX capital structure in 2008

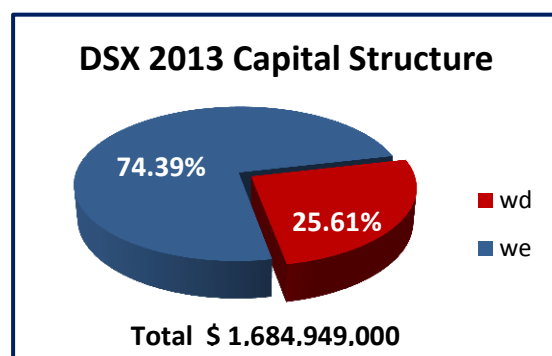


Figure 18: DSX capital structure in 2013

DSX has been operating a purely dry-bulk fleet but it has been following no strategy that differentiates its activities and, in contrast to SBLK, it has not shown an expansive attitude so far. DSX tends to be a rather *conservative* company gauging all its options along with their potential outcome before acting, without this meaning though that DSX will ignore a great opportunity that may arise. One-step by the time and pay attention to detail seem to outline Diana Shipping’s strategy.

- Dryships Inc. (DRYS)

Dryships distincts from the abovementioned companies regarding both its capital structure evolution taken place the examined years (2008-2013) and the activities engaged with. From a DRYS of 2008 financed solely by banks and common equity capital, appears DRYS of 2013 having including in its capital sources convertible bonds, secured and unsecured bonds. Therefore DRYS has not only incorporated other forms of debt financing but also has used mezzanine financing. DRYS total invested capital has exponentially increased by 335% while its weight of common equity has decreased by 32%. Hence, the new capital was, mainly, neither raised through follow-on offerings nor by banks but by bonds and convertibles issued. The 21.28% aggregate weight of the new financing forms added is more expensive compared with debt and common equity capital augmenting DRYS total cost of financing. But why all this money needed?

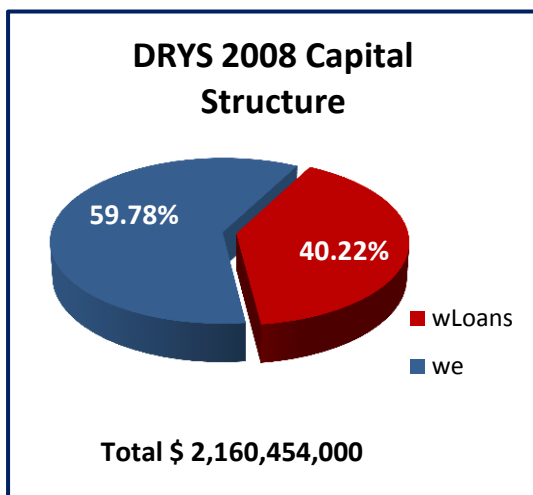


Figure 19: DRYS capital structure in 2008

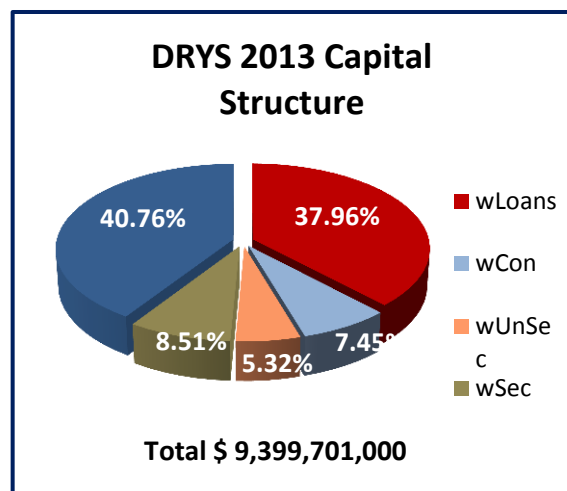


Figure 20: DRYS capital structure in 2013

DRYS in late 2007 it embarked on drilling operations by purchasing 2 drillrigs and 2 drillships, the 4 so called drilling units willing to differentiate its source of revenues and

diversify its risk. For that particular purpose the major shareholders of DRYS set up a separate entity responsible for drilling units operation the “Ocean Rig” controlled by DRYS and consolidated in its financial statements. In 2011 DRYS through Ocean Rig purchased another 2 drillships resulting in a sum of 6 drilling units. The immense capital increase was not only attributable to the drilling units’ purchase but also to the coexistence of increased financial expenses and decreased revenues generated by the company’s dry-bulk fleet. To support all of its operations and repay or refinance its indebtedness DRYS issued convertible bonds in 2008, unsecured in 2011 and secured bonds in 2013. As for its preferred stock, been issued in 2009, was mainly purchased by DRYS Chief Executive Officer Mr. Economou and kept until early 2011.

Profoundly, DRYS has followed a *differentiation strategy* desiring, as aforementioned, to *diversify its risk* and *differentiate its source of income*. Indeed, commencing drilling operations in 2007 DRYS had a revenues’ blend of 79.7% generated by dry-bulk segment and 20.3% by drilling segment. One year later, in 2008 dry-bulk and drilling operations amounted 54.2% and 45.8% of total revenues respectively while same in 2013 were 12.8% and 79.1% !

As illustrated in the figures, drilling operations have been year to year absorbing greater proportion of DRYS total revenues justifying DRYS’ decision to enter in a new market from the outset. Being an advocate of differentiation strategy, DRYS has also penetrated in the tanker segment without having though a significant contribution in revenues yet. Tanker’s contribution in 2013 was 8.1%.

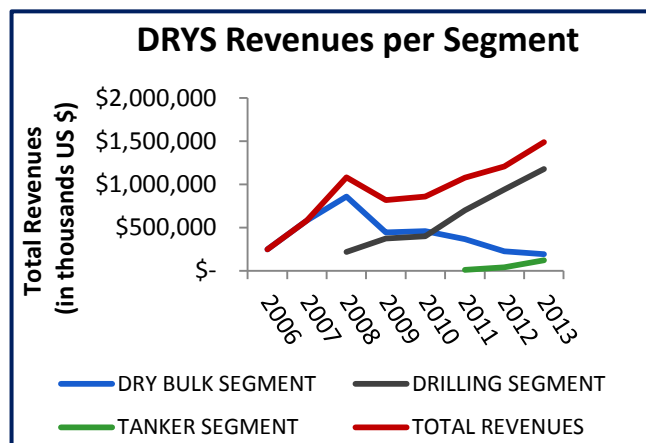


Figure 22: Dryships revenues breakdown

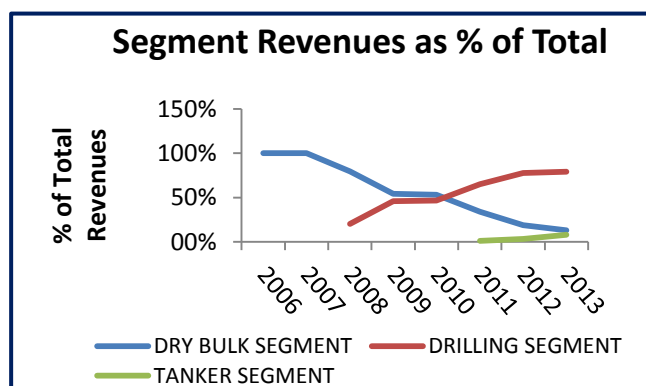


Figure 21: Dryships percentage of revenues for each segment

By looking at the 2nd chart showing each segment’s contribution in thousands US dollars, it is evident that DRYS revenues’ uprising is attributable to the drilling operations.

- *Navios Maritime Holdings Inc. (NM)*

Navios Maritime Holdings, the last company included in the group, resembles to Dryships at the extent that both have not depended solely on bank lending and common equity capital but they have also employed other forms of funding to finance their operations. NM was the first company of the group to issue bonds, the so called “2014 Notes”, senior unsecured, issued on 1st of December 2006 with maturity date in 2014 and for \$300 million amount. The company’s capital structure, depicted by the below pies have evolved from 2008 through 2013 substantially.

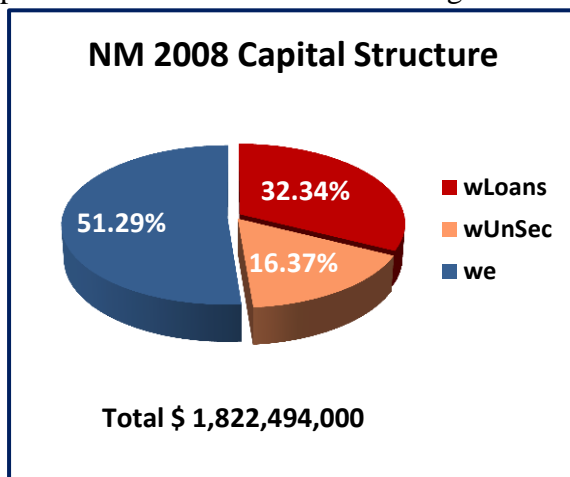


Figure 23: NM capital structure in 2008

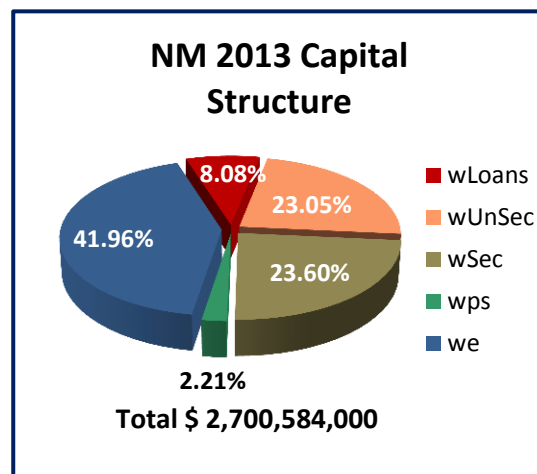


Figure 24: NM capital structure in 2013

NM’s capital structure back to 2008 was 48.71% leveraged capital consisting of loans and unsecured bonds and 51.29% common equity capital while in 2013 debt financing was 55.83%, common equity capital was 41.96% and mezzanine financing having the form of preferred stock was 2.21%. NM’s total invested capital has increased by 48.2% in order to acquire more vessels and support its operations overall. The significant changes made in NM’s capital structure though, were the loans proportion’s shrinking from 32.34% in 2008 to just 8.08% in 2013, with the subsequent filling of this financial gap with the increase of bonds’ proportion from 16.37% in 2008 to 46.65% in 2013, and the insertion of mezzanine financing. Undoubtedly NM has tapped into both equity and debt capital markets being a reputable firm which attracts investors’ interest but

whether this “capital patchwork” is really serving its needs it remains to be proven. Considering that the 46.65% bonds’ proportion bears an average “blended” interest rate of 7.38% and the preferred stock’s return a 3.02%, some concerns are arising for the increased cost of NM’s financing. However, by comparing the 2013 bonds’ financing cost with that of 2008 an improvement has taken place. NM’s bonds’ cost has decreased 22.36% from the average “blended” rate of 9.5% to 7.38% verifying the company’s good relationship with the capital markets. Despite bonds’ lower rate though, the significant increase of bonds’ proportion seems to revert the situation leading to a weighted bonds’ financing cost increase of 54.79% according to 1.56% and 3.44% weighted bonds’ rate in 2008 and 2013 respectively, the so called in the Excel document “WACC’s bond component”.

Regarding NM’s strategy, it has been following *vertical intergration* during, so far, all its public life by being also involved in logistics sector. By owning a port, tug boats, burges and logistics operations in general in South America has achieved apart from generating extra revenues to facilitate its operations and simultaneously reduce its cost. Vertical integration does not constitute the only strategy NM has been following because apart from the logistics sector it has also been actively involved in tanker’s market since 2011, thus following *differentiation strategy*. Worth saying that Navios Group controls and has interest also in other companies operating in different shipping segments like containers etc. but in the present thesis the companies consolidated in the Navios Maritime Holdings Inc. financial statements have only been examined, which are Navios Maritime Holdings and South American Logistics.

KEY FINANCIAL RATIOS

This chapter focuses on monitoring and commenting on the panel companies' main financial ratios so as their performance, profitability, liquidity and solvency to be assessed. Indeed, before proceeding to the calculation of their Weighted Average Cost of Capital (WACC) a reference to them is crucial on the grounds that the level of every single rate composing WACC has been determined based on all, or some, of these ratios and on the companies' overall financial position.

PERFORMANCE INDICATORS

Revenues, Earnings Before Interests Taxes Depreciation and Amortization (EBITDA), Net Cash Flow and Net Income are the first indicators to be presented in order to observe the panel companies' performance over the examined time span. From the all-inclusive Revenues amount, every company's income statement ends up with the residual net income addressed, eventually, to shareholders. The Net Cash flow indicator, is actually the Net income having added back all the non-cash items previously extracted. Depreciation and amortization expenses along with the assets' impairment cost, if incurred, constitute the biggest non-cash amounts. In capital-intensive industries as shipping, these non-cash items if added to the net income can generate a positive net cash flow from a negative net income. The charts have all been put together facilitating

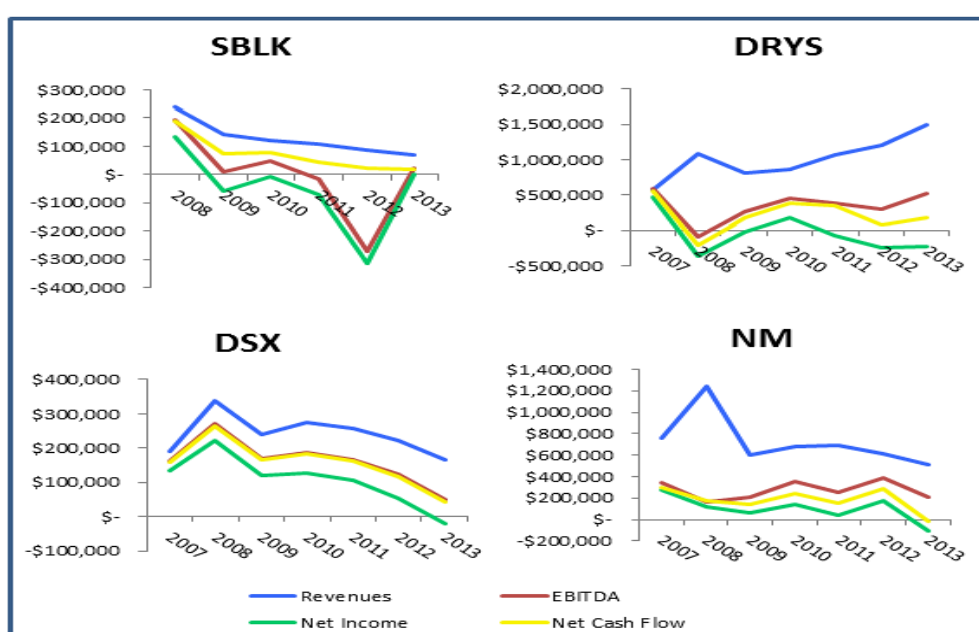


Figure 25: Panel companies key performance indicators

the comparison from a both intra-company and inter-company standpoint.

In sake of more meaningful comparison SBLK, DSX and DRYS, NM will be analyzed separately due to their large differentiation in revenues' generation.

SBLK-DSX

Despite following different strategic plans, with the PE involvement in SBLK to be the major one, these companies are operating purely in the dry-bulk sector generating similar, more or less, turnover. As it is apparent in their corresponding charts, during the years 2008 to 2013 DSX has performed much better reporting losses only in 2013 fiscal year. This though was not the case for SBLK. At this point, it would be interesting to look at both the EBITDA and net cash flow of SBLK. While EBITDA has dropped in many of the examined years drifting net income to plunge into losses, net cash flow has maintained positive for all years. Consequently, the reported losses were not a matter of increased operational expenses, neither of high financial costs, but were, indeed, a matter of inflated depreciation and amortization expenses and immense fleet's impairment losses recorded in 2012. This witness the high vessels' value purchased when SBLK entered the bull market of 2007. On the opposite, DSX has not reported for any fiscal year impairment of its fleet since the vessels have been purchased at normal prices. Moreover, no abnormal depreciation and amortization costs have incurred leading the net cash flow to coincide with EBITDA and all indicators to denote a smooth and relatively stable performance attempting to overcome the shipping market's downturn.

