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The Sale and Purchase Shipbroker and
the Hedonic Price Model for Second Hand Ships

by

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Acknowledgements

As the graduation is coming closer, I can come up with lots of memorable moments during this year as postgraduate student at MEL. This demanding year passed very fast with lots of good memories and many hours of hard work. From making new and very strong friendships to studying and writing without sleeping at all, I can only promise that I will never forget this year. I would like to thank the MEL office, my professors, my classmates, my teammates, and especially the Greeks for sharing one year of their life with me.

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Abstract

The main area of this thesis has to do with the shipbroking function and more specifically with the Sale & Purchase of ships. The role, the duties and the responsibilities together with the information network of the S & P broker are analyzed in the first part. In the following section the construction of an offer, the counter offers, the negotiations, the recap and finally the completion of the sale are analyzed extensively by presenting clause by clause the Memorandum of Agreement, the Bill of the sale and other important legal documents. Furthermore, this part is supported with a case study of real negotiations accompanied with the relevant MoA that concluded the deal.

The aim of the dissertation is to give an insight on how brokers value a second hand ship. The research shows all variables that shipbrokers take into account in the determination of price for a second hand Panamax or Capesize bulk carrier and more specifically their relative weight in the valuation of a vessel's purchase price. This empirical analysis is performed by developing a conceptual model that describes the S & P transaction microstructure after having examined S & P records of negotiation logs kept by brokers who initiated, supported and concluded the entire sales. These records together with questionnaires answered by Greek professional shipbrokers show all important factors that play a highly important or slightly significant role in the negotiations process and consequently in the determination of a ship's sale price. Finally, the shadow prices of the most relevant determinants are estimated in a second-hand ship hedonic price model from an analysis of sale and purchase fixtures.

To my Parents

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List of Abbreviations

BCI	Baltic Capesize Index
BDI	Baltic Dry Index
BIMCO	Baltic and International Maritime Council
BPI	Baltic Panamax Index
FONASBA	The Federation of National Associations of Ship Brokers and Agents
IACS	International Association of Classification Societies
ICS	Institute of Chartered Shipbrokers
IMO	International Maritime Organization
MoA	Memorandum of Agreement
NSF	Norwegian Saleform
S & P	Sale & Purchase

Chapter 1 Introduction

1.1 Introduction

Shipbroking, as a profession, has been established since the early days of commercial shipping. Initially the owner of the ship was also the trader, or in other words, the trader was the owner of the ship. He bought goods in one place, carried them in his ship to another place and sold it there. As the trade evolved, the trading activity and the shipping activity were differentiated; the ship owner simply carried cargo from the trader (or various traders, as competition was rapidly increasing) in one location to another location and handed it over to the buyers.

In the last decades shipping has experienced important developments in many sectors. One of these sectors is the Sale and Purchase of ships. The tremendous evolution in trade specialization and the extremely improvements in shipbuilding have changed the role of brokers to more pronounced. The shipbroker was the intermediary who would find ships for the merchants and cargoes for the ship owners. Nowadays, each broker specialises on specific kind(s) of ship or market(s) and deals only with them. The basic aspect of shipbroking function, in our days, remains the same, but other duties have been added: he is a source of information, a negotiator, an experienced advisor, a dispute resolver for his principals and other secondary activities that have to be accomplished with success on everyday basis.

The main area of this thesis has to do with the shipbroking function and more specifically with the Sale & Purchase service. Legal aspects of S & P, documentation, ship valuations from brokers' insight, negotiations, means of communication and other relevant factors that are highly significant for broker's role are analyzed extensively in this thesis. This dissertation takes a deep look at the S & P service and tries to describe all aspects from brokers' insight.

1.2 Research Questions

The main research question is the following:

Which factors do shipbrokers take into account in the determination of price for a second hand Panamax or Capesize bulk carrier and what is their relative importance?

The aim of this thesis is to investigate brokers' insight and determine all variables and more specifically their relative weight in the estimation of the vessel's price by developing a conceptual model that describes the sale and purchase transaction microstructure. This empirical analysis will be performed by examining sale and purchase records of negotiation logs kept by brokers who initiated, supported and concluded the entire sale. These records together with questionnaires answered by Greek professional shipbrokers show all the important variables that play a role in the negotiations process and consequently in the determination of the ship's sale

price. Finally, from an analysis of sale and purchase fixtures, the shadow prices of all these relevant factors are estimated in a second-hand ship hedonic price model.

However, apart from the main research question there are also other significant questions that motivate this study. The main area of this dissertation deals with the S & P service and basically with the role of the shipbroker. The topics that are analysed later in the study include a broad description of duties and responsibilities of S & P brokers, the important role that the information network plays on his success and the distribution of information, the composition of an offer and a counter offer, the trustees' agreement, the recap, inspection and delivery of the vessel, legal aspects, the MoA analyzed clause by clause and other legal documents essential in order to complete a sale. All these things describe the activities of S & P brokers and are also supported by serious examples and a case study.

Furthermore, the transactions microstructure and the negotiations process are also analyzed step by step as part of the everyday activity of S & P brokers. Moreover, all factors that affect a second hand ship price are analyzed extensively and special attention is given on how each one of them affects price. Next, after a literature review on price modelling and after choosing the most important out of these variables, according to brokers' views, a hedonic price model is established. This model describes how shipbrokers estimate price for a second hand Panamax or Capesize bulk carrier.

1.3 Thesis Structure

The thesis consists of six chapters. The first one is mainly an introduction to the topic, a description of the thesis' structure and the research questions and an overview of what is going to follow in each chapter. The second one refers to the shipbroking function. The role and the responsibility of S & P brokers are analyzed extensively. Furthermore, the information network, the distribution of information and the shipping database are presented. The importance of the information network is illustrated by applying the theory of adverse selection in the second hand market and referring to information asymmetry and uncertainty.

The third chapter focuses more on the ship sale and legal status of S & P brokers. It refers to the construction and structure of a ship offer and all the relevant details that it entails the reply time, the inspection, the price, the deposit, the commission and the delivery of the ship. The next part deals with the legal status of brokers and official documentation by presenting all clauses of the Memorandum of Agreement (MoA), the contents of the Bill of Sale and other essential official documents included in an Addendum so as to complete a sale.

The fourth chapter of the thesis presents the most important part of the S & P service which is the negotiations process. It presents the dynamics of the transaction microstructure and the whole negotiations process between sellers' and buyers' brokers. Furthermore, this research is further continued by showing all variables that affect a second hand ship's price according to brokers' views and experiences and after examining S & P negotiation logs kept by brokers. This part also includes an extensive analysis showing how each of these determinants affects

a ship's price. The case study that follows refers to a recap from a real sale and shows some additional clauses too. It is also accompanied by the relevant completed MoA based on this recap and a trustees' agreement for the same case too.

Investigation on how shipbrokers estimate prices for second hand ships is performed in the fifth chapter. This chapter establishes the hedonic price model and a relevant literature review presenting important articles regarding this price model. Next, this chapter presents a ranking for all variables that affect a second hand ship's price according to brokers' experience. In addition, some shipping valuation rules based on empirical research show how shipbrokers estimate a ship's price. Finally, a second hand model is developed, after having chosen which variables are going to be used, in order to estimate the shadow prices of the factors that affect second-hand ship's price by checking sale and purchase fixtures of second-hand Panamax and Capesize bulk carriers. The model developed describes the sale and purchase transaction microstructure.

To end with, the sixth and last chapter presents the conclusions and the findings of the thesis together with a set of recommendations for further research in the future.

Chapter 2 The Shipbroking Function and Its Relevant Factors

2.1 Introduction

This chapter introduces readers to the shipbroking function. After providing important definitions regarding the different roles that brokers have, the chapter focuses more on the information network. The information network is analyzed further by referring to information asymmetries that occur between the different parties of the transaction process. Next, Akerlof's theory of adverse selection is illustrated in a second hand ship market as well as mechanisms that can confront this theory. The distribution of information and more specifically market reports are analyzed in the following part. Furthermore, the shipping database and its importance are presented together with all elements that it consists of. In addition, computer system programmes and means of communications are described in the next part. Finally, the second hand ships market is analyzed together with relevant literature review.

2.2 Definitions

Shipbroking is therefore a crucial aspect of international maritime transactions. The ICS (2009) diversifies the shipbroking function in the next categories: sale and purchase, chartering, port agency, liner agency and ship management. The dissertation mainly focuses on the S & P service. First of all we need to define what shipbroking is. Shipbroking is considered as an intermediary action that takes place in many maritime transactions. Shipbroker is the person that acts as a middleman between the seller and the buyer of a ship, in order to satisfy both parties' needs. Shipbrokers search, match agents and assist in the bargaining process between these agents. They also take care of formalities in the contract. For his service a shipbroker charges a commission, usually as percentage of the agreed price or freight rate (Stranden, 2000). The S & P broker, on the one hand, tries to identify the vessel with the right specifications that the buyer has requested and on the other hand, he tries to satisfy the seller's requirements. The chartering aspect of the shipbroking function refers again to a middleman that this time interferes between a cargo owner that seeks for transportation and a shipowner that has an appropriate vessel ready for use. According to Prasad (2009) shipbrokers' role can be broadly classified as follows:

- Finding ships for cargoes and cargo for ships
- Source of Information
- An experienced advisor to owners and charterers
- A dispute resolver

Shipbrokers mainly contribute to increasing market efficiency, according to Stranden (2000) by: (a) speeding up search and matching, (b) obtaining favourable ask/ bid prices, and (c) functioning as experts in deals with asymmetric information. The shipbroker's function is mainly based on the fact that he has access to a bigger amount of information than the other parties, like knowledge of the market, expected trends, future seaborne trade, expected rates but also because he knows how to match each seller with the right buyer. However, the

shipbroker has many other duties. By checking the different fields of activity, the function of each shipbroker can be distinguished in one or more of the following categories: information provider, commercial adviser, negotiator, drafter, document reformer, provider of post agreement services (Gaskell, 1991). The role of each of these functions is not clearly defined and usually a broker applies to more than one of those. However, as the shipping industry changes over time and becomes more complex, the S & P services have also reconsidered their business strategies. More and more brokers are applying beyond their classic operations to also offer a wide range of market intelligence and other services such as freight derivatives, shipping finance, consultancy services and research.

Regarding the information provider, that is probably one of the most important services, the S & P broker must be well informed about everything that relates to the ship that is under negotiations like age, deadweight, main engine, fuel consumption, propulsion system, yard and country built, spare parts, special survey, classification society and records and all other relevant characteristics of a ship. Furthermore he has to be ready to address, advise and fully inform all parties about legal aspects or financing and banking procedures. Eventually, the broker's final assessment regarding the quality of a vessel should take into account all these relevant factors and evaluate them accordingly under his own judgement.

The worldwide increase in seaborne trade and a switch in the maritime industry concerning the East, have led in an expansion of several international shipbroking companies setting up offices in Singapore and China so as to benefit from the opportunities in the area. Nowadays, there are more than 70 local and international shipbroking companies in Singapore.

2.3 *The Information Network*

The exchange and distribution of the correct information is highly significant in the shipbroking function. This demands good relevant friendly contacts and relations and excellent communication skills, meaning that brokers first have to acquire (or create) important information, then add their own views and distribute it only to relevant parties or clients. The contact list consists of brokers, owners, Charterers, operators and other associates. With the advent of internet based communication systems which are relatively inexpensive, the contact list of every broker is updated frequently as newer and newer players enter the domain every other day (Prasad, 2009). The information needed from buyers or sellers regarding the demand and supply for shipping services, the international trade, the future freight rates, the expected newbuilding prices, the second hand price levels in the near future, the demolition market and in general the market's trends and prospects are not always easily accessible.

Moreover, the research that is needed in order to find the right ship for sale or the right buyer is not easily performed or accessed by a seller or buyer of a ship due to many factors such as time, knowledge of the market, accessibility to worldwide markets, contact information, knowledge of various buyers, sellers, agents and others. In addition, the shipbroker is the information provider regarding a ship's condition and characteristics like age, deadweight, spare parts, special survey, main

engine, fuel consumption, classification society and records and all particular features. Consequently, this leads to information asymmetries between the two parties of the transaction process. The role of the shipbroker as a middleman is to interfere in the negotiations process and gather all the correct, relative, updated and objective information about potential ships for sale and their features in order to keep his clients full informed and extinguish or at least reduce these asymmetries.

2.3.1 The Theory of Adverse Selection in the Second Hand Ship Market

As information asymmetries are easily observed in most of the economic sectors between two parties, they occur in the maritime industry too. More specifically, it will be analyzed how information asymmetries between a buyer and a seller of a vessel can affect the market. George Akerlof (1970) in his famous article "*The Market for 'Lemons': Quality Uncertainty and the Market Mechanism*", refers to this issue as the problem of adverse selection. First of all, we need to define what adverse selection is. The problem of adverse selection is mainly observed when there is asymmetric information between two economic agents. The asymmetric information problem occurs when in a market one group of buyers or sellers has access to more information about the quality of the product being traded, and thus will try to use its advantageous positions for its own benefits. The inability of the party on one side of a trade to recognize certain characteristics of the product being traded, in contrast to the party on the other side of the trade, because of the asymmetric information, leads to the adverse selection problem which sometimes may cause market failure. This theory is central in understanding the dynamics of markets: that is why Akerlof was awarded the Nobel Prize in Economics in 2001 for his analysis of markets with asymmetric information, together with Michael Spence and Joseph Stiglitz.

The adverse selection theory is the linking point between the S & P shipbroking function and the second hand market pricing. It illustrates the specific role of brokers in determining value and quality of ships. Akerlof uses a market model illustrated by a simplified example from the automobiles industry in order to explain his microeconomic theory. In the following analysis, this theory works in a simplified theoretical S & P second hand ship market. It is assumed that the second hand market consists only of good or bad quality ships. The ships of bad quality are referred as "lemons". In case that all buyers and sellers share exactly the same amount of information about the ships' quality: the good quality vessels are bought at the price of P_G , the bad quality vessels at the price of P_B and of course $P_G > P_B$. Moreover, the sellers value the good quality ships at V_G and the "lemons" at V_B where $P_G > V_G$ and $P_B > V_B$. However simple this may seem, the study of this market can provide researchers with very interesting insights about markets and highlight phenomena that are widely used and whose influence can be noticed in various domains. The phenomenon that is described is called the asymmetrical information problem. This problem arises when one group of buyers or sellers has more knowledge about the quality of the ships. So, it is assumed that the sellers of "lemons", who have much more information about their ships than the buyers because they have been using them for months or years, are willing to benefit from it by selling them at the same price as those of good quality ($P_G = P_B$). As a result, both good and bad vessels will be sold at the same price and of course the buyers are not in a position to distinguish between the two categories. The negative impact

for the market is that the average quality of ships sold will drop and “lemons” will tend to take over progressively the market, so good ships will be left out untraded. The good ships’ sellers will eventually leave the market to the bad quality ships’ sellers. This is how information asymmetries lead to the problem of adverse selection. Nevertheless we have to point to the fact that the model is not entirely realistic (Akerlof himself admits sacrificing realism in favor of proper focus) even if the phenomenon itself is also well-known as “the bad drives out the good” and has various consequences on daily life.

Finally, it seems useful to mention some mechanisms that counteract asymmetrical information and that are nowadays used almost systematically. Akerlof names three major “institutions” acting in this way: brand-names, guarantees and licensing. All of these measures shift the risk that consumers take on product quality towards the sellers, who are the ones which in most of the cases are more likely to be favored by asymmetrical information. If a product from a given brand appears unsatisfying, the consumer will change brands. On the other hand, if a guarantee is provided, the product’s quality is supposed to be higher, for example. The shipbroker’s role is to minimize uncertainty and information asymmetries on behalf of his client. His own reputation and the brand name of the company that he works for, represent the high or low quality of service he offers.

2.3.2 The Distribution of Information

Nowadays, more and more shipbroking companies give special attention to the part of information distribution by creating research departments with experts that provide their clients with daily, weekly, monthly, quarterly and yearly market reports. These reports contain interesting and useful information not only for clients, but for shipbrokers themselves too. Furthermore, the research department of a company is also responsible for keeping their colleague shipbrokers informed with relevant information regarding second hand sales and purchases, market trends, demolition sales, freight rates, newbuilding orders, shipping news, bunker prices, currencies and maritime exchange stock data. The research department must be ready to reply to a clients’ or a colleague’s request for a set of data or a chart within reasonable time by providing accurate information. Regarding the reports, the shipbrokers of each company also contribute to them by submitting relevant or private information that they may have about a specific market or a particular kind of ship.

The relevant contacts are crucial for the development of S & P brokers. Brokers, shippers, shipowners and other interested parties communicate very often with relevant parties in London, Piraeus, New York, Rotterdam, Shanghai, Tokyo, Hamburg, Singapore and Oslo that are significant maritime centers for the distribution of information. London has more shipbrokers than any other city in the world, but the shipbroking function is totally global and brokers deal with principals, clients and vessels all around the earth. A great amount of London and other distant shipbroking companies are members of the Baltic Exchange which is located in the heart of London. The Baltic Exchange acts as a regulatory organisation for its official members and supports them with a shipping information forum. The exchange has functioned in the past as a physical market place but nowadays its members operate without physical presence at the organisation. According to the Baltic

Exchange, only their members handle approximately 40% of dry bulk chartering and 50% of tanker chartering in all over the world. All these, enable shipbrokers to offer higher quality services, to have better knowledge of the market, to deeply understand the financial relations, to provide more unbiased estimations and to make more accurate forecasts and ship valuations

2.3.3 The Shipping Database

The research department, and not the shipbroker, is responsible for the construction and the continuous update of the company's database. However an easily accessible and updated database is highly significant for the shipbroker's function. The shipbroker, as it is already mentioned, plays also the role of information provider, so that updated and accurate distribution of information to his clients is an important part of his work and it is a high determinant for his success. The database of a shipbroking company is vital for his success. Without an efficient database, the broker cannot provide fast and accurate services. Consequently, an efficient database must include the following documents under a continuous update at least for the last twenty years:

- Annual, monthly and weekly reports from various maritime companies
- Shipping news
- Market reviews and outlooks from shipping organisations and research institutions
- Baltic exchange documents
- Baltic indices data
- Maritime contacts directory
- Official legal transaction documents
- Second hand sales statistics for different ships
- Fleet profile and fleet development data
- Orderbook and deliveries
- Charter rates for different ships and for different contracts
- Newbuilding prices for different ships
- Demolition sales and prices for different ships
- Bunker prices
- Commodities prices
- Currencies
- Stock exchange data

Apart from these, all shipbroking companies use a shipbroking suite that offers information about the whole current global fleet that is essential for S & P services. This software provides a consolidated view of all vessels' particular characteristics (from age, deadweight and yard built to main engine, classification society, flag and many others), current position, trading history, owner's name, notes, comments, attachments and links to relevant messages. Consequently, it is an essential and very useful tool for finding vessels for sale and their characteristics. Moreover, such a programme allows brokers to add their own views from their business experience and private information about each vessel. Another very useful tool that these

systems include has to do with the fact that it allows to create searches, so that the broker finds available vessels that meet buyer's specific criteria very fast. Various companies have developed and sell such a programme.

2.3.4 The Means of Communication

The means of communication in shipbroking are highly affected by the development of technology. The means of communication from the beginning of the 20th century have chronologically changed from letter to telegram, telephone, boecode, telex, improved public network, automatic switchboards, computer workstations, computer modems, fax machines, mobile phones, company network drives applications, e-mail and finally the World Wide Web (Qian, 2002). In our days the kinds of communication mainly refer to e-mails and telephone calls. E-mails are considered to be more formal among the interested parties, while the telephone calls belong to more informal and exploratory communications. The telephone is the most frequent devise used for daily conversations and very often they are programmed to save the most common called numbers or the international code numbers automatically by just pressing a button.

The most important way of communication is by exchanging e-mails with potential buyers or sellers, agents, other brokers, shipping lawyers, information centers, yards and other relevant parties. The time difference between negotiators' countries of residence and information centers is a determinant that also promotes the use of electronic messages instead of telephone calls. An official offer, the whole negotiations process and the completion of a sale are all concluded by e-mails. The rise of the Internet has affected almost every industry. What is really needed is a computer with a connection to the internet and a computer programme that controls all incoming and outgoing e-mails. Such a messaging system may not be a prerequisite but most companies have one, because it can improve the efficiency of communications. This means that the update department of a shipbroking company can easily manage and transfer all incoming relevant information to a specific broker that deals with a particular type of ship or divide the incoming information to various folders by the name of each buyer/ seller or by the name of the ship depending on the strategy of each company. As a result, all brokers will easily access all these particular information and interact faster with the other parties through the programme's system. Time is very important for a shipbroker and such a computer programme may prove remarkable for his accuracy and speed of the negotiations' process. After all, such a programme is also a good way of keeping records of the negotiation logs, so that the administration controls the contents of the e-mails and checks the performance of each broker.

2.4 The Market for Second Hand Ships

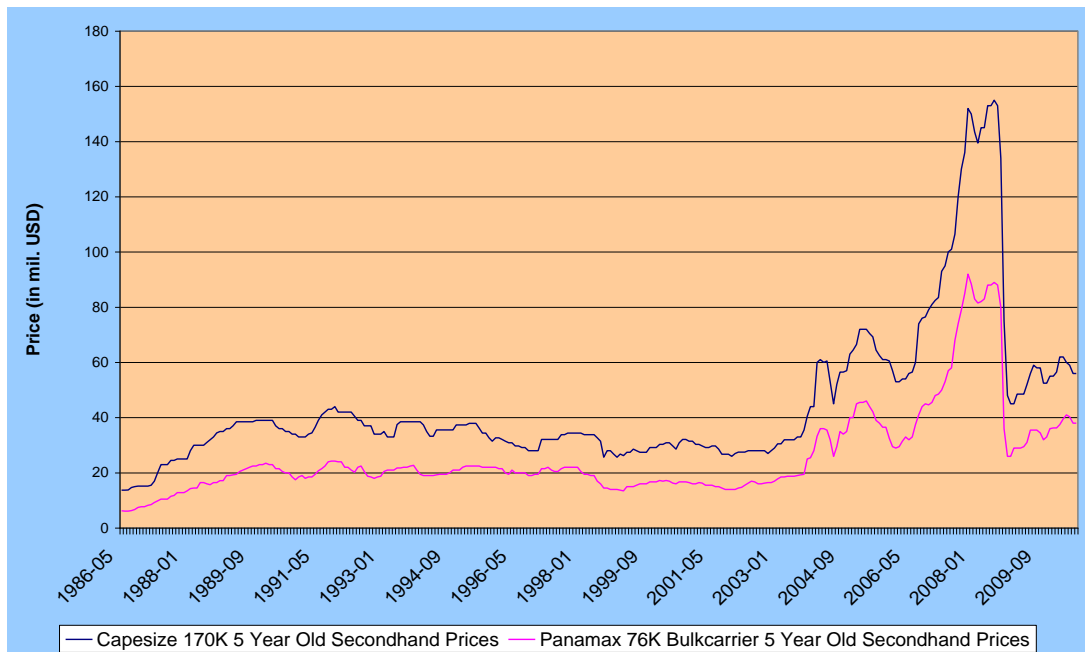
The market for ships consists of three other markets: the newbuilding, the second hand and the scrap market. All these activities are performed by S & P brokers but the field of this research has to do only with the second hand market. The shipping industry is characterised by its volatile nature. Thus, many empirical studies in transport and maritime economics have focused on analysing the dynamics of the market and particularly the behaviour of ship prices. The market for second hand

ships has been researched from many economists who tried to create theoretical models so as to analyze fluctuations in vessels values. The second hand ships market is a crucial aspect of the maritime industry, because it provides low barriers for entry and exit to the freight market, especially for dry bulk shipping. It allows owners and investors to buy and sell ships directly and this is a significant aspect for competitiveness and contestability. This means that extraordinary profit opportunities may arise through asset play, regarding buying low and selling high. Investment timing is a very important concern in the second hand ship market (Tsolakis et al.).

