



**LUND UNIVERSITY**  
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Master Programme in Economic Growth, Innovation and Spatial Dynamics

**Mare Nostrum**  
**A study of the oil price's effect on Danish shipping companies**

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*Abstract:* Large shipping vessels currently got no other valid source of fuel than the ones that are oil based. Crude oil hence becomes an essential necessity for the shipping industry. This thesis examines the effect of the oil price on the profits made by Danish logistic firms. This is done by studying the three Danish shipping companies Maersk A/S, Erria A/S and Norden A/S. The alternative profit effect caused by environmental impacts is also brought into this study.

*Key words:* peak oil, Maersk, Erria, Norden, environmental

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## 1. Introduction

Vaclav Smil discusses in his book "Energy in World History" the evolution of shipping transportation.<sup>1</sup> Preindustrial ships were constituted of a large number of oarsmen; often around 50 and also well up to 170. This gave the ships a speed between 15 and 20 kilometers per hour. In China during the Sung dynasty the ships consisted of a crew of about 200 men. In this case the innovative measure was however the usage of paddle wheels as a means of propulsion. This kind of usage has a certain disadvantage. It requires that the crew working on these vessels is in physical good condition as well as rested and well feed. Failure to meet these needs could result in performance losses, and failure to arrive at a certain place at a certain time is hardly worth mentioning. The vessel's concrete man power was later replaced or complemented by sails. The problem in this case was however that this made the ships somewhat season bound.<sup>2</sup> Further, Smil brings forth that steam engines were used approximately between 1840 and 1890. After this period, the ships were mostly equipped with steam turbines, which themselves had diesel engines as a replacement after 1920. From the 1950's and onward the vessels became larger and more specialized and hence able to move a large variety of commodities.<sup>3</sup>

When looking back at this elaboration it is necessary to keep in mind what the oil used in shipping vessels represents. With the increased performance of today's vessels versus previous models throughout history, the oil can be said to represent many things. It represents countless of hours by oarsmen in harsh weather. It represents a supplement for having to wait throughout the winter to be able to even depart. It's worth is also nurtured by all the innovative measures performed in able to meet the needs for being on a certain place at a certain time. Hence it is necessary to ask oneself what kind of significance the diminishing oil deposits has for the firms operating within the sector of the shipment industry today.

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<sup>1</sup> Vaclav Smil, *Energy in World History*, Westview press 1994.

<sup>2</sup> Smil, p. 137.

<sup>3</sup> Smil, p. 196-197.

## 1.1 Questions at issue

In clarity, the questions put forth in this study are the following:

*Has the oil price had an impact on the profits made by Danish logistic companies in the shipping sector?*

*Has there been an impact on other factors such as scheduled routes?*

*Can environmental factors as such better explain impacts on the profit as well as other factors?*

The first one is the primary question in this study. My hypothesis is that the oil price *prima facie* has had some impact on the profits made by Danish logistic companies. However, the issue lies in how significant this impact has been in relation to the size of the firm. By definition the question can hence be extended to answer if the impact has been relatively significant.

The second and third ones are sub-questions intended to give alternative explanations, if the first empirical analysis does not return a positive answer. In a sense they can also give alternative answers even if a positive response should be retrieved. A dependent variable can get an impact from several other influential variables. The second question gives room for the impact of the oil price on factors other than profits *per se*, since it is quite possible that such a connection might emerge. In this sense I am referring to aspects such as change in the number of regular shipments as a total, shipments to certain regions, number of ships used, the quantity of goods on each shipment among others.

The third question is necessary as a wager to prevent a dogmatic slumber in the sense of being solely focused on the impact of the oil price. As an example, a reduce in the number of shipments might be due to other causes. Let me provide you with a fictional example to better facilitate the understanding of this issue. Say that a firm in the shipping sector decides to put 4 out of its 10 vessels out of commission, all of which are of an older model and deemed as heavy bunker users relative to more modern vessels. This occurs in the same year as the oil price suddenly rises by 20%. Due to these premises it can be tempting to make the conclusion that there is a causation. However, this might not always be the case. The older vessels, which have a large bunker cost, might also stand a high risk of being environmentally unfriendly; a matter which can have an impact on the public opinion of the

firm. Let's say that at the same year a vessel of the same model was foundered, and in conjunction to such an event the causes were blamed on faulty ship design. This further corroborates the notion of the need to look for alternative explanations.

## **1.2 Outline**

In the endeavour of answering the above stated research questions I will proceed in the following manner. First of all the earlier research and background on the subject at hand will be presented. It could in some sense be argued that the introduction part should have been merged with the discussion regarding earlier research. I must however retort against such a proposal since I find it important to make a clear distinction between my own agenda with its conjoined notions and the conclusions made by other authors. It is of course a subjective assessment, but I reckon it to be necessary at the dawn of every thesis to confront the reader in an abstract approach, in order to facilitate the understanding of the empirical evidence when the transition to this occurs.

The limitation section is next in line and here it will be discussed what the study has been narrowed down to and also why, and with this its empirical implications. After the limitation section the general approach will be presented, first by presenting the sources and then in an elaborate discussion regarding how these sources will be analysed in the specified method section. In this section there are also some parts which might be regarded to better fit within the sector of theoretical framework. The reason for placing these aspects here is that they are too directly related to the method per se to be presented distinctively. It is hence necessary to proceed in this manner for the empirical approach. In some studies the method part is placed prior to the limitation part in order to facilitate the transition from a general approach to a narrow focus. This is indeed useful in several studies, but in this case the geographical aspects would have made such an approach confusing due to the fact that the methods presented on several occasions are applicable merely to the final focus. In other words, since the findings in this study are situated primarily to Danish logistic firms and not general logistic firms per se, then it would have been impractical to start with presenting a method approach before the geographical lens had been focused.

The final part in the first chapter is the discussion regarding theoretical framework. The necessity of this section is to connect my method and theoretical generalisations to a wider scope of notions extracted from other authors. Note the distinction between research background and the theoretical approach. While the research background covers empirical findings as well as the effect of these matters on the surrounding

environment (read social, economic, environmental and alike) which are necessary in the making of this study, the theoretical framework is more aimed to connect the methods used to a community of generalisations that can be used for further studies.

The second chapter will empirically address the material at hand as well as provide a brief summary of the findings under each section. Some of the graphs used in earlier sections are also integrated into this chapter. From one perspective such an approach might seem superfluous. However, I have proceeded in this way to facilitate the review of this analysis for the reader. The third chapter will summarise the findings by connecting the short individual conclusions made in each section in chapter two. References are provided in chapter 4.

### **1.3 Earlier research and background**

Holland writes regarding different approaches in how to model the view of peak oil.<sup>4</sup> His argument is that the current models of peak oil in terms of production are too simple, in the sense that we use them as indicators of diminishing deposits. The reason given is that production peaks can occur due to fluctuating prices even though the decline of resources is constant. He further brings into the picture that traditional models fail to involve market failures in the sense of increased and decreased demand due to for example technological innovations. Finally he also argues that traditional policies do not take into account the possible effect of the oil price on policies.<sup>5</sup> This latter conclusion serves as a somewhat background for this study since the common denominator is the oil price effect on actions taken in form of policies as well as gained profits.

#### **1.3.1 Orientation of crude oil prices & time span development**

In this study, the three most common oil price benchmarks have been chosen. The first one is the Dubai benchmark, which is the most commonly used in the Middle East. The reason for this benchmark being the most commonly used, is due to on the spot sales, which are available for basically everyone who anchors in Dubai. As such, it is transcended by a dynamic market as opposed to a benchmark that is more denoted by having long term contracts. The second benchmark is the Bent, which is used in Europe. Brent consists of crude

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<sup>4</sup> Stephen P. Holland, *Modeling Peak Oil*, The Energy Journal 2008-29-2.

<sup>5</sup> Holland, p. 61-62, 75-76.

oil retrieved by the UK in the North Sea. The third and last one is the Western Texas Intermediate, which is the common benchmark for North America.<sup>6</sup>

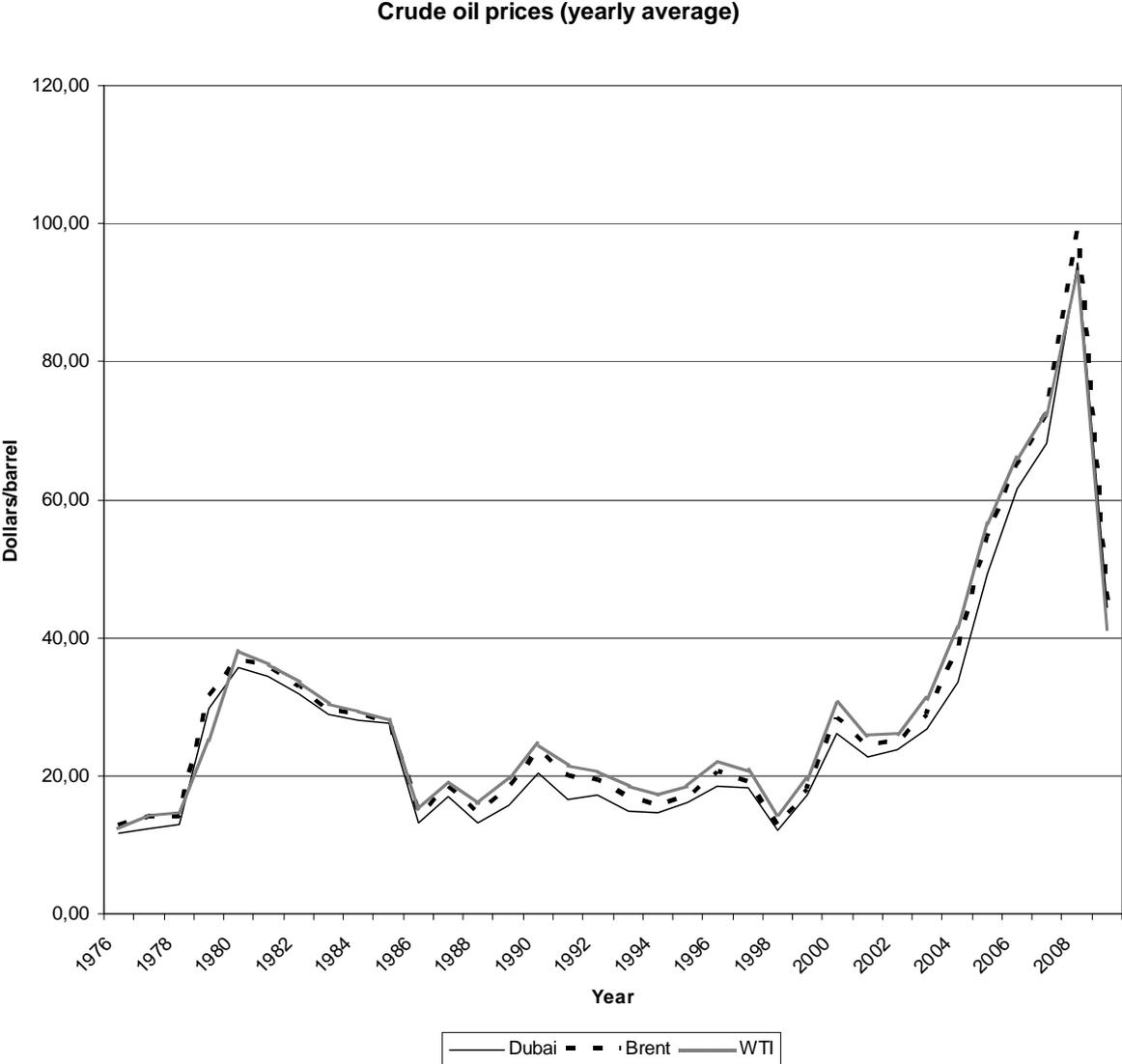


Fig. 1-1. Yearly average oil prices between 1976 and 2009. The period 1976 - 2007 is based on BP Statistical Review of World Energy June 2008. Since this review does not cover 2008 and 2009, weekly spot prices from EIA have been used for these years, which have been calculated into yearly averages by the author. Since this study is being conducted during the first half of 2009, the prices during this period consist of an average between the 2<sup>nd</sup> of January and the 10<sup>th</sup> of April. The WTI numbers from EIA during 2008 and 2009 have been weighted by estimated import volume in the sources.<sup>7</sup>

<sup>6</sup> BBC News - Oil markets explained, <http://news.bbc.co.uk/2/hi/business/904748.stm>.

<sup>7</sup> BP Statistical Review of World Energy June 2008, <http://www.bp.com/multipleimagesection.do?categoryId=9023755&contentId=7044552>, EIA - Spot Prices for Crude Oil and Petroleum Products, [http://tonto.eia.doe.gov/dnav/pet/PET\\_PRI\\_SPT\\_S1\\_W.htm](http://tonto.eia.doe.gov/dnav/pet/PET_PRI_SPT_S1_W.htm).

From Fig. 1-1. above we can see that the different averages basically follow the same pattern, even though there are some rather static intervals between them from 1981 until 2007. During this time the WTI is the most costly, followed by Brent and thereafter Dubai, which has an overall lower price level. After 2007 the different prices converge into what seems to be a more integrated market.

By looking at the general trends of all the three benchmarks, we can discern that there was a temporary rise in the price levels between 1978 and 1986. The years following this are characterized by a relatively steady and low level of prices until the millennia change. The period after this is characterized by a rise in price levels, which peaks in 2008 and thereafter drops dramatically.

