Veidekke - Constructing a road to success

A strategic and financial analysis

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Executive summary
This thesis addresses some of the challenges many industries have faced in the aftermath of the financial crisis in 2008. The crisis had several consequences that have redefined markets and business models. We have chosen to look at one industry that is very sensitive to economic cycles; the construction industry. A large proportion of construction industry activities, particularly within infrastructure, is driven directly by government expenditure. In the post-crisis environment, many governments have had to cut back on all types of public expenditure, in order to bring deficits under control. As a result, this has had direct and negative demand effects on the construction industry in most of Europe.

The purpose of this thesis is to conduct a strategic and financial analysis of Veidekke ASA, the largest Norwegian onshore construction company, and the Norwegian construction industry. The Norwegian construction industry has experienced an increase in competition, caused by new foreign competitors coming to Norway, which have been drawn by the comparatively high activity levels in the Norwegian market compared to the rest of Europe. Our aim is to determine how Veidekke ASA can optimize their business model to be competitive in this highly competitive industry, characterised by decreasing profit margins.

The thesis consists of six parts. The first part presents an overview of the construction industry, Veidekke, and the competitors we have chosen to analyse. The second part is a strategic analysis in which we define the macro environment and Veidekke’s strategic position. Moreover, the third part is a financial analysis in which we analyse the development of Veidekke, and some major domestic and international competitors (NCC, Skanska, AF Gruppen, Implenia and Hochtief). The fourth part is a capital structure analysis in which we have calculated the WACC for all of the above-mentioned companies, in order to determine if Veidekke’s capital structure generates a competitive advantage. Finally, we present our recommendations to Veidekke.

Our findings show that Veidekke has three main areas in need of improvement. Most importantly, as their profit margins have been decreasing continuously after the financial crisis, we recommend a more lean cost structure. In addition, we recommend a broader use of partnerships as a way of coping with new entrants in the market. Furthermore, human capital is of crucial importance to Veidekke, and we are concerned because their reputation among engineering students is poor compared to many competitors. In a situation where engineers in general are in short supply in the Norwegian market, we recommend that Veidekke should focus on new HR initiatives to secure a competitive position in the long run.
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1 INTRODUCTION
After the financial crisis, the Norwegian construction industry experienced a significant increase in competition. The increase was mainly caused by companies, from countries with low investment activity, seeking a share of the relatively high Norwegian activity levels\(^1\). The low investment activity in many European countries was a result of the construction industry’s sensitivity to economic cycles\(^2\). As many major construction projects are driven by the public sector, the requirement on many governments after the financial crisis to cut deficits has had a direct consequence of reduced industry demand in most of Europe. Norway, with a public surplus, not least due to the energy sector, has been able to maintain high activity levels during the crisis. Construction activities have been used as a tool to keep employment levels up. With major new infrastructure initiatives, this is set to continue for the foreseeable future. In such a situation, it is no wonder that foreign companies have been attracted to this market.

As a leading Norwegian construction company, Veidekke has been affected by the increase in competition, and has experienced a significant decrease in profitability. In this thesis, we will analyse Veidekke’s situation and propose ways in which they can adapt to the changes in the industry.

1.1 Problem statement
Leading up to the financial crisis in 2008, the construction industry across Europe was experiencing some of the best years it had ever seen\(^3\). When the financial crisis began in the end of 2008, the situation immediately worsened. There was an immediate drop in construction activities across the European Union\(^4\). Rather than cherry picking the most profitable projects, construction companies had to scramble to find work at all. Many companies went bankrupt or had to downsize their business, and the slow period in the years following the financial crisis have forced them to fundamentally rethink their business models\(^5\).

One solution was to scale-up cross border projects, and that included going further than to just the neighbouring countries. Initially, it was in particular companies from the hardest hit parts of

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\(^1\) KPMG, 2012, *Bygg-giganter satser i Norge*
\(^2\) Berman & Pfleeger, 1997, *Which Industries are Sensitive to Business Cycles?*
\(^3\) Stawinska, 2010, *The EU-27 construction sector “From Boom to Gloom”*
\(^4\) Ploscaru & Nistorescu, 2010, *Impact of the economic and financial crisis in the construction industry*
\(^5\) Cerved Group, 2013, *Monitor of Bankruptcies, insolvency proceedings and business closures*
Southern Europe that started to look at broader markets than before when looking for work. Companies from Spain, Italy, Portugal and other southern European countries went to Germany and other northern European countries. However, this has been followed by construction companies from northern European countries acting in a similar manner, as the crisis spread and demand dropped. The combined effect has been increased competition and general price pressure also in the Norwegian market.

The impact of the financial crisis has in general been a lot less significant in Norway than in other European countries. In Norway, construction demand experienced a lower dip and a faster recovery than in most other European countries. This was partly due to the fact Norway did not have to cut back on public expenditures since they did not have deficit problems. There are several reasons why the Norwegian economy was not as affected by the financial crisis in 2008, as many countries in the rest of Europe. First of all, Norway has for many years run a public surplus due to the energy sector and the massive oil and gas reserves. The government did not have to cut expenditure due to deficits, increased cost of government borrowing or reduced availability of funding; Norway is a net lender. Secondly, the government essentially did an underwriting of the Norwegian banking sector, including the provision of funding, and there was thus no banking crisis. With sufficient funding available for the private sector, the most noticeable effect of the crisis was that interest rates remained low, which all things being equal had a positive impact upon activity. In addition, a very disciplined central bargaining system in the private sector has kept salary levels and such under reasonable control.

The advent of foreign competitors entering the Norwegian construction market has, however, led to fierce price competition as the new market participants even take on project with negative profit margins to gain market share. This forces all market participants to make a choice; either revisit their strategy and business model to be able to adjust to the new market situation, or risk bankruptcy because of pressure on profit margins and declining market share. Veidekke, as a primarily Norwegian based construction company, is also affected by these changes, and has

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6 Ewing, 2013, Southern Europe’s Recession Threatens to Spread North
7 The Economist, 2013, The rich cousin
8 Midthjell, 2010, Finanspolitikk og finanskrise – hvilken effekt har egentlig finanspolitikken
9 KPMG, 2012, Bygg-giganter satser i Norge
seen a fall in profitability and a pressure on their existing market share\textsuperscript{10}. In this thesis we will analyse the issues Veidekke is facing and give recommendations on how they should adapt to stay competitive in the highly competitive construction industry in Norway.

This leads to the following problem statement and research questions:

\textit{How can Veidekke ASA optimize their business model and capital structure to be competitive in the Norwegian construction market, which is characterised as highly competitive with decreasing profit margins?}

To answer this problem the thesis will make a thorough analysis of the Norwegian construction industry from Veidekke ASA’s point of view and answer the questions below.

First, we will look at how macro factors affect the construction industry. In addition, we want to look at Veidekke’s strategic position to determine whether Veidekke has a competitive advantage in the construction industry, and where Veidekke is positioned in the market. The purpose of the first research question is to define Veidekke’s internal strengths and weaknesses, as well as identifying external opportunities and threats. This leads us to the following research question:

\textit{How do macro factors affect the construction industry and what is Veidekke’s strategic position?}

Secondly, we will analyse Veidekke’s and their competitors’ financial development to determine the impact the financial crisis has had and to get a better understanding of the financial strengths of the different competitors. The analysis is based on data from 2007 to 2013, in order to get a pre and post financial crisis view. This leads us to the following research question:

\textit{Analysing financial performance and balance sheet liquidity, how has Veidekke developed, compared to their competitors?}

\textsuperscript{10} Veidekke ASA, Annual Report 2007-2013
Thirdly, we will analyse the capital structure of Veidekke and their competitors. This is important because the capital structure is used to determine a company’s WACC$^{11}$. The WACC is an important competitive factor in the construction industry because it is used to discount future cash flow of long-term projects. Therefore, it is essential to have a competitive WACC in an environment where price competition is fierce, and we therefore want to answer:

*Does Veidekke’s capital structure generate a competitive WACC, compared with their competitors’?*

By answering these research questions we believe we can give recommendations to Veidekke ASA on how to adapt to the post financial competitive environment. The structure of this thesis will be further elaborated in the methodology chapter later in the thesis.

### 1.2 Delimitation

Our master thesis is written with the purpose of presenting recommendations to Veidekke on how they should adapt their business model in order to be competitive in the construction industry. Our recommendations are targeted at Veidekke as a company and others interested in the industry, and not towards individual shareholders.

This thesis is written for readers with financial knowledge and awareness of general business theory. Therefore the models used in this thesis will not be thoroughly elaborated upon, but a discussion of the model’s strengths and weaknesses will be conducted in the methodology section unless otherwise stated.

This thesis is written from an external perspective using only publicly available information, any information released after the June 17th 2014 has not been used in the thesis. Annual reports from 2007 to 2013 have been analysed. Although we are analysing companies with activities outside of Europe, the thesis will not analyse the situation on markets outside Europe and will mainly focus on the Norwegian market as mentioned in the problem statement. When data is used it will be specified on which time horizon and exactly what it describes.

A definition of what we consider the construction industry to be will be given in the beginning of chapter two where we will present an industry presentation.

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$^{11}$ Weighted Average Cost of Capital
1.3 Scientific methodology
In this chapter we are going to elaborate on the scientific methodology of this thesis. The chapter will explain the structure of the thesis, our research philosophy, approach and design. In addition, we will explain the scientific quality of our research methods and reporting standards of IFRS.