This dissertation mainly focuses on Capesize and Panamax second hand bulk carriers. The following graph compares the second hand prices of a Panamax 76K bulk carrier 5 year old with a Capesize 170K bulk carrier 5 year old, over the time period from May 1986 to August 2010. It is obvious that the two values have the similar ups and downs at the same dates throughout all these years. Furthermore, there is a continuous long-term upward trend from January 2003 till September 2008 and more specifically there is a big increase in the second hand prices of both ships from January 2006 till September 2008. However, during this peak, it is observed that Capesize bulk carriers had a much higher increase than Panamax bulkers. In reality, the Capesize bulkers have the same ups and downs as the Panamax, but with higher volatility than Panamax bulkers throughout all these years.

Figure 1: Comparison of Panamax – Capesize second hand prices

Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC



Indeed, Kavussanos (1997) examined the dynamics of conditional volatilities in the dry bulk market for second hand ships and compared the volatilities of second hand prices. He developed ARCH (autoregressive conditional heteroskedasticity) models and proved that in general second hand prices of smaller vessels present less volatility than prices of bigger ships have. In particular, he found that Panamax volatilities are mostly driven by old 'news', while new shocks are more important for Capesize volatilities. Moreover, conditional volatilities of Panamax second hand prices are positively related to interest rates while Capesize prices to timecharters. Coming back to the graph, it is observed that from January 2009 the prices of both ships come back to low levels due to the global financial crisis that affected the shipping industry too.

Alizadeh and Nomikos (2007) went one step further on Kavussanos' (1997) research. Their paper examines performance of trading strategies in the second hand ship market according to the combination of technical trading rules. An extensive analysis in the S & P market for dry bulk ships shows that a long run relationship between price and earnings can indicate investment decisions in the dry bulk shipping sector. In order to eliminate data snooping biases possibility and to evaluate the founded models, they also used the stationary bootstrap method. The final results indicate that trading strategies based on the relationship between earnings and price significantly outperform buy and hold strategies, especially in the market for larger vessels, due to higher volatility in these markets.

Regarding trade flows, Tinbergen (1959) was the pioneer and first understood that the demand for shipping and transport services can be explained from seaborne trade flow. Eriksen (1982), also, interpreted only the part of demand which is affected by prices by finding "relative" demand functions. Regarding seaborne trade Veenstra and Haralambides (2001) also wrote a very interesting paper. They proved that multivariate autoregressive time series models can be used to forecast long term seaborne trade flow estimates especially on four commodity markets (crude oil, iron ore, grain and coal) on major trade routes by presenting small forecast errors.

Beenstock (1985) did the first attempt for determining prices of second hand vessels as an asset of "long life" without taking into account supply and demand as inappropriate. However, this argument is debatable among researchers until today. Beenstock constructed an equation for determining second hand ship prices by taking into account world wealth, fleet size, expected earnings equal to timecharter minus operating costs, expected second hand prices and the interest rate. The share of ship values in total worldwide wealth depends on directly with the expected returns on ships (regarded as capital assets) and is inversely related to alternative investments according to his theory.

Tsolakis, Haralambides and Cridland (2003) present an econometric modelling study of second hand ship prices by developing a theoretical Error Correction Model and comparing it with an atheoretical Autoregressive Model. They show that Structural Equation Models can produce more trustworthy results regarding forecast of cycles, evaluation policies and testing economic theories. Apart from comparing these two models, they came up with other important findings. In order to determine second hand ship prices they found that newbuilding and timecharter rates are the two variables that affect them much more than all others, with newbuilding values having the greatest effect. Moreover, orderbook has a negative effect on determining prices only for large (Suezmax, VLCCs) and Panamax tankers in the

long run. Finally, the cost of capital was noted as highly important for bulkers shipowners.

Other studies have applied real options methodology for determining ship prices by taking into account the operational flexibility in ship management. Tvedt (1997) in his famous paper “Valuation of VLCCs under income uncertainty” presents two options for modelling the stochastic nature of the time charter equivalent spot rate in the market for VLCCs. Tvedt also deals with the problem of uncertainty (relating also with the previous part including the theory of adverse selection in the second hand market) in the valuation process of a VLCC. The flexibility to pick an operation strategy affects the valuation of a vessel because of uncertainty. Then the study concentrates on layup and scrapping as the two options to spot operation. Finally, it concludes that the choice to lay up has enough evidence to be relatively more significant for “younger” ships while scrapping is relatively more important for “older” ships.

The following table presents the second hand sales in the dry bulk sector from the beginning of January 2010 till the end of June 2010 by nationality. Greek buyers lead this race with 134 units while China has acquired 124 vessels. Greeks and Chinese buyers dominate the second hand dry bulk market having done together 47% of the total sales.

Table 1: Second hand sales in the dry bulk market in 2010

Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

2010 DRY CARGO STATISTICS - BUYERS						
COUNTRY	UNITS	%	OUTLAY (\$)	%	DWT	%
GREECE	134	24.23%	\$3,465	33.10%	7,295,203	28.22%
CHINA	124	22.42%	\$1,963	18.75%	8,513,047	32.93%
TURKEY	25	4.52%	\$206	1.97%	469,319	1.82%
USA	23	4.16%	\$1,317	12.58%	586,455	2.27%
NORWAY	19	3.44%	\$522	4.98%	981,527	3.80%
GERMANY	16	2.89%	\$182	1.73%	452,425	1.75%
RUSSIA	11	1.99%	\$152	1.45%	271,114	1.05%
INDIA	9	1.63%	\$225	2.15%	552,759	2.14%
INDONESIA	9	1.63%	\$78	0.75%	280,659	1.09%
KOREA	8	1.45%	\$164	1.57%	343,060	1.33%
VIETNAM	7	1.27%	\$61	0.58%	148,752	0.58%
ISRAEL	6	1.08%	\$115	1.09%	412,747	1.60%
FAREAST	6	1.08%	\$89	0.85%	319,621	1.24%
SYRIA	5	0.90%	\$30	0.29%	124,085	0.48%
UNDISCL	87	15.73%	\$1,092	10.43%	3,052,957	11.81%
ALLOTHER	64	11.57%	\$840	8.03%	2,173,061	8.41%
TOTAL	553	100.00%	\$10,469	100.00%	25,852,706	100.00%

Chapter 3 The Sale & Purchase Shipbroker: Offer and Ship Sale

3.1 Introduction

The majority of the work done by a S & P shipbroker consists of the sale and purchase of second hand ships. As with any contract, there has to be an offer, a negotiation, a consideration and an acceptance (ICS, 2010). Normally a buyer informs his broker that he is interested in acquiring a specific type of ship or a shipowner informs his broker that he is interested in selling a particular ship. In the first case, the broker provides his client with information about similar ships that other shipbrokers have placed on the market for sale. In the second case, the broker firstly has to make a valuation for the ship (it will be analyzed in the fifth chapter) and secondly he has to circulate the ship on the second hand ship market with an indicated price that comes from his valuation and is also approved by the shipowner. The next vessel's characteristics are necessary when putting forward a ship for sale:

- Type
- Deadweight
- Age
- Yard and country built
- Classification society
- survey condition
- Number of decks/ tanks
- Type and number of hatches/ holds (only for dry cargo ships)
- Amount of derricks/ cranes (only for dry cargo ships)
- Capacity
- Type of main engine and country made
- Engine's horse power
- Speed
- Fuel consumption

However, apart from the "classic" way of selling a ship, there are others too. Selling a vessel is a major consideration for shipowners and all possible strategies are analyzed below:

Private treaty: The sale is transacted on a willing buyer, willing seller basis via a broker through private negotiation and contract.

Open or closed tender : A tender is a programme similar to an auction, with an increased level of marketing for which an owner funds the additional promotional costs. A tender involves potential purchasers placing confidential bids for a vessel over a predetermined time span. The bids may or may not include conditions, and any bid can be accepted by the vendor, or the vendor can reserve the right to sell prior. This method is particularly effective when there is urgency associated with the disposal of a vessel as it induces a purchasing decision from interested parties while preserving the confidentiality of their offer and the vendor retains the ultimate right to sell.

Auction: Auction is the conclusion of a three to five week programme using a vigorous and high-profile marketing campaign usually funded by an owner, targeting potential buyers who are frequently overseas. The sale of the vessel goes to the highest bidder or is passed in if the reserve price is not met. If the vessel is passed in the interest generated by the campaign generally results in a sale in the months following the auction.

Trading: It occurs when a ship is traded or swapped, often for another vessel, but it could be any assets. Trading follows the establishment and agreement of the value of all assets by both parties. (Auckland Shipbrokers & Marine Consultants)

3.2 The Structure of an Offer

Although there is not any specific form in order to construct an offer, many brokers very often use a standard pre-made and checked template so that they avoid mistakes or do not neglect any important details. There are specific elements that all offers must include. Many brokers use a template following the same terms' order as the Memorandum of Agreement does, for their convenience. The structure of an offer, in reality, is a summary of what the party of the buyer requests with respect to seller's ship for sale and includes all details of the transaction process. The structure of an initial starting offer normally includes the following information:

- Buyer's name
- Reply time
- Price
- Deposit
- Payment
- Commission

Other aspects are also included in a starting offer depending on each broker's views: dry-docking or diver's inspection, inspection time, place and other details, inspection of class records, reply time, notices (approximate/ definite) for place and time of delivery, the signing of MoA, all conditions of delivery, bunkers and lubricant oils prices, all official delivery documentation, spare parts and property of the ship, blacklist guarantee, encumbrances - claims and taxes, sellers' and buyers' default, buyers representatives and arbitration

Example of a ship offer

Assuming the m.v. "Erika" is available for sale. The seller's broker will announce to potential buyers and buyers' brokers that the ship is for sale under the price of USD \$ 20,500,000 with delivery UK / Continent during July and August 2010. An indicated offer from a prospective buyer's broker may look like the following:

“m.v. “Erika” On behalf of Johnson’s Shipping of St. Mary Axe, London, we are authorised to offer firm for reply, Friday, 30th July 2010 16.00 hours BST London time basis details as set out in your e-mail of Tuesday, 27th July 2010 timed 15.30 hours:

1. *Price USD \$19,750,000. - less 2% total commission this end.*
2. *Subject prompt inspection of the vessel with clean swept holds at Rotterdam within July 2010*
3. *Subject approval of class records after inspection of them.*
4. *Buyers' reply on inspection of vessel and records within 3 working days after completion of vessel inspection.*
5. *Delivery of the vessel, charter free, at a port in Hamburg-Le Havre range at a safe anchorage or berth safely afloat within 30 days after signing of Memorandum of Agreement and deposit lodged with cancelling date in Buyer's option.*
6. *Vessel to be delivered with class maintained, free of recommendations and free of average damage. All safety certificates to be up to date. Vessel to be delivered in substantially the same condition as when inspected.*
7. *National and International Trading Certificates to be unextended, clean and valid for a minimum period of 6 months from the time of delivery. List of all certificates to be provided.*
8. *Dry docking as per NSF 1993.*
9. *Vessel to be delivered with everything belonging to her on board, ashore and on order including all spare parts and spare equipment including spare propeller and tail-shaft, radio/ nav aids not on hire (please itemise).*
10. *Purchase price to include bunkers and lubricant oils as on board at time of delivery.*
11. *Vessel to be delivered free of all encumbrances/ mortgages/ maritime liens/ taxes/ claims and all debts whatsoever.*
12. *Buyer's right to place two men on board at Buyer's risk and expense after contract signed, deposit lodged and Buyer's signed indemnities provided.*
13. *Sellers to guarantee the vessel has not traded to Cuba, Israel and North Korea and is not black-listed by any Arab country.”*

Buyer's name

The seller needs to know the buyer's name/ identity/ background. He has to know whether the buyer is trustworthy and he will get his payments on time. A buyer with a company of good brand name is always preferred, than a new or a notorious one. Of course, a good reputation is difficult to get established and it will normally take many years to build up. On the contrary, it can be damaged very easily, so all parties must be really careful and accurate during negotiations.

It is a common practise for sellers to provide the register company of the vessel and for buyers give the register company under which the vessel will be registered in the MoA. In some cases sellers may even request from buyers' managing company to guarantee the performance of the register company and they may also ask to be included in the MoA.

Reply time

The example of a ship offer that is presented, starts with the following statement: *"On behalf of Johnson's Shipping of St. Mary Axe, London, we are authorised to offer firm for reply, Friday, 30th July 2010 16.00 hours BST London time"*. Reply time is an essential factor that is meticulously used in every offer and states the actual time limit in which the seller's side can reply by sending back a counter offer. As it has already been mentioned, the time factor in the shipbroking function is very important. A 24 hour clock, the exact date and the place according to which time refers to, are expressed in each offer in order to avoid misunderstandings. Moreover, BST clarifies that British summer time is currently being used. Furthermore, S & P brokers must be very accurate when using expressions regarding time. For example, expressions such as "immediate reply" must hardly be used during negotiations and counter offers, because they may be defined differently and may break off a potential sale.

Price

The price of the offer must always be mentioned in a ship offer with the exact amount in figures and words. Nowadays the currency used in most transactions is the United States Dollars, so that calculations and comparisons among international values are more easily performed by all parties. The purchase price includes all items on board, all items ashore or on order and everything that in general belongs to ship's property. Bunkers and lubricant oils, normally, are dealt separately.

Deposit

The deposit in most cases ranges from 10% to 20% of the vessel's total purchase price. The buyer transfers this amount in a joint interest bearing account under the names of the buyer and the seller. At the time of ship's delivery, the seller is only able to get this amount of money.

Payment

The payment is usually requested either on distribution of the vessel or in the following days. Normally the “banking days” for the payment are three and under very strict deadlines due to the huge amount of transactions. The currency must always be clearly presented and usually the United States Dollars are used. In the example of a ship offer that is provided above it states: “*Price USD \$19,750,000*”. This is an ordinary amount paid for a ship and only one day or two days delay could cause significant losses.

Commission

The commission that a broker receives for a sale or a purchase of a ship is not mentioned in the official S& P contract. However, a broker should clarify and agree with the other party about the commission before the sale is completed. It is his duty to ensure that the commission is recorded in the transactions process (written evidence) and that all parties have fully understood and agreed to the specific payable amount. Commission for S & P brokers is normally calculated by reference to a percentage of the sale price of the ship being sold. The commission of each of the brokers usually ranges around 1% of the total ship’s purchase price and it is normally paid by the Seller (the party that gains the payment in the transactions process). Consequently, in most cases that two brokers are involved, one on behalf of the buyer and one on behalf of the seller, the normal commission is totally 2% of the ship’s purchase price (1% for each one of them).

Nevertheless, each case is individual and the amount of commission is not fixed. It varies according to the time allocated in order to conclude the deal, the circumstances, the buyer’s and seller’s brand name and reputation and of course the final purchase price of the deal. On the one hand, the broker must be ready to “fight” for his commission because he deserves it for concluding a sale. On the other hand, the broker sometimes may need to sacrifice a part of his commission in order to successfully complete the deal and not cancel the sale. e.g. brokers sometimes are pushed hard to reduce their final commission after all other terms have been agreed between both parties. This is a really tough situation, but most brokers overcome it by accepting to gain a really lower commission than originally agreed. However, this may prove really valuable for building strong relations with the same clients for future deals or their brand’s reputation and brokers will eventually earn more in the long run.

Regarding another case that four (or even more) brokers are involved in a deal the amount of the total commission will normally reach the level of 4%. From the brokers’ point of view that each one requests 1% of the purchase price, the commission will be the same amount for them as if there were only two involved. From the sellers’ point of view, the total amount achieves the level of 4% of the purchase price that is much higher than normal. e.g. On March of 2010 the 6 years old Japanese built, bulk carrier named Belo Horizonte with size 76.801 dwt has been recorded sold at the price of \$ 33.000.000 USD. If four brokers were involved in that particular deal, their total commission would reach the levels of \$ 1.320.000 USD, which is very high. As a result, the sellers will consider this amount

extraordinary and at the end they will make the brokers negotiate among themselves so that the total payable commission is reduced.

When the commission will be paid is another issue. It is usual in the S & P second hand ship sector that no commission is payable if the purchase price is not paid and the ship is not delivered. The most common phrase that is used in such case is the following: "no sale, no fee". However, this might prove confusing since the signature of a ship sale contract does not mean that the ship in question has been sold. Instead, the contract usually includes an agreement to sell the ship at a future date as long as specific terms are accomplished and the sale will be achieved only when the ship is delivered to buyers. In case a sale contract has been signed by both parties but the sale is not accomplished, a broker may arise an issue and claim for compensation for the commission which would have earned as if the sale was consummated properly. When S & P brokers are deprived of all or part of their commission due to non-performing or premature termination of the contract, the case law is in a tricky and unsatisfactory condition (Goldrein & Turner, 2003).

Due to the fact that a commission "confirmation" is not included in the MoA, FONASBA has introduced the International Brokers Commission Contract that is recommended by BIMCO too. This official contract is accompanied with the MoA and verifies legally the agreement that has been made between the Shipbroker and his client regarding commission's payment. The contract specifies that the broker has fixed the owner's vessel on specific terms and conditions contained in the signed Charter Party and clarifies that the owner has to pay commission or otherwise remunerate the broker. Also, the contract clarifies that any dispute arising out of it shall be referred to specific arbitration and shall be subject to the law and procedures applicable there. This official form of the broker's commission covers and clarifies all legal aspects of the matter. A copy of this contract can be found in Appendix 1.

However, most brokers use their own commission agreement because it can be edited and transformed more easily according to the specific needs of each particular case. It is an official document and has to be signed by the company and the broker that works for them. In reality, it is written confirmation among the seller or buyer and the broker which clarifies that the payment of the commission will be done after the deal has been concluded, the purchase price has been paid and the ship has been delivered under the agreed terms. The following commission agreement is a typical example that has been used during the completion of a sale between brokers and their clients:

“ **Commission Agreement on M.T. _____**

This commission agreement made and entered into on _____ and by _____ and between _____ and _____,

witnesseth:

Whereas, _____ (hereinafter called the "Sellers" have entered into a Memorandum of Agreement on _____ (hereinafter called the "MoA") with _____ of

_____ guaranteed by _____ of _____ for the performance of MoA (hereinafter called the "Buyers") for the sale by the Sellers and purchase by the Buyers of M.T. _____ (type _____ built in _____ at _____, hereinafter called the "Vessel") for the sum of US \$ _____ (United States Dollars _____, hereinafter called the "Purchase Price"),

Whereas, pursuant to an established practice in the sale and purchase business of vessels, the Sellers had appointed _____ as Sellers' Broker and the Buyers had appointed _____, as the Buyers' Broker,

Whereas, the MoA has been diligently negotiated, successfully concluded and duly executed through professional intermediation works by both brokers for each clients with certain understanding that _____ shall pay certain commission as agreed to _____ out of total commission to be received by _____ from the Sellers as agreed, pursuant to an established practice in the sale and purchase business of vessels,

Now, therefore, in consideration of the premises and for other good and valuable consideration, the parties hereto agree the following:

1. _____ shall pay to _____ one (1) % of the Purchase Price i.e. a sum of US\$ _____ (United States Dollars _____) as brokerage commission which shall be payable by _____ to _____ only after successful delivery of the Vessel to the Buyers pursuant to MoA.

2. The above commission shall be remitted by _____ to _____ in immediately available funds by telegraphic transfer to the following bank account of _____ practically soonest after _____ receipt of total commission from the Sellers after delivery of the Vessel.

- Bank's name : _____
- Bank's Address : _____
- Account No. : _____
- Account Name : _____

In witness whereof, the parties hereto have caused this agreement in two originals to be duly signed on the day first above written and each party shall hold each one original.

On behalf of: _____
By: _____
Title: _____

On behalf of: _____
By: _____
Title: _____ ”

3.3 Inspection and Delivery

Inspection of records and ship's inspection

The inspection of the classification society records is part of the S & P brokers' activity and is normally done before the inspection of the ship itself. Brokers arrange for inspection of the vessel by an experienced and qualified Surveyor who will glean a professional insight by inspecting the records and refer to potential problems. Brokers need of course special permission from the owners of the ship and then coordinate all procedure in cooperation with the classification society.

It is very rare for vessels to be sold without inspection. The buyer will try to check as many things as possible at the time of inspection so as to reduce the probability of acquiring a ship with certain transportation problems. In our days, it is very important for a buyer to know that the ship will be able and ready for use exactly after its delivery. All requests for inspecting specific parts of the vessel have to be agreed before it takes place. Buyers, for example, may request to inspect closed areas like ballast or wing tanks that demands a lot of time so sellers need to have their time schedule organised accordingly. Other items that buyers may wish to inspect concern log books, performance of the main engine or even casualties coming from the last ship's use. Sellers may decline to negotiate on a "subject inspection" basis. As a result the potential buyer has to perform ship's inspection and inspection of class records by himself and then provide an offer on an outright basis.