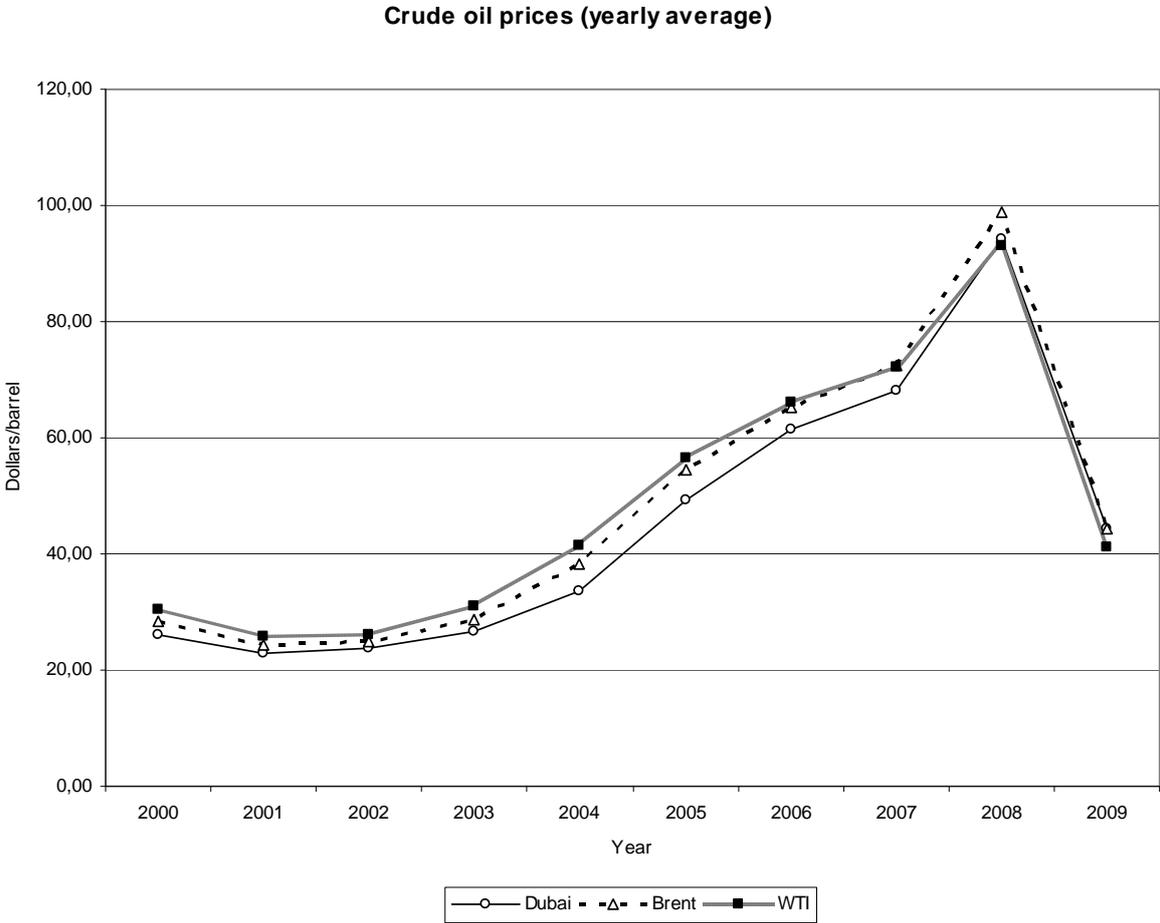


Fig. 1-2. Yearly average oil prices between 2000 and 2009.<sup>8</sup>

By narrowing down our focus of the time span to the years 2000 to 2009 we can clearly see the shift during the latter years, which is commonly known as the peak oil phenomena.

<sup>8</sup> BP Statistical Review of World Energy June 2008, EIA - Spot Prices for Crude Oil and Petroleum Products.

### 1.3.2 Fuel usage in transportation

According to the IEA's report regarding world wide trends in energy use, oil is globally the most used fuel source (measured up to 2005). It has a dominant share of 99% of the worlds energy consumption. The IEA differentiates, in their report, between truck-, ship- and rail haulage in the transportation of goods. The mostly used refined product in this matter is diesel, which the truck sector for example has an 87% usage of compared to other types of fuel. Also the means of propulsion in rail transportation consisted of 88% diesel usage, versus 12% electricity. When it comes to the shipping sector, which is the foundation of this study, the diesel fuel was however merely used to a degree of 40%. In this case, heavy fuel oil, was the dominant part and consisted of a 59% share. The remaining percent is unaccounted for, as far as the author has seen, in the energy report.<sup>9</sup> These numbers in relation to this study denotes the necessity of an oil study in conjunction with the shipping sector. As brought forth, the shipping sector relies on two different fuel types. However, these fuel types are simply products refined in different ways, and hence both are based on crude oil. Even if diesel, which is of course an oil product, is used up to almost 90% in the sectors of truck and rail, there are alternative fuels used to some extent. Hence, this points to the necessity of limiting the study to the shipping industry, which is further discussed under section 1.4.

The IEA further reports that "both the absolute amount and the share of energy use for water freight declined so that in 2005 it accounted for 12% of freight energy use."<sup>10</sup> Why this is the case seems unclear since, as the analysis will show, the period up until 2008 was characterized by an increased market activity in the shipping sector. This naturally calls for an increased fleet by the shipping companies, and in so doing it would seem natural that the energy consumption for this sector would increase; perhaps not in share terms but at least in absolute numbers. Further regarding this matter, the IEA denotes that the truck sector is also the one with the highest energy intensity. They therefore also make the conclusion that "intensity reductions in trucking will result in higher energy savings than intensity reductions in rail or ships or than modal switching between these two modes".<sup>11</sup>

When it comes to the matter of emissions, there are different results between different countries. In Norway, the US, Greece and Canada the shares of CO<sub>2</sub> emissions from water and rail transportation were significantly higher than in than the rest of the IEA18 countries. Needless to say, the emission rates are globally larger when it comes to the truck

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<sup>9</sup> *World Wide Trends in Energy Use and Efficiency - Key Insights from IEA Indicator Analysis*, Paris 2008, [http://www.iea.org/Textbase/Papers/2008/indicators\\_2008.pdf](http://www.iea.org/Textbase/Papers/2008/indicators_2008.pdf), p. 65.

<sup>10</sup> *World Wide Trends in Energy Use and Efficiency - Key Insights from IEA Indicator Analysis*, p. 65.

<sup>11</sup> *World Wide Trends in Energy Use and Efficiency - Key Insights from IEA Indicator Analysis*, p. 68.

sector than in shipping or rail. However, the shares for each country depends on their spatial proximity and trade routes.<sup>12</sup> Countries that require long-range shipping transportation, like for example the US which requires shippings of oil products from among else the Middle East, are naturally more destined to have larger emissions from the shipping sector than other countries.

#### **1.4 Limitations**

In order to be able to discuss a specific phenomena as well as to come to concrete results, it is necessary for a study to be concerned with a specific aspect of an issue. This is something also denoted by Kate L. Turabian, when she discusses how to format ones research question.<sup>13</sup> In the matter of trying to find a connection between the oil price and the logistic sector the study will be narrowed down to large shippings. The reason for this focus is the large amount of fuel required to operate these kinds of vessels. If the study had been regarding the logistic sector as a whole, including rail, road and air, the matter would have been more complicated. This due to the variety of fuels used in these kinds of transportation systems. The inability for large shipping vessels to, in a real sense, benefit from environmental friendly fuels, then becomes beneficial for this study, since it isolates the problem and makes comparisons possible.

Regarding the geographic perspective, the study will be focusing on Danish firms. The reason for this is mainly the (current) large Danish fleet in the commercial sector. A large quantity of possible firms to investigate opens up the possibility for extensive research, without having the study suffer large drawbacks in case of loss of sources. Further on, by focusing on a single country this increases its representativeness, since a general study regarding a collection of international firms might suffer inconsistencies due to potential domestic differences.

Regarding the time-span, the period studied will reach between 2002 and onwards to the current time of this study (2009). The chosen time line is beneficial in two ways. First of all it captures the motions in a transcending peak (read peak oil) that perhaps would not have been discernable if the study had been focusing on an earlier period. It also has a more practical side, which is that sources from the latter years are more easily available and that hence brings us into the next section. It could be argued that the study should be

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<sup>12</sup> *World Wide Trends in Energy Use and Efficiency - Key Insights from IEA Indicator Analysis*, p. 66.

<sup>13</sup> Kate L. Turabian, *A manual for writers of Research Papers, Theses and Dissertations*, Chicago 2007, p. 14-15.

extended back to the 1970's in order to rule out possible fluctuations in firm profits that have no causal relation to the recent peak in oil prices. However this assumption is flawed due to two reasons. First of all, it is not possible to cover a chain of profits so far back due to the reason that the firms I'm analyzing have often changed their structure. Maersk for example changed its structure as recently as 2002, which will be more discussed under section 2.1. Hence, since the structure of the companies has changed, so have the methods of doing the yearly accounting. Conclusively, linking these values would not be representative. Secondly, since I regard the statements given by the companies in their different forms as the concluding evidence and not the oil and profit comparison per se, this rules out the possibility of measurement errors due to random fluctuations.

### **1.5 Sources**

The sources being used in this study are primarily annual reports from Danish logistic firms in the shipping industry. Such documents contain matters such as sales numbers and costs, as well as elaborate assessments of these figures. Prospects and goals for the future are also included. A certain criticism which is possible to aim against using annual reports is that the extent of complementary information available might differ. There also exists the possibility of different ways of calculating the company profits, but since firms are obligated to provide information in a somewhat consequent manner, I reckon this to be a minor risk. One matter should however be elaborated in this setting. It is the author's understanding that the structure of the studied firms often has a tendency to change; as will also be discussed during the analysis per se. What hence also changes is the ways of accounting between the different years. The accounting changes between the different annual reports does not cause a large discrepancy between the figures stated in different annual reports regarding the same years, but it is a matter that should be noted. Since going too far into depth regarding accounting policies would be of a too large magnitude for this study, the author has chosen instead to present the numbers in a fashion tailored for the specific purpose of this study, which also includes providing a timeline for benchmark analysis in conjunction with the annual reports. Instead of using the profit numbers for a number of years back as stated in an annual report for a specific year, the profit numbers will be presented as they were in the annual reports published for each year. I.e. the profit numbers for 2008 will be extracted from the annual report of the year 2008, the 2007 profit numbers will be extracted from the annual report of 2007 and so forth; as opposed to extracting the profit numbers for both 2008 and 2007 from the annual report of 2008. Such a procedure might indeed be criticized since, it stands the risk

of opening up to marginal errors of measurement differences, but due to the nature of this study the author sees however no other valid choice in this matter. Other means of presenting these numbers stand a risk of giving the 'illusion' of large gaps between different time periods. By acknowledging that minor measurement differences exist in this matter, I'm hoping to somewhat circumvent this problem.

Official statements, other than the ones included in the annual reports are also used. This category consists of statements archived by the firm's press centre. The press releases contained in these public online archives are however not limited to statements made by merely the firm per se. Accumulated relevant articles from various financial magazines have also been categorized under the firm's archive of press releases. The matter of investigating firm's official statements is important in several ways. First of all it gives insight into what kind of policies the firm is aiming at (This can of course also be said regarding sections of the annual reports, but since annual reports more have a tendency of describing general trends during the year, it does not always give detailed information regarding specific events, which is something more keen by the press statements to present.). It can also give insight into the company's climate in the context of employees individual opinion regarding the matter at hand. Such insight can prove useful, if there are antagonisms between the official statements made by the leading shift of the company and specialized workers, who themselves are not in any leading position.

When it comes to the matter of being able to discuss alternative explanations, material to potentially support this, will also be extracted from the annual reports as well as the press releases.

## **1.6 Method**

In the endeavour of trying to give an answer to the questions raised in this study, a case study of three Danish logistic firms will be performed. Hakim denotes that the case study's value "depends crucially on how well the study is focused".<sup>14</sup> She also brings up that a case study is probably the most flexible study that can be performed, since it gives room for several interdisciplinary approaches against a specific research question. In this manner, the study becomes holistic and avoids being based on the interpretation from a single source of empirical evidence. Hakim further has a specific term for this which she calls 'multiple

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<sup>14</sup> Catherine Hakim, *Research Design. Successful Designs for Social and Economic Research* - Second Edition, Routledge: London 2000, p. 59.

triangulation'.<sup>15</sup> The definition of this term becomes clear when one considers the use of multiple sources to triangulate one fixed position.

Hakim further denotes that an increase in the quantity of cases used in a case study to investigate a certain issue strengthens the results. Each case added increases the validity of the study, but the largest gain is received from the increase "from one to two".<sup>16</sup> Hakim also brings up that the main flaw of a case study report is its risk of being biased, which is due to its often qualitative segments.<sup>17</sup> In a way I can relate to Hakim regarding this. Interdisciplinary qualitative analyses have a tendency sometimes to create biased results. In another sense however I feel that the triangulation she denotes is a means of circumventing this. The mere nature of the case study is to look at one certain point in several ways to be able to discern a holistic picture. Therefore in a sense, the nature of the case study as a method outweighs its on flaws. This study uses two approaches in the endeavour of analysing the stated research questions, namely the study of the annual reports and the study of the press releases. It could be argued that the perspectives in this study are too few, but in that case I wish to relate to Hakim who states that "Case studies are typically based on two or more methods of data collection.". Hence, two approaches are enough for a valid study. Further, it could also be argued that the two approaches are based on the same source, and that these factors therefore do not give independent support to the results obtained. Such a statement would however also be flawed, since the annual reports give information mainly regarding trends, as the press releases give information regarding specific events which are more open to the researcher to make his or her own conclusions about. We hereby obtain a diversified approach.

By moving on to the general approach in this study it can be said that it's both inductive and deductive. It's deductive in the way that it takes influence from Hakim as denoted above, but its also deductive in the way that I for this study propose also an inductive model. The aim of this study is primarily to discern the oil price's impact on the logistic firms. Alternative explanations, as stated before, could be given by examining the impact of environmental issues on the firms. Hence I would like to propose a model in this study which I stipulate as the 'Triune impact model' in Fig 1-3. This illustrates that there is a triune impact between these three different aspects. On some level the question also arises if the environmental issues can be regarded to have an impact on the oil price per se. This is a

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<sup>15</sup> Hakim, p. 61.

<sup>16</sup> Hakim, p. 62.

<sup>17</sup> Hakim, p. 63.

relation which I find so far non-researched, but it is reasonable to have at least a vague hypothesis that demands for more an environmentally friendly means of propulsion as well as means of generating electricity in a sense can have an impact on the oil price. Hence, the model still works.

The aim of this study is, by observing this model, to study the relation between the oil price and the firms' profit. Alternate explanations are given by the relation between environmental influences and the profit of the firms. The relation between the environmental influences and the oil price is an interesting one, but far too meta and extensive to even begin to make an analysis of in this study. Hence it will not be investigated here.

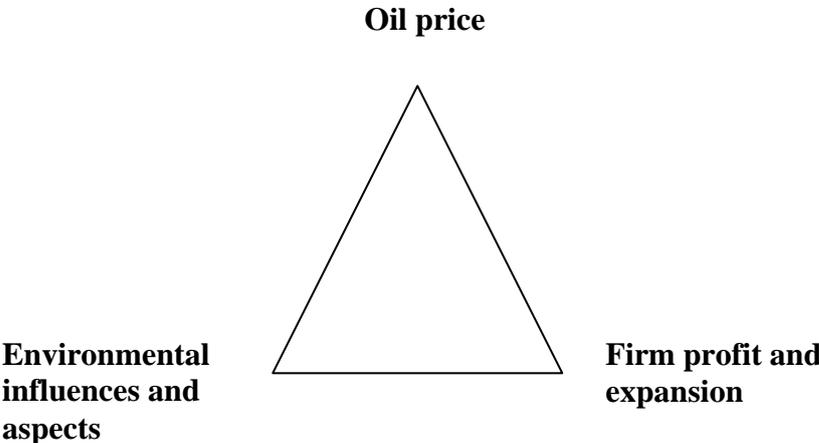


Fig. 1-3. Triune impact model

Hakim writes that "Some case studies collect or compile quantitative data of the sort that may be deposited in data archives. But such data is inevitably only one part of the complete case study database."<sup>18</sup> This can be related to this study where I relate the analysis of the quantitative data found in the annual reports to the policy analysis found elsewhere (and in other sections of the annual reports as well).