1.3.1 Structure of the thesis
The thesis will consist of six chapters. Firstly, the chapter you are currently reading will present the scope and methodology of our thesis. Secondly, we will present the Construction Industry, Veidekke ASA and Veidekke’s competitors. Thirdly, we will conduct a strategic analysis of Veidekke and the construction industry. Fourthly, we will conduct a financial analysis of Veidekke and its competitors. Fifth, we will do an analysis on Veidekke’s capital structure. Finally, we will present our recommendations to Veidekke on how they should adapt to increasing competition and industry changes, based on the three analytical chapters. Below is an illustration of the structure of our thesis.

![Figure 1: An illustration of the structure of our thesis, own production](image-url)
The reason for conducting the strategic analysis before the financial analysis is because we believe a lot of information gathered from the strategic analysis will be critical to understand and explain the historical development in our financial analysis.

1.3.2 Research philosophy
Our thesis will provide both quantitative and qualitative methods, thus we have chosen a philosophical worldview that will be a mix of two paradigms, positivism\textsuperscript{12} and interpretivism\textsuperscript{13}.

The positivistic philosophy is the base of our research philosophy, because we wish to use an objective lens when analysing Veidekke. Data, evidence and rational considerations are how we want to shape knowledge from our analysis, which are some of the important grounds for a positivistic worldview\textsuperscript{14}. A positivistic approach demands an objective relationship from the researcher, and the approach therefore stresses a non-interactive relationship with the research subject. As none of the authors have previous experience with either Veidekke or the construction industry, we believe we have an objective relationship with the company and industry.

On the other hand, we acknowledge our inability to remain 100\% objective when our research will also consist of qualitative methods. To be able to understand the market characteristics of the construction industry and the competitive advantages of Veidekke, we have to conduct research were pure objectivity is impossible. We see the world through different lenses and thus an interpretivistic approach will complement our positivistic approach\textsuperscript{15}.

We believe this combination of a positivistic and an interpretivistic worldview is a good and realistic approach to the thesis that allows us to be objective researches as well as trying to understand the construction industry and Veidekke’s situation.

\textsuperscript{12} Creswell, 2003, \textit{Research Design: Qualitative, Quantitative and Mixed Method Approaches}
\textsuperscript{13} Saunders et.al, 2003, \textit{Research methods for Business Students}
\textsuperscript{14} Creswell, 2003, \textit{Research Design: Qualitative, Quantitative and Mixed Method Approaches}
\textsuperscript{15} Saunders et.al, 2003, \textit{Research methods for Business Students}
1.3.3 Research approach
Our research approach can be either deductive or inductive. The deductive approach goes from theory to logical reasoning, and is often called the “top-down” approach as it starts with broad general information to confirm or reject a hypothesis. The latter, the inductive approach, goes from logical reasoning to theory, meaning that it as opposed to the deductive approach use more specific observations to generalise.
We have chosen the inductive approach, as Veidekke is our specific example to define some alterations as to how a company in the construction industry in Norway should adapt to changes in the business industry. This is the most obvious approach, as we want to pursue a highly objective methodology. Further, the inductive approach suits our thesis structure and design, to present theory and empirical observations simultaneously in our thesis. In a deductive approach the most common way would be to present methodology and theory before going into any sort of analysis.

1.3.4 Research design
The research design, also called the research strategy, will be based on a mix methods strategy including both quantitative and qualitative methods. We believe that a mixed methods strategy will give the analysis more depth and that each type of methodology will provide a more comprehensive picture of Veidekke and the Norwegian construction industry. As our problem statement revolves around both strategic and financial aspects, a mixed methodology is necessary to cover all aspects. Further, as our research philosophy is based on positivistic and interpretivistic worldviews the mixed methods strategies is the most suitable one as quantitative methods is based on positivism and qualitative methods are based on interpretivism\textsuperscript{16}. In addition, in our opinion these methods will function as complementary methods to ensure the quality of our findings and give us a nuanced picture that will ensure the scientific quality.
We will use a concurrent mix method, in which we will merge the quantitative and qualitative findings, in our recommendation chapter, to ensure a comprehensive analysis of our research problem\textsuperscript{17}.

\textsuperscript{16} Sale, Lohfeld & Brazil, 2002, Revisiting the Quantitative-Qualitative debate: Implications for mixed methods research
\textsuperscript{17} Creswell, 2003, Research Design: Qualitative, Quantitative and Mixed Method Approaches, p. 15
The three analytical chapters that will focus on answering the three research questions represent different types of research methods. Below is a more in-depth explanation of how we will conduct our research in each chapter.

The first research question, *How do macro factors affect the construction industry and what is Veidekke’s strategic position?* will be answered in chapter 3, *The strategic analysis*. The chapter will be a study where we will explore the construction industry and Veidekke using a variety of data. In order to answer this question we have to analyse the strategic environment (*PESTLE*), the Construction industry (*Porter’s Five Forces*), Veidekke’s position in the industry (*Porter’s Generic Strategies*), Veidekke’s way of doing business (*Value chain*) and Veidekke’s capabilities and advantages (*VRIN*).

We will start the chapter by using a *PESTLE* analysis to understand the macro environment and what factors affect Veidekke. Barney points to the fact that this model is available for anyone who is willing to examine external factors, and thus the analysis is not able to produce ground for a competitive advantage because the analysers will most likely come to the same conclusions on how to handle the external factors. In other words, a positive external environment does not equal profit for all companies. Furthermore, an attractive macro environment in an industry can still have profits eradicated simply if the competition is too fierce. Nonetheless, we believe the *PESTLE* analysis is a good start for our analysis as we have chosen a funnel structure and we will look further into how Veidekke can benefit from the external environment later in the analysis, when we narrow down our focus to Veidekke.

Second, we will use *Porter’s five forces* to analyse the Construction Industry in depth to understand what sort of competition Veidekke is up against and the intensity of the competition. The five forces framework has been criticised for oversimplifying the companies’ value chains and failing to identify the true problems with for example lack of segmentation of buyers and/or suppliers. Furthermore, it has been criticised for being out-dated because it was constructed in the early eighties, which was a period with extensive growth and companies only had to compete on market share, while today co-operation in competition is equally important in many industries. However, we believe, that by analysing the value chain independently and using the

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20 Grundy, 2006, *Rethinking and reinventing Michael Porter's five forces model*
21 Conklin & Tapp, 2000, *The Creative Web*
analysis only to conclude on the degree of competition and not how individual companies
manage the environment, the model can add valuable input to our thesis. Furthermore, we will
look into cooperation by analysing Veidekke’s usage of strategic partnerships in the
construction industry.

Third, to understand Veidekke’s position in the industry we will use Porter’s generic strategies
to understand what kind of strategy the company has in terms of competitive advantage and
competitive scope. This model has been criticised for being too simple by some22, and by others
criticised for Porter’s notion about mutually exclusive strategies23,24. However, we believe this
model gives a clear overview of the strategic direction a firm is going, and as researchers have
found empirical evidence for the two strategies25, the model creates valuable output. Further,
researchers have established validity in Porter’s model with the notion that firms that follow
these generic strategic will achieve superior performance26.

Fourth, we want to look at Veidekke’s business model in terms of their value chain and how
they work. To do this we want to use a Value Chain analysis to elaborate on the complex way of
working in the construction industry. Porter’s Value Chain analysis has not received as much
criticism as his model on generic strategies27, but some have pointed to the difficulties in
applying the model on a modern business model, i.e. not a classical manufacturing company28.
We will address this issue by focusing on the most relevant parts of the value chain for
Veidekke, and not go in debt with activities which are not relevant for construction companies.

Fifth, a VRIN analysis will be used to look into Veidekke’s capabilities and competitive
advantages. Jay Barney is one of the criticisers of Porter’s perspective of competitive
advantage29 and to give a more balanced picture of Veidekke’s competitive position we have
chosen this model as a supplement to the question of competitive advantage. Although this
model have been criticised for its lack of a clear definition of what valuable mean30, we will try
to overcome this obstacle by clarifying the definition.

22 Mintzberg, 1988, Generic Strategies: Toward a comprehensive framework
23 Hill, 1988, Differentiation versus low cost and differentiation and low cost
24 Wrigth, 1987, A Refinement of Porter’s generic strategies
26 Dess & Davis, 1984, Porter’s generic strategies as determinants for strategic group membership and
organizational performance
27 Stonehouse & Snowdon, 2007, Competitive advantage revisited
28 Stabell & Fjeldstad, 1998, Configuring value for competitive advantage: on chains, shops and
networks
29 Barney, 1991, Firm resources and Sustained Competitive Advantage
30 Ambrosini & Bowman, 2007, Identifying valuable resources
Finally, a SWOT analysis will be used to sum up Veidekke’s strategic position by looking at the company’s internal strength and weaknesses and external opportunities and threats found in the strategic analysis. We believe that the combination of the above presented theories will provide a solid cover of our first research question, and further help us in the overall analysis towards recommendations for Veidekke.

The second research question, *Analysing financial performance and balance sheet liquidity, how has Veidekke developed, compared to their competitors?* will be answered in chapter 4, *The financial analysis*. This chapter is based on quantitative methods, mainly using annual reports from Veidekke and its competitors. In this analysis, we will use horizontal, trend, vertical and ratio analysis to determine the historical development of turnover, cost, profitability and liquidity. All the formulas used in this chapter can be found in appendix 1. To further enhance the analysis, we will go into more depth with each company and investigate the different segments to determine where the turnover and profitability stem from.