DRYS-NM

Having both been operating also in markets other than the dry-bulk, generating a turnover almost 4 times that of SBLK or DSX, DRYS and NM are a separate instance. DRYS, despite having realized growth in its revenues mainly attributable to its drilling segment, seems like struggling to maintain its net income positive without though achieving it in most of the years. While no significant impairment has taken place in its fleet, the losses reported are attributed to the coexistence of increased depreciation costs and high financial expenses. On the other hand, NM has kept its revenues moderate with respect to the bear shipping market, maintaining its depreciation and financial costs

at normal levels. In both corporations, a restraint in operational expenses would be advantageous.

PROFITABILITY RATIOS

A major issue the management and investors of a company are concerned about is how much the return generating from operations is in relation to core balance sheet items. Return on Invested Capital (ROIC), Return on Assets (ROA), the so-called DuPont formula, and Return on Equity (ROE) constitute some of the most widely used ratios that indicate a company's return on its invested capital, assets' value and equity capital respectively. To get an accurate judgement about whether a company generates return over these items a comparison with the corresponding average ratio of the industry operating in shall be made, ROA in shipping is a rather dysfunctional ratio due to the industry's capital intensity that drops ROA of almost all companies far below unit whenever it is computed. ROIC has been calculated by dividing each firm's NOPAT¹, which in most shipping companies coincides with EBIT lacked of taxation, with the invested capital. Another quite important ratio in this category indicating the margin of profits with which a firm operates is the Return on Sales (ROS) or else the profit margin. As lower the firm's operating expenses are, that greater its profit margin will be. Profit margin, if calculated in a shipping firm for some years in a row it will

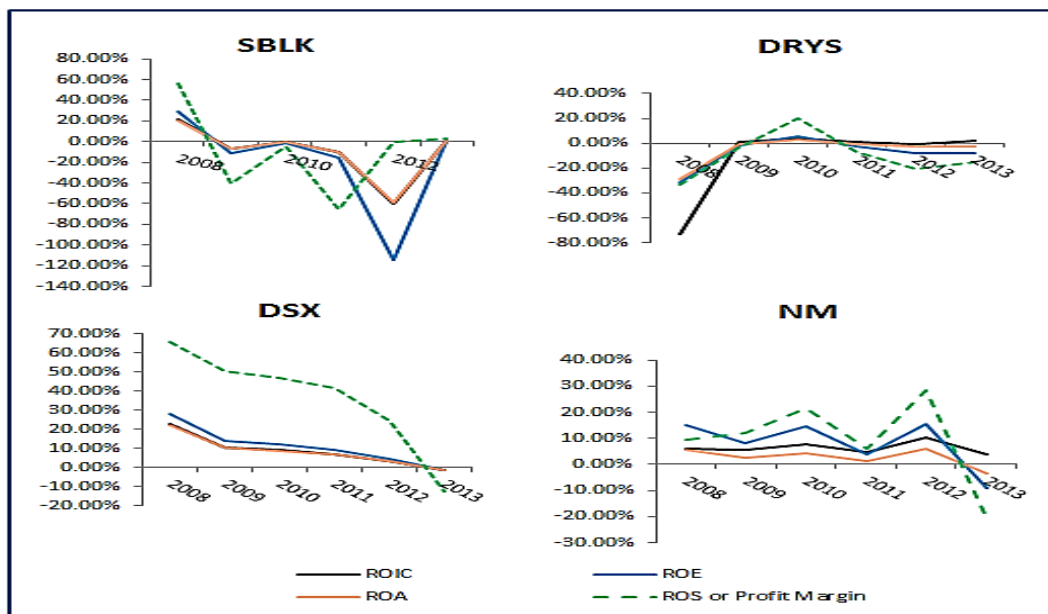


Figure 26: Panel companies main profitability ratios

¹ NOPAT: Net Operating Profit After Tax= EBIT *(1-tax rate)

probably resemble a cardiogram in fluctuations just as revenues do.

SBLK

All SBLK's profitability ratios have turned negative for the majority of years except for 2008 and 2013 witnessing that the company has experienced from its early stage of growth a just one-year bull dry-bulk market with inflated revenues and vessels value and a bear dry-bulk market with collapsed freight rates and revenues prevailing as for the time being. These negative ratios were not surprising at all considering the firm's net losses. For clarity purposes and better comprehension of the SBLK' graph, its profit margin (ROS) for 2012 has been omitted due to its extreme price of -365.00%.

DRYS

DRYS has also faced such a poor performance in terms of profitability with all relative ratios to be negative apart from them of 2010 and the ROIC as for 2009, 2010, 2011 and 2013. ROIC positive income is due to EBIT numerator instead of net income, which has switched to net loss mainly because of the increased interest payments. As for the ROIC's plunge into negative value of -73.30% in 2008, it was an outcome of the approximately -241 million USD EBIT the company had experienced that year. This negative EBIT is mainly attributable to the coexistence of the DRYS' entry in the drilling sector triggering higher operating expenses, the double depreciation and amortization costs, the -208 million USD loss on interest rate swaps and the almost doubled interest and finance cost. The immense increase in DRYS borrowings is mainly due to the capital needed for Ocean Rig, its drilling company, and not for Dryships, as it can clearly be observed in the graph. The revenues' generation of the drilling sector though the next years, has offset the increased operating expenses of that particular segment making it the DRYS' main source of income during the bear dry-bulk market.

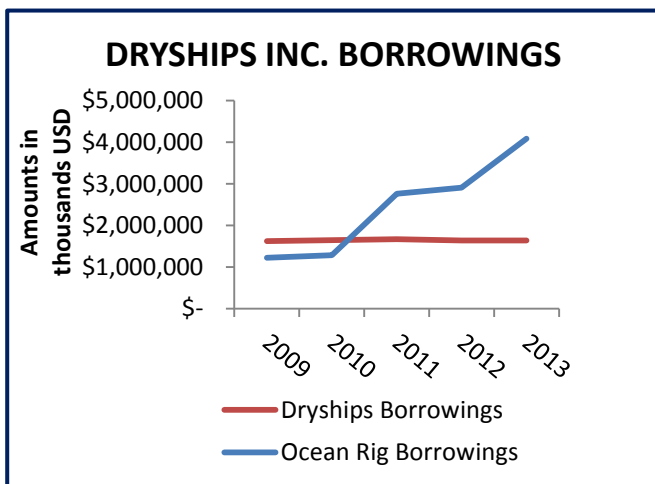


Figure 27: DRYS borrowings evolution

DSX

Profitability ratios indicate the most profitable company among those analyzed to be DSX. All ratios not only are positive, but also at very good levels with the only exception to be in 2013, a bad year for DSX. The company's strategic decisions have led to such encouraging signs of company's future growth and sustainability. Particularly, operating purely in the dry-bulk sector, keeping up leverage at low levels with low interest expenses entailed, chartering out its greater portion of fleet with time-charter period contracts leaving few vessels on the spot market and to follow a conservative policy regarding fleet's growth during recession years were some of the decisions affected positively the company.

NM

Profitability ratios for NM denote that the company, compared to its peers, has been doing well the period from 2008 through 2013. Although NM's profitability was not lying at the high levels of DSX, with a ROIC of 8.46%, a ROE of 15.21%, a ROS of 13.95% and a ROA of 5.23%, all in average values, it seems that the firm has managed to resist the market's low freight rates.

Table 17: Panel companies profitability ratios data

PROFITABILITY RATIOS						
	2008	2009	2010	2011	2012	2013
SBLK						
ROIC	20.87%	-7.16%	-0.71%	-9.98%	-60.40%	0.46%
ROA	20.65%	-7.07%	-0.70%	-9.79%	-58.64%	0.45%
ROE	28.60%	-11.00%	-1.00%	-15.10%	-114.20%	1.00%
ROS	56.00%	-41.00%	-4.20%	-65.00%	-365.00%	2.60%
DRYS						
ROIC	-73.30%	1.33%	3.79%	1.32%	-0.46%	1.73%
ROA	-28.69%	-0.75%	2.70%	-0.96%	-2.82%	-2.35%

ROE	-31.25%	-1.30%	5.69%	-2.33%	-8.24%	-8.17%
ROS	-33.48%	-3.26%	20.07%	-6.92%	-20.39%	-14.96%
DSX						
ROIC	22.62%	10.43%	9.03%	6.84%	3.30%	-1.24%
ROA	22.15%	10.22%	8.86%	6.74%	3.26%	-1.23%
ROV	24.26%	12.53%	12.03%	9.74%	4.84%	-1.68%
ROE	28.15%	13.69%	12.09%	9.19%	4.41%	-1.68%
ROS	65.71%	50.76%	46.75%	41.86%	24.48%	-12.89%
NM						
ROIC	5.85%	5.42%	7.83%	4.60%	10.13%	3.86%
ROA	5.70%	2.70%	4.40%	1.30%	6.00%	-3.60%
ROV	86.10%	27.3%	26.50%	7.00%	49.30%	0.00%
ROE	15.30%	8.20%	14.60%	3.90%	15.50%	-9.30%
ROS	9.70%	11.90%	21.40%	6.00%	28.50%	-20.60%

LIQUIDITY RATIOS

Needless to say that liquidity is of quite significance for a company in order to finance its day-to-day operations as well as to pay its current debt obligations. This ability is disclosed by the current ratio which actual is a simple division of the current assets with the current liabilities. Hence, a current ratio of one (1) or above implies that the company does have the ability to meet its current obligations. Wishing to know if same is possible more quickly, to wit, by using only the company's most liquid assets, cash and cash equivalents together with accounts receivables, the quick asset ratio is computed instead. Again, the above one outcome is the most preferable. Other liquidity ratios like the Accounts Receivable Turnover (ART), the Inventory Turnover (IT) and the Days of Sales Outstanding (DSO), have not been incorporated in the present chapter, though reckoned, given that this thesis concentrates more in financial than operational issues.

How is the liquidity position of the companies examined? Can their current assets finance their corresponding current liabilities? By observing the charts below almost all panel companies appear a satisfactory liquidity position maintaining both current and quick asset ratios above the unit, except for DRYS which in almost all years its current assets did not exceed its current liabilities.

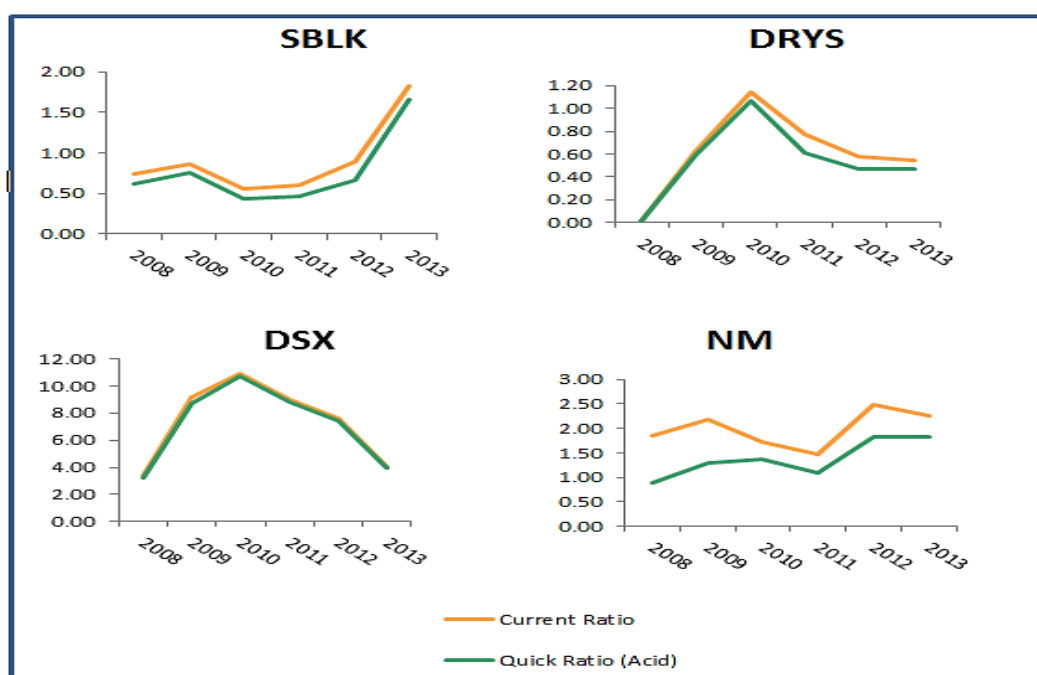


Figure 28: Panel companies main liquidity ratios

The most interesting part though in the charts seems to be the trend that these ratios follow. Indeed, the level of cash a firm tends to retain as well as the level of other current assets are managerial decisions depending on its short-term needs and strategic plans. For instance, when the cash are accumulating during some fiscal years it is highly likely that the company plans to acquire a vessel, vessels or even a company. Over the selected time span, DSX and DRYS have decreased their liquidity while SBLK tries to increase it and NM to keep it as a safe buffer in somewhere near 1.5. In more detail, DSX has the highest liquidity of all companies in the sample reaching to be its current assets 10 times its current liabilities. Therefore, given that no growth plans explaining this accumulation have revealed, it has tended to decrease its current assets at a more normalize levels. Same has not probably occurred in DRYS, as the diminishing liquidity ratios seem not to be a deliberate action but an outcome of having to repay obligations. As for SBLK, from the 2010 fiscal year has been building up its liquid items evincing that future plans are about to be materialized. Lastly, NM, as it has been abovementioned, seeks to have its liquidity position at normal, viable degree. So far, no distinction has taken place between these two ratios but instead they are treated as one, referring to the firm's liquidity position in general. This has not been done haphazardly but on the grounds that the current assets in the majority of shipping companies consist mostly of the cash and cash equivalents, accounts receivables while the inventory is almost lacking. A fact that is clearly noticeable from the almost tangential lines.

SOLVENCY RATIOS

The level of debt in a company's capital structure plays crucial role in its future growth as well as its performance in general. Bear in mind that every single capital provider requires a solvent borrower, one who is able to make its interest payments and to repay at the end its indebtedness. A highly leveraged company may cause serious implications to its operations, growth plans and market capitalization. The large interest payments that a firm will be obliged to pay to its debtors will increase the risk of a payment default and for this, the banks may require higher interest rates, more collaterals or they may not even grant a loan in the future. From the shareholders' side, apart from the increased firm's default risk, there is also the risk of not being paid any dividends, which arise concerns to shareholders and lead the firm's stock price to drop. Therefore, the proportion of debt in the total invested capital is of critical importance affecting either positively or negative the company from both creditor's and shareholders' side. The main ratios for comprehensively understanding a firm's leverage and credibility are the Debt to Equity (D/E), the two capitalization ratios (long-term debt to total capitalization, total debt to total capitalization), the coverage ratio and the debt to assets ratio (D/A) which in case of shipping is better be adjusted to debt to vessels (D/V).

The long-term debt to capitalization ratio is a rather useful indicator showing how much long-term debt has been employed from the total capital to finance the firm's operations. Although in finance bibliography the principle of matching the short-term investments, like the working capital, with short-term borrowings is the most widely spread, financing the vast majority of investments even a proportion of working capital with long-term debt has gained ground. Indeed, as it is apparent in the charts, in all panel companies the two capitalization ratios almost coincide claiming that the long-term debt absorbs almost all the total capital employed. The coverage ratio, which is the division of a firm's operating cash flow with its total debt outstanding in a specific period of time, denotes how much debt can be paid from the firm's annual operating cash flows.

