

# **Master's degree thesis**

**IP501909 MSc thesis, discipline oriented master**

**Title: Benchmarking with macroeconomic uncertainty**

**Richard Adewale 131061**

**Number of pages including this page: 79**

**Aalesund, 29/05/2015**



## Mandatory statement

Each student is responsible for complying with rules and regulations that relate to examinations and to academic work in general. The purpose of the mandatory statement is to make students aware of their responsibility and the consequences of cheating. **Failure to complete the statement does not excuse students from their responsibility.**

Please complete the mandatory statement by placing a mark <u>in each box</u> for statements 1-6 below.		
1.	I/we hereby declare that my/our paper/assignment is my/our own work, and that I/we have not used other sources or received other help than is mentioned in the paper/assignment.	<input checked="" type="checkbox"/>
2.	I/we hereby declare that this paper <ol style="list-style-type: none"> <li>1. Has not been used in any other exam at another department/university/university college</li> <li>2. Is not referring to the work of others without acknowledgement</li> <li>3. Is not referring to my/our previous work without acknowledgement</li> <li>4. Has acknowledged all sources of literature in the text and in the list of references</li> <li>5. Is not a copy, duplicate or transcript of other work</li> </ol>	Mark each box: 1. <input checked="" type="checkbox"/> 2. <input checked="" type="checkbox"/> 3. <input checked="" type="checkbox"/> 4. <input checked="" type="checkbox"/> 5. <input checked="" type="checkbox"/>
3.	I am/we are aware that any breach of the above will be considered as cheating, and may result in annulment of the examination and exclusion from all universities and university colleges in Norway for up to one year, according to the <a href="#">Act relating to Norwegian Universities and University Colleges, section 4-7 and 4-8</a> and <a href="#">Examination regulations</a> paragraph 31.	<input checked="" type="checkbox"/>
4.	I am/we are aware that all papers/assignments may be checked for plagiarism by a software assisted plagiarism check	<input checked="" type="checkbox"/>
5.	I am/we are aware that Aalesund University college will handle all cases of suspected cheating according to prevailing guidelines.	<input checked="" type="checkbox"/>
6.	I/we are aware of the University College's <a href="#">rules and regulation for using sources</a> paragraph 30.	<input checked="" type="checkbox"/>

# Publication agreement

ECTS credits: 30

Supervisor: Lars Oxelheim

## Agreement on electronic publication of master thesis

Author(s) have copyright to the thesis, including the exclusive right to publish the document (The Copyright Act §2).

All theses fulfilling the requirements will be registered and published in Brage HiÅ, with the approval of the author(s).

Theses with a confidentiality agreement will not be published.

**I/we hereby give Aalesund University College the right to, free of charge, make the thesis available for electronic publication:** yes no

**Is there an [agreement of confidentiality](#)?** yes no

(A supplementary confidentiality agreement must be filled in and included in this document)

**- If yes: Can the thesis be online published when the period of confidentiality is expired?** yes no

This master's thesis has been completed and approved as part of a master's degree programme at Aalesund University College. The thesis is the student's own independent work according to section 6 of Regulations concerning requirements for master's degrees of December 1st, 2005.

**Date: 29/05/2015**

## **Preface**

Benchmarking in its current form fails to account for the macroeconomic fluctuations which have a bearing upon the benchmark which firms strive to better as well as the performance of the firms themselves. Using the Macroeconomic Uncertainty Strategy Analysis (MUST) model developed by Oxelheim and Wihlborg, a framework will be developed in order account for said macroeconomic effects, filtering the distortions allowing assessment of the underlying performance of the firms analysed. It is expected that the framework will reveal that the competitiveness of some firms differs from their reported performance, highlighting a need for policy changes in the quality and depth of information communicated internally and externally to the firm.



## TABLE OF CONTENTS

TABLE OF CONTENTS .....	7
LIST OF FIGURES .....	9
CHAPTER I: Introduction .....	10
CHAPTER II: Background and Literature review .....	13
Recent developments in the macroeconomic environment.....	13
The macroeconomic environment and the firm .....	13
The macroeconomic variables.....	14
The exchange rate .....	14
The interest rate.....	15
The rate of inflation.....	15
Measuring Macroeconomic Impact on the firm: A comprehensive Approach.....	17
Where does the ‘extra’ value accrued from a macroeconomic tailwind go? .....	18
The holistic approach to macroeconomic exposure: Enterprise-wide Risk Management (ERM) and Integrated Risk Management (IRM) .....	18
Introduction to Benchmarking .....	20
Internal versus external benchmarking .....	21
Proponents and Opponents to Benchmarking .....	22
The definition of Benchmarking .....	23
Models of benchmarking.....	25
Benchmarking firms through ratio analysis .....	29
The Corporate Governance implications of the current approach to benchmarking: A issue of transparency .....	31
CHAPTER III: Industry Summary .....	33
Firm Summary .....	35
Current benchmarking frameworks for the industry.....	36
CHAPTER IV: Methodology.....	39
Discussing quantitative and qualitative research .....	39
Qualitative analysis: Semi-structured interview .....	40
Conducting the interview .....	41
Qualitative content analysis .....	41
Coding and content analysis .....	42
Quantitative analysis: The Benchmark .....	43
Phase 1. Planning .....	43
Phase 2. Analysis .....	44
Phase 3. Integration.....	44
Quantitative analysis: The MUST Analysis (Macroeconomic Uncertainty Strategy)....	44
Econometric specification.....	47
Fundamental Analysis: Macroeconomic Variables with potential explanatory power ..	50
CHAPTER V: Results.....	52
Qualitative results.....	52
Quantitative results.....	55
An updated benchmark framework.....	58
CHAPTER VI: Conclusion .....	61
Proposition Defence .....	61
Limitations .....	64
Qualitative .....	64

Quantitative .....	65
Policy recommendations .....	65
Further research possibilities.....	66
APPENDICES .....	68
Appendix I: Interview Coding .....	68
Appendix II: Fundamental analysis: Farstad Shipping .....	70
Appendix III: Fundamental analysis: Solstad Shipping.....	72
Appendix IV: Fundamental analysis: Eidesvik Shipping .....	73
References .....	74



## LIST OF FIGURES

Figure 1 Macroeconomic shocks and the cash flow of the firm. (Oxelheim & Wihlborg, 2008).....	17
Figure 2. The Evolution of Benchmarking (Maire et al., 2005).....	24
Figure 3 The Benchmarking wheel .....	26
Figure 4 Camp's Xerox benchmarking model (Camp, 1989) .....	29
Figure 5 Brent Oil Crude price historical data (www.tradingeconomics.com).....	34
Figure 6 Norwegian oil production (www.oilprice.com) .....	34
Figure 7 PWC Profitability ratio analysis (2013) .....	38
Figure 8 Updated benchmark model - Stages .....	59
Figure 9 Updated benchmark model - Activities .....	59

## **CHAPTER I: Introduction**

This paper will propose an updated benchmark framework which will enhance the robustness of the benchmarking process which firms currently employ. Benchmarking in its current form fails to adequately acknowledge the effect of macroeconomic activity upon the performance of the firms which are benchmarked.

The recent global financial meltdown and ensuing global recession which it precipitated are prominent and pertinent examples of the symbiotic relationship between financial risk and uncertainty risk. In light of the market conditions which firms faced as a result of the global recession all firms were very forthcoming in acknowledging the influence that the macroeconomic conditions had upon their performance and profitability. In a sense this enabled all firms to rationalise their bad performance given that all firms were performing badly and that the macroeconomic constraints upon the individual firm was seemingly out of their control. However when considering the favourable macroeconomic conditions that firms were facing prior to the financial meltdown with GDP growth in 2006 of 3 percent in the US (World Bank, 2015c) and UK (World Bank, 2015b) and 4 percent in Germany (World Bank, 2015a), it is interesting to note the absence of firms who acknowledge that their seemingly favourable performance was in part attributable to the favourable macroeconomic environment in which they operate. To put it bluntly firms are generally quick to declare that poor performance is due to unfavourable macroeconomic conditions beyond their control but slow or completely fail to state that their good performance is down to at least in part a favourable macroeconomic environment essentially taking credit where it is not wholly due.

This argument does not mean that firm performance is completely at the whim of the wider macroeconomic environment but rather that it is part of and subject to it, and therefore it is a required duty of firms to transparently acknowledge both the good and the bad elements that macroeconomic conditions place on them. In extending this rationale it must also be noted that certain industries and firms are more exposed to the effects of the wider macroeconomic environment than others and therefore the macroeconomic effects whether they are good or bad will have varying degrees of influence on firm performance from firm to firm and industry to industry. Indeed one need look no further than Oxelheim and

Wihlborg (2012) in which their study reveals the immense differences in the macroeconomic exposure of the two US car manufactures GM and Ford who would naturally be expected to exhibit similar macroeconomic exposure profiles given that they have the same country of origin, operate in the same industry and are of a similar size. However the study appeared to show stark contrasts in exposure profiles of the firms. It therefore stands to reason that there is not a blanket effect upon firm performance as a result of the macroeconomic conditions which they face and as a result the firms should not be issuing boiler-plate statements regarding how their poor performance is a result of poor market conditions stemming from a poor macroeconomic environment. What is required is a distillation of firm performance free from the effects of the macroeconomic environment so that it is possible to accurately scrutinise firm performance free from the macroeconomic noise which distorts it. The distortion free firm performance may paint a starkly contrasted view to the distorted performance that firms report if for instance the market leader has had a highly favourable macroeconomic tail wind which has enabled them to outperform their market rivals but when this favourable tailwind is discounted from their performance they may have fared worse than their rivals who may have not been subject to the favourable macroeconomic conditions and yet were able to still compete without the added advantage of the macroeconomic tailwind or potentially even in the face of unfavourable macroeconomic headwinds.

As the above arguments show, there is a widening hole in the information which firms report and rely upon, the effect of the macroeconomic environment cannot and should not be overlooked given that it permeates through every facet of the business environment. This paper will consider the implications of the current narrow and distorted view that the benchmarking process has on firm performance.

The process for the distillation in the empirical analysis utilises observable price variables as gauges of macroeconomic circumstances. Variations in price variables like interest rates and exchange rates are straightforwardly witnessed without a relatively long lag in relation to macroeconomic developments. The method of analysis of these variables will be based upon the MUST (Macroeconomic Uncertainty Strategy) analysis (Oxelheim & Wihlborg, 2008) This analytical tool enables the weighing of a firm's intrinsic competitiveness and macroeconomic exposures. The disintegration is here applied to the quarterly Sales revenue of a small sample of Norwegian Offshore shipping companies for the period 2004-

2015. These firms share certain similarities in terms of country of origin, industry engagement and scope of international operations making them suitable benchmarking partners.

The remainder of the paper is organized as follows. In Chapter 2 the background on the topics and accompanying literature review is presented covering the macroeconomic uncertainty issues and the influence they wield over the management tool of benchmarking. Chapter 3 introduces the industry to be analysed in detail, Chapter 4 documents the methodological path utilised in this study. Chapter 5 discusses the results obtained from the analysis with the conclusion and policy recommendations following on in Chapter 6.

## **CHAPTER II: Background and Literature review**

### ***Recent developments in the macroeconomic environment***

The last couple of decades have been marked by a series of highly turbulent macroeconomic shocks that have impacted the global economy. In 2005 the economic outlook looked highly positive and commenced with optimistic views of global growth following a global growth rate of 4 percent the highest for some time, the president of the European Central Bank, Jean Claude Trichet, told a meeting of bankers on January 9th 2006 that global economic growth in 2006 could even exceed that of last year (Beams, 2006). Therefore it was fairly unexpected that such optimism would be so quickly dissipated by the fear and panic wrought by the onset of the global financial crisis of 2007-2008. This financial crisis largely considered to be the worst since the great depression of the 1930s, threatened the total collapse of large international financial institutions causing knock on effects in the capital markets, housing markets and labour markets. The lingering effects of the crisis resulted in the global recession of 2008-2012 and contributed to the ongoing European Sovereign debt crisis. One of the facilitators of the scope of the crisis is the increasing internationalisation of trade and capital which have made individual countries more susceptible to real and monetary shocks stemming from global markets (Oxelheim & Wihlborg, 2008). At firm level the macroeconomy is naturally beyond the scope of control of even the very largest of corporate entities however it remains of great importance to management given the influence of the macroeconomy on corporate performance. It is imperative that management are able to fully comprehend how much of their firm's performance is endogenously created as result of the competitive capabilities of the firm and how much is exogenously created as a result of the macroeconomic environment.

### ***The macroeconomic environment and the firm***

As stated by Oxelheim and Wihlborg (2008) when considering the varying influence of the macroeconomy on individual firm performance it is superfluous to make the distinction between international firms and domestic firms. Firms which are seemingly solely domestic in nature are nevertheless subject to global macroeconomic variables and the

shocks that they generate. A case in point could be a domestic producer with domestic sales that could be subject to competition from a new international market entrant via exportation channels. Changes in the exchange rate will have a large bearing on the performance of the entrant's competitive positioning which will undoubtedly thus have a bearing upon the established domestic firm. It is clear to see that although the channels of influence may vary substantially from firm to firm, industry to industry and indeed country to country, all are subject to the influence of the global macroeconomic environment.

### ***The macroeconomic variables***

The key macroeconomic variables to which firms are exposed to, are; the exchange rate, the rate of inflation and the interest rate. Fluctuations in these variables will then have a bearing on the aggregate levels of demand and supply and the level of competition.

### **The exchange rate**

As previously noted, all firms are exposed to exchange rate risk in varying forms and magnitudes but firms with operations overseas or those that undertake international trade are subject to the mercy of currency fluctuations more so. Changes in conversion rates can evaporate profits or vastly increase them. The fast changing currency market has the potential to make firms unwilling to undertake uninsured contracts months in advance for fears of the uncertainty involved when the payment is due. A UK firm making 10 million dollars may end up with much less than anticipated due to a movement in the UK/US exchange rate. A poll of 275 US firms by SunGard Data systems of varying size found that 59 percent of those surveyed had seen a gain or a loss greater than 5 percent as a result of currency fluctuations in the previous trade year (Euro Investor, 2012). The root-cause of these unanticipated changes in results is a failure to identify the firm's exposure from the outset with the result being confronted with it when the quarterly results fall. It is clearly imperative that firms assess and evaluate the macroeconomic risks their organisation faces and this involves taking a holistic analysis with the interdependences between the macroeconomic variables rather than only a narrow focus upon one. For instance McDonald's the global fast food behemoth experienced sales growth in Europe during 2011, however yearly profits were ultimately below the previous year due to a weakening euro which indicates that they failed to appropriately hedge against the macroeconomic risks to which they are exposed. Additional recent examples occurred at eBay, were CFO

Bob Swan admitted that currency fluctuations would hit the bottom line by around three points in 2012. In addition Ralph Lauren reported that currency fluctuations had gone in its favour in 2012, but that it expected a reverse in fortunes in 2013 (Euro Investor, 2012). These examples clearly demonstrate that even the largest organisations in all industries must be wary of the macroeconomic variables which they face and that even with the use of financial assets to hedge against the risk emanating from the macroeconomic variables there are no guarantees that they will provide the most efficient or successful option.

### **The interest rate**

Given that interest rates are predominantly dependent upon policy and expectations there is an inherent relationship to the business cycle and the resultant policy decisions depend on the policy regime and its rulebook. If the rate is used to fine tune the business cycle it will generally fall in recessions and rise gradually with recovery fostering a pro-cyclical pattern with the short run interest rate being much more pro-cyclical than the long term rate. However other policy rules result in different policy decisions such as inflation rate targeting, where in times of stagflation with depressed GDP growth and high inflation, interest rates may be high and a counter-cyclical pattern will be experienced. For firms, interest rates are an everyday part of business they pay interest on debt, and reap interest on deposited funds as well as charging interest to creditors and customers. With the central rate being the base for all others as well as a pulse monitor on the heartbeat of economic activity, all firms must pay due attention to this macroeconomic variable as it can wield great influence over their performance.