The third research question, *Does Veidekke’s capital structure generate a competitive WACC, compared with their competitors’?* will be answered in chapter 5, *The capital structure analysis*. Construction companies use net-present value methods to evaluate what sort of project they prefer to bid on and what price they are able to bid. We believe this is crucial for Veidekke to have an optimal capital structure to be able to be a competitive bidder. The weighted average cost of capital represent the cost of capital from all investors, and we want to find out if Veidekke’s current capital structure strategy is competitive in terms of their discounting rate used for net present value approach. We also want to look at Veidekke’s competitors’ discount rate to establish whether Veidekke is competitive. We will argue for the choice of methodology, when we present our models in the capital structure analysis. We believe this approach will be easier to follow for the reader, as the corporate finance theory is highly debated and does not have any clear methodology in terms of what is right or wrong when calculating costs of capital. Therefore, we have chosen to place our discussions when they appear, respectively.

When we present our conclusion, it will be a conclusion based on both qualitative and quantitative methods that we believe will strengthen the results and recommendations we present to Veidekke. In each chapter we will present a sub-conclusion to highlight the most
important findings from each chapter. In the final chapter we will present our own produced strategy map and Veidekke’s Business Model Canvas.

1.3.5 Quality of research
Scientific credibility is secured through scientific quality of our research methods. We ensure scientific quality by focusing on quality criteria and being aware of biases and threats that can occur while conducting the research. As we have chosen a mix methods strategy it is important to be aware of the different definitions of quality criteria in quantitative and qualitative methods. This demands an overview of the different criteria for each method. However, the mixed methods strategy itself should allow us to be more confident in our results, as we end up with two complementary methods supporting each other’s results.

Validity refers to the question of what the results can be used for and simply put if our research does what we say we are doing. Fuglsang et. al divides validity into four different sub-categories; technical validity, intern validity, external validity and statistical validity. Each sub-category has a focus on the fact that there is a need for clear causation so that the research in the end actually will measure what was stated would be measured. Looking at qualitative validity, this means that the researcher needs to check for the accuracy of findings, and we will ensure this risk by only using valid sources from well-recognised publications. On the other hand, quantitative validity refers to the threat of not drawing the correct numbers or calculations from a data or the threat that the data has not been treated correctly before the researchers examine it. To make sure we do not miscalculate any data we will use a standard excel spreadsheet for all of our calculations to make sure that all the companies are calculated with the exact same formulas. Further, we will only use well-recognised data sources and when punching numbers manually from annual reports we will include sum formulas to ensure that the end numbers are correct.

Reliability is the trustworthiness of a research. Perfect reliability in a research would imply that someone else could follow our methods and structure, and come to the same conclusion. What is important is to show the reader what we have done and how we have conducted our

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31 Jick, 1979, *Mixing qualitative and quantitative methods: triangulation in action*
32 Fuglsang et. al, 2007, *Teknikker i Samfundsvidskaberne*, p. 18
34 Fuglsang et. al, 2007, *Teknikker i Samfundsvidskaberne*, p. 18
research so other people could do the same without getting a significantly different result. Of course, as we have chosen a mixed methods research it will be easier to make an exact copy of our quantitative research as our qualitative research is the basis for our choice of interpretivism as cannot be 100% object. For the quantitative reliability it is important that we at all times describe our methods so that it can be understood and redone. For our qualitative reliability, research suggests that it is important for research colleagues to coordinate a regular flow of communication to ensure that we at all times have the same definitions of where we are headed and what our main focus is.

How we collect and use data is, as described in the two paragraphs above essential for scientific credibility, and thus both important in terms of the quantitative and qualitative approach. The use and collection of data will be presented during the course of the paper. We believe the most practical approach is to introduce the data and sources when they are relevant, because we have gathered data from several different sources and used them in different ways in the research. Where all tables, graphs and figures are presented we will write a short description explaining where the data has been retrieved and calculated. We have also included an appendix with the different formulas used, so the reader can look up the formulas if needed. Further, a CD-ROM is submitted together with our thesis so the reader can easily enter our excel spread sheets if there is any in-depth questions regarding calculations. As it is important to define a strategy for our collection of data, we have chosen to only include data published by well-recognised data sources such as Bloomberg, DataStream, Statistics Norway and official publications from the companies, along with publications from well-renowned consulting housing and stakeholder organisations.

1.3.6 Reporting standards and quality
All companies analysed in this thesis are listed on regulated European stock markets and are therefore obligated to report under the International Financial Reporting Standards (IFRS)\textsuperscript{37}. These standards ensure that the annual reports analysed in this thesis have been compiled within the same framework and are therefore similar to the largest extent. However, IFRS still allows some differences, e.g. whether income from associates is reported before or after operating

\textsuperscript{35} Creswell, 2003, Research Design: Qualitative, Quantitative and Mixed Method Approaches, p. 190
\textsuperscript{36} Creswell, 2003, Research Design: Qualitative, Quantitative and Mixed Method Approaches, p. 217
\textsuperscript{37} IFRS, 2014, Jurisdiction Profiles
profit. We adjust for these differences and others by reading notes and apply the same definitions of equal items and adjusting in the analytical income statement whenever this is needed. After this adjustment we calculate profit ratios and other numbers analysed in this thesis.

While IFRS have made it easier to analyse and compare companies across countries it has also been criticised for a high focus on fair value measurement\textsuperscript{38}. Although the thought behind fair value is admirable, it requires extra effort and trust between producers and users. Producers have to look beyond historical cost and use the valuation techniques allowed by IFRS standards, while users have to be critical and look for large fluctuations and other red flags, as managers may sometimes have incentives to take large impairment losses one year if bonus targets cannot be accomplished to make it easier to reach targets in the following years\textsuperscript{39}. However, we have not seen any red flags during our analysis.

Despite the possible conflict of interest between producers and users of financial reports these are still the best way to gain knowledge about a company’s financial performance and to some degree strategic choices. Therefore our thesis to a large extend is based on annual reports.

2 INDUSTRY AND VEIDEKKE ASA PRESENTATION

In this chapter we are going to present the Norwegian construction industry and some of the largest companies that operate in the industry. Furthermore, we will give a more detailed presentation of Veidekke ASA, which is the main focus of this thesis. This knowledge will both be used to introduce the reader to Veidekke and its competitors and as background knowledge in our analysis.

2.1 Industry definition and overview

First of all, we will present our definition of the Norwegian construction industry since this is essential to understand any further analysis. When talking about the construction industry in this thesis, the scope is construction companies that take on building projects from public or private customers and either completes them on their own, hires sub-contractors or complete them in

\textsuperscript{38} Petersen & Plenborg, 2012, \textit{Financial Statement Analysis}, p. 3

\textsuperscript{39} Petersen & Plenborg, 2012, \textit{Financial Statement Analysis}, p. 3
partnership with other companies. The construction industry is usually split into three different segments: 1) **construction of buildings**, 2) **civil engineering** and 3) **specialised constructions**. With **construction of buildings** being the construction of houses, offices, stores etc. both for private, commercial and public customers. **Civil engineering** represents the construction of infrastructure projects, such as roads, bridges, tunnels, ports and etc. and this segment is mainly for public customers, but sometimes infrastructure, such as toll bridges, are built by commercial customers. **Specialised construction** refers to the work related with gas and or water pipes, painting, electricity and other finishing construction work. We will look at all the construction segments during our analysis, to ensure that our recommendations have the highest quality possible.

The Norwegian construction market was on 335,2 billion NOK in 2012 and was expected to grow in the years to come with an expected 4% compounded annual growth rate (CAGR) by 2015\(^40\) across all three segments. As mentioned in the problem statement, the construction industry is highly correlated with the general economy, and the Norwegian GDP is expected to rise in the years to come and hence, so is the construction industry.

![Figure 2: Turnover in the Norwegian construction industry as index numbers with 2009=100 2009-2014, the data is obtained from Statistics Norway.](image)

Based on the graph above we can conclude that the construction industry is also highly affected by seasonality. This is not surprising as weather affects construction, especially in the northern and eastern part of Norway. Constructions are difficult or almost impossible in the winter period

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\(^{40}\) Byggenæringens Landsforening, 2013, *Økonomiske analyser fra byggnæringen*, p. 5
in these parts and in some periods all over the country. Furthermore, the graph tells us that the industry, after a difficult period, following 2008 financial crisis, has seen a slow but steady upward trend. This is further confirmed when looking on YoY\textsuperscript{41} changes in the turnover that is shown in the graph below.

\begin{center}
\includegraphics[width=\textwidth]{figure3.png}
\end{center}

\textbf{Figure 3}: YoY changes in turnover in the Norwegian construction industry from 2009-2014, the data is obtained from Statistics Norway.

The effect of the financial crisis is clearly seen in the drop of turnover from 2009-2010, but it is also important to notice how fast the recovery commenced. Already during 2010 the recovery was sporadic and in 2011 all three business areas were growing compared with 2010. This is one explanation for foreign companies finding the Norwegian construction industry attractive following the financial crisis. With this being said, there are still some problems in the industry, which is shown by the low growth rates in the end of 2012 stretching into 2013.