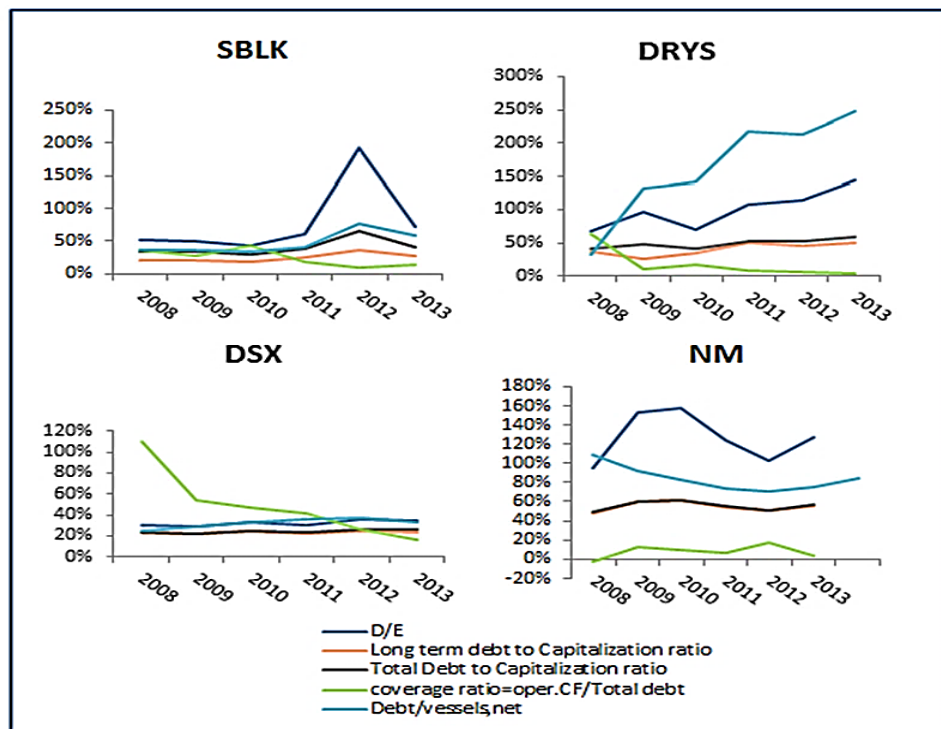


Figure 29: Panel companies main solvency ratios

SBLK-DSX

Long-term debt to capitalization, debt to capitalization, debt to vessels and debt to equity have all been following a rather stable course in both SBLK and DSX. The spike observed in D/E of SBLK in 2012 shall not arise concerns since it is not a matter of debt increase, which in fact had been reduced that year, but a matter of retained earnings' cut of -314,521 thousands USD that lead to a diminishing of equity (-404,254 thousands USD). This cut was mainly attributable to the 303,219 thousands USD of impairment loss recorded driving SBLK net income to plummet into losses. Although they both follow a stable financial policy, SBLK and DSX have financed their fleet with a different proportion of debt and equity. Indeed, as for SBLK, the average D/E and D/V stands at 55% and 47% respectively while the same for DSX is 32% for both ratios. Regarding the coverage ratio, DSX can service much better its debt obligations since it can cover, on an average basis, its 49% of total debt outstanding with its yearly cash flow from operations while SBLK ability stands at 18%.

DRYS-NM

Regarding coverage ratios, in DRYS and NM are more or less similar standing approximately at an average of 8% of debt outstanding being able to be covered by their annual operating cash flows. Total debt to capitalization for DRYS is 49% while for NM 56% and almost all debt capital borrowed on the long-term leading the corresponding lines to almost coincide for both companies. D/E of DRYS has been experiencing an upward trend since 2010 while same of NM has been swinging between reduction and rise with the debt proportion kept though at higher levels than DRYS. The eye-catching difference of these two graphs is regarding the D/V ratio, which in DRYS has been jumping sky high since 2009 reaching its highest of 248%! in 2013, while NM has been trying to maintain a stable, if not downward, trend with an average of 84% of its fleet financed via debt capital.

Table 18: Panel companies main solvency ratios (data)

SOLVENCY RATIOS						
	2008	2009	2010	2011	2012	2013
SBLK						
D/E	53%	50%	42%	61%	192%	72%
Debt/Vessels, net	36%	37%	34%	42%	77%	58%
Long-term debt to Capitalization	22%	20%	20%	24%	36%	27%
Total debt to capitalization	35%	33%	30%	38%	66%	42%
Coverage ratio	37%	27%	43%	19%	8%	14%
DRYS						
D/E	67%	95%	70%	108%	113%	145%
Debt/Vessels, net	32%	130%	142%	217%	213%	248%
Long-term to capitalization	38%	26%	34%	49%	46%	50%
Total debt to capitalization	40%	49%	41%	52%	53%	59%
Coverage ratio	62%	11%	18%	8%	5%	4%
DSX						
D/E	31%	28%	33%	31%	36%	34%

Debt/Vessels,net	25%	29%	33%	36%	38%	33%
Long-term debt to capitalization	23%	22%	25%	22%	25%	23%
Total debt to capitalization	23%	22%	25%	24%	27%	26%
Coverage ratio	110%	54%	46%	41%	26%	16%
NM						
D/E	95%	153%	158%	124%	103%	127%
Debt/Vessels,net	108%	93%	83%	74%	70%	76%
Long-term debt to capitalization	48%	60%	61%	54%	50%	56%
Total debt to capitalization	49%	60%	62%	56%	51%	56%
Coverage ratio	-3%	13%	9%	7%	17%	4%

In every case, the debtor or the investor seeks to know whether the firm will be able to meet its financial obligations during a specific time span. Two ratios have come to answer this question, being in the category of coverage ratios, the Times Interest Earned (TIE) and the EBITDA to interest expenses. This category also includes the coverage ratio with the operating cash flow nominator analyzed and illustrated in the above group of charts due to its difference in scale. In essence, these ratios are quite similar given that their only difference is the fraction's nominator, which in TIE is not the firm's EBITDA but EBIT. By using EBIT, the depreciation and amortization expenses have been abstracted from the operating income giving a clear insight of whether the company in a fiscal year, 6-month period or quarter has "earned" its interests payable and how many times. In shipping though, where the non-cash depreciation and amortization expenses constitute quite significant amounts, the EBITDA to interest expenses ratio is quite popular. The charts below, figure 29, illustrate the ability each examined firm has to pay interests.

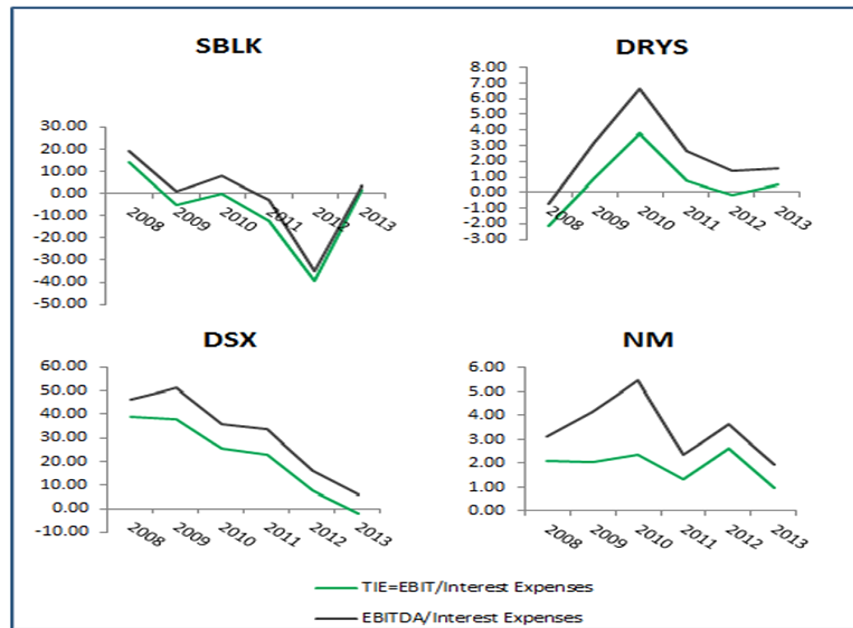


Figure 30: Panel companies main coverage ratios

Due to the difference in scale and the big spikes that some firms appear, the above table extracted from the excel file is also displayed for making the assessment easier. SBLK and DRYS seems to have neither positive nor stable ability to pay their interest expenses for all the fiscal years examined. *SBLK* has not performed well in these ratios with the redeeming feature though that in 2008 collapse was only 1-year company and the 2012 *TIE* of *-39.16* is mainly attributable to the huge fleet's impairment loss recorded. As for the *DSX* and *NM*, both firms can satisfy their interest obligations in all years with *DSX* to have by far though better repayment ability with an average *TIE* of *21.80* compared to *1.91* of *NM*. This fact, attributed to the *DSX* much lower debt capital, does not mean that *NM* stands in worse position since it tries to maintain its debt and concomitant interests at stable levels. In the examined years, *NM*'s interests payable, in an average basis, were approximately 50% of EBIT. Regarding the EBITDA to interest expenses ratio, since the operating income is higher, given that it includes depreciation and amortization costs, the ratio's outcome for all companies is also higher.

Table 19: Panel companies TIE and EBITDA to interest expenses ratios

OTHER COVERAGE RATIOS						
	2008	2009	2010	2011	2012	2013
SBLK						
TIE	13.95	-4.97	0.04	-12.45	-39.16	1.24
EBITDA/Int. exp.	18.93	0.91	7.98	-2.84	-34.94	3.59
DRYS						
TIE	-2.13	0.89	3.79	0.75	-0.18	0.50
EBITDA/Int. exp.	-0.74	3.21	6.63	2.63	1.41	1.58
DSX						
TIE	38.76	37.71	25.53	22.62	7.98	-1.83
EBITDA/Int. exp.	46.15	51.31	35.71	33.85	16.12	6.13
NM						
TIE	2.10	2.04	2.34	1.35	2.63	0.97
EBITDA/Int. exp.	3.14	4.15	5.50	2.37	3.62	1.94

Wishing to refer in detail to the main ratios calculated for the selected firms, the data of all has been incorporated in the hereby thesis' body and not in the appendix section. The table 19 contains the TIE and the EBITDA to interest expenses coverage ratios.

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

As the name denotes, the Weighted Average Cost of Capital (WACC) is simply the cost of all types of capital employed in a company taking into account their weight or average contribution in the total capital. WACC is one of the primary computations in a finance project because it indicates whether the company has been financed expensively or cheaply. Profoundly, in terms of a firm's spending, the lower the WACC the better it is. Not only the lower WACC is better for minimizing spending, but also for maximizing the shareholders' value, the major aim for every company. This can be adequately clarified by the below equation, which is used for reckoning a firm's value given the fact that it will keep operating to perpetuity.

$$Firm's\ Value_{(perpetuity)} = \frac{FCF}{WACC}$$

Where:

FCF: Free Cash Flow of the company

As the equation's denominator, WACC, decreases, *ceteris paribus*, the fraction's outcome, the firm's value, respectively increases making the management's target to be the minimization of WACC. The way of diminishing a company's WACC will become clearer on the "Optimal Capital Structure" chapter.

WACC'S COMPUTATION

For computing WACC the cost of each type of capital has been calculated separately firstly and then the cost of each capital found has been multiplied with its corresponding proportion in the total capital employed. Before proceeding with each capital's type calculation the WACC's equation will be stated:

Equation 8: Weighted average cost of capital (WACC)

$$WACC = r_D * (1 - tax) * w_D + r_{PS} * w_{PS} + r_E * w_E$$

Where:

r_D : rate of Debt

w_D : weight of Debt

tax: the prevailing tax rate imposed to the company by the government

r_{PS} : return of Preferred Stock

w_{PS} : weight of Preferred Stock

r_E : return of Equity, (Common Equity Stock)

w_E : weight of Equity, (Common Equity Stock)

As it is explicitly observed by WACC's equation shown above, there is a linear relationship between all types of capital used to finance a company. In plain words, the higher the cost of each capital the higher the cost of total capital and similarly the higher the weight of the expensive capital the higher the total capital employed. It may seem a rather simple equation to be computed but several assumptions shall be made and different calculations shall be used for valuing each capital increasing thus the difficulty's and subjectivity's level and making WACC's calculation not a child's play.

Worth saying that the tax effect of decreasing the debt's rate in the examined companies has not been taken into account given its low materiality level generally in shipping industry and particularly in the group companies. Remember that the vast majority of the dry-bulk shipping companies have had tax shield.

In the below table the WACC for all group companies has been computed for a 6-year period. The first left row of the table lists each company with its corresponding ticker as used in the exchange and the last right row shows their average for these years WACC.

Table 20: Panel companies average WACC for the years 2008 through 2013

WACC							
	2008	2009	2010	2011	2012	2013	average
SBLK	6.46%	5.12%	5.11%	4.56%	4.30%	5.49%	5.17%
DRYS	6.96%	5.76%	6.09%	8.07%	9.23%	7.72%	7.30%
DSX	12.50%	9.07%	6.16%	5.09%	6.72%	8.75%	8.05%
NM	11.86%	8.78%	8.43%	8.96%	9.82%	9.60%	9.58%

Since every company wishes to reach a low WACC, the reason why will be explained later, the company with the lowest WACC almost in every year and averagely was Star Bulk Carriers (SBLK) with a 5.17% average WACC far below than the next lower WACC that of 7.30% of Dryships (DRYS).

Table 21: Components of average WACC for panel companies

Average WACC Components								
	wd	Rd	wb	Rb	wps	rps	we	re
SBLK	40.46%	3.07%					59.54%	6.59%
DRYS	37.53%	4.78%	13.84%	8.70%			50.94%	8.19%
DSX	24.43%	2.47%					75.57%	9.85%
NM	22.57%	6.84%	32.60%	8.62%	1.96%	3.05%	43.06%	11.59%

The table 21 presents all the sub-parts of WACC's equation explaining why Star Bulk Carriers has achieved the lowest and Navios Maritime Holdings (NM) the highest. They are all average figures and refer to the average WACC shown in the previous table.

Star Bulk Carriers

SBLK's average lowest WACC was mainly attributable to the low, **3.07%**, interest rate achieved all these years and the **40.46%** of the total capital borrowed. Without though disdaining the positive impact of the relatively low equity's required return of 6.59%.

Dryships

DRYS has the second better comparing with the panel but approximately 2 percentage points or 30% above that of SBLK. The average WACC of 7.12% was a result of several actions held concurrently. The raising of the **13.84%** of the firm's total capital through bonds' issuance with a high bond's blended rate of **8.70%**. The requiring of **8.19%** minimum return from equity holders on a **50.94%** of the total capital employed and the borrowing of the less proportion of total capital, **37.53%**, with the relatively cheap interest rate of **4.78%**. Although DRYS has a diversified capital structure raising money, other than from banking institutions, from both equity and debt capital markets has not yet achieved a low WACC making its financing rather costly.

Diana Shipping

DSX has the third in row highest and worst WACC and there is the paradox! While analyzing DSX it has been noticed that follows and maintains a rather stable and conservative management wishing to be protected from the freights' markets volatility with spikes and troughs. This is really the case but it simultaneously was expected DSX to have a low WACC considering though the lower interest rate achieved from all group

companies. The reason for this increased WACC is DSX's low leverage. Since DSX is capable to borrow money with a just **2.47%** averagely and some years with approximately 1.5% it should increase its debt proportion and not lend from banks only the **24.43%** of its total capital. Note that its equity capital's return amounting **75.57%** of its total capital employed is as high as **9.85%**.