Delivery

Delivery of the vessel is a crucial aspect of the S & P service that can have great implications on the transactions microstructure. The place and time of delivery must be clearly discussed and agreed between the two parties before they reach an agreement. Personal belongings of course are not included. It is undoubted that both buyers and sellers want the delivery to take place at a port that is as close as possible to the ship's business network. This happens not for their own convenience but also due to other highly significant reasons that may cost a lot of money, such as the bunkers or the crew on board at the time of delivery. First and foremost both parties will try to agree delivery at a port that is safe and accessible for taking on and off the crew. In addition, both parties have to take into account the inspection of the vessel. Whether dry-docking or diver's inspection is agreed, it must also be accomplished at the same or a close by port.

The time of delivery is another significant issue. It must be clear that at the time of delivery buyers expect to have aboard all equipment that was aboard when the vessel was inspected such as a spare propeller or a spare tail shaft. The exact date of delivery affects other major arrangements such as documentation, availability of crew, availability of compatible cargo, inspection, banking, insurance, registration and classification of the vessel. In case the vessel is not ready for some reason that has to do with sellers, buyers should only have the option to cancel the deal. In such case the buyer has the right to request return of his deposit together with interest acquired. However, it has been observed many times that buyers after having inspected, accepted and placed a deposit with the clear intention of a purchase,

may not wish to lose the ship, if for example, it was delayed in reaching the port of destination for some reason (ICS, 2009). It is therefore, the duty of the buyers' broker to (a) agree and legally state with the sellers on a cancelling date and (b) clarify that this cancelling date is on buyer's option. This means that in case delivery has not been done at least until the cancelling date, the buyers can choose either to request the deposit and interest acquired back or continue the sale normally without further delay of delivery.

What is included in the price?

When a prospective buyer is in the process of negotiation for a ship, he expects that all items on board and ashore and everything that in general concerns ship's property, apart from bunkers and lubricant oils, to be included in the purchase price. Ships at time of delivery will normally have bunkers and lubricant oils that must be paid additionally unless otherwise agreed. There are three issues that demand special attention when taking over bunkers at the port of delivery: price, quality and quantity on board. Prices are different in each and every port and buyers will try to limit the cost of bunkers. Brokers should clarify exactly which price will be payable for the bunkers on board and all details of this procedure in order to avoid disputes.

It has been observed in some cases that sellers try to exclude some items from being included in a sale and may refer to them as fleet spares in case there are more than one ships of the same class. Brokers should do all possible efforts to clarify what do sellers include and intend as ship's property so as to keep their clients fully informed. Buyers expect to have aboard on delivery all items that were aboard when the vessel was inspected. However, in case damage occurs on a part of the equipment between time of inspection and delivery of the vessel it may complicate the sale process. Furthermore, all vessel's manuals, plans, instruction books and navigational aids should be transferred to buyers at the time of delivery or within reasonable time after it.

3.4 Conclusion of the Sale and the MoA

After many offers and counter offers and in case the seller's and the buyer's broker reach an agreement on common terms, the seller's broker will use a formal contract to confirm the agreement. Memorandum of Agreement (MoA) is the official name of this contract and it has to be signed by both parties in order to provide valid evidence and legal confirmation of their agreement. Most of the times, the sellers' broker establishes and completes a MoA and then sends it to buyers for approval. The Norwegian Shipbroker's Association's Memorandum of Agreement for S & P of ships is widely known throughout the world and a generally acceptable legal sale document. It was first established by BIMCO in 1956 and it has been revised in 1966, 1983, 1987 and 1993. Most brokers use the 1993 version of Norwegian Saleform because it is a revised version of the 1987 version and defines more accurately some terms. The perfect contract is of course the one that brokers will edit based on each particular case and according to their client's requests by deleting and adding terms, sentences or whole clauses. Appendix 2 shows a copy of the Norwegian Saleform 1993. An alternative contract that brokers may use is the Nipponale 1999 published by the Japan Shipping Exchange.

The contents that the NSF of 1993 includes are analyzed line by line below:

Date: The date of the agreement on terms among the two parties involved in the ship's sale. This date determines when the deposit will be paid.

Lines 1 to 3: The official names of the sellers, the buyers and the ship's take place in this section.

Lines 4 to 9: These lines include ship's class, age, yard, flag, place of registration, call sign, registered tonnage and register number.

Lines 10 to 15: Definitions of the terms "banking days", "in writing" and "classification society" that are used extensively in the clauses of the contract.

Lines 16 to 283: Include all the following clauses. However, some may be deleted, some other may be added and others not included at all:

Clause 1: Purchase price

It shows the purchase price in figures and in words together with the currency that will be used in the transaction process. Broker's commission is not stated in the MoA.

Clause 2: Deposit

The deposit that buyer's pay in order to assure the sale is negotiable between the two parties. Very often it is 10% of the purchase price and normally it ranges from 5% to 30%. It has to be paid within an exact number of banking days. The buyer transfers this amount to a joint interest bearing account under the names of the buyer and the seller. Only at the time of ship's delivery, the bank releases this amount of money and the seller is able to get it.

In some countries, it is not possible to open a joint interest account and in some others the official procedures take a long time and a huge amount of official documents. The expenses for the creation of a joint interest account paid equally by buyers and sellers may reach the level of 5,000 euro in some countries, which is considerably high in case a vessel's purchase price is for example 400,000 euro. Consequently, for the convenience of both parties and in order to avoid the cancelation of the deal, brokers act as trustees and keep on their account the deposit. Broker's role is to secure this amount of money within much less time than a bank demands and for this reason they act as intermediaries. An example of a trustees' agreement used in the case study that is presented at the end of the chapter is shown in Appendix 2.

Clause 3: Payment

Clause 3 refers to the exact amount buyers have to pay which is the remaining purchase price after the deposit has been deducted. This clause clarifies that

payment has to be completed free of bank charges to a bank convenient for buyers on delivery of the vessel and not later than three banking days after the vessel is physically ready for delivery according to the MoA and Notice of Readiness has been given based on Clause 5 of the MoA. Finally, the broker must clarify if and how the bunkers on board will be paid by buyers.

Clause 4: Inspections

Clause 4 provides two different options, one of which must be deleted. The first alternative is the outright sale that is definite without any additional inspection. The buyers confirm that have already inspected the ship and the class records before the MoA is signed. The second option refers to the sale of the ship subject to inspection. The buyers have the right to inspect the vessel's class records and state whether the same are accepted or not within specific days. The vessel shall provide for inspection of the ship at a specific place. If the vessel is accepted after inspection, the sale will become outright subject only to terms of this agreement, provided that buyers will submit written notice of acceptance within 72 hours after the end of the inspection. In case buyers do not accept the vessel and class records within the time agreed, sellers must release to buyers the deposit together with the interest that earned.

There is a significant debate on whether buyers should be able to raise a claim against a class society where the society's certification of the ship is flawed in some way and as a result of this continuous reliance on the flawed certification, buyers suffer a foreseeable loss. (Goldrein & Turner, 2003)

Clause 5: Notices, time and place of delivery

The sellers have to fully inform buyers about vessel's itinerary and agree with them the place and expected time of the physical delivery of the vessel. The date of cancelling is also mentioned. When the vessel is at the place of delivery and is totally ready for delivery according to the MoA, sellers have to provide a written Notice of Readiness for delivery.

Clause 5 (c) tries to eliminate the fear of the buyer "walking away" in case the ship misses the cancelling date. If this happens, buyers are not obliged to confirm a new cancelling date and they have the option of choosing to do so. Furthermore, according to clause 5 (d) it is clearly stated that in case the ship becomes an actual or constructive loss before delivery, the deposit and interest acquired will be immediately released to buyers and the MoA will be null and void.

Clause 6: Dry-docking/ Divers Inspection

Clause 6 consists of three sections. The first two provide two alternative options for inspecting the ship. The first option is the dry docking inspection of underwater parts by a surveyor of the class society. In case any of the underwater parts are found to be broken or damaged, they must be repaired at sellers' expense so that the class is satisfied. The other option has to do with the diver's (approved by class) inspection

of ship's underwater parts. Sellers at their cost must make the ship available for diver's inspection. The class is responsible for supervising the diver's inspection. In case this inspection concludes that there is a damage that cannot be fixed afloat, the ship must be dry-docked in order to satisfy the class society at sellers' expense. The third section of this clause strongly argues that all expenses regarding this clause are paid by sellers and also clarifies other important details like some of the buyers' rights.

Clause 7: Spare/ bunkers etc.

This clause is very important and it may create great controversy among the parties involved. Brokers have to be as accurate as possible regarding what is included in the purchase price and which items exactly belong in the ship's property in order to avoid confusions and misconceptions that lead to disputes. Buyers expect that all items on board and ashore and everything that generally relates to ship's property, apart from bunkers and lubricant oils, to be included in the purchase price. It has been observed in some cases that sellers try to exclude some items from being included in a sale and may refer to them as fleet spares in case there are more than one ships of the same class. Personal items off course are excluded. Thus, brokers should do all possible efforts to clarify what do sellers include and intend as ship's property so as to keep their clients fully informed.

All remaining bunkers and lubricant oils must be paid at the current market price at the port of delivery. In case bunker prices at the port of delivery are very expensive, buyers will try to avoid paying an extraordinary amount of money for the remaining bunkers and will try to take the ship at a port where the prices are lower. In anyway brokers must clarify the bunker prices and the port of delivery rates before the time of delivery, so that an agreement (or even compromise) is achieved between the two parties.

Clause 8: Documentation

This clause presents the documents that are agreed to be delivered between buyers and sellers. This clause includes the following documents: legal bill of sale, certificate of ownership, confirmation of class, certificate that the vessel is free from registered encumbrances, certificate of deletion of the vessel from vessel's registry, protocol of delivery and acceptance, class certificates, ship's plans, log books and other additional documents that are signed and provided between the two parties at the time of delivery. An addendum is usually signed among the two parties (in coordination with the MoA) in order to clarify all documentation that will accompany the sale and shall be provided on delivery of the ship by both buyers and sellers. More specific details regarding the addendum and delivery documentation are presented in the next part.

Clause 9: Encumbrances

The seller's duty is to arrange that the vessel is free of charters, encumbrances, mortgages, maritime liens and any other debts on delivery, unless otherwise agreed.

Clause 10: Taxes

Any taxes/ fees/ expenses regarding the purchase of the vessel are paid by the buyer while other expenses concerning the closing of seller's register are covered by the seller.

Clause 11: Condition on delivery

The condition on delivery may create some problems because clause 11 states that the ship must be delivered exactly as it was at the time of inspection. This may complicate the sale process because sometimes the official Surveyor that inspected the ship according to clause 4, may not have checked a particular aspect or may have missed certain items. Such an issue may create serious doubt about whether a specific defect was present on the day the vessel was inspected. On the other hand this clause gives buyers a level of assurance that the vessel will be exactly the same condition as when inspected, except for wear and tear.

In the meantime, the vessel must be delivered with its classification certificates as agreed and specified in the MoA. If, for example, has been agreed in the MoA that the vessel's class certificates will be valid for three months from the date of delivery without conditions/ recommendations then it is the owners' obligation to deliver the ship as such. Issues may even arise exactly before ship's delivery: in case that class has imposed conditions/ recommendations whilst owners have agreed to deliver the vessel without those and there is no sufficient time to rectify this condition. In such cases, it depends on good willing from both parties to find an amicable solution.

Clause 12: Name/ markings

It is the buyer's duty to change vessel's name and funnel markings on ship's delivery.

Clause 13: Buyers' default

In case that the deposit is not paid according to the terms and conditions mentioned in clause 2, the sellers have the right to cancel the agreement and claim for compensation for the deposit together with interest acquired (meaning that the rate of interest is based on rates at the time of transactions. However, the NSF 1987 states a fixed rate of interest as 12% per year). In case sellers suffered losses/ expenses higher than the deposit, they have the right to claim for additional compensation.

Clause 14: Sellers' default

Compensation must be paid to Sellers in case of a default by buyers, meaning that the vessel should become "unready" between time of giving notice and buyers taking delivery. If sellers fail to give Notice of Readiness by the day agreed or are not ready to accomplish a legal transfer, they have to pay compensation to buyers for their loss and all expenses together with interest acquired (meaning that the rate of interest is based on rates at the time of transactions. However, the NSF 1987 states a fixed rate of interest as 12% per year) if the sale is not successful due to sellers negligence.

Clause 15: Buyers' representatives

This clause gives, in fact, buyers the right to place two representatives on board after the deposit has been paid at a convenient port under their own expenses and risk. This means that the representatives will not interfere at all with the operational status of the ship and the only reason for their presence on board is has to do with the development of the level of familiarisation before using the vessel. Buyers' representatives have to sign an indemnity letter before embarking on the vessel.

Clause 16: Arbitration

Regarding arbitration the parties have to choose only one out of the three alternative options in clause 16 of the Saleform 1993: (a) English law with arbitration in London in accordance with Arbitration Acts 1950 and 1979 or any statutory modification or (b) United States Code and the Law of the State of New York or (c) another system of Law after being accepted and agreed by both parties.

Additional Clauses

The NSF of 1993 like other sale contracts leaves also the initiative to brokers for adding more clauses or deleting and editing some lines of the already written clauses. If the two parties agree to add extra provisions, they have to be stated very carefully in order to avoid any disagreements with the already written terms and conditions. Moreover, they must be clearly expressed to form part of the contract and they also have to be signed together with the other terms of the sale.

3.5 Completion of the Sale

On delivery of the vessel, the bill of sale is the most important document that will be signed by both parties, in order to verify the ship's sale. The Bill of Sale is a legal and official contract stating that the ship is free from all encumbrances, mortgages, maritime liens and any other debts or claims in coordination with the MoA. This contract will be legalized by the Consul of the country in which the vessel will be registered by the buyers. A copy of a bill of sale can be found in Appendix 3. It contains the following information in fourteen parts:

1. *Seller(s) full name, description and address*
2. *Buyer(s) full name, description and address*
3. *Name of Vessel*
4. *Type of Vessel*
5. *Port of Registry*
6. *Call Signs*
7. *Gross Register Tonnage*
8. *Net Register Tonnage*
9. *Date of Memorandum of Agreement*
10. *Purchase Sum (in figures and in letters)*
11. *Details of subsisting or outstanding Mortgage(s) or other encumbrances, if any; also state other detail, if any, relevant to the sale and transfer of the Vessel*
12. *Place and date and signature of Seller(s)*
13. *The undersigned Witness(es) hereby certifies(y) the correctness of the Seller(s)' signature(s) to this Bill of Sale and the date hereof*
14. *The undersigned Consul (General) hereby certifies the correctness of the Witness(es)' signature(s) as slated in Box 13*

There are also other Bill of Sale contracts: the most frequently used is the Bill of Sale Form No. 10A and its structure can be observed in Appendix 4. However, apart from the Bill of Sale there are other important relevant legal documents that both parties need to sign for the completion of the sale. For all sales there are some documents that are always used and some others that may be requested from the buyers or sellers depending on each particular case. The two parties involved in the transaction usually sign an addendum, in cooperation with the MoA, which is an official form that clarifies all official documents that are requested from each other and finally agreed in order to complete the sale. Some of these documents are prepared by legal advisors and maritime lawyers in cooperation with brokers.

The following section shows an addendum as an example that that has been used by brokers who concluded a real ship's sale:

“This Addendum is supplemental to the MOA. Unless otherwise stated words and expressions defined in the MOA shall have the same meanings when used herein.

Delivery Documentation

It is hereby mutually agreed between the Parties that (in addition to the Vessel documents referred to in lines 197-206 in Clause 8 of the MOA), the following documents shall be provided on delivery of the Vessel in exchange for the payment of the purchase money plus any other money payable under MOA by the Buyers to the Sellers:

A. *Sellers shall deliver to the Buyers the following documents:*

- 1. A Legal Bill of Sale for the Vessel in two originals in a form recordable in _____ duly executed by Sellers under Sellers’ corporate seal/stamp, notarially attested (the notary to confirm genuineness of signature as well as the due authorisation of the person/s signing same for and on behalf of Sellers) and certified by the Academy of Law and legalised by the Ministry of _____ warranting that the Vessel is free from all charters, encumbrances, mortgages and maritime liens or any other debts or claims whatsoever.*
- 2. Evidence that the sale of the Vessel to the Buyers has been duly authorised by the Sellers, namely:*
 - a) original Minutes of separate meetings of the Board of Directors and the Shareholders of the Sellers, signed in original by all directors and shareholders of the Sellers, notarially attested, certified by the Academy of Law and legalised by the Ministry of _____, resolving to sell the Vessel to the Buyers;*
 - b) original Power of Attorney of the Sellers, duly executed by the Sellers notarially attested, certified by the Academy of Law and legalised by the Ministry of _____, authorising their appointed representatives to execute all necessary documents in order to sell the Vessel to the Buyers;*
 - c) A true and complete and legible photocopy of Sellers’ Memorandum and Articles of Association attached to one original certificate of a director or the secretary or other competent officer of Sellers notarially attested certifying that such documents are the presently subsisting and duly adopted constitutional documents of Sellers and that the text of same have not been amended since the date of their adoption;*
 - d) An original Business Profile for the Sellers’ Company issued by the relevant Accounting & Corporate Regulatory Authority of _____ and accompanied with a Certificate of Production of Statement by Computer issued, signed and sealed by the Registrar of Companies, stating the names of Sellers’ directors and shareholders and dated not more than four (4) days prior to date of delivery;*

3. *Original Certificate of Ownership and Freedom from Encumbrances issued by the _____ Ship Registry and dated on the day of delivery of the Vessel confirming that the Vessel is owned by the Sellers and is free of all registered encumbrances.*
4. *A Confirmation of Class issued by the Vessel's Class _____ not earlier than the date of Seller's tendering final NOR under the MOA, confirming that the Vessel maintains its class and that there are no outstanding class recommendations/conditions.*
5. *Commercial Invoice for the Vessel giving main particulars of the Vessel;*
6. *Commercial Invoice for bunkers and lubricating oils remaining onboard the Vessel attaching fax copies of supporting invoices as per clause 7 of MOA;*
7. *A letter from the Sellers to the Buyers undertaking to provide to the Buyers an original Deletion Certificate issued by the Vessel's Registry as soon as possible but in any event within thirty (30) days from the date of delivery of the Vessel;*
8. *A Letter of Undertaking from the Sellers to deliver to the Buyers as soon as practicable but in any event within thirty (30) days from the date of delivery an original Closed CSR issued by the Vessel's Registry;*
9. *Letter of confirmation from the Sellers stating that to the best of their knowledge and belief the Vessel is not blacklisted by any Arab organisation of Damascus League or any other country or organisation;*
10. *Certified true copies from Vessel's full set CSR documents issued up to the date of delivery of the Vessel to the Buyers, with the originals of them to remain onboard on delivery;*
11. *Permission to transfer issued by the Marshall Islands flag authorities permitting and authorising the sale of the Vessel to the Buyers;*
12. *Letter of confirmation from the Sellers confirming that at the time of delivery of the Vessel they shall decommission INMARSAT(s) without unreasonable delay;*
13. *Pursuant to the requirements of _____ for registration of vessels, Sellers to authorize their Classification Society, _____, to issue to _____ a Statement or Affidavit indicating status of class, statutory certification, including all conditions of class and any outstanding recommendations/deficiencies and to the extent known by class any reasons why the Vessel is currently not fit to proceed to sea prior to completion of any outstandings and to release to _____ any other documents requested by _____. Sellers to authorize their Classification Society, Korean Register, as above sufficiently in advance of - the closing, to allow for review by the Marine Safety Division of _____ and in any event not later than five (5) Banking Days prior to delivery in order to*

facilitate Buyers' compliance with registration requirements imposed by _____.

B. Buyers shall deliver to Sellers:

Evidence that the purchase of the Vessel from the Sellers has been duly authorised by the Buyers, namely:

- 1. Original Minutes of a Meeting of the Board of Directors and Officers of the Buyers resolving, approving, and authorising the purchase of the Vessel from the Sellers at the agreed purchase price and the terms set out in the MOA, the execution and delivery on behalf of the Buyers of all documents under or in connection with the MOA, the payment of the purchase price and all other monies, including the release of the Deposit and the execution of a Power of Attorney in favour of Buyers' named Attorneys duly legalized by the _____ Consul;*
- 2. Original Power of Attorney of the Buyers, duly legalized by the _____ Consul, authorising their appointed representatives to act on Buyers' behalf as per clause 1(a) above;*
- 3. An original Certificate of Goodstanding of the Buyers dated within ten (10) Banking Days prior to the date of delivery of the Vessel;*

Sellers and Buyers to fax/email to each other drafts/copies of all available documents at least five (5) Banking Days prior to Sellers' tendering final NOR under clauses 3 & 5 of the MOA and to provide to each other comments within two (2) Banking Days of receipt of such documents by fax/email.

All documents to be provided in original unless otherwise stated herein and in the English language or accompanied by certified by a Lawyer true translation into English language.

At the time of delivery the Buyers and Sellers shall sign and deliver to each other a Protocol of Delivery and Acceptance confirming the date and time of delivery of the Vessel from the Sellers to the Buyers.

All other terms and conditions of this Memorandum of Agreement to remain in full force and effect."

Such an Attendum is an essential document that has to be signed by both parties in order to complete a sale, after off course adding or deleting terms according to buyers' and sellers' requests. From the documents that Sellers shall deliver to the Buyers doc.1, 2 a), 2 b), 2c), 3, 4, 5, 6, 7 and 9 are almost always needed. The rest documents are requested in rare occasions, but the buyers must be ready to provide them in all cases. From the documents that Buyers shall deliver to the Sellers all documents are almost always needed so as to complete a sale. It must be clear, that most of these documents are provided and completed by special lawyers with maritime background in cooperation with the brokers that represent each side.

Chapter 4 Negotiations - Transaction Microstructure & Case Study

4.1 Introduction

This chapter investigates the most important part of the shipbroking function, the negotiations process. How successful a broker is, depends on his negotiation and communicative skills (and of course based on the amount of good relevant contacts). In the beginning it explains the theory of transaction microstructure and the negotiations process in the S & P service. Next, it answers the first part of the dissertation's research question which is the following: "Which factors do the shipbrokers take into account in the determination of price for a second-hand ship?". This question is answered by checking a big amount of real negotiation logs and by asking professional shipbrokers to answer this question based on their own experiences. The second half of the research question will be answered in the next chapter in order to estimate the relative weight of each variable. Finally, a case study that stems from a real negotiations process is presented at the end of the chapter, in order to illustrate how a recap can fit in a sale contract.