The Norwegian economy recovered faster than most of Europe. This has more than one explanation. First of all, the Norwegian economy was not affected as much as rest of Europe as explained in the problem statement, especially compared with southern Europe\textsuperscript{42}. Second, the Norwegian government was not forced to take austerity measures as many other European countries were\textsuperscript{43}. This is very important as a large chunk of the turnover in the construction

\textsuperscript{41}Year on year changes
\textsuperscript{42}Midthjell, 2010, \textit{Finanspolitikk og finanskrise – hvilken effekt har egentlig finanspolitikken}
\textsuperscript{43}BCC, 2012, \textit{EU Austerity Drive Country by Country}
industry relies on public investment, especially in infrastructure projects. Instead of austerity, the Norwegian government was able to approve a 10-year investment plan in infrastructure called the National Transport plan 2014-2023. The plan contains large investments in infrastructure where both train and roads will be improved, to meet the challenges Norway is facing with increasing population and high growth expected in freight forwarding. The plan adds 167 billion NOK to the 2010-2019 National Transport Plan, which brings the total investment amount to 606 billion NOK over the 10-year period. The National Transport Plan 2014 and its consequences will be elaborated further in the PESTEL analysis later on in the thesis.

As mentioned in the problem statement the financial crisis and its aftermath drove construction companies established in other European countries to enter the Norwegian market in search for revenue. The entry lead to pressure on margins and rapidly changed the Norwegian construction market. In the following sections, we will first provide a thorough presentation of Veidekke. Afterwards we will give a brief presentation of some of Veidekke’s competitors, whom we will also conduct a financial analysis of, to benchmark with Veidekke. We have chosen 3 companies that were present before the financial crisis and together with Veidekke constitute “the big four”, (NCC, Skanska and AF Gruppen) in the Norwegian construction market. Further, we have chosen to analyse two newly entered companies in the Norwegian market, this being the Swiss company Implenia and the German company Hochtief.

2.2 Veidekke ASA
In this section we are going to introduce Veidekke ASA. We will start out with a historical overview, then look into Veidekke’s business model and the organisational structure, and end with a brief explanation of Veidekke’s extensive use of M&As as a part of their growth strategy.

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44 Landon, 2009, *Thriving Norway Provides an Economic Lesson*
45 Norwegian Ministry of Transport and Communication, *National Transport Plan 2014-2023*
46 Norwegian Ministry of Transport and Communication, *National Transport Plan 2014-2023*
48 KPMG, 2012, *Lavere Marginer for Bygg og Anlegg*
49 Bygg.no, 2014, *Byggeindustrien: 100 Største*
50 KPMG, 2012, *Bygg-giganter satser i Norge*
2.2.1 Historical overview

Veidekke was founded in Norway in 1936 for the purpose of constructing roads and laying cobblestone and what may be associated with this work. During a time period of almost eighty years, Veidekke has grown into being a leading construction and property development company in Scandinavia and is today leading in its field in Norway.

After the Second World War Veidekke started to construct runways at airports in the Western region of Norway, a field of experience that landed an airport construction contract in Africa and would become an important part of their business model in the future. In the sixties, road construction was again the distinguishing part of the business model before the seventies and early eighties was characterised by contracts with The Norwegian Agency for Development Cooperation (NORAD) in Africa. During the seventies Veidekke searched for new markets in its home country and started building hydropower plants and nation-wide dam construction.

Veidekke started its national-wide business history with dam construction in the end of the seventies, and throughout the eighties and nighties Veidekke went from being the number nine to number one construction company in Norway. The expansion was characterised with mergers and takeovers, as more than 60 companies have been incorporated under the Veidekke business umbrella since 1982. Following the expansion, Veidekke was listed at Oslo Børs (Stock exchange) in 1986. During the nineties, Veidekke expanded into the field of asphalt, gravel and crushed stone. The nation-wide company expanded its geographic boarders to include Sweden and Denmark during the noughties. In Denmark, Veidekke goes under the name of Hoffman AS, a construction industry Veidekke bought in 2000 with a history going back to 1863.

Today, Veidekke is a large construction company with 6300 employees, and their business idea has developed from laying cobblestone into creating value by designing, building and managing projects in partnership with customers who inspire growth and development.

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51 Veidekke, 2014, “Once upon a time there was a cobblestone company...”
52 Veidekke, 2014, Fakta om Veidekke
53 Hoffmann, 2014, Om Hoffmann
54 Veidekke, 2014, Fakta om Veidekke
2.2.2 Veidekke’s business model and organisational structure

Veidekke has three main areas of business:\[55\]:

- Entrepreneur: Building and construction in Norway, Sweden and Denmark
- Property: Developing and sale of property in Norway and Sweden
- Industry: Operations within asphalt, gravel and crushed stone and road maintenance in Norway and Sweden

These different areas consist of regional, district and section offices combined with different subsidiaries.

The business model is divided into business divisions based on the expertise areas, with support functions within finance, IT, strategy, HR, communication and legal. Below is an overview of the organisational structure.

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**Figure 4**: Veidekke’s organisational structure, own production based on organizational chart retrieved from [www.veidekke.no](http://www.veidekke.no)

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\[55\] Veidekke, 2014, *Fakta om Veidekke*
To give an overview of the size and strength of each division and country, we have chosen to show a percentage overview of each division and country. As seen from the two pie charts below, Norway and the entrepreneur division are clearly the largest business areas for Veidekke. The Norwegian market represents three quarters of the company’s total turnover in 2013, a number that has been rather stable during the last ten years.56

![Turnover per country and turnover per division in 2013 for Veidekke. Data retrieved from Veidekke’s annual report 2013 and calculated in excel. See appendix 5 on CD-ROM](image)

The charts also show that the entrepreneur division represents the largest business division with three quarters of the total turnover in 2013; this percentage share has also been stable during the last decade.

### 2.2.3 Ownership
Veidekke is mainly owned by Norwegian and European institutional owners including building associations, banks, and funds57. The largest owner is OBOS (Oslo property and savings association), which owns 28% of Veidekke. IF Skadeforsikring owns 9% through Citibank, their deposit bank. Further, an important part of the ownership is Veidekke’s employees, which owns almost 20% of the company58. This is an important part of Veidekke’s culture, as they believe

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56 Veidekke ASA, *Annual Reports 2007-2013*
57 Veidekke ASA, 2014, *Ownership Structure*
58 Veidekke ASA, 2014, *Veidekkekulturen*
employee ownership strengthens the commitment and responsibility feeling for everyone in the company.

2.2.4 Veidekke’s mergers and acquisitions
Since the eighties Veidekke has completed a lot of mergers and acquisitions, which have helped them gain a position as the leading construction company in Norway, and further expanded the geographical boarders to include Sweden and Denmark. The figure below shows the extent of the merger and acquisition activity in the company since the early eighties. All of these activities represent expansion in all business segments and geographical areas. In recent time, Veidekke has purchased the Swedish construction company Arcona\textsuperscript{59}, an example of expansion activity in Sweden\textsuperscript{60}.

The M&A activity is also an important reason for Veidekke’s local knowledge and presence.

\textsuperscript{59} Veidekke ASA, 2013, Veidekke kjøper svensk entreprenør
\textsuperscript{60} Bygg.no, 2002, Veidekke med oppkjøp i Syd-Sverige
2.3 Companies on the Norwegian market

In this section we will give a brief presentation of the competitors we have chosen to compare Veidekke with. We will further analyse each company’s market position and financial performance in the following chapters.

2.3.1 Skanska

Skanska originates from the 19th century, more specifically they can be dated back to 1887, are domiciled in Sweden, and was one of top 20 largest construction companies in the world in 2013\(^6\) with a total revenue of 17.2 billion dollars\(^6\). On the Norwegian market Skanska is the second largest operator measured on revenue and with more than 57,000 employees worldwide they are a significant player both in the global and Norwegian market. They operate within all

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\(^6\) Fahy, 2014, *The 25 Biggest Contractors in the World*

\(^6\) Skanska, 2014, *Om Skanska*
segments in Norway building both private houses, commercial building and infrastructure projects. Beside Scandinavia, Skanska operates in Europe, USA and South America.

2.3.2 NCC
Like Skanska, NCC is domiciled in Sweden. NCC is a relatively new company established in 1989 as a merger between existing construction companies. NCC is one of the largest players in the Scandinavian market, and has been active in the Norwegian market since the start of the nineties. From the Nordic construction market NCC generated sales worth 882 Billion SEK in 2013. NCC mainly operates on the Scandinavian market and does not have the same geographic diversification as Skanska. However, NCC has started to conduct some business activities in Northern Germany, The Baltics and Russia.

2.3.3 AF Gruppen
AF Gruppen was established in 1985. They are domiciled in Norway and started out by targeting large infrastructure projects. During the years they also started to construct buildings and conduct business within all construction segments. In 2004 they started working offshore, which today is one of their most important business areas. They are the third largest player in the Norwegian market with revenue of 10.127 million NOK. AF Gruppen has 2600 employees across Norway, Sweden, Ukraine and China, with Norway by far being their largest geographic area.