### **The rate of inflation**

Inflation levies a number of costs on firms and these companies will fare poorer if the rate of inflation is unpredicted, for example if firms forecast inflation of 2 percent but encounter inflation of 5 percent, the effect of the higher rate of inflation will be worse than if it was accurately anticipated. One of the costs of inflation to firms is menu costs, the costs incurred in changing price lists, although modern technology makes this easier, the higher inflation is, the more often price lists will have to be adjusted. Another important cost is uncertainty and confusion. If inflation is higher than expected, then the costs of financing will be changing frequently. This makes firms less willing to invest because they are uncertain over future costs and returns. This is particularly a problem with unexpected

cost push inflation increasing the price of raw material costs. Wage inflation may lead to the necessity of renegotiating wage deals with workers, these wage rises may be expensive or unfeasible in a climate of rising costs. Conversely there are also benefits to rising inflation such as the reduction in the value of debt. If firms have debt, inflation may reduce the value of that debt. In this case inflation is more desirable than deflation, where the real value of debt will be increasing. This also depends on interest rates which affect the real interest rate and further enhances the need for firms to assess their exposure to the macroeconomic environment in a holistic fashion.

Changes in the aforesaid macroeconomic variables will have an impact upon the aggregate demand, supply and competition conditions which firms face. Demand conditions are clearly important to the firm given that they determine the level of sales the firm is likely to face and what prices they are able to charge. Supply conditions influence the prices of their inputs and once again ease or inhibit their performance. Competition conditions provide the landscape in which the firm operates and has great influence over the performance of the firm. It cannot be underestimated how much the macroeconomic environment impacts the fortunes of the firm and it is therefore imperative that these macroeconomic distortions be filtered out from the firm's performance in order to realise the intrinsic competitive capabilities of the firm, it is only in this light that a true appraisal of performance can be undertaken.

Figure 1 below depicts the linkages between macroeconomic fluctuations and the cash flow effects on the firm. From the far left the demarcation between domestic and foreign, as well as between policy and non-policy generated disturbances is made. There is also a separation between firm and industry specific disturbances. Over to the far right, the cash flow effects on the firm that have a bearing on performance and risk can be found. The middle section of the figure portrays the possible policy reactions to macroeconomic disturbances which may take the form of monetary, fiscal or industrial and trade policies, accompanied by their respective 'rules' for policy responses taking the form of exchange rate regime, money supply growth targets, interest rate changes and such. These determine how particular fluctuations influence the macroeconomic variables. Uncertainty regarding the rules to address macroeconomic disturbances is a source of political risk.



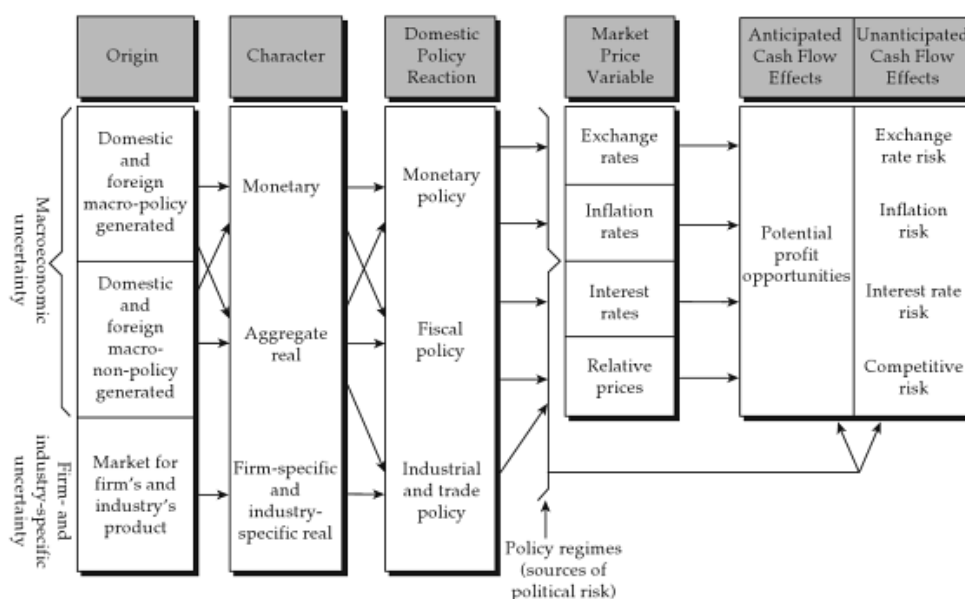


Figure 1 Macroeconomic shocks and the cash flow of the firm. (Oxelheim & Wihlborg, 2008)

## Measuring Macroeconomic Impact on the firm: A comprehensive Approach

Despite the fact that in well-functioning capital markets shareholders do not require firms to reduce the variability of their earnings on their behalf, it is common for the majority of international firms to engage in hedging all the same to address the effect of the macroeconomic variables on their performance. Unfortunately the measures of exposure utilised by firms is inherently weak from the outset given it being based upon accounting information rather than economic information, the use of inflation adjustment for instance is still yet to become a common feature of international management accounting and in addition the key macroeconomic variables are still examined and appreciated in an independent 'silo' fashion when their true impact can only be revealed with an interdependent appreciation of the effect they provide together. Accounting values are able to easily capture the effects of changes in exchange rates and interest rates through orthodox transaction and translation measurement but fail to appreciate the wider effects on the firm of fluctuations in these variables which cannot be realised in the accounting data instantaneously.

The MUST analysis of Oxelheim and Wihlborg (2008) corrects for the pitfalls of the conventional accounting approach as the information this analysis provides enables the

firm to adopt liability positions to be as efficient as possible in setting the level of exposure in their total cash flows.

### **Where does the 'extra' value accrued from a macroeconomic tailwind go?**

One of the important issues with the current system of reliance upon accounting information with little or no acknowledgement of the interdependencies of the macroeconomic variables is that it is not possible to acknowledge where the firm's individual intrinsic competitiveness ends and where the effects of the wider macroeconomic environment begins. In this fashion it is not possible to see how effective and efficient the firm really has been. In cases where there is a sizeable portion of the firm's success can be attributed to changes in the macroeconomic variables providing a generous but temporary environment for the firm's operations, there is an issue in regards to what happens to extra value that the firm is in receipt of due to favourable economic trading conditions. If this is wrongly perceived by the management as an improvement in their core competencies and thus as part of their intrinsic competitive capabilities, it could be that this extra value could be wrongly issued to key personnel in reward for a seemingly well done job when the truth is that there was little or no control over the generation of said value by the management. The reverse situation of this example is also true where a reduction in firm value that can be largely attributed to fluctuations in the macroeconomic variables creating a temporary hostile macroeconomic headwind for the firm, but said reduction in firm value is wrongly perceived to be the fault of the managements. It is easy to see that there is a need for a more transparent and comprehensive approach to measuring macroeconomic risk exposure to the firm.

### **The holistic approach to macroeconomic exposure: Enterprise-wide Risk Management (ERM) and Integrated Risk Management (IRM)**

As aforementioned there is demand for greater macroeconomic risk management and for it to be as effective as is possible then it should utilise a broad approach encapsulating the financial, operational and strategic considerations. In addition the interdependence among the macroeconomic sources of risk must be considered, namely the exchange rates, interest rates and rates of inflation. Two well-known systems utilising holistic approaches to risk management are Integrated Risk Management and Enterprise-wide Risk Management. Outdated methods on the treatment, of for instance, exchange rate risk concentrated on transaction and translation exposures and depended on accounting data to a large degree

(Oxelheim, Wihlborg, & Thorsheim, 2012). The consequences of exchange rate variations on cash flows through price and sales effects were seldom deliberated (Miller, 1998; Oxelheim & Wihlborg, 2008). Archaic methodologies of handling interest rate risk were equally inadequate to managing risk of interest rate linked financial positions, in this way the linkages between risk and strategy were essentially separated by a chasm of indifference.

The evolution of the risk management proposition has facilitated the fairly contemporary concept of 'strategic risk' (Selim & McNamee, 1999) The long gone fractured 'silo' approach to the management of risk, kept an extremely narrow and pragmatic view of risk management with each individual cost or profit centre addressing their own and primarily recoverable risks. The use of these traditional techniques resulted in the tactical rather than strategic undertaking of hedging contracts which could straightforwardly address the exposures (Oxelheim et al., 2012). Interdependencies between the numerous macroeconomic variables were of no consideration and the effect on the firm's commercial cash flows to the variables was not within the remit of risk managers and as a result was never considered or quantified.

Integrated Risk Management has been considered to be superior to traditional risk management in terms of value creation in financial firms, however there is consensus lacking regarding its potency in non-financial firms (Hoyt & Liebenberg, 2011) Proponents claim that firm-wide implementation of IRM is pursuant to a source of value in its' own right given the heightened awareness of the risk exposures permeating the firm (Nocco & Stulz, 2006) However opponents raise equally valid issues centring on implementation problems. Meulbroek (2002) Stresses the mishaps related to the synchronisation amongst diverse facets of a firm. Nocco and Stulz (2006) Highlight the problems in sharing the strategy all the way through a firm. CFO-Research-Services (2002) Demonstrate that insufficient information systems are one of the main obstructions to instigating a strategic risk management program. A survey from 2005 shows that CFOs are lacking information to guide strategic decision-making (CFO-Research-Services, 2005).

The Enterprise-wide approach to risk management was borne from the gradual evolution of risk management, as a greater appreciation of the sources of various risks facing the

firm grew. The interdependencies between the risks were recognised and were no longer mutually exclusive, the firm's total risk exposure is recognised and risk management is linked to both corporate governance and the strategic objectives.

In defining the macroeconomic risk analysis the primary concern is the sources of risk and the wider influence of these sources upon the financial, product market, operational and input exposures. The firm needs to embrace the macroeconomic exposures through a robust framework, namely the MUST analysis given its' ability to appreciate the firm-wide impact of macroeconomic variables as well as the all-important yet often overlooked, interdependence amongst said variables. The MUST analysis framework should be an integral part of the holistic risk management process.

The aforementioned frameworks hold a common focus on the connection among risk management and the strategic process. Therefore, the risk management strategy ought to be advanced to support risk strategies, business objectives and key strategies (Frigo, 2008). In addition integration with the performance measurement system (Cokins, 2009) and executive compensation system (Aureli & Salvatori, 2012) The strategy should be supported by meaningful data which provides an accurate depiction of the firms risk profile, namely the MUST analysis framework. The subprime mortgage crisis and the impact on world credit and financial markets is a clear indication the systemic mispricing of risk can have significant macroeconomic consequences (Simkins & Ramirez, 2008)

### ***Introduction to Benchmarking***

As aforementioned there have been dramatic fluctuations in the global economy facilitated by open economies and rising global competition. Therefore there is a need for firms to have exceptional quality, be first movers or early adopters to technological advances and have lower costs than their rivals. In this regard benchmarking has been see as a key facilitator of these desirable attributes fostering processes enabling continuous improvement and innovation.

Benchmarking can be an informal or formal exercise, although informal benchmarking can assist in improving performance, to truly leverage the benefits which benchmarking

provides the efficient firm will adopt benchmarking as a formal process structured throughout the organisation.

Generally speaking a formal benchmarking process takes the firm through the following steps:

- An examination of their own firm scrutinising for areas of improvement;
- Identification of similar benchmarking partners, namely firms that appear to be performing better;
- In depth study of said better performing firms to try to find out what it is that the firm does better;
- Comparison of the performance of their own firms and the benchmarking partners to understand and explain the reasons for differences;
- Planning and introduction of changes to the firm based on what they have learned.
- Continuous evaluation of the benchmarking firms to learn and implement better processes.

Formal benchmarking provides a standard for comparison. It can be applied to compare the performance of any firm with a more successful firm; compare the past performance of a firm; compare a strategic plan with the actual outcome; compare production levels to check if the firm is technically efficient; compare production costs to check if the firm is economically efficient and examine the production and marketing processes to determine if they are sound;

### **Internal versus external benchmarking**

Internal benchmarking takes place when the performance of the firm is compared with itself. This is an internal assessment of past results to establish ways to improve. Over time the firm is analysed, performance is measured, weaknesses and opportunities are identified, and on this basis enhancements can be made. This process is facilitated greatly through technology and robust benchmarking framework imbibed throughout the firm. Results of internal benchmarking can often be retrieved fairly rapidly. The challenge is to know what the firm can learn from itself in order to improve performance once these lessons have been learned. The solutions for greater performance however, often lie beyond the individual firm boundaries and therefore the natural extension is the use of external benchmarking.

External benchmarking involves comparing the performance of the firm with the performance of other firms that have similar enterprises. The benchmark may be competing firms or simply successful ones which have demonstrated exceptional management and market practices. Either way, the leading benchmarked firm serves as a demonstration of how things should be done. They can be studied, learned from and emulated (Depending on the particular attributes of the enterprises and operations that are being examined).

### **Proponents and Opponents to Benchmarking**

Although there are numerous and notable examples of proponents of benchmarking, there is one whose successful use of benchmarking to revolutionise the prosperity of a stumbling enterprise makes him exemplary, Dr Jan Wallander was a staunch supporter of benchmarking and an equally staunch opponent of budgeting. When recruited as CEO of the Swedish Handelsbanken in 1970 his first radical act was to abandon the imbedded budgeting processes in favour of internal and external benchmarking as a means to measure and judge relative performance of the firm as a whole and of the constituent parts. The systems he employed were based around a philosophy of internal decentralisation so that each branch and function was effectively competing against one another whilst still retaining a strong teamwork philosophy. External benchmarking played the crucial role of evaluating the performance of the central organisation, functional departments such as the legal department where benchmarked against external law firms. His methods steered the bank back on course and still they retain a prominent profile against their peers.

That being said, aside from the macroeconomic weaknesses embodied in the current approach to benchmarking, which this study aims to reveal, there are numerous additional issues which present cause for concern. A major constraint of benchmarking is that although it supports organisations in determining the proficiency of their operational metrics, it remains short in the ability to measure the overall effectiveness of such metrics. Benchmarking exposes the standards attained by competitors but does not consider the circumstances under which the competitors achieved such standards. If the competitor's goals and visions were inconsistent or severely constrained due to some unambiguous factor or macroeconomic factors, an organisation by benchmarking such standards runs the risk of trying to reproduce such flawed standards or settling for particularly low standards. A greater disadvantage of benchmarking is the danger of complacency and egotism. Many

organisations incline to relax after surpassing beyond competitors' standards, allowing complacency to cultivate. The realisation of having become the industry leader soon leads to arrogance, when extensive scope for further improvement residues. Finally, many firms make the error of undertaking benchmarking as a separate activity. Benchmarking is only a means to an end, and it is valueless if not supplemented by a plan to revolutionise the firm based on the information gleaned from the benchmarking exercise.

Comparing the pros and cons of benchmarking, the advantages of benchmarking overshadow disadvantages. The 2008 Global Benchmarking Network survey finds firms favouring benchmarking over any other performance analysis tools, including SWOT. The majority of organisations include benchmarking as a part of their slate of continuous improvement initiatives such as Total Quality Management and Six Sigma.

