



# Master's degree thesis

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**Tit for tat: The counteractive effect between competitive tendering and structural changes in the Norwegian ferry sector**

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## **DEDICATION**

To my late sister Flora E. Mwesiumo who passed away during the early stages of this work.

## PREFACE

It was during my internship at Tanzania National Hospital in 2007 that for the first time I was practically engaged in the public procurement practice. I was involved in procurement planning, sourcing, evaluation, and selection of suppliers. Competitive tendering was the main procurement method we often applied. That experience was both, challenging and exciting; several times we had to repeat tendering process due to insufficient number of bidders. By then, I did not have much knowledge about dynamics of markets and their implications to the competitive tendering process. Later on in 2008, I joined an International consulting firm, Ernst & Young and worked as an Auditor. During my tenure, I was on several occasions assigned to review procurement processes and procurement accounts of our clients. Through discussions and interrogations with clients, it was vivid that, in some cases, due to limited number of potential suppliers, purchasing/procurement personnel were facing a big challenge to acquire the best quality goods/services at lowest possible prices. Frankly speaking, due to my limited knowledge about market processes and dynamics, I could not give much advise apart from insisting them to stick to their procurement policies and keep proper records of transactions. Thanks to Industrial organisation course I took in my first semester at Molde University College, this course taught me about the behavior of key players on demand and supply sides within markets/industries. In addition to that, it also taught me about the implications of such behavior and the consequences of decisions taken by these players. More so, a course on Purchasing and supply theory that I took in the second semester, gave me substantial knowledge about the dynamics of buyer-supplier relationships. I was exposed to several procurement methods and approaches that can be applied in different scenarios. This background was to great extent a driving force behind my decision to undertake a thesis project on the counteractive effect between competitive tendering and structural changes in the Norwegian ferry sector.



**Deodat E. Mwesiumo**

## ACKNOWLEDGEMENT

Glory be to God. After spending almost half a year, striking the keyboard of my computer more than 300,000 times, writing more than 30,000 well considered words, I can say that one of the key secrets to a successful Master's degree thesis, is the support from a great deal of people. For that reason, I wish to extend my heart felt gratitude to the following persons:

First and foremost, I am deeply thankful to my supervisor and teacher, Prof. Arild Hervik. Through his outstanding art of thinking, Prof. Arild Hervik has inspired and imparted on me an invaluable amount of knowledge and skills that will surely remain to be helpful not only academically, but also in my day to day life. The knowledge I got from his course on Industrial Organisation, as well as his kind attention and guidance, were the pillars of this thesis.

Second, I am humbly grateful to the academic and administrative staff of Molde University College for their great support. Special thanks are due to my teachers; Prof. Svein Bråthen, Prof. Arnt Buvik, Associate Prof. Berit Helgheim, Associate Prof. Bjørn Jæger, Associate Prof. Halvard Arntzen, and Associate Prof. Johan Oppen. Through their training, I was able to grasp and understand various concepts and theories that played pivotal role in this thesis.

Third, the support of Norwegian Public Roads Administration personnel from the Central and Western regions' offices is highly appreciated. Despite high confidentiality concerns, they provided us with data that formed a relevant part of our analysis. I understand that they did their best given the ethical and professional guidelines regarding confidentiality especially in a such competitive context.

Last but not least, my sincere gratitude go to my family, friends and my wife Synnøve Solbakken and her family. These have persistently encouraged me to work hard and stay focused. Even in those rare occasions where I would slack, they kept reminding me of my dreams and the best potentials that education can promise. To them, I am highly indebted.

**Deodat E. Mwesiumo**

**Molde, May 2011.**

# **Tit for tat: The counteractive effect between competitive tendering and structural changes in the Norwegian ferry sector**

**Deodat E. Mwesiumo\***

## **ABSTRACT**

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The application of competitive tendering is widely advocated as a means for achieving efficiency and effectiveness in public procurement. Among other things, the success of competitive tendering depends on the structure of the market in which it is implemented. However, since buyer's purchasing strategy can influence supplier's behavior, then, the implementation of competitive tendering is likely to trigger strategic conduct among suppliers. This thesis is devoted to the assessment of the counteractive effect between competitive tendering and structural changes in the Norwegian ferry sector. The study adopted exploratory research design to establish its empirical evidence; and in addition to that, evidence from other scholarly works has been extensively used to supplement our findings. Based on the workdone, we conclude that; competitive tendering led to mergers and acquisitions in the Norwegian ferry sector; factors such as market power, economies of scale, creation of synergies and risk diversification were the motives behind mergers and acquisitions in the Norwegian ferry sector; and finally, competitive tendering has led to the reduction in the number of publicly owned companies in the Norwegian ferry sector. Implications of the findings to the theoretical realms, managerial practice and policy making, have been discussed categorically and where appropriate, recommendations have been given to the relevant stakeholders in the sector.

*Key words:* Public procurement; Market structure; Competitive tendering; Structural changes.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introductory remarks

In today's world, the general public has become more concerned about how their governments are spending (their) funds. Due to that, most governments have been constantly making attempts to promote efficiency in public spending. However, government agencies on one hand have been facing the challenge of budget constraints, and on the other hand, they are facing the growing pressure of the public demand for better quality of services, more transparency in public procurement, more efficiency, fairness and equity (Thai, 2009). Budget constraints and public demands are exerting pressures in opposite directions. In attempt to promote efficiency, several measures have been taken by different governments, one of which is the use of competitive tendering as an approach in procurement of goods, civil works and services. Rimmer (1994) reports that, during the 1980's and early 1990's, all the governments surveyed had increased their use of competitive tendering. The benefits of competitive tendering are enormous; it has been reported that tendering is capable of reducing unit cost for around 20% (Preston, 2005). Detailed discussion on the benefits of tendering will be done in the second chapter of this thesis.

In a nutshell, it is true that any attempts made to improve the practice of competitive tendering should be of paramount interest to any government and the general public at large, since such attempts imply promotion of efficiency and effectiveness. One of the ways of making such attempts is to review the implementation of competitive tendering and provide practical insights and ideas as far as the practice is concerned. The work done in this thesis is devoted to the study of interactive effect between competitive tendering and structural changes that have taken place in the Norwegian ferry sector. We show that competitive tendering can lead to structural changes, and such changes may in turn limit the application of tendering; therefore, it turns out to be a kind of interactive effect. We believe that by addressing the main research questions posed in this thesis, we will be able to shed light onto the implications of competitive tendering beyond efficiency gains prospects. Lessons developed in this work are useful to different stakeholders in the sector, such stakeholders are; the local authorities, contracting authority (Norwegian Public Roads Administration) the central government, ferry operating companies and the competition authority.

## **1.2 Competitive tendering in the Norwegian ferry sector**

Ferry services play a vital role in the Norwegian transport system because fjord crossings form an important part of the Norwegian trunk road network. Owing to that fact, improvement in efficiency of such services is of paramount significance as it would promote general public's welfare. Measures such as deployment of new ferries, increasing capacity, increasing frequencies and extending opening hours, have always been taken as part of improvement initiatives. Of all the measures that have been taken, it is important to note the amendment of the transport act in 1991 which legalized the use competitive tendering in Norway to a limited extent from 1994 onwards. For the first time, competitive tendering was implemented in the Norwegian ferry sector in 1996.

The history of competitive tendering implementation in this sector can be divided into three phases. The phases are categorized mostly based on the structural changes that have taken place in this sector. The first phase was the experimental implementation that begun in 1996 when tendering was introduced for the first time. Six (6) ferry links were subjected to tendering for the trial purpose. During this phase, there were about 15 major operating companies in the sector (Hervik 2010). Out of the 6 contracts, 5 contracts were won by incumbent companies and only one was won by a "new operator". Hervik and Sunde (2000) conducted an evaluation study for the efficiency consequences of the experimental phase; they reported that the results were very promising.

The second phase lasted between 2001 and 2006. In this phase, significant changes started to take place in the form of mergers and acquisitions and thus reducing the number of ferry companies in the sector. Out of the 7 contracts that were tendered out, only two contracts were won by incumbents while the remaining 5 contracts were won by "new operators". The last phase started 2006 to date. In this phase the effect of structural changes became vivid. Most of the contracts tendered during this period suffered small number of bidders due to structural changes. Once again, more of the contracts were won by incumbent companies.

Generally, the Norwegian government introduced competitive tendering in the ferry sector for two main reasons; first was to promote efficiency, and second was to improve the quality of ferry services. Since the results of the experimental phase were so promising, in 2003, the Norwegian Parliament ordered that tendering should be applied to all domestic ferry services, within 7 to 10 year period (Bråthen et al. 2004).

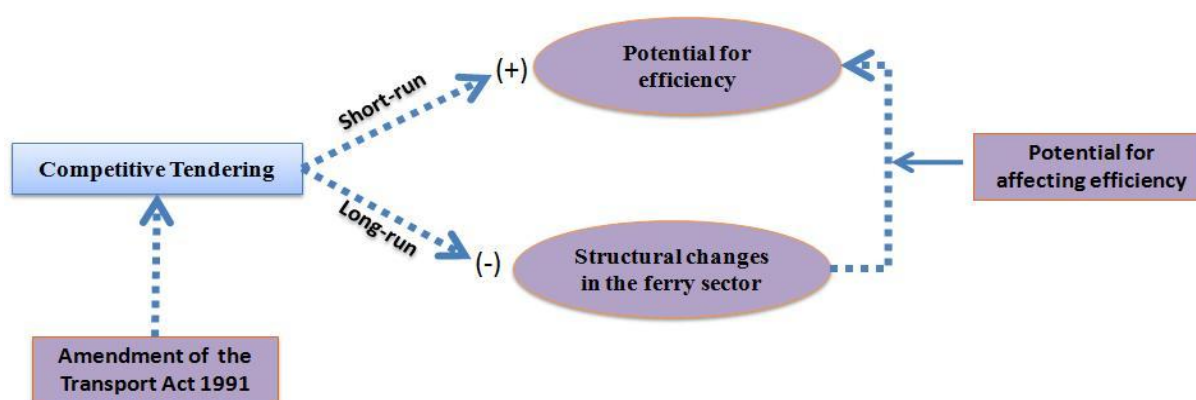
### 1.3 Previous studies on competitive tendering in the Norwegian ferry sector

Several studies have been conducted on the competitive tendering in the Norwegian ferry sector (see in; Hervik and Sunde 2000; Bråthen et al. 2004; Odeck and Bråthen 2009). Generally, all these studies focused on measuring the impact of competitive tendering on the efficiency of ferry services. Hervik and Sunde (2000) evaluated the performance of competitive tendering during the experimental phase; they established that, tendering had improved efficiency somewhat although less than promised by the operating companies ex ante. In their study, Bråthen et al. (2004) compared efficiency between tendered and non-tendered ferry links; they found that competitive tendering proved not to be an obvious successful means for improving efficiency. The results of the study by Odeck and Bråthen (2009), suggested that even in the context of competitive tendering, still there was inefficiency among the Norwegian ferries serving the trunk road network, and the potential for improvement was about 25%.

### 1.4. Research problem

Considering the findings in the previous studies, this thesis looks at competitive tendering in the Norwegian ferry sector from a different point of view. The thesis is concerned with the counteractive effect between the use of competitive tendering and the structural changes that have taken place in the Norwegian ferry sector. It is an assessment of the outcomes of competitive tendering beyond the prospects of efficiency. In a nutshell, one obvious observation is the declining number of operating companies in this sector which has occurred due to mergers and acquisitions. This has implications to the level of competition in the sector. In the short-run, competitive tendering promised efficiency, but now in the long-run, we begin to witness significant structural changes in the sector. The figure below portrays the focal point of our research problem.

**Figure 1.1: Conceptual model portraying the research problem for this thesis**



## 1.5. Objective and importance of the study

The main objective of this study is to explore on how competitive tendering has influenced the structural changes in the Norwegian ferry sector, and how those changes affect the application competitive tendering. As pointed out in the introductory remarks, the question of efficiency gains in competitive tendering is of paramount significance (no need for further debate on that). But it is important to realize that, structure of the market is one of the determinants for successful implementation of competitive tendering (Mathisen and Solvoll, 2008). Therefore, this assessment is important because it will highlight the consequences of competitive tendering beyond the efficiency prospects which was the primary motive for introducing tendering in the Norwegian ferry sector.

Since the Norwegian government is making a move to implement competitive tendering in the entire ferry sector, the findings of this study will provide some insights on the relevant measures to be taken in order to promote and attain the desired benefits of competitive tendering. The findings will be of interest to all important stakeholders in this sector which include; the local authorities, the contracting authority, the central government, operating companies and the competition authority.

## 1.6. Research questions

The formulation of research questions is an important starting point for any research project since it provides the general direction for the study to be undertaken (Kumar 2005). In this thesis, three research questions are to be addressed. These questions are centered on key aspects of competitive tendering and market structure. By answering the asserted questions, we will be able to achieve the objective of our thesis. The main research questions are:

- 1. Did competitive tendering stimulate mergers and acquisitions in the Norwegian ferry sector?**
- 2. What are the motives behind mergers and acquisitions in the Norwegian ferry sector?**
- 3. Does competitive tendering lead to disappearance of public companies from the ferry sector?**



## CHAPTER 2

### PUBLIC PROCUREMENT AND COMPETITIVE TENDERING

#### 2.1 Introduction about public procurement

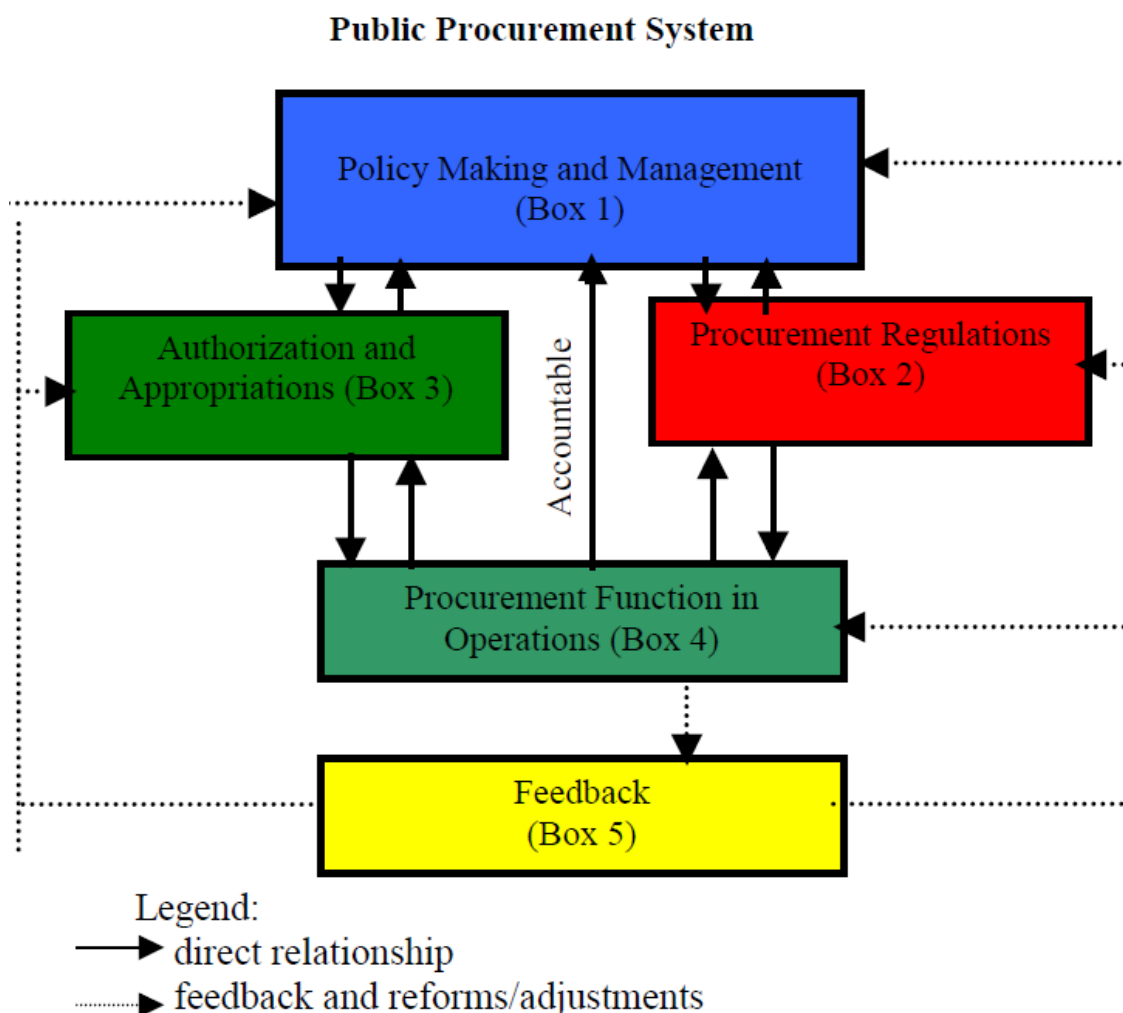
Public procurement is one of the sensitive activities in the management of public resources. The importance of public procurement cannot be underestimated due to the size of public expenditure connected to it. Based on numerous World Bank reports, public procurement has become so complex that it accounts up to 70% of total governments' expenditure (Thai 2009). Furthermore, it is reported that worldwide, public procurement accounts on average for 15% of GDP, and in the OECD countries alone, the figure is even higher, approximately 20% of the GDP (OECD 2007). According to OECD (2010), in Norway, public procurement accounts for more than 380 billion NOK each year and this is more than 15% of the gross national product. The aforementioned facts tell us one important message, that public procurement function plays a significant role and therefore, effective management of it should be one of the prime priorities for any government. This is because effective public procurement ensures proper management and utilization of public funds (OECD 2007).

To bring ideas into perspectives, it is appropriate at this point to have a clear definition of Public Procurement practice. A broad definition is borrowed from the United Nations Development Program (UNDP) that views public procurement as the overall process undertaken by public entities in acquisition of goods, civil works and services; it includes all functions from identification of needs, solicitation and selection of sources, preparation and award of contract, and all phases of contract administration up to the end of a services' contract or the useful life of an asset (UNDP 2007). Based on the Norwegian public procurement act, section 3 as amended in 2006 (§ 3. *Anskaffelser som er omfattet*), public procurement can be defined as the purchase of goods, services and construction works undertaken by the eligible contracting authorities (procuring entities). Section 2 of the same act states the entities that are recognised by the law as eligible procuring/contracting authorities (*Oppdragsgivere som er omfattet*), these include; central, municipal and county authorities. Also recognized by this law are the private legal entities within the utilities sector subject to the extent that they engage in procurement connected to these areas of activity; and also the legal entities in situations involving the building and construction contracts whereby the contribution from public authorities amounts to more than 50 per cent of the value of the contract.

## 2.2 Public procurement as a system

Public procurement operates as a system as it involves several functions, processes, frameworks and institutions. Thai (2009) reckons that, public procurement is a system that consists of procurement laws and regulations, procurement organizations, procurement techniques, processes and methods, and procurement professionalism and workforce. These aspects can be grouped into five core elements which constitute the public procurement system. These five core elements of public procurement as identified by Thai (2001) are; policy making and management, procurement regulations, procurement authorization and appropriations, public procurement function in operations, and feedback. Figure 2.1 below illustrates the five core elements of public procurement system.

**Figure 2.1: The core elements of public procurement system.**



[Source: Thai (2001)]

By looking at public procurement as a 'system', it is clear that the core elements illustrated above are interrelated and interdependent. This means that the elements can be viewed as subsystems that work together and complement one another to form the structured whole. Failure of anyone of the core elements will amount to the failure of the entire system. This view emphasizes the importance of each of the core elements in developing and maintaining effective and efficient public procurement systems. Brief description of these five elements is based on Thai (2001 2009) and OECD (2006 2008) as follows;

### **Policy making and management**

This element entails the public procurement roles performed by the executive branch of the government. It includes various managerial and technical responsibilities as well as policy decisions related to public procurement. The executive branch performs these roles at its various levels of organizational structure. Describing this element in the Norwegian context, it means the various policy and management responsibilities performed by the central government, public agencies and municipal authorities in the entire process of public procurement. It also includes government agencies which act as the 'watchdogs' of the public procurement processes, such agencies include; Norwegian Competition Authority ('Konkurransetilsynet'), Norwegian Public procurement Complaints Board (KOFA) and the Norwegian National Audit office.

### **Procurement regulations**

Due to enormous importance of public procurement in terms of expenditure size and also being a powerful tool for achieving various social and economic objectives, rules and regulations appear to be the life blood of any public procurement regime. Among other things, procurement rules and regulations are expected to cover the following aspects: procurement goals and objectives; procurement organizational structure, roles and responsibilities; procurement phases and process; and standards of conduct (Thai 2001). In Norway, the sources of procurement rules and regulations include; the constitution, acts (statutes) enacted by the parliament, executive orders, and administrative laws and decisions (administrative decisions on claims, protests by independent units such as a board or committee of contract appeals). In Norway for example, the public procurement act provides the main framework on how procurement processes should be handled along with rules and regulations issued by relevant authorities. Also, Norway has other laws which complement

the procurement act, rules and regulations; these include the Norwegian competition act and the penal code (when it comes to corruption issues) OECD (2009).

### **Authorization and appropriations**

This element constitutes decision making and other activities undertaken prior to embarking into the procurement process. They form what is referred to as the pre-procurement cycle phases. Before a public procurement process begins, it is usually presided by activities such as needs assessment, impact assessment, authorization and appropriation done by policy makers and relevant authorities. According to Thai (2001), this element has been largely neglected in the literature since it is assumed that the procurement process begins when the budget is approved. The truth of the matter is, pre-procurement cycle phases are also very important and procurement professionals have a great deal of help to the policy makers by providing relevant information based on their experience and knowledge of the procurement processes.

### **Procurement operational practices**

This is the major and most complicated part of a public procurement system (Thai 2001). It comprises of the public procurement workforce, procurement techniques, processes and methods, and the organization structure. This element performs the actual implementation of the budget expenditure, that is to say, it is responsible for executing the approved procurement budget (Thai 2009). For a public procurement system to be successful, procuring entities must implement efficient operational practices. Efficiency in operations means that the operational practices result in timely award of contracts at competitive market prices as determined by effective and fair implementation of procurement procedures (OECD-DAC 2006). In order to attain high level of efficiency in operations, procurement systems should among other things, recruit personnel who meet high professional standards of knowledge, skills and integrity (OECD 2008). In this thesis, competitive tendering which is one of the procurement methods will be assessed with respect to its application in the Norwegian ferry sector. This means, the thesis is devoted to assessing one aspect within procurement operational practices which as stated earlier is the most complicated part of the public procurement system.

### **Feedback**

This element refers to the opinions, views and recommendations given by various stakeholders following the implementation of the procurement process. Feedback provides

useful information to the policy makers which may turn to be essential for improvement or adjustment of the entire or specific areas of procurement system. Good feedback should be a result of continuous evaluation of the procurement process by looking at what happens to it and what results from it (Thai 2001). Different stakeholders may serve as potential sources of feedback, these include; legislative bodies/legislative committees, oversight bodies (such as internal auditors), special study commissions, and committees or teams. For example in Norway, fines for illegal direct procurement were introduced and implemented as a result of feedback from the National Audit Office after identification of illegal direct procurement in the public sector (OECD 2010). Other sources of feedback include procurement research, the suppliers, industry and professional organizations and the general public (Thai 2001).

### **2.3 Environment of public procurement**

Based on system theory, it is generally agreed that a typical system consists of main four features; first, the parts or elements, second, the qualities or properties of the system itself and its objects, third, internal relationships among its objects and, fourth, any system exists in an environment (University of Twente 2010). In the preceding section above, we have briefly explained the internal elements of the public procurement system; due to its importance, this section is devoted to a brief description of the environment that surrounds and interacts with public procurement system. The main variables/forces surrounding a public procurement system are; Market or Economic conditions, Legal forces, Political forces and, Social forces (Thai 2009). Each of these variables is as explained herein below:

#### **Economic or Market conditions**

This aspect plays a fundamental role in determining the level of competition among potential suppliers and therefore it has direct influence on quality and costs of goods, services or civil works that are acquired through public procurement. Important elements considered when describing market conditions include; the number of players (buyers and sellers), attributes of products, entry and exit barriers, information flow, and the power to determine market price. Market condition or situation is one of the main issues addressed in this thesis. Among other things, structure of the market/industry has significant role on the effectiveness of public procurement as argued by Mathisen and Solvoll (2008). Most public procurement laws insist that there should sufficient competition among the bidders, for example, the regulations on Norwegian public procurement, § 3-1(1) states that: “*Any acquisition shall, as far as possible*

*be based on competition regardless of the procurement procedure used*". Therefore, since the level competition among suppliers appears to be vital in determining effectiveness and efficiency of public procurement, it is worth to devote efforts in analyzing structure of the market/industrial sector in which public procurement is done.