2.3.4 Implenia
Implenia was formed in 2006 after the merger of Zschokke and Batigroup. Despite them being a newly established company, they have more than a 150 years of history from Zchoskke and BatiGroup. Implenia is the largest construction company in Switzerland from where they originate. They have 6.400 employed and a yearly revenue of about 2,7 billion CHF (equivalent of app. 18,33 billion NOK). They have branches across Europe, the Ivory Coast and the United Arab Emirates. Implenia entered the Norwegian market in 2011 when they acquired the Norwegian Company Betonmast Anlegg A/S and their associated companies. Over the last 3

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63 NCC, 2014, Om NCC
64 NCC, 2013, Annual Report, p. 12-13
65 AF Gruppen, 2014, Om AF Gruppen
66 Implenia, 2014, A Young company with tradition
years Implenia has established themselves in the Norwegian market with infrastructure projects especially within tunnelling, a field of expertise which they have a lot of experience with from their domestic market in Switzerland.

2.3.5 Hochtief
In 1873 a small construction company was founded in Germany, and more than 140 years after Hochtief is now among the top ten largest construction companies in the world. Hochtief has operation all over the world, and is an international company with more than 90% of their activities outside of their domestic country Germany. In 2012 Hochtief entered the Norwegian market by co-operating on a project with Veidekke worth 1569 million NOK. At the end of 2013, Hochtief employed 80,912 people and generated revenues of 25.7 billion EUR (equivalent of app. 205 billion NOK).

3 STRATEGIC ANALYSIS
In this chapter we will conduct a strategic analysis of Veidekke ASA and the construction industry to answer our first research question: How do external macro factors affect the construction industry and what is Veidekke’s strategic position? This chapter has a funnel structure were we start with the wide macro perspective and move towards a narrow focus on Veidekke. The models will appear in the following order; First, a PESTLE analysis to assess the macro environment. Second, we will move onto Porters five forces to analyse how intense the competitive structure of the market is. Third, to obtain a better understanding of Veidekke and their chosen strategy, we will use Porter’s generic strategy framework to identify Veidekke’s competitive focus. Fourth, we will analyse Veidekke with a value chain perspective to understand where Veidekke’s strengths and weaknesses are when they are creating value. Fifth, we will present a short analysis of Veidekke’s collaborative measures, which are its joint ventures and other strategic partnerships.

The funnel structure is chosen as we believe it gives the best understanding of the firm’s specific dynamics if one has an understanding of the industry they operate in. In the end of the chapter

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67 Hochtief, 2014, *Hochtief*
68 Fahy, 2014, *The 25 Biggest Contractors in the World*
we have conducted a SWOT-summary, as we believe the model is good to summarise the strategic findings from our analysis and present the most important conclusions.

3.1 PESTLE
In order to understand the macro-environment Veidekke navigates in, we will apply an analysis with the PESTLE framework. The PESTLE framework will give an understanding of the external factors Veidekke has no or little influence on, and how they affect their business both now and in the future. The PESTLE model analyses six different categories; Political, Economic, Social, Technical, Legal and Environmental. By looking at these categories we establish a wide understanding of the external environment, and are able to identify which factors are the key drivers of changes in the industry. In this analysis we have chosen to combine the technical and environmental factors into one section since they are closely connected in this industry.

3.1.1 Political
In this paragraph we will discuss the most important impacts coming from the political environment and how they affect the construction industry. Furthermore we will look at how some new policies may change the industry in the future. Since there are countless numbers of policies affecting the construction industry we have chosen to look at the two factors we believe have the largest impact on the industry, this being the Norwegian Transport plan and the policies regarding the issues with social-dumping.

**The Norwegian Transport plan 2014-2023**
The Norwegian Transport Plan is reviewed and renewed every fourth year and sets the goals of the government’s transport policies for the next ten years. The 2014-2023 Transport Plan was introduced in 2012. It is not a complete step-by-step plan, but it contains the direction of the transport policies with a guiding amount of financial resources dedicated to improve the infrastructure in Norway. The issue with the National Transport Plan is that the plan is a multi-year plan; however, this plan does not include multi-year funding. Funding is decided every year through the national budget. With the current minority government there is no guarantee that the multi-year plan will actually receive funding. Further, as politics can be as stable as the weather, there is a risk of a change in the focus of public funding if a new government is elected. This
can result in a lot of stopping and starting with planning of projects, which is inefficient for the
country and makes planning hard for the construction companies. To address this issue, the
government has announced plans to establish new financing models for infrastructure\(^\text{69}\). If these
models become a reality, as we expect them to, long term planning will be easier and create an
attractive macro environment.

The Transport Plan is very important and influential for the development of the construction
industry in Norway. First of all, it creates extra demand for construction because it initiates large
investments in the Norwegian infrastructure. Secondly, it will decrease mobility cost in the
future, for the construction companies, because it will be easier to move construction equipment
around for future jobs. The current Transport Plan contains expansion of investments in all types
of transportation. Under the caption “Easier, faster and safer”\(^\text{70}\) roads, trains, air and water
transportation will benefit from the plan. The invested amount is raised by more than 50%, or
150 billion NOK, compared with the 2010-2020 Transport Plan, as the government will spend
more than 500 billion NOK on infrastructure over the next ten-year period\(^\text{71}\). The aviation part
of the plan is expected to be mainly self-funded and therefore will not receive any direct
investments, but benefit through better infrastructure getting to and from the airports.

The average annual distribution of the government funds is as shown in the figure below. Most
of the investments are going to roads between the large Norwegian cities, but railways are also
going to get a large lift with extra trails on the most frequently used lines\(^\text{72}\). Ports and navigation
will get a smaller investment portion, but it is also expected that private investment activities
will lift these facilities when the mobility costs decrease as a result of the improved
infrastructure.

\(^{69}\) The Conservative Party & The Progress Party, 2013, *Political Platform*

\(^{70}\) Norwegian Ministry of Transport and Communication, *National Transport Plan 2014-2023*, p.6

\(^{71}\) Norwegian Ministry of Transport and Communication, *National Transport Plan 2014-2023*, p.3

The public funds are split into more than 71 large projects\footnote{A large project is more than 750 million NOK} in the period of 2014-2023\footnote{Norwegian Ministry of Transport and Communication, National Transport Plan 2014-2023, p.30}. This implies that there will be a lot of circulating capital for entrepreneurs to get their hands on, as there is a good chance of winning one or several projects. 31 of these projects are expected to be finished within the first four years, showing this plan has an immediate impact on the industry\footnote{Norwegian Ministry of Transport and Communication, National Transport Plan 2014-2023, p.12}. As mentioned in the industry overview, Norway is a large country, and this is why it is critical to minimize transportation time and cost between cities to ensure mobility. It is therefore safe to assume that this will not be the last large public investment in the Norwegian infrastructure. The government has sufficient funds to follow up on infrastructure investments, and it is therefore safe to assume that the Transport plan presented in 2018 will also represent an increase in public spending\footnote{Norwegian Ministry of Transport and Communication, National Transport Plan 2014-2023, p.11}. Politically, the previous government election secured a majority for the Conservative Party\footnote{Høyre, 2014, Veier} and the Progress Party\footnote{Fremskrittspartiet, 2014, FrP vil bygge landet}. Both of these parties represent political movements working for an increase in public funding to infrastructure projects. When the next Transport Plan is presented in 2018, is it safe to assume that this plan also will include a high level of funding that will benefit the construction industry.
**Social dumping**
Like many other countries with high minimum wage, Norway has had and is having issues with social dumping. Despite Norway not being a part of the European Union, they have decided to participate in the European Economic Area agreement. The agreement gives them the benefits of easy work related mobility both in and out of Norway, but also welcomes the challenges with social dumping that most of the western and northern parts of Europe are currently experiencing. Social dumping is “where foreign service providers can undercut local service providers because their labour standards are lower,” as defined by the European Commission and also accepted by Eurofund. This gives the Foreign Service provider a cost advantage to the local companies and the problem has hit the construction industry hardest since it is very easy to move construction workers as most basic standards and techniques are equal across European countries. Further, the use of subcontractors makes it hard to control the entire value chain and the use of employment for the contractor. Moreover, a cost advantage for all construction companies in the Norwegian market can stem from foreign workers offering their services for minimum standards, while Norwegian labour tends to utilise the strength of unions to achieve better working standards.

Along with many other countries, Norway has tried to minimize social dumping and already in 2006 an action plan against social dumping was implemented. The plan had requirements of ID-cards on construction locations along with stronger rights of control and sanctions to the labour authorities. Furthermore, it is listed as a requirement in all public contracts that all workers as a minimum have to be hired according to the minimum standards in Norwegian law. Despite these actions, social dumping still exists and currently it gives both foreign companies, and Norwegian companies utilising foreign workers with lower demands, cost advantages in some cases. But, more actions against social dumping, especially in the construction industry, is expected to come both in Norway and Europe, as a whole as shown in the latest European Parliament election. Some Norwegian companies are also using foreign labour, and there have

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79 Økokrim, 2010, *Sosial dumping*
80 Economic Free Trade Agreement, *EEA Agreement*
81 Ministry of Labour and Social Affairs, 2014, *Social Dumping*
82 Eurofound, 2013, *Social Dumping*
83 The European Foundation for the Improvement of Living and Working Conditions
84 Solberg, 2011, *Ulovlig Innleieboom I byggebransjen*
been instances where they have been caught underpaying and thereby obtaining an unfair competitive advantage\textsuperscript{86}.

Further policies on this area could have a high impact and even out competition between companies if it becomes harder to cheat with labour in the future. We expect this to be the case on a European scale since the directive from 1996 has proven not to be adequate\textsuperscript{87}.