McPhee writes regarding different ways of conducting a case study. He differentiates between what he calls different data-points, different explanations and different images. In McPhee's explanation, a different data-point approach is a case study which is designed to search for a certain variable causing a certain event. When discussing this approach, McPhee brings up both qualitative and quantitative examples. The second approach is different explanations, which he stipulates as finding several possible reasons causing one

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<sup>18</sup> Hakim p. 74.

scenario. The third and last approach is the different images notion, which McPhee elaborates as putting a different cognitive framework on each studied case.<sup>19</sup> A different image approach is not something that will be used in this study, since it is the view of the author that in doing so one would invite to a too high degree of relativism (I wish to stress the importance of this since, as noted before, a case study already stands a particular risk of being biased.). The cases studied will be presented in the search for common denominators, which brings us into the discussion of the first two approaches. In conjunction with the different data-points approach, this study will primarily search for a single variable (the oil price) to explain the profits made by the firms. In conjunction with the different explanations approach, alternative explanations can be given if the first approach returns a negative result.

In this manner, three Danish logistic firms will be investigated with a case study for each one. This is done by first presenting the oil price for the years in question and observing significant years that ought to be used as benchmarks. Secondly for each case, the profits earned for each year will be presented as well as an analysis of the sources belonging to this case and time period. It is worth noting that similarities between the turnings of the oil price and the profits made, do not by themselves indicate a causation in this case. They are used as aiming points for further qualitative in-depth analysis. This is followed by a summarised discussion as well as any final conclusions.

Moving on, Leonard-Barton also discusses the case study approach in a manner that is relevant to this study.<sup>20</sup> She denotes that the case study approach possesses two main strengths. The first one is that it can investigate multiple sites, which is related to this study since several firms are put under the lens. The second strength is the 'power' of being able to investigate each singular case closely under a long period of time.<sup>21</sup> This is also related to this study in that the time span is almost ten years. Of course, a long time span is always relative to what kind of study is being pursued.

She further emphasizes that the main problem in conducting a case study is that the author needs multi-faceted skills in several topics in order not to give biased results.<sup>22</sup> This is hence also true for this study. I would reckon that the largest risk in this study, when it comes to the risk of being biased, is the analysis of qualitative statements, since such sources

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<sup>19</sup> Robert D. McPhee, *Alternate Approaches to Integrating Longitudinal Case Studies*, Organization Science, Vol. 1, No. 4 (1990), p. 393-398.

<sup>20</sup> Dorothy Leonard-Barton, *A Dual Methodology for Case Studies: Synergistic Use of a Longitudinal Single Site with Replicated Multiple Sites*, Organization Science, Vol.1 No. 3, Special Issue: Longitudinal Field Research Methods for Studying Process of Organizational Change (1990).

<sup>21</sup> Leonard-Barton, p. 263-264.

<sup>22</sup> Leonard-Barton, p. 263-264.

opens the door for several alternative interpretations. We therefore find ourselves on a borderline of influence from the psychological sciences in the interpretation of the material intended for this study.

### **1.7 Theoretical framework**

It is a worthy discussion whether the results obtained in this study are generalizable in a larger context. Achen & Snidal brings up a flaw related to case studies in their article regarding rational deterrence theory and comparative case studies.<sup>23</sup> They argue that case studies have the nature of being non-generalizable, since the results obtained from the case study merely gives information regarding the case per se. Another side of this is, according to Achen & Snidal, that the case study often has a too much of an inductive approach. Hence, their criticism is that case studies don't give us 'scientific laws' that can be used in a broader scope outside the study.<sup>24</sup> The criticism given by Achen & Snidal has a certain point, but I do believe it can be circumvented for this study. By applying the different data-point approach and in some cases the different explanations approach presented by McPhee (as illustrated in section 1.6), this study is able to extract generalizable information about the overall nature of Danish shipping firms and not only the studied cases per se. However if McPhee's 'different image's' approach would have been used, then Achen & Snidal's criticism would have been more valid in this case.

I wish to further argue that Achen & Snidal's criticism lacks insight regarding Popperian scientific research. By so strongly arguing that the case study approach fails to bring generalizable information, then the authors are committing a false dichotomy. The nature of a case study, as with any other study, not only depends on the classification of the approach but also on how one mends the approach to fit the needs of ones own research. Hence, Achen & Snidal, in my own view, fail to realize the Popperian view that knowledge can be corroborated on different levels. Also, when it comes to other types of studies, the possibility of falsifying an earlier corroborated research conclusion stands as the very foundation of scientific knowledge today. In conjunction, this influence provides protection against ad hoc protective statements.

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<sup>23</sup> Christopher H. Achen & Duncan Snidal, *Rational Deterrence Theory and Comparative Case Studies*, World Politics, Vol. 41, No. 2 (Jan., 1989).

<sup>24</sup> Achen & Snidal, p. 168.

## 2. Firm specific analysis

### 2.1 Maersk A/S

Maersk A/S has roots back to the beginning of the 20th century, when the entrepreneur A.P. Møller founded the shipping company A/S Dampskibsselskabet. This was a firm he started in collaboration with his father, Captain P.M. Møller.<sup>25</sup> The Maersk A/S that exists today is a merging which occurred in 2003 between D/S 1912 and D/S Svendborg.<sup>26</sup>

The main office is located in Copenhagen and has currently around 120 000 employees situated in 130 countries. The activities maintained by Maersk A/S includes container shipping, APM terminals, tankers, oil- and gas activities, retail activity and shipyards together with other related industries.<sup>27</sup>

In this section, Fig 2-1. will be compared to the profits made by the studied firms in order to find related yearly benchmarks, and in so doing lead the way to a deeper analysis of the firm's annual reports.

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<sup>25</sup> 1876: Arnold Peter Møller was born on 2 October 1876 in Dragør, <http://about.maersk.com/en/History/Decades/1870/Pages/1876ArnoldPeterMoellerwasbornon2October1876inDragoer.aspx>.

<sup>26</sup> A.P. Moller - Corporate structure, <http://about.maersk.com/en/WhoWeAre/Pages/Structure.aspx>.

<sup>27</sup> A.P. Moller - Maersk Group Facts, <http://about.maersk.com/en/FactsAndFigures/Documents/FastFacts.pdf>.

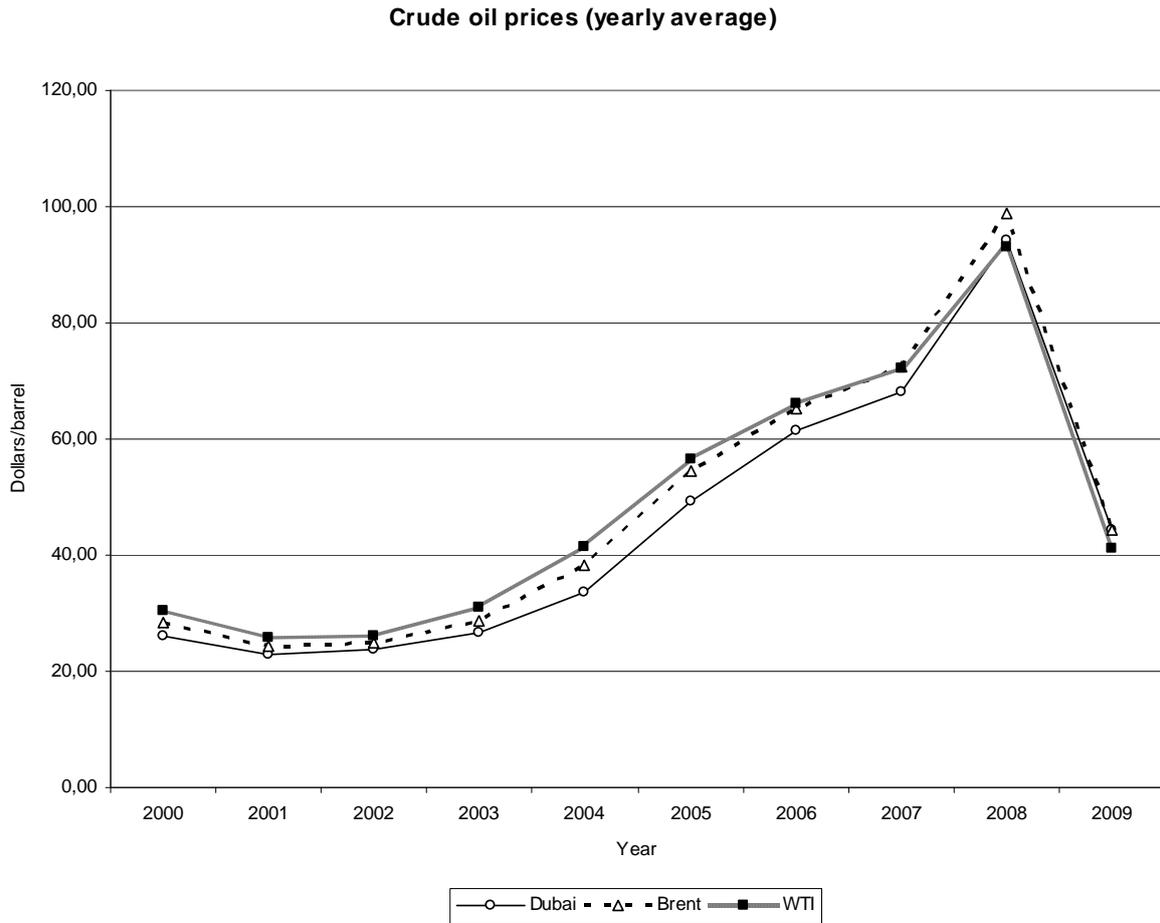


Fig 2-1. Crude oil prices between 2000 and 2009 in Dubai, Brent and Western Texas Intermediate benchmarks.<sup>28</sup>

What can be noted as the difference between the graph regarding the oil prices and the profit graphs is that there are missing data from 2009 on the profit figures, which is due to the fact that no annual reports from this period have been published at the time this study is conducted. Firms also publish half-annual reports and the numbers from these could have been integrated into the graphs in a suitable manner as well. However, no such report has either been published at the time of this study.

### 2.1.1 Benchmarking & annual report analysis

In Fig. 2-1. the oil prices in the benchmarks of Dubai, Brent and WTI are presented between the years 2003 and 2009. In Fig. 2-2. and Fig. 2-3. we have the profits gained during the same years in DKK and USD respectively.

Further, by comparing these three graphs we can discern that the oil prices increase steadily from 2003 until 2008, where they have their peak. When it comes to the

<sup>28</sup> BP Statistical Review of World Energy June 2008, EIA - Spot Prices for Crude Oil and Petroleum Products.

profit made by Maersk, this has a peak during 2004 and then drops until 2006. After 2006 it has a somewhat increase. After 2007 the profit in DKK seems to decline, while the profit gained in USD has a small increase. This is due to differences in currency ratios.

What becomes interesting is that since the profits drop from their 2004 peak in 2004, at the same time that the oil prices starts to rise. Between 2006 and 2007 there is a less increase in the average oil prices, while the Maersk profits peak in 2007. Hence, we have 2004 and 2006/2007 as benchmarks to go further into depth in the annual reports.

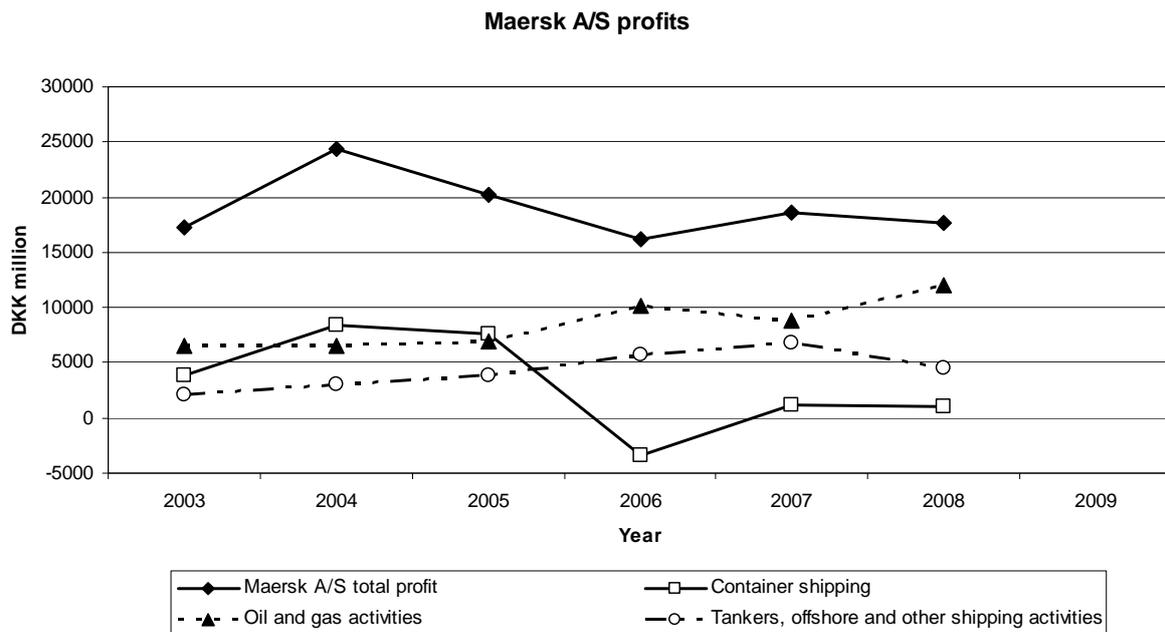


Fig. 2-2. Profits made by Maersk A/S between 2003 and 2009. Measured in DKK.<sup>29</sup>

<sup>29</sup> A.P. Møller - Maersk A/S Annual Report 2003, [http://shareholders.maersk.com/en/FinancialReports/AnnualInterimReports/2003/Documents/Annual\\_2003\\_uk.pdf](http://shareholders.maersk.com/en/FinancialReports/AnnualInterimReports/2003/Documents/Annual_2003_uk.pdf), p. 3, 8., A.P. Møller - Maersk A/S Annual Report 2004, [http://shareholders.maersk.com/en/FinancialReports/AnnualInterimReports/2004/Documents/interim\\_2004\\_uk.pdf](http://shareholders.maersk.com/en/FinancialReports/AnnualInterimReports/2004/Documents/interim_2004_uk.pdf), p. 3, 11., A.P. Møller - Maersk A/S Annual Report 2005, [http://shareholders.maersk.com/en/FinancialReports/AnnualInterimReports/2005/Documents/Annual\\_2005\\_uk.pdf](http://shareholders.maersk.com/en/FinancialReports/AnnualInterimReports/2005/Documents/Annual_2005_uk.pdf), p. 3, 9., A.P. Møller - Maersk A/S Annual Report 2006, <http://shareholders.maersk.com/SiteCollectionDocuments/shareholders.maersk.com/en/FinancialReports/ANNA CC2006UKnotes.pdf>, p. 3, 9., A.P. Møller - Maersk A/S Annual Report 2007, <http://shareholders.maersk.com/en/FinancialReports/AnnualInterimReports/2007/Documents/AnnualReport2007-UK.pdf>, p. 2, 13., A.P. Møller - Maersk A/S Annual Report 2008, [http://shareholders.maersk.com/en/Announcements/2008/Documents/UK\\_APM%20Beretning-08\\_Internet.pdf](http://shareholders.maersk.com/en/Announcements/2008/Documents/UK_APM%20Beretning-08_Internet.pdf), p. 2, 13.