The popularity of benchmarking has been high for the past two decades given that the practical relevance of it as a useful management tool is undisputable. It enables the highlighting of best practices and the processes enabling their creation (Anand & Kodali, 2008) Jarrar and Zairi (2001) Carried out a survey of 227 organisations across 32 different countries which concluded that benchmarking is being used across the majority of sectors, including, manufacturing, health services, insurance services, financial services, construction and government. A survey carried out by Korpela and Tuominen (1996) among Fortune 1000 companies showed that 65 percent of organisations use benchmarking as a management tool in order to obtain competitive advantage. In similar fashion, the Chambre de Commerce et d'industrie in France carried out a survey enabling them to estimate that 50 percent of the 1000 companies used benchmarking on a regular basis and that of them, 80 percent believed it to be an effective means of facilitating change (Maire, Bronet, & Pillet, 2005). These studies indicate that benchmarking is regarded as key and effective management tool across a wide range of organisations, countries and industries.

### **The definition of Benchmarking**

Although there are numerous definitions of benchmarking, a commonly quoted one is "Benchmarking is the search for the best industry practices which lead to exceptional performance through the implementation of these best practices" (Camp, 1989). A more recent definition of benchmarking states that "It is the process of identifying,

understanding, and adapting outstanding practices from organisations anywhere in the world to help an organisation improve its performance. It is an activity that looks outward to find best practice and high performance and then measures actual business operations against those goals (Motwani, Sower, Kumar, Antony, & Dhakar, 2006). There are many definitions in the academic literature (Nandi & Banwet, 2000). Indeed Spendolini unearthed 49 definitions for benchmarking, however there are popular and recurring themes which prevail, such as; measurement, comparison, identification of best practices, implementation and improvement (Anand & Kodali, 2008). Maire et al. (2005) Have proposed that the multiple definitions which were proposed express various stages in the evolution of benchmarking and based on the definitions they have concluded that benchmarking passed four important stages of evolution depicted diagrammatically in Figure 2. Below.

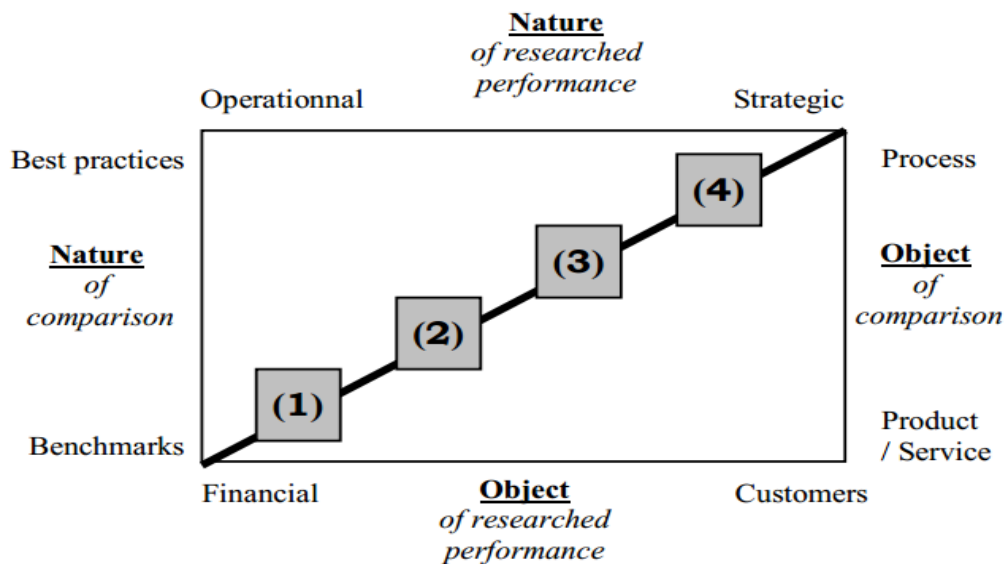


Figure 2. The Evolution of Benchmarking (Maire et al., 2005).

- i. Stage 1 concretising the passage of a priority given to the benchmarks to a priority given to the action, i.e. the benchmarking.
- ii. Stage 2 concretising the passage of a products/services performance evaluation to an evaluation of process.
- iii. Stage 3 conveying the transformation of an evaluation rather based on financial indicators towards an evaluation integrating measurements in connection with the satisfaction of the internal or external customers.
- iv. Stage 4 conveying the passage of a comparative evaluation of process (operational benchmarking) to a comparative evaluation of strategies (strategic benchmarking).



Previous studies of benchmarking regarded it as a major investment, requiring immense amounts of resource and time and therefore should be carried out fastidiously (DeToro, 1995; Vaziri, 1993) Consequently earlier articles were highly geared towards organisational preconditions and standards for successful benchmarking, including:

- Focus on customers, employers and continuous improvement (Vaziri, 1993).
- Strategic focus and flexibility, management support, willingness to change and share information (Elmuti & Kathawala, 1997).
- The demand for quality and clear communication organisation wide, process understanding and commitment (Pryor & Katz, 1993).

More recently, the focus of benchmarking literature has evolved to confront issues regarding the enhancement of the benchmarking process concentrating on the in-depth study of benchmarking to highlight the missing linkages. Dattakumar and Jagadeesh (2003) Find support for this stating, "...it can be said that the benchmarking technique has seen a steady growth and appears to be heading towards maturity level, considering the gamut of publications". Although it appears that academic research and publication of benchmarking technique is now saturated, there is little or no research which draws a linkage between benchmarking and the macroeconomic environment which distorts it, this paper will attempt to address this issue and may provide a next step in the evolution of the benchmarking process.

## **Models of benchmarking**

Benchmarking has evolved from a, "...continuous and systematic process of evaluation of the products, services" to a "continuous process of identification, learning and implementation of best practices in order to obtain competitive advantages, whether internal, external or generic" (Anand & Kodali, 2008). Elmuti and Kathawala (1997), state that the benchmarking process should provide the basic framework for action, with flexibility for modification to meet individual needs. The model chosen by the organisation should be clear and basic, emphasising logical planning and organisation and establishing a protocol of behaviour and outcomes.

According to Bhutta and Huq (1999), benchmarking can be carried out in many steps; some companies have used up to 33 steps while others have used only four. Consequently,

in addition to the Xerox pioneering ten-step benchmarking process (Camp, 1989), there is the Fifer (1988) seven-step process, the Spendolini (1992) five-step process, IBM's five phase/14-step process (Eyrich, 1991), Alcoa's six-step benchmarking, AT&T's 12-step benchmarking process (Bemowski, 1991) and many academicians too have proposed their own models, which were even later modified and adapted for different benchmarking situations. For example, Boxwell (1994) has suggested an eight-step benchmarking process, which has been used by Nath and Mrinalini (1995) to benchmark R&D Organisations. Sole and Bist (1995), modified Spendolini's five-step process by adding one more step and emphasised that benchmarking assumes continual improvement as the goal of all corporations using the process and hence ensured that their model is circular. Similarly, Andersen and Moen (1999) have identified 60 different existing models developed and proposed by various academics, researchers, consultants and experts in the field, while they were designing a new model, the benchmarking wheel depicted below in figure 3.



Figure 3 The Benchmarking wheel

Franceschini et al. (2006), reviewed some of the benchmarking frameworks and classified the same into the following – academic/research-based models and consultant/expert-based models. The same categorisation scheme has been extended further by Anand and Kodali (2008) who include one more type called industry-based models. A brief definition for each categorisation scheme is shown below:

- Academic/research-based models. These are the models, which are developed mainly by academics and researchers mainly through their own research, knowledge and experience in benchmarking. In these models, the academic/researcher tend to look at it from theoretical and conceptual aspect, which may or may not have been implemented and validated through real life applications.
- Consultant/expert-based models. These models are developed from personal opinion and judgment through experience in providing consultancy to organisations embarking on a benchmarking project. These models would be adequately tried and validated through implementation in the client's organisation and hence the approach taken by consultant/expert tend to be more practical oriented.
- Organisation-based models. These are the models, which were developed or proposed by organisations based on their own experience and knowledge. They tend to be highly dissimilar, as each organisation is different in terms of its business scope, market, products, process, etc.

In addition to the above-discussed variations, a cursory review of the benchmarking models revealed that they are highly dissimilar in terms of number of steps, number of phases and application. This has resulted in another problem for the practitioners when it becomes necessary to choose a particular model for benchmarking. Since each model has been customised for a particular application or for particular classification scheme of benchmarking, practitioners may also encounter the dilemma of whether the model chosen by them is appropriate and whether will it satisfy their requirements.

In this paper, it would be impractical to cover all the available models and therefore the Xerox model has been chosen. The reasons for choosing the Xerox model for benchmarking are as follows:

- In the earlier study, (Zairi & Leonard, 1994) highly rated Camp's model (which they identify as the "Xerox" methodology). They stated that all of the processes

they examined contain planning or preparation, analytical, integration and action phases and concluded that “most, if not all, of the methodological approaches (i.e. models) are preaching the same basic rules of benchmarking, but using different languages”, and that “most methodological approaches are based on the Xerox approach, which is considered to be an effective and generic way of conducting benchmarking projects”.

- The literature review also revealed that the Xerox benchmarking process model has been greatly quoted and mentioned throughout the literature. Hence, it is assumed that it is at least one of the most commonly used models by the practitioners.
- Further, the Xerox model has been used for quite a long time without any significant refinement. Hence, it was felt that it should be enhanced through the addition of macroeconomic framework.

Considering these facts, the Xerox’s benchmarking model, shown below in figure 4. Has been chosen for benchmarking the firms to be analysed, however given that the benchmarking process will be modified from a Consultant/expert/organisational model to an Academic/research-based model that will be utilised in a theoretical capacity and will not be practically applied to the industrial setting which it analyses, certain steps will not be relevant or applicable to this study.

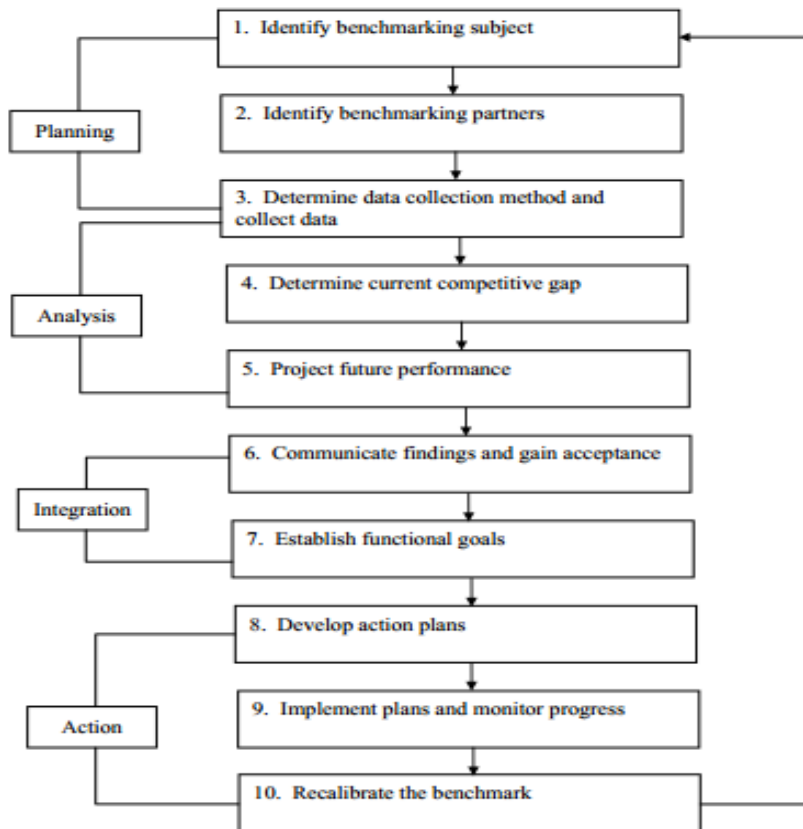


Figure 4 Camp's Xerox benchmarking model (Camp, 1989)

## Benchmarking firms through ratio analysis

It has become a common feature of external benchmarking that firms are compared through ratio analysis, indeed the PWC Annual Shipping benchmark utilises financial ratio analysis as the basis for financial analysis of the global shipping industry. The use of financial ratio analyses is advantageous for many reasons;

- it can provide a straightforward way of synthesising the volume of information contained in the financial statements produced by firms,
- it facilitates the comparison of companies with differing scales of operation,
- it enables trend analysis of firms over a defined period of time, and
- It emphasises the key information in a simple form enabling users to make judgements on a firm by looking at a few pieces of information as opposed to digesting the entirety of a financial statement.

However there are drawbacks to the use of financial ratio analysis some of the most potent being that;

- Different firms operate in different industries each facing different environmental conditions such as regulation, market structure, etc. Such factors are so substantial that a comparison of two companies from different industries may be misrepresentative.
- Financial accounting data is affected by approximations and assumptions. Accounting standards allow different accounting policies, which blights comparability and therefore ratio analysis is less expedient in such conditions.
- Ratio analysis clarifies relationships between past information while users are more concerned about current and future information.

In the context of this paper the most relevant and important limitation of ratio analysis is that it fails to consider the firm-specific macroeconomic environment which all organisations face, in this way the inherent weakness of ratio analysis is that it is based on incomplete information given that accounting data is in itself incomplete. Accounting information is naturally subjective given the breadth of interpretation afforded to the principles and rules, substantial steps have been taken to bring the body of accounting under one standard with convergence with the IFRS standards being the frontrunner of this movement. However there have been little or no attempts to address the firm-specific macroeconomic exposure effect on performance and although it is fairly common to see macroeconomic commentary feature in quarterly and annual accounts, the information presented is usually far from complete in encapsulating the dearth of macroeconomic risk exposure borne by the firm.

Investors and analysts have a need to comprehend the risks a company takes and faces in its endeavours to create value and they have a need for data on the viability of current value-creation strategies. The desire for increased corporate risk disclosure has been noted in surveys of key institutional investors (pension funds, investment trusts, unit trusts, and insurance companies) the results of which highlight the thirst for enhanced corporate risk disclosure (Solomon, Solomon, Norton, & Joseph, 2000). It is therefore imperative that the senior management team are positioned well enough to ensure external stakeholders that the risks and uncertainties facing the firm are appropriately considered (DeLoach & Andersen, 2000). In regards to the macroeconomic exposure of the firm, the management team must ensure that they have the means and methods to assess how their performance will be influenced by the macroeconomic environment, in this way they are better

positioned to communicate this information to the external stakeholders. This necessitates not merely the enactment of firm-wide risk-management systems, but also efficient and clear channels of communication about the risks influencing a firm's strategies and the arrangements management intends to take to exploit on emergent prospects as well as to curtail the risk of failures (Beretta & Bozzolan, 2004).

### **The Corporate Governance implications of the current approach to benchmarking: A issue of transparency**

As aforementioned the current approach to benchmarking and the data which underpins this method of firm performance analysis is inherently flawed. The feasibility of obtaining true depictions of relative performance is weak. For analysts and investors alike the incomplete information issued to the market is perpetually asymmetric in nature.

This naturally raises the question of transparency. Given that the information and protocols required to quantify and appreciate the amount of firm performance that is attributable to favourable macroeconomic tailwind or unfavourable macroeconomic headwind is rarely appreciated in a holistic fashion within the firm, the chances of it being shared externally are finite.