\subsection*{3.1.2 Economic}

In this section we will review the economic topics that affect the construction industry the most, both now and in the future. Since economic relations are an endless web of interactions across industries and national borders, we have chosen to focus on what we believe are the two most important topics when looking at economic impact on the construction industry. Firstly, we will look into the construction cycles in Norway, both at the current state and the expectations to the coming years. Secondly, we will look into the European construction industry and analyse how this will impact the Norwegian market.

**Construction cycles in Norway – difference between segments**

The construction industry is, as mentioned in the problem statement, highly correlated with GDP and is in general a very cyclical industry. As GDP has increased during the last few years, this correlation has had a positive effect on the construction industry, as it is one of the first industries to follow the economic cycle. On the other hand, it one of the first industries that hit when the financial crisis occurred in 2008, as seen from the figure below. The solids lines are confirmed numbers and the dashed line shows forecasted values.

\textsuperscript{86} Solberg, 2011, *Ulovlig Innleieboom I byggebransjen*

\textsuperscript{87} Directive 96/71/EC of the European Parliament and of the Council
The figure above also tells us that while all construction segments were impacted by the financial crisis, civil engineering was influenced most being down more than 11% yoy in 2009. Furthermore, civil engineering was the slowest to recover with two years in a row of negative growth. With this being said the civil engineering industry have bounced back and seen the highest growth rates the last three years. This trend is expected to continue mainly driven by the Transport plan 2014-2023 that was covered in the political part of this PESTLE analysis. According to a survey conducted by Byggenæringen in 2013, the Norwegian construction companies are now better prepared for changes in the economy, as more than 30% of the companies state that they are better prepared than the year before\(^88\). Despite the slight slowing growth in Norwegian GDP and civil engineering, we believe that the Norwegian Transport Plan for 2014-2023 will be able to recover growth in civil engineering combined with the fact that Norwegian GDP is expected to increase in 2014\(^89\) after a short dip in 2013. Based on this, it seems the Norwegian construction market is looking towards a brighter economic future. These expectations are further supported by Euroconstruct, a research association focusing on the European construction industry. They expect the improving economic conditions to have a possible spill over on the construction industry\(^90\).

\(^{88}\) Byggenæringens Landsforening, 2013, *Byggenæringens fremtidsbarometer*, p. 8

\(^{89}\) Organisation for Economic Co-operating and Development, 2013, *OECD Economic Outlook*, p. 176

\(^{90}\) Senneset, 2013, *Euroconstruct 2013*, p.3
**European pick up – correlation between GDP and the construction industry**

In this section we will look into the economic environment on the European market. This is relevant because the slowdown in the rest of Europe has been a part of the explanation for the increased competition in the Norwegian market.

The good years, compared with the rest of Europe, in the Norwegian market after the financial crisis may prove to become better in the future, if the European recovery appears as it is currently expected to do. Europe took a hard hit from the financial crisis; especially southern Europe felt the consequences with high unemployment and little or no willingness to invest\(^91\). The financial crisis and the following downturn seem to be loosening its grip in the economy with recovering growth rates in Europe as one of the indicators. The PIIGS\(^92\) countries experienced the financial crisis harder than most of their fellow European countries, but they are all forecasted to have positive GDP growth in 2014\(^93\). The effect on GDP from the financial crisis and the expected upturn can be seen on the figure below.

![Figure 10: The YoY changes in GDP for PIIGS, Germany and EURO area, the solid lines are actual numbers and the dashed lines represents forecast values. The data is obtained from European economic forecast 2014.](image-url)

The figure above tells us that the European economy is expected to continue its recovery and even the weaker economies in Southern Europe are expected to have positive growth rates. As showed earlier, there is a correlation between GDP and the construction industries growth rates,

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\(^91\) Tremlett, 2009, *Building Boom Reduced to Ruins by Collapse of Spain’s Economic Miracle*

\(^92\) PIIGS is an acronym for Portugal, Italy, Ireland, Greece and Spain

and it is therefore fair to assume that the construction industry will grow in these countries as well. Furthermore, the figure shows that it is not only the weaker economies regaining strength, but, the European growth engine, Germany is also expected to have a yearly GDP growth around 2% and along with them the entire EURO area. This is relevant for the Norwegian construction industry for two reasons. First, growth in Europe gives the companies in the Norwegian market the possibility to look and bid on projects outside of Norway. Second, growth in the European construction market will most likely ease the pressure of foreign companies entering the Norwegian market and thereby make the market less competitive in the years to come. The sprouting European growth on the construction market is further confirmed by KPMG’s construction survey from 2013\textsuperscript{94}. It concludes that better times are ahead for the construction industry, although it might take two to five years before the final breakthrough is felt by the entire market.

3.1.3 Social
To understand the macro environment construction companies operate within, it is important to look at social factors influencing the market. In this case the most interesting social factor is demographics since it can give us an indication of the future demand for construction services.

Demographics of Norway
Norway had a population of 5,051,275 as of January 1st 2013, with a growth rate above 1%. They live on 323,802 square kilometres; this gives a density of approximately 16 people per square kilometre, which is the lowest in Europe except for Iceland\textsuperscript{95}. However, these numbers are somewhat misleading as 80% of the population lives in urban areas and the density here is around 1600 people per square kilometre. This is important knowledge to understand the Norwegian construction industry. First of all, one reason for the high degree of urbanisation is that large part of the country is difficult or impossible to build on and live in. This will be further elaborated upon in the technical and environmental part of the PESTLE analysis. Second, the urbanisation increases the need for better infrastructure between large cities, and this is why the Norwegian Transport Plan is so large and will be a continued focus for the government to invest and expand all sorts of transportation.

\textsuperscript{94} KPMG, 2013, \textit{Global Construction Survey 2013}, p. 5
\textsuperscript{95} Norwegian Ministry of Transport and Communication, \textit{National Transport Plan 2014-2023}, p.4
Another important finding when analysing the Norwegian demographics is that the population growth is expected to continue in the years to come. 6 million inhabitants are expected by 2029. This corresponds to a CAGR above 1%. The growth is expected to mainly occur in urban areas, and therefore infrastructure improvement initiative, such as the Transport Plan, are necessary, and it is most likely going to be further expanded when it is revisited in 2018. Moreover, people will need places to live and therefore further construction of residential buildings is needed. However, in the capital (Oslo), which is one of the cities in most need of building, there is a lot of protected land by law surrounding the city which makes the building difficult. On the other hand, there has in recent time been initiated several projects around Oslo for building of new residential homes and commercial real estate.

**Education**

In terms of education, there is a decreasing trend of young students choosing craft studies. According to The Norwegian Directorate for Education and Training, applicants within construction studies have fallen 16% from 2013 to 2014. The trend has been decreasing since 2012, and the Directorate is worried about the development of applications for vocational courses such as building and construction. This factor can force construction companies to hire human resources from other countries. Furthermore, there is a serious shortage of supply of engineers in Norway. As of 2013, the engineer profession was the profession with the highest shortage of supply in Norway.

To sum up social factors, the expected development of the Norwegian demographics is positive for the construction demand, since all types of constructions are expected to have a sustainable demand in the years to come. Education within construction is experiencing a decreasing trend, and this can be a challenge for the construction industry in the long run.

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96 Alsvik, 1998, Markagrensa – En hellig sort strek
97 Sørenga – Bolig ved kaikanten
98 Eriksen, 2013, Slik blir nye Bjørvika
99 Ravnaas, 2014, Så mye tjener de i Norge
100 Utdanningsdirektoratet, 2014, Færre sökere til yrkesfag
101 Leonid et al, 2013, NAVs bedriftsundersøkelse høsten 2013
3.1.4 Legal

The focus of this section will be on the public procurement process since this is essential to understand before moving into the analysis of competition on the Norwegian construction market. We will start off by explaining the basics of the law and afterwards explain the impact it have had and will have on the industry in the future. We won’t go into every details of the law but only explain the parts we find to have most relevance.

Public procurement process

Norway is not a member of the European Union, but as they are a part of the EEA agreement, Norway is essentially obliged to introduce all existing and future EU directives into Norwegian law. One of them is the law regarding public procurement process. The law states that every governmental agent is required to publicly issue a bidding process when acquiring a service or product. This law has a high impact on the competitive environment of the Norwegian construction industry. The law applies to all contracts made by the government or similar agents or contracts where more than 50% are paid by government subsidies. Furthermore, the contract value has to exceed 1 million NOK to be subject to this law. Naturally this law will cover most construction projects for large construction companies.

The law also states on which conditions the work has to be conducted. It is specified that the minimum requirements for companies building in Norway is the minimum wage and working condition determined by Norwegian law.

Lastly and most importantly, the law covers the process of how to choose between different offers. It is clearly stated that the winning offer is the offer that serves as the most economically beneficial product/service, or in other words the offer with the lowest price. Of course, the offer has to comply with everything in the procurement process. An offer that seems unrealistically low can only be rejected if the bidding company cannot reliably justify for the price difference compared other bidders. Further, it is illegal to reject or choose a company because of their domicile country.

To sum up, the public procurement process leads to a business environment with fierce price competition, because price is the all-dominating factor when the winning bid has to be chosen.