4.2 Transaction Microstructure

Transaction microstructure is the process that shows how transactions are being established. It is the field of finance regarding the process by which investors' latent demands are ultimately translated into transactions (Madhavan, 2000). Many researchers have tried to analyze market microstructure during the last thirty years and this interest mostly comes from the tremendous technological and structural changes that involve the securities industry globally. Coughenour and Shastri (1999) analyzed in their study some particular topics: the determination of the components of the bid ask spread, order flow properties, the Nasdaq debate, and the correlation of option and stock markets.

Academic studies show the importance of information in decision making. Both practical experiments and theoretical models show that agents' behaviour is highly sensitive to the assumed information structure. Agents are also better known as market makers ready to buy or sell according to market's demand. Madhavan (2000) focuses mainly in the following areas: (a) price formation, (b) market structure and design, (c) transparency, information and disclosure, and (d) Applications to other areas of finance. This dissertation mainly deals with the topic of price formation, the procedure by which prices come to impound information. The factors that determine price offer short run predictability. Market microstructure shows how various frictions and departures from symmetric information affect the trading process. In a canonical model of efficient markets, price shows all public information. If brokers are assumed to possess symmetric information and frictions are negligible then prices simply represent expected values. Such models could be used to explain short run predictability and periodic fluctuations in market liquidity as well. The variables that result in price movements (inventory and asymmetric information) are the crucial factors in constructing reliable and accurate models regarding transactions theory.

Market makers quote two prices: the bid price, at which they will buy securities and the ask price, at which they will sell. The difference between the bid and the ask price is the market maker's spread. Trading costs (meaning physical costs of transactions) in S & P markets are huge and thus the spread of bid ask prices is huge as well. Asymmetric information implies that for large orders, the true cost of trading will exceed the quoted bid ask price. Empirical research reveals that such costs can be substantial in small capitalization stocks. This is an important issue because the costs of trading can substantially reduce the notional or paper gains to an investment strategy (Madhavan, 2000).

Demsetz (1968) presented that market makers support a "predictive immediacy" service in a structured exchange market. In such market the bid ask spread is the appropriate return under competition. Demsetz's research study was supported by other researches (like Smidt's (1971) that tried to involve variation in bid ask spreads as part of the dynamics of price. In Demsetz's model the spread used as the performance indicator in the provision of marketability services. Volume, risk, price and company size seem to be able to give evidence to most of the variability in the bid ask spread. Dealers can achieve faster turnaround in inventory lowering their potential liquidation costs and reducing their risk. However, there do not appear to be economies of scale in market making. His results show that spreads are wider for riskier securities, as predicted. Smidt (1971) emphasized on dealer inventory, since it is believed that it affects prices and liquidity. He analyzed that the market maker plays a highly significant role in price setting in order to accomplish a fast inventory turnover. Garman (1976) formally modeled the relation between dealer quotes and inventory levels based on Smidt. After this literature review on transaction microstructure (mainly in the securities industry) it is obvious that similar behaviour is observed in the S & P service of second hand ships, if ships are considered as capital assets.

4.3 Negotiations Process

Negotiation is a decision process in which two or more parties make individual decisions and interact with each other for mutual gain (Thompson, 1998). Traditionally, negotiation is usually associated with contracts as an outcome (Raiffa, 1982). A contract is a binding agreement between two or more parties, defining the set of obligations and rewards in a business process. This reduces uncertainty associated with the interactions among the interested parties. But how negotiations are being established?

S & P brokers have to use their contacts, meaning friendly long-term relations with shipowners, shipping companies, other brokers and key players within the shipping industry. Good contacts and excellent communication skills are two essential factors that can determine whether a broker's work will be successful or not. The starting point for negotiations with prospective buyers will normally be the one that a potential purchase price offer is close enough to what sellers request. The negotiations process is normally conducted by brokers who represent the two parties. It must be clear, that an S & P broker will always try to support and take advantage of his client and negotiate the best conditions for him. Brokers advise their clients for their own interests and try to achieve the best possible terms for

them while negotiating the purchase price and other relevant factors of the sale, like place/ time of delivery, spare parts, bunkers, inspection etc.

The transactions microstructure in almost all of the cases, takes the form of written offers that are being send through e-mails by brokers on behalf of their clients. Due to the big amount of communications held by brokers, many abbreviations are used mainly on the initial offers, so as to move faster the negotiations. An effective offer should include the necessary conditions based on which the side offering is willing to contract, the time by which the offer may be accepted and whether or not acceptance agreed terms means a legally binding contract. In a contractual context, "acceptance" means finals and unqualified assent to an offer. Consequently, a negotiation where one of the parties wants to change some of the offer's terms will not mean acceptance of the offer. This kind of response is known as the counter offer and in reality terminates the original offer by changing some conditions (Goldrein & Turner, 2003).

Providing that an offer is interesting enough, the seller's broker will come up with a counter offer that itself requires acceptance or rejection or another counter offer. Apart from exchanging e-mails, telephone discussions may take also take place among the interested parties during negotiations. The negotiations process sometimes is really hard not only for sellers/ buyers but for brokers too. All parties have to remain patient during the whole procedure, which may take more than a month, in order to reach an agreement and satisfy both sides. The counter offers that will follow from the both brokers will indicate the terms that one side agrees on and other that he disagrees, if any, by suggesting his own terms and conditions. Both brokers will try to serve their client under the best arrangements in coordination with his own requests. Both parties can stop negotiations at any time and leave the process without any commitment.

Next, after some counter offers from both sides either, they will agree on some specific and acceptable for both parties terms, or they will disagree and the negotiations will be stopped. If they finally agree on specific common terms, a "recap" message will be prepared usually by the sellers' broker in order to confirm and clearly state the common terms agreed. The buyers need to approve this message, so as both parties are ready to sign a legal contract (Memorandum of Agreement) on the previously agreed terms.

4.4 *Factors that Determine Price for a Second Hand Ship*

This part examines the factors that shipbrokers take into account in the determination of price for a second-hand Panamax and Capesize bulk carrier. This part of the dissertation shows all important variables (no matter if they are important or not) that play a role in the negotiations process and consequently in the determination of a second hand ship's sale price. The main question answered is the following: How do shipbrokers value a ship at a particular time? Meaning, which variables do they use and how? It must be clear that the aim of this analysis is not to show how a ship valuation is generally done by anybody, but only how shipbrokers themselves determine which should be the starting point of negotiations (regarding price) when there is not any official contract for the ship.

The factors that are analyzed have been found by examining sale and purchase records of negotiation logs kept by brokers who initiated, supported and concluded the entire sale. After a research on those negotiations records, very interesting findings concluded on what plays a role or what could affect a ship's price. More specifically, by checking messages exchanged during negotiations among the relevant parties, the factors that affect price can be easily identified due to the special attention paid to them from all parties.

The empirical research also includes a questionnaire answered by S & P Greek professional shipbrokers that deal everyday with the S & P service and are highly experienced. It is part of their everyday function to make ship valuations. Indeed, they revealed they do not use any standard formulas or computerised calculations in order to make a ship valuation but only their own views based on their experience. More specifically, they only work with their own particular rules and methodology that comes from the fact that they take into account most or all of the following factors very fast and accurately by using their long experience with the S & P service. They were kindly requested to answer the following question:

“Which factors do shipbrokers take into account in order to estimate the price for a secondhand Panamax or Capesize bulk carrier and what is their relative importance (the weight of each variable) ?”

Consequently, a thorough research on negotiations logs and questionnaires answered by shipbrokers shows that the variables that shipbrokers take into account in order to determine a second hand Panamax or Capesize bulk carrier's price are the following:

- Last similar ship sold
- Age
- Deadweight
- Country / yard built
- Main engine
- Special survey
- T/C included
- Freight rates (BDI prospects)
- Classification society
- Seller's and buyer's reputation
- Place of delivery
- Delivery date
- Classification records
- Availability of similar tonnage
- Bunkers on delivery
- Spare parts
- Trading history
- Condition of the ship
- Flag
- Light Displacement

More specifically, all factors that brokers use in order to determine a second hand ship's price can be further analyzed on how they affect price:

1) Last similar ship sold

If a similar vessel has been recently reported sold, this will be primarily used by both buyers and sellers brokers. When a broker searches in his database for the last similar ship sold in the market, he actually looks for a ship that is as similar as possible to the ship for sale referring first to the three following characteristics: type, size and age. After checking these, brokers continue further with other variables or other relevant things (like all these mentioned below) and try to find a ship recently reported sold as similar as possible to the one that they are dealing with. Brokers' market reports are the main source of ship sales.

According to private personal contact and questionnaires, all brokers mentioned that this factor is the first and most important that they take into consideration before determining a ship's price. Then a broker tries to determine price according to all differences in other features or relevant factors (e.g. market trends) among the two ships by adding or deducting proportionate values. The more identical are the characteristics of each vessel and relevant conditions, the more close their sale price will be. But the important question is how similar is similar? This is a subjective issue and varies among brokers but in general a ship of the same type, +- 5 years old and +-10.000 dwt is considered as a similar ship. However other characteristics are also very important and are taken into account too. Although the last similar ship sold includes the next two determinants that are age and deadweight of the ship or even more variables, they also have to be examined separately because they can affect price individually too.

2) Age

The age of the ship is an important determinant for ship's price. Comparing two ships of the same type with exactly the same characteristics apart from age, the older one will normally have lower price than the newer. Moreover, as the vessel's age is getting higher, the price is decreasing more and more.

3) Size (dwt)

The deadweight of a ship of course affects a ship's price. In general, it refers to the weight of cargo, stores, fuel, passengers and crew carried by the ship when stored to her highest draught in salt water. For two Panamax bulkers with the same characteristics, the one with the largest deadweight normally also has a higher price. This is common in the maritime industry due to the economies of scale. However, deadweight does not increase proportionally with price. Exactly the same thing is observed in second hand capesize bulkers too.

4) Country / yard built

A Korean or Japanese built vessel would definitely get a higher price from a Chinese or Spanish built. Especially, the well established (better known as “first class”) Japanese and Korean yards have the personnel, the needed experience and the relevant know-how to deliver units of “only the best” quality. However, the last years the Chinese yards represent the emerging power by improving more and more the level of their services.

5) Main engine

The main engine consists of some other variables like speed, power supply, fuel consumption, specs of the engine, brand name and country constructed. The power supply is almost the same for all engines. The fuel consumption differs from engine to engine and plays a major role for some buyers. The service speed is very important especially for container ships and reefers that transportation time plays a crucial role. The country made and the brand name are also important indicators about the engine’s trustworthiness.

6) Special survey

If a special (every 5 years) or an intermediate survey (every 2,5 years) is due soon, all potential buyers have to spend a considerable amount of money depending on vessel’s age, class and condition. Depending on some of the characteristics of the ship, like age, this variable may be highly significant on the determination of price. For example, a special survey for a ship built in 1988 plays a much more critical role in the determination of price than a special survey for a ship built in 2008. This happens because uncertainty regarding the ship’s condition and maintenance increases as age is getting higher too.

7) Timecharter included

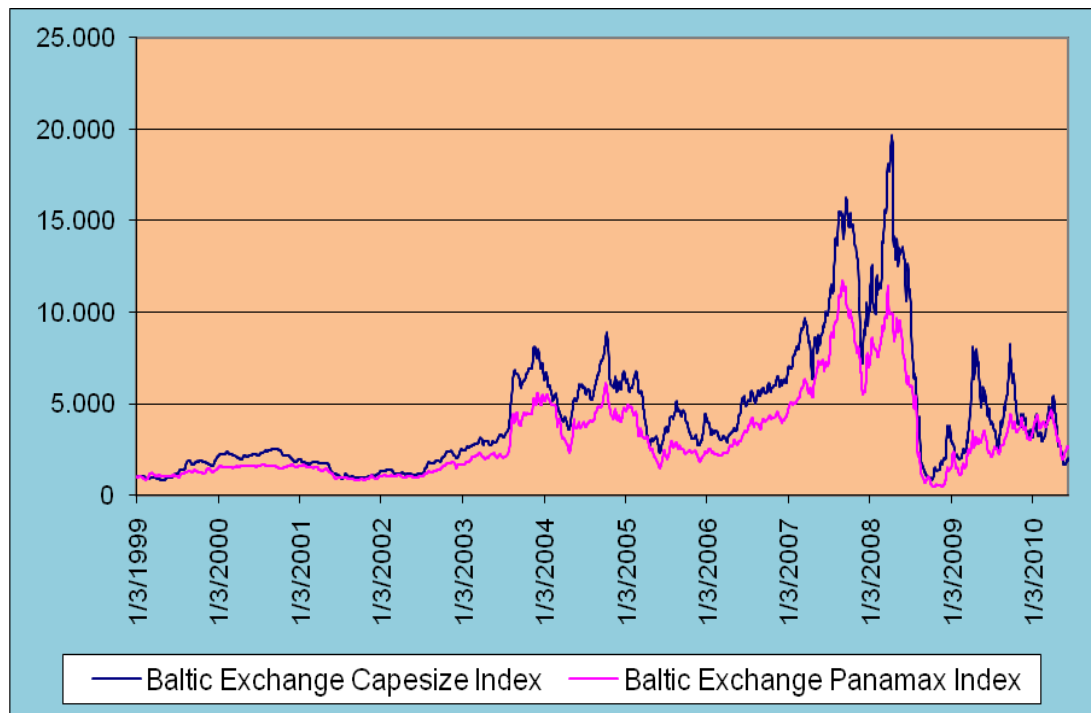
If a timecharter is attached in a ship for sale, it does not mean that the sale’s price will rise automatically. Instead, it depends on the rate of timecharter and market’s prospects. If the rate of timecharter attached in the ship is relatively higher in comparison to the current rates and the future market’s trends are not optimistic, then the ship’s price will increase. How much it will increase then depends on the duration of the timecharter. The larger the duration of the charter contract, the higher the price. On the other hand, a relatively low timecharter rate compared to the current rates attached to a ship, it will reduce the ship’s price. Moreover, the biggest the duration of the low timecharter rate is, the more the ship’s price will be reduced. If the new buyer wants to stop the timecharter, he has to arrange it with the charterer. In reality, it depends on charterer’s views whether he accepts to cancel the contract or not.

8) Freight rates – Market trends (BDI)

The Baltic Dry Index (BDI) consists of the equally weighted average of BCI (Baltic Capesize Index), BPI (Baltic Panamax Index), BHSI (Baltic Handysize Index) and BSI (Baltic Supramax Index). BDI is issued daily by the Baltic Exchange since the 1st of November 1999. Many brokers have internal panels to quote prices when no contracts have been reported in a certain period, but the Baltic Exchange in London also has various broker panels consisting of representatives from various broking firms. These broker panels generate the daily input for the BDI and its component indices (Veenstra, 2010). BDI reflects the movements in the dry-bulk shipping market and it measures demand for capacity with regards to supply of dry bulk carriers. In the statistical analysis presented in the next chapter, BPI and BCI are used to examine Panamax and Capesize bulk carriers respectively. The following figure shows the trend lines of BPI and BCI in the time period from the 1st of March 1999 to the 5th of August 2010.

Figure 2: Comparison between BPI and BCI

Source: Baltic Exchange



The level of BDI while negotiations still take place, affects the purchase price. In case, for example, BDI goes considerably upwards during negotiations, sellers will try to achieve a higher price due to more optimistic prospects and higher potential profits. On the other hand, if BDI goes considerably downwards during negotiations, buyers will try to get a lower price on the grounds that market conditions are getting

worse. Furthermore, buyers will try to delay more the negotiations in order to have a clearer picture of BDI in the long-run.

9) Classification Society

Vessels have to be classified because international convention requires that an authorised classification society must confirm that the vessel is of seaworthy quality and is recommended for transporting cargo. Every country has its own classification society and every one has different standards. The quality of each classification society is an issue that demands particular attention and the buyers must be very careful. There are many small and private organisations that consider themselves as classification society but their status is often doubted.

The S & P shipbroker must be ready to provide his clients with full details regarding the status of each class society and advise them accordingly. It is commonly accepted that the members of International Association of Classification Societies (IACS), which is also supported and accredited by IMO, are considered reliable, respectable, loyal and of high quality. IACS is a maritime organisation in London with reputable and responsible status that guarantees to potential buyers that its members' ships are in a very good seaworthy condition (ICS, 2010). The ships registered as IACS members are mostly preferred by all relevant parties of the S & P service and consequently they attract higher prices than others because their superior quality is generally acceptable.

The IACS members are the following:

<u>Members</u>	<u>Symbol</u>
ABS	ABS
Bureau Veritas	BV
CCS	CCS
Det Norske Veritas	DNV
Germanischer Lloyd	GL
Korean Register	KR
Lloyd's Register	LR
Nippon Kaiji Kyokai	NK
RINA	RINA
Russian Maritime Register of Shipping	RS
<u>Associates</u>	<u>Symbol</u>
Indian Register of Shipping	IRS

All S & P brokers' office have at least one member of IACS official Register issued book that is very helpful and records ship characteristics in various formats. Lloyd's Register is an essential tool that informs brokers about all self-propelled merchant

ships bigger than 100 gross tonnage registered in any class. It includes seven columns – categories named as LR identity, ship's name, tons, classification, hull, cargo capacities and machinery for every registered vessel. (Lloyd's register also publishes other important documents like: List of Shipowners, Maritime Guide, Register of Offshore Units, Submersibles and Diving Systems, Merchant Shipbuilding Returns, Annual Summary of Merchant Ships Completed, Casualty Return, Shipyard Orders Weekly Report). However, the Register books do not entail all details such as ship's speed and fuel consumption. Ship's plans and other important details can be acquired from a shipowner's office.

10) Seller's and Buyer's reputation

If sellers have a good reputation regarding vessels' maintenance, they will definitely attract a higher price for their vessel. Indeed, there are certain sellers who traditionally sell higher than market price levels. This happens due to their good reputation and the well known company's brand name regarding the good condition of their vessels that justifies a selling price higher than normal. On the other hand, a well known buyer's name usually guarantees that all payments will be on time and such buyers are always preferred.

11) Place of delivery

The place of delivery affects ship's price too. Assuming that a potential buyer resides in Norway and he wants a ship for transporting cargo from Rotterdam to Shanghai and a seller has an appropriate available vessel in Argentina, the ship's price will be higher than if the ship was in the port of Antwerp. This happens due to the fact that other expenses occur for transporting a vessel from Latin America to Europe such as crew expenses and bunkers. More specifically, the seller has to seek for available crew and appropriate (for the ship) cargo that demands transportation from Argentina to Rotterdam so that transportation costs decrease. In rare occasions, the buyer will undertake all actions to bring the vessel close to the needed trade route. The place of delivery and all details that it entails may prove a crucial aspect that can destroy all previously successfully concluded negotiations among the two parties involved.

12) Delivery date

The time of delivery of the vessel is another variable. More specifically, the earlier the delivery of the vessel, the higher the sale's price since risk on buyer's side is lower in the short run regarding the freight market prospects and trends. On the other hand, if delivery of the vessel is possible only after 6 months, then this will highly reduce the ship's sale price since uncertainty about freight rates and general market conditions will be very high. Moreover, regarding the exact day of delivery, all other weekdays apart from Friday are generally acceptable. If something goes wrong during delivery of the vessel that is arranged on Friday, both parties will have to wait until Monday for renegotiations, legal actions and conclusion or cancellation of the sale. So, Friday is good to be avoided for delivery of the vessel.

13) Classification society records

The classification records provide prospective buyers with information regarding the history of the ship before being registered under that class society. It contains special surveys, notes, condition, recommendations and defects that may have occurred during the previous years. However, S & P brokers are not considered to be special engineers that can fully understand a vessel's technical aspect and its importance. If a buyer requests an inspection of class records, S & P brokers should arrange it on behalf of their client and they must also be in a position to recommend an experienced and trustworthy available consultant for this work.

14) Availability of similar tonnage

If there are hardly any similar units on the market and a considerable amount of potential buyers, according to the market forces of supply and demand, it is undoubted that the ship's price will be higher.

15) Bunkers included at the time of delivery

Bunkers and lubricant oils that have remained unused in the ship are normally paid at a specific price at the current market price of the port of delivery. In case bunker prices at the port of delivery are very expensive, buyers will try to avoid paying an extraordinary amount of money for the remaining bunkers and will try to take the ship at a port where the prices are lower.

16) Spare parts

The spare parts affect the ship's price too. Spare parts refer to an anchor, a spare propeller, a spare tail-shaft., a ship's bell, gas bottles, tank cleaning machines or even crockery and cutlery that belong to the ship. Buyers expect that all spares and everything that belongs to ship's property are included in the purchase price. However, sometimes sellers will try to hide or not include some items (regarded as spare parts) and buyers may be requested to pay extra money for some of them. It is brokers' duty to clarify which what belongs to the ship. In any case, the more spare parts and the better their quality is, the higher the purchase price will be.

17) Trading history

A merchant ship may stay with one owner or change ownership several times during its life. The trading history shows the previous owners of each ship and the way that it was used. Moreover, it shows how many times it has been traded and in cooperation with the former owners' reputation, it is an indication of the condition that was held during its life.

18) Condition of the ship

The condition of a ship that is approximately indicated by other factors such as trading history, classification society and records, plays an important role in determining a ship's price. How well maintained a vessel is, reveals whether it is of good quality or not and how many more years it can be used trustworthy without certain cargo transportation problems. The better a ship's condition and quality are, the higher its price will be.

19) Flag

Some countries due to special regulations and minimum taxation are widely known as flags of convenience. Panamanian, Honduran, Liberian, Costa Rican, Cypriot, Haitian, Lebanese, Marshall Islands, Omani, San Marinese, Sierra Leonian, Somalian, Vanuatuan and others are currently considered as the most famous flags of convenience. All of them have grown quite a lot during the last fifty years for one or more of the following reasons according to ICS (2009):

- No taxes on profits; no fiscal control. Only tax is a subscription tax per net registered tonnage
- No labour restrictions and wage rates flexible.
- Limited liability.
- No political restrictions on freedom of trade
- Very flexible corporate laws.
- Easy financing because of simple mortgage laws.
- No risk of political instability or nationalisation.
- Minimum safety laws and regulations. In the past, lack of control and inability to enforce safety standards was a key feature of open registries.

However, due to the "advantages" that the flags of convenience can offer to a shipowner, many of them have attracted a considerable amount of bad condition ships and as a result many of these flags have been considered as disregarded. This does not mean that many well maintained vessels are not registered under these flags. It is believed that "there are no bad flags, only bad ship owners" (ICS, 2009). The duties of S & P brokers of course include the whole legal procedure regarding the registration of a recently acquired ship, under the flag of the new buyer's choice.