### **Legal forces**

This refers to the broad legal framework that surrounds public procurement. Rules and regulations constitute one of the internal elements of the public procurement system, however, it is important to note that in the external environment there are also other legal frameworks that complement the procurement laws. These legal frameworks span from national laws and regulations to international trade agreements (Thai 2009). For example, Norwegian public procurement system is surrounded with extensive legal frameworks such: European Union public procurement directives, OECD conventions, the Norwegian penal code (when it comes to corruption issues), and the Norwegian competition act, just a few to mention. There are also other general laws such as contract law which provide general guidelines for business relationships. Generally, the legal frameworks are vital for smooth operation of any procurement regime, OECD (2010) reckons that such legislative frameworks facilitate the achievement of value for money in the public sector and more efficient use of public expenditure.

### **Political forces**

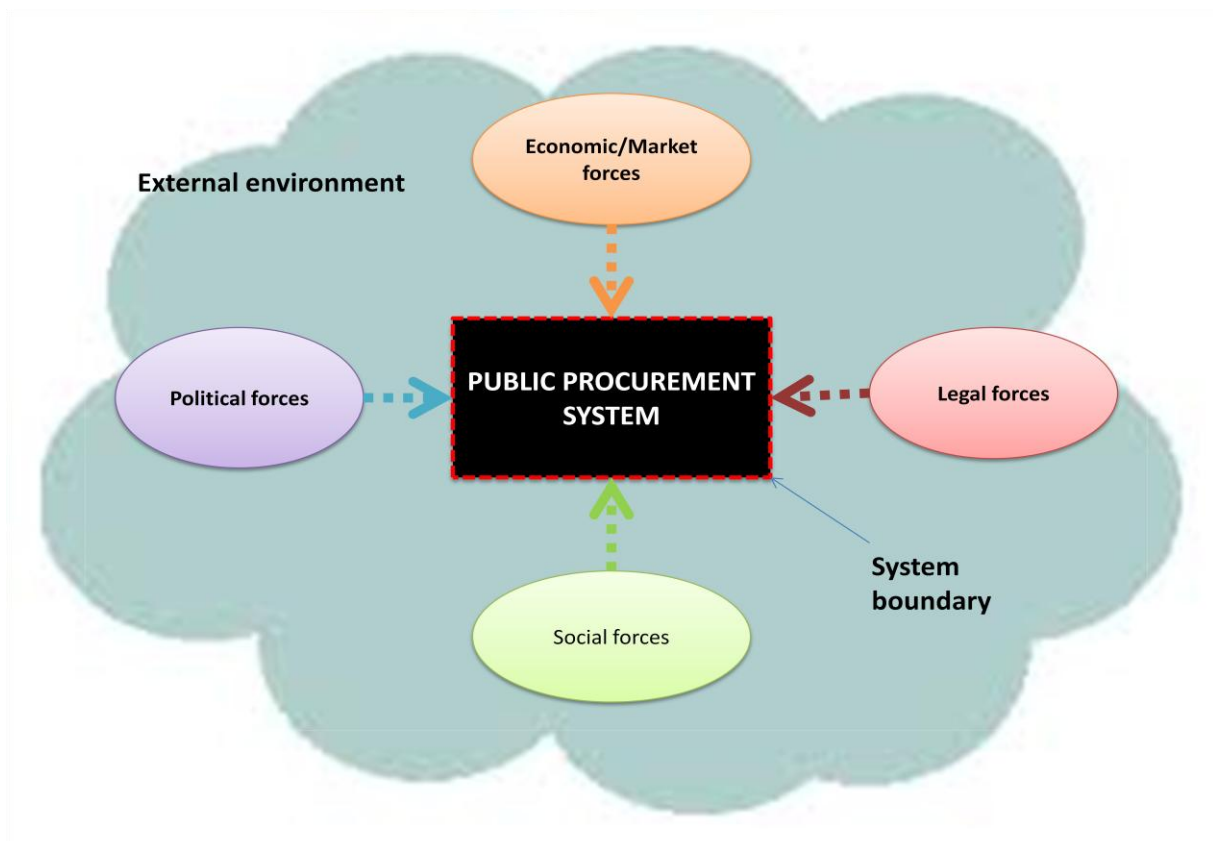
Since public procurement involves spending of public funds, it attracts lots of attention from various interest groups. In a democratic country, such groups may include; civilians, professional associations, trade associations and, business firms (Thai 2001). The interest groups are involved in various aspects of public procurement such as lobbying the parliament to pass or alter procurement laws, influencing implementation of these laws, and influencing budget authorization and appropriations processes. In democratic environment such as Norway, a final public procurement program is usually adopted as a result of compromise between policy makers and the various interest groups. When it comes to political issues, one useful piece of advice to public procurement professionals is, they should strive to make a balance between pressures of the interest groups and sound economic decisions.

## Social forces

Media and civil societies may have a crucial role in holding procurement officials accountable for procurement transparency, fairness, and efficiency. Issues such as environmental consciousness may also be addressed by these social groups. A good procurement system should allow proactive engagement of society in order to promote effectiveness and efficiency. In recognition of the importance of the social environment, World Bank (2006) noted that efforts are needed to develop independent and competent media that can investigate and report on procurement process, including corruption issues.

To conclude therefore, a public procurement system just like any other typical system is surrounded and interacts with external environment. The external environment has an impact on both, efficiency and effectiveness of the public procurement practice. The following figure illustrates the public procurement system and its surrounding environment.

**Figure 2.2: Illustration of the public procurement system and its external environment**



## 2.4 Competitive tendering in public procurement

In the first chapter of this thesis, it is pointed out that, currently competitive tendering is increasingly adopted by many governments as a mechanism for public procurement. This is due to the prospects of enhancing efficiency and effectiveness in acquisition of goods and services. As stated earlier, operational practices form a very complicated element of the public procurement system. It includes, among other things, procurement processes, techniques and methods. Due to its importance, many procurement laws, rules and regulations are highly devoted to setting a framework for guiding the conduct of public procurement practitioners and other stakeholders. This section is devoted to describing competitive tendering which is one of the procurement methods and a central aspect in this thesis.

By definition, competitive tendering simply refers to the mechanism of purchasing goods or services by inviting bids or tenders and choosing the supplier from among the bids that were received. The process is actually nothing but an auction in which the bidders (suppliers) compete for the exclusive right to sell their products or services (Krishna 2002). When applied by the government, competitive tendering is in effect an auction where by a public authority awards monopoly franchise to the company that offers to supply the product on best terms (Hervik and Sunde 2000). The essence of competitive tendering as its name suggests, is to create an environment of competition among potential suppliers and therefore allowing the procuring entity to acquire the best terms possible. Competitive tendering does not necessarily mean that contracts must be awarded to external bidders but rather it can sometimes result in contracts being awarded to in-house bidders as well or, a combination of these two (Rimmer 1994).

In Norway, public procurement procedures that procuring entities are required to follow are provided for by the applicable procurement law. The procurement procedures are established in section 4-2 of the Norwegian Public procurement rules and regulations and they include the following;

§ 4-2: (*Prosedyrer*)<sup>1</sup>

- *Open tender*: the procurement procedure that allows all interested suppliers to submit bids, but that does not allow negotiation.

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<sup>1</sup> This part has been captured from the Norwegian public procurement rules and regulations (written in Norwegian). It was translated with the help of Google translator. The author bears full responsibility in case of any translation flaws. The original version of the rules and regulations is available at:

<http://www.lovdatab.no/cgi-wift/ldles?doc=/sf/sf/sf-20060407-0402.html#4-2>



- *Limited competitive bidding*: the procurement procedure that allows only those suppliers who are invited by the contractor to submit bids, but that does not allow negotiation,
- *Competitive dialogue*: the procurement procedure in which the principal in one or more rounds carry out a dialogue with suppliers about alternative solutions before granting competing bids.
- *Competition with negotiations*: procurement procedure in which the principal has the right to negotiate with one or more suppliers.
- *Dynamic purchasing system*: a completely electronic process for making ordinary purchases, whose characteristics, as they exist on the market, meet the public client's requirements. The scheme is limited in duration and is open during the validity period for all suppliers who meet eligibility requirements and who have submitted an indicative offer that complies with the tender documents,
- *Electronic auction*: an electronic process whereby after a first full assessment of the offers, they are ranked with methods for automatic assessment and carry out a recurring process in which prices or new values for certain elements of the offers may be adjusted. Certain construction contracts and service contracts that include intellectual services, such as the design of work, cannot be ranked with methods for automatic review, and can therefore not be subject to electronic auctions.

In the Norwegian ferry sector, Open tender procedure has been applied since the introduction of competitive tendering. For that matter, therefore, our discussion on competitive tendering in this thesis shall focus on open tender as a competitive procedure unless stated otherwise.

#### **2.4.1 Benefits of competitive Tendering**

The use of competitive tendering especially in public procurement has become popular mostly because of its promising benefits. As pointed out earlier, competitive tendering is intended for creating competitive atmosphere among suppliers and thus making it possible for the buyer to acquire the best possible terms. The main advantage of tendering that is widely proclaimed is the reduction of costs. Several studies have reported an average cost reduction of 20% to 30%, as attributed to competitive tendering (Hensher and Wallis 2005; Preston 2005; Domberger and Rimmer 1994; Domberger and Farago 1994).

More so, competitive tendering is argued to improve quality of the tendered services. Domberger and Jensen (1997), report on the findings of the Australian Industry Commission's study in which it was found that competitive tendering leads to quality

improvements. This was mainly for three reasons, one is because it provides much clearer focus on what is required in the service, second, it presents opportunity to choose among alternative providers, and last, it encourages the buying entity to improve performance monitoring.

In addition to the aforementioned benefits, Tadelis and Bajari (2006) argue that open competitive tendering is known for transparency and providing equal opportunity among potential suppliers. This makes it easier to prevent corruption both in the public and private sector where procurement managers may have incentives to rig the system in return for bribes and other benefits. Transparency and equal opportunity are among the aspects that are highly emphasized in the Norwegian public procurement regulations. This is because transparency and equal opportunity are very important in building the public confidence on the country's public procurement system.

Equally important, it is argued that competitive tendering has the potential to improve accountability in service delivery (Australian Industry Commission 1996). The justification behind this argument is that when competitive tendering is applied, contracting agencies are required to specify clearly, not only the service to be delivered, but also the criteria on which the contractor's performance is to be measured and monitored. This instills a sense of responsibility among suppliers and provides a basis for 'punishment' in case the suppliers fail to deliver as required by the contract.

#### **2.4.2 Challenges faced in implementing competitive tendering**

Despite the potential benefits of the tendering practice, there are several challenges that need to be addressed in order for the procuring entity to attain the desired results. These are the aspects that arise either from within or from the external environment of the procurement system. It has been widely argued that unless competitive tendering is properly designed and implemented, the potential benefits of it cannot be realized (Domberger and Jensen 1997; OECD 2008). In this thesis, the following issues are considered to be the most critical challenges that procurement regimes need to address when designing and implementing competitive tendering:

Challenge in making the right choice and adequate specifications of the goods, services or works to be procured. The procuring entity has the obligation to provide adequate specifications and tell explicitly what is expected from the potential suppliers. It is a challenge to the procuring agency to gather sufficient information about what and how the

supplier should deliver. Adequate specifications help the potential suppliers to design their tenders accordingly. Rimmer (1994) reckon that, in some cases when the buyer gives insufficient information, it may result into bidders placing excessively low bids (winner's curse), in effect, this will generate substantial cost savings in the beginning but when the contracts are renewed the bidders tend to abruptly increase the prices to ensure full cost recovery.

Challenge in designing appropriate contractual obligations and methods of remuneration. The design of contractual obligations and methods of compensation have an influence on the results of the tendering practice. Different forms of contractual terms have different impact on influencing the willingness of potential bidders. For example, White and Tough (1995) conducted an empirical survey on public transport tendering and they concluded that there was strong evidence to suggest that gross-cost terms encourage more bids than net-subsidy terms. This was due to the difference in risk levels that the suppliers are required to bear between those two contract forms. An important message to the procuring entities is, design of contractual obligations and payment terms should be done carefully by considering the type industry/sector in which procurement is done.

Challenge in ensuring sufficient competition in the sector/industry. Existence of sufficient competition among potential suppliers is a key to achieving desired results in competitive tendering (Cambini and Filippini 2003). Consideration that sufficient competition is a key to competitive tendering is supported by the auction theory which suggests that, among other things, the benefits from an auction can also depend on the number of participating bidders (Waterson 1988; Hensher and Stanley 2008). In addition to that, it has been pointed out that competition plays an important role in encouraging improvements in service quality, innovation in service delivery and cost savings (Australian Industry Commission 1996). However, as Keisler and Buehring (2009) noted, often the government is the only buyer for certain products or services; therefore, in such cases the biggest challenge is to create an atmosphere that will steer enough competition among suppliers. Competition is another main aspect addressed in this thesis with respect to the Norwegian ferry sector, and for that reason, the next chapter discusses in detail about this aspect.

## **2.5 Conclusion of the chapter**

In a nutshell therefore, this chapter has briefly discussed an overview of the public procurement practice. The aim of including this chapter in our thesis is to provide, in part, the background understanding of the main units of analysis addressed in this thesis. These units of analysis are; competitive tendering, and industry/market structure. We have described the public procurement system, its components and the forces that operate within its surrounding environment. The thesis focuses on two aspects drawn from both, internal elements and the external environment. Competitive tendering is a part of the core internal element, operational practices, while market/industry structure is one of the external environment forces. Based on literature review, it is clear that market structure has strong influence on competitive tendering, and vice versa might be true. The Norwegian ferry sector will be assessed with respect to these two aspects.

## CHAPTER 3

### PERSPECTIVES ON MARKET STRUCTURE AND COMPETITION

#### 3.1 Introduction

In the previous chapter, we have discussed about public procurement system and its environment. Market structure is one of the variables in the external environment of public procurement system. As pointed out earlier, structure of the market determines to great extent the degree of competitiveness of a given market and this explains the reason why antitrust authorities are usually concerned about the structure of markets (Waldman and Jensen 2006). Major issues in the analysis of market structure include measurement of market concentration, the level of merger activity and, entry and exit barriers. In this thesis, reflections are made on the Norwegian ferry sector with respect to those aspects.

#### 3.2 Market structure

Microeconomics theory teaches that a market/industry consists of firms which produce interchangeable or substitutable products and/or services (Waldman and Jensen 2006). The substitutability could be based on the products' characteristics, their prices or their intended use. The structure of a market is made up of several elements such as; the number of sellers and buyers, barriers to entry and exit, nature of products, cost structures, information flow, and power to determine price. In the conventional framework, depending on the attributes of the structural variables, four market structures are defined, these are; Perfect competition, Monopolistic Competition, Oligopoly and Monopoly. A brief description for each type of the market forms is as follows:

**Perfect competition;** this is a market structure that is characterized by a large number of both, buyers and sellers such that none of them can dictate the price, that means, all players are price takers. In addition to that, the products involved are homogeneous and the buyers and sellers have complete information about the market. More so, there are no barriers to entry or exit and all sellers have the same cost structure. Because of these conditions, each firm will face a horizontal demand curve.

**Monopolistic competition;** this market structure has several producers and the products involved are differentiated but they are close substitutes. In addition, there are no barriers to

entry. Because of these conditions, each firm in this market structure will face a downward sloping demand curve, which means; if the price rises they sell less, and vice versa is true.

**Oligopoly**; this is a market form which is dominated by a small number of sellers. The firms are large and have the power to set market price and not take prices as given. In this market form, the decisions of each seller influences and, is influenced by other sellers. Since the sellers are few, each of them is aware of the actions or moves taken by others. The entry barriers such as; economies of scale, complex and expensive technology and strategic actions of the incumbent firms, are usually very high. Products may be homogeneous (as in steel industry) or differentiated (as in automobile industry). The Norwegian ferry sector can fit best in this category.

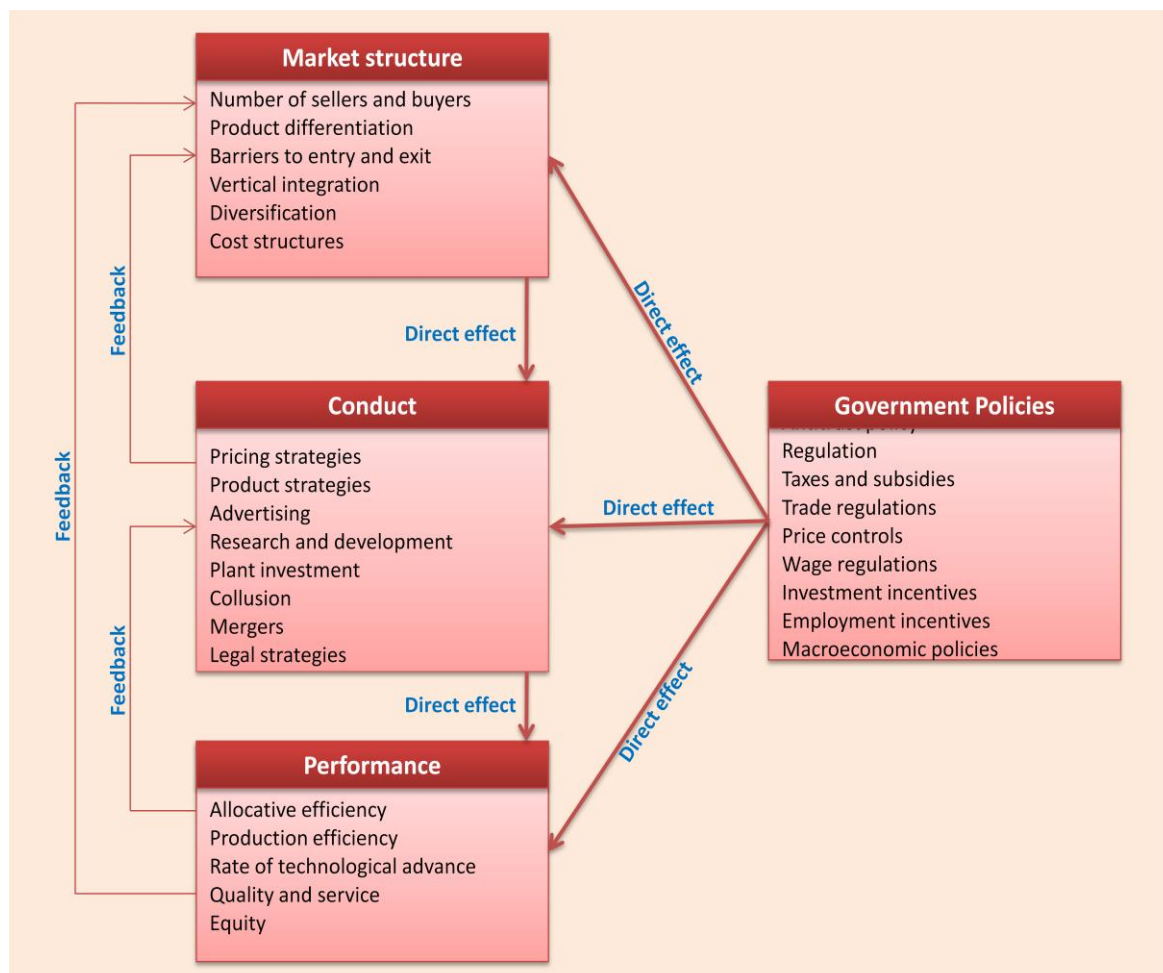
**Monopoly**; this is an extreme case in which the market is served by only one firm (monopolist) who produces the entire output. This implies that in a monopoly situation, there is no distinction between the firm and the industry. For that matter, the monopolist has the power to determine terms and conditions of exchange in the market. However, a monopoly faces a negatively sloped demand curve and therefore, any price increase will result in the loss of some customers.

### 3.3 Structure, conduct and performance

It is argued that the analysis of a given market's structure is a vital point of departure for making predictions about firms' conduct (Waldman and Jensen 2006). The analysis can be done with the help of the conventional Industrial economics tool, Structural-Conduct-Performance (SCP) paradigm. The SCP framework suggests that, market structure has an influence on the conduct of firms; and the conduct determines performance of those firms. More specifically, the paradigm propounds that the degree of market concentration is inversely related to the degree of competition among firms; and there is a positive correlation between market concentration and profitability (Edwards et al. 2006). Figure 3.1 portrays the SCP paradigm, it is illustrated that market structure determines conduct; and conduct determines performance. Moreover, it is shown that government policies have a direct influence on all three variables; structure, conduct and performance. Important to note are the feedback effects of conduct on structure; performance on conduct; and of performance on structure.

With respect to the subject addressed in this thesis, as introduced earlier, the Norwegian ferry sector is a typical example of the impact of conduct on structure; whereby the mergers and acquisitions that have taken place in the past ten years, have reduced the number of ferry operating companies in the sector. That is to say, the conduct in the Norwegian ferry sector (mergers and acquisitions), has resulted into structural changes (reduced number of firms).

**Figure 3.1: The structure-Conduct-Performance Paradigm**



[Source: Adopted from Waldman and Jensen (2006)]

### 3.4 Barriers to Entry

As mentioned earlier, barriers to entry constitute an important aspect of a market structure. When it comes to the analysis of competition cases, consideration of entry barriers is very important in assessing market dominance, in determining whether unilateral conduct might deter new firms from participating in a market, and in the analysis of the likely competitive effects of mergers (OECD 2005). While it is generally undeniable that entry barriers is a necessary factor to consider in competition analysis, there has been a strong debate on the

precise definition of ‘entry barriers’ (Waldman and Jensen 2006; OECD 2005). For example: Bain (1956), defined barriers to entry as market conditions that allow incumbent firms to raise prices above the competitive level without attracting entry; Stigler (1968) defined a barrier to entry as “a cost of producing (at some or every rate of output) which must be borne by firms that seek to enter an industry but is not borne by firms already in the industry”, Ferguson, (1974) defined a barrier to entry as “a factor that makes entry unprofitable while permitting established firms to set prices above marginal cost, and to persistently earn monopoly return”. Other definitions of barriers to entry can be found in; Fisher (1979), Von Weizsacker (1980), Gilbert (1989), and Carlton and Perloff (1994). However, regardless of many definitions of entry barriers that have been brought forth, OECD (2007) reckon that, the debate on the precise definition of entry barriers is irrelevant to the competition policy, instead, emphasis should be on more practical questions of whether, when, and to what extent entry is likely to occur given the facts in each case. Considering the scope of this thesis, we will not indulge ourselves into the debate on the precise definition of entry barriers; rather, we will devote our efforts in discussing common barriers to entry presented in literature and therefore build a basis for understanding and reflecting on their relevance to the Norwegian ferry sector.

The literature we have reviewed groups conditions that constitute Barriers to entry into several categories. The main categories are structural barriers and strategic barriers. On one hand, structural barriers are the barriers related to structural or technical characteristics of an industry for which even the incumbent firms have no control. They include conditions such as; economies of scale, capital cost requirements, absolute cost advantages and product differentiation. On the other hand, strategic barriers are the barriers related to the behavior of the existing firms within the industry. With strategic entry barriers, the incumbent firms deliberately behave in a way that decreases the probability of entry by other firms (Waldman and Jensen 2006). Strategic barriers are the most discussed in the literature and appear to be more interesting to economists (Smiley 1987). They include conditions such as investment in excess capacity, predatory pricing, limit pricing, filling in all niches, and Research and Development patents. Structural or strategic barriers to entry can also be distinguished as economic barriers or antitrust barriers (McAfee et al. 2004; Schmalense 2004). According to McAfee et al. (2004), “An economic barrier to entry is a cost that must be incurred by a new entrant and that incumbents do not or have not had to incur” and on the other hand “An antitrust barrier to entry is a cost that delays entry, and thereby reduces social welfare relative to immediate but equally costly entry”. More so, Barriers to entry can be expressed as either standalone or ancillary. Standalone is a barrier to entry that can operate on its own while an



ancillary barrier does not constitute a barrier to entry by itself but rather reinforces other barriers to entry if they are present. The following table presents barriers to entry by categories. See table 1.