102 Forskrift om offentlige anskaffelser, law number - FOR-2014-03-28-336
103 §2-1 Forskrift om offentlige anskaffelser, law number - FOR-2014-03-28-336
104 §2-2 Forskrift om offentlige anskaffelser, law number - FOR-2014-03-28-336
105 §7 Lov om offentlige anskaffelser, law number - LOV-2013-06-14-32
106 §13-1 Forskrift om offentlige anskaffelser, law number - FOR-2014-03-28-336
Furthermore, it makes it easier for foreign companies to enter the Norwegian market since it is illegal to discriminate foreign companies. Because of this, the only barrier to win public contracts is that a company need to be able to compete with the prices offered by other companies and have the capabilities to do so.

3.1.5 Technical and Environmental
In this section we will review both the technical and environmental factors and their impact on the construction industry. The reason for combining the analysis of these two factors is that the environmental factors such as climate and geography have a large impact on the technical factors.

Right equipment is essential
As mentioned in the section regarding Social factors, 80% of the Norwegian population live in a few urbanised areas. This is partly caused by large amounts of inhabitable land where it is difficult to construct due to harsh climate, poor soil quality and difficult terrain as almost 50% of the country is covered by mountains\textsuperscript{107}. These factors are important to understand for companies in the construction industry as they add cost and risk to projects. Geographic understanding is essential to succeed in this market either through local knowledge or experience from similar environment. Special equipment and techniques are required in many large projects; especially some of the infrastructure projects from the Transport plan 2014-2023 will require this. The technical part of the business is expected to evolve further in the future, and this will allow construction companies to lower their cost and build in places where it has previously not been possible and/or too affordable to build.
To conclude, the projects in the more difficult terrains will require specialists and large companies are most likely going to be the only companies able to complete these projects.

3.1.6 Conclusive remarks on the PESTLE analysis and outlook for the construction industry
The figure below summarises the findings from our PESTLE analysis and below the figure we will shortly sum up the consequences of our findings for the construction industry.

\textsuperscript{107} Norwegian Ministry of Transport and Communication, \textit{National Transport Plan 2014-2023}, p.4
The political environment in Norway is positive for the construction industry. This is exemplified both by the large investment initiatives from the National Transport Plan and the focus on securing equal terms for competition by fighting social dumping. This fight is important for Veidekke and other companies established on the Norwegian market, when competing against companies based in countries where the requirements for minimum wage are significantly lower than in Norway. However, if companies are able to hire foreign workers who accept working for the required minimum wage, this can be used as a competitive advantage.

The emerging recovery of both the Norwegian and European economy, points toward a brighter future for the construction industry. This is the case both when isolating the Norwegian market and for Europe as a whole, which we believe will further enhance the positive effect for construction companies on the Norwegian market. The forecast of Norwegian demographics provides further reasoning for a positive outlook for the Norwegian construction industry. However, a decrease in young people choosing craft studies and the short supply of engineers can be significant challenges in the future. Construction companies’ ability to build in more remote areas creates opportunities for the companies with these special skills. The public procurement process will continue to force price pressure on all assignments from public agents. However, this is a common factor for all European countries, and when other European governments again are able to invest in infrastructure this should lower the price pressure.
somewhat since fewer companies are forced to Norway to gain a turnover. In general, the macro environment indicates a more positive future for the construction industry.

**Outlook for the construction industry**

In the PESTLE analysis we found that GDP is expected to grow both in Norway and across Europe, this will as argued have a positive spill over on the construction industry. We will now look further into which areas are expected to benefit most from the positive trends in the macro economy. We will mainly focus on the expectations for the Norwegian economy.

Housing starts\textsuperscript{108} in Norway, excluding holiday houses, are expected to grow from 30,000 in 2012 to 35,000 in 2016\textsuperscript{109}. This corresponds to a CAGR of 4\% a year. In 2012 we wrote our bachelor thesis analysing the Norwegian housing market, in this we identified the main drivers behind increasing prices as being: a strong population growth, low interest rates, easy access to loans and low unemployment\textsuperscript{110}. These factors also drive the housing starts, especially the fact that house prices are rising faster than the price increase of new dwelling makes property development attractive. These factors will also cause a demand for renovation of dwellings, which is expected to grow 2-3\% annually\textsuperscript{111}.

The outlook for non-residential buildings in Norway is also expected to increase somewhat after a few years hovering around 3.5 million square meters a year. When looking at the amount invested, it is expected to have a growth rate around 2-3\% in the years to come, mainly driven by public investment in both healthcare and education to match the growing population\textsuperscript{112}.

The civil engineering market is also expected to see significant growth of around 6\% in the years to come\textsuperscript{113}, the main reason for this was explained in the section on the Transport Plan 2014-2023.

3.2 **Porter’s five forces**

Following the PESTLE model we are now going to use Michael Porter’s framework ”Porter’s five forces” to analyse the competitive environment in the Norwegian construction market\textsuperscript{114}.

\textsuperscript{108} Economic indicator that reflects the number of privately owned new houses  
\textsuperscript{110} Hellegård & Jørgensen, 2012, *A Norwegian Real Estate Bubble?*  
\textsuperscript{111} Senneset, 2013, *Euroconstruct 2013*, p.7  
\textsuperscript{112} Senneset, 2013, *Euroconstruct 2013*, p.10  
\textsuperscript{113} Senneset, 2013, *Euroconstruct 2013*, p.14  
\textsuperscript{114} Porter, 2008, *The Five Competitive Forces That Shape Strategy*
The model looks at 5 different factors, those being the threat of new entrants, threats of substitute services, supplier’s bargaining power, customer’s bargaining power and the rivalry among competitors. After looking at each of the 5 forces we will sum up by giving our assessment of the degree of competition on a three step-scale consisting of low, medium and high. The assessment of the competitive environment contributed from each factor will both be made of the current state and from the expectations of the future environment.

### 3.2.1 Threat of new entrants

Is this section we will look at how easy it is for new companies to enter the Norwegian construction market. This is important because markets with high barriers of entry will usually be able to take a higher price, whereas markets with low barriers of entry will be flooded with companies instantly, until profit margins are low and only obtainable through offering a special product or service\(^\text{115}\).

The Norwegian construction market that Veidekke competes in does in one way have fairly high barriers to entry, since only companies with a decent size are able to bid on the projects Veidekke are able to bid on. Size is not something that is built overnight and therefore it is unlikely that a new company will be able to compete right away. On the other hand, the government’s procurement process combined with easy access to the market through Schengen and other laws makes it relatively easy for big established companies from other countries to enter the Norwegian market.

**Profit divergence**

As mentioned earlier, the financial crisis was followed by years with little or no construction activity in Southern Europe, and while at the same time the Norwegian market recovered with rapid speed this lead to a profit divergence\(^\text{116}\). This divergence naturally led to more companies being attracted to the Norwegian market, both to seek profits and survival, as this was one of few markets with high activity. It is commonly accepted in economic theory that agents and companies will seek markets with profit to maximize their gain and this was also the case on the Norwegian market. Because of the EFTA agreement, barriers to enter the market are relatively

\(^{115}\) Porter, 2008, *The Five Competitive Forces That Shape Strategy*

\(^{116}\) European Metalworkers’ federation & EU, 2011, *The construction and building material machine industry in Europe*
low for large international players able to bid covered by the Public Procurement Process. Hence, we assess the barriers of entry to be fairly low, which was also proven in the years following the financial crisis. Especially in times where the rest of Europe is contracting, it will be attractive to seek towards markets with higher demand, like the Norwegian. This led to foreign contractors entering the Norwegian market by bidding on projects with prices they knew would cause losses\(^\text{117}\). The foreign construction companies did this to gain market share and to get a position and reputation in the market when bidding on profit making projects in the future. Furthermore, there are no or few barriers for small contractors since it is very easy to start a new company and bid on small projects and maintenance work. But we have chosen to see the small contractors as suppliers rather than competitors as Veidekke often uses many small suppliers as subcontractors when executing their contracts and a newly started company will not be able to bid on a lot of the larger projects.

To sum up we believe the threat of new entries are high and will continue to be as long as there is a divergent profit margin across Europe. As mentioned in the PESTLE analysis, we expect the recovery of the European economy to continue and the construction industry will follow. Therefore, we believe that the threat from new entry from established European companies will decrease in the coming years.

### 3.2.2 Threat of substitute services

The substituting services are not relevant for the construction industry since it is not possible to build for example a bridge without a construction company. One relevant factor to mention when talking about substituting services, is if the government or private customers decides to hire sub-contractors directly themselves, in order to develop more control of the building process and lower the costs of projects by decreasing the value chain. But, even if this were the case, Veidekke and other construction companies still have the opportunity to become one of the sub-contractors on the given project. Moreover, we have not seen any trends that would indicate that this will be the case in the future so we have no reason to expect a threat from substitute services, now or in the near future.

\(^{117}\) KPMG, 2012, *Bygg-giganter satser i Norge*
3.2.3 Suppliers bargaining power
Suppliers are a very important factor when reviewing the construction industry. Overall, we will divide suppliers into two different categories. Firstly, we will look at the sub-contractor category, which are smaller construction companies that Veidekke or other large competitors will hire adhoc to do work for them on different projects. Secondly, we will look at companies that are delivering construction materials to the industry since they also have an important role regarding the final cost of a project.