20) Light Displacement

No matter how many times a ship may change owners, the sure thing is that at the end there is only one sale left which is to the ship breaker. As the ship is getting older, the owners consider more and more the idea of scrapping it. The scrap market is completely different from the market for further trading, in terms of contracts, conditions, buyers and others. In fact, this parameter is only taken into account for ships with age higher than twenty years old or ships that are not seaworthy anymore regardless of their age. However, a ship's life is influenced by

many factors and varies among each and every vessel. For example, a serious accident at any age could cause a working ship to the ship breaker.

It is calculated that on average, a ship consists of 86% scrap steel, 7% cast iron, 1% non-ferrous metals and 6% non-metallic materials. When ships are sold in the market for further trading the light displacement of a ship is what really matters. Light displacement is the weight of the hull completely equipped plus the weight of the machinery, boilers, water in the boilers and spare parts but excludes cargo, bunkers, provisions stores and other water (ICS, 2009). The price of each ship is calculated as the lightweight multiplied with the scrap value of the market. Consequently, for old vessels that are still being sold in the second hand market, the purchase price that they may attract must be at least a bit higher than the demolition price. Brokers always calculate the demolition price of an old ship before starting negotiations for it, so as to know which would be the least "tolerable" purchase price.

4.4 Case Study

Assuming that after many offers and counter offers and negotiations the sellers and the buyers reach an agreement on common terms, one of the two brokers will establish and forward to the other party a message with the recapitulation of the main terms agreed. This final message just before the establishment of the MoA is better known as the Recap and in reality it is a confirmation that both parties have clearly agreed on specific terms for the conclusion of a ship's sale. It is nothing more than an offer but at its last stage where no other changes will (normally) take place because both parties have just agreed on specific terms and conditions. The following section presents a real recap that was used by brokers for the sale of a tanker:

"Sellers: _____ of Marshall Islands
Buyers: _____ S.A., Panama or their guaranteed nominee

M/T _____

1. Price _____ cash less _____ pct total commission this end

20 pct deposit to be paid into _____ shipbrokers account who will act as trustees for both the sellers and the buyers. This deposit is to be released in accordance with the provisions of the relevant trustees' agreement.

The 80 pct balance purchase money, plus bunkers and lubs to be paid to the same sellers nominated bank, at the time of delivery of the vessel and in exchange of agreed delivery documents.

2. Buyers have inspected the vessel at _____ during ___/___/___ and accepted. Buyers waived their right to inspect ships records and this offer is definite and outright without any additional inspection and is subject only to terms herein.

3. The vessel to be delivered "on as is basis" at the time of delivery at a safe anchorage _____ within _____ the _____ till _____ at sellers' option and with cancelling _____ at buyers option.

4. The vessel to be delivered charter free, cargo free, with gas free tanks and clean /safe for man entry. Vessel is trading foil and gas oil for the last years in bunkering trading business in the area of _____ and recently _____.

Vessel to be delivered with her present class maintained and with her class, trading certificates, both national and international as is at the time of delivery. The vessel will be delivered as per survey status "listing of surveys, conditions of class and memoranda" dated __/__/__

5. The vessel is to be delivered without drydocking. Diver's underwater inspection clause to apply to 6b of MoA.

6. The sale to include everything belonging to the vessel onboard, and ashore, including stores, provisions, radio and navigational equipment. Only excluded items are personal effects of the master/crew and masters slopchest, company documents, certificates etc that have to be returned to authorities and items on hire. Other excluded items if any plus items on hire to be advised as soon as possible but always before finalising the main terms

7. The buyers shall take over the remaining bunkers on delivery and pay sellers last net invoice prices as evidenced by supporting vouchers. The buyers also shall take over all remaining unused lubs in ships stores and sealed drums and pay the net contract prices excluding barging cost as substantiated by relevant vouchers.

8. When moa is signed and 20 pct deposit lodged, the buyers to have the right to place up to two representatives onboard the vessel for familiarisation purposes. Such representatives to stay onboard until the time of delivery of the vessel at buyers risk and expenses who shall sign sellers letter of indemnity prior boarding. However due to limited accommodation space such boarding will be done not earlier than 20 days prior estimated date of delivery.

9. This offer and subsequent discussions/negotiations are to be kept strictly private and confidential between all parties involved.

10. At the time of delivery the sellers shall hand over to the buyers all classification certificates as well as all plans/instruction books/manuals/etc which are on board the vessel where as all operational and technical documentation which exist ashore in sellers possession shall be promptly forwarded to buyers immediately after ship's delivery at their expenses.

11. Vessel to be delivered free from all debts, mortgages, encumbrances, claims and maritime liens, whatsoever.

12. Sellers to give 10/7/5/3 days approximate and 2/1 days definite notice of time and place of delivery to buyers.

13. Sellers and buyers to provide a list of closing documents which are to be mutually agreed and incorporated into the MoA as an addendum. Draft copies to be provided to both parties at least 2 days prior closing for buyers/sellers approval.

14. Sales contract to be Norwegian Saleform 1993 suitably amended to incorporate above terms and conditions. English law to apply with arbitration London - London maritime arbitrators association.

15. Sellers to provide a letter confirming that to the best of their knowledge the vessel is not blacklisted by any Arab organisation of Damascus league or any other country or organisation.

16. Closing to take place _____ at sellers bank premises”

Appendix 5 contains the official NSF 1993 that was finally signed between the two parties based exactly on each and every term of the above recap. By checking line by line both the recap and the Saleform 1993 that was finally signed, it is easy to understand how a formal offer can match with a legal and official document. Furthermore, it is very helpful in understanding how each sentence of the recap can be translated in legal terms and conditions on an official Sale contract. Special attention must be paid to the fact that three additional clauses are added on the saleform so as to conclude the agreed terms:

Clause 17

This clause refers to an Addendum supplemental to the MoA, which both parties need to sign in order to clearly confirm that they agree on specific documents that are essential for the completion of the sale. These documents have to be provided at least two days before closing so as to have enough time for approval by both parties. Finally, the sellers shall provide all reasonable and customary documentation which is in sellers' control and are required for the legal transfer of ownership and registration of the vessel under the buyers' intended flag which has to be advised prior to the delivery of the documents included in the Addendum.

Clause 18

This clause officially confirms that the ship is not blacklisted by any Arab organization or Damascus or any other country/ organization.

Clause 19

This final clause of the Saleform deals with the privacy and confidentiality that must be kept by both parties regarding the terms of the agreement and everything else included in there about the sale of the ship.

Trustees' Agreement

In addition to this, Appendix 6 contains the trustees' agreement that is fully incorporated to the relevant MoA with reference to Clause 2. It states clearly that the shipbrokers will act as trustees between the buyers and the sellers, meaning that they will notify both parties when the deposit will reach the designated account and it will not be released to any party unless one of the following conditions is satisfied:

- (a) by official written instructions from sellers and buyers, or
- (b) sellers or buyers release the same deposit in favor of the other, or
- (c) the vessel becomes a total or constructive total loss before delivery, the deposit will be released in favor of the buyers, or
- (d) the purchase price has not been paid according to Clause 3 of MOA and sellers choose to cancel the agreement, the deposit will be released in favor of the sellers, or
- (e) the deposit will be released pursuant to any arbitration award or Court decision from which there is no right of appeal or such right of appeal has expired.

Chapter 5 The Second Hand Ship Hedonic Price Model Analysis

5.1 Introduction

In chapter four, all the relevant factors that affect ship's price were revealed by examining S & P negotiation records and by analyzing the results of a questionnaire answered by Greek professional shipbrokers. Chapter five introduces the hedonic price model and refers to a literature review on hedonic models. Next, this chapter firstly shows the ranking of all variables based on the average grades that brokers gave and secondly determines which of those factors will be finally used in the hedonic price model. The next part of the study includes some empirical valuation rules that stem from the research done on this topic. Finally, a conceptual model for the determination of a Panamax or Capesize bulk carrier's price is established by examining S & P fixtures. This part of the thesis is also supported by personal contact with brokers.

S & P shipbrokers often have to perform a ship valuation. This happens when for example a shipowner announces to them that he wants to sell one of his ships or a prospective buyer wants an indicated price for a ship that is already for sale. The broker's work is to evaluate all relevant characteristics of the ship and then by giving the relative weight to each one of them, he has to estimate a selling price by which he will circulate the ship in the S & P market and he will try to attract potential buyers. Of course, this valuation process is informal and unofficial. It is a procedure that each broker does on his own and it is subjective to each particular broker's view and experience. Nevertheless, this thesis will try to estimate an average second hand ship's valuation model. It has been observed, however, that sometimes an official ship valuation is requested. Again S & P brokers will take care of this issue and of course receive a certain fee for their services. An official ship valuation may be needed by lawyers, arbitrators, banks, Inland Revenue Services, accountants, auditors, salvage adjusters, parties involved in salvage arbitration and governments (ICS 2010).

5.2 The Hedonic Price Model

The big amount and different kinds of ships' characteristics make its valuation difficult. Moreover, due to the fact that each and every person in the shipping industry evaluates each and every particular variable differently, this process is complicated even more. However, this dissertation attempts to explain a valuation from the brokers' point of view by estimating a ship's individual components with the use of hedonic price model. What this model does is that it breaks down a price into the values of each physical and relevant component. This model was chosen because it defines an analysis very close to brokers' empirical valuation rules. Although having some problems regarding the definition and the measurement of variables, hedonic equations can deal with an important issue that other models cannot: they do not only measure the obvious (physical) components of a ship but they also take into account the effect of other important parameters, such as market prospects.

The hedonic price model normally has the following formation:

Price = f (physical features, other relevant factors)

This means that the price of a ship for sale is a function of its physical variables like age, size, main engine, condition, spare parts etc and other relevant factors such as place/ time of delivery, market trends etc. All these variables support the idea that ships are not homogeneous products. The regression estimates give the implicit prices of each characteristic. Hedonic price models are usually estimated using linear or semi-logarithmic models (Sirmans, Macpherson and Zietz, 2005). Follain and Malpezzi (1980) found that the semi-log models have some advantages compared to the linear models, like: (a) minimization of heteroscedasticity, (b) easier interpretation of coefficients and (c) allowance for variation in the dollar value of each factor.

Comparing studies that use hedonic models, it is rather complicated by the fact that studies define and measure variables differently. Extensive use of hedonic modeling analysis by many researchers has been done on house valuation. Malpezzi (2003) presents the use of hedonic price model for estimating and forecasting house prices as the solution for heterogeneous housing stock and heterogeneous consumers, meaning that each particular house has different characteristics that may be valued differently by each individual prospective buyer. Court, an economist for the Automobile Manufacturers' Association, was the first researcher who noticed that only one factor cannot explain the automobile demand. The first hedonic model that was constructed by Court (1939) includes three variables: dry weight, wheelbase and horsepower. Some other, however, argue that Court is not the "father" of hedonic modeling due to a paper by Haas (1922) who tried to evaluate a farmland by calculating the value of its relevant features. Finally, another important paper worth mentioning was written by Lancaster (1966) who estimates the value of variables that generate utility with a natural application to housing.

5.3 The Variables

Ranking all variables

In order to answer the second part of the research question, brokers were requested the following:

"Please indicate how important or unimportant each factor is in the determination of a second hand ship's price by choosing from a 10 point rating scale. You may choose a number from 1 to 10 (1: very unimportant - slightly affects price, 10: highly significant)"

The following table clearly presents the results of the questionnaire that answers this question from an empirical point of view. The first column shows the ranking of the determinants based on the third column that contains the average grade that brokers gave to each factor based only on their own experience and valuation methodology.

Table 2: The relative weight of all variables that affect ship's price
Source: Questionnaires' results

RANK	DETERMINANTS	RATING (1-10)
1	LAST SIMILAR SOLD	9,86
2	AGE	9,14
3	BDI (FREIGHT RATES TRENDS)	8,60
4	COUNTRY / YARD BUILT	8,14
5	DEADWEIGHT	7,80
6	LDT (only for vsl>20 yrs)	7,50
7	SPECIAL SURVEY	7,30
8	T/C INCLUDED	7,10
9	CONDITION	7,00
10	AVAIL. SIMILAR TONNAGE	6,50
11	MAIN ENGINE	6,20
12	CLASSIFICATION RECORDS	6,00
13	DELIVERY DATE	5,80
14	SELLER'S - BUYER'S REPUTATION	5,60
15	CLASSIFICATION SOCIETY	5,25
16	PLACE OF DELIVERY	5,25
17	FLAG	3,80
18	SPARE PARTS	3,00
19	TRADING HISTORY	3,00
20	BUNKERS	1,50

The table above clearly shows that the last similar ship sold in the second hand market is the first and most important factor that affects a ship's price with average grade 9,86 out of 10. Without any exception, all brokers clarified that this is the most powerful tool in making a ship's valuation. The last similar ship sold in terms of type, size and age is the determinant that is first taken into account and then this value is either increased or decreased according to all other variables. Both, age and deadweight, are considered highly significant too and someone may argue that they have already been included in the value of the first determinant. This is true, but only as indicators. Both can be also used separately and increase or decrease a ship's price after having checked the last similar ship sold and that is the reason why they are also considered independently. This means that if a last similar sold does "exist", other components, then not much else is considered. But if a last similar sale is not recorded, ship's components are looked at. This statement is also supported by the econometrics analysis in the next part.

Market trends in terms of BPI for Panamax bulkers and BCI for Capesize bulkers respectively play also a crucial role according to brokers' views with final average grade 8,6 out of 10. Indeed, whether the general condition of the second hand market and future prospects seem positive or not, can highly affect a ship's price. The country/ yard built was also very high rated and reveals that the nationality and the brand name of the yard still results in important fluctuations of the ship's quality and consequently ship's price too. Moreover, light displacement that is only used for vessels that are older than 20 years old or unseaworthy gathered a quite high grade on this questionnaire. Last but not least, special survey due, timecharter contract included in the sale and general condition of the ship gained a grade higher than 7 out of 10. The last eleven factors are also taken into account but are considered to be rather unimportant compared to the first determinants.

Choosing which variables will be used in the price model

A price model is in reality a sophisticated mathematical tool and such tools must be managed and used when they are kept as simple as possible. It is a dangerous strategy to make use of a big amount of independent factors due to many reasons. The price models should make good intuitive sense, and so one should add extra independent variables only if it is sensible to do so. Moreover, it has been observed many times that having an extraordinary number of independent variables may result to multicollinearity problems. The better statistical price models are those that use as few independent variables as possible, resulting being more simple and accurate. The variables that will finally be used in this analysis are those having the top 5 highest scores because they are the strongest determinants of the price according to brokers' views:

- Price of last similar ship sold
- Age
- Size
- Yard built
- Market condition - trends (BDI)

Table 3: The variables used in the price model
Source: Questionnaires' results

RANK	DETERMINANTS	RATING (1-10)
1	LAST SIMILAR SOLD	9,86
2	AGE	9,14
3	BDI (FREIGHT RATES TRENDS)	8,60
4	COUNTRY / YARD BUILT	8,14
5	DEADWEIGHT	7,80

5.4 Ship Valuation Empirical Rules

The next part of the study includes some empirical valuation rules that stem from the research done on this topic.

Although there are many methods of valuating a vessel, the following technique is followed by the most shipbrokers in principle and this methodology is also supported from the findings of my thesis. Doing a successful ship valuation is a matter of experience in the S & P sector. Most shipbrokers check the last similar ship's purchase price records. Last similar ship sales recorded, meaning in terms of type, deadweight and age. Especially for a sister ship, this factor could be considered as of the highest significance for the determination of price.

This technique is very helpful and only in very rare occasions it can lead to wrong estimations. For example, in case of a tremendous technological change or in case of a rapid and deep change in the shipping or financial market from the day the last similar ship's sale was recorded. After finding a similar ship, brokers add or deduct proportionally from that specific price after examining all relevant factors mentioned in the previous chapter, according to the individual weight they give to each feature in order to estimate price for a particular vessel. What makes all valuations slightly different is the relative importance that each particular S & P broker gives to each individual factor. Brokers give slightly different weight to the determinants of price according to their own opinion, experience and market expectations.

An important research question that must be clearly answered and defined is the following: how similar is similar? In this analysis the last similar ship sale done refers only to type, age and size of the ship. This means that ships of the same type (in this analysis, the two types used are only Panamax and Capesize bulk carriers), maximum age (higher or lower) difference of 5 years and maximum size (higher or lower) difference of 5.000 tons dwt for Panamax and 10.000 tons dwt have been recorded as similar vessels in this statistical analysis.

By using this technique, the market levels are entailed, because normally a similar second hand ship's sale should have been recorded during the previous weeks or maximum two, three months. So, what a shipbroker has to do is slightly increase or reduce the price based on the market's trends and the prospects of BDI. How slightly, is a matter of experience and understanding of the shipping industry.

However, as mentioned in the previous section, there are other important variables as well: age, deadweight and yard built are significant indicators of ship's price and affect it too. If a ship is newer or/and bigger or/and built at one of the "first class" yards, its price will be pushed to higher levels too. However, it has been observed in sales fixtures that some ships with similar characteristics have been sold exactly at the same price during a period of two or three weeks, something that shows the strong relationship of "last done" with price. There are other variables too that may strongly or slightly affect price and sometimes brokers may use even more than fifteen out of the twenty factors that were shown in this study. It depends on each specific case, each particular ship and each individual broker. However, these "general valuation rules" apply in most cases and are used by most brokers.

5.5 *The Hedonic Model for Second Hand Ships*

Data collection

The sales data has been obtained from the fixture database of Intermodal Shipbrokers Co. together with the database of Clarkson Shipbrokers PLC that was used as supplemental. The time year period in this analysis includes sales recorded from the 1st of January 2009 to the 4th of August 2010. It only includes S & P records for Panamax and Capesize bulk carriers, meaning that we had to distinguish the data used first in terms of type of ship (bulk carriers) and then in terms of size by picking only two categories. Panamax bulk carriers belong in the size range of 60,000 - 80,000 ton dwt and can carry the largest quantity of cargo within the constraints of the Panama Canal. Capesize bulk carriers belong in the size category of 120,000 - 200,000 ton dwt. Date selection proved to be the most consuming and difficult task due to the lack of reliable sales data especially before 2007. In 2008 there have been reported some very different sales statistics from month to month due to great market fluctuations: because this research takes in first priority the “last done”, it was very dangerous to use data from 2008 where for example a sale on November-December would be based on September or August of 2008 that the market was in a totally different condition.

Only charter free vessels were selected for this analysis so as not to complicate the results but also because brokers did not grade them as high as other variables. e.g. some ships are sold with timecharter contract attached. In order to evaluate them some other variables need to be taken into account like timecharter rates and time length of the contract in combination with current market conditions and future prospects, in order to estimate whether it a “good” contract and it will increase ship’s value (meaning its selling price) or not.

Variables specification

The hedonic studies can provide researchers with valuable insights to the determination of ship prices. In this study, second hand ship’s price determinants are examined by employing a hedonic price model according to the results of a questionnaire presented in an earlier part of the dissertation. Below, the calculation of the hedonic indices includes the following factors which determine ship’s price in an econometrics analysis and are measured as:

- **Last similar ship sold:** purchase price of the last similar ship sold in million(s) United States Dollars
- **Ship’s age:** measured in years
- **Ship’s size:** measured in deadweight
- **Yard built:** examination of the nationality of each yard and creation of a dummy variable, meaning Japanese yards:1, others:0.
- **Market Trends/ Freight Rates:** in terms of BPI for Panamax bulkers and BCI for Capesize Bulkers

The **ship’s price** that reflects the dependent variable is measured in million(s) USD.

Statistical Tests

To show whether or not an equation is “correctly” constructed the following statistics have been used by using the statistical software EViews:

- Mean, median, maximum value, minimum value, Standard deviation, skewness, kurtosis are the most classic estimates
- Jarque-Bera Test
- Probability
- Sum square deviation
- Correlation matrix
- Least squares method (repeated after logarithms are established on the previous results of variables): t-test, standard error, Coefficient of determination (R^2) and adjusted coefficient of determination R^2 , , sum squared residuals, Durbin-Watson test, Akaike information criterion, Schwarz criterion and F-test.