**Table 3.1: Classification of barriers to entry**

Classification of Structural barriers to entry				
Structural Barriers to Entry	Economic		Antitrust	
	Standalone	Ancillary	Standalone	Ancillary
Economies of Scale				+
Switching Costs			+	
Brand Loyalty	+		+	
Capital Costs				+
Absolute Cost Advantages	+		+	
Informational Advantages				+
Organizational Advantages		+		+
Asset Specificity		+	+	

Classification of Strategic barriers to entry				
Strategic Barriers to Entry	Economic		Antitrust	
	Standalone	Ancillary	Standalone	Ancillary
Intense advertising			+	
Contracts to block distribution			+	
Excess capacity		+	+	
Price discrimination	+		+	
Lease-only marketing		+	+	
Tying	+		+	
Collective product proliferation				+
Lobbying to raise entrant's cost	+		+	

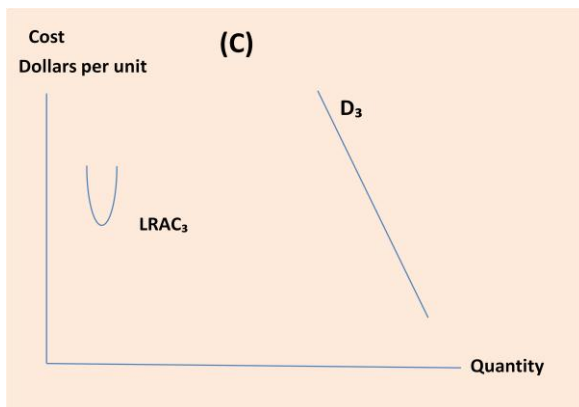
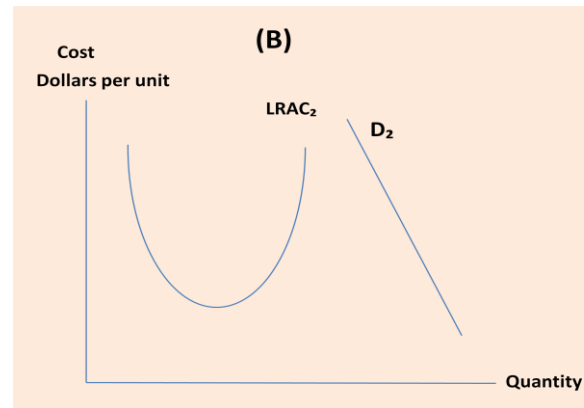
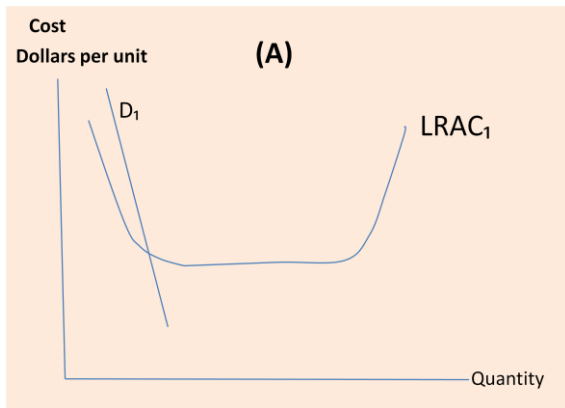
[Source: Adopted from McAfee et al. (2004)]

By considering the relevance to the issues discussed in this thesis, we hereby provide a brief description of some structural and strategic barriers to entry.

### **Economies of scale**

Theoretically this refers to the cost advantages that a business obtains as a result of growth and increase in production of units. Economies of scale are enjoyed when the average cost per unit falls as the volume of output increases. Assuming that potential entrants for a given industry have access to capital and same technology as incumbents, it easy for them to build a plant which produces enough output to minimize average cost, that is, a plant minimum efficient scale (Waldman and Jensen 2006). However, according to McAfee et al. (2004), under such conditions, if the added output of the entrant's plant of minimum efficient scale is large and exceeds industry demand and existing output, entry may become unprofitable. This

is due to the fact that entry would result into falling of the product price below the entrant's per unit cost of production. In line with this view, Waldman and Jensen (2006) illustrate economies of scale as a barrier to entry by presenting three different demand curves in relation to long-run average cost, see the graphs below.



[Source: Waldman and Jensen (2006)]

From the graphs above, (A) illustrates the case where demand is pretty low such that one firm can satisfy demand and still not reach MES. In such situation therefore, economies of scale becomes a significant barrier to entry. In case (B), it is shown that several firms could produce and sell enough output to minimize average cost and thus economies of scale is less significant barrier to entry than in case (A). In case (C), existing minimum efficient scale (MES) is very small compared to the industry demand and therefore, the market is much more competitive. However, with regard to economies of scale, McAfee et al. (2004) argued and concluded that it is not a barrier to entry by itself but it reinforces other barriers to entry

such as switching costs and brand loyalty (if they are present) and therefore they named it an ancillary barrier to entry.

### **Capital costs**

The amount of financial capital required to establish a business firm in a particular industry may be an obstacle for new firms to enter into that industry. When huge amount of funds is required to start business, an investor may be compelled to approach a capital market in order to acquire the funds. Dunne et al. (1988) reckoned that in most cases new firms in an industry are small in size and that there is higher risk of failure among such firms. This means that there is high risk of bankruptcy and default associated with new firms and for that reason the creditors tend to charge them higher interest rates. Waldman and Jensen (2006) noted that empirical evidence shows that small firms pay higher interest rates, and with regard to capital costs, they concluded that "the greater the capital investment needed to operate a minimum efficient scale plant, the higher the barrier to entry will be".

### **Sunk costs**

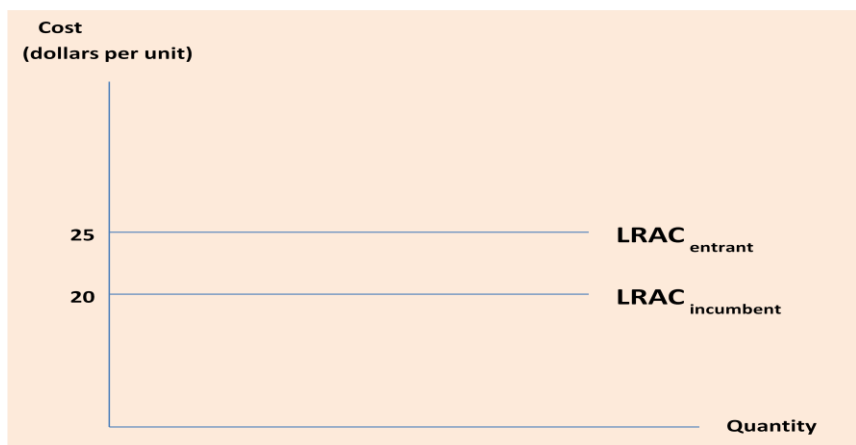
Sunk Costs are the costs that a firm cannot recover if it decides to leave an industry. High sunk costs act as a barrier to entry of new firms due to the risk of making huge losses if they decide to leave an industry. Theoretically, it has been argued that the presence of sunk costs may deter entry by making it riskier (Carlton 2004), therefore, the higher the sunk costs involved in a given industry the higher the barrier to entry. McAfee et al. (2004) argued and concluded that sunk costs are ancillary, antitrust barriers to entry. That is, the ability of sunk costs to delay entry depends on the presence of uncertainty. However, Cabral and Ross (2008) present a model in which they show a possibility that large sunk investments might actually facilitate entry by providing the entrant with commitment power to stay in the industry and thus soften the reactions of incumbents. In that respect, they conclude that the net effect may imply that entry is more profitable when sunk costs are greater. Nevertheless, for the purpose of our thesis, the most important issue is the basic understanding that sunk costs may discourage new firms to enter in an industry. A detailed discussion on the rest of the technical paradoxes behind sunk costs as entry barrier is beyond the scope of this thesis.

### **Absolute cost advantage**

This refers to the beneficial state where an incumbent firm is able to achieve and sustain lower average total costs for its products or services relative to that achievable by newer entrants. Various sources of Absolute cost advantages include patents on superior production

techniques, learning through research and development, exclusive access to scarce raw materials and establishment of business at more favorable locations. Due to lack of such advantages, the entrants are faced with higher average cost above those of incumbents at any common output level (McAfee et al. 2004). Therefore, the absolute cost advantages of the incumbent firms tend to discourage new firms from entering a given industry. The figure below illustrates absolute cost advantage as barrier to entry.

**Figure 3.2: Absolute cost advantage of an Incumbent firm**



From the graph above, the incumbent firm can produce any level of output for \$20 while the average cost for a potential entrant is \$25. As a result, any price above \$20 but below \$25 will generate positive economic profits for the incumbent firm but not to the entrant. Therefore, the cost advantage of the incumbent firm would pose a barrier to entry into this industry.

### **Asset specificity**

Transaction-specific assets are the non-redeployable physical and human investments that are specialized and unique to a particular task, Williamson (1975, 1985, 1986). Broader definition is given by McGuinness (1994) who argues that asset specificity is the extent to which the investments made to support a particular transaction have a higher value to that transaction than they would have if they were redeployed for any other purpose. Therefore, such assets are at their best use only when deployed in the activity for which they are intended and not otherwise. In that case, if a given industry involves investment in some specific assets, new firms are likely to suffer serious losses if entry fails. Klein et al. (1978) argue that Investments in specific assets represent a sunk cost since their value cannot be recovered elsewhere. For that reason, the requirement of specific assets may discourage new firms from entering a given industry.

### **Contracts as barrier to entry**

An incumbent firm may decide to lock up a buyer into a long-term relationship in order to preclude potential entrants. If this happens, then a contract may become a barrier to entry. Incumbent firms that face a threat of entry usually will tend to sign long-term contracts that prevent the entry of some lower-cost producers (Aghion and Bolton 1987). However, contracts preclude entry only during their life span and not beyond. Rasmusen et al. (1991) showed that a monopolist can exploit customer disorganization and exclude potential rivals by signing exclusive contracts with the buyers.

## **3.5 Mergers and acquisitions**

### **3.5.1 Overview**

One of the vivid phenomena that have happened in the Norwegian ferry sector is the occurrence of mergers and acquisitions. Since the introduction of competitive tendering in 1996 several mergers and acquisitions have been recorded. One of the consequences of these mergers and acquisitions has been the heightened concern over possible anticompetitive effects in the Norwegian ferry sector. To put ideas in perspective, first, it is important to have a clear understanding of the two terms, mergers and acquisitions. On one hand, a merger refers to the consolidation or unification of two companies into one economic unit (Weston and Weaver 2001) while on the other hand, acquisition refers to the situation where a company attains ownership control of another company or a business unit of another company which in turn becomes a subsidiary to the acquiring party (Capron 1999).

Mergers can be distinguished in three broad categories: horizontal mergers, vertical mergers and conglomerate. Horizontal mergers involve unification of companies that are direct competitors, that is, they are producing/selling the same product in the same geographic market. Vertical mergers involve firms that produce at different stages of a supply chain in the same industry; and conglomerate mergers involve unification of companies that operate in different geographic markets. Based on this distinction, the mergers and acquisitions in the Norwegian ferry sector fall under the category of horizontal mergers. Since our study is centered on the Norwegian ferry sector, from now on as we mention mergers and acquisitions we will be referring to horizontal mergers and acquisitions.

In both cases, horizontal mergers and acquisitions, the obvious immediate effect is the reduced number of ‘players’ in the industry in which the merged entities operate. This implies

alteration of the industry structure which clearly has implications on the level of competition within the industry. As far as the Norwegian ferry sector is concerned, both, mergers and acquisitions have taken place. Table 3.2 presents examples of mergers and acquisitions that have taken place in the Norwegian ferry sector between 2001 and 2008.

**Table 3.2: Examples of Mergers and acquisitions in the Norwegian ferry sector**

<b>S/N</b>	<b>Name of the companies involved in a Merger/Acquisition</b>	<b>Year</b>	<b>Activity</b>	<b>Name of the New company formed</b>
1.	Møre og Romsdal Fylkesbåtar <b>AND</b> Fylkesbaatane i Sogn og Fjordane	2001	Merger	Fjord1 Nordvestlandske
2.	Hardanger Sunnhordlandske Dampskipsselskap <b>BOUGHT</b> BERGEN Nordhordland Rutelag	2002	Acquisition	HSD brand was retained
3.	Veolia Transport Norway <b>BOUGHT</b> Finnmark Fylkesrederi og Rutebilselskap AS-FFR	2003	Acquisition	FFR brand was retained
3.	Fosen Trafikklag <b>BOUGHT</b> Innherredsferja AS	2005	Acquisition	Fosen brand was retained
4.	Hardanger Sunnhordlandske Dampskipsselskap <b>AND</b> Gaia Trafikk	2006	Merger	Tide ASA
5.	Troms Fylkes Dampskipsselskap <b>AND</b> Ofotens og Vesteraalens Dampskipsselskab	2006	Merger	Hurtigruten Group
6.	Stavangerske AS <b>AND</b> Tide Sjø AS	2007	Merger	Tide brand was retained
7.	Fosen Trafikklag <b>BOUGHT (51% shares) of</b> Nesodden-Bundefjord Dampskipsselskap (NBDS)	2007	Acquisition	Fosen brand was retained
8.	Torghatten ASA <b>AND</b> Ferry division of Hurtigruten ASA	2008	Acquisition	Torghatten Nord AS

### 3.5.2 The motives behind Mergers and acquisitions

The understanding of the motives behind mergers and acquisitions is of particular importance in our thesis. This is due to the fact that such understanding will provide a basis not only for explaining what has happened in the Norwegian ferry sector but also for prediction of the future behavior of the companies. Literature has extensively elaborated various core motives behind mergers and acquisitions, based on that, the following factors are the most advocated key drivers for the occurrence of mergers and acquisitions.

**Market power;** with this motive, the merged firms combine their strengths and create synergy. In case of horizontal mergers, always they lead to increased concentration and thus, there is a possibility of increasing market power. When market power is the main motive, the anticipated benefits include; increased size of the firm leading to the monopoly power and heightening entry barriers and therefore, reduced competition.

**Economies of scale;** by combining the production activities of two or more firms, a merger anticipates to reduce production or marketing costs and hence achieve economies of scale. This implies that merging firms are motivated by the promised efficiencies resulting from the consolidation of their production activities.

**Financial motives;** under financial motives, the merging firms aim at building **financial synergy** which is the resultant feature of corporate merger or acquisition. Financial synergy has both, short run and long run impacts. In the short run, it may result in increased earning per share and improved liquidity; and in the long-run, it may lead to; increased Debt Capacity, improved capital redeployment, reduction in debt and bankruptcy cost, and stabilizing Earnings. In addition, increased firm size may give it an access to cheaper capital.

**Risk diversification;** mergers and acquisitions can help to spread risks by providing a company with several alternative business lines or several market segments. By increasing the size of the firm and at the same time reducing the number of competitors, a company is able to spread its presence across the market. That being the case, such a company can compensate losses in one business line/market segment by gains obtained other business lines/market segments.

**Managerial motives;** under managerial motives, mergers and acquisitions occur in order to fulfill specific managerial goals. Such goals may include empire building whereby companies

decide to merge for mere reason of attaining growth. Another managerial motive is a desire to rescue a failure firm; for example, on the verge of bankruptcy, a firm may attempt to find a buyer in order to be bailed out. Also aging of owners or lack quality human capital may drive the owners to initiate a merger or acquisition in order to fill the human resources gap.

In the literature, many authors have presented various descriptions of the motives behind mergers and acquisitions. What we have presented in this thesis is just a summary that we believe has captured all important factors. The table below provides examples of various motives as advocated by different authors.

**Table 3.3: Motives behind mergers and acquisitions as cited in the literature**

S/N	Motive	Author(s)
1.	To achieve synergetic gains.	Porter (1987) Berkovitch and Narayanan (1993) Lehto and Lehtoranta, (2004)
2.	Technical Efficiency	Chaaban, Réquillart and Trévisiol (2005)
3.	Economies of scale	Walter and Barney (1990) Waldman and Jensen (2006)
4.	Diversification for risk reduction	Goldberg, (1983).
5.	Market power	Kim and Singal (1993) Krishnan and Krishnan (2003)
6.	Increasing market share	Gosh (2004)
7.	Penetration into new businesses	Walter and Barney (1990)
8.	Empire-building	Black (1989)
9.	Power achievement, sensation seeking and prestige	Lausberg and Stahl (2007)
10.	Resource redeployment	Capron et al. (1998)
11.	Expansion of product lines or markets	Walter and Barney (1990)
12.	Innovation performance	Ahuja and Katila 2001
13.	Managerial motives	Malmendier and Tate (2008) Jensen (1986) Roll (1986)



### 3.5.3 The impact of mergers and acquisitions: Evidence from the literature

So far, Literature shows that, numerous studies on the impact of mergers and acquisitions have been conducted across various industries. However, to our knowledge, no study has been conducted on the impact of mergers and acquisitions within the ferry sector. Nevertheless, findings from other sectors especially transport services such as bus transport, aviation and rail transport may offer some useful insights and point of departure for our analysis. From the literature we have reviewed, it appears that no exclusive conclusion can be made regarding the impact of mergers and acquisitions on efficiency and productivity (See table 3.4).

**Table 3.4: The impact of mergers and acquisitions: Empirical findings**

S/N	Industry studied	Unit of analysis	Findings	Author(s)
1.	Bus transport	Efficiency and productivity	1. Mergers outperformed non-mergers as far as scale efficiency is concerned 2. The merger process led to productivity improvement.	Odeck (2008)
2.	Air transport	Effect of mergers on prices	Merging firms raised airfares by 9.44 percent relative to the routes unaffected by the merger.	Kim and Singal (1993)
3.	Bus transport	Efficiency	Improvement in the internal efficiency of the acquired firms.	Cowie (2002)
4.	Railway transport	Welfare effects of mergers and acquisitions	Gains in efficiency gave rise to an increase in consumer surplus of about 25% between 1986 and 2001.	Ivaldi and McCullough (2005)
5.	Banking	Market power and interest rates	Mergers lead to greater market power and contributed to the rise of personal loan but reduced automobile loan rates.	Kahn et al. (2005)
6.	Banking	Performance	The merged banks were found to perform better in the industry.	Cornett and Tehranian (1992)
7.	Banking	Performance	Domestic mergers among equal-sized banks significantly increase the performance of the merged partners.	Vennet (1996)
8.	Several industries	Profitability	Large companies were found to decrease profits and efficiency while small firms increased profits.	Gugler et al. (2003)
9.	Several industries	Post-acquisition performance	Acquiring firms' performance does not positively change as a function of their acquisition activity.	King et al. (2004)
10.	Agriculture	Performance	Considerable production economic gains from mergers can be expected.	Bogetoft and Wang (2005)
11.	Manufacturing sector	Ex post analysis of operating results	Ex post profitability of the targeted corporations decreased sharply.	Ravenscraft and Scherer(1989)
12.	Manufacturing sector	Relationship between acquisitions and productivity	Takeovers are associated with strong increases in productivity	Baldwin and Gorecki (1987)

### 3.6 Ownership structure and performance

The impact of ownership structure on performance is one of the subjects that have attracted attention of economic researchers. The research has been directed towards responding to the debate concerning the efficiency of public enterprises<sup>2</sup> versus privately owned enterprises. The purpose of introducing this subject in this chapter is to set a theoretical basis for discussing change in ownership structure in the Norwegian ferry sector. In theory, the incentive of profit is expected to make private companies more efficient than public firms and thus better suited for competitive markets than public companies (Vickers and Yarrow 1988). Over a period of time, the Norwegian ferry sector has witnessed disappearance of many public companies after the introduction of tendering, so we want to come up with possible explanation and prediction for the observed trend.

Extensive research has been done to compare efficiency between public and private companies. Evidence from such studies suggests that private companies are more efficient than public companies. Megginson and Netter (2001) report that, out of the 10 studies that compared the performance of public and private enterprises operating in the same industry, eight concluded that private enterprises performed better. Table 3.5 provides examples of such studies. In addition to that, the literature has widely discussed the technical reasons on why private entities are likely to be more efficient than public entities. Some of the arguments brought forth are:

- **Multiple goals** of public companies versus well defined and focused goal of private companies. Entities owned by government have a problem in defining their goals because usually the governments have multiple objectives apart from maximizing profits or shareholder wealth. These objectives can change from one administration to the next. OECD (2003) note that, under public-ownership, the companies are faced with multiple and often conflicting objectives, and are thus subject to the vagaries of politics and interference by politicians. More so, even where such companies pursue the objective of shareholder wealth maximisation, it is very hard to directly link managers' performance with incentives to achieving those goals. But to the opposite, private companies enjoy the benefit of having a clear corporate goal of profit maximization that makes it possible for managers to be focused (Hansmann and Kraakman 2000).

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<sup>2</sup> A company is defined as privately owned if the majority (more than 50%) of its shares is controlled by individuals or private companies; otherwise the company is defined as publicly owned (Adopted from Terje and Solvoll, 2008).

- **Soft budget constraints of public companies.** Since public-owned entities enjoy the financial back-up of the government, financial risk is not a critical issue to most of them (Qian and Roland 1998; Frydman et al. 2000). OECD (2003) reckon that, in almost every case, state owned firms will not be allowed to fail, and thus, budget constraints are weak; more so, state owned firms face no consequence of poor performance in the form of bankruptcy or exposure to the risk of a hostile takeover. But this is not the case when it comes to private firms where for example, the discipline enforced by capital markets and the threat of financial distress always put them under pressure of working hard and deliver good results.
- **Excessive regulations,** procedures and compliance demands on public companies. Managers of public companies have to comply with numerous regulations and a complicated decision making hierarchy. Such a huge pile of regulations limit public companies to be flexible and agile as private companies. Due to that, managers of public companies find themselves putting less effort on innovation and competitiveness while their counterparts in privately owned companies put all their efforts on innovation and creation of competitive advantages.
- **Difficulty in mobilizing equity capital for a public company.** Equity capital is the invested money that, as opposed to debt capital, is not repaid to the investors in the normal course of business. Even though public companies have a guaranteed buck-up, such a support is usually in terms of bail out package that is extended as a loan. OECD (2003) argue that, due to fiscal constraints, often public owned firms would starve of capital. But it has always been much easier for their counter parts (privately owned firms) to mobilize equity capital essential for improvement and meintenance of business infrastructure as well as meeting the demamnd for new and growing services.

**Table 3.5: The Efficiency of Public versus Private Ownership: Empirical Evidence**

Authors	Description of the study	Findings and conclusions
D'Souza and Megginson (2000)	Examines pre- versus post-privatization performance changes for 17 national telecom companies privatized through share offerings during 1981–94.	Profitability, output, operating efficiency, capital spending, number of access lines, and average salary per employee all increase significantly after privatization. Leverage declines significantly; employment declines insignificantly.
Dewenter and Malatesta (2001)	Compares pre- versus post-privatization performance of 63 large, high-information companies divested during 1981–94 over both short-term [(+1 to +3) versus (–3 to –1)] and long-term [(+1 to +5) versus (–10 to –1)] horizons. Examines long-run stock return performance of privatized firms and compares relative performance of a large sample (1,500 firm-years) of state and privately owned firms during 1975, 1985, and 1995.	Documents significant increases in profitability (using net income) and significant decreases in leverage and labor intensity (employees ÷ sales) over short- and long-term horizons. Operating profits increase prior to privatization, but not after. Significantly positive long term (1–5 years) abnormal stock returns, mostly in Hungary, Poland, and UK. Results strongly indicate that private firms outperform SOEs.
Boardman, Laurin, and Vining (2000)	Compares 3-year average post privatization performance ratios to 5-year pre-privatization values for 9 Canadian firms privatized during 1988–95. Computes long-run (up to 5 years) stock returns for divested firms.	Profitability more than doubles after privatization; efficiency and sales increase significantly (though less drastically). Leverage and employment decline significantly; capital spending increases significantly. Privatized firms significantly outperform Canadian stock market over all long-term holding periods.
Boubakri and Cosset (1998)	Compares 3-year average post-privatization performance ratios to 3-year pre privatization values for 79 firms from 21 developing countries and 32 industries over 1980–92. Tests for significance of median changes in ratio values post-versus pre-privatization. Binomial tests for percentage of firms changing as predicted.	Documents significant post-privatization increases in output (real sales), operating efficiency, profitability, capital investment spending, dividend payments, employment; significant decreases in leverage. Performance improvements are generally larger than those documented by MNR.
Megginson, Nash, and Randenborgh (1994)	Compares 3-year average post-privatization performance ratios to 3-year pre privatization values for 61 firms from 18 countries and 32 industries from 1961–89. Tests significance of median changes in post versus pre-privatization periods. Binomial tests for percent of firms changing as predicted.	Documents economically and statistically significant post-privatization increases in output (real sales), operating efficiency, profitability, capital investment spending, and dividend payments; significant decreases in leverage; no evidence of employment declines, but significant changes in firm directors.

[Source: Megginson and Netter (2001)]

## CHAPTER 4

### PERSPECTIVES ON THEORETICAL FRAMEWORKS

#### 4.1 The Auction Theory

##### 4.1.1 Introduction

Auctions have been a common phenomenon in our lives. It was reported by a Greek historian, Herodotus that auctions were used during the closing of the Roman Empire as early as 500 B.C. (Milgrom and Weber 1982). Today, auctions can involve a case where the seller (auctioneer) is looking for the highest price possible or, a case, as in government procurement, where the buyer (auctioneer) is looking for the lowest price possible. Formally, economic theory defines an auction as a market institution with an explicit set of rules that determine resource allocation and prices on the basis of bids from the market participants (McAfee and McMillan 1987).

There are four common forms of auctions; The *English* auction, the *Dutch* auction, the sealed-bid *first-price* auction and the sealed-bid *second-price* auction (Krishna 2002). In the English auction, the price ascends openly and the auction stops when there is only one interested bidder (the highest bidder). In the a Dutch auction, opposite to the English auction, the seller begins by pronouncing a price high enough such that no bidder is interested of buying at that price and thus the price is lowered gradually until some bidder indicates her interest of buying the object. The sealed-bid *first-price* auction involves bidders submitting bids in sealed envelopes and the person submitting the highest bid wins the object and pays what he bids. As its name suggests, in the sealed-bid *second-price* auction the bidders submit bids in sealed envelopes; the person submitting the highest bid wins the object but pays not what he bids, but the second highest bid. Auctions can also be categorized as *forward* auctions and *reverse* auctions. The forward auctions are the ordinary auctions in which the buyers compete to obtain a good or service and the winner is the one with the highest price. In reverse auctions, sellers compete to obtain business and the winner is the one with the lowest selling price.