Regardless of the burgeoning body of literature that emphasises the innumerable benefits of organisations and industries alike of enhanced information disclosure, it is common occurrence that organisations wish to reduce the opportunity of releasing sensitive information they deem as proprietary (see Lambert, Leuz, & Verrecchia, 2007). Yet this monopolisation of macroeconomic information disables stakeholders from obtaining an undistorted view of firm performance and serves only compound the costs associated with information asymmetry. As previously stated the enactment of the International Financial Reporting Standards aims to reduce information asymmetry through enhanced transparency unfortunately this remains to address the issue of macroeconomic transparency. The chances that a constant body of reporting principals and standards, adapted to the distinct complexities of differing countries will enable external stakeholders to gain a true grasp of the macroeconomic exposures facing a firm are slim. Additional devices are required, at least two types of information requirements must be fulfilled in corporate reporting from an outsider's perspective (Oxelheim & Wihlborg, 2003) Initially, the information must permit ex post control, evaluation and taxation. Furthermore, it ought to enable outsiders to create suitable risk and value calculations for extrapolative

resolutions. Short of a systematic classification method and the appraisal of the connection concerning the macroeconomic environment and corporate performance, these information desires can simply be marginalised (Oxelheim & Wihlborg, 2003).

Taking the perspective of the firm, inadequate release of information can fashion information asymmetries and adverse selection, which in turn leads to negative impacts upon the cost of capital (Lambert et al., 2007; Leuz & Verrecchia, 2000; Verrecchia, 2001). Supplementary to firm-specific effects, insufficient transparency also has market repercussions. The uncertainty emerges through the cumulative cost of capital (Lambert et al., 2007). Oxelheim (1997) contends that sub-standard corporate transparency diminishes economic growth by means of a higher cost of capital and declining investment rates. For that reason, inducements do exist for divulging the information required to make suitable conclusions vis-à-vis intrinsic competitiveness, regardless of whether there are proprietary costs implicated (see Leuz & Verrecchia, 2000).



## CHAPTER III: Industry Summary

In order to practically illustrate the theoretical concepts discussed in this paper an industry has been identified for in depth analysis. The international offshore service industry has been selected in this case. This industry has been selected for a number of reasons, given its ample international presence making it highly susceptible to macroeconomic exposure, the value of the industry to the Norwegian economy and the number of firms with seemingly similar types of operations, scale of operations and capital structures makes the application of an external benchmarking model also appropriate. The offshore service industry is a key component of the maritime sector in Norway, a sector that is characterised by innovation clusters and is possibly best recognised as being one of the greatest in the world as a result of the country's vast merchant marine fleet. In addition Norway also boasts an extensive maritime industry comprising of an abundance in shipyards, ship equipment manufacturers, and ship consultants, and a glut of supplementary organisations and firms with maritime oriented pursuits. The aggregation of these players sum to the essential components of the Norwegian maritime cluster. Resilient interconnections between players in diverse fragments of the sector and a prominence of innovation and entrepreneurship have traditionally underwritten a strong and dynamic industrial cluster.

The offshore service industry is defined by firms which have operations in assisting other firms in offshore related activities, specifically oil and gas exploration, drilling, and other offshore projects, consequently there is a high correlation and dependency between the oil price and the oil and gas equipment sector, which contains the marine sector also. Subsequent to a peak in oil prices in early 2008 of around 150 USD per barrel, the realisation of the scale of the global financial crisis is portrayed by a sharp decline in oil prices thereafter as can be seen in figure 5. Below.

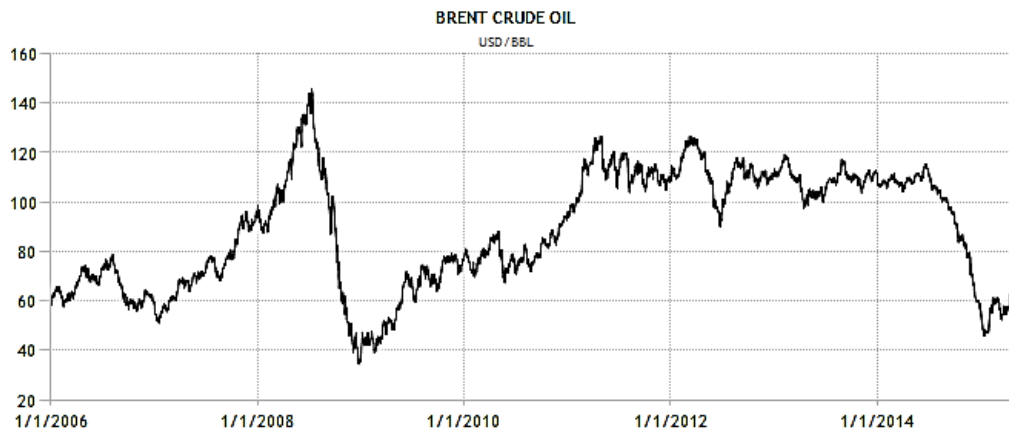


Figure 5 Brent Oil Crude price historical data ([www.tradingeconomics.com](http://www.tradingeconomics.com))

In depicting the linkage between oil prices and energy and power production the average daily oil production for Norway between 1999 and 2015 is shown in figure 6. Below.

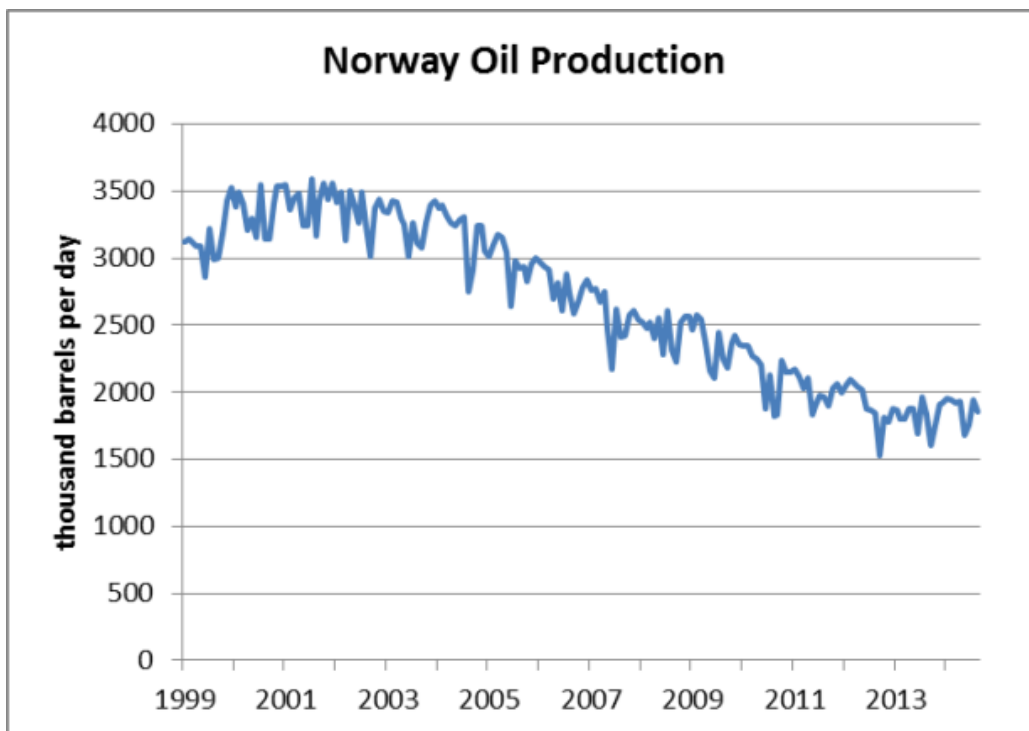


Figure 6 Norwegian oil production ([www.oilprice.com](http://www.oilprice.com))

Oil production has gradually declined in Norway since around 2001, and has accelerated at alarming pace due to a number of factors such as falling oil prices, see the sharp decline in 2007, as well as rising costs and dwindling reserves. Lower oil prices are conducive to lower levels of production, which has the knock-on effect of diminishing voluminous

offshore activities such as exploration and appraisal. This serves to further reduce the demand for supply service vessels.

In basic terms, the need for supply vessels grows when the oil price is high and the reverse of this relationship is also true. In actuality the relationship is naturally much more complex given the individual characteristics of the firm and the nature of the contracts which are entered into. The supply vessel firms own and operate a fleet of distinct supply vessels. This fleet is then commissioned out to separate oil companies with varying demands which these supply vessels address. The accompanying contractual obligations have various durations and could run for months or years with the potential for extension and therefore such contracts will be less susceptible to fluctuations in the oil price. Nevertheless large price adjustments as those currently taking place will no doubt have a bearing on long term contracts possibly resulting in early conclusion, bad debts or non-extension.

The primary aim of these companies is to reduce the rate of redundancy for the vessels in order to achieve viable rates. To safeguard the firm's ability to meet peak demand in periods of intense offshore oil and gas activity, new builds are commissioned. Regrettably, these new assets are not freely obtainable, increasing the pressure faced by current vessels, as well as resulting in an overcapacity of vessels during periods of depressed activity in the oil and gas sector.

Vigilant analyses are thus essential to guarantee that supply and demand for supply vessels are in harmony. Prior to the financial crisis there was high demand for offshore supply vessels and therefore many new builds were commissioned, excess supply is symptomatic of the industry given the need for maintenance of the assets, however the size of the oversupply to the industry can prove problematic for the firms going forward

### ***Firm Summary***

The Norwegian offshore fleet is the world's second largest and most up-to-date. The shipping firms partake in all segments of petroleum activities: beginning with preliminary seismic surveys to production and lastly retiring of non-producing fields. The shipping

companies are closely incorporated with small coastal communities and are fundamental for employment and value creation in Norway's regions. The offshore shipping companies are developing an ever more imperative piece of Norway's maritime industry.

Collectively, they command the world's most innovative offshore fleet, consisting of some 500 ships, of which around 60 per cent sail under the Norwegian flag (Norwegian Shipowners Association, 2014). Recently the fleet has been considerably internationalised, with more than half of operating revenues now derived from beyond the Norwegian Continental Shelf; in Asia, in Latin America and in Africa (Norwegian Shipowners Association, 2014). It is predicted that this is a development that will persist given the gradual decline of domestic oil production. In practice this results in one in four offshore service vessels in Brazil is controlled by Norwegian owners. In macroeconomic terms this serves to only further increase the degree of macroeconomic exposure faced by these firms and consequently it makes a study of this nature ever more relevant.

### ***Current benchmarking frameworks for the industry***

The Norwegian offshore shipping industry has been appraised previously in many studies and professional reports, for example, in benchmarking the Norwegian offshore shipping companies in terms of their contribution to the Norwegian economy as a whole, the Norwegian Ship-owners association utilise value creation as their measurement of choice. The define value creation as the following; Value creation is calculated quite simply as the company's turnover less the cost of goods and services purchased. This also means that the company's value creation is equivalent to payroll costs plus earnings before depreciation and amortisation (i.e. EBITDA, Earnings Before Interest, Taxes, Depreciation and Amortisation). The maritime industry's value creation is therefore the sum of payroll costs and EBITDA of all the constituent companies. (Norwegian Shipowners Association, 2014) The two reasons why they opt to use value creation are that; firstly, goods and services are accounted for only once, which makes it meaningful to compare value creation across industries. It also provides a good picture of how society profits from the business activity. This is because value creation captures disbursements to the industry's key stakeholders, i.e. employees through salaries, the municipalities and the state through income tax, employers' charges and corporation tax, creditors through interest on loans, and finally owners through profit after tax.

As previously noted there are inherent weaknesses in measuring firm performance based on accounting information which is unadjusted to the effects of the macroeconomy and given that the value creation method as defined above is based upon the accounting measurement of EBITDA then it is unlikely that the true value that the industry generates is fully comprehended. Unfortunately the Norwegian Ship-owners Association are not alone in their use of performance measures which are inadequate in appreciating firm-specific macroeconomic exposure. For instance the global professional services firm PricewaterhouseCoopers conducts an annual Global Shipping Benchmark analysis which pits major shipping segments against one another as well as measuring the performance of the firms within the segments. Their financial benchmark analyses key performance indicators (KPIs) of firms in various subsectors of the shipping industry, specifically container, tanker, dry bulk, offshore, ferries and miscellaneous (firms participating in multiple sectors of the industry) The benchmark analysis measures more than 150 firms, the data used for the financial analysis is obtained from the publicly available financial statements. The rationale of their benchmarking analysis is determining the financial performance of separate companies in subsectors, equating performance among subsectors and the general shipping industry and recognising developments and changes. The methodology of the financial benchmark determines the financial performance of the shipping companies through measurement of the following KPIs: “Profitability ratios RONO, being Return On Net Operating Assets, is one of the most important performance indicators for measuring returns on investments in companies. RONO measures returns on operating activities of a company. To calculate RONO the ratios ‘Working Capital/net sales’, ‘Net fixed assets/net sales’ and ‘EBIT/net sales’ are measured in our analysis. If a company has also invested money in other companies or granted loans, ROCE is another important performance indicator. ROCE, being Return On Capital Employed, presents total net returns on all assets, not just on operating assets. The following graph presents a breakdown of the components of RONO and ROCE.” (PricewaterhouseCoopers, 2013)

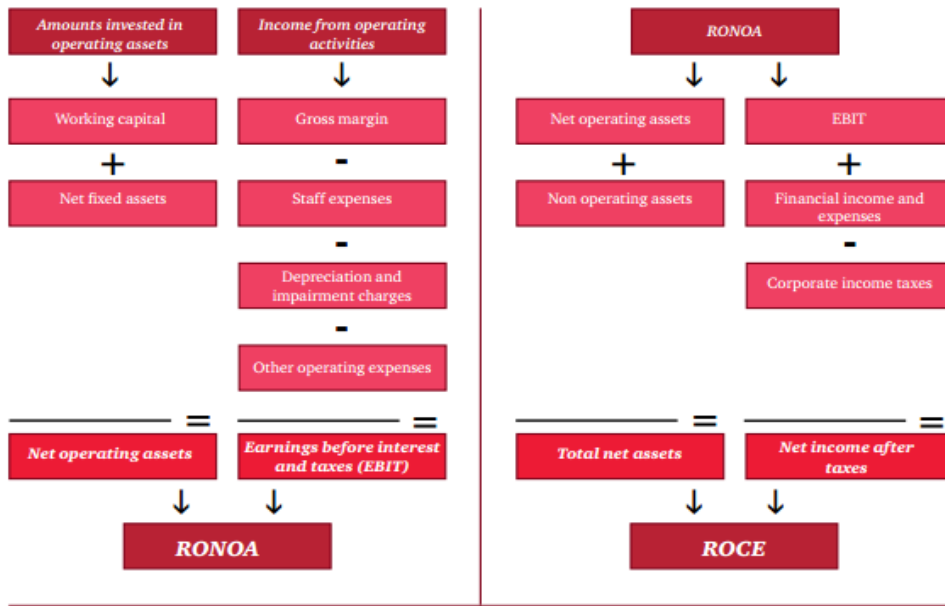


Figure 7 PWC Profitability ratio analysis (2013)

In addition to RONOA and ROCE their benchmark also measures the Return on Equity (ROE), as defined by net income after taxes over average shareholders' equity. As the statement and graphical representation above indicate, the entirety of the financial benchmarking analysis is predicated upon the use of accounting information, accounting information which has not been corrected for the bespoke influence of the macroeconomic environment upon each firm.

As the preceding examples demonstrate the use of value creation, and ratio analysis are tried and tested industry certified methods of performance analysis and it is for this reason that policy changes are required throughout the firm, institutions and professional bodies as it is only in this way that this vastly overlooked issue will be considered for the gravitas that it embodies.

## **CHAPTER IV: Methodology**

In choosing a research methodology in social sciences the question of whether a qualitative or quantitative method should be selected is a never ending cycle, this study has elected to utilise both in order to have robust body of data to draw conclusions from. A brief discussion of the characteristics of both approaches will now follow.