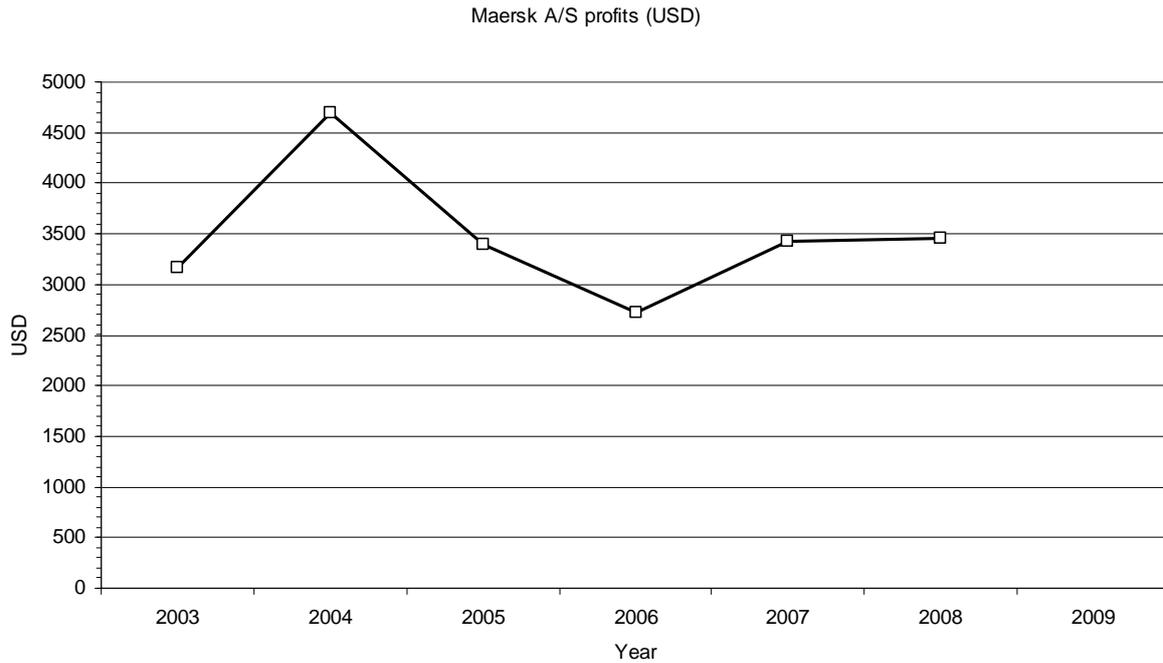


Fig 2-3. Profits made by Maersk A/S between 2003 and 2009. Measured in USD.<sup>30</sup> The USD profits are merely presented as total profits, due to accountant differences between 2005 and forward versus earlier years.

In the annual report covering the whole period there are basically three segments of the company which has relevance for this study. The first one is regular container shipping. The second one is oil and gas shipping as well as other miscellaneous shippings which are not shipped by regular containers. The third and last segment is oil- & gas activities, such as offshore drilling. These are not the only segments of the firm, but they are the ones that have been deemed relevant for this study. These other non-included segments are for example terminal and retail activities.

Regarding 2004 the container activities there had been an increase in comparison to the previous year of 2003. This increase is primarily caused by a higher demand for container shipping services. Between Asia and North America there was an increase in shipping routes, as well as between Asia and Europe. The largest actor in the Asian market was China, which had increased its export by 20%. Between Europe and North America the growth was stagnant. Even though the Maersk container segment saw a significant increase in profits during 2004, it was also held back by several factors. The main one was the low rate of the USD, which affected Maersk due to its large assets in this currency. Taxation was also an issue, as well as higher fuel prices.<sup>31</sup>

<sup>30</sup> A.P. Møller - Maersk A/S Annual Report 2008, p. 5., A.P. Møller - Maersk A/S Annual Report 2007, p. 5.

<sup>31</sup> A.P. Møller - Maersk A/S Annual Report 2004, p. 5, 7, 10, 12.

The last factor is the one that has the most importance for this study, since the company reports indeed acknowledge that the fuel price has been a negative contributor to the profit level. As noted earlier, the vessels used for container transportation require oil based bunker fuel and hence we have the conclusion that this fuel made an impact. There is however one problem facing us when contemplating this conclusion from the annual reports. It is noted that the fuel price had an impact, but we are not informed regarding how strong the impact was. For all that was said, it could have been just a marginal impact. Therefore this brings us into a bit of ambiguity, since the aim of this study is not merely to study if it had an impact. A change in bunker costs will always have some impact. The goal is rather to distinguish whether the change had a significant impact. Of course, it can always be discussed per se what the definition of significant is in this context, even if it is the task of the author to set the level. The definition of significant in this case, as well as in any other, must not be ad hoc and must be open for discussion.

Regarding tankers, offshore and other shipment activities there was also an increase in profits compared to 2003. From Fig. 2-2. it can be discerned that it had an even greater increase than the profits made by the container segment. Primary factors of the increased profits were, among others, increased oil usage in China and the US. Miscellaneous shipment profits were also gained due to a significant increase in Japanese and South Korean car exports.<sup>32</sup> All in all, it seems that the Asian market during 2004 was significant for the Maersk shipping industry.

According to Maersk's reports, the rental services and sales of offshore platforms and equipment are also contained within this second segment. The reports from 2004 bear witness of an increased drilling activity, especially in the North Sea, due to an increase in oil prices.<sup>33</sup> Conclusively, even though one segment of the Maersk company was being disadvantaged due to higher oil prices and bunker costs, another segment was benefited. Hence we see the effects of a firm operating in a diversified industry. The main problem in this case however is, that the reports don't contain detailed information regarding how large impact the oil price had in this case either. By the former elaboration it would, at a first glance, seem that the impact of the oil price lands us in a scenario of status quo. To assume this however would be a serious flaw, since we, in conjunction with the former discussion, have no idea of the proportions of these impacts.

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<sup>32</sup> A.P. Møller - *Maersk A/S Annual Report 2004*, p. 14, 16.

<sup>33</sup> A.P. Møller - *Maersk A/S Annual Report 2004*, p. 16.

When it comes to the segment of Maersk oil- and gas activities, the profit level was basically the same during 2004 as during 2003. The reports mention that the profit levels are affected by higher oil prices, the dollar ratio, increased Danish taxation and increased state ownership in Qatar. The report fail however to explicitly mention in what sense the profit was affected by these factors other than the ones already mentioned. One exception however is that the increased state ownership in Qatar was caused by higher oil prices and that it affected the profit levels of Maersk negatively. To what extent the oil price per se actually compensated for this decline is not mentioned. Further, regarding the geographical aspects of the oil- and gas activities, there was an increase in the North Sea from 4138 million DKK in 2003 to 4589 million DKK in 2004. The international activities however declined from 2352 million DKK in 2003 to 1987 million DKK in 2004. Conclusively, even though there was a profit increase in domestic activities, the loss from international activities caused the stagnation.<sup>34</sup>

Overall the profit level during 2004 was a peak compared to earlier and later years. The general trend is that the profit level was gained by increased demand of services. Since the Maersk company is so diversified, it is problematic to establish a permanent conclusion regarding the impact of the oil price. What is clear is however that the oil price gives different impacts depending on which segment is being analysed. The proportional status of these impacts remains nevertheless questionable.

From Fig. 2-2. we can see that the total profit of Maersk during 2006 was at a much lower level than during the previous years. The segment of the company which managed most poorly was the container shipping industry. One of the main reasons for the negative development during 2006, given by the annual reports, is that the quantity of containers shipped didn't reach their full potential. The other primary reason given is that the shipping industry recently had undergone structural changes which had given them significant transaction costs, mainly caused by loss of time due to transcending the new structure into a routine process. Included in this matter are both the factor of getting personnel used to new shipping routes as well as the integration of new IT-systems. The third reason given for the low result during this year is the increased bunker cost. The annual report from this year gives witness to the fact that the bunker prices rose with 26% compared to the previous year of 2005, which was equivalent to an increase of 700 million USD. The lower profit level, in conjunction with the increased price of bunker fuel, goes aligned with the increase in yearly

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<sup>34</sup> A.P. Møller - Maersk A/S Annual Report 2004, p. 18, 20.

average of oil prices during that year.<sup>35</sup> However, since this study, as noted earlier, is not a quantitative one, the given results should not be taken as conclusive in any total sense. The results deducted from this yearly benchmark are merely a one time event and to count the results given as conclusive evidence would be jumping to conclusions. This line of thinking also goes in line with the nature of a case study per se, which is being conducted here. Since a case study is the method being conducted, there is a theoretical need to also incorporate other evidence in order to create a holistic view, before anything conclusive can be said.

The segment regarding tanking, offshore and other miscellaneous shipping industry saw an increase in the results compared to the previous year of 2005. The reasons were first of all higher oil prices in conjunction with a higher demand in the US, which was beneficial to the oil tanker industry. The positive development was however stalled by milder weather during the end of the year, which decreased the demand. The above stated reasons made an impact in contributing to the positive figures, but the foremost reason denoted by the annual report for 2006 was the selling of several ships and offshore platforms. So, even though the oil price made a contribution, it was not significant enough to have made a heavy impact in contributing to the positive figures in relation to other factors.<sup>36</sup>

Regarding the oil- and gas activities the profit was also higher compared to the previous year. In this case the main contributor to the development was higher oil prices. The level was however held back due to higher taxations and transaction costs, which as noted before reflected upon the entire industry. In the Danish part of the North Sea, there was a falling production level most likely due to diminishing deposits. Hence, it would have been reasonable to expect a fall in profits during the following years since the industry is so dependent on the oil price.<sup>37</sup>

In summary we can see that the increase in bunker cost, also during this year, had different impacts depending on which segment is being analysed. The negative effect of the bunker price was quite extensive on the container industry. At the same time the oil- and gas segment was positively influenced by the increase in oil prices. It should be noted that since Maersk's largest deposits are in the North Sea, then the Brent benchmark is the main one that should be referred to in conjunction with this. The oil price also had some effect on the oil tanker industry, but was limited if we also take into account the proportionality versus the profits gained from the selling of several vessels and offshore platforms. All in all, both

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<sup>35</sup> A.P. Møller - *Maersk A/S Annual Report 2006*, p. 5, 10, 14.

<sup>36</sup> A.P. Møller - *Maersk A/S Annual Report 2006*, p. 16, 18.

<sup>37</sup> A.P. Møller - *Maersk A/S Annual Report 2006*, p. 22.

during 2004 and 2006 the oil price had different impact depending on which sector of the firm we are discussing, but it seems that the impact in the various segments was larger (in their own specific way) during the latter year.

From Fig. 2-2. we can see that during 2007 there was an increase in profits in comparison to 2006 for the container segment. The positive results were mainly caused by an increase in the market between Europe and Asia, which are the most promising routes for Maersk. The market increased slowly between Asia and the US. This was however mainly due to a lagging effect of a more passive market since the end of 2006. Other reasons given were also that the US terminals had poor capacities in handling the incoming shipments, as well as under capacities in inland transportation. The bunker cost had risen with 10% compared to 2006, and the ongoing rise in costs for this factor caused Maersk to start developing a strategy for balancing the weight on the cargo vessels. If this is to be done by increasing the number of vessels or some other innovative measure on the vessels per se is not further mentioned.<sup>38</sup>

In the segment regarding tankers, offshore and miscellaneous shippings, the profits were slightly higher than during 2006. The main factor in lowering the profit was overall rising production costs and taxes. The positive year result was however brought up by an increase activity in the selling of offshore rigs, and during the year Maersk was able to sell several rigs as well as tanker ships.<sup>39</sup>

The profit gained from Maersk's oil- and gas activities during 2007 was slightly lower than during the previous year. The rising oil price contributed positively to the results. Another positive factor was increased production. However, as in the segment regarding tankers and offshore facilities, the increased production cost as well as increased taxes contributed negatively to the result.<sup>40</sup>

Overall, Maersk made a slight increase in profits compared to 2006. Also during this year the oil price gained some segment of the company, while it negatively affected other segments. Several segments were affected by rising production costs as well as taxation.

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<sup>38</sup> A.P. Møller - *Maersk A/S Annual Report 2007*, p. 14-16.

<sup>39</sup> A.P. Møller - *Maersk A/S Annual Report 2007*, p. 20, 22.

<sup>40</sup> A.P. Møller - *Maersk A/S Annual Report 2007*, p. 28.

### 2.1.2 Public statements

Maersk A/S every year makes a number of press releases regarding specific matters.<sup>41</sup> The period covered in the press statements is 2003 until 2009, in order to be consistent with the time span in the annual reports.

Only the ones, deemed by the author to be, relevant are being presented here. To avoid an ad hoc dogma, the author is encouraging any hesitating reader to resort to the sources of these press releases. In this manner the reader can make his or her own assessment whether an articles relevance or non-relevance is suitable or not for this study, and in so doing replicating the study. There's always a certain relativism integrated in the judgment of what sources are suitable, but the line has to be drawn somewhere and it's the authors humble understanding that the elaboration above counteracts any judgment in this matter. It should further be noted that in opposition to the annual reports, all years are covered here. The criteria for the selection of the press releases are based on if they have a relation to the company profit, the oil/bunker price, some other oil related activity or any environmental activity.

**The archive of press releases from 2003 consists of 43 entries. The ones deemed relevant to this study are:**<sup>42</sup>

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<i>Date</i>	<i>Title</i>
February 24, 2003	Revised expectations for the 2002 result
April 25, 2003	Clarification of expectations to the 2003 result
August 9, 2003	Update on grounded vessel
August 19, 2003	Grounded vessel off Cape Town
August 29, 2003	Update on grounded vessel
September 30, 2003	Oil activities in the North Sea - Taxation and Concession

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**Summarised content:** In the beginning of 2003, it was estimated by the firm that the firm's profit will be significantly larger than previously expected. This was the result of shipping operations, but no further causality is being explained. It is also stated that there had been an increase in activities and oil prices, and that this was beneficial for the firm.