#### 4.1.2 Competitive tendering as an auction

Competitive tendering applied in procurement is a typical example of a reverse auction. Hervik and Sunde (2000) note that, competitive tendering is in effect an auction where a public agency awards a monopoly franchise to the company that offers to supply the product on best terms. However, there has always been an emphasis on the selection of the lowest price bidder, that is, the company which can produce a pre-specified output at the lowest possible cost is appointed as the winner of the tender. It is this kind of competitive tendering that has been implemented in the Norwegian ferry sector. According to Demsetz (1968) the selection of the lowest price bidder should induce both internal and allocative efficiency. Nevertheless, Hervik and Sunde (2000) argue that in practice, tender competitions have usually been limited to induce internal efficiency only. Along all these scientific contentions, it is widely accepted that competitive bidding is a method which can best achieve efficiency, quality improvement, equal treatment and transparency (Soudry 2004).

Since auctions promise some benefits (efficiency, effectiveness, etc.), it makes a lot of sense to undertake evaluations and assess their performance. There are two main grounds commonly used to evaluate auctions; these are the *revenue* basis and the *efficiency* basis (Krishna 2002). Under the *revenue* basis, the auctioneer is more concerned about the auction format that will yield the possible maximum revenue for the object, whereas, under the *efficiency* basis, an auction is successful if the bidder that *ex-post* values the item most, actually gets it. In the case of procurement of services, efficiency means that the contract is won by the lowest possible price bidder and the service is delivered at a high level. It is the efficiency criterion that has been the unit of analysis in several studies undertaken on the competitive tendering in the Norwegian ferry sector (see in; Hervik and Sunde 2000; Bråthen et al. 2004; Odeck and Bråthen 2009).

#### 4.1.3 Auctions and the number of bidders

The general proposition presented in the auction theory is that, the larger the number of bidders, the higher the competition and therefore, the more it benefits the buyer (Gomez-Lobo and Szymanski 2001). That is to say, there will be lower selling winning bids (or higher buying winning bids) as the number of bidders increases and, vice-versa is true (Brannman et al. 1987). Mathisen and Solvoll (2008) note that, when competitive tendering is applied, a profit increasing strategy for a company is to reduce the number of actual competitors in order to capture market power (example, through cross-ownership or mergers) so that bids

can be raised and increase producer surplus. In the case of 3G auctions in Europe, it happened that after the first successful auction in 2000 by the UK government, the next auction was held in Netherlands, due to formation of alliances between the incumbents and the potential new entrants, competition was poor and the Dutch government collected only €2.7 billion far less than £22.5 billion that was collected by UK government (Douma and Schreuder 2005). In their study, Gomez-Lobo and Szymanski (2001), have established that a higher number of bids is associated with the lower cost of service. Therefore, the auction theory proclaims that the benefits from an auction, among other things, can also depend on the number of participating bidders. Specifically it is argued that, the higher the number of bidders in an auction, the more likelihood that the buyer will receive lower quoted prices (bids) (Waterson 1988; Hensher and Stanley 2008).

## **4.2. Game theory**

### **4.2.1 Introduction**

The study of how interdependent decision makers make choices is what the scholars refer to as the Game theory. Dixit and Nalebuff (1991) define game theory as a science of strategic thinking. According to Waldman and Jensen (2006), game theory can be used to provide insights into many types of decision making scenarios, and for that reason, in the last two decades economists have used it to analyze a wide variety of economic interactions. In his Nobel prize lecture, Prof. Robert Aumann reckoned that game theory can be applied to all interactive situations. Like any typical game, games that are described and analysed in game theory include players, actions, information, strategies, payoffs, outcomes and equilibria. The players are the interdependent decision makers; Actions are the possible moves that players can make; Information is what each player knows at each point in the game; Strategies are the rules telling each player which action to choose at each point in the game; Payoffs are the profits or expected profits the players receive after all of the players have picked strategies and the game has been played out; The outcome is a set of interesting results the modeler selects from the values of actions, payoffs, and other variables after the completion of the game; An equilibrium is a strategy combination that consists of the best strategy for each player in the game.

#### 4.2.2 The Norwegian ferry sector: Game theory perspective

The subject addressed in this thesis is about the interaction of competitive tendering and structural changes in the Norwegian ferry sector. Competitive tendering was introduced by the Norwegian government as a new approach for purchasing ferry services. Following that introduction, ferry operating companies began to act strategically so as cope with the challenges and demands of competitive tendering. We view this scenario as a game that involves two sets of players, one set is comprised of the contracting authorities that buy ferry services, and the other set is comprised of the operating companies that supply the ferry services. The decisions taken by anyone of these two antagonistic sides would tend to affect the conduct of the other. For example, as the contracting authorities begin to implement competitive tendering, the operating companies may act strategically to reduce competition among themselves in order to maximize the chances of winning contracts. It is from this perspective we derive the title of our thesis, “Tit-for-tat”<sup>3</sup> which literally means reciprocal actions, and is synonymous to the words, *this for that; blow for blow; or equivalent retaliation*. Here we consider the reciprocal actions of contracting authorities (on behalf of the government) and the ferry operating companies.

#### 4.2.3 Major types of games

##### **Simple zero-sum games**

A zero sum game represents a situation in which a participant's gain or loss is exactly balanced by the losses or gains of the other participant(s). In such situation, if the total gains of the participants are added up, and the total losses are subtracted, they will sum to zero. A popular example of such situation is that of two competing icecream vendors who have to choose a location along the beach. Also, games such as football and poker are zero-sum games (Dixit and Nalebuff 1991). One dominant solution to such games is obtained by using the so called minimax strategy, that is, one player plays a strategy that minimizes the maximum possible outcome for the other player.

##### **Prisoner's dilemma game**

This is a game that represent situations where there are possibilities for mutual advantage as well as conflict of interest between players. The game demonstrates why two people might not cooperate even if it is in both their best interests to do so. In its classic form, the game

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<sup>3</sup> Tit for tat is a highly effective strategy in game theory for the iterated prisoner's dilemma; however, in this context we simply use the literal meaning of the phrase.



presents two prisoners interrogated independently for common charges, given the possible payoffs, the dominant strategy for them is to confess. It is called a dominant strategy because a player remains better off no matter what the other player does. However, it would be in the best interest of both players if they had not confessed. That is to say, the fundamental problem in the prisoner's dilemma is that, for each player, the dominant strategy is to defect, while they would both be better off if they chose mutual cooperation (Douma and Schreuder 2005). Many people, firms and nations have been gored on the horns of prisoner's dilemma (Dixit and Nalebuff 1991).

### **Simultaneous games**

These are games that represent situations in which all players make decisions without knowledge of the strategies that are being chosen by other players. Therefore, even if the players make their decisions at different points in time, the most important point is, when one player makes its choice, it does not know what the other player has chosen. The basic prisoner's dilemma is described as simultaneous game. It is not obvious how coordination between the two players' choices can be obtained. Simultaneous games are solved by Nash equilibrium.

### **Sequential games**

These are games in which one player makes a move and then the other player responds. For example firm 1 makes a move then firm 2 responds, then firm 1 responds to firm 2's response and so on. In sequential games, it is easy to coordinate the choices made by both players since one player is allowed to move first while the other observes. The most important point with sequential game is, the player that takes a move must have information of the action that has been taken by the opponent, otherwise the difference in time would have no strategic effect.

### **Repeated games**

These are also called iterated games. They represent situations in which some base game is played in a number of repetitions. Repeated games reflect on the idea that, a player will have to take into account the impact of his current action on the future actions of other players. This means that, the current action of the player can affect the future outcomes of the game. Repeated games have different equilibrium properties because the threat of retaliation is real; as player will play the game with the same opponent again and again.

#### **4.2.4 Rationale for modelling economic scenarios into games**

Game theory is a powerful tool for analysing situations in which two or more people have to make interdependent decisions (Douma and Schreuder 2005). The most important benefit enjoyed from game theory is the ability to gain insights about the interactive situations and thus, we can use that understanding to find solutions for such situations. Game theory does not guarantee to solve all questions, but it provides a guidance that can translate the ideas and insights into action.

Contracting authorities and operating companies in the Norwegian ferry sector face an interactive situation. This thesis uses game theory, among other theories, to build an understanding and gain insights about the Norwegian ferry sector. The generated knowledge can provide the foundation for solutions and predictions regarding the challenges faced by the players in this sector.

### **4.3 The theory of incentives**

#### **4.3.1 Introduction**

The issue of designing institutions that provide good incentives for economic agents has become a critical question of economics (Laffont and Martimont 2002). The essence of incentive question is the problem of delegating a task to an agent who has different objectives than the principal who delegates this task, whereas information about the agent is imperfect. Therefore, conflicting objectives and asymmetric information are the two basic ingredients of incentive theory (Laffont and Martimont 2002). The problem regarding private information of the agents is of three types; one is adverse selection; that is, the agent has some private knowledge of his cost or valuation that is not known to the principal ex-ante. The second type is moral hazard which is the hidden action of the agent ex-post. The third type is nonverifiability which arises when the principal and the agent share ex-post the same information but no third party can make observation of that information, in particular, no court of law can observe (Laffont and Martimont 2002).

The incentive theory focuses on design of mechanisms that take into account the possible strategic behavior caused by incomplete information and limited observability on the part of the principal (Calzolari 2001). As it can quickly be noticed, there is a clear connection between incentive theory and the agency theory. The agency theory discusses the relationship between the principal and an agent who acts on behalf of the principal. The connection between the two theories arises when it comes to the issue of goal conflict between the

principal and the agent; and also the question of how should the principal design the reward structure of the agent. In the positive agency theory, the firm is viewed as a nexus of contracts; and one of the main research questions in this stream is how do contracts influence the behavior of participants? (Douma and Schreuder 2005).

#### **4.2.2 Incentive theory and competitive tendering**

As competition has been introduced in the Norwegian ferry sector, it is important to consider the incentive aspects and their implications in the context of competitive tendering. Until 1990, subsidies in the Norwegian ferry sector were awarded ex-post on a cost-plus basis and thus, incentive for cost efficiency was weak. Later on from 1990, subsidies were awarded ex-ante so as encourage cost efficiency. In 1991, the transport act was amended in which tendering was allowed to a limited extent from 1994 onwards, the aim was to induce further cost efficiency and thus allow for further cuts in the subsidies.

Among the challenges faced by procuring entities is the drawing of contracts that include appropriate contractual obligations and remuneration mechanism which will ensure cost-effective delivery of the desired product (Tadelis and Bajari 2006). Therefore, before calling for competitive tendering a procuring entity is required to design a contract in which specifications and remuneration methods are well elaborated. With regard to specifications of ferry services, the public agencies responsible for organizing competitive tendering are required to specify, among other things, the operating hours, service frequency, carrying capacity, ownership mode of the capital equipment (whether owned by the agency or the operating company) and in case of net-subsidy contract, fares must as well be specified.

Regarding the contract terms of remuneration in transport services, there two basic methods that procuring entities can employ, these methods are; net-subsidy method and full-or gross-cost method. Under gross-cost method, a procuring entity retains the revenues collected from the services and provides a subsidy to the operating company. When competitive tendering is applied, the amount of subsidy each bidder quotes is the basis for competition among the bidders. Since the operating company is not responsible for revenue collection, it does not bear the revenue risk, and therefore, it has no incentive to promote demand through provision of quality services. However, the operating company bears the operating cost risk. The main advantages of this method include: greater compatibility with integrated multimodal system planning; greater compatibility with complex subsidy mechanisms; elimination of cost risk from the public agency; and lack of incentives for predatory operating practices (Shaw 1996).

On the other hand, net-subsidy method (also called minimum subsidy), is the type of remuneration whereby the operating company keeps the farebox revenue and if it is not sufficient to cover the production costs, the public agency fills the deficit. The competition among the bidders therefore, is based on the amounts requested from the public authority. In this payment method, the operator bears both, revenue and cost risks. However, Shaw (1996) argues that, the risks are slightly lower than under a commercial operation since some income is guaranteed. Since the operating company retains the farebox revenue, the main advantage of this payment method is, it encourages companies to promote demand through provision of high quality services. However, where elasticity of demand with respect to service is low; or in case for whatever reason demand declines; the operator might be tempted to cut down costs by reducing the quality of service (Shaw 1996). It has been reported that the price elasticity of the Norwegian ferry sector is low, between -0.3 and -0.4 (Bråthen et al. 2004).

There is a link between the level of competition in the tendering process and the method of remuneration employed by the public agency. Based on theory, White and Tough (1995) noted that gross-cost method ought to be more popular than net-subsidy method because under gross-cost terms, the operating company bears less risk. In particular, small size operators are expected to have more preference for the gross-cost terms due to their risk averse orientation. An empirical study on this theory has agreed to its propositions (White and Tough 1995), the overall conclusion was that, there is strong evidence to suggest that gross-cost terms encourage more bids than net-subsidy terms as shown in table 4.1.

With regard to the experience of the remuneration methods in the Norwegian ferry sector, Hervik and Sunde (2000) reported that, during the introductory phase, three cases were organized on gross-cost terms while the remaining three were on net-subsidy terms. The outcome was that, gross-cost contract had higher transaction costs and less incentives for operating companies to promote demand; and on top of that, the risk premiums in the market for net-subsidy contracts were not higher than for gross-cost contract. It is on this basis, Hervik and Sunde (2000) suggested that there was no reason to stick to gross-cost contracts since the public sector is not able to diversify the systematic risks born in gross-cost terms.

**Table 4.1: Comparison of the number of bids under different contract terms**

<i>Authority</i>	<i>Total Contracts Analysed</i>	<i>Bids per Contract</i>		<i>Difference between Methods</i>
		<i>MS</i>	<i>GC</i>	
Wiltshire	113	4.10	4.61	0.51
East Sussex	212	3.29	3.75	0.46
Cheshire	53	3.84	4.22	0.38
Norfolk	31	1.03	3.23	2.20
Shropshire	37	4.40	4.60	0.20
Gloucestershire	37	3.10	4.40	1.30
Lancashire	300	3.05	3.66	0.61

**MS**.....Minimum Subsidy (Net-Subsidy).

**GC**.....Gross-Cost.

[Source: White and Tough 1995]

### 4.3 Synthesis of the chapter

This chapter was devoted to the review of perspectives on the theoretical frameworks that guided our study. Background information to the theories of auctions, games and incentives, has been presented. The mechanisms and aspects of auctions have been discussed and linked to competitive tendering. The problem of goal conflict and information asymmetry has been introduced as well as the role of incentives in combating such a problem. Attempt has been made to link the theoretical perspectives with our main agenda, that is, competitive tendering and market structure changes (reduced number of bidders). The Norwegian ferry sector was looked at from game theory point of view thus, making it easy to gain more understanding and insights about the interaction between the players in this sector. The link between competitive tendering, market structure and the theoretical frameworks enhances the understanding of the main issues discussed in this thesis.

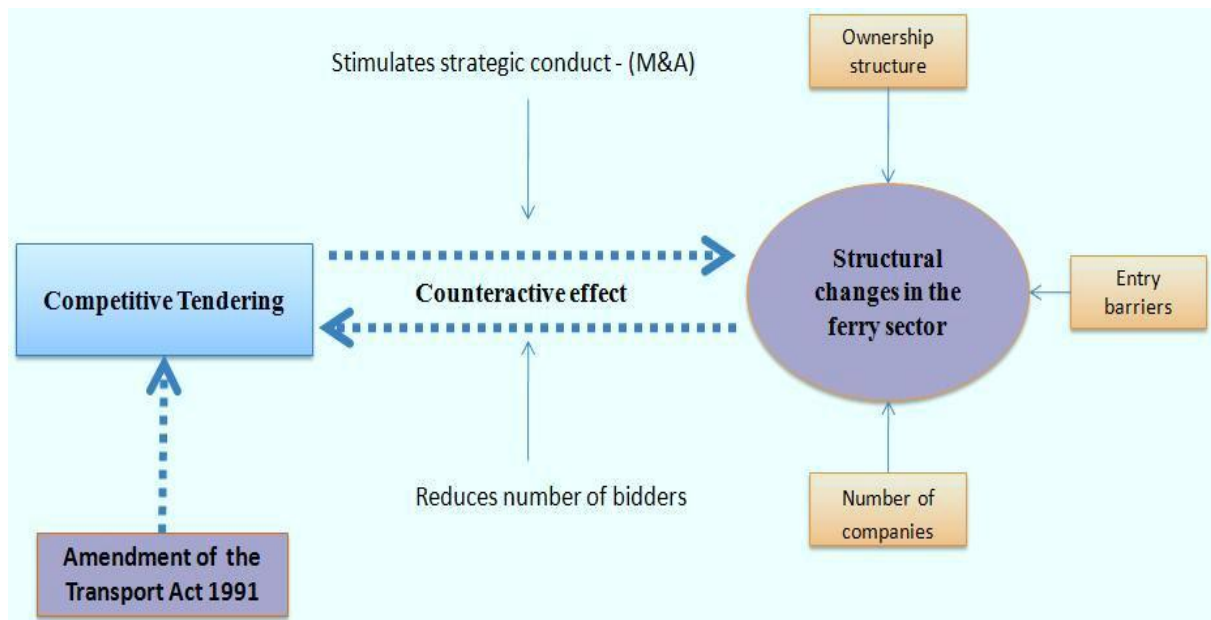
## CHAPTER 5

### RESEARCH MODEL AND PROPOSITIONS

#### 5.1 Research model

The main objective of this study as mentioned earlier is to assess the counteractive effect between the implementation of competitive tendering and structural changes in the Norwegian ferry sector. Three main aspects of the structural changes will be specifically assessed, these are; Number of companies, Barriers to entry, and Ownership structure [Public or private; Local or foreign]. Initially, the introduction of competitive tendering was aimed at improving efficiency in the ferry sector, however, in the long-run, it resulted into structural changes. The research model shown in figure 5.1 below illustrates that; the introduction of competitive tendering stimulates strategic conduct among potential suppliers and thus resulting into structural changes, and as a feedback effect, the structural changes reduce the number of potential bidders.

**Figure 5.1: A portrait of the research model**



## 5.2 Research propositions

This study uses research propositions as opposed to research hypotheses. It is important to clarify the distinction between these two terms. Hypothesis is a tentative answer or a guess that the researcher makes about the problem under investigation (Dillon, Madden and Firtle, 1994:417; McDaniel and Gates, 1999:514). Practically, hypothesis entails an assumption or a predictive answer which is then subjected to an empirical test and the findings obtained thereof, would form the basis for conclusions (Willemse 1990: 117).

With regard to a proposition, Cooper and Schindler (1998:43) first argue that literature disagrees about the meanings of the terms proposition and hypothesis. Then, they define proposition as a statement about concepts that may be judged as true or false if it refers to observable phenomenon. To them, a proposition becomes hypothesis when it is formulated for empirical testing; this view is not different from the definition given by Willemse (1990).

The rationale for using propositions in this thesis is the fact that the research design used to address the subject is more of exploratory nature. Therefore, we assert statements based on theoretical frameworks and use them as a guide in undertaking the study. This means that the extent to which we support or reject our propositions will not be subject to quantitative tests. The following are research propositions asserted for the studied phenomenon:

- P1:** By triggering competition, competitive tendering led to mergers and acquisitions in the Norwegian ferry sector.
  
- P2:** The occurrence of mergers and acquisitions in the Norwegian ferry sector is due to the factors that are also widely advocated in the literature, such factors include; market power, economies of scale, creation of synergies, risk diversification etc.
  
- P3:** Since private companies are more suited for competitive markets, then competitive tendering will lead to the reduction in the number of publicly owned companies.

## CHAPTER 6

### RESEARCH METHODOLOGY

#### 6.1 Introduction

In this chapter, the research methodology for this work is presented. In a sequential way, we explain the philosophical position of the study, research design and methods, and the data set/information required for the study.

#### 6.2 Philosophical position

It is suggested that researchers should always consider their philosophical position as it may help in the process of deciding on a research design (Easterby-Smith et al. 2002). There are two types of paradigms in as far as philosophical position is concerned; the positivist and the interpretivist paradigms (Easterby-Smith et al. 2002). Levin (1988) noted that, positivists believe in the stability of reality, and therefore, they argue that reality can be observed and be described from an objective point of view. That is to say, positivist paradigm relies and draws conclusions based on data measurement. On the other hand, interpretivists argue that, only through subjective interpretation of, and intervention in reality, can that reality be fully understood. Interpretivism can be described by the term social constructionism, and the main idea of this paradigm is the fact that people decide what the reality is (Easterby-Smith et al. 2002). In short, interpretivism does not rely on objectivity. This study attempted to maintain the positivist thinking whereby our conclusions are based on objective arguments.

#### 6.3 Research design

Research design is a plan of action for a study to be undertaken; it is a framework for how the researcher intends to collect and analyze data (Churchill 1995). Research design should: contain clear objectives derived from research questions; specify the type of data and sources from which data is collected; elaborate the design techniques, and sampling methodology and procedures (Shukla 2008). The choice of an appropriate research design requires a careful consideration of the features of a phenomenon under investigation. Such features determine both, the type of empirical data and the method for undertaking the analysis (Gupta 2003). There are three types of research designs; exploratory design, descriptive design and causal design (Shukla 2008; Churchill 1995). Descriptive design and causal design may be grouped together as conclusive designs (Shukla 2008).



### **6.3.1 Exploratory design**

Exploratory research design, as the name suggests, deals with exploring into the phenomenon (Shukla 2008). It aims at discovering ideas and insights about a given phenomenon (Churchill 1995). The main characteristics of this research design are; flexibility and versatility in terms of methods being used, and often it is the front end of total research design. The most common methods applied in undertaking exploratory research are; expert surveys, pilot surveys, case studies, secondary data, and qualitative research. Exploratory research design is often applied when it is not possible to measure the subject in quantitative and precise manner; or in a situation where the researcher has to gain a more precise definition of the problem before having the ability to use the conclusive design in order to confirm the findings (Malhotra and Birks 2006).

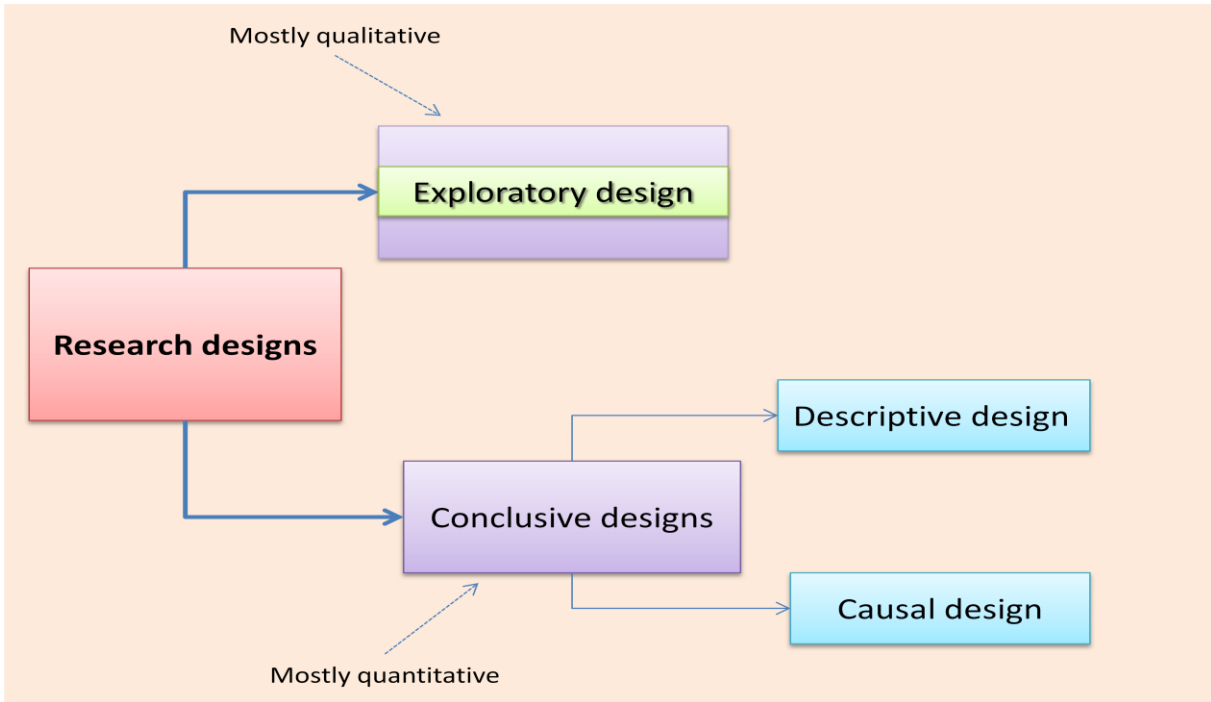
### **6.3.2 Descriptive design**

This is one of the conclusive research designs whose main objective is describe characteristics or functions of phenomena. The main characteristics of descriptive research design are; the prior formulation of specific hypotheses, and it is well structured and pre-planned (Malhotra and Birks 2006). Churchill (1995) argues that, descriptive studies are rigid as they require a clear specification of the who, what, when, where, why, and how of the research. The most common methods applied in undertaking descriptive research are; the use of secondary data, surveys, panels, observational and other data. This research design is applied when a researcher wants to make specific predictions; or estimate the proportion of individuals/entities in a specified population who behave in a certain way; or describe the characteristics of certain groups.