The results of these tests are summarized in the following tables:

Analysis for Second Hand Panamax Bulk Carriers

Table 4: Descriptive statistics for panamax bulk carriers
Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

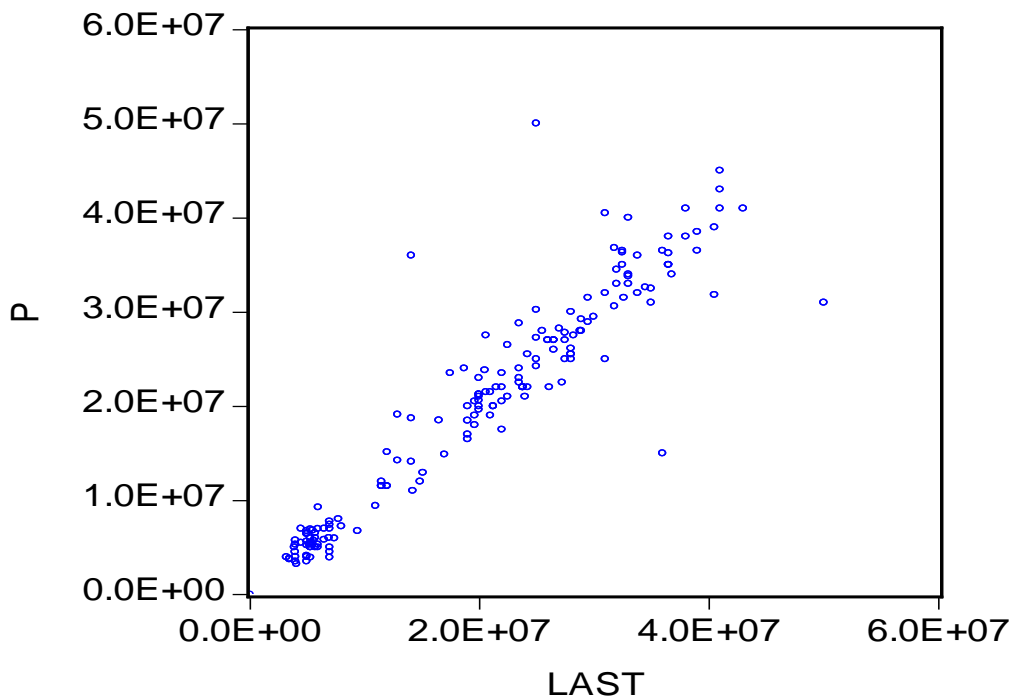
	DAY	MONTH	YEAR	YARD	SIZE	AGE	LAST	BPI	P
MEAN	16.25000	6.136364	1997.886	0.659091	70616.95	15.85795	20034375	2904.210	20202273
MEDIAN	17.00000	6.000000	2009.000	1.000000	71894.50	14.00000	21000000	2978.500	21375000
MAXIMUM	31.00000	12.00000	2010.000	1.000000	79800.00	29.00000	50000000	4576.000	50000000
MINIMUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
STD. DEV.	8.261096	3.421551	151.4576	0.475367	7043.271	8.570864	11625844	976.7862	11787704
SKEWNESS	-0.24004	0.266305	-13.1529	-0.67124	-5.796421	0.137506	0.088149	-0.630239	0.106317
KURTOSIS	2.000972	1.981199	174.0025	1.450575	58.40463	1.786293	1.937187	3.082189	1.947417
J-B	9.009320	9.691939	219515.0	30.82213	23496.49	11.35726	8.511444	11.70077	8.456392
PROB.	0.011057	0.007860	0.000000	0.000000	0.000000	0.003418	0.014183	0.002879	0.014579
SUM	2860.000	1080.000	351628.0	116.0000	12428584	2791.000	3.53E+09	511141.0	3.56E+09
SUM. SQ. DEV.	11943.00	2048.727	4014396.	39.54545	8.68E+09	12855.45	2.37E+16	1.67E+08	2.43E+16
OBSERV.	176	176	176	176	176	176	176	176	176

Table 5: Correlation matrix for panamax bulk carriers
 Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

	DAY	MONTH	YEAR	YARD	DWT	AGE	LAST	BPI	P
DAY	1.000000	0.134236	0.148684	-0.075666	0.192467	-0.085123	0.127705	0.009013	0.106640
MONTH	0.134236	1.000000	0.134612	0.081444	0.156060	0.017422	0.049564	0.384488	0.013778
YEAR	0.148684	0.134612	1.000000	0.104938	0.760241	0.139886	0.131327	0.226519	0.130649
YARD	-0.075666	0.081444	0.104938	1.000000	0.016960	0.018902	0.026689	0.030958	0.003045
DWT	0.192467	0.156060	0.760241	0.016960	1.000000	-0.434547	0.626387	0.221978	0.634380
AGE	-0.085123	0.017422	0.139886	0.018902	-0.434547	1.000000	-0.915122	-0.040746	-0.928393
LAST	0.127705	0.049564	0.131327	0.026689	0.626387	-0.915122	1.000000	0.192174	0.939851
BPI	0.009013	0.384488	0.226519	0.030958	0.221978	-0.040746	0.192174	1.000000	0.177906
P	0.106640	0.013778	0.130649	0.003045	0.634380	-0.928393	0.939851	0.177906	1.000000

The correlation between ship's price and the price of the last similar sale done is extremely high (0,939) showing that this variable strongly determines and correlates with price. The following graph shows the correlation between price and last similar ship sale done in a scatter diagram, where the high determination of price by "last done" can be clearly observed.

Figure 3: Scatter diagram between ship's price and price of last similar ship sold for Panamax Bulk Carriers
 Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC



Several reasons support the use of natural logarithms. The data transformed in logarithms may stabilise a non stationary variance and more importantly an exponential trend becomes linear after transformation, allowing more in depth analysis in details. So, the equation will take the following form:

$$\log (P) = c + \beta^* \log (\text{last})$$

The following table shows the least squares method's results by taking as dependent variable log (p):

Table 6: Least squares method between price and last similar sale for panamax bulk carriers
Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.472923	0.318633	1.484223	0.1396
LOG(LAST)	0.971873	0.019191	50.64108	0.0000
R-squared	0.936804	Mean dependent var		16.59221
Adjusted R-squared	0.936439	S.D. dependent var		0.759270
S.E. of regression	0.191422	Akaike info criterion		-0.457307
Sum squared resid	6.339152	Schwarz criterion		-0.421138
Log likelihood	42.01434	F-statistic		2564.519
Durbin-Watson stat	1.965932	Prob(F-statistic)		0.000000

So, we have $\log (P) = 0.47 + 0.97^* \log (\text{last})$. Obviously, there is a very strong correlation between ship's indicated price and price of last similar sale. Next, the correlation and regression between price and "last done" have to be examined again. In order to evaluate better the power of determination that "last done" has, the analysis continues with the following test: we examine if the other variables (yard, size, age and BPI) improve the degree of explanation of the price of the ship beyond the price of the last similar sold. So, another regression is performed which includes a price that is "filtered" for these variables. Firstly, regression is performed for log (P) on a constant and log (last done) and then the residuals of this are regressed on the remaining variables. The residuals are called pfilt and follow this equation:

$$\text{pfilt} = c + \beta_1^* \text{age} + \beta_2^* \text{yard} + \beta_3^* \text{size} + \beta_4^* \text{BPI}$$

Table 7: Least squares method on residuals for panamax bulk carriers
Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.368095	0.463539	0.794097	0.4282
YARD	-0.041349	0.030629	-1.349960	0.1788
DWT	-3.06E-06	5.85E-06	-0.523241	0.6015
AGE	-0.005431	0.003139	-1.730190	0.0854
BPI	-1.25E-05	1.50E-05	-0.834334	0.4053
R-squared	0.045854	Mean dependent var		-3.63E-15
Adjusted R-squared	0.023403	S.D. dependent var		0.190871
S.E. of regression	0.188625	Akaike info criterion		-0.469959
Sum squared resid	6.048478	Schwarz criterion		-0.379537
Log likelihood	46.12144	F-statistic		2.042436
Durbin-Watson stat	1.885110	Prob(F-statistic)		0.090626

As it is observed, this regression hardly adds anything valuable to the explanation of the residuals. Consequently, the conclusion of this analysis is that the price of the last similar sale is really a very dominant indicator for the second hand price of S&P service, for panamax bulkers and does not let other factors (yard, size, age and BPI) affect price. Brokers totally depend on the “last done” when determining the price of a second hand panamax bulk carrier.

Analysis for Second Hand Capesize Bulk Carriers

Table 8: Descriptive statistics for capesize bulk carriers
Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

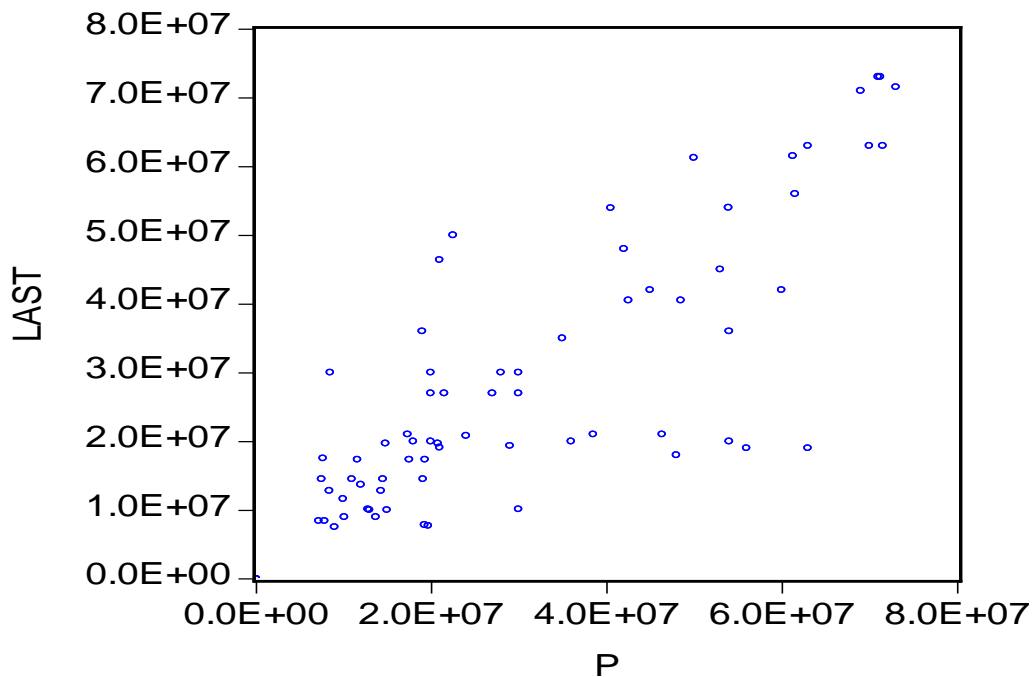
	DAY	MONTH	YEAR	DWT	AGE	YARD	BCI	LAST	P
Mean	14.24638	5.246377	2009.348	162383.1	14.71014	0.434783	4170.618	29383333	31892319
Median	14.00000	5.000000	2009.000	170012.0	16.00000	0.000000	3991.000	20800000	22500000
Maximum	31.00000	12.00000	2010.000	198906.0	29.00000	1.000000	8056.000	73000000	73000000
Minimum	1.000000	1.000000	2009.000	127907.0	0.000000	0.000000	1640.000	7500000.	7200000.
Std. Dev.	9.999126	3.093664	0.479770	16199.57	8.575103	0.499360	1528.299	19269501	20530187
Skewness	0.221651	0.652875	0.639010	-0.291319	-0.208956	0.263117	0.577857	0.879894	0.614268
Kurtosis	1.585430	2.796729	1.408333	2.137377	1.936493	1.069231	2.640971	2.570481	2.017382
Jarque-Bera	6.317886	5.020617	11.97937	3.115310	3.753885	11.51378	4.149628	9.433860	7.115166
Probability	0.042471	0.081243	0.002504	0.210629	0.153057	0.003161	0.125580	0.008943	0.028508
Sum	983.0000	362.0000	138645.0	11204436	1015.000	30.00000	283602.0	2.03E+09	2.20E+09
Sum Sq. Dev.	6798.812	650.8116	15.65217	1.78E+10	5000.203	16.95652	1.56E+08	2.52E+16	2.87E+16
Observations	69	69	69	69	69	69	68	69	69

Table 9: Correlation matrix for capesize bulk carriers
 Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

	DAY	MONTH	YEAR	DWT	AGE	YARD	BCI	LAST	P
DAY	1.000000	0.041059	0.039762	-0.048433	-0.192007	-0.012320	0.100041	0.088202	0.198568
MONTH	0.041059	1.000000	-0.417841	0.107384	-0.135241	0.094540	0.514611	0.165425	0.166207
YEAR	0.039762	-0.417841	1.000000	-0.153135	0.087420	-0.160409	-0.191609	0.015506	-0.037852
DWT	-0.048433	0.107384	-0.153135	1.000000	-0.651716	0.075078	-0.040076	0.590753	0.569074
AGE	-0.192007	-0.135241	0.087420	-0.651716	1.000000	0.006707	-0.064828	-0.806701	-0.816541
YARD	-0.012320	0.094540	-0.160409	0.075078	0.006707	1.000000	-0.090833	-0.080705	0.062236
BCI	0.100041	0.514611	-0.191609	-0.040076	-0.064828	-0.090833	1.000000	0.050986	0.163290
LAST	0.088202	0.165425	0.015506	0.590753	-0.806701	-0.080705	0.050986	1.000000	0.799379
P	0.198568	0.166207	-0.037852	0.569074	-0.816541	0.062236	0.163290	0.799379	1.000000

In the case of Capes, the correlation between price and “last done” is still high but much lower (0,799) compared to the results for Panamax bulkers. This means that other factors play also some role in the determination of price.

Figure 4: Scatter diagram between ship’s price and price of last similar ship sold for capesize bulk carriers
 Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC



This scatter diagram that shows the relationship between price and last similar sale recorded in the second hand market for Capesize bulk carriers reveals that their correlation is much less defined compared to the panamax study, where one could clearly observe the very dominant relationship. This outcome is also supported by the fact that many economists (e.g. Kavussanos,1997) have analyzed that Capesize second hand markets are much more volatile in terms of price than Panamax second hand sales are. (Generally second hand markets of bigger ships are more volatile than smaller vessels' markets). Next, again for the same reasons, logarithms are employed to transform the data in the following equation:

$$\log (P) = c + \beta * \log (\text{Last})$$

The following table shows the least squares method's results by taking log (P) as dependent variable:

Table 10: Least squares method between price and last similar sale for capsizes bulk carriers
Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.477126	1.415650	2.456204	0.0166
LOG(LAST)	0.799373	0.083286	9.597888	0.0000
R-squared	0.578933	Mean dependent var		17.05420
Adjusted R-squared	0.572648	S.D. dependent var		0.696333
S.E. of regression	0.455208	Akaike info criterion		1.292432
Sum squared resid	13.88335	Schwarz criterion		1.357188
Log likelihood	-42.58890	F-statistic		92.11945
Durbin-Watson stat	2.178163	Prob(F-statistic)		0.000000

So, $\log (P) = 3.47 + 0.79 * \log (\text{last})$.

Indeed there is a positive correlation between price and last similar sale but not as high as was in the previous case. The question that remains to be answered is to figure out if the other variables improve the level of explanation of the price of the ship beyond the price of the last similar sale. Firstly, regression is performed for log (P) on a constant and log (last done) and then the residuals of this are regressed on the remaining variables. So, another regression is performed which includes a price that is "filtered" for the other variables (yard, size, age and BCI). The residuals are called:

$$p_{\text{filt}} = c + \beta_1 * \text{age} + \beta_2 * \text{yard} + \beta_3 * \text{size} + \beta_4 * \text{BCI}$$

Table 11: Least squares method on residuals for capesize bulk carriers
Source: Intermodal Shipbrokers Co. & Clarkson Shipbrokers PLC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.107492	0.795415	-0.135139	0.8929
AGE	-0.013823	0.007962	-1.736106	0.0874
YARD	0.237493	0.104205	2.279086	0.0261
DWT	-6.52E-07	4.23E-06	-0.154224	0.8779
BCI	7.50E-05	3.42E-05	2.193481	0.0320
R-squared	0.188149	Mean dependent var		0.000649
Adjusted R-squared	0.136603	S.D. dependent var		0.455175
S.E. of regression	0.422945	Akaike info criterion		1.187538
Sum squared resid	11.26961	Schwarz criterion		1.350737
Log likelihood	-35.37628	F-statistic		3.650112
Durbin-Watson stat	2.238298	Prob(F-statistic)		0.009751

The results in the case of Capes prove to be a bit different. There is some explanation power left for ship characteristics. This means that the last similar sale is not as dominant as it was in the first case. About 19% of explanatory level is still related to yard, BCI and age. More specifically, the yard where the vessel has been built and the market trends (BCI) affect price for sure, while ship's age may affect price in some cases too.

This is explained by the fact that markets of bigger ships are more volatile than those of smaller vessels, so the "last done" affects capesize bulkers less than panamax bulkers. However, this result is also explained by the fact that the annual number of capesize second hand sales is much less than for panamax, meaning that there are biggest time logs between two similar sales in the capesize market. So, other variables may affect ship prices during these time logs. Also, the total observations of second hand capesize bulkers' sales were much less compared to panamax bulkers.

To conclude, according to this analysis brokers evaluate panamax bulk carriers based totally on the price of the last similar recorded sale. However, this means that whenever there is not a similar sale recorded in the market, other characteristics determine price (from which the most dominant are size, age, BDI and yard built). Regarding the valuation of capesize bulk carriers, brokers again depend a lot on the price of the last similar sale but not as much as for panamax bulkers. More specifically, market condition (BCI) and yard built are also taken into account in order to evaluate a ship. Sometimes age is also considered as a determinant.

Chapter 6 Conclusions and Recommendations

6.1 Conclusions

The main area of this dissertation deals with the S & P service and basically with the role of S & P shipbroker. This thesis investigates brokers' insight. It tries to present all aspects of S & P according to brokers' views. The first topics that analysed in the study include a broad description of role, duties and responsibilities of S & P brokers, an extensive explanation of the importance of a good information network by referring to the theory of adverse selection, the distribution of information, the shipping database and the means of communication and an introduction to the second hand ships' market.

The next chapters shed light on brokers' basic activity which is the sale and purchase of ships: the composition of an offer and a counter offer, the commission agreement, the inspection and delivery of the vessel, the negotiations process, the transactions microstructure, the conclusion of a sale and the MoA analyzed clause by clause, and other legal documents essential in order to complete a sale. All these things describe the activities of S & P brokers and are also supported by a case study and many official documents in the appendices. Furthermore, the transactions microstructure and the negotiations process are also analyzed step by step as part of the everyday activity of S & P brokers.

Moreover, all factors that affect a second hand ship price are analyzed extensively and special attention is given on how each one of them affects price. The next chapters, in fact, answer the main research question that is the following:

“Which factors do shipbrokers take into account in the determination of price for a second hand Panamax or Capesize bulk carrier and what is their relative importance?”

The first part of the research question is answered in the fourth chapter while the second part in the fifth chapter. The variables that brokers take into account so as to determine price for a second hand Panamax or Capesize bulk carrier are the following: last similar ship sold, age, deadweight, country and yard built, main engine, freight rates (BDI prospects), special survey, timecharter included, seller's and buyer's reputation, classification society, place of delivery, delivery date, classification records, availability of similar tonnage, bunkers on delivery, spare parts, trading history, condition of the ship, flag and light displacement.

These findings were concluded after examining sale and purchase records of negotiation logs kept by brokers who initiated, supported and concluded the entire sales. These records together with questionnaires answered by Greek professional shipbrokers show all the important variables that play a role in the negotiations process and consequently in the determination of the ship's sale price. From an analysis of sale and purchase fixtures, the shadow prices (the relative weight) of all these relevant factors are estimated in a second hand ship hedonic price model. This conceptual model describes the sale and purchase transaction microstructure according to brokers' insight.

After a literature review on price modelling and after choosing the most important out of these variables, according to brokers' views, a hedonic price model is established. This model describes how shipbrokers estimate price for a second hand Panamax or Capesize bulk carrier. The empirical analysis shows that the price of last similar sale recorded, ship's age, market condition (BPI for Panamax and PCI for Capesize), country / yard built and ship's size are the five determinants that have the strongest effect on ship's price. These factors are taken into account in order to construct a hedonic price model that produced different results for the two types of ships. To conclude, according to this analysis brokers evaluate panamax bulk carriers based totally on the price of the last similar recorded sale. However, this means that whenever there is not a similar sale recorded in the market, other characteristics determine price for Panamax ships (from which the most dominant are size, age, BDI and yard built).

Regarding the valuation of capesize bulk carriers, brokers again depend a lot on the price of the last similar sale but not as much as for panamax bulkers. More specifically, market condition (BCI), yard built and sometimes age are taken into account in order to evaluate a ship and can determine price about 19%. This is caused mainly due to the higher volatility observed in the capes second hand market. This result is also explained by the fact that the annual number of capesize second hand sales is much less than for panamax, meaning that there are biggest time gaps between two similar sales in the capesize market so other variables may also affect ship prices during that time.

6.2 Recommendations

An interesting question would be to investigate the degree of similarity between two sales recorded as "similar" in this dissertation. The factor of the "last done" contains three other variables (type, age, size), so an examination of how close these variables are in terms of size and age may play a role in our analysis, comparing panamax and capesize sales records, may provide us with some interesting results. Moreover another interesting question supporting this idea would be to examine the hierarchy on these other variables in cases that a last similar sale does not exist.

Recommendations for future research would be to include, examine and compare other ships with different size, like handysize bulkers, with this dissertation's findings for panama and capsize bulkers. For example a test on whether "last done" would determine even more the price of these ships due to the lower price volatility observed in smaller ships, would be useful for improving this study even more.

Another recommendation would also be to take into account in the econometrics analysis some other variables that take place in real cases so as to reflect more the real situation. Supplementary factors like a timecharter attached or the lightweight of the ship referring to older vessels would be some extra factors that may provide different results in some cases. Finally, employing a bigger sample may provide this research with a bit more accurate results but such sample is rather difficult to find especially in the second hand sales market due to pour amount of S & P records for many years.

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Appendices

Appendix 1: International Brokers Commission Contract by FONASBA



The Federation of National Associations of Ship Brokers and Agents

INTERNATIONAL BROKERS COMMISSION CONTRACT

Recommended by BIMCO

THIS AGREEMENT is made the _____ day of _____ 200

between: _____

Shipowner/Timechartered Owner/Disponent Owner _____

(hereinafter referred to as the "Owner") and : _____

Shipbroker/Chartering Broker of : _____

(hereinafter referred to as the "Broker")

WHEREAS:

The Broker has fixed the Owner's vessel on the terms and conditions contained in the Charter Party dated: _____ annexed hereto.

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. The Owner shall pay commission to or otherwise remunerate the Broker:
 - ❖ (a) In accordance with the relevant provisions of the Charter Party.
 - ❖ (b) As follows _____
2. Any dispute arising out of this Contract shall be referred to Arbitration at _____ and shall be subject to the law and procedures applicable there.

For and on behalf of

For and on behalf of

(Owner)

(Broker)

❖ (Delete as appropriate)

Appendix 2: Norwegian Saleform 1993 (Memorandum of Agreement)

MEMORANDUM OF AGREEMENT

Norwegian Shipbrokers' Association's Memorandum of Agreement for sale and purchase of ships. Adopted by The Baltic and International Maritime Council (BIMCO) in 1956.
Code-name
SALEFORM 1993
Revised 1966, 1983 and 1986/87.