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<sup>41</sup> *Maersk - Media Centre*, <http://media.maersk.com/en/PressReleases/2009/Pages/Interim120509.aspx>.

<sup>42</sup> *Maersk - Media Centre - 2003*, <http://media.maersk.com/en/PressReleases/2003/Pages/ChangeofManagementSvendborg.aspx?lst=All>.

During the year, the container ship "Sealand Express" grounded outside off Cape Town. The vessel was reported to contain, among other goods, hazardous cargo which was safely removed without any impact on the environment. There were also no leakages of the bunker fuel as reported on the 9th of August.

During the end of the year, the Danish government forced an agreement with Maersk regarding increased taxation of their oil products, which will impact negatively on the firm's profits.

**The archive of press releases from 2004 consists of 32 entries. The ones deemed relevant to this study are:<sup>43</sup>**

<i>Date</i>	<i>Title</i>
February 26, 2004	The A.P. Moller - Maersk Group signs 50th contract for China built vessels
December 31, 2004	Politiken distorts facts about A.P. Moller - Maersk aid

**Summarised content:** In the beginning of 2004, Maersk acquired several new tankers from a collaborating shipyard in Guangzhou. The collaboration further strengthened business relations between Denmark and China, since leaders from both nations were present at the signing of the contract.

Further, during the end of the year Maersk stated that a domestic Danish newspaper had written that the firm didn't provide help to the tsunami victims of 2004. Maersk refuted this statement by pointing to for example free usage of transportation and containers.

**The archive of press releases from 2005 consists of 49 entries. The ones deemed relevant to this study are:<sup>44</sup>**

<i>Date</i>	<i>Title</i>
March 14, 2005	Order placed for four high-efficiency jack-up rigs

<sup>43</sup> *Maersk - Media Centre - 2004*, <http://media.maersk.com/en/PressReleases/2004/Pages/PolitikendistortsfactsaboutAPMollerMaerskaid.aspx?lst=All>.

<sup>44</sup> *Maersk - Media Centre - 2005*, <http://media.maersk.com/en/PressReleases/2005/Pages/TheAPMollerMaerskGroupconcludesagreementwithQatarPetroleumaboutfurtherdevelopmentoftheAlShaheenField.aspx?lst=All>.

July 11, 2005	MAERSK HOLYHEAD involved in collision
August 08, 2005	The A.P. Moller - Maersk Group acquires UK North Sea oil and gas interests
November 11, 2005	MAERSK HOLYHEAD involved in a collision - status 11 November

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**Summarised content:** In the beginning of 2005, Maersk ordered four rigs from Singapore, which were stated to have an innovative construction compared to previous rigs. The innovative concept was focused on increasing the drilling capacity, and didn't have any pro or con impact on the environment.

In July the lpg-carrier MAERSK HOLYHEAD collided with another carrier outside off Venezuela. The collision caused damages to the ship and in conjunction with this a bunker fuel leakage that ran out into the sea. Oil container equipment were called in to dampen the environmental impact. Further information regarding the incident was published during November stating that the oil leakage at the time had been stopped and that environmental procedures were in action. The cause of the original incident was not known at the time.

Further, during August, Maersk acquired further oil interests in the North Sea.

**The archive of press releases from 2006 consists of 29 entries. The ones deemed relevant to this study are:<sup>45</sup>**

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<i>Date</i>	<i>Title</i>
April 12, 2006	A.P. Moller - Maersk and Teekay Shipping establish Swift Tankers
July 18, 2006	Two new jack-up rigs for Maersk Contractors
September 03, 2006	Maersk Container Industry to cease production of reefers in Denmark

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**Summarised content:** During April Maersk and Teekay conducted a joint venture in establishing a fleet of new innovative tankers. One of the characteristics of these tankers is an increased hull, which is important for carrying environmentally hazardous goods.

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<sup>45</sup> *Maersk - Media Centre - 2006*, <http://media.maersk.com/en/PressReleases/2006/Pages/Odense%20Steel%20Shipyard%20publish%20press%20release.aspx?lst=All>.

During July Maersk stated that it had made a contract to acquire two new rigs from a company in Singapore. The new rigs are innovative in the sense that they can reach further depths in comparison to conventional rigs.

Further, during the beginning of September it was announced that Maersk will cease to produce reefers in Denmark. A reefer is a refrigerated cargo container used to transport temperature sensitive goods. The reason for ceasing the production was that the market had declined. The lower ratio of the US dollar had also made an impact.

**The archive of press releases from 2007 consists of 39 entries. The ones deemed relevant to this study are:<sup>46</sup>**

<i>Date</i>	<i>Title</i>
April 6, 2007	Maersk Contractors sells three drilling rigs
December 6, 2007	Maersk Tankers name new chemical/product tanker
December 17, 2007	Namegiving of newbuilding L 210 from Odense Steel Shipyard

**Summarised content:** During April Maersk sold three rigs to an internationally owned company. In December Maersk acquired one tanker and also one new container vessel.

**The archive of press releases from 2008 consists of 51 entries. The ones deemed relevant to this study are:<sup>47</sup>**

<i>Date</i>	<i>Title</i>
January 8, 2008	Maersk Line reorganises to drive new strategy
May 2, 2008	Continued internationalisation of container and tanker crewing
May 13, 2008	Namegiving of newbuilding L 212 from Odense Steel Shipyard
May 22, 2008	Environmental Report 2007 - A.P. Moller Maersk Vessels <sup>48</sup>

<sup>46</sup> *Maersk - Media Centre - 2007*, <http://media.maersk.com/en/PressReleases/2007/Pages/OSS%20L%20210.aspx?lst=All>.

<sup>47</sup> *Maersk - Media Centre - 2008*, <http://media.maersk.com/en/PressReleases/2008/Pages/Martinair161208.aspx?lst=All>.

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**Summarised content:** In the beginning of the year, Maersk announced that they will focus on a new strategy where the aims are to reduce costs in order to increase the profit for the company. It was also stated that they would concentrate on transporting selected valuable cargos that are more profitable than others. During May, due to increased costs and in order to be more competitive, Maersk stated that they will outsource some of their service by replacing 200 Danish positions by international labour. During May a new container vessel was also introduced.

During 2008 Maersk also published their 2007 environmental report in their press release section. No similar annual report in this matter has however been found under this section regarding years prior nor post to this period. In their report Maersk stated that they continuously take technical measures to prevent emissions from their vessels. Such measures could be for example the installation of waste heat recovery systems, which reduces fuel usage. However, not all of Maersk's shipyards are capable of equipping newly built ships with these systems, and the author has found no evidence of vessels being decommissioned due to any lack of them.<sup>49</sup> The annual report further states that they continuously train their personnel in environmental disaster managing, and that they focus on building new tanker vessels with double hulls. Further, it denotes that single-hull tankers are being decommissioned.<sup>50</sup> It is not explicitly stated the extent of this out-phasing or when the old tankers will be fully replaced. Unfortunately for this study, it neither stated what kind of impact these environmental policies have on the profit made by the company. It would seem trivial that the scrapping of a fully functional tanker vessel would have a significant impact on the profit, but since this is not explicitly stated by Maersk, this is for the time being merely the author's own speculations.

In November Maersk stated that to prevent hijacking by pirates, slow moving vessels in the Gulf of Aden will either take different routes or join large convoys to avoid capture. This matter mainly affects tanker vessels, since they more often have the tendency to be slow moving. Hence, it is not explicitly stated that the pirate issue affects the profit, but since Maersk denotes that these measures are taken to prevent loss of crew, vessels and cargo, then this can also be regarded as a threat to profits.

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<sup>48</sup> *Environmental Report 2007 - A.P. Moller Maersk Vessels*,  
[http://about.maersk.com/en/WhoWeAre/Documents/TOEnvironmentalReport2007\\_UK.pdf](http://about.maersk.com/en/WhoWeAre/Documents/TOEnvironmentalReport2007_UK.pdf).

<sup>49</sup> *Environmental Report 2007 - A.P. Moller Maersk Vessels*, p. 10-11.

<sup>50</sup> *Environmental Report 2007 - A.P. Moller Maersk Vessels*, p. 22.

**The archive of press releases from 2009 consists of 19 entries. The ones deemed relevant to this study are:<sup>51</sup>**

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<i>Date</i>	<i>Title</i>
March 13, 2009	Maersk Tankers ready to enter market for C02 transportation
April 14, 2009	A.P. Moller - Maersk Group statement on piracy
May 05, 2009	A.P. Moller - Maersk Group reduces C02 emissions by 9%

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**Summarised content:** During March Maersk announced that the company will enter into the C02 transportation business. In relation to the triune impact model it is therefore interesting to note that increased C02 emission, which is an environmental issue, can have a potentially positive impact on the profit for shipping companies, since it provides a favourable market opportunity.

In April Maersk further commented on the piracy issue, where they stated that they are making investigations regarding how to solve the problem. The piracy issue is reckoned to be of concern for trade lanes and as such it can be regarded to have impact on the company profits.

In May Maersk stated that their environmental measures had reduced C02 emissions by 9%.

### **2.1.3 Conclusions**

From the analysis of the annual reports we can conclude, that there has been a general trend of increased trend of demand in the shipping industry. Trivially, this has been one of the important impacts on Maersk's positive profits, especially during 2004. Negative impacts on Maersk profits has been caused by a low USD, since the company has a large deal of its assets invested in this currency. Taxation was also an important variable to be reckoned with, and it is regarded to have a significant negative impacts on the gained profits.

Transaction costs are also seen as having a significant negative impact on the company profit. In relation to this matter, throughout the benchmark years, negative impact

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<sup>51</sup> *Maersk - Media Centre - 2009*, <http://media.maersk.com/en/PressReleases/2009/Pages/APMM190509.aspx?lst=All>, [Note: The quantity of press releases accounted for during 2009 is based on the authors assessment made at 19th of May 2009. Hence, other press releases regarding 2009 will most likely be published after this date.].

on the profit has been caused by lagging handling of cargo especially at US terminals. Lagging inland transportation was also an important issue to be reckoned with.

When it comes to the matter of the oil price in relation to the profit, this is announced as having a significant impact. In the annual reports, the bunker cost is given as an important factor to be reckoned with in the analysis of the causes of the company's profits. During 2007 Maersk, due to the increasing bunker costs, started working on a weight balancing strategy on the cargo vessels in order to minimize fuel consumption. Even though this strategy is not explained more in detail, it does bear witness to the fact that the increase in bunker cost has forced them to take preventive measures.

Another issue that emerged was that an increased oil price can have different effect depending on which segment of the company that is being discussed. As can be seen in this study, shipping companies are often diversified in their approach and don't only invest in shippings containers per se, but also in tanker services, offshore drilling and the trade of both rigs as well as various vessels. In Maersk, the rising oil price had a positive impact on the profits made by the tanker segment. Hence, it can be difficult to speak of the rising oil price as a purely negative influence on the profit. In polarity, the diversified approaches taken by the shipping companies rather tend to balance each other. The question remains however; to what extent do these factor balance each other?

A factor that however is seen to have made a relatively strong impact on the profits is the trade of vessels. The sale of merely a single tanker vessel is seen as a huge success for the company, and as such this might be a stronger factor to be reckoned with than any of the other variables.

When analysing the press releases we can discern, just as with the annual reports, that much focus is given to the trade of vessels and offshore rigs. In the press releases it is also stated that an increased oil price can be beneficial to the company's profits. Just as in the annual reports, taxation is announced as having a strong negative impact on Maersk's profits. In this case it is primarily referred to the domestic Danish taxation. During recent years, piracy is also given as an important negative influence on the profits.

As stated in the beginning of this study, the triune impact model also analyses the potential impact of environmental factors on the profits made by the company. In relation to this, the press releases bear witness that vessels that stand the risk of having a negative impact on the environment, are having their engines optimized for lesser fuel consumption. New vessels are built with double- instead of single hull and single hull vessels are to some

extent being decommissioned. It is however noted to what extent these older vessels are being decommissioned or what specific impact this out-phasing has had on the profits.

It is also stated that Maersk entered the business of CO<sub>2</sub> transportation. Here we can see that environmental factors such as increased volume of CO<sub>2</sub>, also in conjunction with the triune impact model, had an impact on the profits since it has the potential of providing a business opportunity.

## **2.2 Erria A/S**

Erria wasn't established until 1992 and went in the beginning under the name of Rederiet Fabricius A/S, and it didn't become public until 2002. Until 2002 the services provided by the firm consisted of technical management and part-ownerships in smaller vessels. In 2005 the maritime consulting company BR Marine A/S was integrated into the company. From this time and forward the company was hence also capable of tanker transportation, and in the middle of 2007 the group was renamed to Erria A/S after several smaller name changes.<sup>52</sup>

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<sup>52</sup> *Erria - A history with a vision*, <http://www.erria.dk/history.html>.

2.2.1 Benchmarking & annual report analysis

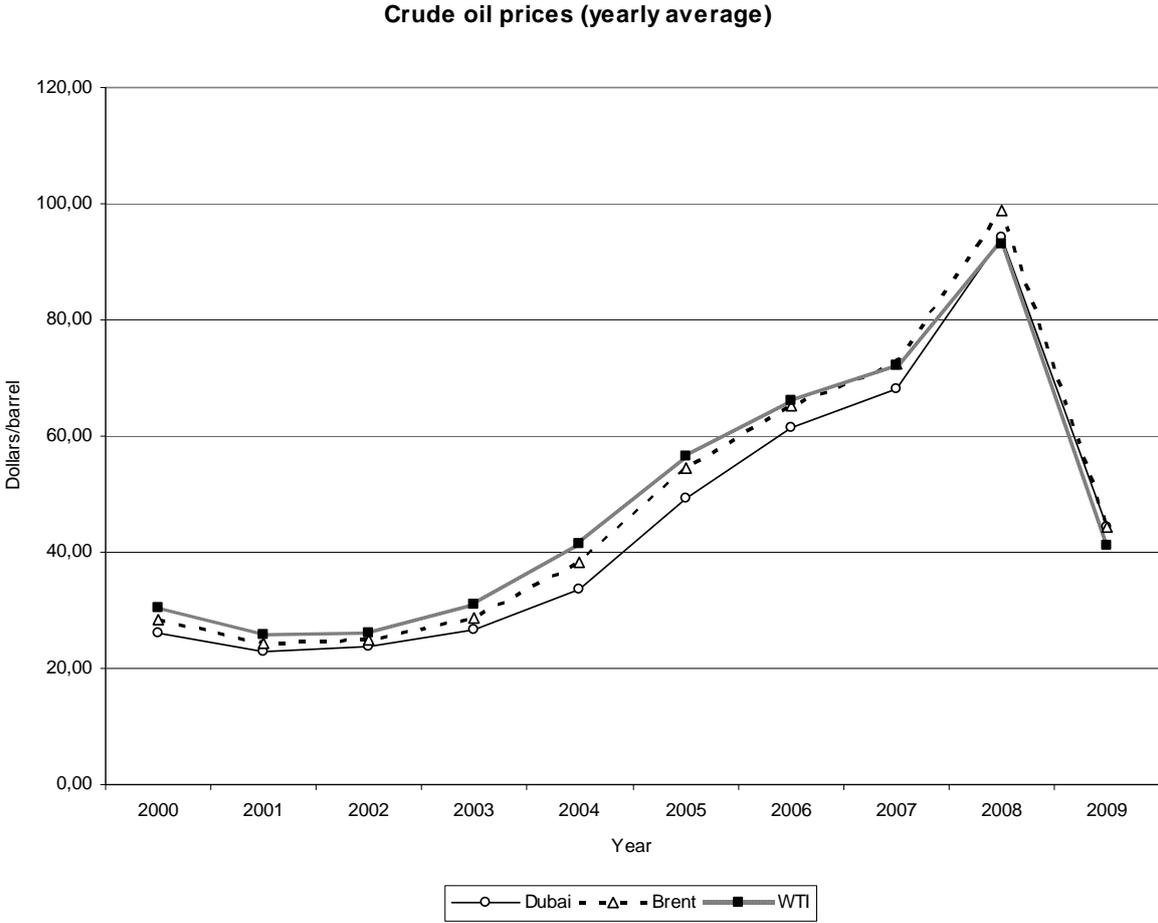


Fig. 2-4. Crude oil prices between 2000 and 2009 in Dubai, Brent and Western Texas Intermediate benchmarks.<sup>53</sup>

<sup>53</sup> BP Statistical Review of World Energy June 2008, EIA - Spot Prices for Crude Oil and Petroleum Products.