### **6.3.3 Causal design**

This is another form of conclusive research design, its main objective is to determine cause and effect relationships. Causal research design is mostly characterized by manipulation of one or more independent variables and control of other mediating variables. The main method applied in causal research is the use of experiments; that is, a scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the degree to which the dependent variables change (Churchill 1995). This research design is applied when the researcher wants to know the impact of one variable on another.

**Figure 6.1: Types of research designs**



[Source: Adopted from Shukla (2008)]

#### **6.4 Justification for the choice of exploratory design**

This thesis is based on exploratory research design. The rationale for choosing this approach is due to its flexibility and versatility in terms of the methods. We have not been able to undertake a robust conclusive research due to nature of circumstances in the Norwegian ferry sector. Because of intense competition, stakeholders in this sector have become extremely sensitive to confidentiality issues making it very difficult to obtain relevant data that could enable us conduct a robust conclusive study. Therefore, due lack of sufficient amount of relevant data we decided to employ exploratory approach that would allow us to discover insights and ideas about the interaction of competitive tendering and structural changes in the Norwegian ferry sector.

#### **6.5 The exploratory methods applied for the study**

Churchill (1995) identifies four main types of exploratory studies, namely; literature search, experience survey, focus groups and case studies. Two types of exploratory approaches are actively applied in this study, these are; literature/secondary data search and case studies.

As far as competitive tendering for procurement of ferry services is concerned, two case studies have been built from the experience of Møre and Romsdal region, and the NPRA Western region. The case studies were built based on the responses of the key personnel responsible for procurement of ferry services in Møre and Romsdal and also by capturing relevant information from the competitive tendering reports of both regions. In respect to the strict confidentiality agreement made with the authorities, an attempt was made to maintain as much anonymity as possible.

Besides the interview and the tendering reports, we also searched for the annual reports of the ferry companies in the Norwegian ferry sector. The annual reports were expected to give us some information about the ferry sector from the suppliers' point of view. Usually the management teams would report on all important events and transactions that have taken place in a particular year. Therefore, we expected that issues like mergers and acquisitions would be reported and justified in the annual reports for the years in which such events occurred. In addition, search for evidence in the scientific literature has been actively used as a means to support some of our arguments.

## **6.6 Synthesis methods**

The empirical evidence derived by the two approaches mentioned above was finally subjected to systematic synthesis in order to make sense of the information gathered. The synthesis is both quantitative and qualitative. The quantitative part was done by means of simple mathematical models conceptualized based on the case studies; the qualitative part was done by means of corroborating the information about the ferry sector with concepts and theories presented in the literature. More so, descriptions and predictions regarding various phenomena have been done.

## **6.7 Limitations of the Methodology**

Despite being flexible and suitable for the type of problem addressed in this thesis, exploratory approaches are limited in a number of ways. The data collected is not large enough to allow robust analysis and generalization of conclusions. Therefore, the findings established in this thesis cannot form a theory due to lack of empirical adequacy. However, the methodology applied for this thesis has successfully brought ideas and insights and, by corroborating it with the empirical findings found in the literature, it was possible to achieve the main objective of our study.

## CHAPTER 7

### EMPIRICAL EVIDENCE

#### 7.1 Introduction

This chapter presents practical experiences and trends with regard to the tendering of ferry services in Norway. We have built two case studies based on experiences of competitive tendering of ferry services in Møre and Romsdal region, and the NPRA Western region. The selection of these regions as case studies owes to their extensive experience acquired since the introduction of competitive tendering in the Norwegian ferry sector. The regions have actively implemented tendering procedure during all three phases in the history of this practice within the Norwegian ferry sector.

Besides the case studies, we also present the arguments for the merger and acquisition activities that have taken place in the Norwegian ferry sector. These arguments are based on the statements from the annual reports of the respective ferry companies especially for the years in which mergers or acquisitions took place. Usually the management would use an annual report as a forum to describe and justify major events that happen to a company within a given financial year. Just as expected, the various annual reports of the companies that we reviewed, stated explicitly the motives behind either merging with or acquisition of another company or its subsidiary.

#### 7.2 Case study 1: Procurement of Ferry services in Møre and Romsdal region

##### 7.2.1 Background information

Møre and Romsdal is one of the 19 counties in Norway, it is situated in the northern part of Western Norway. The county has a coastal line of about 7700 km along the Norwegian sea, and it is integrated with numerous fjords. Just as in other regions, ferry links are part of the transport network in this region. The county has 36 municipalities and 26 ferry routes (See the map- Figure 7.1; and Table 7.1). Generally, ferry services play a significant role in the social and economic prosperity of this region.

Figure 7.1: A map showing 36 municipalities of Møre and Romsdal county



[Source: Møre and Romsdal website (<http://mrfylke.no/Om-Moere-og-Romsdal/>)]

Table 7.1 : Ferry links in Møre and Romsdal county as of 01.01.2010

Ferry link	Operator	Type of contract
Festøya – Hundeidvika	Fjord1 MRF	RT
Festøya – Solavågen	Fjord1 MRF	RT
Sæbø - Leknes - Standal - Trandal – Skår	Fjord1 MRF	RT
Ørsnes – Magerholm	Fjord1 MRF	RT
Stranda - Liabygda	Fjord1 MRF	RT
Eidsdal – Linge	Fjord1 MRF	RT
Valldal – Geiranger	Fjord1 MRF	Kommersiell
Geiranger – Hellesylt	Fjord1 MRF	Kommersiell
Brattvåg - Dryna- Fjørtofta - Harøya	Fjord1 MRF	Anbod
Solholmen - Mordalsvågen	Fjord1 MRF	Anbod
Aukra - Hollingsholmen	Fjord1 MRF	Anbod
Småge - Orta - Finnøya - Sandøya- Ona	Fjord1 MRF	RT
Molde – Vestnes	Fjord1 MRF	Anbod
Molde – Sekken	Fjord1 MRF	RT
Åfarnes – Søsnes	Fjord1 MRF	Anbod
Kvanne- Røkkum	Fjord1 MRF	RT
Halsa – Kanestraum	Fjord1 MRF	RT
Arasvika – Hendset	Fjord1 MRF	RT
Seivika – Tømmervåg	Fjord1 MRF	RT
Edøya – Sandvika	Fjord1 MRF	RT
Volda – Folkestad	Tide Sjø	Anbod
Larsnes-Åram-Voksa-Kvamsøya	Tide Sjø	Anbod
Årvik – Koparnes	Tide Sjø	Anbod
Hareid – Sulesund	Tide Sjø	Anbod
Volda – Lauvstad	Tide Sjø	Anbod
Haramsøya-Løvsøya-Skjeltene	Tide Sjø	Anbod

[ Source: Møre and Romsdal website (<http://mrfylke.no/Tenesteomraade/Samferdsel/Ferje/>)]

**RT** .....Negotiated contract: **Anbod**.....Tendered contract: **Kommersiell** .....Commercial contract

### 7.2.2 Objectives of introducing competitive tendering

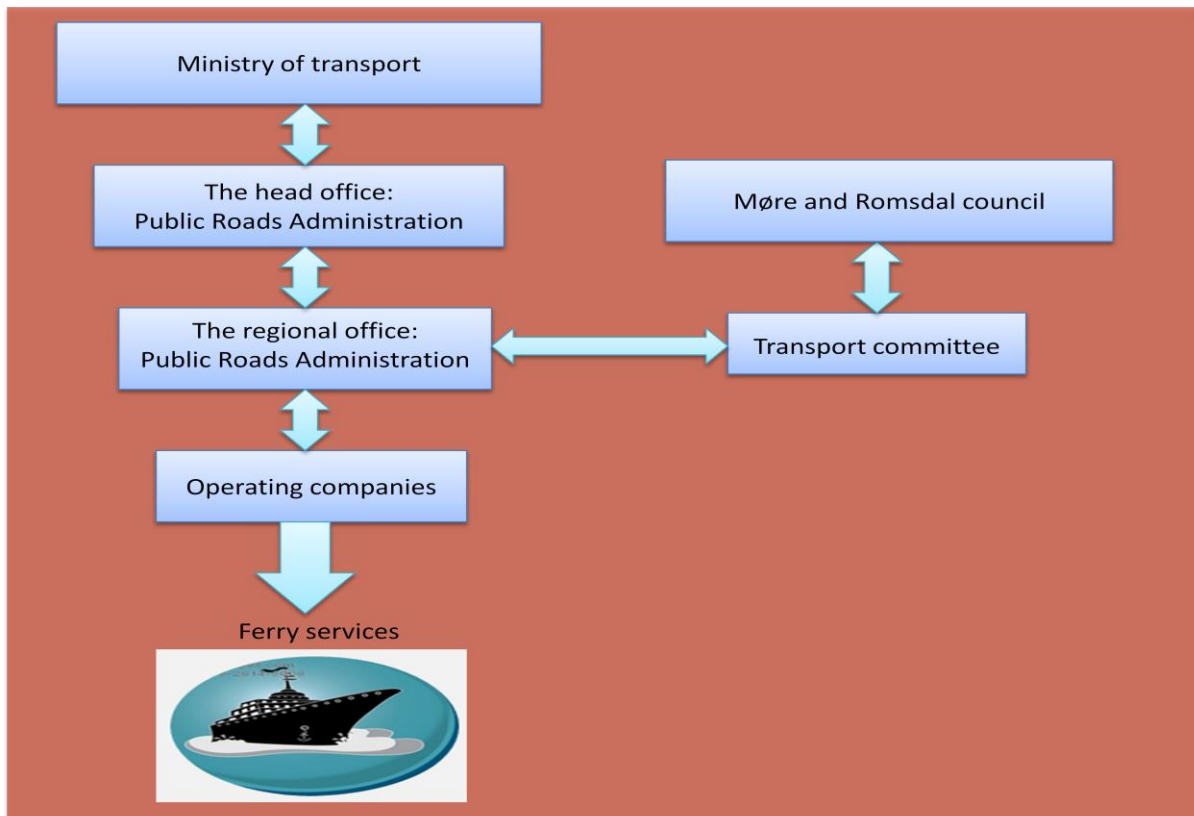
Considering the importance of ferry services, efficiency and high quality are the top priority of the public authorities in this region. As stated in the Ferry strategy for Møre and Romsdal for the period 2006-2015, the exposure of ferry links to competitive tendering aimed at achieving greater efficiency and better quality in services.

### 7.2.3 Organisation for the procurement of ferry services in Møre and Romsdal

As in other counties, the procurement of ferry services in Møre and Romsdal is performed by the Norwegian Public Roads Administration (NPRA). NPRA is under the Norwegian ministry of transport, and is comprised of the head office in Oslo and five regional offices across the country. Møre and Romsdal is served by NPRA regional office located in Molde.

The regional office is responsible for organising and execution of the tendering procedure including selection of the operating companies. However, the final approval of the contract is made by the head office based on the report made by the regional office. The regional office works in close cooperation with the transport committee of the county council. Figure 7.2 illustrates institutional framework involved in the procurement of ferry services.

**Figure 7.2: Institutional structure for procurement of Møre and Romsdal ferry services**



[Source: Conceptualized based on the reviewed reports]

### 7.2.4 The tendering process

The tendering process in Møre and Romsdal is executed through *open tender procedure* in accordance with section 5 of the public procurement regulations. The tendering process for ferry services is usually initiated when the previous contract for particular ferry link(s) comes to an end. The process begins by advertising the invitation to tender; from the reports we have reviewed, most of the tenders were advertised on DOFFIN<sup>4</sup> and TED<sup>5</sup> databases. Interested companies are then required to submit their statements of interest, and later on tenders/bids. The qualification of each tender is then assessed prior to evaluation, and a shortlist is prepared.

The evaluation is undertaken based on the pre-stated specifications. Based on the evaluation results, a winning bid is eventually selected. From all the tender competition reports we reviewed, price was the main awarding criterion, whereby the lowest bidders were the winners. When selection is done, the regional office delivers a report to the head office for final decision; then, the participating companies are informed about the final decision, and at the same time they are granted opportunity to file appeals if they want to do so.

### 7.2.5 Contractual aspects in the procurement of ferry services

#### **Type of contracts**

Since the introduction of competitive tendering the major types of contracts that have been employed in the Norwegian ferry sector are net-subsidy and gross-cost contracts (see chapter 4 for detailed descriptions). In the case of Møre and Romsdal, based on the reports we reviewed, net-subsidy<sup>6</sup> contracts were implemented in which the farebox revenue is retained by the operating company.

#### **Contract duration**

The duration of the contracts in this region varies from one contract to another ranging between 4 up to 10 years. In addition to the specified duration, some contracts provided an option of extending the service period. Based on the reports that we reviewed, the following table shows examples of contracted ferry packages with the corresponding duration.

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<sup>4</sup>DOFFIN is the Norwegian national database for public procurement. It enables public authorities to comply with Norwegian public procurement regulations by allowing the creation and publication of tender notices.

<sup>5</sup>TED (Tenders Electronic Daily) is the online version of the 'Supplement to the Official Journal of the European Union', dedicated to European public procurement.

<sup>6</sup>Section 4.2.2 of this thesis provide the definition, advantages and disadvantages of net-subsidy contracts.



**Table 7.2: Examples of ferry packages with corresponding contract duration**

Contracted package	Route No.	Name of the ferry link	Duration (years)	Extension option (years)
<b>Bundle of 4 links</b>	30	Solholmen - Mordalsvågen	10	1
	31	Hollingsholm - Aukra	10	1
	33	Molde - Vestnes	10	1
	36	Sølsnes - Åfames	4	2
<b>Bundle of 5 links</b>	2	Årvik - Koparnes	6	1
	6	Hareid - Sulesund	6	1
	8	Volda - Lauvstad	6	1
	21	Skjeltene - Lepsoya - Haramsøya	6	1
<b>Bundle of 6 links</b>	34	Molde - Sekken	9	-
	9	Hundeidvika - Festøya	9	-
	32	Småge - Orta - Finnøya - Sandøya - Ona	10	-
<b>Bundle of 6 links</b>	14	Stranda - Liabygda	8	-
	15	Eidsdal - Linge	8	-
	12	Sæbø - Leknes - Standal - Trandal - Skår	8	-

### **Number of ferry links in contracted packages**

During the experimental phase only one link was exposed for tendering, however, the trend now is to expose the links in bundles. The size of the package is not fixed and can comprise ferry links of any number. Table 7.2 above shows ferry packages with 4, 5 and 6 ferry links.

### **Specifications on vessels**

Specifications are usually a prerequisite to any tendering process. The contracting authority is required to identify and inform the bidders on the relevant specifications for a given contracted package. In the early phases of tendering practice, the contracting authority in this region used to provide detailed specifications about capital equipment (the vessels) to be used on every tendered ferry link. However, currently the authorities are more concerned with functionality and output, therefore, the authorities just provide the general terms of what is expected from a ferry operator, and then the companies would tender the technical capabilities and specifications of their capital equipment.

However, some critical specification factors are clearly stated and heavily emphasized by the contracting authorities. One of these factors is the environmental performance of the vessels; for example, the current contract for the Molde – Vestnes route required the operator to



introduce three new gas-powered ferries. Two ferries for normal operations and one for a back-up purpose in case of service failure. Fjord 1 MRF which won the contract had to deploy three new vessels, the M/F Moldefjord, M/F Romsdalsfjord and M/F Fannefjord, each of which can take 128 cars. Other specifications include; capacity of the vessels in terms of PBE; internal control system; and special structures for handicapped people.

### **Infrastructure compatibility**

Another critical issue is the compatibility of the vessels to the existing terminal infrastructure. The operating companies are required to supply vessels that fit to the structure of the existing infrastructure, or make modifications to the infrastructure at their own costs. In one incident, the authority reported that the cost of modifying a ferry terminal ranged from 6 to 10 million Norwegian kroner.

**Figure 7.3: Image showing cars embarking into a ferry at Molde ferry terminal**



Compatibility of the vessels to the existing terminal infrastructure is one of the necessary conditions for the award of ferry service contract.

**[Source:** A picture taken by the author on 17.04.2011 as part of this study]

### **7.2.6 Number of participating bidders**

Significant changes have occurred with regard to the potential number of companies that participate in competitive tendering of ferry services in Møre and Romsdal. Given the current structure of the ferry sector in Norway, whereby only 4 companies are dominant<sup>7</sup>, most of the recent contracts have involved only 1, 2 or 3, and at maximum 4 bidders (see Table 7.3). In the early phases of competitive tendering, the sector had about 15 operators (Hervik, 2010), and the number of bidders ranged on average between 6 and 9 for a given contract (Hervik and Sunde, 2000).

The obvious reason behind this declining number is the prevalence of mergers and acquisitions in the Norwegian ferry sector. As we went through tendering reports, it was clear that some of the companies that participated as independent bidders in the previous tender rounds, did not show up in the subsequent rounds. As we traced the history of such companies, it appeared that most of them were 'swallowed up' by the giant companies. The outcome is the existence of few powerful operating companies who have been dominating the tendering processes across the country including this region.

### **7.2.7 Amount of bids placed by participating companies**

When cost structures of the bidders are adjusted appropriately, differences in the amounts of bids submitted can be one of the basis for assessing the degree of competition in a given tender competition (Bajari and Summers, 2002). We have gone through reports of major tender rounds that have taken place in Møre and Romsdal region since 2006 and checked this aspect, however, data on operating costs of the ferry companies could not be accessed. In all tendering reports that were reviewed, it was pre-stated that other criteria would be considered only if the price difference between the best and the second best bidder is within 5%. Due to strict confidentiality agreement we made with the authority that provided this information, high level of anonymity is maintained, therefore, no names of companies and corresponding tenders are disclosed. Table 7.3 shows the amount bids placed by different companies for the selected tender competitions. Synthesis of these data will follow in the next chapter.

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<sup>7</sup> These are the companies that currently operate a total of over 90% of the ferrylinks in the sector.

**Table 7.3: Amount of bids for the selected tender competitions in Møre and Romsdal**

Tender	Bidder	Amount (Mil. Kr.)	Difference between the best and the second best bids
Tender T <sub>1</sub>	B <sub>1</sub> <sup>sb</sup>	67,244	$\frac{(82,006 - 67,244) * 100}{67,244} \approx 22\%$
	B <sub>2</sub> <sup>sb</sup>	82,006	
	B <sub>3</sub> <sup>sb</sup>	276,089	
	B <sub>4</sub>	335,747	
	B <sub>5</sub>	346,953	
	B <sub>6</sub>	621,845	
Tender T <sub>2</sub>	B <sub>1</sub>	688,350	$\frac{(820,621 - 688,350) * 100}{688,350} \approx 16\%$
	B <sub>2</sub>	820,621	
Tender T <sub>3</sub>	B <sub>1</sub>	82,775	$\frac{(187,405 - 82,775) * 100}{82,775} \approx 56\%$
	B <sub>2</sub> <sup>sb</sup>	187,405	
	B <sub>3</sub>	325,610	
	B <sub>4</sub>	363,848	
	B <sub>5</sub> <sup>sb</sup>	346,249	
	B <sub>6</sub> <sup>sb</sup>	322,589	
	B <sub>7</sub> <sup>sb</sup>	424,611	
Tender T <sub>4</sub>	B <sub>1</sub>	383,990	$\frac{(383,990 - 312,495) * 100}{312,495} \approx 19\%$
	B <sub>2</sub>	312,495	
Tender T <sub>5</sub>	B <sub>1</sub> <sup>sb</sup>	207,784	$\frac{(227,691 - 207,784) * 100}{207,784} \approx 9\%$
	B <sub>2</sub>	227,691	
	B <sub>3</sub>	447,541	
	B <sub>4</sub> <sup>sb</sup>	240,790	
	B <sub>5</sub> <sup>sb</sup>	225,179	
	B <sub>6</sub> <sup>sb</sup>	228,754	
	B <sub>7</sub> <sup>sb</sup>	226,624	
Tender T <sub>6</sub>	B <sub>1</sub> <sup>**</sup>	580,519	$\frac{(586,773 - 580,519) * 100}{580,519} \approx 1.1\%$
	B <sub>2</sub> <sup>**</sup>	586,773	

B<sub>1</sub><sup>\*\*</sup> .....This was the only bidder that showed up.

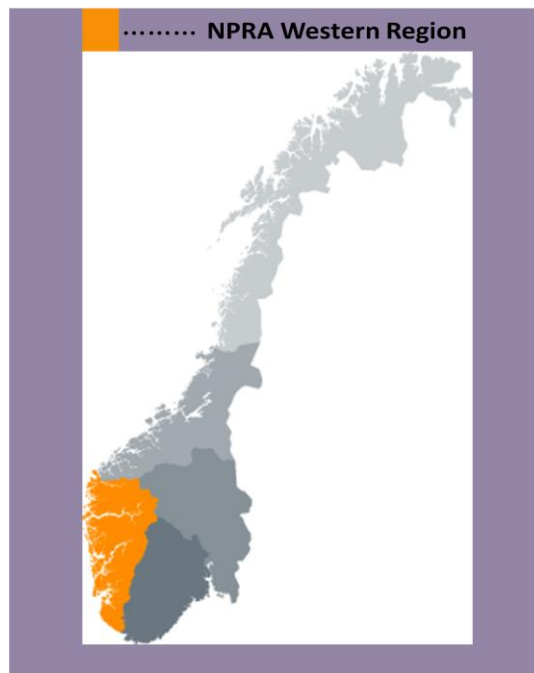
B<sub>n</sub><sup>sb</sup> ..... A company that has submitted multiple bids for the same contract.

### 7.3 Case study 2: Procurement of Ferry services in the Western Region

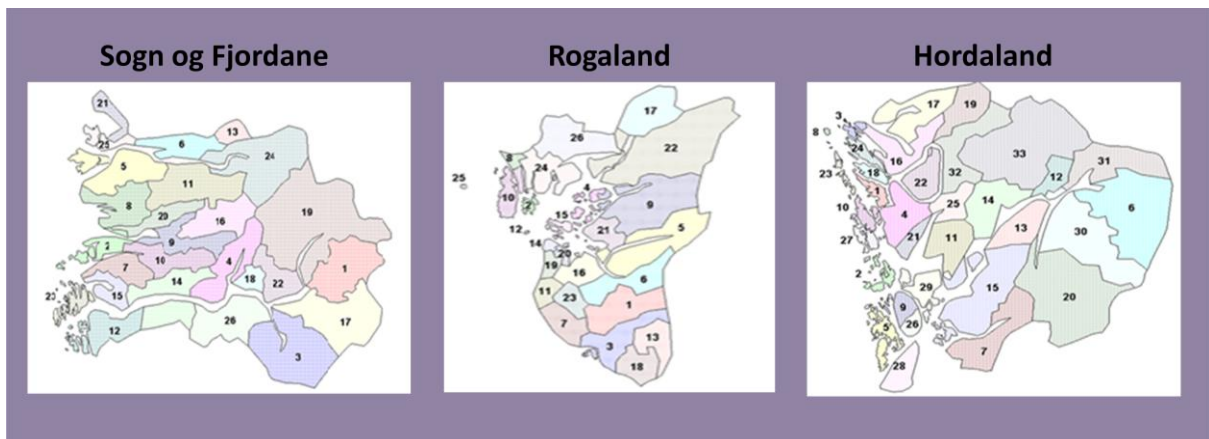
#### 7.3.1 Background information

The NPRA Western Region comprises of the counties Rogaland (R), Hordaland (H) and Sogn og Fjordane (SFJ). The region has extensive road network connecting the North and the East. Just as in other regions, ferry links are part of the trunk road transport networks in this region as well. Rogaland has 26 municipalities, Hordaland has 33 municipalities and, Sogn og Fjordane has 26 municipalities. Like in other regions, ferry services play a significant role in the social and economic prosperity of this region.