Dated:

hereinafter called the Sellers, have agreed to sell, and 1

hereinafter called the Buyers, have agreed to buy 2

Name: 3

Classification Society/Class: 4

Built: By: 5

Flag: Place of Registration: 6

Call Sign: Grt/Nrt: 7

Register Number: 8

hereinafter called the Vessel, on the following terms and conditions: 9

Definitions 10

"Banking days" are days on which banks are open both in the country of the currency stipulated for the Purchase Price in Clause 1 and in the place of closing stipulated in Clause 8. 11
12

"In writing" or "written" means a letter handed over from the Sellers to the Buyers or vice versa, a registered letter, telex, telefax or other modern form of written communication. 13
14

"Classification Society" or "Class" means the Society referred to in line 4. 15

1. Purchase Price 16

2. Deposit 17

As security for the correct fulfilment of this Agreement the Buyers shall pay a deposit of 10 % (ten per cent) of the Purchase Price within banking days from the date of this Agreement. This deposit shall be placed with 18
19
20

and held by them in a joint account for the Sellers and the Buyers, to be released in accordance with joint written instructions of the Sellers and the Buyers. Interest, if any, to be credited to the Buyers. Any fee charged for holding the said deposit shall be borne equally by the Sellers and the Buyers. 21
22
23
24

3. Payment 25

The said Purchase Price shall be paid in full free of bank charges to 26

on delivery of the Vessel, but not later than 3 banking days after the Vessel is in every respect physically ready for delivery in accordance with the terms and conditions of this Agreement and Notice of Readiness has been given in accordance with Clause 5. 27
28
29

4. Inspections 30

a)*	The Buyers have inspected and accepted the Vessel's classification records. The Buyers have also inspected the Vessel at/in _____ on _____ and have accepted the Vessel following this inspection and the sale is outright and definite, subject only to the terms and conditions of this Agreement.	31 32 33 34
b)*	The Buyers shall have the right to inspect the Vessel's classification records and declare whether same are accepted or not within _____ The Sellers shall provide for inspection of the Vessel at/in _____	35 36 37
	The Buyers shall undertake the inspection without undue delay to the Vessel. Should the Buyers cause undue delay they shall compensate the Sellers for the losses thereby incurred. The Buyers shall inspect the Vessel without opening up and without cost to the Sellers. During the inspection, the Vessel's deck and engine log books shall be made available for examination by the Buyers. If the Vessel is accepted after such inspection, the sale shall become outright and definite, subject only to the terms and conditions of this Agreement, provided the Sellers receive written notice of acceptance from the Buyers within 72 hours after completion of such inspection. Should notice of acceptance of the Vessel's classification records and of the Vessel not be received by the Sellers as aforesaid, the deposit together with interest earned shall be released immediately to the Buyers, whereafter this Agreement shall be null and void.	38 39 40 41 42 43 44 45 46 47 48
*	<i>4 a) and 4b) are alternatives; delete whichever is not applicable. In the absence of deletions, alternative 4a) to apply.</i>	49 50
5.	Notices, time and place of delivery	51
a)	The Sellers shall keep the Buyers well informed of the Vessel's itinerary and shall provide the Buyers with _____, _____, and _____ days notice of the estimated time of arrival at the intended place of drydocking/underwater inspection/delivery. When the Vessel is at the place of delivery and in every respect physically ready for delivery in accordance with this Agreement, the Sellers shall give the Buyers a written Notice of Readiness for delivery.	52 53 54 55 56
b)	The Vessel shall be delivered and taken over safely afloat at a safe and accessible berth or anchorage at/in _____ in the Sellers' option.	57 58 59
	Expected time of delivery:	60
	Date of cancelling (see Clauses 5 c), 6 b) (iii) and 14):	61
c)	If the Sellers anticipate that, notwithstanding the exercise of due diligence by them, the Vessel will not be ready for delivery by the cancelling date they may notify the Buyers in writing stating the date when they anticipate that the Vessel will be ready for delivery and propose a new cancelling date. Upon receipt of such notification the Buyers shall have the option of either cancelling this Agreement in accordance with Clause 14 within 7 running days of receipt of the notice or of accepting the new date as the new cancelling date. If the Buyers have not declared their option within 7 running days of receipt of the Sellers' notification or if the Buyers accept the new date, the date proposed in the Sellers' notification shall be deemed to be the new cancelling date and shall be substituted for the cancelling date stipulated in line 61.	62 63 64 65 66 67 68 69 70 71
	If this Agreement is maintained with the new cancelling date all other terms and conditions hereof including those contained in Clauses 5 a) and 5 c) shall remain unaltered and in full force and effect. Cancellation or failure to cancel shall be entirely without prejudice to any claim for damages the Buyers may have under Clause 14 for the Vessel not being ready by the original cancelling date.	72 73 74 75 76
d)	Should the Vessel become an actual, constructive or compromised total loss before delivery the deposit together with interest earned shall be released immediately to the Buyers whereafter this Agreement shall be null and void.	77 78 79

6.	Drydocking/Divers Inspection	80
a)**	The Sellers shall place the Vessel in drydock at the port of delivery for inspection by the Classification Society of the Vessel's underwater parts below the deepest load line, the extent of the inspection being in accordance with the Classification Society's rules. If the rudder, propeller, bottom or other underwater parts below the deepest load line are found broken, damaged or defective so as to affect the Vessel's class, such defects shall be made good at the Sellers' expense to the satisfaction of the Classification Society without condition/recommendation*.	81 82 83 84 85 86 87
b)**	(i) The Vessel is to be delivered without drydocking. However, the Buyers shall have the right at their expense to arrange for an underwater inspection by a diver approved by the Classification Society prior to the delivery of the Vessel. The Sellers shall at their cost make the Vessel available for such inspection. The extent of the inspection and the conditions under which it is performed shall be to the satisfaction of the Classification Society. If the conditions at the port of delivery are unsuitable for such inspection, the Sellers shall make the Vessel available at a suitable alternative place near to the delivery port.	88 89 90 91 92 93 94 95
	(ii) If the rudder, propeller, bottom or other underwater parts below the deepest load line are found broken, damaged or defective so as to affect the Vessel's class, then unless repairs can be carried out afloat to the satisfaction of the Classification Society, the Sellers shall arrange for the Vessel to be drydocked at their expense for inspection by the Classification Society of the Vessel's underwater parts below the deepest load line, the extent of the inspection being in accordance with the Classification Society's rules. If the rudder, propeller, bottom or other underwater parts below the deepest load line are found broken, damaged or defective so as to affect the Vessel's class, such defects shall be made good by the Sellers at their expense to the satisfaction of the Classification Society without condition/recommendation*. In such event the Sellers are to pay also for the cost of the underwater inspection and the Classification Society's attendance.	96 97 98 99 100 101 102 103 104 105 106
	(iii) If the Vessel is to be drydocked pursuant to Clause 6 b) (ii) and no suitable dry-docking facilities are available at the port of delivery, the Sellers shall take the Vessel to a port where suitable drydocking facilities are available, whether within or outside the delivery range as per Clause 5 b). Once drydocking has taken place the Sellers shall deliver the Vessel at a port within the delivery range as per Clause 5 b) which shall, for the purpose of this Clause, become the new port of delivery. In such event the cancelling date provided for in Clause 5 b) shall be extended by the additional time required for the drydocking and extra steaming, but limited to a maximum of 14 running days.	107 108 109 110 111 112 113 114
c)	If the Vessel is drydocked pursuant to Clause 6 a) or 6 b) above	115
	(i) the Classification Society may require survey of the tailshaft system, the extent of the survey being to the satisfaction of the Classification surveyor. If such survey is not required by the Classification Society, the Buyers shall have the right to require the tailshaft to be drawn and surveyed by the Classification Society, the extent of the survey being in accordance with the Classification Society's rules for tailshaft survey and consistent with the current stage of the Vessel's survey cycle. The Buyers shall declare whether they require the tailshaft to be drawn and surveyed not later than by the completion of the inspection by the Classification Society. The drawing and refitting of the tailshaft shall be arranged by the Sellers. Should any parts of the tailshaft system be condemned or found defective so as to affect the Vessel's class, those parts shall be renewed or made good at the Sellers' expense to the satisfaction of the Classification Society without condition/recommendation*.	116 117 118 119 120 121 122 123 124 125 126 127
	(ii) the expenses relating to the survey of the tailshaft system shall be borne by the Buyers unless the Classification Society requires such survey to be carried out, in which case the Sellers shall pay these expenses. The Sellers shall also pay the expenses if the Buyers require the survey and parts of the system are condemned or found defective or broken so as to affect the Vessel's class*.	128 129 130 131 132
	(iii) the expenses in connection with putting the Vessel in and taking her out of drydock, including the drydock dues and the Classification Society's fees shall be paid by the Sellers if the Classification Society issues any condition/recommendation* as a result of the survey or if it requires survey of the tailshaft system. In all other cases the Buyers shall pay the aforesaid expenses, dues and fees.	133 134 135 136 137
	(iv) the Buyers' representative shall have the right to be present in the drydock, but	138

without interfering with the work or decisions of the Classification surveyor.	139
(v) the Buyers shall have the right to have the underwater parts of the Vessel cleaned and painted at their risk and expense without interfering with the Sellers' or the Classification surveyor's work, if any, and without affecting the Vessel's timely delivery. If, however, the Buyers' work in drydock is still in progress when the Sellers have completed the work which the Sellers are required to do, the additional docking time needed to complete the Buyers' work shall be for the Buyers' risk and expense. In the event that the Buyers' work requires such additional time, the Sellers may upon completion of the Sellers' work tender Notice of Readiness for delivery whilst the Vessel is still in drydock and the Buyers shall be obliged to take delivery in accordance with Clause 3, whether the Vessel is in drydock or not and irrespective of Clause 5 b).	140 141 142 143 144 145 146 147 148 149
* Notes, if any, in the surveyor's report which are accepted by the Classification Society without condition/recommendation are not to be taken into account.	150 151
** <i>6 a) and 6 b) are alternatives; delete whichever is not applicable. In the absence of deletions, alternative 6 a) to apply.</i>	152 153
7. Spares/bunkers, etc.	154
The Sellers shall deliver the Vessel to the Buyers with everything belonging to her on board and on shore. All spare parts and spare equipment including spare tail-end shaft(s) and/or spare propeller(s)/propeller blade(s), if any, belonging to the Vessel at the time of inspection used or unused, whether on board or not shall become the Buyers' property, but spares on order are to be excluded. Forwarding charges, if any, shall be for the Buyers' account. The Sellers are not required to replace spare parts including spare tail-end shaft(s) and spare propeller(s)/propeller blade(s) which are taken out of spare and used as replacement prior to delivery, but the replaced items shall be the property of the Buyers. The radio installation and navigational equipment shall be included in the sale without extra payment if they are the property of the Sellers. Unused stores and provisions shall be included in the sale and be taken over by the Buyers without extra payment.	155 156 157 158 159 160 161 162 163 164
The Sellers have the right to take ashore crockery, plates, cutlery, linen and other articles bearing the Sellers' flag or name, provided they replace same with similar unmarked items. Library, forms, etc., exclusively for use in the Sellers' vessel(s), shall be excluded without compensation. Captain's, Officers' and Crew's personal belongings including the slop chest are to be excluded from the sale, as well as the following additional items (including items on hire):	165 166 167 168 169
The Buyers shall take over the remaining bunkers and unused lubricating oils in storage tanks and sealed drums and pay the current net market price (excluding barging expenses) at the port and date of delivery of the Vessel. Payment under this Clause shall be made at the same time and place and in the same currency as the Purchase Price.	170 171 172 173 174
8. Documentation	175
The place of closing:	176
In exchange for payment of the Purchase Price the Sellers shall furnish the Buyers with delivery documents, namely:	177 178
a) Legal Bill of Sale in a form recordable in _____ (the country in which the Buyers are to register the Vessel), warranting that the Vessel is free from all encumbrances, mortgages and maritime liens or any other debts or claims whatsoever, duly notarially attested and legalized by the consul of such country or other competent authority.	179 180 181 182
b) Current Certificate of Ownership issued by the competent authorities of the flag state of the Vessel.	183 184
c) Confirmation of Class issued within 72 hours prior to delivery.	185
d) Current Certificate issued by the competent authorities stating that the Vessel is free from	186

registered encumbrances.	187
e) Certificate of Deletion of the Vessel from the Vessel's registry or other official evidence of deletion appropriate to the Vessel's registry at the time of delivery, or, in the event that the registry does not as a matter of practice issue such documentation immediately, a written undertaking by the Sellers to effect deletion from the Vessel's registry forthwith and furnish a Certificate or other official evidence of deletion to the Buyers promptly and latest within 4 (four) weeks after the Purchase Price has been paid and the Vessel has been delivered.	188 189 190 191 192 193
f) Any such additional documents as may reasonably be required by the competent authorities for the purpose of registering the Vessel, provided the Buyers notify the Sellers of any such documents as soon as possible after the date of this Agreement.	194 195 196
At the time of delivery the Buyers and Sellers shall sign and deliver to each other a Protocol of Delivery and Acceptance confirming the date and time of delivery of the Vessel from the Sellers to the Buyers.	197 198 199
At the time of delivery the Sellers shall hand to the Buyers the classification certificate(s) as well as all plans etc., which are on board the Vessel. Other certificates which are on board the Vessel shall also be handed over to the Buyers unless the Sellers are required to retain same, in which case the Buyers to have the right to take copies. Other technical documentation which may be in the Sellers' possession shall be promptly forwarded to the Buyers at their expense, if they so request. The Sellers may keep the Vessel's log books but the Buyers to have the right to take copies of same.	200 201 202 203 204 205 206
9. Encumbrances	207
The Sellers warrant that the Vessel, at the time of delivery, is free from all charters, encumbrances, mortgages and maritime liens or any other debts whatsoever. The Sellers hereby undertake to indemnify the Buyers against all consequences of claims made against the Vessel which have been incurred prior to the time of delivery.	208 209 210 211
10. Taxes, etc.	212
Any taxes, fees and expenses in connection with the purchase and registration under the Buyers' flag shall be for the Buyers' account, whereas similar charges in connection with the closing of the Sellers' register shall be for the Sellers' account.	213 214 215
11. Condition on delivery	216
The Vessel with everything belonging to her shall be at the Sellers' risk and expense until she is delivered to the Buyers, but subject to the terms and conditions of this Agreement she shall be delivered and taken over as she was at the time of inspection, fair wear and tear excepted. However, the Vessel shall be delivered with her class maintained without condition/recommendation*, free of average damage affecting the Vessel's class, and with her classification certificates and national certificates, as well as all other certificates the Vessel had at the time of inspection, valid and unextended without condition/recommendation* by Class or the relevant authorities at the time of delivery.	217 218 219 220 221 222 223 224
"Inspection" in this Clause 11, shall mean the Buyers' inspection according to Clause 4 a) or 4 b), if applicable, or the Buyers' inspection prior to the signing of this Agreement. If the Vessel is taken over without inspection, the date of this Agreement shall be the relevant date.	225 226 227
* Notes, if any, in the surveyor's report which are accepted by the Classification Society without condition/recommendation are not to be taken into account.	228 229
12. Name/markings	230
Upon delivery the Buyers undertake to change the name of the Vessel and alter funnel markings.	231
13. Buyers' default	232
Should the deposit not be paid in accordance with Clause 2, the Sellers have the right to cancel this Agreement, and they shall be entitled to claim compensation for their losses and for all expenses	233 234

incurred together with interest.	235
Should the Purchase Price not be paid in accordance with Clause 3, the Sellers have the right to cancel the Agreement, in which case the deposit together with interest earned shall be released to the Sellers. If the deposit does not cover their loss, the Sellers shall be entitled to claim further compensation for their losses and for all expenses incurred together with interest.	236 237 238 239
14. Sellers' default	240
Should the Sellers fail to give Notice of Readiness in accordance with Clause 5 a) or fail to be ready to validly complete a legal transfer by the date stipulated in line 61 the Buyers shall have the option of cancelling this Agreement provided always that the Sellers shall be granted a maximum of 3 banking days after Notice of Readiness has been given to make arrangements for the documentation set out in Clause 8. If after Notice of Readiness has been given but before the Buyers have taken delivery, the Vessel ceases to be physically ready for delivery and is not made physically ready again in every respect by the date stipulated in line 61 and new Notice of Readiness given, the Buyers shall retain their option to cancel. In the event that the Buyers elect to cancel this Agreement the deposit together with interest earned shall be released to them immediately.	241 242 243 244 245 246 247 248 249 250
Should the Sellers fail to give Notice of Readiness by the date stipulated in line 61 or fail to be ready to validly complete a legal transfer as aforesaid they shall make due compensation to the Buyers for their loss and for all expenses together with interest if their failure is due to proven negligence and whether or not the Buyers cancel this Agreement.	251 252 253 254
15. Buyers' representatives	255
After this Agreement has been signed by both parties and the deposit has been lodged, the Buyers have the right to place two representatives on board the Vessel at their sole risk and expense upon arrival at _____ on or about _____	256 257 258
These representatives are on board for the purpose of familiarisation and in the capacity of observers only, and they shall not interfere in any respect with the operation of the Vessel. The Buyers' representatives shall sign the Sellers' letter of indemnity prior to their embarkation.	259 260 261
16. Arbitration	262
a)* This Agreement shall be governed by and construed in accordance with English law and any dispute arising out of this Agreement shall be referred to arbitration in London in accordance with the Arbitration Acts 1950 and 1979 or any statutory modification or re-enactment thereof for the time being in force, one arbitrator being appointed by each party. On the receipt by one party of the nomination in writing of the other party's arbitrator, that party shall appoint their arbitrator within fourteen days, failing which the decision of the single arbitrator appointed shall apply. If two arbitrators properly appointed shall not agree they shall appoint an umpire whose decision shall be final.	263 264 265 266 267 268 269 270
b)* This Agreement shall be governed by and construed in accordance with Title 9 of the United States Code and the Law of the State of New York and should any dispute arise out of this Agreement, the matter in dispute shall be referred to three persons at New York, one to be appointed by each of the parties hereto, and the third by the two so chosen; their decision or that of any two of them shall be final, and for purpose of enforcing any award, this Agreement may be made a rule of the Court. The proceedings shall be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc. New York.	271 272 273 274 275 276 277 278
c)* Any dispute arising out of this Agreement shall be referred to arbitration at _____, subject to the procedures applicable there. The laws of _____ shall govern this Agreement.	279 280 281
* 16 a), 16 b) and 16 c) are alternatives; delete whichever is not applicable. In the absence of deletions, alternative 16 a) to apply.	282 283

Appendix 3: Bill of Sale

BILL OF SALE			
1. Seller(s) (state full name, description and address)		2. Buyer(s) (state full name, description and address)	
3. Name of Vessel	4. Type of Vessel	5. Port of Registry	6. Call Signs
7. Gross Register Tonnage	8. Net Register Tonnage	9. Date of Memorandum of Agreement	
10. Purchase Sum (in figures and in letters)			
11. Details of subsisting or outstanding Mortgage(s) or other encumbrances, if any, also state other details, if any, relevant to the sale and transfer of the Vessel			
<p>The Seller(s), named in Box 1, who is (are) the Owner(s) of the Vessel described in Boxes 3 to 8, both inclusive, hereby confirm(s) having sold and handed over the said Vessel with everything belonging to her to the Buyer(s), named in Box 2, for the Purchase Sum, as stated in Box 10. Unless otherwise stated in Box 11, the Seller(s) warrant(s) that the Vessel is free from encumbrances, debts and maritime liens of any kind whatsoever and confirm(s) that the sale and transfer of the Vessel is effected in accordance with Memorandum of Agreement dated as indicated in Box 9. In consideration of the said Purchase Sum, paid to the Seller(s) by the Buyer(s), the Seller(s) hereby transfer(s) the Vessel to the Buyer(s) so that the Vessel shall hereinafter become his (their) legal property.</p> <p>IN WITNESS whereof this Bill of Sale has been issued and signed at the place and on the date stated in Box 12 in the presence of the Witness(es) as indicated in Box 13 whose signature(s) has (have) been certified (if required) by the person indicated in Box 14.</p>			
12. Place and date and signature of Seller(s)			
13. The undersigned Witness(es) hereby certifies(y) the correctness of the Seller(s)' signature(s) to this Bill of Sale and the date hereof (state full name, title and address of Witness(es))			
14. The undersigned Consul (General) hereby certifies the correctness of the Witness(es)' signature(s) as stated in Box 13			

Appendix 4: Bill of Sale Form No. 10A

Prescribed by the
Commissioners of Customs &
Excise with the consent of the
Secretary of State for Trade

Form No. 10A

X.S.79A

BILL OF SALE (Body Corporate)

Official number	Name of Ship	Number, year and port of Registry	Whether a sailing, steam or motor ship	Horse power of engines (if any)
Length from fore part of stem, to the aft side of the head of the stem post/fore side of the rudder stock		Fath	Tenths	Number of tons
Main breadth to outside of plating		III	CM	(Where dual tonnages are assigned the higher of these should be stated)
Depth in hold from tonnage deck to ceiling amidships		III	CM	Gross
and as described in more detail in the Register Book		III	CM	Register

We, (a) (hereinafter called the 'transferees') having our principal place of business at in consideration of the sum of
(.....) paid to us by (b) (hereinafter called 'the transferor(s)') the receipt whereof is hereby acknowledged, transfer shares in the Ship above particularly described, and in her boats and appurtenances, to the said transferor(s).
Further, we, the said transferees for ourselves and our successors covenant with the said transferor(s) and (c) assigns, that we have power to transfer in manner aforesaid the premises hereinbefore expressed to be transferred, and that the same are free from encumbrances (d).....
In witness whereof we have hereunto affixed our common seal on
The common seal of the transferees was affixed hereunto in the presence of (e)

(a) Name in full, Body Corporate, (b) Full name(s) and address(es) of transferees with their description in the case of individuals, and adding 'as joint owners (c) 'his, 'theirs' or 'his, ' (d) if any subsisting encumbrance add 'save as appears by the registry of the said ship' (e) Signatures and description of witness, i.e. Director, Secretary, etc. (as the case may be).
NOTE - A purchaser of a registered British Vessel does not obtain a complete title until the Bill of Sale has been recorded at the Port of Registry of the Ship and neglect of this presentation may entail serious consequences.
NOTE - Registered Owners or Mortgagees are reminded of the importance of keeping the Register of British Ships informed in any change of residence on their part.

Appendix 5: Completed NSF 1993 MoA from the Case Study

MEMORANDUM OF AGREEMENT

Dated: *th July*

Norwegian Shipbrokers' Association's Memorandum of Agreement for sale and purchase of ships, Adopted by The Baltic and International Maritime Council (BIMCO) in 1956.
Code-name
SALEFORM 1993
Revised 1966, 1983 and 1986/87.