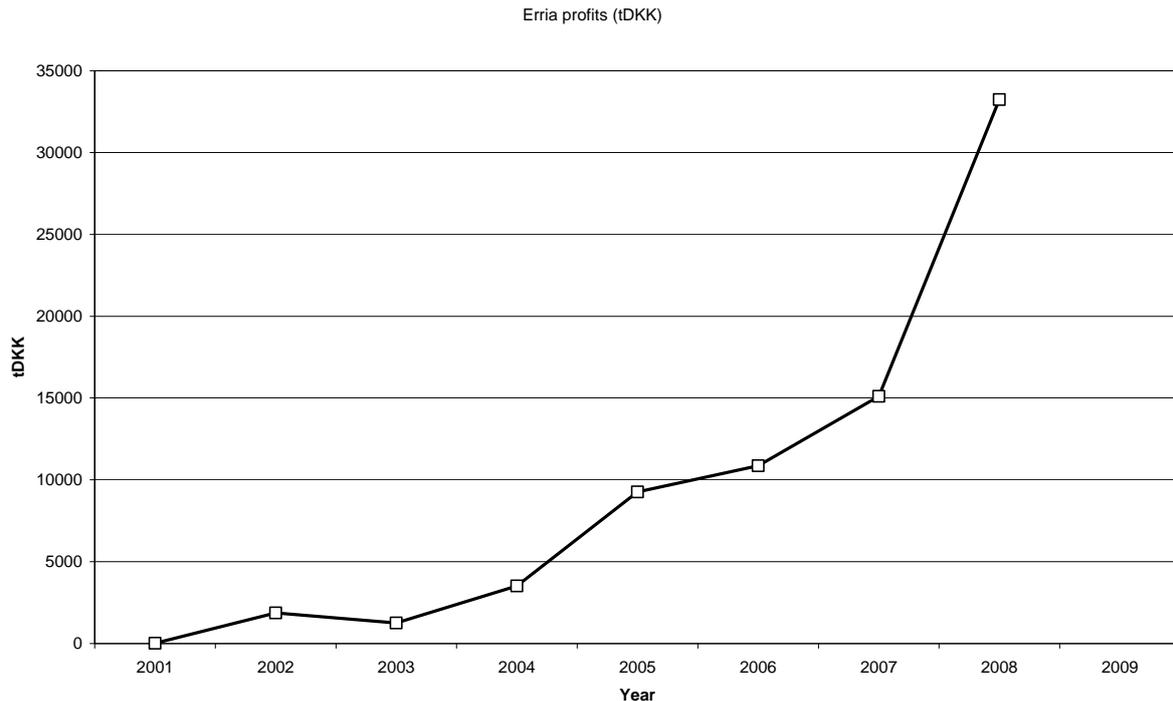


Fig. 2-5. Erria A/S profits between 2001 and 2003.<sup>54</sup>

As seen from Fig. 2-4. in conjunction with Fig. 2-5., Erria has had increasing profits from 2001 and onwards, with the exception of 2003 when it declined slightly before the rise in 2004. Further, the year of 2005 was a significantly more profitable year than the previous. Also, the profits gained during 2008 were extremely higher than during 2007. This has occurred together with an almost constant increase in oil prices. Hence 2003, 2004, 2005 and 2008 will be chosen as benchmarks for further analysis in the annual reports. Unfortunately, the firm does not separate their profits into segment in the same extent as Maersk, which might be due to their nature of being more of an investment company than a manager of infrastructure per se. It should however be noted that this latter conclusion is the author's own judgment and not an official statement of the firm. The annual reports from Erria are also

<sup>54</sup> *Rederiet Fabricius A/S koncernen - Annual report 2003*, [http://www.eria.dk/fileadmin/fabricius\\_root/filer/Annual\\_reports/060404fabriciusaarsrapport2003.pdf](http://www.eria.dk/fileadmin/fabricius_root/filer/Annual_reports/060404fabriciusaarsrapport2003.pdf), p. 8., *Rederiet Fabricius A/S koncernen - Annual report 2004*, [http://www.eria.dk/fileadmin/fabricius\\_root/filer/Annual\\_reports/070405aarsrapport2004.pdf](http://www.eria.dk/fileadmin/fabricius_root/filer/Annual_reports/070405aarsrapport2004.pdf), p. 8., *Rederiet Fabricius A/S koncernen - Annual report 2005*, [http://www.eria.dk/fileadmin/fabricius\\_root/filer/Annual\\_reports/annual\\_report\\_2005\\_fabr.pdf](http://www.eria.dk/fileadmin/fabricius_root/filer/Annual_reports/annual_report_2005_fabr.pdf), p. 8., *Rederiet Fabricius A/S koncernen - Annual report 2006*, [http://www.eria.dk/fileadmin/fabricius\\_root/filer/Annual\\_reports/annual\\_report\\_2006.pdf](http://www.eria.dk/fileadmin/fabricius_root/filer/Annual_reports/annual_report_2006.pdf), p. 8., *Rederiet Fabricius A/S koncernen - Annual report 2007*, [http://www.eria.dk/fileadmin/fabricius\\_root/filer/Annual\\_reports/aarsrapport\\_2007.pdf](http://www.eria.dk/fileadmin/fabricius_root/filer/Annual_reports/aarsrapport_2007.pdf), p. 6., *Rederiet Fabricius A/S koncernen - Annual report 2008*, [http://www.eria.dk/fileadmin/fabricius\\_root/filer/Annual\\_reports/annual\\_report\\_2008.pdf](http://www.eria.dk/fileadmin/fabricius_root/filer/Annual_reports/annual_report_2008.pdf), p. 6.

severely briefer than the ones provided by Maersk. This of course comes natural since Erria is generally a lot smaller than Maersk.

By observing Fig. 2-5. we can discern that the profits during 2003 were lower compared to the previous year. The annual reports bare witness to that the market in shipment transportation is increasing its demand, which is favourable for the firm. Also the sale of vessels was an important factor. Even so, contemporary high operating costs dampened the effect of this favourable market, resulting in a lower profit.<sup>55</sup>

During 2004 the company had recovered from the minor dampening of profits during the previous year. The firm's freight activity was characterized by an increase, which was due to the increasing market demand. Another factor was the decrease of operating costs. As noted above, these costs lowered the profit but during 2004 the firm had managed to eliminate some of the issues regarding this. How specifically this was done is however not stated in the annual report from this year. Further issues contributing to a higher profit than during the last year was the further sale of vessels.<sup>56</sup>

In Fig. 2-5. we can see that the profits gained during 2005 had further increased since the previous year. This year was characterized by an increased activity resulting from a higher demand on the market. The profits were further brought up by the continuing sale of vessels. By now it would seem obvious that also Erria's profits depends a lot on the sales of these kinds of infrastructure. It is further mentioned in the annual report from this year that there were transaction costs and difficulties in transcending the organisation, from a merger during the previous year with a Vietnamese company. Issues brought up are differing company cultures, language barriers and general organisational structures. These issues are further mentioned in the annual reports as having an impact, but the magnitude is not discussed.<sup>57</sup> I reckon that there probably were difficulties in making an estimation of the profit lost due to such transaction difficulties, and hence that might be why this issue is not brought into further depth in the reports. Nevertheless, the firm acknowledges that these diversified cultural issues are now resolved.

From Fig. 2-5. we can discern that the profit numbers for 2008 were severely higher than during the previous year. Even so, the results are considered as unsatisfactory. There are no explicit descriptions regarding why this is the case, other than high losses in

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<sup>55</sup> *Rederiet Fabricius A/S - Annual Report 2003*, p. 13.

<sup>56</sup> *Rederiet Fabricius A/S koncernen - Annual report 2004*, p. 13.

<sup>57</sup> *Rederiet Fabricius A/S koncernen - Annual report 2005*, p. 11-13.

sales. Hence, I find it most suitable to leave this area as uncharted in my analysis instead of making conclusions that have no solid basis.<sup>58</sup>

### 2.2.2 Public statements

Regarding Erria the press releases available reach merely back to 2005. Hence, the analysis will begin from this year. However, during 2005 there were no press releases found that were deemed to be relevant. As with Maersk, the press releases are based on if they have a relation to the company profit, the oil/bunker price, some other oil related activity or any environmental activity.

**The archive of press releases from 2006 consists of 7 entries. The ones deemed relevant to this study are:<sup>59</sup>**

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<i>Date</i>	<i>Title</i>
April 24, 2006	FABRICIUS MARINE signs an agreement to purchase 3 chemical tankers from Rederiet Jens Jakobsen A/S
August 23, 2006	FABRICIUS MARINE buys a sistership to Delmas Angola
October 20, 2006	CS & Partnere A/S Fabricius Marine A/S invites investors to buy up to 65% of K/S Ingrid Jakobsen
November 02, 2006	FABRICIUS MARINE A/S invite investors to buy up to 70% of K/S Maria Jacobsen

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**Summarised content:** All relevant Erria articles during 2006 are related to purchasing or sales of vessels. This further consolidates the hypothesis that Erria might be less affected by situational factors affecting the vessels per se.

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<sup>58</sup> Rederiet Fabricius A/S koncernen - Annual report 2008, p. 11.

<sup>59</sup> Erria - Press releases, [http://www.erria.dk/press\\_releases.html](http://www.erria.dk/press_releases.html).

**The archive of press releases from 2007 consists of 36 entries. The ones deemed relevant to this study are:**<sup>60</sup>

<i>Date</i>	<i>Title</i>
April 25, 2007	Erria A/S and Ibex Maritime Ltd. Invite investors to buy up to 60% of K/S Erria Dorthe
April 28, 2007	M/V Erria Vietnam 2,900 DWT container vessel launched on 27 April 2007
June 04, 2007	M/T Erria Dorthe has been sold out
October 24, 2007	ERRIA invite investors to buy up to 60% of K/S Erria Julie
November 07, 2007	ERRIA invite investors to buy up to 60% of K/S Erria Helen

**Summarised content:** Just as during 2007, the relevant 2008 numbers are merely related to trade of vessels.

**The archive of press releases from 2008 consists of 32 entries. The ones deemed relevant to this study are:**<sup>61</sup>

<i>Date</i>	<i>Title</i>
January 19, 2008	The newest vessel to the fleet m/t "ERRIA NIMMER" has been launched 19. January 2008 CelikTrans Shipyard
January 23, 2008	ERRIA invite investors to buy up to 60% of K/S Erria Mie
September 24, 2008	Artikel I Tanker Shipping & Trade. "Tanker operators prosper through diversified approach"

**Summarised content:** During September is reported by the magazine "Tanker Shipping & Trade" that Erria's investment in Saigon will give them access to a lucrative market. This is further stated as one of several diversified approaches that Danish shipping companies are

<sup>60</sup> Erria - Press releases.

<sup>61</sup> Erria - Press releases.

undertaking.<sup>62</sup> The press releases from the rest of the year are, just as during the previous year, related to the trade of vessels.

**The archive of press releases from 2009 consists of 6 entries. Only one press release from this year has been deemed relevant for the study:**<sup>63</sup>

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<i>Date</i>	<i>Title</i>
January 29, 2009	Artikel I Børsen. "Dansk Rederi opruster trods finanskrisen" <sup>64</sup>

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**Summarised content:** In the beginning of January Erria re-published an article in their press archive that was originally written for the Danish financial newspaper Børsen. In this article Lasse Friis reports that Erria are increasing their investments in the shipping industry, even though several other companies in the same industry are loosing profits. The reason stated for this approach is that Erria tend to invest more in the tanker- than the dry cargo industry, since the financial crisis did not hit as hard on the tanker industry.<sup>65</sup>

### 2.2.3 Conclusions

The foremost factor stated as having an impact both by the annual reports and in the press releases is the trade of vessels. Even during years, which has had negative impacts from other factors, the sale of vessels is regarded as a life line. The annual reports further denote, just as in the case of Maersk, that the increased demand during the latter years have been very beneficial. High operating costs are given as negative impacts, and policies were being formed to minimize the effect. Further, then annual reports also state that transaction costs in the merger with a Saigon firm has had some impact. It is however not stated to what extent.

In one entry in the press release section an article is being brought up that states that Erria has managed the financial crisis better than other shipping companies, due to their larger investments in the tanker section rather than in dry cargo. I find this interesting, since the oil price plummeted during the financial crisis.

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<sup>62</sup> Tanker Shipping & Trade, *Tanker operators prosper through diversified approach*, August/September 2008, [http://www.erria.dk/fileadmin/fabricius\\_root/News/TST\\_Aug08\\_p48-49.pdf](http://www.erria.dk/fileadmin/fabricius_root/News/TST_Aug08_p48-49.pdf), p. 48.

<sup>63</sup> *Erria - Press releases*.

<sup>64</sup> [My translation: "Article in Børsen. Danish shipping company expands inspite of the financial crisis"].

<sup>65</sup> Børsen, *Dansk rederi opruster trods finanskrisen*, January 29, 2009, p. 13.