**Figure 7.4: NPRA Western Region in the Map of Norway**



**Figure 7.5: Maps of the counties within the NPRA Western Region**

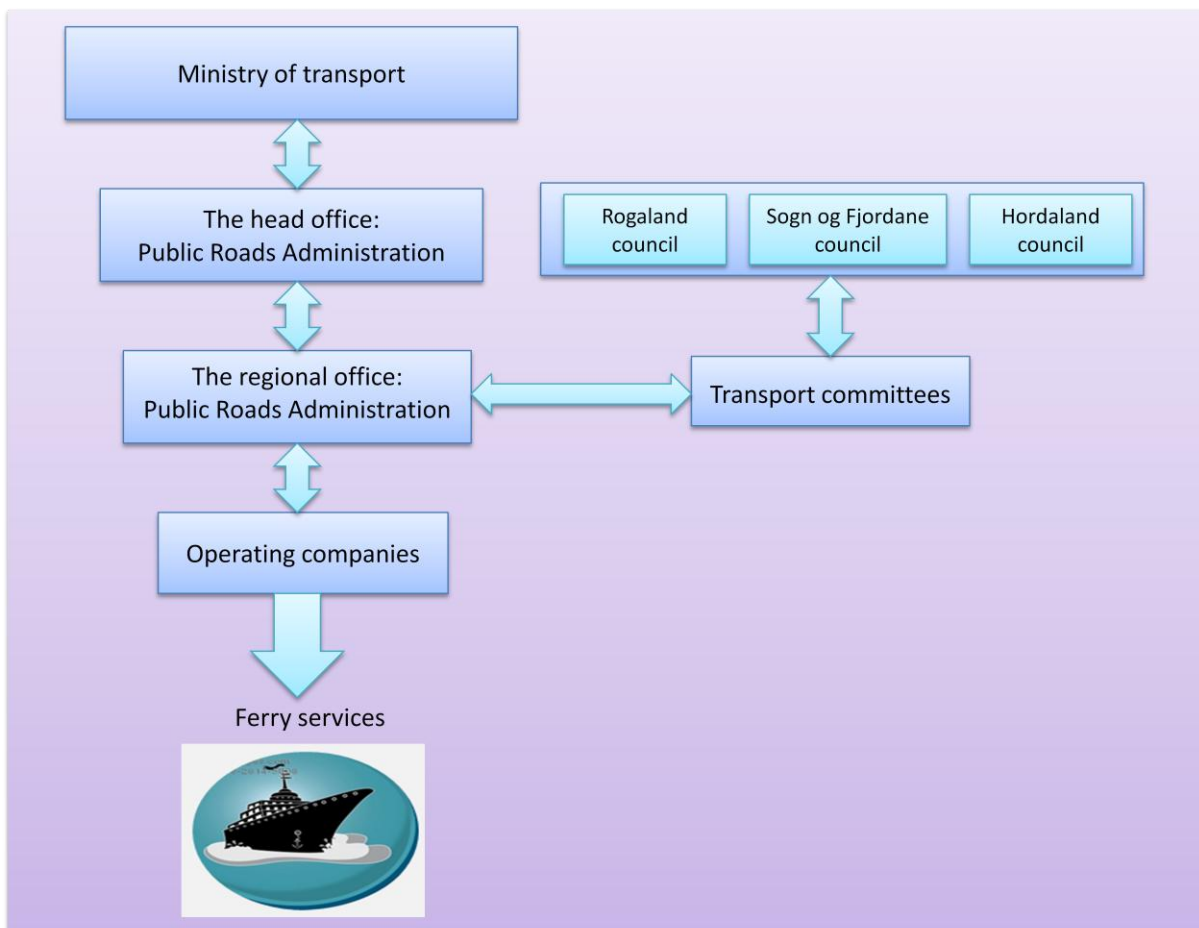


### 7.3.2 Organisation for the procurement of ferry services in the Western Region

As in other regions, the procurement of ferry services in the Western region is performed by the Norwegian Public Roads Administration (NPRA). NPRA is under the Norwegian ministry of transport and, is comprised of the head office in Oslo and five regional offices across the country. The Western region is served by NPRA office located in Leikanger.

The regional office is responsible for organising and execution of the tendering procedure including selection of the operating companies. However, the final approval of the contract is made by the head office based on reports made by the regional office. The regional office works in close cooperation with the transport committees of the three counties' councils. Figure 7.6 illustrates institutional framework involved in the procurement of ferry services.

**Figure 7.6: Institutional structure for procurement of ferry services in Western region**



[Source: Conceptualized based on the reviewed reports]

### 7.3.3 The tendering process

The tendering procedure in the Western region is similar to that of Møre and Romsdal region. It is executed through *open tender procedure* in accordance with section 5 of the public procurement regulations. The tendering process for ferry services is usually initiated when a the previous contract for particular ferry link(s) comes to an end. The process begins by advertising the invitation to tender; from the reports we have reviewed, most of the tenders were advertised on DOFFIN<sup>8</sup> and TED<sup>9</sup> databases. Interested companies are then required to submit their statements of interest, and later on tenders/bids. The qualification of each tender is then assessed prior to evaluation, and a shortlist is finally prepared.

The evaluation is undertaken based on the pre-stated specifications. Based on the evaluation results, a winning bid is eventually selected. From all the tender competition reports we reviewed, price was the main awarding criterion, whereby the lowest bidders were the winners. When selection is done, the regional office delivers a report to the head office for final decision; then, the participating companies are informed about the final decision, and at the same time they are granted opportunity to file appeals if they want to do so.

### 7.3.4 Contractual aspects in the procurement of ferry services

#### **Type of contracts**

The Western region mostly applies net-subsidy<sup>10</sup> contracts whereby the farebox revenue is retained by the operating company. However, the operating company is required to work in close cooperation with the contracting authority when it comes to developing a ticketing system.

#### **Contract duration**

The duration of contracts in the Western region varies from one contract to another ranging between 3 to 8 years. In all tendering reports that we reviewed, non of the contracts provided an option of extending the service period. Based on the tender reports, the following table shows examples of contracted ferry packages with the corresponding duration.

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<sup>8</sup>**DOFFIN** is the Norwegian national database for public procurement. It enables public authorities to comply with Norwegian public procurement regulations by allowing the creation and publication of tender notices.

<sup>9</sup>**TED** (Tenders Electronic Daily) is the online version of the 'Supplement to the Official Journal of the European Union', dedicated to European public procurement.

<sup>10</sup> **Section 4.2.2** of this thesis provide the definition, advantages and disadvantages of net-subsidy contracts.



**Table 7.4: Examples of ferry packages with corresponding contract duration**

Contracted package	Route No.	Name of the ferry link	Duration (years)
Bundle of 3 links	Rv5	Mannheller-Fodnes	8
	13/55	Vangsnes-Hella-Dragsvik	8
Bundle of 2 links	Rs469	Launes-Kvellandstrand	3
	Fs919/Rs469	Abelnes/Launes-Andabeløy	3
Bundle of 7 links	Es39	Lavik-Oppedal	5
	Rs606/Rs57	Krakhella-Rysjedalsvika-Rutledal	8
	Rs608/Fs365	Askvoll-Gjervik-Fure-Værlandet	5
	Fs31	Daløy-Haldorsneset	8
Bundle of 4 links	Es39	Anda-Lote	8
	Rs614	Isane-Stårheim	8
	Rs616	Måløy-Oldeide-Husevågøy	8
Bundle of 3 links	Rv13	Hjelmeland-Nesvik-Skipavik	8
	Rv46	Sand-Ropeid	8
Bundle of 5 links	Rs13/550	Kvanndal-Utne-Klnsarvik	7
	Rs49/550	Tørvikbygd-Jondal	7
	Rs48/551	Gjermundshamn-Årsnes-Varaldsøy	7

### Number of ferry links in contracted packages

During the experimental phase only one route in this region was exposed for tendering, however, the practice now is to expose the links in packages/bundles. The size of the package is not fixed and can comprise ferry links of any number. Table 7.4 above shows ferry packages with 2,3, 4, 5 and 7 ferry links.

### Specifications on vessels

As in other regions, specification of the vessels is a prerequisite in the Western region as well. The contracting authority identifies and informs the bidders on the relevant specifications for a given contracted package. Some major specifications factors that are also heavily emphasized in this region include; environmental performance of the vessels, capacity of the vessels in terms of PBE (vehicle units), internal control system and special structures for handicapped people.

## **Infrastructure compatibility**

The issue of compatibility of the vessels to the existing terminal infrastructure is also critical in this region. The operating companies are required to provide vessels that fit to the structure of the existing infrastructure, or make modifications to the infrastructure at their own costs. In case a winning company chooses to modify the infrastructure, the modification has to be done in accordance with NRPA standards.

### **7.3.5 Number of participating bidders**

As noted earlier, significant structural changes have occurred in the Norwegian ferry sector. Given the current structure of the ferry sector whereby only 4 companies are dominant, most of the reviewed contracts in the Western region involved 1 or 2, and at maximum 3 bidders (See Table 7.5). In the early phases the sector whereby about 15 operators were dominant (Hervik, 2010), the number of bidders ranged between 6 and 9 for a given contract (Hervik and Sunde 2000).

The obvious reason behind this declining number is the prevalence of mergers and acquisitions in the Norwegian ferry sector. As we went through the tendering reports, it was clear that some of the companies that participated as independent bidders in the previous tender rounds, did not show up in the subsequent tender rounds. As we traced the history of such companies, it appeared that most of them were 'swallowed up' by the giant companies. The outcome is the existence of few powerful operating companies who have been dominating the tendering processes across the country including this region.

### **7.3.6 Amount of bids placed by participating companies**

We have gone through reports of major tender rounds that have taken place in the Western region and checked the differences in the amounts of bids submitted. However, data on operating costs of the ferry companies could not be accessed. In all tendering reports that were reviewed, it was pre-stated that other criteria would be considered only if the price difference between the best and the second best bidder is within 5%. Due to strict confidentiality agreement we made with the authority that provided this information, high level of anonymity is maintained, therefore, no names of companies and corresponding tenders are disclosed. Table 7.5 shows the amount bids placed by different companies for the selected tender competitions. Synthesis of these data will follow in the next chapter.



**Table 7.5: Amount of bids for the selected tender competitions in the Western Region**

Tender	Bidder	Amount (Mil. Kr.)	Difference between the best and the second best bids
Tender T <sub>1</sub>	B <sub>1</sub> <sup>sb</sup>	419,331	$\frac{(426,281 - 419,331) * 100}{419,331}$ <b>12%</b>
	B <sub>2</sub> <sup>sb</sup>	426,281	
	B <sub>3</sub> <sup>sb</sup>	460,433	
	B <sub>4</sub>	494,314	
Tender T <sub>2</sub>	B <sub>1</sub> **	288,988	$\frac{(288,988 - 288,988) * 100}{288,988}$ <b>0%</b>
Tender T <sub>3</sub>	B <sub>1</sub>	72,330	$\frac{(89,088 - 72,330) * 100}{72,330}$ <b>23%</b>
	B <sub>2</sub>	89,088	
	B <sub>3</sub>	116,395	
Tender T <sub>4</sub>	B <sub>1</sub>	452,823	$\frac{(499,769 - 452,823) * 100}{452,823}$ <b>10%</b>
	B <sub>2</sub>	499,769	
	B <sub>3</sub> <sup>sb</sup>	575,788	
	B <sub>4</sub> <sup>sb</sup>	587,957	
	B <sub>5</sub> <sup>sb</sup>	607,742	
Tender T <sub>5</sub>	B <sub>1</sub> **	60,621	$\frac{(60,621 - 60,621) * 100}{60,621}$ <b>0%</b>
Tender T <sub>6</sub>	B <sub>1</sub>	34,524	$\frac{(185,603 - 34,524) * 100}{34,524}$ <b>438%</b>
	B <sub>2</sub>	185,603	
Tender T <sub>7</sub>	B <sub>1</sub>	91,949	$\frac{(91,949 - 74,913) * 100}{74,913}$ <b>23%</b>
	B <sub>2</sub>	100,721	
	B <sub>3</sub>	74,913	
Tender T <sub>8</sub>	B <sub>1</sub>	52,621	$\frac{(82,412 - 52,621) * 100}{52,621}$ <b>57%</b>
	B <sub>2</sub>	82,412	
Tender T <sub>9</sub>	B <sub>1</sub>	55,670	$\frac{(57,043 - 55,670) * 100}{55,670}$ <b>2%</b>
	B <sub>2</sub>	57,043	
Tender T <sub>10</sub>	B <sub>1</sub> <sup>sb</sup>	600,103	$\frac{(626,016 - 600,103) * 100}{600,103}$ <b>4%</b>
	B <sub>2</sub> <sup>sb</sup>	626,016	
	B <sub>3</sub>	676,298	
Tender T <sub>11</sub>	B <sub>1</sub> <sup>sb</sup>	142,520	$\frac{(159,315 - 142,520) * 100}{600,103}$ <b>12%</b>
	B <sub>2</sub>	159,889	
	B <sub>3</sub> <sup>sb</sup>	159,315	

B<sub>1</sub>\*\* .....This was the only bidder that showed up.

B<sub>n</sub><sup>sb</sup> .....A company that has submitted multiple bids for the same contract.

## 7.4 Motives behind mergers and acquisitions in the norwegian ferry sector

### 7.4.1 Introduction

As pointed out earlier, we reviewed the annual reports of some ferry companies to capture any management's statements that would justify mergers or acquisitions. This approach worked as expected. We categorise the motives in two groups, the first category is the justification for merging with or acquiring another company; and the second category is the justification for selling out a company or subsidiary of a company. The following are the motives behind mergers and acquisition as advocated by some ferry companies in the Norwegian ferry sector:

### 7.3.2 Justifications for merging with or acquiring another company

- **Economies of scale.** This argument was made to justify the merger between Troms Fylkes Dampskibsselskap (TFDS) and Ofotens og Vesteraalens Dampskibsselskab (OVDS) to form Hurtigruten ASA. The management of the newly formed company mentioned economies of scale as one of the grounds for merging the two companies, TFDS and OVDS (Hurtigruten ASA annual report 2006).
- **Improving financial performance.** This factor was also advocated to justify the merger between Troms Fylkes Dampskibsselskap and Ofotens og Vesteraalens Dampskibsselskab. The management reckoned that "Their financial performances were not satisfactory, and a merger would contribute to substantial synergies and economies of scale" (Hurtigruten ASA 2006).
- **Business expansion.** This argument was made to justify the merger between Hardanger Sunnhordlandske Dampskipsselskap (HSD) ASA and Gaia Trafikk AS in 2006 that resulted into formation of Tide. The management of the newly formed company aimed at business expansion within Norway and across Scandinavia region. We quote it from the report<sup>11</sup>: "*Tide's goal and ambition is to expand as a company and compete for tenders in the industry with both, national and international actors*" (Tide årsrapport 2006) .

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<sup>11</sup> The quoted statement from Tide annual report was originally in Norwegian and was translated with the help of Google translator. The author bears full responsibility in case of any translation flaws. The original statement can be found in the reference report, Tide årsrapport, 2006.

- **Creation of synergy.** This argument was also made to justify the merger between HSD ASA and Gaia Trafikk AS in 2006 to form Tide. The management argued that the integration of the two companies targeted at extracting synergies of at least 66 million annually (Tide årsrapport 2006).
- **Achieving growth through acquisitions.** This argument was asserted by Tide through their annual report of 2007, by then Tide had just acquired Stavangerske AS (see table 3.1). The management argued that one of the ways for them to attain growth was through undertaking acquisitions (Tide årsrapport 2007).

### 7.3.3 Justifications for selling out a company or subsidiary of a company

- **To achieve relief for debt burden.** This argument was advocated by Hurtigruten ASA in its annual report for 2008. This is the year when Torghatten ASA bought the ferry division of Hurtigruten ASA. More so, connecting this argument to the global economic affairs, we realize that in the year 2008 the global financial crisis was at its peak, and therefore, the argument posed by hurtigruten is understandable.
- **Focus on core business areas.** This argument was also advocated by Hurtigruten ASA in its annual report for 2008. The management argued that, despite the intention to reduce debt burden, the divestment would target only the businesses that they considered not core to the company; and therefore, give them opportunity to focus and concentrate on their core business areas.

## 7.4 Conclusion of the chapter

This chapter has presented some evidence on the issues pertaining to the Norwegian ferry sector. The evidence has been presented categorically into two parts. The first part are the case studies from Møre and Romsdal region, and NPRA Western region, in a way these rerepresent the dynamics on the buying side of the ferry sector. The second part presents various arguments asserted by some ferry companies to justify merger and acquisition activities, this represents some of the dynamics on the supply side. Generally, the chapter provides some insights about the conduct of the ferry sector; and sets the ground for the next chapter of this thesis in which a systematic synthesis and discussion is undertaken.

## CHAPTER 8

### SYNTHESIS AND DISCUSSION

#### 8.1 The effect of declining number of bidders: Illustrative model

From the case studies, we are informed that the number of potential bidders in the Norwegian ferry sector has declined from 15 (in 1996) to 4 (today). We construct a simple model for this scenario in order to show the impact of declining number of bidders on the tendering processes.

This scenarios is modelled as follows:

##### **Stage one:**

Consider a 'hypothetical' ferry sector with 15 companies (hereafter abbreviated as C). This represents a pool of potential operators from which a contracting authority has to select and award a contract to one of them.

##### **Assumptions:**

1. These are the only players in the sector capable of participating in competitive tendering.
2. All companies participate and have equal chance of winning a given contract.
3. Barriers to entry are high and therefore, new entrants are precluded.

**This can be described mathematically as follows;**

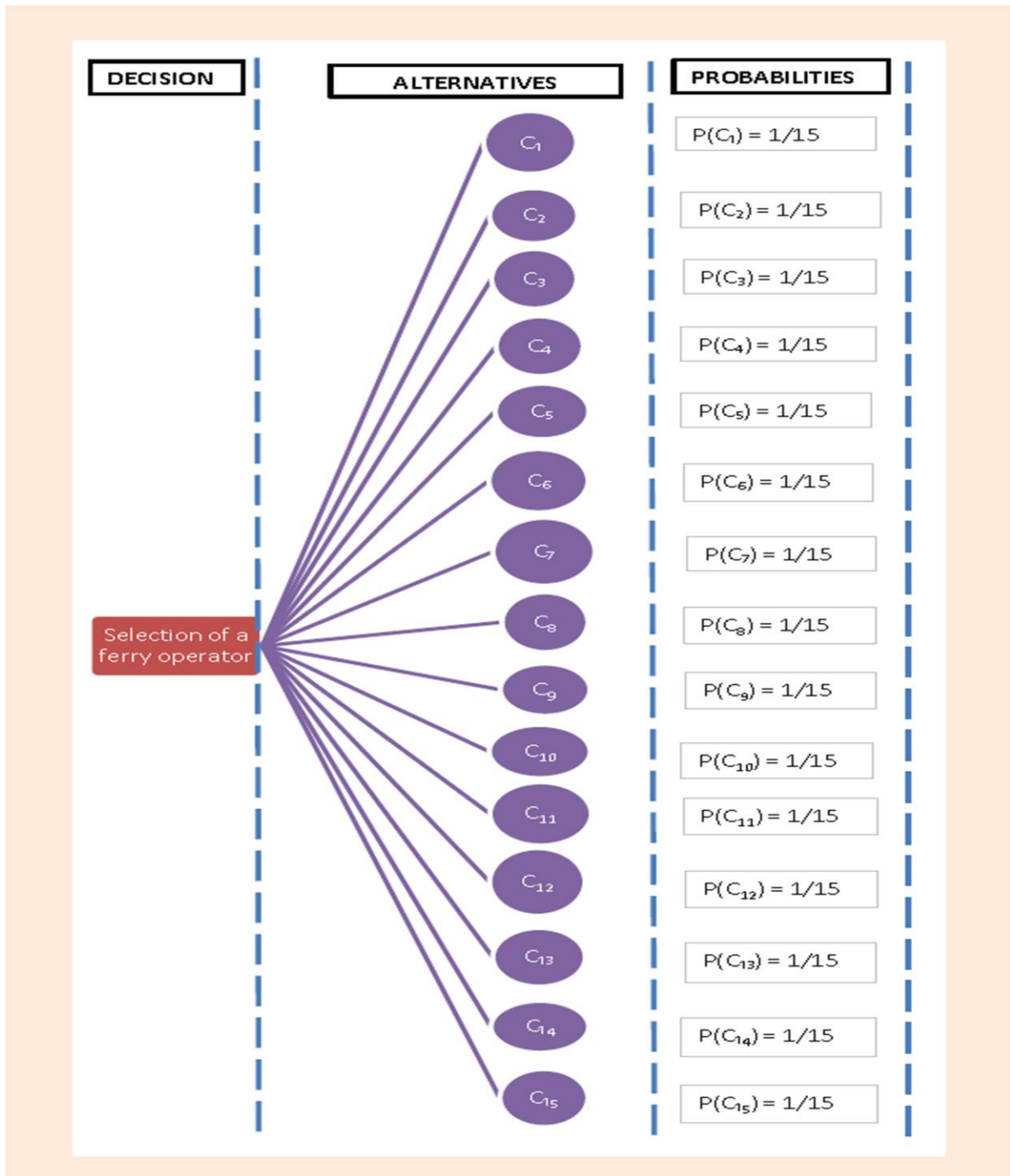
$$C = \{ C_1, C_2, C_3, C_4, C_5, C_6, C_7, C_8, C_9, C_{10}, C_{11}, C_{12}, C_{13}, C_{14}, C_{15} \} \Rightarrow n(C) = 15$$

**Therefore, the corresponding probability of any operating company to be selected is:**

$$P(C_x) = \frac{n(C_x)}{n(C)} = \frac{1}{15} = 0.0667 = 6.67\%$$

Whereas,  $x = \{1, 2, 3 \dots 15\}$  and  $C_x \in C$

Figure 8.1: Decision tree illustrating stage one of the model



**Important results noted from stage one:**

1. The probability for a company to be selected (=6.67% for each company)
2. The number alternatives ('degrees of freedom') for the contracting authority (=15)

## Stage two:

In this stage we assume that the companies adopt a strategic conduct through mergers and acquisitions. The mergers and acquisitions result into the formation of giant companies (herein after abbreviated as **G**). This can be described mathematically as follows:

1.  $C_1, C_2$  and  $C_3$  form a giant company [  $G_1$  ]

$$f : C_1 + C_2 + C_3 \rightarrow G_1$$

2.  $C_4, C_5$  and  $C_6$  form a giant company [  $G_2$  ]

$$f : C_4 + C_5 + C_6 \rightarrow G_2$$

3.  $C_7, C_8, C_9, C_{10}$  and  $C_{11}$  form a giant company [  $G_3$  ]

$$f : C_7 + C_8 + C_9 + C_{10} + C_{11} \rightarrow G_3$$

4.  $C_{12}, C_{13}, C_{14}$  and  $C_{15}$  form a giant company [  $G_4$  ]

$$f : C_{12} + C_{13} + C_{14} + C_{15} \rightarrow G_4$$

Thus,

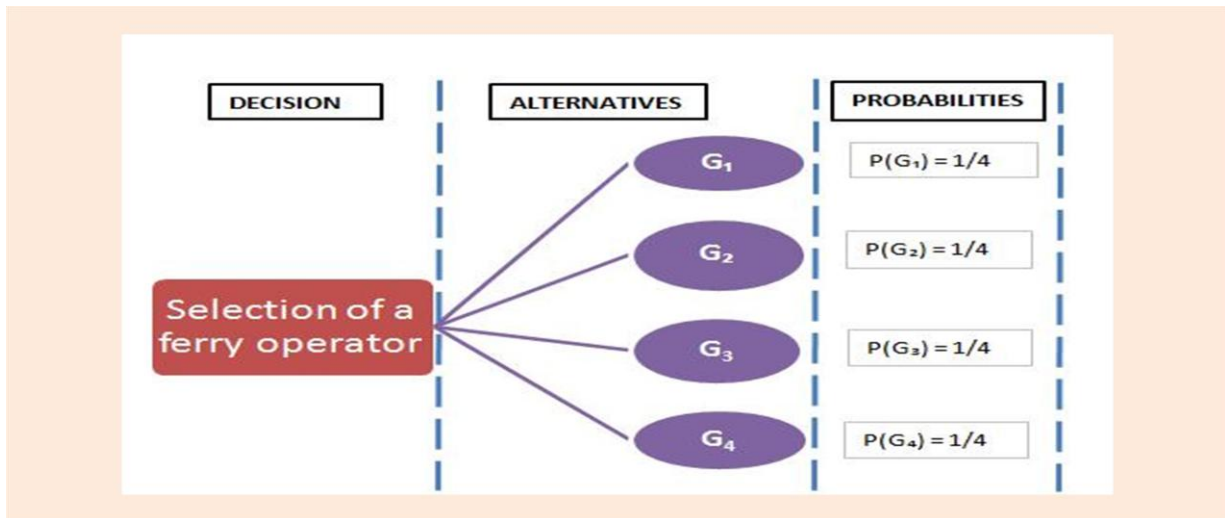
$$G = \{G_1, G_2, G_3, G_4\} \Rightarrow n(G) = 4$$

Given that the same assumptions as in stage one continue to hold, the corresponding probability for any giant company to be selected becomes :

$$P(G_x) = \frac{n(G_x)}{n(G)} = \frac{1}{4} = 0.2500 = 25\%$$

Whereas  $x = \{1, 2, 3, 4\}$  and  $G_x \in G$

**Figure 8.2: Decision tree illustrating stage two of the model**



**Important results noted from stage two:**

1. The probability for a giant company to be selected (= 25% for each company)
2. The number alternatives ('degrees of freedom') for the contracting authority (= 4).

**Discussion on the results of the model**

Two points are worth to be noted from the model; first, other factors being equal, the strategic conduct of the ferry companies through mergers and acquisitions, increases the probability for the newly giant companies to win a given contract. From the model, we have shown that the probability increases from 6.67% to 25%. This implies that in such competitive environment, there is an incentive for the companies to merge with or acquire their competitors in order to increase the potential for winning contracts. This finding addresses our 1<sup>st</sup> research question and part of the 2<sup>nd</sup> question .