Navios Maritime Holdings

NM has been financed more expensively than all the other panel's companies with an average WACC of **8.94%**. For NM, a quite sophisticated and well established company though; all types of capital are quite expensive. Commencing from a return of equity of 11.59% to 8.62% bond's blended rate and to a bank lending with a 6.84% average blended interest rate. Since the equity's return is volatile and the proportion of capital, 43.06%, at normal levels the proportion of capital raised through bonds, 32.6% is a matter to be considered given its corresponding rate. Should a decrease in bonds' capital take place, NM's WACC would be improved.

ESTIMATING THE RATE OF DEBT (R_D)

Rate of debt is the one determining the risk of the debt capital. From the very first chapter of this thesis it has been clarified that debt capital is every capital a company has borrowed and for this pays as "rent" the interest. Therefore, since the debt capital encompasses both bank lending and bonds, if a company is financed by both types it should breakdown its debt and value the cost of bank lending and bonds separately. Consequently, the WACC's equation regarding debt capital will be slightly modified to:

Equation 9: Rate of debt

$$r_D = r_L * w_L + r_B * w_B$$

Where: r_L and w_L and r_B and w_B are the rate and weight of Loans and Bonds respectively.

RATE OF LOANS (R_L)

The cost of loans is simply defined as the interest expenses made in one fiscal year, income statement's or profits and losses' item, divided by the average loans outstanding in the beginning and the end of this fiscal year. An alternative and more precise way to find the cost of loans would be to take the average interest rate all outstanding loans bear multiplied by their corresponding weight in the company's total capital employed but due to lack of such internal information the equation used was the simple one shown below:

Equation 10: Rate for loans (non-weighted)

$$r_L = \frac{\text{interest expenses}_t}{\text{average} (Loans_{t-1}, Loans_t)}$$

The rate at which each panel's company borrows money through bank lending is analyzed in the "Commercial Loans" chapter.

Worth mentioning that the nominator of the interest rate's equation stated above shall be carefully computed by only including the interest expenses related to the outstanding loans and not the bonds. Particularly, the companies raising money from both banking institutions and debt capital markets paying the interest rate and the coupon rate respectively, have included both interests in the "Interest expenses & Finance costs" income statement's account. Given this, for calculating the blended loans' interest rate the interest expenses related to the bonds' coupon payment shall be subtracted. Therefore, the distinction of the two different interest expenses paid was necessary for estimating NM's loans' interest rate. The problem though was lying on the fact that the company in its annual statements reported no such distinction and the way of making this done was to calculate each year's coupon payments according to each separately bond's prospectus. The table below shows roughly how much money had the company to pay for meeting its coupon payments' obligations and how much for paying its loans concluded. The latter has simply been computed by subtracting the coupon payments from the interest and finance costs.

Table 22: Rough estimation of NM total interest paid for outstanding loans

Navios Maritime Holdings: Interest paid for loans in thousands US \$						
	2008	2009	2010	2011	2012	2013
Interest & Financecosts	49,128	63,618	106,022	107,181	106,196	110,805
— Coupon payments	28,500	28,500	28,500	44,881	73,013	90,763
Total loans' interest paid (approximately)	20,628	35,118	77,522	62,300	33,184	20,043

RATE OF BONDS (R_B)

As for bonds' financing, the yield to maturity (YTM) is the one representing the cost for a company. However, the coupon rate may be regarded as the cost of bonds but this is a misguided attempt of valuing their cost given the fact that WACC is a measure of company's total cost of capital taking into account though the market value of debt reflecting the risk factor. The rate of straight bonds used for calculating WACC is not the cash paid for interest which the coupon rate indicates but the effective rate of bonds financing indicated by the YTM. There are not a few times that a company has issued several bonds, incorporating different features, bearing different coupon rate and experiencing different YTM. In this particular case an average, called by the practitioners "blended" rate of all outstanding bonds is used instead.

$$r_B = \text{average YTM (Secured Bonds, Unsecured Bonds)}$$

There are a lot of companies not having liquid, tradable, long term straight bonds outstanding therefore not having YTM announced. Should this be the case, the cost of bonds' calculation would include the firm's rating as stated by the major credit agencies¹ together with a default rate estimated based on that rating. As professor

¹ As the major credit agencies embracing the vast majority of companies operating globally are considered the Moody's, Fitch and Standard & Poor's.

Aswath Damodaran¹ alleges, when neither YTM nor rating for the firm is available a synthetic rating shall be estimated based on the interest coverage ratio² and the cost of debt will be based on this. In essence, the company's interest coverage ratio will imply the rating and the rating its default spread. Given that the companies analyzed in this thesis have YTM available, the rate of bonds has been reckoned by taking the average, "blended" YTM of each company's outstanding bonds, stated above.

The blended YTM together with the YTM for every single bond issued by the panel companies have been included in the "Bonds" chapter.

¹ Damodaran, Aswath. "Estimating Risk Parameters and Costs of Financing." In *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, 3rd ed. New York: John Wiley & Sons, 2012.

² Interest coverage ratio = EBIT/Interest Expenses

ESTIMATING THE RETURN OF PREFERRED STOCK (R_{PS})

For valuating the preferred stock of each company included in the selected group the Gordon Shapiro model has been used. In essence, the Gordon Shapiro model is also implemented to calculate the intrinsic value of a firm's stock, usually in order to compare it with the actual market price and find out whether this stock has been under or over valued by the market. Given the fact that it solely depends on the dividends, its application is limited to large companies with a relative stable dividend growth. The initial formula of the model is:

Equation 11: Gordon Shapiro dividend growth model

$$P = \frac{D_{t1}}{r_e}$$

Where:

P= Price or fair or intrinsic value of a stock

D_{t1} = expected dividend per share as for one year later

r_e = required rate of return for a shareholder

The above formula constitutes a perpetuity formula since it assumes a stable expected dividend of D_{t1} payable in the future. Bearing in mind that this valuation formula requires a stable expected dividend, it can also be applied on the reckoning of the preferred stock's value. Additionally, if the above equation is solved for r_e , the outcome will be the required return that the preferred stockholders require as compensation for the risk their investment entails. Solving for r_e :

$$r_e = \frac{D_{t1}}{P}$$

For better comprehending that the formula has been used for estimating the required return of a preferred stock, the formula's abbreviations have been modified as follows:

Equation 12: Preferred stock valuation based on Gordon Shapiro model

$$r_{ps} = \frac{DPS_{t1}}{PPS * (1 - flot.rate)}$$

Where:

r_{ps} = required rate of return of a preferred stockholder

PPS = Price or fair or intrinsic value of a preferred stock

DPS_{t1} = expected dividend per preferred share as for one year later

Flot. rate = flotation rate; the issuance cost of a preferred stock expressed as rate

Note that all formulas stated above assume no growth rate of dividends but a stable amount instead. The flotation rate has been added in the formula due to the fact that the preferred stocks have often considerable issuing cost incurred.

For the time being, only NM has a countable preferred capital, which has been financing its operations since 2009. DRYS has issued preferred stocks too in 2009 but they have been purchased by the CEO Mr. Economou and been outstanding only until 2011. In the table below the required return of Navios Maritime Holdings' preferred shareholders has been calculated.

Table 23: Calculation of NM return of preferred stock

Preferred Stock's Return Calculation (in U.S \$ except for per share data)					
	2009	2010	2011	2012	2013
Promised Dividend Rate	2%	2%	2%	2%	2%
Pref. stock nominal Value	10,000	10,000	10,000	10,000	10,000
DPS	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Additional Paid-In Capital (from pref.)	37,575,000	67,633,000			
Repurchase of preferred stock		-49,016,000			
Preferred Capital	37,575,000	56,192,000	56,192,000	56,192,000	56,192,000
# of pref. stock outstanding	8,201	8,479	8,479	8,479	8,479
PPS	4,582	6,627	6,627	6,627	6,627

Pref. shares					
issuance		1,819,000			
costs					
Flotation rate		3.24%			
r_{ps}	4.37%	2.92%	3.02%	3.02%	3.02%

Having a nominal value of \$10.000 per preferred share, the NM's preferred stock addresses to institutional investors; a fact that has also been confirmed by using the Bloomberg terminal. The DPS has been reckoned by simply multiplying the 2% promised dividend rate with the nominal value of the preferred stock. A lower capital than the outcome of nominal value times preferred shares outstanding has been added to the firm's total equity from the preferreds' issuance witnessing that the preferred shares have been purchased at below par. The issuance or flotation cost of \$1,819,000 leading to a flotation rate of 3.24% has been fully expensed in 2009, the fiscal year that it realized, yet it could be expensed in more years since the preferred funds finance the firms for many years.

ESTIMATING THE RETURN OF EQUITY (R_E)

There are many theories developed regarding the most appropriate way of valuating the common equity capital and a heated debate between the different schools of thought on which of them is going to prevail. In this thesis though, the alternatives of valuing the common equity stock will not be mentioned, but the focus will be on the most commonly used equity valuation method, the Capital Asset Pricing Model (CAPM). CAPM in contrast to other models does not take into consideration many variables but takes into consideration one single variable reflecting the company's risk. In fact, CAPM assumes that the non-systematic risk, the inherent risk of the company, has been eliminated due to diversification and the only risk the shareholders shall bear and compensate for is the systematic risk, the inherent risk of market that cannot be eliminated even through diversification. The measure of systematic risk, the beta coefficient, there has been the key element in the CAPM model. The equation used in the CAPM for valuating common equity stock is shown below. Obviously, there is a linear relationship between the three factors, risk-free rate, beta coefficient, risk

premium, comprising the equation. If any of these increases, the minimum required return of the shareholders (r_E) will also increase.

Equation 13: CAPM, valuation of common equity's return

$$r_E = r_{FR} + \mathbf{beta} * (r_M - r_{FR})$$

Where:

r_{FR} = rate of an investment Free of Risk

beta= beta coefficient, the measure of systematic risk

r_M = return of the capital market

As the rate of a risk-free investment (r_{FR}) is often taken the 10-year US treasury bonds, bearing in mind that if these bonds default United States would have already been default too.

The subtraction in brackets shown above ($r_M - r_{FR}$) is the so-called market's risk premium. The premium the equity investors shall receive for undertaking the greater market's risk than that of a risk-free investment. Clearly, the greater the market's return (r_M) the bigger the risk premium and subsequently the required return of equity (r_E).

Market's return has been computed by taking the average annual logarithmic returns of New York Stock Exchange (NYSE) index for a 10-year period.

BETA COEFFICIENT

The measure of systematic risk, beta coefficient, has been computed for every company and has not been taken as reported by several financial analysts not because of unreliability from the latter but on the grounds that this constitutes an academic paper and the results are better being a research's product.

In substance, beta coefficient measures the sensitivity of a firm's common stock return to the variations of the index. In other words, it measures how volatile is a firm's stock (or other investment asset) in relation to the market's performance or how much the return of a stock would fluctuate if the index's return varied for one unit. A beta that equals to 1, ($b=1$), indicates an absolute positive correlation between the stock's return and the index's return given that a one unit increase of the index's return will result to a one unit increase of the stock's return. Therefore, a stock with beta 1 moves with the

market. The market, being the most well diversified investments' portfolio, has a beta of one (1).

Beta greater than 1, ($b > 1$), implies that if the index's return increases one unit, the stock's return will increase more than that and the level depends on the beta's price. Hence, the stock or the asset, with a beta greater than 1 is called *offensive* and this beta is frequently found in technology firms' stocks. Beta less than 1, ($b < 1$), denotes less volatility in the stock's return when the index goes up or down a unit. The stocks with beta less than 1 are called *defensive* and this beta is rather often in utility stocks. A negative beta, ($b < 0$), indicates a stock having a negative relationship with the market meaning that when the market's index goes up the stock goes down as much as the beta price defines.

Having interpreted betas, the method of the panel companies' beta computation goes next. In general, betas are estimated by using regression analysis. More specifically, the linear regression of each common stock's return against the return of the index NYSE or NASDAQ has taken place. Both returns including in the regression are not linear but logarithmic and on *weekly intervals of 2-year periods* for reducing the sample's standard error and having simultaneously sufficient number of data. According to Aswath Damodaran's assertions, beta's price depends on three factors: the nature of the product or service offered by the company, the operating leverage or alternatively the fixed proportion of operating expenses and the company's leverage. Therefore, the beta computed through the linear regression is a Levered beta. In shipping where cyclicality, high fixed costs and high leverage coexist, an augmented beta is expected. To give an instance, the chart below illustrates the regression analysis for Diana Shipping Inc. as for the years 2012 and 2013. The X independent variable is the NYSE weekly

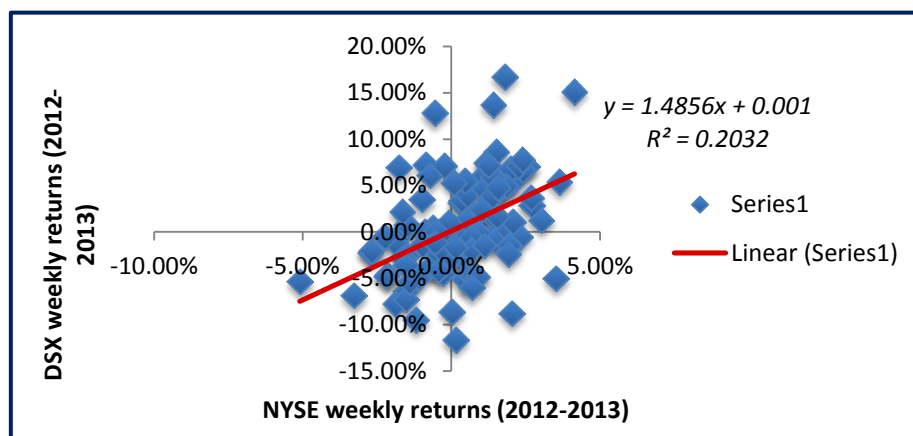


Figure 31: Linear regression for Diana Shipping stock (DSX)

logarithmic returns while the Y dependent variable is the DSX's stock weekly return. DSX stock's beta is 1.4856 and it is the slope of the regression line. The beta of 1.4856 has not been taken into consideration due to the below mentioned reasons. On the grounds that the coefficient of determination or "R-squared (R^2)" stands quite low, just 20% of the variation in DSX stock's is explained by variation in the NYSE index. This can be explained by the fact that primarily DSX is a Greek company, not significantly affected by the US equity market's performance and that DSX is a dry-bulk shipping company, implying that the dry-bulk freight rate market as well as the commodities market mainly affect it.

The chart below illustrates the beta coefficient for every group's company derived from the linear regression. Clearly panel companies' betas present significant variations one to another due to the beta's reliance on stock's performance and the stock performance's reliance on the investors' subjective criteria. The companies with the less volatile betas through the examined years, as observed from the chart, were NM and DSX.

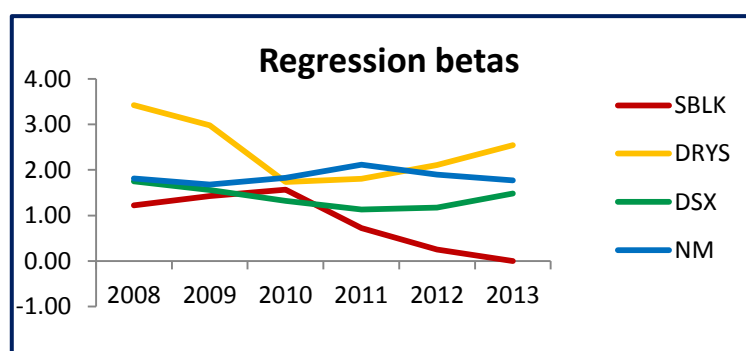


Figure 32: Panel companies' betas calculated with simple regression

Even though the regression betas have already been levered betas, having incorporated the effect of the each company's debt, when observed that the panel companies did not present such differentiation in leverage that would explain this immense beta's difference, it was decided not to apply these betas in the estimation of each company's return of equity and subsequently in WACC. Another reason supporting this decision was the fact that aiming to estimate the return of equity and the corresponding WACC in the near future and as objectively as possible more normalized results were needed.