### 2.3 Norden A/S

Norden A/S is a company that is specialized in the tramp sector of the shipping industry. It was founded in 1871 by Mr Mads Holm, who was the manager of the company until his death 20 years later. The first vessels used by the company were steam boats and the first acquired vessel had the name "Norden" as well. Today the company operates around 116 dry cargo and tankers vessels. Several more are also on the way to being incorporated.<sup>66</sup> The company differentiates its profile into the dry cargo and tanker segments. The dry cargo segment consists of around 80 ships and the tanker segment of around 36.<sup>67</sup> Unfortunately, Norden does not differentiate their profit figures in the same extent as Maersk, but since the occupations of these segments are similar enough, this shouldn't cause a too large analytical problem.

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*Dampskibsselskabet NORDEN A/S - History*, <http://www.ds-norden.com/profile/whoarewe/history/>.

<sup>67</sup> *Dampskibsselskabet NORDEN A/S - NORDEN in brief*, <http://www.ds-norden.com/profile/whoarewe/nordeninbrief/>.

2.3.1 Benchmarking & annual report analysis

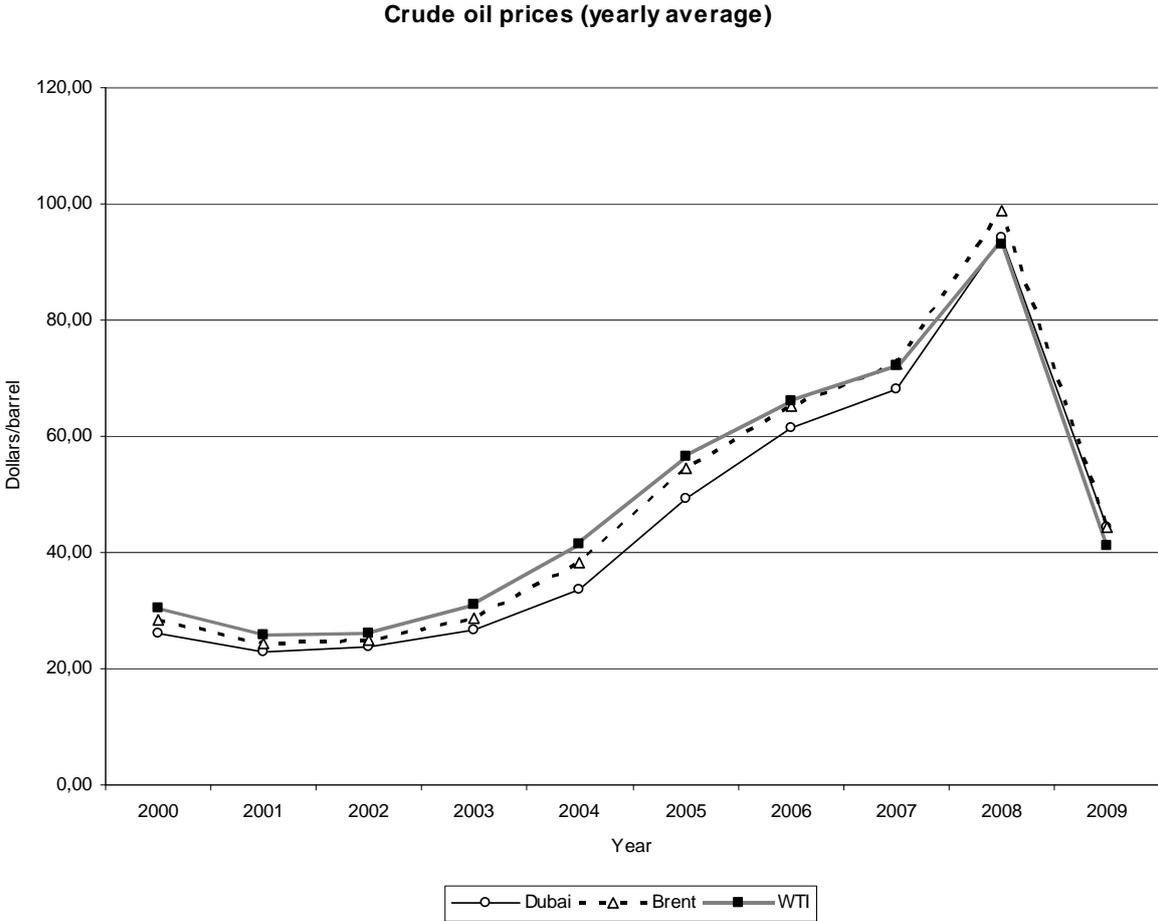


Fig. 2-6. Crude oil prices between 2000 and 2009 in Dubai, Brent and Western Texas Intermediate benchmarks.<sup>68</sup>

<sup>68</sup> BP Statistical Review of World Energy June 2008, EIA - Spot Prices for Crude Oil and Petroleum Products.

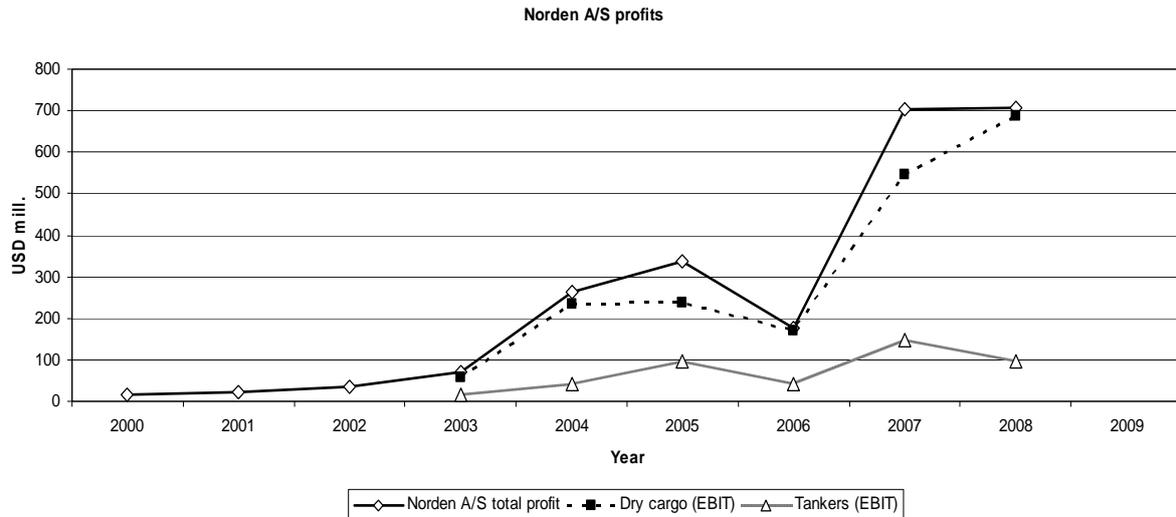


Fig. 2-7. Profits for Norden A/S between 2000 and 2009. Figures prior to 2004 have been altered to 2004's yearly accounting measures.<sup>69</sup> Total profits provided in net. Dry cargo- and Tanker profits provided in EBIT (Earnings Before Interest and Taxes).

From Fig. 2-6. in conjunction with Fig. 2-7. we can see that the yearly average oil prices were pretty much stagnant between 2000 and 2003. During this period the Norden profits had a moderate increase in profit growths. From 2003 and onwards the profits increased a lot more than even the previous years and had a peak in 2005. During this period the yearly average oil price had started to increase, and did so until 2008. Norden seemed to have a severe year during 2006, since their profits then plummeted. In 2007 the profits rose again and was stagnant until 2008.

Since the profits had risen significantly in 2004, this should be our first benchmark. Naturally, 2006 will be our second benchmark, due to the low profits from this year. It could thereafter be crucial to investigate what caused the profits to rise to its current level in 2007 and 2008. In conclusion we then have 2004, 2006, 2007 and 2008 as our benchmarks for further analysis.

As seen in Fig. 2-7., the dry cargo segment of Norden was the primary winner during 2004. The main reason for the increased profit were an increased global market during

<sup>69</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2004*, [http://www.ds-norden.com/public/dokumenter/news\\_english/Annualreport2004uk.pdf](http://www.ds-norden.com/public/dokumenter/news_english/Annualreport2004uk.pdf), p. 4, 13, 19., *Dampskibsselskabet NORDEN A/S - Annual Report 2005*, [http://www.ds-norden.com/public/dokumenter/news\\_english/UKNordenreport2005.pdf](http://www.ds-norden.com/public/dokumenter/news_english/UKNordenreport2005.pdf), p. 2, 7, 15., *Dampskibsselskabet NORDEN A/S - Annual Report 2006*, [http://www.ds-norden.com/public/dokumenter/news\\_english/AnnualReport2006UK.PDF](http://www.ds-norden.com/public/dokumenter/news_english/AnnualReport2006UK.PDF), p. 2, 15, 23., *Dampskibsselskabet NORDEN A/S - Annual Report 2007*, [http://www.ds-norden.com/public/dokumenter/news\\_english/NORDENAnnualReport2007.pdf](http://www.ds-norden.com/public/dokumenter/news_english/NORDENAnnualReport2007.pdf), p. 2, 17, 25., *Dampskibsselskabet NORDEN A/S - Annual Report 2008*, [http://www.ds-norden.com/public/dokumenter/news\\_english/NORDENannualreport2008.pdf](http://www.ds-norden.com/public/dokumenter/news_english/NORDENannualreport2008.pdf), p. 4, 21, 27.

this year. As a result of this, dry cargo activity rose by 46% for the company.<sup>70</sup> Due to the stronger demand, the tonnage prices also went up which led to further increase in profit. A strong actor in this scenario was China, which had an increase in steel production. This called for a larger import of iron ore. Further, global coal transportation, which is one of Norden's main resources for transportation, rose by 10%. As with Maersk, Norden also benefited from sales of vessels, which contributed approximately USD 50 million to the company (the figure is however not merely limited to the sales of dry cargo vessels). An interesting entry in this study was however that the company predicts that profits will be dampened in the future due to the rising oil price.<sup>71</sup>

The tanker segment was also characterized by being in a strong market during 2004, which caused a 162% increase in profit compared to the previous year. The market was gained by a heavy oil demand, especially from China and the US, which were in the requirement of both crude oil and refined products. As a result of this, according to the IEA, the global oil demand rose by 3,3%. Not all of Norden's profits should however be regarded as being caused by an increased demand. As with the dry cargo segment, the tanker segment also benefited from the sales of ships. As an example, the tanker segment sold a tanker for approximately USD 13 million. Factors that during 2004 had contributed positively to an increased market demand were, among others, strikes, storms as well as power plant- and refinery failures. Such scenarios have a tendency to create demand in the specified region. Negative impact on the market is however feared from the political instability in the Middle East, as well as a potential downturn in China.<sup>72</sup> A further interesting fact for this study is that the rising oil prices also caused a concern in this segment. Therefore, Norden decided to lock the bunker prices for 2005 to 2009 for all predetermined long routes in an arrangement which is called "bunker hedging". The bunker price will therefore be static and not be affected by the change in oil prices.<sup>73</sup> Since most engines for large shipping vessels are run on diesel, this also puts less emphasis on refining costs.

The year of 2006 was characterized by altogether low profits for both the dry cargo- and the tanker segment. There was an increase in market demand for the dry cargo sector. As an example, the Chinese iron industry continued to be successful, which caused a further demand for the import of iron ore. Nevertheless, problems at terminals and ports continued to slow down the development. It is however not mentioned in which geographical

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<sup>70</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2004*, p. 1, 5.

<sup>71</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2004*, p. 5, 13, 15-16.

<sup>72</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2004*, p. 19-22.

<sup>73</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2004*, p. 25.

areas the faulty ports were situated. A strong factor contributing to the lower profits, compared to the previous, year was there were fewer vessels sold in comparison. By the account of the annual reports, this seems also to have been the strongest negative factor.<sup>74</sup> Hence, the profits were not really due to any factor regarding the oil price, but merely due to 'normal' fluctuations in the sales of vessels.

Regarding the tanker segment, there was also a decrease in profit in comparison with the previous year. The factors in this case were several. First of all, maintenance activities in oil refineries were a factor. It is not explicitly specified in the annual reports further what such activities consist of, but I reckon that it is reasonable to assume that strikes and production delays might be some of such factors. Further, a decrease in oil exports from Russia was also mentioned as lessening the market, as well as a mild winter in the US. As in the dry cargo segment, the tanker segment also suffered a diminishing profit since they also sold fewer vessels than during the previous year.<sup>75</sup> Altogether, the oil price seems not to have affected the segments of Norden during this year when it comes to bunker costs. Since they, as mentioned before, during 2004 hedged the bunker costs for certain pre-determined routes then this is however to be somewhat expected. The matter is however not sealed, since it would seem reasonable that vessels with no pre-determined routes could have been affected by the rising bunker costs.

As seen in Fig. 2-7., the year of 2007 was extremely profitable for Norden. There were also increased profits in both the dry cargo- and the tanker segment. The main factor for the total increased profit was a higher activity in the dry cargo sector. The global market was this year characterized by a very strong demand, and Norden had increased the quantity of own vessels in the dry cargo segment by almost 50%, which positioned the company well to reap the harvest from such a scenario. As during previous years, China's ore import continued to be a strong factor in the business. India, who is China's largest ore contributor, increased taxation on their exports which slightly dampened the profit. However, in relation to the global upsurge, the effects of this taxation seems not to have been that much noticeable.<sup>76</sup>

In the tanker segment there was also an increase in profits compared to the previous year. In the annual reports, special attention was given to the US, which Norden regards as being their foremost source of demand for crude oil and refined products. A

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<sup>74</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2006*, p. 16-18.

<sup>75</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2006*, p. 24-25.

<sup>76</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2007*, p. 18-19.

tougher winter in the US also caused the demand of oil to rise, which in turn affected profits. On the negative side, increased operating costs caused a dampening of the profits. As seen earlier in this study as well, fluctuations in operating costs can often be an important actor in the shipping industry. The foremost matter that caused the tanker segments to receive increased profits during 2007, was however the sale of two tanker vessels.<sup>77</sup> It seems likely so far to assume that the sale of even one tanker vessel can have a significant effect on the earned profit during that particular year. This seems to be a common denominator for both Norden as well as the previous companies brought up in this study. Hence, the sales of two tanker vessels should be reckoned as having a tremendous impact on the profit. Conclusively, it seems reasonable to assume that the 2007 increase for the tanker segment was primarily caused by the sales of these two vessels.

During the first half of 2008, there was a historical demand for dry cargo transport and the activity rose significantly. During the second half, in conjunction with the financial crisis, the demand for this kind of service went radically down. First of all, the banks that used to give out credits for long-range international transports ceased to do so. Secondly, there was a heavy increase in the price of commodities which caused as a counter incentive for the purchasing of these goods and their transportation. As an example, we have the matter of the Chinese iron industry. As mentioned regarding the previous years, China's ore import was a key factor in providing profits for Norden's dry cargo segment. In conjunction with the financial crisis, this import plummeted as well; putting the bulk carrier industry in an uncertain situation. As with a variety of capital products during the financial crisis, such as for example cars, the value of ships also fell due to depreciation, and hence the value of several of Norden's ships fell by more than half its price. Nevertheless, the dry cargo segment managed to secure a few successful sales of vessels, and in so doing dampening the effects of the financial crisis on the company.<sup>78</sup> I reckon however that since the activity during the first half of 2008 was great even in a historical broad view, then these early results should be acknowledged in keeping the segment's profit per se from falling in the accounted numbers collected from this year.