### ***Discussing quantitative and qualitative research***

Quantitative methods are frequently uniform procedures, trying to quantify collective phenomena through statistics and analysis of hypotheses via fixed variables. Due to the consistent measures they are applicable for reasonably large samples (Silverman, 2006) and assist in the finding of wide-ranging data (Patton, 2005). Opponents of quantitative methods might, nevertheless, contend that studies in this school of research incline to have little or no contact with the people and that variables may, likewise, be defined in a random way (Silverman, 2006). Additionally, some phenomena or social developments are simply not quantifiable through numbers, through statistics or with random samples. In such circumstances using quantitative methods might rather restrict the probabilities of determining several aspects of said phenomena (Silverman, 2006).

Qualitative research can be defined as “any kind of research that produces findings not arrived by means of statistical procedures or other means of quantification” (Strauss & Corbin, 1990). Consequently, the focus lies on in-depth perception of words, opinions and experiences rather than on numbers. Furthermore, qualitative methods are directed more toward the individual than on the common (Mayring, 2003). Qualitative research is mostly inductive. Although backed up with a theoretical framework, the data should be guiding the study, not a theory (Taylor & Bogdan, 1998). The condemnation concerning qualitative methods is frequently founded on the traits of reliability and validity.

Reliability signifies the problem of whether a replication by different researchers or by the same researcher at another time and place would come to the same result (Silverman, 2006). Accomplishing reliability is principally challenging in qualitative studies. Taylor and Bogdan (1998) Even go so far to say that “it is not possible to achieve perfect reliability if we are to produce valid studies of the real world”. Moreover, they state,

qualitative studies underline validity and they “are designed to ensure a close fit between the data and what people actually say and do” (Taylor & Bogdan, 1998) In qualitative interviews, reliability often creates a challenge due to “the data yielded are a reflection of the circumstances under which the interview is conducted” (Pole & Lampard, 2002). Reproducing the same interview could lead to dissimilar conclusions as a consequence of the varying context. However this doesn’t necessitate that qualitative researchers overlook reliability. Silverman (2006) Suggests potential procedures in order to accomplish a reliable qualitative research study, which have been adhere to in this thesis. It is recommended that investigators should demonstrate their research progression in addition to the selection of theory in an evident way thus that the steps made can be grasped, implicit and duplicated by others. Additionally, it is maintained that readers of a research report ought to be capable of retrieving the tangible observations formulated, not only summaries or generalisations. Following on from Silverman, this was considered in this thesis by voice-recording and transcribing the interview as well as including direct quotes from these transcripts into the analysis chapter of the thesis. Furthermore, pre-testing the procedures and mechanisms, can enrich reliability (Silverman, 2006) and has been done in this thesis.

The problem of validity is the question of if a study precisely computed what it proposed to (Silverman, 2006). In qualitative studies, and expressly in research utilising exploratory methods or grounded theory, the response to this subject is less clear than in quantitative research. Hence, for the validity of a qualitative study it is fundamental that the observations made, correspond to the theories that are developed out of them (Bryman, 2012).The findings of Pole and Lampard (2002) are consistent the recommendations of Dey (2003) to understand validity as looking at whether a study is “well-grounded conceptually and empirically” (Pole & Lampard, 2002) meaning that the superiority of the method by means of which an investigation was premeditated and accomplished encourages the validity of the investigation. Illustrations reinforcing the implication of the data ought to be provided and, as well as reliability, the context out of which the data was conducted needs to be deliberated (Pole & Lampard, 2002).

### ***Qualitative analysis: Semi-structured interview***

The rationale for conducting interviews in this study was the hope of gaining insight into the practical application of benchmarking within the firm and to gauge the relationship



between the macroeconomic exposure of the firm and the firm's appreciation of said macroeconomic exposure and whether this macroeconomic exposure appreciation transcended the generic. Generic being in reference to the frequently utilised hedging techniques now employed to limit the firm's macroeconomic exposure, usually at least in regards to foreign currency fluctuations. Interviews enable respondents to consider and judge on a variety of subjects in a different way than surveys or opinion polls which allows for a deeper insight into how they think and reflect. It goes without saying that such data is hard to come by and unfortunately only one firm of those considered for benchmark analysis in the study was available for an interview, however the information obtained from the face to face encounter was very enlightening.

### **Conducting the interview**

To supplement the quantitative data analysis of this study one professional from one of the firms included in the benchmarking analysis was interviewed. He was approached through a wider connection to the author's network and selected based upon his knowledge of the firm and industry, all potential candidates for interview were selected on this basis given the objective of the interviews is supplementary information to the quantitative analysis. The interview was conducted in English and voice recorded. The interview took place over two meetings at the office of the interviewee and each meeting took between 30 and 40 minutes.

### **Qualitative content analysis**

After conducting the interview it was transcribed in order to prepare it for the analysis. The methodology utilised by Mayring (2003) was selected on the basis of the robustness of the technique Mayring's qualitative content analysis is a methodology which strives to assess communication matter in a systematic way (Mayring, 2007). Due to the method aiming to emulate some of the positive traits of quantitative analysis it is can be perceived as reliable. It builds upon direction through procedures and respects the notions of verification, reliability and validity by applying these properties in an eloquent form in order for them to be practical in relation to qualitative data (Mayring, 2007). The first stage of qualitative content analysis, is the definition of the source material, namely the interviewee(s), the basis of sample selection, the rudimentary circumstances of the

interviews and how the text to be analysed was created (Mayring, 2003), these steps were carried out in the passage above.

Moreover, the central research problem of the study along with the theory underpinning it must be comprehensively defined and elucidated (Mayring, 2003) to permit clear a definition of the purpose of the analysis and to allow precise comprehension of the data. The research question and theoretical body have been established in the literature review of the study (see chapter 2) and were then included in the coding agenda (see appendix I). Furthermore, the mechanisms and procedures utilised for qualitative content analysis can by no means be absolutely universal given the inherent requirement that they must relate to the discrete material in addition to the research question. Consequently it is greatly advocated to test the cultivated techniques and mechanisms in a pre-test and amend them applicably (Mayring, 2003) as transpired in this thesis by means of the first interview. In keeping with Mayring (2003) there exist three rudimentary customs of understanding in qualitative content analysis, specifically: ‘summary’, signifying the reduction of the data ‘explication’, by discovery of additional material and ‘structuring’, meaning sieving central characteristics from the data.

In the case of the this qualitative content analysis, the prior specification of valid categories based upon the underlying theory and purpose of the interview enabled a clear and efficient route in the structuring and filtering of the pertinent content out of the material as a whole. Through the definition of the categories the statements obtained from the interview could be assigned accordingly. The synthesis of the categories progressed in an inductive manner however some categories emerged through deductive means by way of theoretical underpinning.

The culmination of this process resulted in a coding agenda which can be reviewed in appendix I. Following the development of the categories and coding agenda, the text was coded, the responses belonging to the emergent variables were then collated and structured accordingly.

### **Coding and content analysis**

The process for how the interview was translated into discrete contents for the study is as follows. The first stage was the creation of the thematic categories which were described in

the coding agenda. To distinguish between the categories, coding rules were created, as a result the author read the transcripts and highlighted statements of pertinence, and following this the content of the transcript was structured into thematic highlighting using a defined colour scheme.

Statements, opinions and quotes were retrieved based upon their thematic designation; abbreviating them into the category system. Some statements were direct quotations, however most were abridged and paraphrased in the author's own words. After coding the interview, the collected statements were analysed and interpreted (see chapter 5)

### ***Quantitative analysis: The Benchmark***

The empirical analysis of this study is the application of a benchmark which will be enhanced through the addition of the MUST analysis, enabling the identification of the individual firm-specific macroeconomic exposure profiles. The benchmarking process is depicted in the following phases and steps.

#### **Phase 1. Planning**

- *Step 1.* Identify the benchmarking subject. In this study the benchmarking subject is benchmarking itself namely to discover if firms which can conventionally be deemed benchmarking partners are so when emphasis is placed on their macroeconomic exposure.
- *Step 2.* Identify benchmarking partners. The benchmarking partners identified for this study are three Norwegian offshore shipping companies; Farstad Shipping, Solstad shipping, and Eidesvik. These firms are headquartered in the Western coast of Norway and are considered to be some of the largest offshore shipping companies in Norway with substantial operations abroad. Farstad, for example, derives around 80 per cent of its revenues from areas other than the North Sea and Solstad generates more than 65 per cent of its revenues from beyond the Norwegian Continental Shelf. To enable this study to be as robust as possible the number of benchmarking partners has been limited to three firms which is consistent with benchmarking theory that it is dangerous to consider too many benchmarking partners because it can complicate and thus reduce the effectiveness of benchmarking.

- *Step 3.* Determine the data collection method and collect data. For this study the data collection method will be a mixture of both quantitative information and qualitative information. Ideally the information would be obtained directly from the firms but failing that through the quarterly and annually published financial reports, key performance indicators of profitability such as sales revenue will be used. Some qualitative information will also likely be gleaned from the published reports.

## **Phase 2. Analysis**

- *Step 4.* Determine the current competitive gap.
- *Step 5.* Project future performance.

## **Phase 3. Integration**

- *Step 6.* Communicate findings and gain acceptance.
- *Step 7* Establish functional goals
- *Step 8* Develop action plan
- *Step 9.* Implement plans and monitor progress

As previously stated this benchmarking model is highly conceptual and it has not been validated by implementing it in an organisation and therefore steps 4-9 will be omitted from the study

- *Step 10.* Recalibrate the benchmark. Further studies can be carried out to improve upon the proposed model and new practices which may evolve in the future can also be incorporated

## ***Quantitative analysis: The MUST Analysis (Macroeconomic Uncertainty Strategy)***

The firm's long term competitive positioning can largely be credited to the entity's collection of skills and competence in comparison to the industry and its rivals. In comparison, the short-term effects can often be ascribed to influence of macroeconomic happenings which are most readily realisable in fluctuations in the major macroeconomic variables, namely the exchange rate, interest rates and the rate of inflation in domestic and foreign markets. As previously noted these wider macroeconomic events are beyond the control of the management of the firm however the actual effects of the macroeconomic

variables on the cash flows of the firm can be mitigated through the endeavours of the management team. In this regard it is therefore crucial for the management of the firm to have access to data which enables them to make insightful judgements and the decisions in order to better steer the future value of the firm.

Accordingly the distillation of beneficial information pertaining to current and future performance of the firm through the separation of the short term macroeconomic effects and the longer term firm capabilities will facilitate greater accuracy in the decisions taken by the management. The refinement of useful information enables the specification of firm performance under what can be described as “neutral macroeconomic conditions” (Oxelheim & Wihlborg, 2008). The functional definition of neutrality can be disputed but can be addressed through applied analysis with emphasis placed on performance related variables.

For instance if prospective investments are scrutinised based on forecasted cash flows without a demarcation of the sustainable demand and cost conditions and short-term demand and cost conditions predicated upon macroeconomic events, a potential positive project value may not be viable under ‘neutral’ macroeconomic conditions. Conversely where project projections are built upon observations made whilst negative macroeconomic conditions are taking place, it is possible that these projected values may fail to appreciate the project’s intrinsic value based on the long-term conditions of the firm and the market. In this case projects may fail to be instigated due to inference made from distorted data. A specific example in this situation could be the undervaluing of a currency which naturally leads the management of the exporting firm to extrapolate that it is competitive, however the distillation of firm profits from the currency undervaluation may reveal them to be falling. This temporary positive firm performance can have the knock-on effect of driving demands for wage and dividend growth which are not based on the firm’s intrinsic level of competitiveness but more so on the temporary positive tailwind effects of competitive macroeconomic conditions relative to rival market participants. Actions such as these serve to compound the cost to shareholders as a result of their incomplete knowledge of the transient macroeconomic conditions meaning the ultimate cost borne can be high indeed.

This paper carries the proposition of adjusting firm performance measures in light of the effect of macroeconomic events. Taking the perspective that the performance evaluation tool of benchmarking based on cash flows and values which are composite values of the long-term competitive capabilities of the firm and the short term effects of the macroeconomic environment, the resultant premise is that the information provided by this tool can be thought of as being contaminated with an unpredictable noise element.

This premise carries with it wider considerations such as the compensation packages of managers. The burgeoning body of incentive contract literature indicates that where the compensation package of the risk-averse manager is linked to factors outside their scope of control in absence of a clear and robust connection to the increase of shareholder value then the incentive to exercise fortitude on behalf of the shareholders can be diluted. Therefore from a benchmarking perspective, it is appropriate to distil the performance measures into the categories of the intrinsic capabilities of the firm and the extrinsic effects of the macroeconomic environment with the purpose of enhancing the incentives of managers. In this way they are able to properly analyse their firm's performance in light of the relative performance of their rivals.

The MUST analysis framework developed by Oxelheim and Wihlborg (2008) enables management to analyse the firm's exposure to the effect of the macroeconomic environment through interpretations of key macroeconomic variables, namely exchange rates, interest rates and rates of inflations in domestic and foreign markets.

One of the integral elements of the MUST analysis is the estimation of exposure coefficients within a multivariate framework (Oxelheim & Wihlborg, 2003), to assess the influence of the macroeconomic price variables on the commercial (non-financial) cash flows or the upon the value of the assets creating said cash flows. This paper proposes that these exposure coefficients are useful in a benchmarking context also.

The periodic cash flows can be allocated to two fragments, one fragment being the cash flows resulting under a hypothetical neutral macroeconomic environment in the countries of importance for the firm in question. These are the cash flows that can be ascribed to the firm's intrinsic competitiveness in the market and the corresponding market demand for their products and or services. These cash flows can be designated as 'sustainable' given that they are generated through the firm's proficiency in its operations as a result of the

level of innovation, technological inputs, the collective know-how of the employees and managerial aptitude to name a few key characteristics, and the corresponding the market response to said operations. Based on these key characteristics there can be said to be a determinate level of cash flows which can be deemed as the sustainable level occurring under the hypothetical neutral macroeconomic conditions. Although this sustainable level is generally not observed and cannot be deemed persistent, it can be regarded as autonomous to the effects of macroeconomic proceedings and is thus a portrayal of the capabilities management possesses in leveraging the resources under their control in a productive manner. Oxelheim and Wihlborg (2003) Assert that although this sustainable level is not willingly discernible it does not demonstrate that it is not a significant characteristic and go as far as stating that to the contrary it should be approximated by management and used as a strategic component in business decisions.

### **Econometric specification**

The aforementioned fragment of the cash flow decomposition, the sustainable level of cash flows can be denoted by  $X_L$  the second fragment of the decomposition are the cash flows which can be attributed to the macroeconomic conditions occurring in the countries of importance to the firm and can be denoted by  $X_M$  these cash flows could be positive, negative or essentially neutral but are by definition of a short term nature. Therefore:

$$X_t = X_{L,t} + X_{M,t} \tag{1}$$

Where  $X_t$  denotes the total cash flows of the firm in period  $t$  which is the aggregate value of  $X_{L,t}$  denoting the long term sustainable cash flows generated by the firm in period  $t$  and  $X_{M,t}$  is the short term cash flows resulting from the influence of the macroeconomic variables on the firm in period  $t$ .