RE-LEVERED BETAS

In fact, by using the re-levered betas the leverage effect on each company's beta is considered from the company's own leverage, as its debt to equity ratio indicates, and not from the market's perspective.

As it is clearly observed from the chart, re-levered betas are producing much more normalized and smooth results promoting a better comparison among the peers' companies.

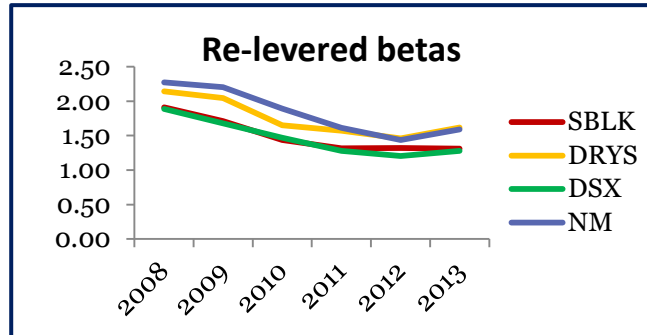


Figure 33: Panel companies' re-levered betas, based on A. Damodaran's method

For the re-levered betas to be found there are some steps that shall be followed.¹

- Run the regression analysis and compute the regression (levered) beta for every single company.
- Take the average of all regression betas calculated to find a peers' average beta.
- Calculate for each company its debt to total capitalization ratio² and find the average.
- Use the equation:
$$\frac{\text{average regression (levered) beta} * 1}{(1 + (1 - 0) * \text{Average debt to total capital ratio})}$$
 to figure out the average unlevered beta for the examined time period.
- Finally, proceed with the
$$\text{average unlevered beta} * \left(1 + \frac{\text{Debt}}{\text{Total Capital}} * (1 - 0)\right)$$
 equation, where in debt to total capitalization ratio apply the corresponding ratio for each firm as calculated in the step "c" so as to get the re-levered beta for each company having now incorporated their own debt effect.

The re-levered beta calculated in the "e" step has been used in Capital Asset Pricing Model, CAPM, for estimating the minimum return required by a firm's equity holders. In the hereby companies' WACC estimation the abovementioned steps have been followed for every single year during the 2008 to 2013 period.

¹ The steps for un-levering and re-levering firms' betas are referred to the chapter of the book: Damodaran, Aswath. "Estimating Risk Parameters and Costs of Financing" In *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*

² Debt /Total capitalization or capital ratio is a ratio indicating a firm's leverage position and is computed by dividing one's fiscal year the outstanding debt by the corresponding sum of the debt and equity capital invested.

OPTIMAL CAPITAL STRUCTURE

As it has been mentioned in the previous chapter, the management's target regarding financial planning is to seek such funding source or blend of sources composing the company's capital structure, which minimize WACC and subsequently maximize shareholders' value for a going concern firm. The capital structure satisfying this criterion is referred as the optimal capital structure. Undoubtedly, the fundamental issue of reaching the optimal capital structure lies on which types of capital shall be employed in order to minimize WACC. The optimality of capital structure is a rather controversial issue that has vexed many corporate finance practitioners as well as economists from various schools of thought.

MILLER-MODIGLIANI THEOREM

Milton Modigliani and Merton H. Miller being pioneers in researching of whether the capital structure affects a firm's value, they eventually cast light on this by issuing the paper titled "The Cost of Capital, Corporation Finance and the Theory of Investment" in 1958. By establishing their main propositions, they have set the foundations for understanding the impact that the taxation and financial distress had to a company. Moreover, they have paved the way for the rational investment decision-making to be put in place. The first proposition, also known as no-tax, assumes that the companies are subject to no taxation leading to the conclusion that capital structure is irrelevant to the market value of a firm¹. On the grounds that interests are not tax-deductible items, the firm does not benefit from paying less taxes and the investors will value the firms depending on their cash flow stream and not on the way they have financed. The second also non-tax proposition, refers to companies that have been financed partially with debt and their cost of equity will increase as their debt to equity ratio increase² having been

¹ Miller-Modigliani Proposition I: "The market value of any firm is independent of its capital structure and is given by capitalizing its expected return at the rate P_k appropriate to its class." "The average cost of capital, to any firm is completely independent of its capital structure and is equal to the capitalization rate of a pure equity stream of its class."

² Miller-Modigliani Proposition II: "That is, the expected yield of a share of stock is equal to the appropriate capitalization rate p_k for a pure equity stream in the class, plus a premium related to financial risk equal to the debt-to-equity ratio times the spread between p_k and r ."

linear related. This linear relationship is based on creditors' priority in payment compared with shareholders' payment junior feature.

Partially in section II of their paper and mainly in a future paper titled "Corporate income taxes and the cost of capital: a correction" published in American Economic Review Journal in 1963, Miller and Modigliani have incorporated the corporate tax effect in their theory. They have concluded that the firm's tax shield created by the deductibility of interests diminishes the WACC as the cost of debt capital decreases. Given that no financial distress costs have been incorporated in the assumptions, the more debt capital the lower the capital cost for the company leading to an optimal capital structure consisting of 99.9% debt. Despite being of critical value, Miller-Modigliani theorem is based on unrealistic assumptions such as the absence of agency and other transaction costs, the both debt and equity markets' lack of inefficiencies, the homogeneity in investors' expectations regarding future cash flows, the flat rate for both borrower's and lender's side.

Wishing to reach a more realistic conclusion, corporate taxation, agency costs as well as financial distress costs have been taken into account. In reality, as debt proportion increases the company's ability to meet its interests' obligations is lessening leading the so-called financial distress costs to inflate. In the light of these costs, the shareholders will require higher yield, thus, augmenting the cost of equity. Therefore, there is a trade-off for the company between the tax benefit enjoyed by borrowing debt capital and the increased cost of equity caused by the financial distress costs. As for the agency costs, the expenses related to the company's management, the higher debt capital would lead to bigger need for monitoring the company, therefore, increased agency costs which in their turn will cause the cost of equity to be at higher levels.

Debt is indeed cheaper than equity but this is not to say that an exponential increase of debt will achieve the WACC's minimization and capital structure optimization since when the ***financial risk's increase, the required return of equity (r_{equity})*** respectively increases. Consequently, how can the management minimize the firm's WACC and accomplish the goal of capital's structure optimization? The debt's positive effect in decreasing WACC caused by the deductibility of interests will be greater than the

equity's negative effect in increasing WACC caused by the augmented financial distress and agency costs.

$$\textit{Minimum WACC} = \textit{debt's effect} > \textit{equity's effect}$$

Suppose that a company has found that blend of capital types that minimizes its WACC, should this be deemed as a golden rule for other similar companies too? Not really, considering that each company has its own culture, practices, corporate governance and other special characteristics, for a firm to reach the capital structure optimization needs a different mixture of debt and equity capital. The proportion of them is usually been found through a more heuristic process.

PECKING ORDER THEORY

Another quite popular theory engaged in capital structure' optimization is the pecking order theory by Stewart C. Myers and Nicholas S. Majluf as it has unfolded in the "Corporate financing and investment decisions when firms have information that investors do not have" paper, published in 1984. The main assumption of this theory is the asymmetry of information existing between the management and the shareholders of a firm. Shareholders account the management better informed regarding company's issues than themselves and, therefore, it is more likely to benefit against shareholders. For that particular reason, the issuance of new common shares will bear higher cost since the existing shareholders assume the management will take advantage of the company's overvaluation. Consequently, according to the pecking order theory the funding by raising equity capital shall be a firm's last resort. In particular, the hierarchy postulated by this theory begins with the most preferable choice of funding by using the company's retained earnings, continues with the moderate option of raising debt capital and ends up with the least preferable of equity financing.

Having referred to some of the most widely known theories regarding capital structure's effect in a firm's value, some observations in the panel companies would worth to be stated.

PANEL COMPANIES' FINDINGS

Monitoring the capital structure of the firms included in the sample, an attempt was made to seek whether there is a linear correlation between the capitalization ratio and the level of WACC observed throughout the examined years. All graphs below show in the vertical axis the cost of debt and equity capital as well as the aggregate WACC axis, while in the horizontal axis, each company's leverage is the depended variable.

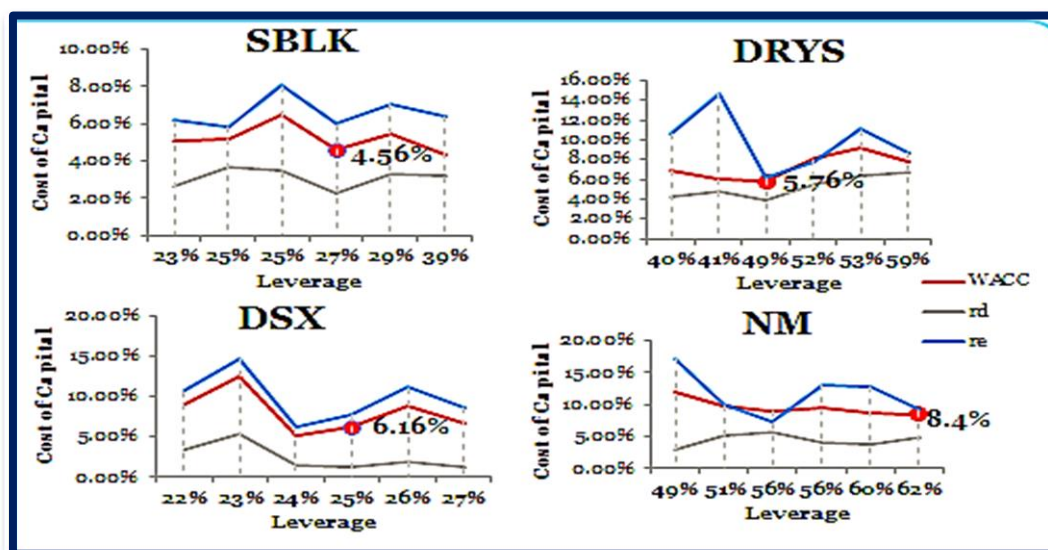


Figure 34: Panel companies' minimum estimated WACC

Panel Companies' minimum WACC ranges from 4.56% to 8.4%, experiencing a great gap considering the similarities that these firms share. Regarding the relationship between the level of leverage and the minimum WACC, no linear correlation is observed and WACC does not follow a particular pattern with the leverage variations. Note that this lack of correlation could be explained to an extent by the fact that shipping companies are not subject to taxation at all or the taxation imposed to them is of low materiality level having been left out of consideration. Another comment these charts merit is the fact that equity's yield (re) variations is attributed not only to the leverage fluctuations but also to other internal as well as external factors.

Once again, optimal capital structure, when found, does not constitute an immutable fact but changes over time. The company's management shall not be complacent about achieving one year a low WACC since today's optimal capital blend may be not the same for tomorrow!

VALUATION RATIOS

Wishing to monitor how the investors have valued the four selected firms' stocks, some of the main valuation ratios have been calculated. These valuation ratios are the price to earnings (P/E), the price to cash flow (P/CF), the price to book value (P/B), the enterprise value to book value (EV/BV) and the enterprise value to EBITDA (EV/EBITDA). The per share ratios, these having the stock's price as numerator, are presented separately from those having the enterprise value instead.

VALUATING THE STOCK

Commencing with the ratios on a per share basis, the P/E and the P/CF in essence imply how much an investor is willing to pay for every dollar of earnings and cash flow generated by the firm respectively. Alternatively, they disclose in how many years he will gain his money back through earnings or cash flow. The P/BV indicates whether the company's share is undervalued or overvalued, as regards to its book value. The latter interpretation can also apply to the P/E and P/CF regarding though its earnings and cash flow. Due to the high book value of vessels, the P/B ratio stands most of the times at quite low levels, even below unit (1), where the later denotes that shipping firms' shares are traded below their book value. The P/E and P/CF ratios are quite volatile, given their denominators' increased fluctuations, following no pattern. The higher the investors' expectations are about earnings and cash flow generation in the near future, the higher these ratios will be. There is not a concrete rule regarding the value that these ratios shall have to attract investors since different values accommodate different investment strategies. For instance, high P/E and P/CF refer to a company that is overvalued regarding to its profit and cash flow generation but the investors are willing to pay this stock's price because they expect the company to outperform and generate greater profits in the near future. On the other hand, a non-growth driven but speculation driven investor will seek for a bargain stock, traded at a discount that it has P/E, P/CF and P/B at quite low values, anticipating even a slight increase in price in order to sell it and realize capital gains.

Regarding the examined corporations' valuation ratios, they do not follow a similar pattern and they are analyzing below. Note that every negative ratio has been included

in the graphs only for illustrative purposes since no fraction can be defined with negative denominator. In fact, valuation ratios when are turned negative are not applicable (N/A) for this time span.

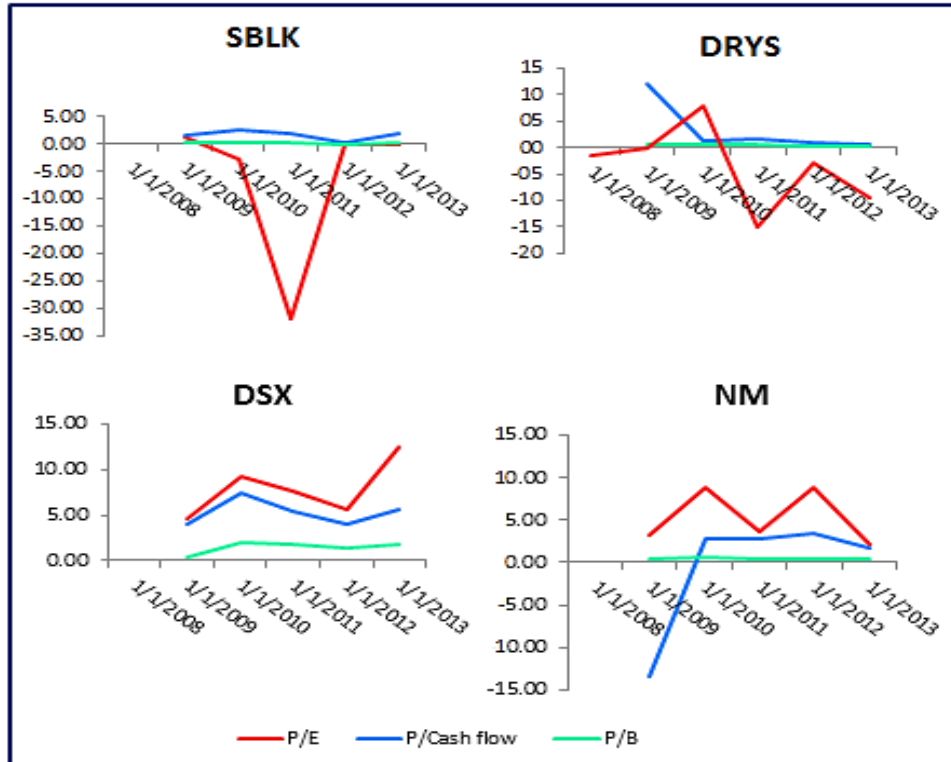


Figure 35: Panel companies' main valuation ratios (1/2)

Starbulk Carriers (SBLK)

By looking only to P/B ratio in all examined years, SBLK stock is traded at a discount since its assets' book value per share is higher than its current market price implying that it may be a bargain purchase. If though the P/E and P/CF ratios are observed, the company's difficulty on generating profits and high cash flow amounts will be revealed making the stock not such appealing to investors.

Dryships (DRYS)

P/E, P/CF and P/B of Dryships are giving more or less the same image with that of Starbulk. An undervalued stock with lower price than its book value per share, losses for the majority of years making the P/E ratio not to be applicable and low cash flow generation. Despite the company's poor performance, its stock may be attractive from investors who believe in the company's management, assume a stock's upturn in the

short-term and perceive the stock's low price as a bargain. In every case though, DRYS remains a rather risky stock.