In the tanker segment, the beginning of 2008 was characterized by a weak first quarter. Parallel to the dry cargo segment however, the tanker segment experienced a high demand during the beginning of the summer just before the effects of the financial crisis. In conjunction with the financial crisis, the oil prices plummeted. Since, during the financial

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<sup>77</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2007*, p. 26.

<sup>78</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2008*, p. 22-24.

crisis, the economic growth and development worldwide was halted, this also caused a low demand of oil products.<sup>79</sup> Hence, the effect was a low transport activity for the tanker industry. Norden's annual reports give however some witness that "The large oil price drop resulted in oil futures prices markedly above spot oil prices, which meant a strong financial incentive for global stock building during the last months of the year. This led to some stabilization of the tanker market, but at a lower level."<sup>80</sup> Also, even though the effects of the financial crisis was still upon the industry during the last part of the year, another incident caused a rise in demand. The hurricane Ike, which hit the US in September 2008 rendered a lot of the country's refinery infrastructure incapacitated.<sup>81</sup> Hence, there was an increase in demand for refined oil products, in spite of the financial crisis.

### 2.3.2 Public statements

For Norden, there are press releases between 2002 and 2009 available.<sup>82</sup>

**The archive of press releases from 2002 consists of 13 entries. The ones deemed relevant to this study are:**

<i>Date</i>	<i>Title</i>
Jan 30, 2002	Purchase of ships
April 10, 2002	Sale and contracting of Handymax bulkcarriers

**Summarised content:** During 2002 the relevant press releases consisted of purchase and sale of bulk carrier vessels.

**The archive of press releases from 2003 consists of 13 entries. The ones deemed relevant to this study are:**

<i>Date</i>	<i>Title</i>
March 28, 2003	Sale and contracting of product tankers
December 10, 2003	Contracting of product tankers

<sup>79</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2008*, p. 26-30.

<sup>80</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2008*, p. 28.

<sup>81</sup> *Dampskibsselskabet NORDEN A/S - Annual Report 2008*, p. 28.

<sup>82</sup> *Dampskibsselskabet NORDEN A/S - Announcements to NASDAQ OMX Copenhagen A/S*, <http://www.ds-norden.com/investor/financialnews/announcements/>, *Dampskibsselskabet NORDEN A/S - Press Releases & Corporate News*, <http://www.ds-norden.com/investor/financialnews/pressreleases/> [Note: Norden's press centre archives the press releases under "Announcements" and "Press releases". The article during these two sections have been accumulated for this study.].

**Summarised content:** During 2003, just as during 2002, the relevant press releases consisted of trading of vessels. However, during this year the trade was regarding tankers instead of dry bulk carriers.

**The archive of press releases from 2004 consists of 22 + 1 entries. The ones deemed relevant to this study are:**

<i>Date</i>	<i>Title</i>
April 26, 2004	Fleet expansion
June 30, 2004	Sale of Product Tanker

**Summarised content:** During April Norden announced that they will expand their fleet with several new bulk carriers, which were built at Japanese shipyards. During June Norden sold the product tanker "Nordamerika" to a German firm, and received a profit of USD 11.5 million.

**The archive of press releases from 2005 consists of 21 + 1 entries. The ones deemed relevant to this study are:**

<i>Date</i>	<i>Title</i>
February 01, 2005	Sale of two Handymax Bulkcarriers
February 15, 2005	Sale of one Handymax Bulkcarrier
June 16, 2005	NORDEN A/S - NORDEN among the Top Financial Performers of the World - Press Release
July 18, 2005	Sale of Product Tanker
December 23, 2005	Sale of a Handymax Bulkcarrier
December 29, 2005	Sale of a Handymax Bulkcarrier

**Summarised content:** During the beginning of the year Norden sold two bulk carriers. In June Norden was announced as the third most profitable shipping company in the world by Marine Money International Magazine. The cause was primarily denoted as good risk management. The rest of the year the press releases were regarding further sale of vessels.

**The archive of press releases from 2006 consists of 12 + 0 entries. The ones deemed relevant to this study are:**

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<i>Date</i>	<i>Title</i>
April 06, 2006	Upward adjustment - Sale of One Handymax Bulkcarrier
September 27, 2006	Sale of Handymax Bulkcarrier

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**Summarised content:** During 2006 the relevant press releases consisted of further sale of vessels.

**The archive of press releases from 2007 consists of 29 + 0 entries. The ones deemed relevant to this study are:**

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<i>Date</i>	<i>Title</i>
February 05, 2007	NORDEN sells vessels
February 15, 2007	NORDEN sells vessel
May 01, 2007	NORDEN sells vessels and increases profit guidance
June 28, 2007	NORDEN sells vessel and increases profit guidance
July 31, 2007	NORDEN sells Panamax bulkcarrier
November 06, 2007	NORDEN sells dry cargo vessel NORD VIKING

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**Summarised content:** During 2007 there was an increased sale of vessels for Norden, which was regarded as a significant profit increase. The reasons for the profitable year was announced as both a strong development in dry bulk carriers as well as good industry analysis.

**The archive of press releases from 2008 consists of 27 + 6 entries. The ones deemed relevant to this study are:**

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<i>Date</i>	<i>Title</i>
March 14, 2008	NORDEN sells two vessels and increases profit guidance
April 17, 2008	NORDEN sells NORD FIGHTER and increases profit guidance

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June 18, 2008	NORDEN among the world's best at creating financial results - Press Release
October 21, 2008	NORDEN in global climate change survey - Corporate News
November 12, 2008	NORDEN sells 3 dry cargo vessels

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**Summarised content:** During the first half of 2008 the relevant press releases were regarding the sale of vessels. In June the Marine Money International Magazine once again announced Norden as a high ranking company in the ability to create profit. This year Norden was ranked as number two in the World

In October Norden participated in the Carbon Disclosure Project's global survey.<sup>83</sup> Norden did not rank among the top environmentally friendly companies. However, the company reported that there has been and are continuing work in the field of optimizing engine performance in order to reduce emissions and save fuel.

The remaining relevant press release from 2008 was regarding further sale of vessels.

**The archive of press releases from 2009 consists of 15 + 1 entries. The ones deemed relevant to this study are:**

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<i>Date</i>	<i>Title</i>
January 06, 2009	NORDEN sells vessels in the amount of USD 175 million for delivery in 2009
April 15, 2009	NORDEN sells two bulkcarriers
May 12, 2009	Further sale of vessels and adjustment of expectations for 2009
May 19, 2009	Double naming of Handysize dry cargo vessels - Corporate News

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**Summarised content:** All of the relevant press releases from 2009 were regarding sale of vessels.

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<sup>83</sup> *Carbon Disclosure Project Nordic Report 2008*, <http://www.ds-norden.com/public/dokumenter/CarbonDisclosureProjectNordicReport2008.pdf> [Note: The Nordic part of this survey, which is the one publishing the results for Denmark, Sweden, Norway, Finland and Iceland is published by Ethix SRI Advisors AB, Stockholm].

### **2.3.3 Conclusions**

As with Maersk and Erria, Norden is also reckoned to be benefited by the sale of vessels according to the annual reports. Increased demand is another factor. In this case, China is regarded as the most contributing actor, due to large imports of iron ore to be used in steel production. Factors such as strikes, storms and power plant failures are actually seen as positive for the profit since they can increase the local demand and as such create a business opportunity for the tanker segment. One example is given regarding the US, where the hurricane Ike created a higher demand for oil products since the hurricane disabled several of the domestic refineries.

Increased taxation, increased operating costs as well as an unstable situation in the Middle East were seen as significant factors in affecting the profit negatively. Further, the financial crisis had a significant effect on the company, since several banks became unwilling to give credit for long-range orders.

The rising oil price was seen as negative for Norden, and it was explicitly stated that it had dampened the profits. At one point, the firm decided to hedge the bunker cost to prevent any further significant impact from this factor on pre-determined future routes.

The press releases were mostly regarding trade of vessels which, as with the other companies, was seen as explicitly beneficial. Norden was further stated as being able to handle the financial crisis better than other companies, due to its larger investments in the tanker sector, which was not as heavily affected as the dry cargo sector.

When it comes to the matter of environmental impacts on the profit section, the author hasn't found any significant evidence. Norden however, just as Maersk, has taken innovative measures to dampen fuel usage by optimizing the engines of various ships.

### 3. Wrapping up

In the beginning of this study three questions were stated. The first one was if the oil price has had any significant impact on the profits made by Danish logistic companies in the shipping sector. The second question was if the oil price has affected any other factor within the company. Finally, the third question asked whether environmental factors better could explain impacts on the profits. Hence, we have been searching for factors which impact the profits of the shipping companies the most, in order to discern primarily what significance the oil price has had. This has been done by using a two-method approach in analysing the Danish shipping companies Maersk, Erria and Norden.

The results show that the foremost factor that impacts the profit is, trivially, the demand. During the latter years up until the financial crisis, there has been a significant increase in demand for shipping services and this we can count as probably the most significant positive factor. Another significant factor in maximizing the profits for all of the three companies, has been the sale of vessels both in the dry cargo- and tanker segment. Special attention is given to this matter both in the annual reports and in the press releases.

Further, when it comes to the matter of negative factors, which are having a significant impact on the company profits, we have the matter of taxation. As it turns out, the shipping companies often see this matter as crucial in their business.

When it comes to the matter statements regarding the oil price, there has been some differences between the companies. Maersk and Norden comment regarding these matters; as well as regarding matters of environmental impacts. Erria however does not. Both Erria's annual reports as well as their press releases are mainly concerned with sale of vessels; both entire ships as well as shares. I have a hypothesis regarding the reason for this matter. It is quite possible that Erria, by being more of an investment company, has little or no actual handling of practical matters on board the ships such as repairs and bunker costs. As said however, these are just speculations. Further regarding the results obtained by analysing Maersk and Norden, it is quite clear that the oil price has had a significant impact on the profits. In both companies, the rising oil price caused a concern for long-range transportation. Norden even went so far as to hedge the oil price for longitudinal pre-determined routes, since the future outlook for the oil price was uncertain. However, it can also be said that the oil price affects these companies in different ways within their own segment. As an example,

Maersk for example operates within the sectors of dry cargo, tankers and offshore oil production/harvesting. For the dry cargo segment (which transports bulk cargo such as grain, ore and general containers) the oil price has a negative impact since it affects bunker costs. For the tanker segment however, the positive trading benefits of tanker oil outweighs the negative influences from, for example increased diesel costs at various ports. The foremost question to be answered in the future is what kind of relative proportions these different impacts are situating. In conjunction with the triune impact model it can hence be said that the oil price has had an effect on the profits earned by these Danish logistic companies, but it is unclear what the exact proportions are.

When it comes to the second question regarding if the oil price has had any impact on scheduled routes, the answer is somewhat unclear. There have been discussions of optimising ship operations for minimum fuel usage, but I don't reckon there to be enough empirical evidence to support any route-changing policy. Piracy seems to have had a greater impact in this matter.

Regarding the third question about environmental impacts on the profit, there has occurred environmental accidents that have forced the company to take innovative measures in preventing further unfortunate situations. Maersk, for example are building their new vessels with double hull. Single hull vessels are also being decommissioned, but it is not clear what kind of profit loss is obtained from having to 'give up' such a capital. Nor are there any exact figures showing if the innovative hull improvements, for example, has had any significant impact on dampening the profits. Further, both Maersk and Norden have taken innovative steps in optimising their engines for lesser fuel consumption. As stated, this is done both since the companies wish to minimize their impacts on the environment, as well as to dampen their fuel costs.

What also ought to be noted as important for this study, is that an increased negative environmental impact can be seen as somewhat positive for the profits gained by shipping companies. I base this on the matter where Maersk entered into the CO<sub>2</sub>-transportation business. As such, increased CO<sub>2</sub> can be beneficial to the profits since they provide a market opportunity.

As a periphery, another interesting matter that emerged was that natural catastrophes can actually be seen as having a positive impact on the profits earned by these shipping companies, since it can raise the demand for oil products in a specific area. One example was the late 2008 hurricane Ike in the US, which disabled several of the domestic refineries and thus created an increased market opportunity for shipping companies.

### **3.1 Theoretical concept**

In conjunction with the notions brought forth by McPhee, this study has researched several possible variables which can have an impact on the earned profits. This study is also retorting against Achen & Snidal's notion of the case study as being non-generalizable, since we have seen similar impacts between the different companies. Erria has been the weak point of evidence in this study, since it does not provide as much evidence as Maersk and Norden. However, since evidence was found from both these latter companies, the study still has strength. I refer this conclusion in conjunction with Hakim's earlier noted notion that the largest increase of evidence occurs when the cases studied increase by one to two.

The question that now emerges is how generalizable these findings are. These Danish companies were chosen primarily since Denmark has a large fleet, and therefore it becomes a good opportunity of becoming a lucrative research. The findings could be said as to be generalizable to other Danish shipping companies, but as noted earlier it all depends of what kind of internal structure the company has. It can have a differentiated impact whether the firm operates in both the dry cargo- and the tanker sector, or in merely one of these. The outcome is hence often dependent on this. Hakim states that "At the minimum, a case study can provide a richly detailed 'portrait' of a particular social phenomenon...".<sup>84</sup> This is hence the contribution of this study, in that it portrays the nature of this matter and it's various potential impacts.

### **3.2 Further research**

A matter which I also wish to address, both in conjunction with this latter matter as well as the previous ones, is how large the proportions of refinery- and taxation costs are relative to the cost of the crude oil per se. Different ports have different bunker costs depending on both their oil price benchmarks as well as their local arrangements. This study opens up the possibility for continuous research in this area.

What also would be beneficial to engage in, in conjunction to this study, would be to go into depth regarding the specific vessels and their fuel consumption. By doing so a more concrete quantitative result could be obtained, which together with this study, could illustrate that there are potential impacts, and also account for how large they could theoretically be. These research opportunities are also beneficial, in that they can act as a

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<sup>84</sup> Hakim, p. 59.

modelling tool for companies, to weigh the potential pros and cons against each other, when they choose to enter the industry.

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### ***Other remarks***

There is today no clear standard of referring to internet material in today's scientific community. Therefore, in order to make these kinds of references more congruent with the rest of the referenced material, the author has tailored this part to fit the needs of this study. The custom in this study is that in the endnotes, the first entry of the internet resource is referenced by the web page title in italic; followed by the internet address in regular format. Further references to this source is given by referencing solely to the page title in italic, as well as any occurring page number (where this is necessary) in the resource. In the literature

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