Second, other factors being equal, the strategic conduct of the ferry companies through mergers and acquisitions reduces the possibility space (number of alternatives) of the contracting authority. From the model, we have shown that the alternatives decrease from 15 to 4, a decline of about 73.3%. This implies that the strategic conduct of the ferry companies cripples the degrees of freedom of the contracting authority and thus the selection process becomes more challenging. As potential bidders grow more powerful, the bargaining position of the contracting authority is weakened. Our interview with the key personnel responsible for the procurement of ferry services in Møre and Romsdal region confirmed this finding. The finding partly responds to our 2<sup>nd</sup> research question.

## Limitations of the model

This model has been simplified for the purpose of understandability. In a real world, however, some of the assumptions we have made may not be operational. For example, the assumption of equal probability of winning a contract for each of the companies can hardly prevail if we consider companies' differences in capabilities such as environmental performance, financial muscles and technical competence. Nevertheless, the model has successfully met our objective of showing the impact of declining number of bidders on the tendering processes.

## 8.2 Changes in ownership structure of the operating companies

### 8.2.1 Over view

It is interesting to notice that the ownership structure of the companies in the Norwegian ferry sector has changed over time. We compare two periods, the base year 1996 when competitive tendering was introduced in the Norwegian ferry sector, and 2011 which is the year of this study. The ownership structure has changed with respect to public/private<sup>12</sup> ownership as well as foreign/local ownership. The sector has witnessed many public companies disappearing after the introduction of competitive tendering and interestingly, a foreign company entered the sector (See Table 8.1 and Figure 8.3) .

**Table 8.1: Changes in ownership structure of the operating companies**

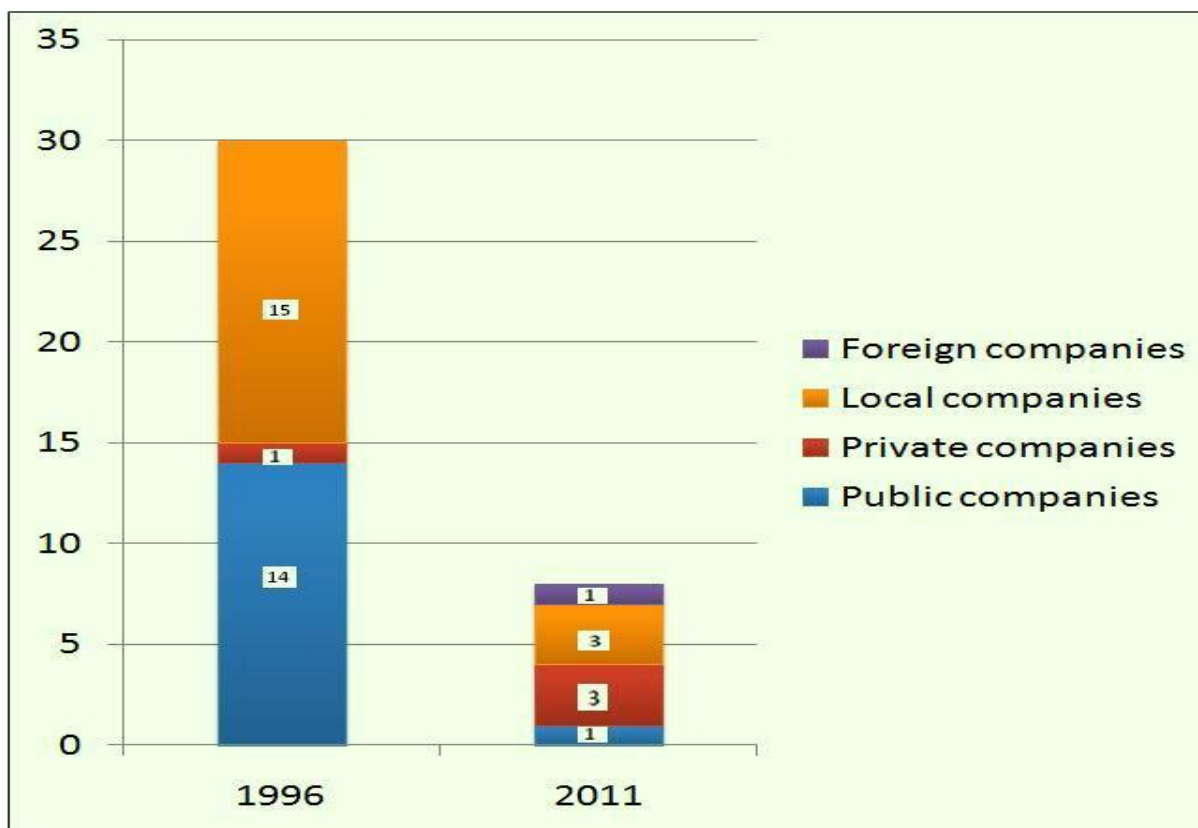
Year	Public companies	Private companies	Local companies	Foreign companies	Total
1996	14	1	15	0	15
2011	1 <sup>13</sup>	3	3	1	4
Change	-13	+2	-12	+1	-11
<b>Percentage changes relative to industry size</b>					
Year	Public companies	Private companies	Local companies	Foreign companies	Total
1996	93.3%	6.7%	100%	0%	100%
2011	25%	75%	75%	25%	100%
Change	-68.3%	+68.3%	-25%	+25%	N/A

<sup>12</sup> A company is defined as privately owned if the majority (more than 50%) of its shares is controlled by individuals or private companies; otherwise the company is defined as publicly owned (Adopted from Terje and Solvoll, 2008).

<sup>13</sup> Even this only public company has recently, (in April, 2011) sold its 41% stake to a private company Havila AS, (More details will be provided in later sections). But still it remains public according to our definition.



**Figure 8.3: Changes in the ownership structure of the ferry companies**



### **8.2.2 Arguments for disappearance of public companies from the ferry sector**

In chapter three of this thesis we present evidence from literature that shows private companies are generally more efficient than public companies. But as far as our study is concerned, we need to establish an argument on why public companies would disappear after the introduction of competitive tendering. This question can be addressed by first considering the essence of the objectives for introducing competitive tendering. As we explained in chapter two of this thesis, two main objectives are usually asserted to justify the application tendering processes, these are; improvement of efficiency and quality of services.

The buying entities expect to achieve cost efficiency and high quality of products/services by stimulating competition among potential suppliers. From the case studies of Møre and Romsdal and the Western region, we could see that the main criterion for selection of a ferry company is price; this implies that in order to survive in such a market, a firm must develop a competitive edge based on price differentiation and cost efficiency. Obviously, that would require a lot of flexibility, innovation, and agility on the part of suppliers who are competing for the contracts.

Now the question comes, are public companies sufficiently flexible, innovative and agile to survive competition?; an answer to this question can be obtained in chapter three of this thesis where we report arguments from literature on why public entities are less efficient than their private counterparts. Literature argue that, excessive regulations, formalities, and guaranteed back-up support from the the governemnet, are the chief reasons for inefficiency of public entities. Public firms dedicate much of their effort in meeting compliance requirements, and at the same they have less incentive to promote cost efficiency since they have that assured financial back-up from the gouvernement . These conditions discourage firm's innovativeness and kills the spirit of competitiveness.

With regard to the disappearance of public companies from the Norwegian ferry sector, we argue that, the introduction of competitive tendering most likely made it more difficult for public entities to survive in the sector due to the practical factors we mentioned earlier. It became vivid to public entities that in order to survive in this game which apparently had become highly competitive, they had to have a single and clear focus – EFFICIENCY. However, we aware that the owners of such companies; the government (central or local), have multiple objectives and sticking to efficiency alone might contradict other objectives. Therefore, quitting the industry and leave it in the hands of privately owned firms becomes the best option. This argurment is in line with the views of Sheilefer (1998) in his paper '**State versus private ownership**' where he concludes that:

*"Private ownership should generally be preferred to public ownership when the incentives to innovate and to contain costs must be strong"*

### **8.3 Barriers to entry in the Norwegian ferry sector**

While the number of ferry companies is declining, history shows that entry of new companies in the Norwegian ferry sector is very difficult. Based on literature review and reports from the Norwegian ferry sector, we argue that this sector is characterized by the following barriers to entry:

#### **1. Asset specificity**

As defined earlier, specific assets are those assets that are deployed to support a particular transaction and they have a higher value to that transaction than they would have if they were redeployed for any other purpose. NCHRP (2008) give examples of specific assets in transportation system, these include highway assets, **ferries**, tunnels, and bridges. Usually

such assets are built to suit the purpose for which they were intended or suit particular locations or routes. In case of ferries, the operator may be required to make several specific investments in order to meet the needs of a particular route. Such investments could relate to specific features like size of the ferry, communication technology, special facilities such as those needed for handicapped passengers, size of parking spaces, and specific engine features such as gas powered engines needed for environmental friendliness.

In the case of ferry contracts for both, Møre and Romsdal and the Western region, the issue of asset specificity is vivid. For example, the requirement to operate gas powered ferries, and the compatibility of the vessels to the terminal infrastructure, constitute considerable asset specificity. Klein et al. (1978) argue that, investments in specific assets may represent a sunk cost since their value cannot easily be recovered elsewhere. For that reason, the requirement of specific assets may discourage new firms from entering a given industry. Therefore, we argue that the Norwegian ferry sector is comprised of investments in specific assets that may discourage new ferry companies from entering this sector.

## **2. High capital requirement and difficulties in securing finances**

From the study conducted by Baird (2009) regarding investments in the European ferry industry, it is clear that the amount of capital required to establish a ferry company, is significantly high. This implies that for such industry, it is less likely that one entrepreneur can finance entry out of his savings. A potential entrant in the ferry industry may therefore be required to turn to lending organizations for funds. However, lending institutions such as investment banks are usually very skeptical on start-ups and small scale operators. On an interview, Trond H. Scheie, the Senior Vice president of Shipping, Offshore & Logistics for DnB NOR, which is Norway's leading ship industry financing bank, was quoted saying that:

”It is more difficult today to start a new ferry company on a new route with respect to the financing of new buildings with the help of major ship financing banks. We, at least, have had a preference for large, well established corporations that operate many ships and have a good track record. So mergers and acquisitions may be one solution, the other may be state or government finance schemes”

**[Source: Det Norske Veritas (DNV) 2010]**

One of the factors that make soliciting finances for ferry operations even more complicated than for other shipping segments, is the presence of specific investments. Trond H. Scheie give a remark about this:

”What differentiates ferry financing to more traditional shipping segments is the lack of a transparent second hand market for ferries. Unlike most other segments with more standard tonnage, many ferries are purpose-built in one way or another. It is difficult to establish what value such a ferry would have for another operator on another route”

[Source: Det Norske Veritas (DNV) 2010]

According Waldman and Jensen (2006), usually financiers are very much concerned about risk of bankruptcy and default; and for that reason, in industries that have high uncertainties, they would prefer large and well established firms rather than new firms. This is exactly what Trond H. Scheie is arguing. Therefore, we formally argue that, high capital requirement and difficulties involved in securing finances is one of the factors that may preclude new firms from entering Norwegian ferry sector.

### **3. The effect of tendering ferry links in packages/bundles**

From the case studies of Møre and Romsdal, and the Western region, it can be seen that ferry links are in most cases tendered in bundles/packages. This means that, a set of two or more ferry links are tendered jointly. The problem of bundling as a barrier to entry is widely discussed in anti-trust literature; however, it is covered mostly from the suppliers’ point of view [see in: Nalebuff (2004); Adams et al. (1976); Bakos and Brynjolfsson (1999)]. In the Norwegian ferry sector, this problem can be looked at from the buyer’s point of view; that is, the practice of the contracting authorities to package several ferry links for competitive tendering.

When ferry links are tendered in packages, the issue of capacity immediately turns out to be vital to the potential bidders. It is a big challenge for small companies to compete in such a situation where a relatively larger fleet is required in order to meet the conditions of the tendered contracts. Now, as evidence shows that entrants tend to be small relative to all firms in an industry (Waldman and Jensen 2006), it is tempting to argue that the practice of tendering the ferry links in bundles will perpetuate the dominance of the existing large firms and discourage small firms from entering this sector.

## 8.4 Market dominance: Regional dimension

Through the review of tendering reports and the websites of operating companies, it was clear that market dominance in the Norwegian ferry sector has taken a regional dimension. Each of the operating companies has strong influence and dominance in a given region. Tide AS appears to have stronghold in the Southern region as it operates majority of the ferry links in this region. Mid/Central Norway appears to be the home of Fjord 1 as it operates most of the links in this market segment. The Northern region is largely dominated by Torghatten ASA while Veolia operates just a few links in this region as well. By tracking the history of this sector, it is vivid that most of the mergers and acquisitions also took place in a similar pattern; that is, mergers and acquisitions occurred mostly for companies operating in the same region.

## 8.5 Drivers for mergers and acquisitions in the Norwegian ferry sector

Among other things, chapter 7 of this thesis presents evidence regarding the factors behind mergers and acquisitions in the Norwegian ferry sector as captured from some of the ferry companies' annual reports. In these reports it was argued that, the main justifications for merging or acquiring another company was to achieve economies of scale, business expansion, creation of synergy, growth and improving business performance. Apparently, these factors are part of the general factors that we report in chapter three as captured from the literature. Therefore, the evidence from other scientific studies coincide with the arguments of the ferry companies as presented in their annual reports. Although not explicitly stated in the ferry companies' annual reports, the motives behind mergers and acquisitions in the Norwegian ferry sector can be summed into two major factors; **market power** and **risk diversification**.

### **Market power**

It has been shown by the use of simple mathematical model that when tendering is used as a method of procurement, suppliers have an incentive to strengthen their market power in order to reduce competition and hence increase their chance of winning contracts. More so, we noted that market dominance and mergers and acquisitions took place in a regional dimension; this gives signal to the fact that the operating companies had a motive also to increase their power within their home regions. If that is the case, then factors such creation of synergy, business expansion and growth, all targeted at increasing the market power.

## **Risk diversification**

The issue of risk diversification has strong influence for mergers and acquisitions in the Norwegian ferry sector. As ferry links are tendered in bundles and the contract duration in some cases run up to 10 years, companies cannot risk to stay out of business for all that period. Increasing capacity through consolidation becomes a viable strategy that allows a company to reduce competition and at the same time spread risk across the market. If a company loses one contract in a particular region, the loss might be compensated by contracts won in other regions. But if the company is small, at certain times it might be compelled to put all the 'eggs in one basket' as it cannot spread risks due to capacity constraints.

### **8.6 Amount of bids: Difference between the best and the second best bids**

Literature on auction theory suggest that the amount of bid placed by a bidder in an auction is partly determined by the level of competition in that particular auction (see in: Waterson 1988; Gomez-Lobo; Szymanski 2001; Hensher and Stanley 2008). That being the case, then the vice versa might be true, that is, the amounts of bids placed by bidders can tell us something about the level of competition. According to Saunders et al. (1998), one of the ways to measure competition among bidders is to look at measures of bid spreads; this is so because, as the number of bidders increase, the second highest bidder tends to use the lowest possible valuation (where bidding is done for selling a service/good) or the highest possible valuation (where bidding is done for buying a service/good). Put it in other words, increase in the number of bidders increases the level of competition and also reduces the price spread, or difference, between the best and the second best bids. We adopt this view and therefore we assess the amounts of bids placed in the tendering processes of the two case regions for this last phase (from 2006); this is the period when the impact of structural changes was vivid.

Tables 7.3 and 7.5 show respectively, the amount of bids for the selected tender competitions in Møre and Romsdal and the Western Region with the corresponding computations of the best and the second best bids. The two contracting authorities use price as the main selection criterion and they use the rule of thumb that other factors will be considered only if the price difference between the best and the second best bids is within 5%. Our findings regarding this matter are presented categorically as follows:

## **Findings in Møre and Romsdal**

For all the reviewed tender rounds in this region, the price difference between the best and second best bidder was above 5% except in one incident where there was only one bidder who submitted two bids with price difference of 1.1%. Tender rounds that involve more than one bidder had the minimum difference of 9% and the maximum of 56%.

One notable observation is that, in some tender rounds, bidders submitted two or more bids; obviously this aimed at increasing their chance of being selected. In such cases, it appears that the bidders submitted multiple bids with small price differences such that if they happen to be the only bidders for a particular contract, they can still secure a good deal. The tender round that had 9% difference (which was the smallest difference among tender rounds with more than one bidder), is the tender round that also had the largest number of bids (7 bids, out of which 5 were submitted by the same bidder). This observation is partly consistent with the theory [the higher the number of bids, the smaller the difference between the best and the second best bids].

Another interesting observation is the incident where the difference between the best and second best bids was 1.1%. The contracting authorities' rule of thumb is to consider other evaluation criteria only if the price difference is within 5%; this rule is irrelevant in such a case where there is only one bidder. Submission of multiple bids with small differences help the bidder to secure a good deal when price is the main selection criterion. However, if there is a threat of high competition, even if a bidder submits multiple bids, the smallest of his bids would not be very high above his private valuation so as to avoid the risk of losing the contest. However, if such a bidder is informed in advance that he is going to be the only bidder, there is a likelihood that the smallest of his bid could be very high above his actual private valuation.

## **Findings in the Western region**

Eleven tender rounds were assessed in this region. Five tender rounds had price difference of below 5% between the best and the second best bidder. But of those five tender rounds, four of them had interesting pattern; the pattern was either only one bidder was involved, or the best and the second best bids were placed by the same bidder. In such cases the issue of considering other criteria becomes less important. The submission of multiple bids was intended for and definitely increased the chance of winning the contracts.

The remaining six contracts had the minimum difference of 10% and the maximum of 438%; quite interesting. As the case in Møre and Romsdal, the round with 10% difference is the one that had the largest number of bids (5 bids, out of which 3 were submitted by the same bidder). This is partly consistent with the theory. The 438% difference occurred in a tender round that involved only two bids, again this is in line with the prediction of the theory; the less the competition, the greater the difference between the best and the second best bid.

### **Conclusion about the amount of bids**

First, we admit that the sample of tender rounds that has been analysed is not adequate enough for us to make a robust conclusion on the competitiveness of the tendering practice in the ferry sector. In addition to that, since we were not able to access information about ex-post operating costs of the winning bidders, it is difficult to judge whether the bids quoted were too high or not. However, we can still deduce some signals about the level of competition in this sector:

- Having the same bidder submitting multiple bids with small differences suggest that ferry companies are striving hard to win contracts, but at the same time they make sure that if a company happens to be the only bidder, it can still secure a 'good deal'. In way, submission of multiple bids is used as strategy for spreading risk of losing a contract.
- The rule that price difference between the best and the second best bids should exceed 5% does not guarantee value for money. The best bid might be well above 5% compared to the second best; but the amount of this best bid may still be too high in real terms. There is a need for contracting authorities to build strong knowledge base of cost structures for each contracted package so that the bids are compared not only against each other but also in real terms.
- In both case studies, the higher number of bids [7 bids in Møre and Romsdal; 5 bids in the Western region] was associated with an indication of some competitiveness. Both produced a relatively smaller difference between the best and the second best bid; this is regardless of the fact that some bids were placed by the same bidder. It tempts to argue that if more bids were also involved in other tender rounds, perhaps smaller differences would have been recorded.

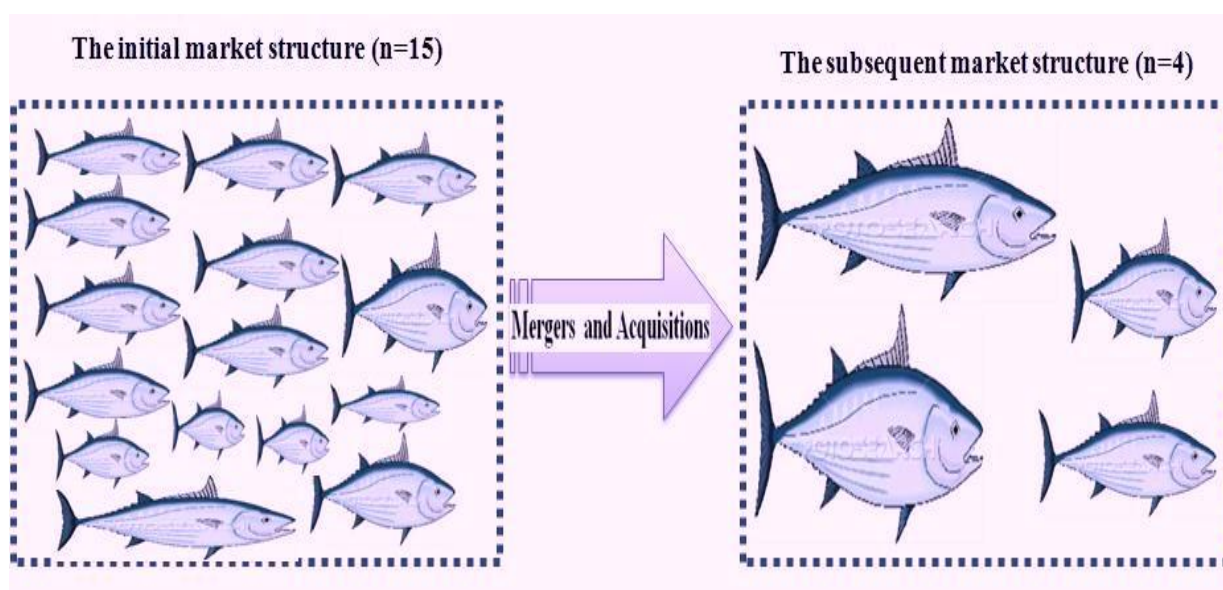


## 8.7 Competition reduction: Big fish in the small pond

### 8.7.1 Overview

Through mergers and acquisitions, the structure of the Norwegian ferry sector has significantly changed. The sector is now dominated by a few players, and this signifies that the level of competition has declined. But another important issue to note is the growing of powerful companies in the sector concurrently with the decline of competition. The situation is synonymous to a fish pond that was initially occupied by several fish of various sizes and then the bigger fish started to eat the smaller ones resulting into reduced number of fish (see in figure 8.4).

**Figure 8.4: Decline in the number of firms resulting into few powerful players**



### 8.7.2 Who are the big fish in the Norwegian ferry sector?

Without offence, the big fish in this sector are those companies that have been able to survive competition after the introduction of competitive tendering. Most of them made it possible through mergers and acquisitions. Conversely, the small fish in this sector were those public companies that could not survive competition and had to be acquired.

Looking at the current structure of the ferry sector, it is tempting to make predictions on its future trend. Based on the observation of the patterns and the analysis we have made, we have the guts to argue that, the Norwegian ferry sector still has some "small fish" that are potential target for elimination. These are the two companies; the only foreign owned company and the only public company.

### **Why is the only existing foreign company a potential target for elimination?**

History has proven that entry into the Norwegian ferry sector by foreign companies is not easy. Since 1996, the sector has witnessed only one foreign company. On top of that, this company does not seem to be very vibrant and it operates mostly in the small Northern part of the country. Through our review of the competitive tendering reports for the procurement of Møre and Romsdal and the Western region ferry services, we have noted that this company has not made appearances in the recent tender rounds. Now, considering the strength of the other two giant companies, it is tempting to argue that in the long-run, this foreign company may end up losing even those few contracts it currently holds (Note: In 2005 this same company bought Helegelandske AS, later in 2006 they lost all the contracts for its bus routes except the airport coach).

### **Why is the only existing public company a potential target for elimination?**

It is obvious that tendering practices induced competition in the Norwegian ferry sector but according to literature, it is very difficult for public companies to survive such competitive environment. Infact, there are no sufficient technical reasons for public companies to operate in such competitive industry. This lead us to believe that the only public company in the Norwegian ferry sector will eventually be eliminated by being sold to a private company.

We have noted that after the introduction of competitive tendering the number of publicly owned companies declined from 14 in 1996 to 1 in 2011. The only public company is owned by two counties, Sogn og Fjordane county (59%) and Møre and Romsdal (41%); however, recently (in April, 2011), Møre and Romsdal has accepted the offer of Havila AS for the purchase of its 41% stake<sup>14</sup>. In justifying the sale, the county council argued that Havila AS being a private company, will contribute to the real competition. Actually this recent incident supports our prediction that was made even before it happened.

### **What could be the next move?**

It is clear that the companies in the Norwegian ferry sector are now attempting to acquire strategic position. Consider a strategic move made by one of the giant companies that won a contract in Møre and Romsdal region, apparently the contract was previously operated by the local public company, later on, the giant company hired the same public company to operate the contracted links (sekken.net, 2010).