Macroeconomic events, instigating variation in a firm's cash flows and economic value, can possibly be elicited through numerous policy and non-policy shocks occurring domestically or non-domestically. Monetary and fiscal policy shocks are the policy shocks frequently mentioned, whereas non-policy shocks can transpire through adjustments in private sector aggregate demand and supply. The cash flows produced by macroeconomic shocks could yield extensive influence on a firm's value in a period  $t$ . The clearest and most discernible way in which macroeconomic events are visible is in the fluctuations of

the macroeconomic price variables namely the exchange rates, interest rates, and price levels however the core macroeconomic events are generally indiscernible. In the majority of macroeconomic models the various shocks induce changes in price variables in varying ways and arrangements, the price variables are essentially reflections of macroeconomic conditions. The combination and effects of said price variables then impact each individual firm in a specific manner. For instance for one particular firm their exposure to the macroeconomic price variable of the exchange rate could be expressed in movements of the Norwegian kroner and the Euro in addition to the Australian dollar and the British pound and interest rate exposures to the London interbank offered rate as well as the long term Norwegian rate, with inflation exposure to European producer prices and Australian consumer prices. The required amendment to the commercial cash flows of said firm to realise the level of intrinsic sustainable cash flows under hypothetical neutral macroeconomic conditions in period  $t$  can be expressed as follows:

$$X_{M,t} = \frac{\delta X_M}{\delta e} (e - \bar{e})_t + \frac{\delta X_M}{\delta i} (i - \bar{i})_t + \frac{\delta X_M}{\delta p} (p - \bar{p})_t \quad (2)$$

In (2)  $(e - \bar{e})_t$ ,  $(i - \bar{i})_t$ , and  $(p - \bar{p})_t$  signify digressions from the exchange rates, interest rates and price levels which would be consistent with neutral macroeconomic conditions in period  $t$ . Respectively, these variables can be presented as vectors of domestic and foreign variables of consequence to a particular firm, the partial derivatives are tantamount to sensitivity coefficients carrying similar attributes to exposure coefficients.

Contrary to common exposure management systems in the majority of firms, the exposure coefficients in (2) encapsulate the explicit effect of each variable on cash flows in the period as well as the correlations between the variable and the additional macro effects. The general treatment of macroeconomic exposure management in most firms is to analyse the macroeconomic price variable effects in isolation when they often occur simultaneously. The fallacy of such actions has been criticised heavily by Oxelheim and Wihlborg (2003) who contend that it is in the best interests of firms to measure key macroeconomic exposure coefficients as those in (2) for the firm's specific macroeconomic exposure composition enabling them to utilise in multivariate regression or scenario analyses.



Equation (2) depicts the composite linear relationship between the key macroeconomic variables, the econometric and application concerns determine the exact nature of whether the estimated coefficients should be quantified in levels or proportional changes in cash flows and price variables, this study has elected to estimate the coefficients in measurements of proportional change. Alternate forms of functional expression are possible but ultimately the distillation process is the same (Oxelheim & Wihlborg, 2003). It is possible to express each of the market price variables as a function of the lagged and current changes to it, the reason for doing so is that although macroeconomic shocks may often be perceived as random, they often manifest in serial correlation to a large extent. For instance the exchange rate's current deviation from its long run value can be expressed as:

$$e_t - \bar{e} = p_e(e_{t-1} - \bar{e}) + s_t \quad (3)$$

$P_e$  represents the serial correlation coefficient of the exchange rate,  $S_t$  is the unanticipated change in period  $t$ . The change in cash flow in response to the anticipated change may possibly be different or equal to the change in cash flow in response to the unanticipated change. In addition there is a chance that cash flow adjustments in period  $t$  are occurring in response to exchange rate fluctuations in period  $t-1$ . Consequently cash flows attributed to period  $t$  may contain effects from both period  $t$  and  $t-1$  in reference to exchange rate fluctuations in period  $t-1$ .

Accordingly cash flows in period  $t$  explained by the exchange rate and the other variables' departures from their long run prices may be depicted in the subsequent expression for their effect on cash flows:

$$X_{M,t}^e = \frac{\delta X_M}{\delta(e_{t-1} - \bar{e})} (e_{t-1} - \bar{e}) + \frac{\delta X_M}{\delta s} S_t \quad (4)$$

$$X_{M,t}^i = \frac{\delta X_M}{\delta(i_{t-1} - \bar{i})} (i_{t-1} - \bar{i}) + \frac{\delta X_M}{\delta s} S_t \quad (5)$$

$$X_M^p = \frac{\delta X_M}{\delta(p_{t-1} - \bar{p})} (p_{t-1} - \bar{p}) + \frac{\delta X_M}{\delta s} S_t \quad (6)$$

The initial phase in (4) comprises the lagged current period effects of exchange rates in  $t-1$ , as well as the current period effects of the anticipated exchange rates departure from the long run level. The second term includes unanticipated cash flow effects in period  $t-1$  of unanticipated exchange rate changes a period  $t$ . The expressions depicting the same lagged and current effects of the market price variables for interest rate and price levels changes are expression (5) and (6) respectively.

In this study the difference between the value of assets in period  $t$  and their value under neutral macroeconomic conditions is defined as:

$$\Delta V_{A,t} = V_{A,t} - V_{A,L,t} = \sum_{j=1}^{\infty} \delta_M^j E_t [X_{M,t+j}], \quad (7)$$

Where

$$X_M = X_M^e + X_M^i + X_M^p$$

And  $\delta_M$  is the discount factor for cash flows caused by macroeconomic conditions. Superscripts indicate cash flow effects of different macroeconomic variables in (4, 5 and 6). Each of these variables can be expressed as in (7) in terms of an anticipated component and a noise component.

### ***Fundamental Analysis: Macroeconomic Variables with potential explanatory power***

The initial stage of carrying out a MUST analysis is a fundamental analysis of the firm in question, the fundamental analysis is similar to that carried out by professional financial analysts but in this case the adopted perspective takes a focus upon the macroeconomic variables to which the firm is question is exposed, as opposed to the intrinsic capabilities or the firm which are usually the emphasis in the fundamental analysis carried out by professional analysts. In addition, to reiterate the premise of this study; benchmarking in its current form is inadequate in catering for the macroeconomic uncertainty which firms encounter. It must be noted that the fundamental analysis must be performed for each individual firm. The point is that each firm is individual in that they each have a firm-

specific macroeconomic exposure profile and as such each firm must be assessed on the basis of its individual exposure. This point in turn feeds back to the premise of the study in that it is not possible to accurately benchmark one firm with another without due attention being placed on the macroeconomic exposure of each firm.

The firm's exposure to the macroeconomic environment can be captured through numerous potential contenders of explanatory variables such as: commodity prices, currency movements, consumer sentiment, purchasing manager surveys, orthodox market data, inflationary expectations, short term interest rates, long term interest rates, intermediate interest rate terms and a good deal more. The extensive list has been refined to some extent through previous literature, which has generally taken the form of principal components extraction over an expansive dataset of macroeconomic variables (see e.g. Stock & Watson, 2006) This study continues this established path in the aim of decreasing the breadth of the problem through careful consideration of the firm's exposure to foreign countries, this can be deemed an acceptable choice in light of the fact that operational and investment decisions transcending international borders are an expected fundamental channel whereby macroeconomic factors influence firm performance. These geographic exposures are acknowledged through the quarterly and annual reports. In addition given the prominence and availability of the key macroeconomic price variables of the exchange rate, interest rates and rates of inflation as well as their prominence in prior research utilising the MUST analysis framework, these are the key variables through which the exposure coefficients for the firms will be produced. The macroeconomic variables considered to hold explanatory power regarding the individual firms' performance were distilled and can be examined in Appendix II-V)

## CHAPTER V: Results

### *Qualitative results*

In this chapter the answers from the conducted interview will be presented structured according to the themes addressed, these findings will be analysed and discussed in light of the academic literature, the industry characteristics and the aim of the research question.

#### **Interviewee characteristics**

The interviewee is a Senior Chartering manager of one of the companies analysed in this thesis, his role within the firm is to manage the chartering activities of a portion of the fleet from the head office of the firm, he has been with the firm for approximately 14 years and has progressed from initially working as a seafarer on one of the ships to management position at the head office.

#### **Theme 1: Benchmarking as a process**

Given that the main topic of this thesis is the usage of benchmarking as a firm performance tool it was important to assess how benchmarking was perceived within the organisation of the interviewee.

*Q*      *Is benchmarking used as a tool in the company?*

*A*      *“...where is the highest income and revenue, and what are the accompanying costs...”*

The answer provided a rudimentary description of the benchmarking process and established that it was used to at least in regards to internal benchmarking within the firm.

*Q*      *Is benchmarking regarded as a formal process or an informal process whereby it naturally occurs when comparing performance internally and externally?*

*A*      *“We have systems to collect the data and analyse the data”*  
*“We compare the different markets based on income and cost...”*

*“...for the public companies it is easy to obtain their financial data and so we put that into the system...”*

These responses indicate that benchmarking is a formal process in the organisation which is used for both internal and external analyses and as such there are management systems where the information can be gathered.

*Q Is the financial benchmarking restricted to the finance department of the firm?*

*A “...they run the reports but we see the outcome...we use the information to make our decision and plan strategy”*

This question was designed at determining the level of disbursement of pertinent information obtained through the use of the benchmarking system. The interviewee's response indicates that access to the system is provided to those requiring said information and that although the data collection and production is confined to the finance department, it is the operational managers who make practical use of the information.

## **Theme 2: Benchmarking as a tool**

*Q Do you actively use benchmarking in your role within the company?*

*A “...not so much it is used to obtain the overall picture of the firm and the market...”*

*“...they run the reports but we see the outcome and we use the information to make our decision and plan strategy”*

This question was aimed at ascertaining the interviewees level of interaction to the benchmarking system, the responses are somewhat contradictory but when contextualised they provide a consistent account. The interviewees indicates that the external benchmarking is largely the responsibility of the executive team who assess the overall firm relative to the market whereas the day to day internal benchmarking and micro-market benchmarking is used by the operational management in planning strategy and taking decisions.

*Q Do you benchmark against particular firms or do you benchmark against an industry average?*

A        *“...benchmark against the market, we do this on a monthly basis and report to the management where we are ranked against the average market”*

This question aimed at establishing to what the firm compares itself in its external benchmarking endeavours. The response from the interviewee indicates that an industry average is used on a regular basis.

Q        *Who would you regard as the key benchmarking partners?*

A        *“...Solstad, Olympic, Island offshore, very much the stock listed companies in the same industries...”*

This question established that the firm sees its rivals as the stock listed Norwegian shipping companies operating in the same industry as itself. This demonstrates that the firms selected for the benchmarking analysis were appropriate.

### **Theme 3: Benchmarking with macroeconomic uncertainty**

Q        *Do you have any processes to filter out the effects of the macroeconomic variables?*

A        *“...we feel an analysis such as this would be useful to see the underlying effects”*  
*“...not so much overall macroeconomic variables...”*

This line of questioning was attempting to discern if the benchmarking system had any links to the measurement of the firm’s macroeconomic exposure this core issue of this study. The responses indicate that there are no such systems currently in use at the firm but that they may be of some value to the firm.

### **Theme 4: Enhancing the benchmarking framework**

Q        *If there was model which filtered out these effects would you see it as a useful tool for the firm?*

A        *“...in some respects yes when you compare to the competitors and see how you are rated, if you are outperforming them then it may not be of primary concern”*

The aim of this question was to enquire what value the firm would place on benchmarking system that incorporated a macroeconomic filtration system such as the MUST analysis.

The responses provided indicate that the issue of complacency could be of concern given that the respondent sees such a benchmark as only being of use when the firm is considered to be performing relatively worse than its competitors but when the roles are reversed and the firm is regarded as the better performing firm then the effect of the macroeconomic variables upon the firm's performance is of less importance.

*Q Do you feel that the firm should pay closer attention to the macroeconomic variables?*

*A "...need to do is to analyse the market to see what is in demand..."*

*"...an important KPI for us is mapping the exploration and production spending of the oil companies..."*

The responses to this question indicate that there is reluctance to raise the level of appreciation given to the macroeconomic exposures faced by the firm and that continued emphasis on the market KPIs is a better way of guiding the company.

Overall the responses provide a valuable insight into how the macroeconomic influence on the firm is perceived from the perspective of operational management, they are regarded as important to an extent but not so important that they are in a position to negate strategic decisions based on market analysis.

However the updated benchmark system suggested in this thesis is not designed to be a tool which would replace all others in guiding the firm, indeed benchmarking is a relative firm performance measure and as such enables the comparison of the firm to its contemporaries at least in an external context, enabling the firm to gauge its performance and highlight areas for improvement. The weakness of the current system is that it does not provide a true depiction of any of the firms included in the benchmark due to distortion from the firm-specific macroeconomic exposure.

### ***Quantitative results***

The changes in freight income were obtained from the quarterly published reports of the firms, the fundamental analysis produced a number of macroeconomic variables with latent explanatory power. The changes in freight income for the firms were then regressed on changes in the variables gleaned from the fundamental analysis comprising of exchange

rates between the Norwegian Kroner and a number of key currencies, interest rates and inflation rates. The European Brent crude spot price was also included to control for changes in the industry's conditions and dummy variables were used to adjust income changes for seasonality effects. Due to the small number of observations, combinations of currencies were utilised. Regressions were carried out for the whole period from 2004 to the first quarter of 2015.

**Table 1.**

<b>Macroeconomic Variable</b>	<b>Farstad</b>	<b>Eidesvik</b>	<b>Solstad</b>
Norwegian Government 10 year bonds			
US Treasury 10 year bonds			
UK Gilts 10 year bonds			
NIBOR 3 month			
LIBOR 3 month			<b>-.269</b>
USLIBOR 3 month		<b>.043</b>	<b>.145</b>
AUDLIBOR 3 month	<b>-.218</b>		
EURIBOR 3 month		<b>-.007</b>	
NOK/EUR	<b>-1.219</b>	<b>-.458</b>	<b>-.930</b>
NOK/GBP	<b>.471</b>	<b>.564</b>	
NOK/USD			
NOK/BRL		<b>-.389</b>	
Norway PPI			<b>-1.122</b>
US PPI	<b>.903</b>	<b>-.656</b>	<b>2.370</b>
UK PPI			
Australia PPI	<b>-.936</b>	<b>1.089</b>	
Europe PPI	<b>1.666</b>		



Brent Europe Spot  
price

Adj. R <sup>2</sup> (incl. seasonal dummies)	<b>.593</b>	<b>.409</b>	<b>.263</b>
--	-------------	-------------	-------------

\*Coefficients in bold indicate that the hypothesis that the coefficient is equal to zero can be rejected at the 5% level (one-sided test)

Table 1 above depicts the statistically significant sensitivity coefficients for each of the firms, calculated through the use of linear multivariate regression utilising the backward elimination criteria in order to select the variables with the highest predictive power using contemporaneous dependent and independent variables. The data for the dependent variables was retrieved through publicly available sources, raw data from the companies was not available. Although the firms exposure to various explanatory macroeconomic variables was revealed through the MUST analysis, more robust figures would likely have been obtained had raw data from the companies been retrieved. Given that the use of financial instruments to hedge against macroeconomic exposure does have a dampening effect on the revealed macroeconomic exposure of the firm.

The dependent and independent variables are measured as the percentage change in value from the preceding quarter in all regressions enabling the estimation of the influence on freight income due to changes in the variables. As the coefficients indicate, the firms have varying degrees of exposure to the macroeconomic variables and as such the estimated percentage change in freight income in reaction to a 1% change in the macroeconomic variables are fairly dispersed. For instance the sensitivity coefficient for the NOK/EURO variable was -1.219 for Farstad, -.458 for Eidesvik and -.930 for Solstad, although not statistically significant for Eidesvik at the 5% level the results demonstrate the unique and firm specific influence of this macroeconomic variable. A 1% increase in the NOK/EURO exchange rate is predicted to precipitate a 1.219% decrease in freight revenue for Farstad, and a .930% decrease for Solstad, holding all other variables constant. As previously stated examining the macroeconomic variables in isolation is one of the reasons why the current risk management frameworks is inadequate but still this provides valuable insight into how seemingly similar firms with similar scales of operation and market positions can be so differently effected by the macroeconomic variables. In the context of benchmarking it is

clear to see that it is not possible for firms to simply compare themselves with firms which appear to be suitable candidates without paying due attention to the firm specific macroeconomic exposure they face and as formerly stated the industry average is also an unsuitable benchmark given that it is a composite of the industry and cannot provide a true depiction of the individual exposure firms face.