Diana Shipping (DSX)

Having rather high P/E and P/CF ratios, Diana shipping generates profits and DSX stock investors perceive the company will have greater cash and net income generation in the future driving the stock further to outperform. As for its P/B ratio, in almost all examined years has exceed the unit indicating that DSX is traded at a premium, over its book value per share. Even in 2013, where Diana Shipping reported losses, did not lose its momentum and DSX continued traded above its book value. it is worth noticing though that these increased, above the unit, P/B ratio is not only attributable to the inflated stock's market price but also to the low to standard vessels' purchase prices and the normal fleet's size. Undeniably, Diana Shipping maintains a strong possibility for bringing higher turnover and generating value to its shareholders.

Navios Maritime Holdings (NM)

P/E and P/CF are in relative high levels for Navios Maritime Holdings too. NM stock's investors are willing to pay a 5-year average of \$5.34 for every dollar of earnings and \$5.68 for every dollar of cash flow, implying that they see in NM stock growth prospects. Regarding the P/B, it stands at lower than the unit values showing that NM is traded at a discount. In opposition to Diana Shipping, Navios Maritime Holdings has a quite larger fleet explaining partially the difficulty of NM price to exceed the per share book value.

Table 24: Panel companies' main valuation ratios (1/2) data

VALUATION RATIOS (1/2)							
	12/2008	12/2009	12/2010	12/2011	12/2012	12/2013	Avg
SBLK							
P/E	1.16	-2.94	-32.00	-0.06	-0.12	97.90	10.7
P/CF	1.40	2.61	1.87	0.08	1.97	6.59	2.4
P/B	0.15	0.32	0.24	0.02	0.09	0.72	0.3
DRYS							
P/E	-1.62	0.00	7.75	-15.02	-2.86	-9.33	-3.5
P/CF	12.1	1.4	1.8	1.0	0.6	0.6	2.9

P/B	0.68	0.58	0.62	0.27	0.32	0.71	0.5
DSX							
P/E	4.67	9.33	7.58	5.64	12.42	-51.05	-1.90
P/CF	3.96	7.46	5.44	3.93	5.66	16.06	7.09
P/B	0.36	2.09	1.72	1.38	1.90	5.54	2.17
NM							
P/E	3.19	8.90	3.64	8.83	2.16	-9.74	2.83
P/CF	-13.31	2.79	2.81	3.38	1.62	17.78	2.51
P/B	0.45	0.66	0.51	0.35	0.32	1.02	0.55

ENTERPRISE VALUE AND MARKET CAPITALIZATION

Before proceeding with the analysis of the remaining valuation ratios, EV/BV and EV/EBITDA the interpretation of their numerator, enterprise value, is useful to be stated. Enterprise value is the price that an investor will pay for acquiring an operating business. In essence, is the sum of the firm's market capitalization (market cap), the both short and long-term debt obligations, the preferred capital and the minority interest subtracting though from this sum the firm's total cash and cash equivalents. Therefore, enterprise value is better indicator than the simple market capitalization for a takeover scenario since it includes all the money the acquirer will pay and excludes all the other he will receive. The higher the enterprise value is, the more expensive the acquired company will be. Pay attention though to the reason the enterprise value is high. Is it because of the stock's appreciation or because of the firm's augmented leverage? The

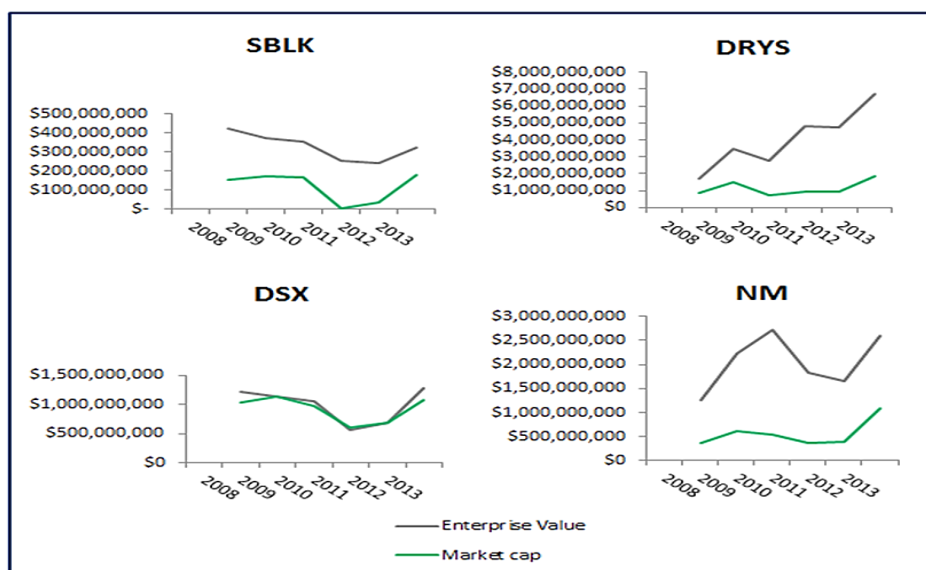


Figure 36: Enterprise value and market cap of examined companies

answer affects substantially the takeover decision since a high market cap indicates positive market's perception, while an increased leverage raises concerns regarding firm's credibility, possibility of default and sustainability.

By observing the charts regarding the enterprise value and the market cap of the examined companies from 2008 through 2013, the distinction between these two indicators becomes clear.

Starbulk Carriers (SBLK)

SBLK, with an average market cap of \$119 million, has the lowest market cap among the group and an approximately 2.7 times greater average enterprise value implying the value of its debt obligations. In fact, Starbulk has retained a D/E ratio above 50% in almost all years with the highest of 72% to be recorded in 2013. Since there have not been minority interest and preferred stock capital during this period, the gap between EV and market cap is due to the debt and the firm's cash which has amounted an average 13% of the aggregate outstanding borrowings.

Dryships (DRYS)

DRYS seems to be an instance of how EV and market cap can differ among them. With an average \$1.14 billion market cap and an enterprise value to literally climbing to \$6.73 billion it becomes evident that these immense difference is a matter neither of its preferred capital nor of its minority interest but a matter of its huge debt capital outstanding. DRYS constitutes a quite expensive company not because of its promising growth prospects but of its mountainous (colossal) indebtedness. The cash and cash equivalents together with the restricted cash correspond averagely to the 18% of Dryships' aggregate outstanding borrowings.

Diana Shipping (DSX)

EV and market cap of DSX have almost coincided indicating that the company has neither minority interest nor preferred capital and, once again, verifying that DSX has maintained a low leverage. Rather remarkable is the fact that the company accumulates quite high cash amounts representing an average of 81%! of its total borrowings. Does DSX plan to make new investments? It is highly likely but it remains to be seen.

Navios Maritime Holdings (NM)

The gap between EV and market cap is actually due to the coexistence of relatively increased debt capital, considerable minority interest, and little preferred capital. Therefore, NM is an expensive company regarding not only its market cap of 1 billion in 2013, averagely \$560 million, but also its other items composing the EV. As for its cash and cash equivalents are averaged at a 13% of its aggregate outstanding borrowings.

The table below extracted from the Excel provides a reference to the data used and quantifies the EV and market cap charts.

Table 25:Enterprise value and market cap of examined companies, data

Enterprise value and Market cap (in thousands US \$)							
	2008	2009	2010	2011	2012	2013	average
SBLK							
EV	419,716	370,418	354,631	251,124	239,266	325,296	326,742
Market cap	155,177	171,663	164,176	4,215	37,428	181,122	118,964
DRYS							
EV	1,735,311	3,447,674	2,757,795	4,840,454	4,744,388	6,727,344	4,042,161
Market cap	881,794	1,538,991	739,300	921,734	921,734	1,847,435	1,141,831
DSX							
EV	1,211,371	1,124,888	1,008,054	563,156	691,156	1,273,405	978,672
Market cap	1,035,310	1,133,535	969,807	606,492	678,669	1,082,481	917,715
NM							
EV	1,248,215	2,236,079	2,718,909	1,820,840	1,660,407	2,590,693	2,045,857
Market cap	365,165	614,461	536,257	365,601	387,208	1,087,443	559,356

VALUATING THE COMPANY

EV/BV ratio actually claims whether the company is valued under, over or at its book value. Profoundly an undervalued company, with the EV/BV ratio to be below the unit, seems to be an investment opportunity. It is better indicator than the P/BV since it does not only take into account the stock's price but also other substantial items like the firm's indebtedness. On the other side, the EV/EBITDA ratio denotes how expensive the company is in relation to its EBITDA. This ratio is more preferable and insightful than the corresponding P/E ratio for three main reasons. Firstly, the EBITDA, used as denominator, is not affected by the firm's financial decisions and capital structure due to the fact that from this operating income no interest payment has been subtracted. Interpreting this, the P/E ratio can highly be biased by capital raised through debt financing leading to depressed earnings and a distorted P/E while the EV/EBITDA ratio cannot. Secondly, the EBITDA used instead of earnings offers a shield against potential differentiations in the accounting treatment of the depreciation and amortization items which in capital-intensive industries may afflict significant the P/E value. Thirdly, same as with P/B ratio, the enterprise value used as numerator instead of the stock's price offers a better comprehension of whether the stock is over or undervalued since it does also take into account other than the stock's price elements like the firm's leverage.

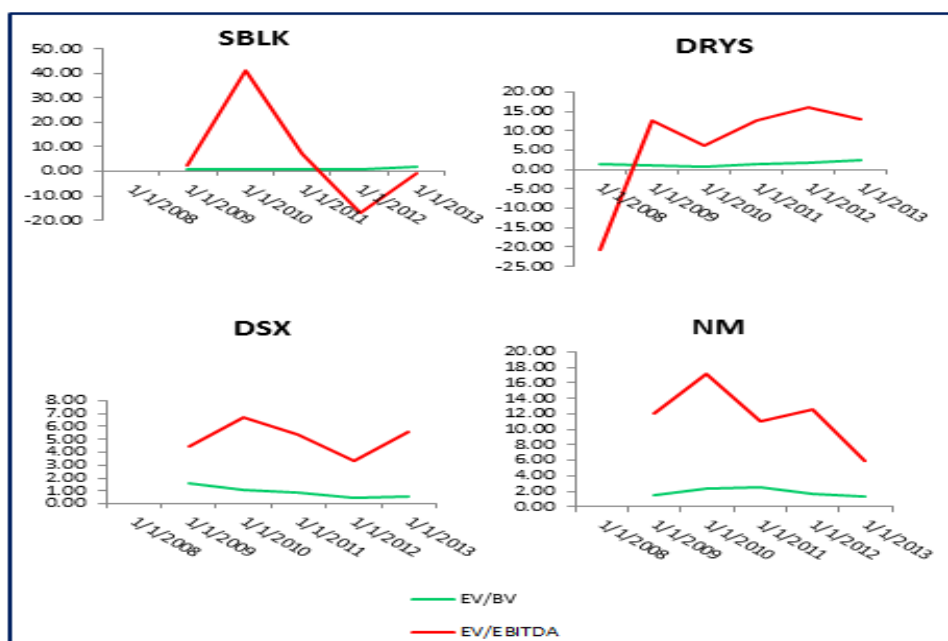


Figure 37: Panel companies' main Valuation ratios (2/2)

Starbulk Carriers (SBLK)

The EV/EBITDA downfall from 2009 to 2012 is attributed to the decreasing and eventually negative EBITDA that SBLK experienced in the years 2011 and 2012. Though no fraction is defined with negative denominator, the ratio has been computed and depicted on charts for illustrative purposes. Additionally the valuation ratio EV/EBITDA seems to be quite volatile as its denominator, EBITDA, and the market cap, contained in numerator, are. Regardless of the years with negative EBITDA, the average EV/EBITDA for SBLK stands at 13.4, a relative high level compared to that of the other group companies making the company to be an expensive takeover. As for the EV/BV ratio, with an average value of 1.3 indicates that the company is valued slightly above its book value or alternatively SBLK is overvalued.

Dryships (DRYS)

With an EV to be 3.6 times the firm's annual EBITDA, in average numbers, an investor will gain its money paid for taking over Dryships in just 3.6 years. Thus, the EV/EBITDA ratio points DRYS to be a potential candidate since the company's value is almost close to its annual EBITDA. EV/BV stands at below the unit levels with an average of 0.5 pointing out that the company is valued at the half of its book value. Is DRYS really a bargain? The biggest concern in this question is that these ratios do not enlighten regarding the company's debt obligations. In fact, the EV/BV shows an undervalued company since DRYS book value is quite inflated. Recall that only the drilling sector's assets valued \$5.8 billion in 2013, while the dry-bulk sector's assets valued \$2.2 billion for the same year. On the other hand, the negligence of EV/EBITDA ratio regarding the company's financial decisions and capital structure does not leave the firm's high leverage to be revealed.

Diana Shipping (DSX)

EV/BV claims that Diana Shipping it would be a potential candidate for a takeover since it has averaged at 0.93 through the examined years. Though the company is not that cheap remaining rather close to its book value, it is highly likely to augment its turnover and consequently its profit and to evolve radically the years to come. This assertion depends on the fact that EV of DRYS is mainly market capitalization with only a slight proportion of debt. EV/EBITDA highly fluctuates from the 3.38 in 2011 to

25.53 in 2013 as an outcome of the market cap and EBITDA variations. The EV/EBITDA averages in 8.52 showing that DSX is overvalued regarding the EBITDA generation. For a low leveraged, well established, credible, with prospects for further development company, its EV to be 8.52 times the EBITDA is quite reasonable if not attractive.

Navios Maritime Holdings (NM)

Both EV/BV and EV/EBITDA claim that Navios Maritime Holdings is an expensive, overvalued company, since its EV is 2 times the firm's book value and 13.82 times the annual EBITDA, all in average numbers. As it has been analyzed in the enterprise value sub-chapter, there is not one main reason leading NM's EV at high levels but all of the enterprise value components are playing their own role in inflating these corporate valuation ratios. Which company is supposed to be the most attractive for investing in or for taking it over? Apparently, there is not a single answer but the decision lies solely on the investor's own strategy, future expectations and anticipations, level of patience and finally risk tolerance. For instance, if the case is a rational, risk-averse investor wishing to invest in a low leveraged and promising company with high likelihood to gain profits, or even his money back (!), Diana Shipping is the one to invest.

Table 26: Panel companies' main valuation ratios data (2/2)

VALUATION RATIOS (2/2)							
	2008	2009	2010	2011	2012	2013	Avg
SBLK							
EV/BV	1.28	1.34	1.34	1.01	1.32	1.68	1.3
EV/EBITDA	3.69	74.62	13.82	-29.52	-0.56	18.26	13.4
DRYS							
EV/BV	0.68	0.66	0.33	0.29	0.32	0.71	0.5
EV/EBITDA	-10.56	6.85	2.36	2.40	3.11	3.53	3.6
DSX							
EV/BV	1.56	1.13	0.86	0.47	0.55	1.02	0.93
EV/EBITDA	4.49	6.68	5.42	3.38	5.63	25.53	8.52
NM							
EV/BV	1.55	2.42	2.57	1.72	1.38	2.43	2.01
EV/EBITDA	12.08	17.20	10.96	12.62	5.94	24.11	13.82

ECONOMIC & MARKET VALUE ADDED¹

Economic Value Added (EVA) constitutes a good indicator of whether the company has generated value surplus using the whole invested capital. EVA it is often used as a measure of management's performance and not of company's performance. For this reason, many companies have tied the bonus of their high in hierarchy officials to the EVA creation playing the "carrot" role. Companies having positive EVA usually have increased market capitalization, the market's trust and a trustworthy rating as reported by the major credit rating agencies.