<i>of Marshall Islands</i> hereinafter called the Sellers, have agreed to sell, and <i>of Panama</i>	1
hereinafter called the Buyers, have agreed to buy	2
Name: <i>M/T</i>	3
Classification Society/Class:	4
Built: By:	5
Flag: <i>Liberian</i> Place of Registration: <i>Monrovia</i>	6
Call Sign: Grt/Nrt:-	7
Register <i>IMO</i> Number:	8
hereinafter called the Vessel, on the following terms and conditions:	9
Definitions	10
"Banking days" are days on which banks are open both in the country of the currency stipulated for the Purchase Price in Clause 1 and in the place of closing stipulated in Clause 8.	11 12
"In writing" or "written" means a letter handed over from the Sellers to the Buyers or vice versa, a registered letter, telex, telefax or other modern form of written communication.	13 14
"Classification Society" or "Class" means the Society referred to in line 4.	15
1. Purchase Price Usd (<i>United States Dollars only</i>) in cash	16
2. Deposit (<i>See also Trustees Agreement</i>)	17
As security for the correct fulfilment of this Agreement the Buyers shall pay a deposit of 40 ten <i>20%</i> (<i>twenty</i> per cent) of the Purchase Price within <i>3 (three)</i> banking days from the date of <i>after</i> this Agreement <i>has been signed by both parties via facsimile or e-mail</i> . This deposit shall be placed with <i>Citibank Piraeus Branch</i> , and held by _____, who will act as Trustees <i>them in a joint account for both</i> the Sellers and the Buyers, to be released in accordance with the provisions of the relevant Trustees agreement <i>with joint written instructions of the Sellers and the Buyers</i> . Interest, if any, to be credited to the Buyers <i>Buyers</i> . Any banking fees/expenses <i>banking fees/expenses</i> charged for holding the said deposit closing shall be borne equally by the Sellers and the Buyers.	18 19 20 21 22 23 24
3. Payment	25
The <i>balance 80 pct of the</i> said Purchase Price <i>plus sums for bunkers and lubricants remaining on board</i> shall be paid in full free of bank charges to	26
on delivery of the Vessel <i>and in exchange of agreed delivery documents as per Clause 8 and 17 hereof</i> , but not later than 3 banking days after the Vessel is in every respect physically ready for delivery in accordance with the terms and conditions of this Agreement and	27 28

Notice of Readiness has been given in accordance with Clause 5.	29
4. Inspections	30
a)* The Buyers <i>wave their right to inspect</i> have inspected and accepted the Vessel's classification records. The Buyers have also inspected the Vessel at/in-Trinidad on 23rd January 2010 and on 27th April 2010 and have accepted the Vessel following this inspection and the sale is outright and definite without any additional inspection, subject only to the terms and conditions of this Agreement.	31 32 33 34
b)* The Buyers shall have the right to inspect the Vessel's classification records and declare whether same are accepted or not within	35 36
The Sellers shall provide for inspection of the Vessel at/in	37
The Buyers shall undertake the inspection without undue delay to the Vessel. Should the Buyers cause undue delay they shall compensate the Sellers for the losses thereby incurred. The Buyers shall inspect the Vessel without opening up and without cost to the Sellers. During the inspection, the Vessel's deck and engine log books shall be made available for examination by the Buyers. If the Vessel is accepted after such inspection, the sale shall become outright and definite, subject only to the terms and conditions of this Agreement, provided the Sellers receive written notice of acceptance from the Buyers within 72 hours after completion of such inspection. Should notice of acceptance of the Vessel's classification records and of the Vessel not be received by the Sellers as aforesaid, the deposit together with interest earned shall be released immediately to the Buyers, whereafter this Agreement shall be null and void.	38 39 40 41 42 43 44 45 46 47 48
* 4 a) and 4b) are alternatives; delete whichever is not applicable. In the absence of deletions, alternative 4a) to apply.	49 50
5. Notices, time and place of delivery	51
a) The Sellers shall keep the Buyers well informed of the Vessel's itinerary and shall provide the Buyers with 10, 7, 5 and 3 days approximate notice and 2/1 day definite notices of the estimated time of arrival at the intended time and place of drydocking/underwater inspection/delivery to Buyers. When the Vessel is at the place of delivery and in every respect physically ready for delivery in accordance with this Agreement, the Sellers shall give the Buyers a written Notice of Readiness for delivery.	52 53 54 55 56
b) The Vessel shall be delivered and taken over safely afloat at a safe and accessible berth or anchorage at/in	57 58
in the Sellers' option.	59
Expected time of delivery: th September 2009 to th September 2009 in Sellers' option	60
Date of cancelling (see Clauses 5 c), 6 b) (iii) and 14): th September 2009 in Buyers' option	61
c) If the Sellers anticipate that, notwithstanding the exercise of due diligence by them, the Vessel will not be ready for delivery by the cancelling date they may notify the Buyers in writing stating the date when they anticipate that the Vessel will be ready for delivery and propose a new cancelling date. Upon receipt of such notification the Buyers shall have the option of either cancelling this Agreement in accordance with Clause 14 within 7 2 running days of receipt of the notice or of accepting the new date as the new cancelling date. If the Buyers have not declared their option within 7 2 running days of receipt of the Sellers' notification or if the Buyers accept the new date, the date proposed in the Sellers' notification shall be deemed to be the new cancelling date and shall be substituted for the cancelling date stipulated in line 61.	62 63 64 65 66 67 68 69 70 71
If this Agreement is maintained with the new cancelling date all other terms and conditions hereof including those contained in Clauses 5 a) and 5 c) shall remain unaltered and in full	72 73

	force and effect. Cancellation or failure to cancel shall be entirely without prejudice to any claim for damages the Buyers may have under Clause 14 for the Vessel not being ready by the original cancelling date.	74 75 76
d)	Should the Vessel become an actual, constructive or compromised total loss before delivery the deposit together with interest earned shall be released immediately to the Buyers whereafter this Agreement shall be null and void.	77 78 79
6.	Drydocking/Divers Inspection	80
a)**	The Sellers shall place the Vessel in drydock at the port of delivery for inspection by the Classification Society of the Vessel's underwater parts below the deepest load line, the extent of the inspection being in accordance with the Classification Society's rules. If the rudder, propeller, bottom or other underwater parts below the deepest load line are found broken, damaged or defective so as to affect the Vessel's class, such defects shall be made good at the Sellers' expense to the satisfaction of the Classification Society without condition/recommendation*.	81 82 83 84 85 86 87
b)**	(i) The Vessel is to be delivered without drydocking. However, the Buyers shall have the right at their expense to arrange for an underwater inspection by a diver approved by the Classification Society prior to the delivery of the Vessel. The Sellers shall at their cost make the Vessel available for such inspection. The extent of the inspection and the conditions under which it is performed shall be to the satisfaction of the Classification Society. If the conditions at the port of delivery are unsuitable for such inspection, the Sellers shall make the Vessel available at a suitable alternative place near to the delivery port.	88 89 90 91 92 93 94 95
	(ii) If the rudder, propeller, bottom or other underwater parts below the deepest load line are found broken, damaged or defective so as to affect the Vessel's class, then unless repairs can be carried out afloat to the satisfaction of the Classification Society, the Sellers shall arrange for the Vessel to be drydocked at their expense for inspection by the Classification Society of the Vessel's underwater parts below the deepest load line, the extent of the inspection being in accordance with the Classification Society's rules. If the rudder, propeller, bottom or other underwater parts below the deepest load line are found broken, damaged or defective so as to affect the Vessel's class, such defects shall be made good by the Sellers at their expense to the satisfaction of the Classification Society without condition/recommendation*. In such event the Sellers are to pay also for the cost of the underwater inspection and the Classification Society's attendance.	96 97 98 99 100 101 102 103 104 105 106
	(iii) If the Vessel is to be drydocked pursuant to Clause 6 b) (ii) and no suitable drydocking facilities are available at the port of delivery, the Sellers shall take the Vessel to a port where suitable drydocking facilities are available, whether within or outside the delivery range as per Clause 5 b). Once drydocking has taken place the Sellers shall deliver the Vessel at a port within the delivery range as per Clause 5 b) which shall, for the purpose of this Clause, become the new port of delivery. In such event the cancelling date provided for in Clause 5 b) shall be extended by the additional time required for the drydocking and extra steaming, but limited to a maximum of 14 running days.	107 108 109 110 111 112 113 114
c)	If the Vessel is drydocked pursuant to Clause 6 a) or 6 b) above	115
	(i) the Classification Society may require survey of the tailshaft system, the extent of the survey being to the satisfaction of the Classification surveyor. If such survey is not required by the Classification Society, the Buyers shall have the right to require the tailshaft to be drawn and surveyed by the Classification Society, the extent of the survey being in accordance with the Classification Society's rules for tailshaft survey and consistent with the current stage of the Vessel's survey cycle. The Buyers shall declare whether they require the tailshaft to be drawn and surveyed not later than by the completion of the inspection by the Classification Society. The drawing and refitting of the tailshaft shall be arranged by the Sellers. Should any parts of the tailshaft system be condemned or found defective so as to affect the Vessel's class, those parts shall be renewed or made good at the Sellers' expense to the satisfaction of the Classification Society without condition/recommendation*.	116 117 118 119 120 121 122 123 124 125 126 127
	(ii) the expenses relating to the survey of the tailshaft system shall be borne by the Buyers unless the Classification Society requires such survey to be carried out, in which case the Sellers shall pay these expenses. The Sellers shall also pay the expenses if the Buyers require the survey and parts of the system are condemned or found defective	128 129 130 131

or broken so as to affect the Vessel's class*.	132
(iii) the expenses in connection with putting the Vessel in and taking her out of drydock, including the drydock dues and the Classification Society's fees shall be paid by the Sellers if the Classification Society issues any condition/recommendation* as a result of the survey or if it requires survey of the tailshaft system. In all other cases the Buyers shall pay the aforesaid expenses, dues and fees.	133 134 135 136 137
(iv) the Buyers' representative shall have the right to be present in the drydock, but without interfering with the work or decisions of the Classification surveyor.	138 139
(v) the Buyers shall have the right to have the underwater parts of the Vessel cleaned and painted at their risk and expense without interfering with the Sellers' or the Classification surveyor's work, if any, and without affecting the Vessel's timely delivery. If, however, the Buyers' work in drydock is still in progress when the Sellers have completed the work which the Sellers are required to do, the additional docking time needed to complete the Buyers' work shall be for the Buyers' risk and expense. In the event that the Buyers' work requires such additional time, the Sellers may upon completion of the Sellers' work tender Notice of Readiness for delivery whilst the Vessel is still in drydock and the Buyers shall be obliged to take delivery in accordance with Clause 3, whether the Vessel is in drydock or not and irrespective of Clause 5 b).	140 141 142 143 144 145 146 147 148 149
* Notes, if any, in the surveyor's report which are accepted by the Classification Society without condition/recommendation are not to be taken into account.	150 151
** 6 a) and 6 b) are alternatives; delete whichever is not applicable. In the absence of deletions, alternative 6 a) to apply.	152 153
7. Spares/bunkers, etc.	154
The Sellers shall deliver the Vessel to the Buyers with everything belonging to her on board and on shore. All spare parts and spare equipment including spare tail-end shaft(s) and/or spare propeller(s)/propeller blade(s), if any, belonging to the Vessel at the time of inspection used or unused, whether on board or not shall become the Buyers' property, but spares on order are to be excluded. Forwarding charges, if any, shall be for the Buyers' account. The Sellers are not required to replace spare parts including spare tail-end shaft(s) and spare propeller(s)/propeller blade(s) which are taken out of spare and used as replacement prior to delivery, but the replaced items shall be the property of the Buyers. The radio installation and navigational equipment shall be included in the sale without extra payment if they are the property of the Sellers. Unused stores and provisions shall be included in the sale and be taken over by the Buyers without extra payment.	155 156 157 158 159 160 161 162 163 164
The Sellers have the right to take ashore crockery, plates, cutlery, linen and other articles bearing the Sellers' flag or name, provided they replace same with similar unmarked items. Library, forms, etc., exclusively for use in the Sellers' vessel(s), shall be excluded without compensation. Captain's, Officers' and Crew's personal belongings including the slop chest are to be excluded from the sale, as well as the following additional items (including items on hire):	165 166 167 168 169
<i>-Company documents, certificates that must be returned to authorities</i>	
<i>-Inmarsat Fleet 55</i>	
<i>-Gas bottles (oxygen, acetylene, freon)</i>	
<i>-Yokohama Fenders</i>	
<i>-Flexible cargo hoses</i>	
<i>-Company PPE for crew (overalls etc.)</i>	
<i>-Company documents, certificates, that must be returned to authorities</i>	
<i>-Master's mobile phone</i>	
The Buyers shall take over the remaining bunkers <i>on delivery</i> and pay Sellers' last net invoice prices as evidenced by supporting vouchers. The Buyers also shall take over all remaining unused	170

lubricating oils in storage tanks and sealed drums and pay the current net market contract prices as evidenced by supporting vouchers (excluding barging expenses) at the port and date of delivery of the Vessel.	171
Payment under this Clause shall be made at the same time and place and in the same currency as the Purchase Price.	173
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8. Documentation	175
The place of closing: <i>Sellers' Bank, Piraeus, Greece</i>	176
In exchange for payment of the Purchase Price the Sellers shall furnish the Buyers with delivery documents, namely: <i>See Clause 17</i>	177
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a) Legal Bill of Sale in a form recordable in _____ (the country in which the Buyers are to register the Vessel), warranting that the Vessel is free from all encumbrances, mortgages and maritime liens or any other debts or claims whatsoever, duly notarially attested and legalized by the consul of such country or other competent authority.	179
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b) Current Certificate of Ownership issued by the competent authorities of the flag state of the Vessel.	183
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c) Confirmation of Class issued within 72 hours prior to delivery.	185
d) Current Certificate issued by the competent authorities stating that the Vessel is free from registered encumbrances.	186
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e) Certificate of Deletion of the Vessel from the Vessel's registry or other official evidence of deletion appropriate to the Vessel's registry at the time of delivery, or, in the event that the registry does not as a matter of practice issue such documentation immediately, a written undertaking by the Sellers to effect deletion from the Vessel's registry forthwith and furnish a Certificate or other official evidence of deletion to the Buyers promptly and latest within 4 (four) weeks after the Purchase Price has been paid and the Vessel has been delivered.	188
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f) Any such additional documents as may reasonably be required by the competent authorities for the purpose of registering the Vessel, provided the Buyers notify the Sellers of any such documents as soon as possible after the date of this Agreement.	194
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At the time of delivery the Buyers and Sellers shall sign and deliver to each other a Protocol of Delivery and Acceptance confirming the date and time of delivery of the Vessel from the Sellers to the Buyers.	197
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At the time of delivery the Sellers shall hand <i>over</i> to the Buyers <i>all</i> the classification certificate(s) as well as all plans / <i>instruction books / manuals</i> etc., which are on board the Vessel. Other certificates which are on board the Vessel shall also be handed over to the Buyers unless the Sellers are required to retain same, in which case the Buyers to have the right to take copies. <i>All Other operational and technical documentation which may be exist ashore</i> in the Sellers' possession shall be promptly forwarded to the Buyers <i>immediately after ship's delivery</i> at their expense, if they so request. The Sellers may keep the Vessel's log books but the Buyers to have the right to take copies of same. <i>Buyers have the right after the 20 pct deposit is lodged to request and receive in copy for pre-registration purposes the necessary Class, Trading, Statutory Certificates including but not limited to Radio Licence, International Tonnage, Safe Manning and Registry Certificates.</i>	200
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9. Encumbrances	207
The Sellers warrant that the Vessel, at the time of delivery, is free from all charters, encumbrances, <i>claims</i> , mortgages and maritime liens or any other debts whatsoever. The Sellers hereby undertake to indemnify the Buyers against all consequences of claims made against the Vessel which have been incurred prior to the time of delivery.	208
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10.	Taxes, etc.	212
	Any taxes, fees and expenses in connection with the purchase and registration under the Buyers' flag shall be for the Buyers' account, whereas similar charges in connection with the closing of the Sellers' register shall be for the Sellers' account.	213 214 215
11.	Condition on delivery	216
	The Vessel with everything belonging to her shall be at the Sellers' risk and expense until she is delivered to the Buyers, but subject to the terms and conditions of this Agreement she shall be delivered and taken over <i>on "as is" basis, otherwise</i> as she was at the time of inspection, fair wear and tear excepted.	217 218 219
	However, the Vessel shall be delivered <i>charter free, cargo free with gas free tanks and clean/safe for man entry. Vessel is trading Foil and Gas Oil for the last years in bunkering trading business in the area of Jamaica and recently in Trinidad. Vessel to be delivered with her present class maintained without condition/recommendation*</i> ,	220
	free of average damage affecting the Vessel's class, and with her classification and trading certificates both national and international as is at the time of delivery. The Vessel will be delivered as per survey status "Listing of Surveys, Conditions of Class and Memoranda" dated __/__/__. certificates, as well as all other certificates the Vessel had at the time of inspection, valid and unextended without condition/recommendation* by Class or the relevant authorities at the time of delivery -	221
	"Inspection" in this Clause 11, shall mean the Buyers' inspection according to Clause 4 a) or 4 b), if applicable, or the Buyers' inspection prior to the signing of this Agreement. If the Vessel is taken over without inspection, the date of this Agreement shall be the relevant date.	222 223 224 225 226 227
*	Notes, if any, in the surveyor's report which are accepted by the Classification Society without condition/recommendation are not to be taken into account.	228 229
12.	Name/markings	230
	Upon delivery the Buyers undertake to change the name of the Vessel and alter funnel markings.	231
13.	Buyers' default	232
	Should the deposit not be paid in accordance with Clause 2, the Sellers have the right to cancel this Agreement, and they shall be entitled to claim compensation for their losses and for all expenses incurred together with interest.	233 234 235
	Should the Purchase Price not be paid in accordance with Clause 3, the Sellers have the right to cancel the Agreement, in which case the deposit together with interest earned shall be released to the Sellers. If the deposit does not cover their loss, the Sellers shall be entitled to claim further compensation for their losses and for all expenses incurred together with interest.	236 237 238 239
14.	Sellers' default	240
	Should the Sellers fail to give Notice of Readiness in accordance with Clause 5 a) or fail to be ready to validly complete a legal transfer by the date stipulated in line 61 the Buyers shall have the option of cancelling this Agreement provided always that the Sellers shall be granted a maximum of 3 banking days after Notice of Readiness has been given to make arrangements for the documentation set out in Clause 8. If after Notice of Readiness has been given but before the Buyers have taken delivery, the Vessel ceases to be physically ready for delivery and is not made physically ready again in every respect by the date stipulated in line 61 and new Notice of Readiness given, the Buyers shall retain their option to cancel. In the event that the Buyers elect to cancel this Agreement the deposit together with interest earned shall be released to them immediately.	241 242 243 244 245 246 247 248 249 250
	Should the Sellers fail to give Notice of Readiness by the date stipulated in line 61 or fail to be ready to validly complete a legal transfer as aforesaid they shall make due compensation to the Buyers for their loss and for all expenses together with interest if their failure is due to proven negligence and whether or not the Buyers cancel this Agreement.	251 252 253 254

15.	Buyers' representatives	255
	After this Agreement has been signed by both parties and the 20% deposit has been lodged, the Buyers	256
	have the right to place <i>up to two (2)</i> representatives on board the Vessel at their sole risk and expense	257
	upon	
	arrival at Trinidad on or about. <i>Such representatives to stay onboard until the time of delivery of the vessel. However due to limited accommodation space such boarding will be done not earlier than 20 days prior the estimated date of delivery.</i>	258
	These representatives are on board for the purpose of familiarisation and in the capacity of observers only, and they shall not interfere in any respect with the operation of the Vessel. The Buyers' representatives shall sign the Sellers' letter of indemnity prior to their embarkation.	259 260 261
16.	Arbitration	262
a)*	This Agreement shall be governed by and construed in accordance with English law and any dispute arising out of this Agreement shall be referred to arbitration in London in accordance with the Arbitration Acts 1996 1950 and 1979 or any statutory modification or re-enactment thereof for the time being in force, one arbitrator being appointed by each party. On the receipt by one party of the nomination in writing of the other party's arbitrator, that party shall appoint their arbitrator within fourteen days, failing which the decision of the single arbitrator appointed shall apply. If two arbitrators properly appointed shall not agree they shall appoint an umpire whose decision shall be final.	263 264 265 266 267 268 269 270
b)*	This Agreement shall be governed by and construed in accordance with Title 9 of the United States Code and the Law of the State of New York and should any dispute arise out of this Agreement, the matter in dispute shall be referred to three persons at New York, one to be appointed by each of the parties hereto, and the third by the two so chosen; their decision or that of any two of them shall be final, and for purpose of enforcing any award, this Agreement may be made a rule of the Court. The proceedings shall be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc. New York.	271 272 273 274 275 276 277 278
e)*	Any dispute arising out of this Agreement shall be referred to arbitration at The laws of subject to the procedures applicable there. shall govern this Agreement.	279 280 281
*	16 a), 16 b) and 16 c) are alternatives; delete whichever is not applicable. In the absence of deletions, alternative 16 a) to apply.	282 283

Clauses 17 to 19 to form an integral part of this Contract

Clause 17

Sellers and Buyers to provide a list of closing documents which are to be mutually agreed and incorporated into the MOA as an Addendum hereto. Draft copies to be provided to both parties at least 2 days prior closing for Buyers' / Sellers' approval.

Sellers shall provide all reasonable and customary documentation which is in Sellers' control and required for the purpose of legal transfer of ownership and registration of the Vessel under the Buyers' intended flag which to be advised prior to the execution of the delivery documents Addendum.

Clause 18

Sellers to provide a letter confirming that to the best of their knowledge the vessel is not blacklisted by any Arab organisation of Damascus League or any other country or organisation.

Clause 19

This agreement is to be kept strictly private and confidential by all parties involved.

For the Sellers

For the Buyers

Appendix 6: Trustees Agreement from the Case Study

TRUSTEES' AGREEMENT

With reference to Clause 2 (Deposit) of the Memorandum of Agreement dated th _____ (the "MOA") for the **M/T** _____, signed by Messrs "_____" of _____ as Sellers, and Messrs "_____" of _____ as Buyers, we, _____, acting as trustees for both Sellers and Buyers hereby confirm that we will officially and promptly notify the Sellers and the Buyers once the deposit reaches our designated account and will only release said funds or part thereof in one of the following cases:

- By joint written instructions of Messrs "_____" (Sellers) and Messrs "_____" (Buyers)

OR

- By the Sellers or the Buyers releasing same deposit in favor of the other,

OR

- Deposit to be released pursuant to any arbitration award or Court decision from which there is no right of appeal or such right of appeal has expired,

OR

- Deposit to be released in the Buyers' favor should the vessel become a total or constructive total loss before delivery.

OR

- Deposit to be released in the Sellers' favor should the purchase price not been paid in accordance with Clause 3 of MOA and Sellers choose to cancel the agreement.

We hereby undertake that the deposit will not be released to any party, unless one of the conditions listed above is fulfilled.
This agreement is subject to English Law and London Arbitration and is fully incorporated to the relevant MOA.

Dated: _____

For the Sellers

For the Trustees

For the Buyers