### ***An updated benchmark framework***

One of the aims of this study was to provide an updated benchmark framework based upon the theoretical limitations of the current approach to benchmarking. The quantitative analysis aimed at exposing the limitations of the current approach through a practical analysis by comparing a sample of firms which can be deemed appropriate benchmark partners using the current approach and exposing the weaknesses of said approach. As the results above show even when utilising public accounting data to analyse the effect of the macroeconomy on the individual firm, it is possible to see that a significant portion of firm value is influenced by the macroeconomy and that the effect of this influence distorts the perception of firm performance as a whole. Consequently this study will propose an updated benchmark framework.

This new framework draws upon the salient points of former benchmarks such as the phase and step approach from Camp's model and the circular notion from Anderson and Moen's model representing that benchmarking is a continuous activity. In figures 8 and 9 below the proposed benchmarking model can be seen.

## Stages



Figure 8 Updated benchmark model - Stages

## Activities

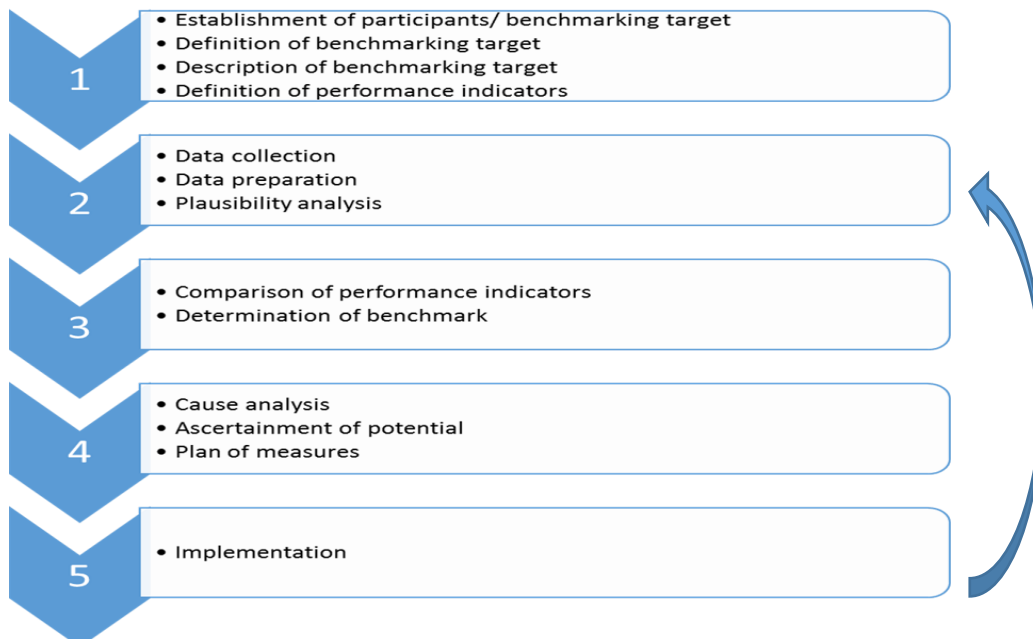


Figure 9 Updated benchmark model - Activities

As the updated benchmarking framework above shows, the adoption of a MUST analysis as a central aspect to the benchmarking framework enables the filtration of the distorting macroeconomic effects on the firm, as such the benchmark will provide a true depiction of firm performance enabling a true comparison of the firms and a clear cause analysis for the differences in firm performance. The benefits of the MUST analysis permeates through every stage of the benchmarking activities, from the initial selection of participants to the implementation of emergent plans, the analysis facilitates the clear portrayal of performance enabling suitable selection and appropriate plans which can account for the firms specific exposure profile.

## **CHAPTER VI: Conclusion**

This thesis analysed the approach to benchmarking currently employed in vast number of enterprises in light of the shortcomings in its ability to reflect a true portrayal of firm performance, free from distortion created by the firm-specific exposure to the macroeconomic environment. Based upon the literature and findings presented above, this chapter will sum up the salient results of the study; firstly through the overall proposition defence of the study, the limitations of the methodological process, the resulting policy recommendations and finally the possibilities for further research on this topic.

### ***Proposition Defence***

#### **Background**

Benchmarking has proved to be a popular and resilient firm performance measurement tool, internal benchmarking has enabled firms to discover where they are most efficient and inefficient and to leverage good skills in one segment, sector or division in other seemingly weaker performing facets of the firm. External benchmarking has enabled firms to compare their performance with competitors or other seemingly unrelated industries so that they may enhance their processes and emulate good characteristics which are regarded as being fostering better performance. Numerous studies and surveys find the usage of benchmarking as pervasive and of its utility as unquestionable, it is quite alarming in this respect that there have been no significant steps taken in the evolution of benchmarking literature that have aimed at addressing the issue of macroeconomic uncertainty. The apparently separated subject of macroeconomic uncertainty and the effect on firm performance has been growing steadily over the past two decades with seminal studies such as the Market Determinants of Voluntary Disclosure of Macroeconomic Effects on Corporate Performance by Oxelheim and Wihlborg which demonstrate how truly unique each individual firm is in the exposure it faces in the wider macroeconomic environment. These studies demonstrate that even with firms with the same country of origin, same industry, similar scope of operations and similar market presence can have vastly different macroeconomic exposure profiles, the result of which is that they are in receipt of vastly different macroeconomic influences on their performance. When the theories of benchmarking and the theories of macroeconomic uncertainty are brought together it is clear that benchmarking frameworks and process which lack a macroeconomic component which distils firm performance free from macroeconomic distortion is not really and

adequate means of benchmarking given that it does not enable a true distortion free portrayal of firm performance.

### **Research questions**

The over-arching research question addressed in this study is the question of whether the current benchmarking framework presents a robust measurement of firm performance, which accounts for the firm-specific macroeconomic exposure profile? The literature review presented theories in relation to the qualities of the current approach to benchmarking and methods which have been developed in order to measure the firm-specific effects of the macroeconomic environment, however there is a gap in the literature which fails to bring the two concepts together and it is this gap which this study attempts to fill. The strategies utilised by the firm to address the risk and uncertainty of macroeconomic environment have generally taken the form of financial instruments to hedge against the separate effects of the macroeconomic variables, however the research presented indicated that this 'silo' approach to addressing macroeconomic exposure fails to account for the effect of the interdependency between the variables and in doing so does not appreciate that there are often simultaneous shocks in the interest rate and the exchange rate which in turn have may have an effect in the rate of inflation. In establishing the inadequacy of the current benchmarking models, the next logical question addressed was; whether the introduction of a macroeconomic uncertainty strategy analysis (MUST) would provide a different portrayal of firm competitiveness in a benchmarking context? In response to this question the use of an empirical case study was employed. The sample of firms selected was on the basis of the prevailing methods which make use of reported accounting data and financial ratios in order to rank the firms. The MUST analysis revealed the firms to hold widely different exposures to macroeconomic variables, attributed to the firm-specific macroeconomic exposure profile which empirically demonstrates the shortcoming of the current approach to benchmarking and that it can provide misleading results when the short term effects of the macroeconomic environment on the firm are presented to be tantamount to the long term performance of the firm. This in turn raises and answers the crucial question of; does the current approach to benchmarking need to be improved?

## **Relevance of the study**

In addressing the research questions investigated in this study the foundation of the relevance of this study was created, this study revealed that benchmarking in its' current form is weak in accounting for the firm specific macroeconomic exposure profile. For the firm this means that senior management may be basing strategic and operational decisions on weak or even misleading information, consider firm A benchmarking against firm B which is the market leader according to the prevailing method of benchmarking, this leads the management of firm A to emulate the operational strategies of firm B, however when the macroeconomic distortions are discounted from the individual firm performance it may reveal firm A to have been the market leader all along. This analogy can be applied to investors selecting where to place their funds or analysts managing extensive portfolios. In extending the analogy the natural progression of the argument is into the realm of corporate governance given the ramifications regarding; transparency, information asymmetry, executive remuneration and risk management practice. The implications of the MUST analysis are far reaching and in the context of benchmarking it demonstrates that the current approach does not provide a clear portrayal of the intrinsic competitiveness of the firm, the dependency upon accounting information unadjusted to the firms' specific macroeconomic exposure profile is the crucial element of the limitation. The relevance of this study is high given the lack of research in this area, indeed the author was unable to find any studies which have sought to enhance the robustness of the current approach to benchmarking in relation to the macroeconomic effect on the firm.

## **Theoretical perspectives - Literature review**

In investigating the prevalence of benchmarking as a firm performance tool, the literature depicted a saturated body of research which indicated that benchmarking had progressed through several stages of evolution. Prominent contemporary issues in benchmark studies were found to be concerned with the issues regarding implementation and simplification of benchmarking frameworks to ease the organisational difficulties arising with the introduction to a new management tool. However as aforementioned there were no studies that sought to analyse whether the information provided from benchmarking provides meaningful results in light of the influence of the macroeconomic variables on firm performance. The literature review on the topic of the macroeconomic uncertainty facing

all firms is a strand that has is growing in size, importance and relevance given the recent financial crisis and the failure of the risk management practices in use at the time. The MUST analysis developed by Oxelheim and Wihlborg is method which enables the derivation of sensitivity coefficients depicting the firms' exposure to key macroeconomic variables, this model has been utilised in numerous empirical studies to portray the susceptibility of firms to the macroeconomic environment, the use of this analytical tool in an external benchmarking context was a natural progression in this strand of research and serves to highlight the need for enhancement in the current system.

### **Preliminary findings**

The findings from both the quantitate aspects of the study indicate that the choice of benchmarking partners should not be taken at face value even when the firms appear to be ideal candidates, the MUST analysis reveals that firms have varying degrees of exposure to key macroeconomic variables and this should be taken into account in carrying out a robust assessment of firm performance.

### **Limitations**

Although the implications of the theory and preliminary findings are wide-ranging and in principle apply to every organisation in some capacity whether they partake in benchmarking or not, the analytical procedure is not without limitation.

The methodological process followed in this study can be regarded as a mixed methods approach to a certain degree given the usage of both qualitative and quantitative methods, however the use of qualitative information was mainly aimed at gathering supplementary information from the organisations being analysed to provide the study with greater depth. The primary method of analysis was quantitative through the use of multivariate regression analysis. The limitations of both approach will now be expounded upon in greater detail.

### **Qualitative**

As formerly stated the use of qualitative data for this study was to provide the study with greater depth, obtaining soft data from the organisations being analysed allowed for inferences to be made based upon their current approach to benchmarking and their current approach to measuring the macroeconomic exposure that the firm faces as well as ascertaining whether these two practices were linked in any capacity. Generally speaking



interviews are a useful tool given that they enable the collection of qualitative data that provides an insight into the operation of the process under analysis from a practical point of view and can be free from some of the associated rigidity found with quantitative approaches. The overbearing limitation of the qualitative approach used in this study is the lack of data, only one firm agreed to be interviewed of those chosen for analysis and therefore it is harder to make inferences about the current approach to benchmarking utilised in the industry, in addition given that the external benchmarking activities performed by the firm are generally related to the overall operational performance of the firm, it is generally within the remit of the Chief Financial Officer (CFO) and it would be most beneficial to gain insight from that person as opposed to a mid-level manager as was the case in this study. Furthermore although cultural aspects are not presupposed to provide a significant influence on the financial procedures of the firm, the analysis of firms from the same country of origin could be regarded as a further limitation in regards to the qualitative data analysis.

## **Quantitative**

The primary shortcoming of the quantitative analysis was the lack of data, not having access to raw information from the firms being analysed limited the potency of the analysis given the at the published information has been altered due to accounting regulations and the firm's management of macroeconomic exposure through its hedging activities. The data available covered only a decade which was not enough to provide robust estimates and high Adjusted  $R^2$  statistics which no doubt reduced the effectiveness of the analysis in demonstrating the power of the explanatory variables. Indeed the relationship to commercial income presented too weak a relationship resulting in the usage of freight income which is essentially total revenue, this figure is much farther from zero and so more statistically significant results were obtainable. Although benchmarking theory does indicate that the usage of too many partners can hinder the process, this study was limited by the availability of firm data for a substantial period enabling more accurate testing and the addition of more explanatory variables.

## ***Policy recommendations***

Although as noted in the previous section there were numerous limitations presented in this study, it is still possible to make inferences based upon the theory and the results. The

results from both the qualitative and quantitative analysis indicate that there is an inherent weakness of the current approach to benchmarking, the use of accounting information which has not been corrected for the influence on the individual firm of the macroeconomic environment does not allow for a true depiction of the intrinsic value of the firm. It is this value which can be regarded as the basis for the firm's sustainable level of cash flows and it is this value which the management should aim to influence, and be judged according to. This intrinsic value should be what is compared with other firms in external benchmark analysis and it should be this value which external stakeholders are informed of so that they are able to base their investment decisions upon.

Therefore the use of the MUST analysis in a benchmarking context should be adopted by enterprises as demonstrated in the proposed updated benchmark framework, it is only through this form of analysis that a true appraisal of firm performance can take place.

In addition the use of an industry average as a standard yardstick to which firms strive to better has been shown to be a fallacy, the industry average being the composite value of all firm performance is predicated upon data which shows no appreciation for the firm-specific macroeconomic exposure and therefore it does not show what the true industry average is.

In order to enact any of these proposed changes what is needed is a fundamental change in the way in which accounting information is produced and communicated and which in which risk is appreciated and quantified by the individual firm. In relation to accounting information, the movement towards a harmonised set of standards should also embody a means of distilling the macroeconomic influence of the firm. Whereas in relation to risk management, the usage of IRM and ERM should be encouraged as these modes of risk management foster a holistic, firm-wide assessment of risk of which macroeconomic exposure is a crucial element and as such, should be predicated upon financial analysis which is capable of providing a true depiction of the intrinsic value of the firm, namely the Macroeconomic Uncertainty Strategy (MUST) developed by Oxelheim and Wihlborg.

### ***Further research possibilities***

Due to the breadth of the fields of benchmarking, macroeconomic uncertainty, risk management and corporate governance, the prominent themes of this study, as well as the

exploratory character of this thesis, it intended to, and could, only contribute with a limited insight. To truly understand the limitations of the current approach to benchmarking and the influence of macroeconomic environment on the individual firm, the analysis should be carried out with the use of accounting data which has not been influenced by the hedging activities of the firm in their endeavours to limit their exposure to the influence of the macroeconomic environment.. Financial instruments may work as intended or fail should the macroeconomy change in unanticipated ways, and in the context of the MUST analysis they can inhibit the significance of coefficients for the explanatory variables. A study which utilised the unhedged financial information of the benchmarked firms may present more significant results from which stronger conclusions can be made.

## APPENDICES

### *Appendix I: Interview Coding*

The following table represents the coding agenda for the qualitative content analysis consistent with the recommended methods of Mayring.