Shipping companies are not really included in that group of companies mainly due to the shipping market's inherent cyclicity and the quite volatile revenues. Owing to that, the credit rating agencies do not normally put shipping companies high in their credit rankings rating almost none above the "BB" investment grade level. From the panel companies the Standard & Poor's (S&P) agency has only assessed Navios Maritime Holdings Inc. NM's credit rating² is B+ while its bonds' credit ratings vary from B⁺ to BB⁻ for the unsecured and secured notes respectively.

Continuing with EVA, it is reckoned by subtracting from the firm's NOPAT³ the total dollar cost of financing.

Equation 14: Economic Value Added (EVA)

$$EVA = NOPAT - (Invested\ Capital * WACC)$$

Or
$$EVA = EBIT * (1 - tax) - (Invested\ Capital * WACC)$$

In many shipping companies where the tax effect in operating profit is of low materiality level, NOPAT coincides with EBIT.

¹ Damodaran, Aswath. "Value Enhancement, EVA, CFROI and Other Tools." In *Investment Valuation book*.

² Standard & Poor's Rating Services. Issuer Credit Rating for Navios Maritime Holdings Inc. http://www.standardandpoors.com/en_US/web/guest/ratings/entity/-/org-details/sectorCode/CORP/entityId/409966

³ Where NOPAT, Net Operating Profit After Taxes

On the other side, Market Value Added, abbreviated MVA, is a measure of whether the company has outperformed generating value to its shareholders. For calculating MVA the common equity capital is merely subtracted from the company's Market Capitalization (Market Cap).

Equation 15: Market Value Added (MVA)

$$MVA = \text{Market cap}^1 - \text{Common equity capital}$$

Despite being misconstrued several times, EVA and MVA are not interchangeable indicators. In fact, they are substantially different considering that EVA needs a high NOPAT to be positive whilst MVA needs a high stock's market price. Consequently, EVA requires an efficient and effective management to bring the desirable high NOPAT and MVA requires the market to trust the company and invest in its shares.

Has management created value for shareholders? EVA replies to this.

Has the firm outperformed & increased shareholders' wealth? MVA is the answer.

Undoubtedly, there is a positive relation between an efficient management generating profits and investors' opinion about the company, but this does not confute indicators' different application. The table below shows the EVA and the MVA as have been calculated for each panel company separately.

Table 27: Panel companies' EVA & MVA

EVA & MVA in thousands U.S \$						
	2008	2009	2010	2011	2012	2013
SBLK						
EVA	85,693	-87,671	-35,199	-97,045	-321,594	-16,637
MVA	-404,963	-327,594	-324,076	-429,998	-79,318	-84,984
DRYS						
EVA	-272,965	-249,809	-88,540	-471,534	-745,532	-605,182
MVA	-409,778	-1,273,551	-2,516,527	-2,223,594	-1,924,726	-766,201
DSX						

¹ Market cap is the stock's market price times the number of shares outstanding. When computing market cap for a fiscal year and the stock's market price is average is usually used the weighted average number of shares instead.

EVA	97,153	6,517	37,026	30,716	-55,129	-162,286
MVA	259,833	134,210	-200,123	-602,386	-587,755	-170,912
NM						
EVA	-133,546	-115,787	-50,246	-76,928	23,369	-159,660
MVA	-569,614	-446,289	-781,286	-810,091	-935,831	-101,892

Both EVA and MVA of almost all panel's companies have turned negative coloring the table red with only Diana Shipping making the difference and bringing positive EVA and MVA, colored green, from 2008 through 2011 and for the years 2008, 2009 respectively. Navios Holdings' and Star Bulk Carriers' positive EVA for 2012 and 2008 respectively are just a sunshine in the rainstorm.

These discouraging results regarding value creation from both management's side and market's perspective were not surprising at all considering the market's performance and outlook in the examined years. In mid-2008 Baltic Dry Index and dry-bulk freight rates collapsed leading shipping firms in below break-even revenues while in 2010-2011 the new buildings ordered in the bull market of 2007, early 2008, delivered resulting in capacity's oversupply. If in these circumstances the financial crisis burst and hit the Eurozone and the slowing pace of the global demand's growth are added, the explanation of the value destruction in the examined dry-bulk companies will be crystal clear. Indeed, how could the investors trust dry-bulk shipping companies increasing their market capitalization when their revenues have plummeted? Depending on the risk averted investor's character, how the stock's price of a dry-bulk shipping company would be high when the shipping market was experiencing one of its hardest and more volatile times?

As for DSX, the conservative policy without many opportunistic movements but with close scrutiny of every growth potential proposal, the efficient vessels' operation, the low leverage and the also low interest rate achieved are the main determinants explaining DSX's positive EVA.

DIVIDEND YIELD & CAPITAL GAINS

How much dividend yield a company offers and how much capital gains the investor can realize when selling its stocks in the market are questions and subjects of critical importance for an investor when it comes to decide whether to buy or not a stock. On the other side of that coin, dividend policy is significant for the companies too, since the dividend is the necessary lure (teaser) for attracting investors, increasing firm's market capitalization and shareholders' wealth.

DIVIDEND YIELD

During the defined time span, two out of the four companies have kept declaring dividends to their shareholders, Navios Maritime Holding and Star Bulk Carriers while Dryships and Diana Shipping have ceased same since 2008 as the below chart illustrates.

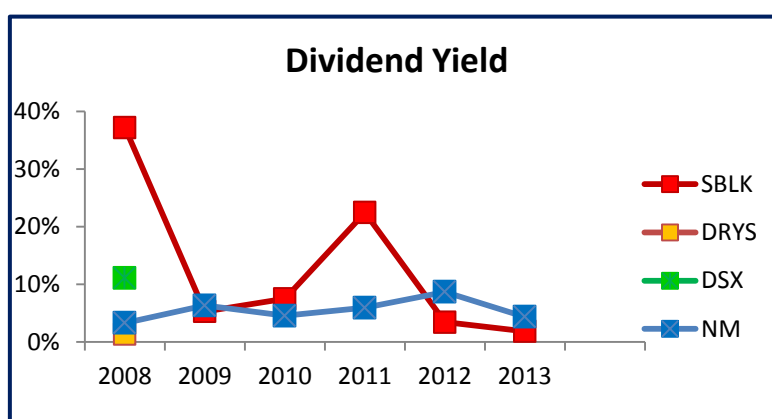


Figure 38: Dividend yield of examined firms' stocks

Navios Maritime Holdings (NM)

NM has been paying dividends to its shareholders by almost the time it went public, in 2006, and after the downstream merger with the SPAC International Shipping Enterprise was completed. Since then it declares a stable dividend of **\$0.06** per share payable quarterly, having only been altered in 2007 and 2008 paying \$0.0666 and \$0.09 per share respectively. As it is clearly observed from the chart, NM's dividend yield is quite smoother compared with SBLK's and it fluctuates from **4.0%** in 2008 and 2013 to

6.8% in 2012. Indeed, NM has opted to maintain a stable dividend policy to eliminate potential fluctuations in stock's price raised by variations in dividend declared. NM desires to have their shareholders satisfied by paying them a stable dividend even when reporting losses and on the contrary, when reporting profits to still pay the stable dividend but reinvest the rest for company's growth purposes.

Star Bulk Carriers: Star Bulk has also been paying dividends since its public life initiated, in 2007, but its dividend policy has not followed a stable pattern. Dividend per share varies from \$0.05 in years 2009, 2010, 2011 to \$0.06 in 2013 and \$0.35 in 2008, all payable in quarterly basis. Regarding dividend yield, it has highly fluctuated in the examined years from the low 1.9% in 2013 to the highest ever 37.2% in 2008.

CAPITAL GAINS

Rather volatile stocks give the ability to their holders to generate abnormal profits by selling them when their price is much higher than the initial purchase price. The graph below shows the capital gains that an investor would have if he sold his share at the end of its year, after keeping it in his portfolio for a year. Therefore, an investor buying SBLK share at the beginning of the year 2012 and selling it at the end of same he would realize 189% capital gain since the stock's price was \$0.93 on the 3rd of January 2012 and \$6.18 on the 31st of December 2012. This was not the scene though as for one year earlier, 2011. The same investor if had followed the same strategy for the year 2011 would have realized a -111.3% loss since SBLK's price on the 3rd of January 2011 was \$2.71 while same on the 30 of December 2011 was \$0.89.

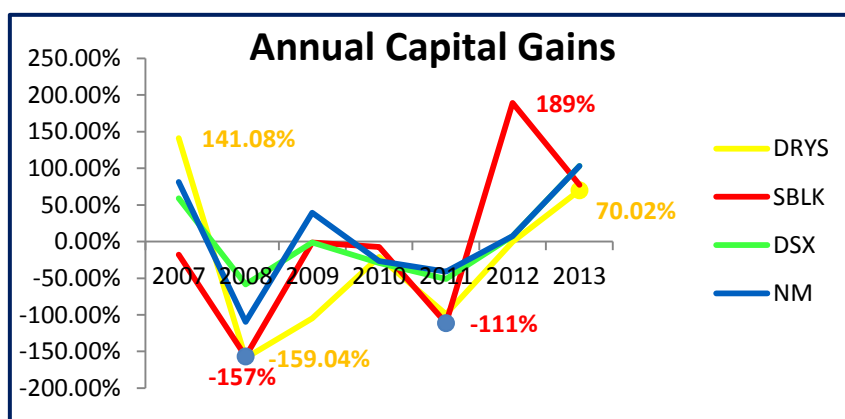


Figure 39: Annual capital gains for investors holding the selected stocks

Observing the graph, all companies' annual capital gains follow more or less the same trend regardless to their different management, capital structure, financial decisions and financial performance. May the market's perception for a stock be mainly grounded in the shipping's market overall outlook and not in each company's own prospects? At an increased extent, yes! When the freight rates have collapsed and the general feeling as well as the future prospects of the dry-bulk market are negative then investors will be pothered and discouraged of buying stocks or keeping assets tied to this collapsed market. The company's performance affects the stock price and thus any capital gains at the degree that the latter vary for one firm to another. The periods of investors' profits or losses are revealed by looking the capital gains graph according to which the year 2008 brought the greatest losses to investors followed by the years 2010 and 2011 and the years 2007 and 2013 the highest profits, always provided holding the stock for a whole calendar year. For review purposes the annual dividend, dividend yield, dividend pay-out ratio and annual capital gains of each panel company have been cited in the table below.

Table 28: Annual dividend, dividend yield, dividend payout and annual capital gains of the selected stocks

	2007	2008	2009	2010	2011	2012	2013
SBLK							
Annual dividend	\$ 0.10	\$ 1.06	\$ 0.15	\$ 0.20	\$ 0.20	\$ 0.24	\$ 0.24
Dividend Yield		37.19%	5.32%	7.49%	22.47%	3.46%	1.86%
Dividend payout		43.2%	-15.6%	-239.7%	-1.4%	-0.4%	182.3%
Annual capital gain	-18%	-157%	-1.1%	-7.6%	-111.3%	189.4%	77.2%
DRYS							
Annual dividend	\$ 0.80	\$ 0.80	N/A	N/A	N/A	N/A	N/A
Dividend yield		1.40%	N/A	N/A	N/A	N/A	N/A
Dividend payout		-772.35%	N/A	N/A	N/A	N/A	N/A

Annual capital gain	141.08%	-159.04%	-104.69%	-20.96%	-99.33%	-0.46%	70.02%
DSX							
Annual dividend	\$ 2.19	\$ 2.71	N/A	N/A	N/A	N/A	N/A
Dividend yield		11.1%	N/A	N/A	N/A	N/A	N/A
Dividend payout		91%	N/A	N/A	N/A	N/A	N/A
Annual capital gain	59.17%	-58.59%	-1.44%	-29.16%	-51.19%	7.47%	103.10%
NM							
Annual dividend	\$ 0.288	\$ 0.33	\$ 0.24	\$ 0.24	\$ 0.24	\$ 0.24	\$ 0.24
Dividend yield	2.63%	3.32%	6.34%	4.56%	5.94%	8.69%	4.36%
Dividend payout		29.05%	35.30%	16.55%	59.35%	13.84%	-22.41%
Annual capital gain	81.22%	-109.49%	39.40%	-26.76%	-41.20%	7.47%	103.10%

Undoubtedly, shipping stocks may offer high yields and realize abnormal capital gains but holding a stock for a year is a rather unpredictable venture with volatile outcomes especially when it comes to a shipping stock. Therefore, investors willing to be involved in the shipping market shall be knowledgeable about the dry-bulk market, patient and wait for the right moment to come so as to be benefited. Once again, profits and desirable outcomes are not often delivered within stringent timetables imposed.

CONCLUSION

In a general framework, ship-finance alters together with the global economic conditions, the funds available and the shipping market's prevailing conditions affecting each segment separately. Shipping's main peculiarities such as the volatility of revenues, the intensive capital requirements, the derived demand character of transportation and the increased regulations in operations, compose a sector in high need of capital but simultaneously rather risky for investments. Moreover, due to the co-existence of volatile revenues and high fixed expenses, the minimization of a firm's financing cost is of paramount importance for achieving survival, profitability and sustainability during all the phases of a shipping cycle. During the last decade, many different methods have been used for funding a shipping company and for providing the necessary capital in order to acquire vessels, to support the day-to-day operations and to repay indebtedness. Did any of them emerge as the most advantageous method making the company that applied it more profitable, flexible, developed and finally with a shareholders' value increase?

Let me take it from the beginning, commercial lending, the well-known traditional bank-lending bears the lower cost compared to the other forms of financing but in shipping, given the risks associated, large funds are not always available. In fact, the global economic crisis' burst, with Lehman Brothers collapse in late 2007, led many banks to decrease their exposure in shipping and the largest banks included in the "bulge bracket" to totally retreat from ship financing since now.

Continuing with bonds, the other major category of debt financing, shipping companies *can raise substantial amount of money by issuing them* without even having to collateralize their assets but *they are costly and not free of covenants imposed. Furthermore, do all shipping companies have the ability to tap the debt capital markets?* Regarding the examined dry-bulk shipping, the most fragmented segment with numerous small ship-owners operating a couple of vessels, the issuance of debt securities with all the requirements needed seems to be a solution for few.

Proceeding to *mezzanine capital*, this hybrid capital encompassing features from both debt and equity financing and placed in the middle level of a company's capital structure *provides capital with middle risk and cost* filling the gap between the cheap

debt and expensive equity. However, again, it *addresses more to larger companies, usually publicly traded* and staffed with *financial competent human capital that fully understand the complicated structure* of these mezzanine securities.

Equity markets have always been a gate to ample source of funding but *there has to be a loss of privacy* and flexibility by filing financial statements and other reports with the Security Exchange Commission and informing the investors about the company's actions of materiality level. Undoubtedly, privacy loss is a burden for the traditional intuition-driven ship-owner and the high cost of going public is an aspect that shall not be omitted. However, if these do constitute deterrent factors of going public the funding sources are limited to bank lending, private placement and Private Equity. *Private Equity, an almost new arrow in the shipping finance quiver, injects large funds in companies but entails risk* making the scrutinizing of the agreement to be highly vital for avoiding future pitfalls.

Profoundly, when choosing one financing method, something you gain and something you lose, but what are the determinants of the most beneficial trade-off? What is really the ultimate aim? Commonly accepted, the bet and simultaneously the goal for every company is the shareholders' value maximization. Quantitatively, to accomplish this goal the Weighted Average Cost of Capital (WACC) of the company shall be minimized. Recall that a company is valued by dividing its future free cash flows with its WACC. Therefore, *ceteris paribus*, if the denominator, WACC, decreases, the fraction's outcome, company's value and by way of consequence shareholders' value, increases. In plain words, the financing solution *minimizing WACC* and, *ceteris paribus, maximizing shareholders value shall be the most preferable. Should this be deemed as a doctrine? Is the cost minimization the only factor to be considered?* No! Privacy, flexibility and financial horizon are some others, more qualitative elements, complementing and framing the final decision; but how much should you pay for enjoying them? The cost was, is and I believe will continue to be the final deciding factor.