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<sup>14</sup> Møre and Romsdal County has sold its 41% stake in Fjord 1 for a sum of NOK 362.3 mil. Full story available at: <http://mrfylke.no/Organisasjon/Info/Pressemeldingar/Sel-aksjeposten-i-Fjord1>

If the only public company in the sector (herein after referred to as 'the target company') chooses to sell-out and quit the industry, we are likely to witness another strategic episode. That will be the time for the two giant ferry operators to solidify their market power by acting strategically. Three scenarios are possible in case the public company is put out for sell:

**Scenario 1:**

**The giant companies play aggressively to maximize their market share.**

It has been reported in literature that maximizing market share is one of the motives for mergers and acquisitions. In this scenario we assume that the giant companies are only driven by the desire to capture the largest market share<sup>15</sup> possible. That being the case, when the target company is put out for sale, both of the giant companies will play as much aggressive as possible so as to take it over. Three actions are possible:

- One of the giant companies buying the whole of the target company.
- Both play aggressively and end up to share the company 50% each.
- None of them buys, and thus a new company enters the sector by a take-over.

It should be noted that in this scenario the sole motive for buying the target company is to capture the market segment which is currently held by the target company. The following are the possible outcomes with respect to the market share distribution:

**Table 8.2: Possible distribution of market share between potential buyers for the segment which is currently held by the target company.**

	Giant ferry company 1		
		Buy	Not buy
Giant ferry company 2	Buy	50% , 50%	100% , 0%
	Not buy	0% , 100%	0% , 0%

We argue that, if each of the giant companies chooses to buy half of the target company, then each of them is likely to capture half of the market share that is currently held by the target company. In case one of them chooses to play aggressively and buy the whole of the target

<sup>15</sup> Due to entry barriers such as asset specificity and high capital requirements, we consider that the company that successfully makes the buyout will likely capture the market segment that is currently held by the target company.

company, then it will likely capture the whole of the market share that is currently held by the target company. Finally, if both of them fail to buy the target company and allow a new entrant to come in, it is likely that the market share that is currently held by the target company may whole go to the new entrant.

### **Solution to the game**

From the past annual reports of some ferry companies, we could see that creation of synergy, economies of scale and business expansion are some of the motives behind mergers and acquisitions in the Norwegian ferry sector. However, with this scenario, the sole incentive for the giant companies to buy the target company and not let it go to the hands of a new entrant, is to protect their sphere of influence (market power) in the ferry sector.

Given the possible outcomes shown in table 8.2, we argue that for each of the the giant companies, the dominant solution to this seemingly prisoner's dilemma game, is to buy the target company. Thus, in the end it will not be a surprise to see the two giant companies splitting and share 50% - 50% of the target company, other factors held constant<sup>16</sup>.

### **Scenario 2:**

#### **The owners of the target company act opportunistically by setting a very high price in anticipation of splitting the company to the two giant companies.**

Considering the dominant solution in scenario 1, the owners of the target company have an incentive to set a relatively higher price. Even though the giant companies are ambitious about maintaining their market power, buying the target company at such a higher price may not be economically justifiable. Obviously, even though both of them are powerful companies, they would definitely have different private valuation of the target company. That being the case, then, when the target company is put out for sale, each of the giant companies will bid until a point where its private value is exceeded. Three actions are possible:

- One of the giant companies gives up and leaves the target company to the other.
- Both of the giant companies bargain and end splitting the company 50% - 50%.
- Both of the giant companies give up and thus a new company enters the sector.

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<sup>16</sup> Factors such as regulatory interference and the price set out by the owners of the target company may change rules of the game in scenario 1.

**Table 8.3: Possible distribution of market share between potential buyers for the segment which is currently held by the target company.**

	Giant ferry company 1		
		Give up	Buy
Giant ferry company 2	Give up	0% , 0%	0% , 100%
	Buy	100% , 0%	50% , 50%

We argue that, if the price is set higher than the private valuation of giant companies, they may both give up and let a new entrant capture that market segment. But, if the price is higher above the private valuation of just one of the giant companies, the other one may buy it and thus capture the whole market segment<sup>17</sup>. However, it is possible that both giant companies may focus on maintaining their dominance and thus they split the target company 50%-50% at a price higher than their private valuation; in this case, the outcome will be in the best interest of the target company owners. But consumers may suffer consequences since the giant companies may want to compensate their costs in the form of higher service prices.

Baird (2009) reports on the private equity fund investment (PEF) in the European ferry industry, his findings provide us with useful insights in the reflection of this scenario. The report concluded that; “With a few exceptions, the purchase prices paid by PEF investors to acquire ferry companies tend to be higher multiple of EBITDA<sup>18</sup>; and several times greater than net asset value (i.e. net worth of the ships)”. More so, he adds that, the auction process of a ferry company appears to help even raise the end price much more due to intense competition in the market between PEF investors. Therefore, it will not be a surprise if the target company in the Norwegian ferry sector is sold at a price more than its net asset value.

### **Solution to the game**

Solution to this game depends on two factors; the price of the target company and information sharing between the giant companies. If the giant companies are able to communicate and cooperate, then one of them may give up and thus allowing the other giant company buy the target company at a relatively lower price<sup>19</sup>. This will be in the best interest

<sup>17</sup> The threat of anti-competition accusation is ignored.

<sup>18</sup> **EBITDA** stands for Earnings Before Interest, Taxes, Depreciation, and Amortization.

<sup>19</sup> The assumption is that, the giant companies are powerful enough to outbid new entrants.

of the giant companies but a worst case to the target company owners. However, consumers may benefit from this since the price is not higher to induce a giant company later on set higher service prices to compensate the buying costs (other factors remain constant).

**Scenario 3:**

**The Antitrust authority poses a credible threat to the giant companies.**

In the first two scenarios, the role of competition authority is ignored. However, it is definite that the Norwegian competition authority would not be comfortable with the increasing concentration in the ferry sector. That being the case, the giant companies would now move smartly by considering potential antitrust case filed against them after the acquisition of the target company. Three actions are possible:

- One of the giant companies buys the target company regardless of the antitrust threat.
- Both of the giant companies bargain and end splitting the target company 50% - 50% regardless of the antitrust threat.
- Both of the giant companies a scared by the antitrust threat and thus a new company enters the sector.

**Table 8.4: Possible distribution of market share between potential buyers for the segment which is currently held by the target company.**

	Giant ferry company 1		
		Buy	Scared
Giant ferry company 2	Buy	50% , 50%	100% , 0%
	Scared	0% , 100%	0% , 0%

We argue that, if the competition authority is not comfortable with the increasing concentration in the Norwegian ferry sector, then the giant companies need to move smartly by considering the antitrust repercussions. Both of the giant companies may choose to bargain aggressively and split the target company 50%-50% but will have to bear the risk of potential antitrust accusations. Also, it is possible that one of the giant companies may be scared of the antitrust threat, and thus leaving the company to the courageous rival. But it is possible that both of the giant companies might be scared of the potential antitrust accusations, that will leave the target company to a new entrant.

### **Solution to the game**

Since the antitrust threat is credible, it appears that allowing a new entrant would be in the best interest of both giant companies. Playing aggressively put them in the potential risk of antitrust accusations and the subsequent penalties since the competition authority may later on require them to justify the acquisition. But this is bad news to the owners of the target company, if both giant companies are scared then, they may have to sell at even a lower price to the new entrant.

### **Conclusion about the games**

As noted earlier, the public company (target company) is owned by two counties, Sogn og Fjordane county and Møre and Romsdal. Recently, when we were about to conclude this study, Møre and Romsdal County sold its 41% stake. The giant companies were among the bidders but eventually the stake was bought by a new entrant, Havila AS. Therefore, part of our prediction has already happened; either scenario 2 or scenario 3 took place. That is, either the price (NOK 362.3 mil ) was too high above the private valuation of the giant companies, or both of the giant companies were scared of the credible threat of the antitrust authority.

However, according to our definition<sup>20</sup> of public and private companies, the target company remains to be public since 51% stake is still owned by a public authority. This being the case, with the same argument that public companies can hardly survive such competitive environment, we predict that the remaining 51% might be put out for sale sooner or later. If scenario 2 or scenario 3 will hold again, Havila AS or another new entrant may end up buying the remaining stake thus making the target company a full private company. This will be good news to the competition authority because the dominion power of the giant companies will partly be reduced.

Important to note, the dynamics in the Norwegian ferry sector are definitely more complex and beyond the three scenarios presented in this thesis. A very simple game approach has been used and the solutions presented have taken several assumptions that may not necessarily hold. Therefore, such solutions should not be taken strictly as the only feasible alternatives. However, the games we have portrayed may give some insights and understanding about competition dynamics in the Norwegian ferry sector.

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<sup>20</sup> A company is defined as privately owned if the majority (more than 50%) of its shares is controlled by individuals or private companies; otherwise the company is defined as publicly owned (Adopted from Terje and Solvoll, 2008).

## CHAPTER 9

### IMPLICATIONS, CONCLUSIONS, LIMITATIONS OF THE STUDY AND AREAS FOR FUTURE STUDIES

#### 9.1 Implications of the study

##### 9.1.1 Theoretical implications

This study has exploited mainly two streams of literature; first, the literature related to public procurement, and second, the industrial organisation literature. This was necessary in order to bring into perspective the interaction effect between competitive tendering and structural changes. In relation to both of these, different perspectives have been discussed. The main area of research to which this study has aimed at contributing is the application of competitive tendering in procurement of public transport. Industrial organization literature has thus been used just to bring its concepts and viewpoints into the discussion on the challenges of applying competitive tendering in procurement of public transport services.

Although the study was basically exploratory, it has provided further insights in the field of public procurement which apparently, according to Thai (2009), is a field that continues to evolve both, conceptually and organizationally. One of the most important contributions is concerned with the main objective of the study itself; the interaction effect between competitive tendering and structural changes. The study has conceptualized, described and illustrated numerous concepts surrounding the interaction between those two variables. It has also demonstrated how various theories as advocated in the scientific literature operate in the real world. Most importantly, the subject addressed in this study has added to our knowledge about the importance of understanding the market structure in public procurement.

The study has shown how competitive tendering could ultimately impart strategic conduct of firms in a given industry, and vice versa is true. This has been achieved by reviewing a real world case study, the Norwegian ferry sector. Furthermore, the study gives the scope that the interaction effect may cover; it includes the aspects of barriers to entry, ownership structure, motives behind mergers and acquisitions, and declining number of bidders. All these aspects give clue about important issues to consider in assessing the application of competitive tendering especially in procurement of public transport services.



### 9.1.2 Managerial implications: A way forward for contracting authorities

In addition to the theoretical implications described, this study has provided new insights that might be useful to practitioners responsible for procurement of public transport services. The study has shown on one hand, how competitive tendering may trigger structural changes in the industry, and on the other hand, how those changes may pose challenges of implementing competitive tendering. It is clear that in the situation where the number of bidders is limited, the competition level becomes low and thus the selection process becomes more challenging. As argued in the introduction section, efficiency and quality can be attained in competitive tendering because of the stimulated competition among potential suppliers; this means that, when competition declines, the benefits of competitive tendering might be jeopardized. Based on extensive literature review, the following is recommended:

#### **1. No one size fits all**

According to Klemperer (2002), different procurement situations may require different mechanisms. This implies that, the use of competitive tendering is not expected to be effective in all situations. OECD (2008) reckons that, not all bidding models are equal from the competition point of view. Where the number of firms in the market is enough to sustain reasonable competition, efficient procurement outcomes may be achieved through a simple auction or tender process, but when the number is not sufficient to sustain reasonable competition, more sophisticated arrangements may be necessary to achieve an efficient outcome. Tadelis and bajari (2006) also argue that competitive tendering may perform poorly when there are few available bidders.

With that view in mind, there is a need for the contracting authority to assess its position and the current situation in the ferry sector in order to decide on the best alternative procurement procedures. In particular, an assessment should be done with respect to the use of negotiation procurement procedure. To our knowledge, no empirical evidence has been reported so far on the relative merits between tendering and negotiation procedures in contracting ferry services. However, some international research works that have addressed this subject in the public bus sector do not provide clear evidence as to when competitive tendering for bus services is more appropriate than negotiation, or vice versa (Wallis et al. 2010). Nevertheless, it is possible to identify from the literature a number of factors that will tend to favour one strategy or the other, depending on the strength of their presence.

Wallis et al. (2010) present a model that can be used by contracting authorities as a framework in making decision whether to use tendering or negotiation. They identify seven (7) factors that broadly relate to both, the performance of the current contractors and the expected market environment. These factors are; (1)Efficiency of existing tender prices, (2) Current service quality performance, (3) Current operator entrepreneurship (service development, response to incentives), (4) Current operator-authority relationships, (5) Contract complexity and completeness, (6) Expected strength of supplier market, (7) Period since previous open market testing. With respect to these factors, a contracting authority should assess itself and establish a score for each factor. The model in figure 9.1 illustrates how a final decision can be arrived at regarding whether to use competitive tendering or negotiation.

**Figure 9.1: A model for selection of either Competitive Tendering or Negotiation**

Factor	Favour Competitive Tendering	Favour Negotiation
A. Efficiency of existing tender prices	Far from efficient	Close to efficient
B. Current service quality performance	Low quality	High quality
C. Current operator entrepreneurship (service development, response to incentives)	Poor	Good
D. Current operator relationships (trusting partnership)	Poor	Good
E. Contract complexity and completeness	Simple, complete	Complex, incomplete
F. Expected strength of supplier market (i.e. potential bidders)	Strong	Weak
G. Period since previous open market testing	Long	Short

[Source: Adopted from Wallis et al. (2010)]

## **2. Help to reduce the cost of participating in competitive tendering**

In case the authority decides to continue with competitive tendering, it may be important to consider helping potential bidders to reduce the cost of participating in competitive tendering. Milgrom (2004) argue that, since the driving force behind the success of procurement is competition between bidders, the more bidders enter the contest, the more likely the end result is satisfactory for the government; and thus, it makes sense for the government to keep the entry costs as low as possible. Companies' participation in the tendering for ferry services involve some costs such as gathering information on operational requirements, prepare a bidding strategy and submit bids. The contracting authority may be capable of affecting each of these, for example by providing detailed information on the operational requirements to all potential bidders. Also, there may be a need to consider exploring ways to reduce other barriers to entry such as economies of scale, bundling effect and access to capital to new entrants. For example the practice of tendering the ferry links in packages could be reviewed to determine the optimal size of bundles that can promote efficiency without causing significant entry deterrence.

## **3. Understand cost structures of the ferry companies**

In the current state of the ferry sector, the knowledge about cost structures of the operating companies is perhaps more important to the contracting authority than any other time before. Based on theory, when competition is low, there is high likelihood that ferry companies may demand relatively higher amount of subsidies. It is important for the contracting authorities to establish strong knowledge base about cost structures of the operating companies as this will help them benchmark the various quotations made by bidders. Strong knowledge base of cost structures for each contracted package will allow the contracting authorities to compare the bids not only against each other but also in real terms. More important, in case negotiation procedure will be adopted, then knowledge of cost structures becomes very useful for the purpose of comparison and carrying out dialogues with the companies.

### **9.1.3 Policy implications**

The subject addressed in this thesis emphasizes an aspect that must have sent a signal to the Norwegian Competition Authority. The main function of the authority is to promote healthy competition for the benefit of consumers, business and industry. It is on that account, the issues discussed in this thesis are relevant and should receive attention of the antitrust authority. As argued earlier, the current structure of the Norwegian ferry sector is likely to

jeopardise competition due to increased market concentration; OECD (2008) note that, a concentrated market structure, in which only a few firms exist in a particular sector, is one of the industry characteristics that have been found to help collusion in a procurement market.

Therefore, the current structure of the Norwegian ferry sector should be carefully watched with respect to the possibility of anti-competitive practices. However, the case needs to be keenly handled in close cooperation with the contracting authority (The Norwegian Public Roads Administration). Impact assessment of the current market structure should be conducted with respect to consumer benefit - efficiency and quality. Meanwhile, the Norwegian Competition Authority should impose increased burden on the ferry companies to demonstrate significant public benefits for any merger or acquisition application that might be lodged to them.

## 9.2 Conclusions

This study was devoted to assess the interactive effect between competitive tendering and structural changes in the Norwegian ferry sector. The relevance of the study is justified by the need of the public procuring authorities to achieve efficiency and effectiveness through competitive tendering. We viewed public procurement as a system, and described its link with the external economic environment. In particular, aspects of market structure and strategic conduct of companies in form of mergers and acquisitions were elaborated as the foundation of the study. Inputs from auction, game and incentive theories have been used accordingly as a framework for explaining and predicting the phenomena. Due to its flexibility and versatility, an exploratory design was adopted to answer three main research questions. The questions helped to keep the study focused.

**The first question was;** did competitive tendering stimulate mergers and acquisitions in the Norwegian ferry sector? Based on the evidence collected and our synthesis, it is obvious that the answer to this question is not straight forward but can be inferred. The motives behind mergers and acquisitions in the Norwegian ferry sector have been revealed, these include; economies of scale, business expansion, synergy creation, market power, financial performance and risk diversification. Competitive tendering is not mentioned directly, but if the scenario is examined carefully, it is clear that those factors would not be that much important in the absence of competition.

Prior to introduction of competitive tendering, the large majority of the operators in the ferry sector were public companies that received back-up support from the local authorities, and thus were not much concerned about efficiency issues. The introduction of competitive tendering awakened and demanded them to be more strategic and produce more efficiently without compromising quality. Therefore, it can be argued that the strategic moves that have been taken by ferry companies, especially mergers and acquisitions, can be directly linked to the introduction of competitive tendering in this sector. The motives for mergers and acquisitions in a way are the factors that would allow them to overcome the challenges of competitive tendering.

**The second question was;** what are the motives behind mergers and acquisitions in the Norwegian ferry sector? The answer to this question is straight forward. The aim for posing this question was to trigger an exploration into the underlying motives behind mergers and acquisitions in the ferry sector. From the beginning, it was clear that such a question is sensitive and the companies would not be willing to have an interview on such a subject. We therefore resorted to explore past annual reports of the ferry companies especially in the years when those companies either merged or acquired other companies. Out of this effort, we were able to capture statements from management reports that justify mergers or acquisitions. The reported justifications for mergers and acquisitions are; economies of scale, business expansion, synergy creation, and financial performance. However, based on literature review and our own synthesis, we summarize these motives into two major factors; risk diversification and market power.

**The third question was;** does competitive tendering lead to disappearance of public companies from the ferry sector? Based on the synthesis which was done by corroborating evidence from literature and evidence from the ferry sector, it is clear that public companies face more challenges in operating within competitive environment than private companies. Basically there are no sufficient technical reasons to justify public company's participation in such competitive environment. That being the case, it can be concluded that the disappearance of public companies from the Norwegian ferry is due to competitive forces that apparently are too tough for a public company to handle.

Apart from answering the main research questions, the study attempted to cover issues related to entry barriers such as asset specificity, high capital requirements and the effect of tendering the ferry links in bundles/packages. Also a simple mathematical model was developed to

illustrate why companies would have an incentive to merge in the face of competitive tendering. More so, we have reported on the regional dominance of the ferry companies and make predictions on the possibility of further structural changes that might happen due sale of the only public company that exist in the sector at present. Interesting observations were also recorded when we attempted to assess the differences between the best and the second best bids; there was some consistence to the prediction of the auction theory but no robust conclusion could be made due to data inadequacy. In general, the evidence presented in this study and our synthesis support all three propositions that were earlier stipulated based on extensive literature review and theoretic frameworks. Therefore we conclude that:

1. By triggering competition in the ferry sector, competitive tendering led to mergers and acquisitions in the ferry sector.
2. The factors that led to the occurrence of mergers and acquisitions in the Norwegian ferry sector coincide to the factors advocated widely in the literature, such factors are; market power, economies of scale, synergies, risk diversification etc.
3. Competitive tendering has led to the reduction in the number of publicly owned companies since private companies are more suited for competitive markets than public companies.

### **9.3 Limitations of the study**

There are two limitations that need to be admitted regarding the present study. The first limitation is concerned with the exploratory nature of the study. Despite the fact that exploratory research approach gave us a huge flexibility in terms of data collection methods and analysis, it could not permit to undertake rigorous quantitative tests. The main reasons for not being able to undertake rigorous tests are; the complexity of the subject itself, and limited data availability due to confidentiality concerns. To make robust conclusions on the interaction effect between competitive tendering and structural changes requires not only a dynamic approach, just as done in this thesis, but also a robust analysis based on sufficient volume of data. The later is a shortfall in this thesis, and due to that, we admit that the conclusions established are case-specific and can not be generalized as such.

The second limitation has to do with the coverage of the study. Evidence is based on only two case studies, extensive literature review and annual reports from some of the ferry companies. Considering the fact that the procurement of ferry services in Norway is executed in five regions according the location of the Norwegian Public Roads Administration offices, two

case studies may not be sufficient. More so, the evidence collected from the annual reports of some ferry companies can not be inferred to include the opinions of other companies in the sector; and furthermore, even though the evidence was collected from the respective companies' annual reports, still such evidence cannot be conclusive as such since the interpretation of a written document is always vulnerable to subjectivity.

#### **9.4 Areas for future studies**

There are two main areas that can further be explored as far as the interaction between competitive tendering and structural changes is concerned. The first one is the impact of structural changes on efficiency. The objective of introducing tendering was to promote efficiency and quality of ferry services; therefore, it would be useful to establish the impact that structural changes have had on those two variables. Hence, future studies may focus on efficiency comparison between pre-mergers and post-mergers periods to see if there are any significant changes.

The second area for future research is extension of coverage to include the assessment of other variables such as the type of contract issued and the number of bids. From the literature, it has been established empirically that gross cost contracts usually attract more bids than net-subsidy contracts (see chapter 4). Future studies may therefore explore if the type of contracts issued in the Norwegian ferry sector have any impact on the willingness of the ferry companies to participate in competitive tendering of ferry services.

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**APPENDIX**  
**Interview Guide**



**INTERVIEW GUIDE**  
**DATA COLLECTED FOR A MASTER'S DEGREE THESIS**

**Topic:**

**Tit for tat: The counteractive effect between competitive tendering and structural changes in the Norwegian ferry sector**

**Deodat E. Mwesiumo**

**Supervisor: Prof. Arild Hervik**

**A. GENERAL INFORMATION ABOUT THE AUTHORITY PROVIDING THE DATA**

A1. Name of the Authority/Agency

A1.



A2. Contact details

A2.



A3. Name of the key informant

A3.



A4. Position/designation in the Authority

A4.



## **B. GENERAL ASPECTS ON COMPETITIVE TENDERING IN THE FERRY SECTOR**

**B1. Can you give a brief description of the process followed in the procurement of ferry services?**

**B2. When did the authority start to employ competitive tendering for the ferry services?**

**B3. How many tender rounds have been performed on ferry services until now?**

**B4. Has competitive tendering been successful or not? Why?**

**B5. What can you say about the level of competition in each tender round?**

**B6. Has there been improvement in the quality of ferry services over time?**

**B7. Do you attribute this quality improvement/decline to Competitive tendering?**

**B8. Are there other factors that might be responsible for the change in quality?**

## **C. CONTRACTS FOR FERRY SERVICES**

**C1. What is the standard duration of the contracts?**

- **What do you think about the duration of the contracts? (too long, too short or its okay)**

**C2. Which capital equipment the bidding firms are required to own in order to be considered for the ferry contracts? (The vessels/Infrastructure)**

**C3. Are there special specifications of the capital equipment named above? Age? Capacity?..**

**C4. If the answer is YES in B3 above, what are those specifications?**

**C5. What is the capital requirement for the firms intending to participate in a ferry tender?**

- **Are they required to place any performance bond/financial guarantee?**
- **Do you assess the quality of service during the contract duration?**
- **Are there any penalties imposed on operating companies for failure to meet the agreed terms?**

**C6. How many ferry links/routes are there in the region/municipal?**

- **What is the minimum number of ferry links/routes exposed for tender in each contract?**

**C7. Is there any privilege given to the local companies? (Those located within /Owned by the municipal)**

- **In your selection criteria, do you consider “past relationship” with a company?**

**C8. Are there special conditions given to foreign companies? If YES, what are they?**

**C9. Do you face any challenges in preparing specifications for tenders?**

**C10. Do you face any challenges in selection of the companies over a time as the number of bidders decreases ?**

#### **D. STRUCTURAL ISSUES**

**D1. How many ferry companies participated in each of the following tender rounds?**

The first round

The second round

The third round  etc.

**D3. How many ferry links/routes were exposed to competitive tendering?**

The first round

The second round

The third round  etc.

**D4. What is the amount of bid placed by each of the companies that participated in the previous tender rounds?**

Bids placed by companies in the first round

Contract	Company	Amount of a bid

Bids placed by companies in the second round

Contract	Company	Amount of a bid

Bids placed by companies in the third round

Contract	Company	Amount of a bid

- Fourth round
- Fifth round.....etc.

**D5. Which companies were awarded contracts in each of the following tender rounds?**

Companies awarded contracts in the first round

Contract	Company awarded

- Second round
- Third round .....etc

**D6. Which payment method was used in each of the contracts that were awarded in each of the tender rounds (Either gross cost vs. Net-subsidy)?**

Types of contracts awarded in the first round

Contract	Contract type

- Second round
- Third round.....etc

**E. ANY MATTERS ARISING DURING THE INTERVIEW**

**F. TOOLS USED DURING THE INTERVIEWS.**

1. Note book.
2. Voice Recorder.