Category	Variable (sub-categories)	Definition of the Category	Examples from the interview for statements fitting into the category	Coding rules (to limit the categories)
<b>Theme 1: Benchmarking as a process</b>				
Is benchmarking used as a tool in the company?	Usage	This category defines if and how benchmarking is perceived in the firm.	"...where is the highest income and revenue, and what are the accompanying costs"	This variable communicates the level of usage of benchmarking.
If so... Is benchmarking regarded as a formal process or an informal process whereby it naturally occurs when comparing performance internally and externally?	Degree of formality Internal External	This category denotes if benchmarking is carried out formally or informally as well as whether it is internal, external or both.	"We have systems to collect the data and analyse the data" "We compare the different markets based on income and cost..." "...for the public companies it is easy to obtain their financial data and so we put that into the system..."	This variable determines the depth of usage of benchmarking.
Is the financial benchmarking restricted to the finance department of the firm?	Dissemination	This category assesses where benchmarking occurs in the firm.	"...they run the reports but we see the outcome...we use the information to make our decision and plan strategy"	This variable determines whether benchmarking as an activity and the results of benchmarking are dispersed

				throughout the firm.
<b>Theme 2: Benchmarking as a tool</b>				
Do you actively use benchmarking in your role within the company?	Application	This category defines if, where and how benchmarking data is used.	“...not so much it is used to obtain the overall picture of the firm and the market...” “...they run the reports but we see the outcome and we use the information to make our decision and plan strategy”	This variable is directly related to the role of the interviewee and their interaction with benchmarking.
Do you benchmark against particular firms or do you benchmark against an industry average?	Relativity	This category discerns to what the firm is comparing itself to in regards to external benchmarking.	“...benchmark against the market, we do this on a monthly basis and report to the management where we are ranked against the average market”	This variable is concerned with who or what the firm uses for comparison.
Who would you regard as the key benchmarking partners?	Compatibility	This category denotes who the firm sees as its contemporaries	“...Solstad, Olympic, Island offshore, very much the stock listed companies in the same industries...”	This variable identifies the perceived rivals of the firm.
<b>Theme 3: Benchmarking with macroeconomic uncertainty</b>				
Do you have any processes to filter out the effects of the macroeconomic variables?	Clarity of value	This category determines the level of appreciation at the firm of their exposure to the macroeconomic environment.	“...we feel an analysis such as this would be useful to see the underlying effects” “...not so much overall	This variable examines the firm’s capabilities in analysing their macroeconomic exposure.

			macroeconomic variables...”	
Theme 4: Enhancing the benchmarking framework				
If there was model which filtered out these effects would you see it as a useful tool for the firm?	Utility	This category depicts the likelihood of adoption to a system of reporting which enhances the appreciation of the firm’s macroeconomic exposure.	“...in some respects yes when you compare to the competitors and see how you are rated, if you are outperforming them then it may not be of primary concern”	This variable assess how valuable a MUST analysis type model would be to the firm.
Do you feel that the firm should play closer attention to the 1 macroeconomic variables?	Attentiveness	This category denotes the firms willingness to enhance it’s awareness of it’s macroeconomic environment.	“...need to do is to analyse the market to see what is in demand...” “...an important KPI for us is mapping the exploration and production spending of the oil companies...”	This variable is concerned with whether a greater appreciation of the macro environment is perceived as beneficial to the firm.

## ***Appendix II: Fundamental analysis: Farstad Shipping***

Key variables with prospective elucidatory influence were recognised resulting from solutions to a sequence of questions such as; where do the firms operate? What are the major markets for the firms? What are the major currencies, interest rates and price levels, to which the firms are exposed in their financial positions?

**FARSTAD SHIPPING**

FARSTAD SHIPPING						
Geographical markets	Exchange rates		Interest rates		Inflation rates	
The North Sea			Long term Norwegian Interest rate	3 month NIBOR	Norwegian Producer Prices – Shipping	Norwegian Producer Prices – Domestic investment
	NOK/GBP	GBP/NOK	Long term UK interest rate	3 month LIBOR	UK Producer prices – Domestic Investment	UK Consumer price inflation
	NOK/EURO	EUR/NOK	Long term Euro rate	3 month EURIOBOR	European Producer Prices - Domestic Investment	European Consumer price inflation
Brazil	NOK/BRL	BRL/NOK	Long term Brazilian Interest rate	3 month BRALIBOR	Brazilian Producer Prices – Domestic investment	Brazilian Consumer Price inflation
	NOK/USD	USD/NOK	Long term US interest rate	3 month USIBOR	US Producer Prices – Domestic Investment	US Consumer price inflation
Australia	NOK/AUS	AUS/NOK	Long term Australian Interest rate	3 month AUSLIBR	Australian Producer Prices – Domestic Investment	Australian Consumer price inflation
	NOK/SING	SING/NOK	Long term Singaporean Interest rate	3 month SINGIBOR	Singaporean Producer Prices – Domestic Investment	Singaporean Consumer price inflation

### **Appendix III: Fundamental analysis: Solstad Shipping**

SOLSTAD SHIPPING						
Geographical markets	Exchange rates		Interest rates		Inflation rates	
The North Sea The Mediterranean			Long term Norwegian Interest rate	3 month NIBOR	Norwegian Producer Prices – Shipping	Norwegian Producer Prices – Domestic investment
	NOK/GBP	GBP/NO K	Long term UK interest rate	3 month LIBOR	UK Producer prices – Domestic Investment	UK Consumer price inflation
	NOK/EUR	EUR/NO K	Long term Euro rate	3 month EURIOBOR	European Producer Prices - Domestic Investment	European Consumer price inflation
Brazil Mexico	NOK/BRL	BRL/NO K	Long term Brazilian Interest rate	3 month BRALIBOR	Brazilian Producer Prices – Domestic investment	Brazilian Consumer Price inflation
	NOK/USD	USD/NO K	Long term US interest rate	3 month USIBOR	US Producer Prices – Domestic Investment	US Consumer price inflation
Australia Asia	NOK/AUS	AUS/NO K	Long term Australian Interest rate	3 month AUSLIBR	Australian Producer Prices – Domestic Investment	Australian Consumer price inflation
	NOK/SING	SING/NO K	Long term Singaporean Interest rate	3 month SINGIBOR	Singaporean Producer Prices – Domestic Investment	Singaporean Consumer price inflation



**Appendix IV: Fundamental analysis: Eidesvik Shipping**

EIDESVIK SHIPPING						
Geographical markets	Exchange rates		Interest rates		Inflation rates	
The North Sea			Long term Norwegian Interest rate	3 month NIBOR	Norwegian Producer Prices – Shipping	Norwegian Producer Prices – Domestic investment
	NOK/GBP	GBP/NOK	Long term UK interest rate	3 month LIBOR	UK Producer prices – Domestic Investment	UK Consumer price inflation
	NOK/EURO	EUR/NOK	Long term Euro rate	3 month EURIOBOR	European Producer Prices - Domestic Investment	European Consumer price inflation
Brazil	NOK/BRL	BRL/NOK	Long term Brazilian Interest rate	3 month BRALIBOR	Brazilian Producer Prices – Domestic investment	Brazilian Consumer Price inflation
	NOK/USD	USD/NOK	Long term US interest rate	3 month USIBOR	US Producer Prices – Domestic Investment	US Consumer price inflation

## References

- Anand, G., & Kodali, R. (2008). Benchmarking the benchmarking models. *Benchmarking: An International Journal*, 15(3), 257-291.
- Andersen, B., & Moen, R. M. (1999). Integrating benchmarking and poor quality cost measurement for assisting the quality management work. *Benchmarking: An International Journal*, 6(4), 291-301.
- Association, N. S. (2014). Norwegian Offshore Shipping Companies - local value creation, global success.
- Aureli, S., & Salvatori, F. (2012). *Perceptions of Risk Management Practices through the reading of public corporate financial documents*. Paper presented at the 3rd Financial Reporting Workshop-Naples,(Italy).
- Beams, N. (2006). Report on the world economy in 2006. Retrieved 20/02/15, 2015, from <http://www.wsws.org/en/articles/2006/02/nbp1-f28.html>
- Bemowski, K. (1991). The benchmarking bandwagon. *Quality progress*, 24(1), 19-24.
- Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *The International Journal of Accounting*, 39(3), 265-288.
- Bhutta, K. S., & Huq, F. (1999). Benchmarking-best practices: an integrated approach. *Benchmarking: An International Journal*, 6(3), 254-268.
- Boxwell, R. J. (1994). *Benchmarking for competitive advantage*: McGraw-Hill New York etc.
- Bryman, A. (2012). *Social research methods*: Oxford university press.
- Camp, R. C. (1989). Benchmarking: The search for industry best practices that lead to superior performance. *Quality progress*, 22(3), 76-82.
- CFO-Research-Services. (2002). Strategic Risk Management: New Disciplines, New Opportunities: CFO Research Service and Aon.

CFO-Research-Services. (2005). The CFO as Chief Performance Adviser: CFO Research

Services and PricewaterhouseCoopers LLP.

Cokins, G. (2009). *Performance management: Integrating strategy execution, methodologies, risk, and analytics* (Vol. 21): John Wiley & Sons.

Dattakumar, R., & Jagadeesh, R. (2003). A review of literature on benchmarking. *Benchmarking: An International Journal*, 10(3), 176-209.

DeLoach, J. W., & Andersen, A. (2000). *Enterprise-wide risk management: strategies for linking risk and opportunity*: Financial Times Prentice Hall.

DeToro, I. (1995). The 10 pitfalls of benchmarking. *Quality progress*, 28(1), 61-64.

Dey, I. (2003). *Qualitative data analysis: A user friendly guide for social scientists*: Routledge.

Elmuti, D., & Kathawala, Y. (1997). An overview of benchmarking process: a tool for continuous improvement and competitive advantage. *Benchmarking for Quality Management & Technology*, 4(4), 229-243.

Euro Investor. (2012). How exchange rate fluctuations affect companies. Retrieved 20/02/2015, 2015, from <http://www.euroinvestor.com/ei-news/2012/07/17/how-exchange-rate-fluctuations-affect-companies/19796>

Eyrich, H. (1991). Benchmarking to become the best of breed. *Manufacturing Systems*, 9(4), 40-47.

Fifer, R. M. (1988). *Beating the competition: a practical guide to, benchmarking*: Kaiser Associates.

Franceschini, F., Galetto, M., Baba, Deros, M., Mohd Yusof, S. r., Azhari, & Salleh, M. (2006). A benchmarking implementation framework for automotive manufacturing SMEs. *Benchmarking: An International Journal*, 13(4), 396-430.

Frigo, M. L. (2008). When strategy and ERM meet. *Strategic Finance*, 89(7), 45-49.

- Hoyt, R. E., & Liebenberg, A. P. (2011). The value of enterprise risk management. *Journal of Risk and Insurance*, 78(4), 795-822.
- Jarrar, Y. F., & Zairi, M. (2001). Future trends in benchmarking for competitive advantage: a global survey. *Total Quality Management*, 12(7-8), 906-912.
- Korpela, J., & Tuominen, M. (1996). Benchmarking logistics performance with an application of the analytic hierarchy process. *Engineering Management, IEEE Transactions on*, 43(3), 323-333.
- Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of accounting research*, 45(2), 385-420.
- Leuz, C., & Verrecchia, R. E. (2000). The Economic Consequences of Increased Disclosure (Digest Summary). *Journal of accounting research*, 38, 91-124No.
- Maire, J.-L., Bronet, V., & Pillet, M. (2005). A typology of “best practices” for a benchmarking process. *Benchmarking: An International Journal*, 12(1), 45-60.
- Mayring, P. (2003). Qualitative inhaltsanalyse [Qualitative content analysis]. *Qualitative Forschung Ein Handbuch (Qualitative Research: A Handbook)*, 468-475.
- Mayring, P. (2007). *On generalization in qualitatively oriented research*. Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research.
- Meulbroek, L. K. (2002). A senior manager's guide to integrated risk management. *Journal of Applied Corporate Finance*, 14(4), 56-70.
- Miller, K. D. (1998). Economic exposure and integrated risk management. *Strategic Management Journal*, 19(5), 497-514.
- Motwani, J. G., Sower, V. E., Kumar, A., Antony, J., & Dhakar, T. S. (2006). Integrating quality function deployment and benchmarking to achieve greater profitability. *Benchmarking: An International Journal*, 13(3), 290-310.

- Nandi, S., & Banwet, D. (2000). Benchmarking for world class manufacturing—concept, framework and applications. *Productivity*, 41(2), 189-200.
- Nath, P., & Mrinalini, N. (1995). Benchmarking of best practices: case of R&D organization. *Productivity*, 36(3), 391-398.
- Nocco, B. W., & Stulz, R. M. (2006). Enterprise risk management: Theory and practice. *Journal of Applied Corporate Finance*, 18(4), 8-20.
- Oxelheim, L. (1997). Financial Markets in Transition. Globalization, investment and economic growth.
- Oxelheim, L., & Wihlborg, C. (2003). Recognizing macroeconomic fluctuations in value based management. *Journal of Applied Corporate Finance*, 15(4), 104-110.
- Oxelheim, L., & Wihlborg, C. (2008). Corporate decision-making with macroeconomic uncertainty: performance and risk management. *OUP Catalogue*.
- Oxelheim, L., & Wihlborg, C. (2012). Corporate distress and restructuring with macroeconomic fluctuations: The cases of GM and Ford. *Journal of Applied Finance*.
- Oxelheim, L., Wihlborg, C., & Thorsheim, M. (2012). The CFO's Information Challenge in Managing Macroeconomic Risk *The Strategic CFO* (pp. 189-208): Springer.
- Patton, M. Q. (2005). *Qualitative research*: Wiley Online Library.
- Pole, C. J., & Lampard, R. (2002). *Practical social investigation: Qualitative and quantitative methods in social research*: Pearson Education.
- PricewaterhouseCoopers. (2013). Global Shipping benchmarking Survey 2013.
- Pryor, L. S., & Katz, S. J. (1993). How benchmarking goes wrong (and how to do it right). *Planning Review*, 21(1), 6-53.
- Selim, G., & McNamee, D. (1999). The risk management and internal auditing relationship: developing and validating a model. *International Journal of Auditing*, 3(3), 159-174.
- Silverman, D. (2006). *Interpreting qualitative data: Methods for analyzing talk, text and interaction*: Sage.

- Simkins, B. J., & Ramirez, S. A. (2008). Enterprise-wide risk management and corporate governance. *Loyola University Chicago Law Journal*, 39.
- Sole, T. D., & Bist, G. (1995). Benchmarking in technical information. *Professional Communication, IEEE Transactions on*, 38(2), 77-82.
- Solomon, J. F., Solomon, A., Norton, S. D., & Joseph, N. L. (2000). A conceptual framework for corporate risk disclosure emerging from the agenda for corporate governance reform. *The British Accounting Review*, 32(4), 447-478.
- Spendolini, M. J. (1992). *The benchmarking book* (Vol. American Management Association): Amacom New York, NY.
- Stock, J. H., & Watson, M. W. (2006). Forecasting with many predictors. *Handbook of economic forecasting*, 1, 515-554.
- Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*: Sage Publications, Inc.
- Taylor, S. J., & Bogdan, R. (1998). *Introduction to qualitative research methods: A guidebook and resource*: John Wiley & Sons Inc.
- Vaziri, K. (1993). Questions to answer before benchmarking. *Planning Review*, 21(1), 37-37.
- Verrecchia, R. E. (2001). Essays on disclosure. *Journal of accounting and economics*, 32(1), 97-180.
- World Bank. (2015a). Germany GDP Growth rates. Retrieved 20/02/2015  
<http://databank.worldbank.org/data/views/reports/tableview.aspx>
- World Bank. (2015b). UK GDP Growth rates. Retrieved 20/02/2015  
<http://databank.worldbank.org/data/views/reports/tableview.aspx>
- World Bank. (2015c). US GDP Growth rates Retrieved 20/02/2015  
<http://databank.worldbank.org/data/views/reports/tableview.aspx>

Zairi, M., & Leonard, P. (1994). Practical Benchmarking: A Complete Guide. : Chapman & Hall, Oxford.