By analyzing the application of the different financing methods in the 4-firm group, it has become evident that companies shall *gauge the benefits and shortcomings of each method, always in a regular basis*, to achieve the desirable capital structure's

optimization. Today's minimum WACC is not the same for tomorrow but alters and adjusts in every variation of the inner and outer firm's environment. Moreover, it may debt be indeed cheaper than the other types of financing, yet, could this mean that an overleveraged company has achieved the least possible cost of capital as the no-tax Miller-Modigliani has indicated? According to the revised Miller-Modigliani theorem, *debt financing due to its first priority in payment, the collateralization of assets and the tax-deductible feature is cheaper but when its proportion in capital structure increases equity's required return also increases.* As the interest obligations increase, the shareholders become worried about the company's ability to firstly meet them and secondly pay the dividends. This leads the shareholders to require higher return as a compensation for their extra risk. Given this opposite relationship is not proportional but in many cases seems arbitrary, careful, diligent and delicate handling of the company's financial matters is indispensable so as to find the optimal blend of the different types of financing through a more like a trial-and-error process.

In rough lines, for *small capitalization companies* it is more preferable to *remain on commercial lending and equity raised by markets.* With a low interest rate and a more or less fifty percent (50%) leverage they will probably be led to less possible cost and no threat of losing the company's control arising. Regarding the medium to large capitalization companies, it seems to be more preferable to *diversify their risk by not having a single source of financing* and by employing instead a variety of them.

By reckoning the Economic Value Added (EVA), the value creation by management indicator, and the Market Value Added, the value creation by market indicator, the results were discouraging since in almost all panel companies have turned negative. Nevertheless, this outcome was almost anticipated considering the capital intensity of shipping which needs a share's jump sky high so as the market to add value to the company and a higher NOPAT than dollar-cost of capital to add the management value to the company. This *rather difficult task to turn EVA and MVA positive and make them a pole of attraction for new investors has been also implied by the major credit agencies globally, such as Standard & Poors and Moodys', which have rated with a BB and below most of the companies engaged in the shipping industry. This non-investment grade rating indicating the risk entailed is attributed more to the industry with its volatile and highly unpredictable environment and less to the company itself.*

Finally, yet importantly, some general inferences extracted from the hereby thesis would worth to be stated. In shipping companies, every stakeholder shall employ patience, discernment, set specific targets and concurrently be quick on the draw to swift decisions and policy if need be. Time is a rather relevant element in shipping operations and not narrow time span shall be set if the aim is to ride the cycle. Immature with shipping sector investors, who do not realize that a profitable first quarter may be followed by a second quarter of loss, will probably be disappointed from their investment, they may not wait for recovery and consequently, they will, in fact, lose money. On the opposite side, ship-owners shall opt and implement that financing method which suits better in the company's profile and accommodates most of its needs. Complicated financing types, composing a complex capital structure, if applied to traditional shipping firms lacking of financial expertise, may lead to detrimental implications for the company instead of diminishing its cost of capital. All in all, *there is no panacea for all companies' financial illnesses but ideal solutions considering each company's own needs!*

REFERENCES

- Merikas Andreas/Department of Shipping, University of Piraeus, Andreas, Dimitrios Gounopoulos/School of Management, University of Surrey, and Christos Nounis/Department of Economics, University of Athens. "Global Shipping IPOs performance." Last modified 2007.
<http://epubs.surrey.ac.uk/154536/1/Global%20Shipping%20IPO%20Performance%20MPM%20FORMAT.pdf>.
- Modigliani, Franco, and Merton H. Miller. "The Cost of Capital, Corporation Finance and the Theory of Investment." *The American Economic Review* 48 (May/June 1958): 261-297. <http://www.jstor.org/stable/1809766>.
- CFA Institute. "Capital Structure." In *Corporate Finance*. 2013. Presentation.
- Hawawini, Gabriel A., and Claude Viallet. *Finance for Executives: Managing for Value Creation*, 4th ed. Cincinnati: South Western College Pub, 2011.
- Damodaran, Aswath. "Estimating Risk Parameters and Costs of Financing." In *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, 3rd ed. New York: John Wiley & Sons, 2012.
- Damodaran, Aswath. "Capital Structure." In *Applied Corporate Finance*, 4th ed. Hoboken: J. Wiley, 2014.
- Damodaran, Aswath. "Value Enhancement, EVA, CFROI and Other Tools." In *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, 3rd ed. New York: Wiley, 2012.
- Myers, Stewart C., and Nicholas S. Majluf. "Corporate financing and investment decisions when firms have information that investors do not have." *Journal of Financial Economics* 13, no. 2 (June/July 1984).
<http://dspace.mit.edu/bitstream/handle/1721.1/2068/SWP-1523-15376412.pdf?sequence=1>.
- Damodaran, Aswath. "Option Pricing Theory & Models." In *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, 3rd ed. New York: Wiley, 2012.
- Drobetz, Wolfgang, Dimitrios Gounopoulos, Andreas Merikas, and Henning Schroder. "Capital Structure Decisions of Globally-Listed Shipping

- Companies." International Centre for Maritime Studies. Last modified May 2012. <http://www.icms.polyu.edu.hk/ifspa2012/papers/137.pdf>.
- Taylor/Mayer Brown, James, and Robert Flanigan/Mayer Brown. "Convertible Bonds An Issuer's Guide." Mayer Brown. Last modified October 2013. [https://www.mayerbrown.com/files/Publication/b9394aec-1850-418d-b58d-5b73e34ef5c2/Presentation/PublicationAttachment/944a31fb-4043-4b1e-8f42-589585d4cddc/Convertible%20Bonds%20\(European%20Edition\).pdf](https://www.mayerbrown.com/files/Publication/b9394aec-1850-418d-b58d-5b73e34ef5c2/Presentation/PublicationAttachment/944a31fb-4043-4b1e-8f42-589585d4cddc/Convertible%20Bonds%20(European%20Edition).pdf).
 - Dempsey Timothy, Curran/NYSE Brian. "NYSE IPO Guide, Second Edition." Caxton Business & Legal, Inc. Last modified 2013. https://www.nyse.com/publicdocs/nyse/listing/nyse_ipo_guide.pdf.
 - Maxim Group LLC. "Special Purpose Acquisition Company (SPAC), Overview." Maxim Group LLC, Investment Banking. Last modified 2008. <http://forums.capitallink.com/shipping/2008/files/maxim032008.pdf>
 - Talis Capital Limited. "PE Investments in Shipping." In *London Ship Finance Forum*. London: Marine Money, 2014. <https://www.marinemoney.com/sites/all/themes/marinemoney/forums/LON14/presentations/Vasile%20Foca.pdf>.
 - Blundell-Wignall/ OECD, Adrian. "The Private Equity Boom: Causes and Policy Issues." Organization for Economic Co-operation and Development (OECD), 2007. <http://www.oecd.org/finance/financial-markets/40973739.pdf>
 - OECD Council Working Party on Shipbuilding. "Report on Ship Financing." OECD.org - OECD. Last modified June 2007. <http://www.oecd.org/sti/ind/47128870.pdf>.
 - J.Tenev, Partner, Holland & Knight LLP. "Private Equity JVs: Recent Success and more to come." 27th Annual Marine Money Week , New York, USA, June 17, 2014.
 - J. Tenev, Partner, Holland & Knight LLP. "Private Equity JVs: Recent Success and more to come." In New York, USA: Marine Money, 2014. <https://www.marinemoney.com/sites/all/themes/marinemoney/forums/MMWeek14/presentations/Tuesday/Tuesday%20255%20PM%20Tenev.pdf>.
 - Melsom Myhre, Christian. "Capital Structure An Analysis of the Shipping Market." PhD diss., NORGES HANDELSHØYSKOLE, 2011.

<http://brage.bibsys.no/xmlui/bitstream/handle/11250/169523/Myhre.pdf?sequence=1&isAllowed=y>.

- Robinson, Arthur D., Igor Fert, and Daniel N. Webb. "Mezzanine Finance: Overview." Simpson Thacher & Bartlett LLP. Last modified 2013. <http://www.stblaw.com/docs/default-source/cold-fusion-existing-content/publications/pub1580.pdf?sfvrsn=2>.
- Silbernagel, Corry, and Davis Vaitkunas. "Mezzanine Finance." Bond Capital. Last modified 2012. http://www.salvador-montoro.com/uploads/3/2/0/7/3207272/mezzanine_finance_12.pdf.
- "Roadmap for an IPO: A guide to go public." PricewaterhouseCoopers LLP. Last modified November 2011. <http://www.pwc.com/us/en/transaction-services/assets/roadmap-for-an-ipo-a-guide-to-going-public.pdf>.
- http://nysemanual.nyse.com/LCMTTools/PlatformViewer.asp?selectednode=chp_1_2_2_3&manual=%2Ffcm%2Fsections%2Ffcm-sections%2F

APPENDIX

<http://www.sec.gov/about/forms/forms-1.pdf>

424b5 SEC filing: DRYS Prospectus for the Issuance of Convertible Bonds

<http://www.sec.gov/Archives/edgar/data/1308858/000095012309064848/y80493b5e424b5.htm>

Conversion rights as exactly stated in the prospectus filed with SEC:

{“Holders may convert their notes at any time prior to the close of business on the business day immediately preceding the maturity date for the notes only under any of the following circumstances:

- during any calendar quarter beginning after December 31, 2009 (and only during such calendar quarter), if the closing price of our common stock for at least 20 scheduled trading days in the period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is more than 130% of the then applicable conversion price per share of the notes on the last trading day of such preceding calendar quarter;
- during the ten consecutive trading days after any five consecutive trading day period (the “measurement period”) in which the trading price per \$1,000 principal amount of notes for each trading day of that measurement period was less than 98% of the product of the closing price of our common stock and the then applicable conversion rate of the notes;
- if certain significant distributions to holders of our common stock are made, or specified corporate transactions occur; or
- any time on or after June 1, 2014 until the close of business on the business day immediately preceding the maturity date for the notes.

The initial conversion rate for the notes is shares of common stock per \$1,000 principal amount of notes. This is equivalent to an initial conversion price of approximately \$7.19 per share of common stock. The conversion rate is subject to adjustment under certain circumstances. See “Description of Notes—Conversion Price Adjustments.”

Upon conversion, we will have the right to deliver, in lieu of shares of our common stock, cash or a combination of cash and shares of our common stock to satisfy our conversion obligation, in each case calculated as described under “Description of Notes—Conversion of Notes—Settlement Upon Conversion.” Upon any conversion, subject to certain exceptions, you will not receive any cash payment representing accrued and unpaid interest. See “Description of Notes—Conversion Rights.”

Holders who convert their notes in connection with a make-whole adjustment event, as defined herein, may be entitled to a make-whole adjustment amount in the form of an increase in the conversion rate for notes converted in connection with such make-whole adjustment event. See “Description of Notes—Adjustment to Conversion Rate—Adjustment to Conversion Rate Upon a Make-Whole Adjustment Event.”}

F-3 SEC filing: “Certificate of Designations of Rights, Preferences and Privileges of Preferred Stock of Navios Maritime Holdings Inc.”

{Convertible Preferred Stock: The Company’s 2% Mandatorily Convertible Preferred Stock (“Preferred Stock”) are recorded at fair market value on issuance. The fair market value is determined using a binomial valuation model. The model which is used takes into account the credit spread of the Company, the volatility of its stock, as well as the price of its stock at the issuance date. Each preferred share has a par value of \$0.0001. Each holder of Preferred Stock is entitled to receive an annual dividend equal to 2% on the nominal value of the Preferred Stock, payable quarterly, until such time as the Preferred Stock converts into common stock. }

{On November 8, 2010, in connection with the expected acquisition of two newbuild vessels, Navios Maritime Holdings Inc. (“Navios Holdings”) filed a Certificate of Designations, Preferences and Rights of Navios Holdings (the “Certificate of Designation”) with the Registrar of Corporations in the Republic of the Marshall Islands designating a series of preferred stock as the Series E Convertible Preferred Stock (“Preferred Stock”). It is expected that on or about November 17, 2010 and November 29, 2010, upon execution of the applicable subscription agreements, the 1,960 shares of designated Preferred Stock will be issued. The Preferred Stock contains a 2% per annum dividend payable quarterly, accruing from the date of issuance. Accrued but unpaid dividends may be paid upon conversion in accordance with the mandatory

conversion terms of the Preferred Stock. The Preferred Stock, plus any accrued but unpaid dividends, will mandatorily convert into shares of common stock as follows: 30% of the outstanding amount will convert on August 19, 2015 and the remaining outstanding amounts will convert on August 19, 2020 at a price per share of common stock of not less than \$10.00. The holder of the Preferred Stock shall have the right to convert the shares of Preferred Stock into common stock prior to the scheduled maturity dates at a price of \$14.00 per share of common stock. The Preferred Stock does not have any voting rights. The Certificate of Designation, as filed, is attached hereto as Exhibit 1.1 to this Report and is incorporated herein by reference. }

{In general, a holder of the Series B Preferred Stock will receive an annual dividend equal to 2%, payable quarterly, until such time as the Series B Preferred Stock converts into common stock. The Series B Preferred Stock will mandatorily convert into common stock as follows: (1) following the third anniversary of such preferred stock's issuance, if the common stock closing price is at least \$20.00 per share for 10 consecutive business days, then such outstanding preferred stock automatically converts at a conversion price of \$14.00 per share of common stock; and (2) 30% of the then-outstanding Series B Preferred Stock will mandatorily convert into common stock five years from the date of such issuance and any remaining then-outstanding Series B Preferred Stock will mandatorily convert into common stock ten years from the date of such issuance, all at a \$10.00 price per share of common stock. The holder shall have the right to convert the outstanding shares of such preferred stock into common stock prior to the scheduled maturity date at a price of \$14.00 per share of common stock. A copy of the Certificate of Designation with respect to the Series B Preferred Stock is filed as Exhibit 3.1 as part of this Report and is incorporated herein by reference.

On September 17, 2009, Navios Holdings issued 2,829 shares of the newly designated Series B Preferred Stock as partial payment in connection with the acquisition of two vessels.

This information contained in this Report is hereby incorporated by reference into the Navios Registration Statements on Form F-3, File Nos. 333-136936, 333-129382 and 333-141872 and on Form S-8, File No. 333-147186. }

The issuance of Preferred stock in detail explaining the financing of the new-building program for capesize vessels:

Issuance of Preferred Stock: Navios Holdings issued 1,780 shares of preferred stock at \$10,000 nominal value per share to partially finance the acquisition of the Navios Antares on January 20, 2010. On January 27, 2010, Navios Holdings issued an additional 300 shares of preferred stock at \$10,000 nominal value per share to partially finance the construction of Navios Azimuth. On July 31, 2010 and August 31, 2010, Navios Holdings issued 2,500 and 1,870 shares, respectively, of preferred stock at \$10,000 nominal value per share to partially finance the acquisition of the Navios Melodia and the Navios Fulvia, respectively. On October 29, 2010 and November 17, 2010, Navios Holdings issued 2,500 shares of preferred stock and 980 shares of preferred stock, respectively, at \$10,000 nominal value per share to partially finance the construction of the Navios Buena Ventura and the Navios Luz. On December 3, 2010 and December 17, 2010, Navios Holdings issued 980 shares of preferred stock and 2,500 shares of preferred stock, respectively, at \$10,000 nominal value per share to partially finance the construction of the Navios Etoile and the Navios Bonheur.

On December 27, 2010, Navios repurchased \$131.3 million (or 13,132 shares) of certain 2% Preferred Stock previously issued in connection with the acquisition of Capesize vessels for a cash consideration of \$49.2 million, reflecting a 62.5% discount to the face amount (or nominal value).