Sub-contractors bargaining power
A subcontractor is a company hired by the company that won the main contract of a project. The main contractor can chose to hire subcontractors for different reasons, either because they need a sub-contractor with special skills, or simply to keep the company’s fixed cost down as it can be a solution to work with subcontractors whenever they are busy with many projects and in this way they do not risk excess employment. A main contractor that uses many subcontractors have flexibility in down markets since they hire subcontractors for each individual project, and when markets go up they are able to hire smaller companies to be able to follow an increasing demand. The construction industry in Norway is fairly fragmented with a relative low amount of large players and a lot of small companies, which further adjacent to the subcontractor structure. The table below shows the number of contractors within each group.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>0-9 employed</td>
<td>42.117</td>
<td>44.170</td>
<td>45.302</td>
<td>45.424</td>
<td>46.600</td>
</tr>
<tr>
<td>10-19 employed</td>
<td>1.934</td>
<td>2.271</td>
<td>2.317</td>
<td>2.355</td>
<td>2.417</td>
</tr>
<tr>
<td>20-49 employed</td>
<td>1.024</td>
<td>1.171</td>
<td>1.174</td>
<td>1.155</td>
<td>1.184</td>
</tr>
<tr>
<td>50-249 employed</td>
<td></td>
<td>281</td>
<td>312</td>
<td>304</td>
<td>317</td>
</tr>
<tr>
<td>250 or more employed</td>
<td>37</td>
<td>40</td>
<td>38</td>
<td>32</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>45.393</td>
<td>47.964</td>
<td>49.135</td>
<td>49.283</td>
<td>50.566</td>
</tr>
</tbody>
</table>

Table 1: Number of construction companies in Norway, sorted into groups based on the number of people employed, from 2007-2011, the data is obtained from Statistics Norway

Table 1 above tells us that the number of large contractors in Norway has been fairly stable since 2007. It is interesting to see the drop from 2009-2010 caused by the financial crisis and the recovery the following year presumably caused by entry from foreign companies. The 11%
increase in total number of companies from 2007-2011 is not found among larger companies, but instead it is the small companies especially the companies with less than 9 employed has been growing rapidly with a growth rate above 10%. Based on this it is fair to say that the subcontractors without a very special skill, such as technique or local knowledge, has little or no bargaining power when negotiating to become a subcontractor from the larger companies.

**Suppliers of building materials**

The bargaining power of the companies that supplies building materials is relatively low. First of all, materials are usually purchased from project to project which makes it relatively easy and cheap for the construction companies to change suppliers. Secondly, there are a lot of different suppliers of different building materials which further weakens their bargaining power. The fact that building material is a fairly generic product with several manufactures gives the construction company an attractive position when they are negotiating. When this is said, it is important to underline that some of the companies supplying resources with a unique quality or feature, such as the ability to be used in harsh climates, may have bargaining power to a certain extend. Further, we have seen a tendency among contractors to choose quality over price, as the cheapest materials often is of such quality that improvement costs makes it more expensive than choosing the better product in the beginning\(^\text{118}\). Nonetheless, in general, we will conclude that the suppliers of building materials have a low degree of bargaining power.

To sum up the bargaining power of suppliers is low due to the high amount of suppliers the large construction companies have to choose between. However, the bargaining power is higher for suppliers with unique products or products with an especially high quality. Further, the fact that the construction industry is project-based makes it easy to change suppliers in between projects. Even long running projects are usually split up in smaller steps, which gives the main-contractors the opportunity to change suppliers during a project if they want to\(^\text{119}\). This results in a difficult position for suppliers when negotiating. The suppliers will have a stronger negotiation position as the economy is stronger and the construction industry busier. We expect the current status to continue with suppliers having low-medium bargaining power.

\(^{118}\) Byggeindustrien, 2014, *Kaster ut alle utenlandske leverandører*

\(^{119}\) Aktiv HMS, *Byggeprosessen*
3.2.4 Customer’s bargaining power

In this section we will discuss the bargaining power of customers in the construction industry\textsuperscript{120}. As mentioned earlier customers can be divided into several different groups, in this section we will discuss three customer groups private, commercial and governmental/public.

**Private customers**
This customer group only concerns private individuals or families purchasing services for private purposes. Private customers buy into real estate development projects and sometimes acquire specialised construction products, such as water and gas pipes to new living areas. As the total construction costs of residential houses are up 62.4\% since 2010\textsuperscript{121}, this goes to show that entrepreneurs have power in terms of setting the market price of private construction projects. A development project includes construction companies that build apartment buildings or new areas with houses and then sell them when finished. Usually, a development project will not start until at least 60\% of the houses/apartments are sold. As most construction companies do not initiate a building process until a certain percent is sold, market forces will define the bargaining power based on the supply and demand of real estate.

The bargaining power will naturally vary over time, and in periods with low activity in the construction industry the private customers obviously have a better negotiation position. In this current point in time, the sale of new buildings is falling across Norway, a factor that gives the private customers a good bargaining position\textsuperscript{122}. Further, if some of the newly arrived construction companies on the market move mainly taking large projects to smaller private projects their bargaining power might improve.

To sum-up the bargaining power of private customers, we argue that the power is medium at the moment, as entrepreneurs on one hand are able to set the market price of construction costs, and one the other hand, the supply and demand of new buildings at the moment increase the private customer’s bargaining power.

\textsuperscript{120} Porter, 2008, *The Five Competitive Forces That Shape Strategy*  
\textsuperscript{121} Statistics Norway, 2014, *Construction Cost Index for Residential Buildings*  
\textsuperscript{122} Remen, 2014, Nyboligsalget stuper I hele landet
**Commercial customers**

The definition of commercial customers in this thesis is customers who hire contractors for commercial purposes, this being investors or a company developing buildings for living purposes to sell or sublet and/or companies building offices or malls for themselves or others. The bargaining power for commercial customers varies like for private customers over time, depending on the general activity in the construction market, but more importantly the total price of a project determines the bargaining power. Since some development projects can reach a total value of billions NOK the customers will have a good bargaining power especially in the current environment where a fierce price pressure from government projects could spill over on the commercial segment since the companies need projects to stay profitable.

We therefore conclude that commercial customers have a relatively high bargaining power, especially in large projects they will be able to negotiate and get the price down through a bidding process from construction companies.

**Government/public customers**

The Norwegian government and other public institutes have a strong negotiation position given the public procurement process that was explained in the legal part of the PESTLE. Due to the fact the construction companies know that the lowest offer will win a project, the construction companies always need to give the lowest offer possible if they want to win a project.

To sum up bargaining power from customers depends on two things, namely the project’s size and the relative degree of activity in the construction industry. In the last couple of years, the customers have had a good position because of the entry of new competitors from other European countries. However, this position has been becoming less attractive as the construction industry is becoming busier. Large projects will continue to give customers a strong negotiation power, but a European pick up will in general worsen the negotiation position of the Norwegian customers, since the contractors will have more projects to choose between.

**3.2.5 Rivalry among competitors**

Companies fighting for market share and the intensity of this fight tells us how intense the rivalry among existing competitors is. Michael Porter argues that a high degree of rivalry among competitors could drive down profits, but rivalry could also be high because of roughly same
size of business, high exit barriers or a slowing growth of the market\textsuperscript{123}. In this section we will look further into the rivalry among the existing competitors in the Norwegian construction market and assess how we believe this will develop in the years to come.

We consider the construction industry to be a mature market, according to the industry lifecycle framework\textsuperscript{124}. However, as the demand for homes and infrastructure has been present for thousands of years, we argue that the industry life cycle is repeating itself again and again through time. Steven Klepper argues that a product or an industry has a lifecycle going through 4 stages that is introduction, growth, maturity and decline. In the maturity face the industry is mainly focused on process R&D, such as developing low cost processes, more than product R&D. Furthermore, the number of companies will be stable or changing at low rates\textsuperscript{125}. We argue that this is mainly the case with the Norwegian construction market, as a cost focus is essential due to the public procurement process. However, due to a constant technology development and an increase in population, the industry will keep on growing and never reach a complete decline stage. Moreover, the recent growth in the number of companies is a result of new international players whom well-established in their home countries, but expanded to Norway because of the relatively attractive market and not because the Norwegian market was a newly established industry.

The Norwegian construction market consists of a few dominant companies often being the main contractor on large project, and a large number of smaller companies acting as subcontractor on large projects and sometimes as main contractor on smaller projects\textsuperscript{126}. This tells us that the market is fairly fragmented, despite a few big players, and it is expected in the future that a consolidation will take place with large players buying smaller contractors. The main change in the market over the last couple of years is the increased competition from foreign companies in the market both related to winning projects, but also in the competition of recruiting both young and experienced talent. More than 30% of the companies involved in a survey on the construction industry answered that they felt increased competition from foreign markets, and this number has been increasing steadily since 2009\textsuperscript{127}. The competition from foreign companies has hit differently depending on company size. Small companies have either

\textsuperscript{123} Porter, 2008, \textit{The Five Competitive Forces That Shape Strategy}
\textsuperscript{124} Klepper, 1996, \textit{Entry, Exit, Growth, and Innovation over the Product Life Cycle}
\textsuperscript{125} Klepper, 1996, \textit{Entry, Exit, Growth, and Innovation over the Product Life Cycle}
\textsuperscript{126} See table 1
\textsuperscript{127} Byggenæringens Landsforening, 2013, \textit{Byggenæringens fremtidsbarometer}, p. 9
seen no effect or been forced to have more focus of quality and productivity\textsuperscript{128}. Large companies have also been forced to focus of the same measures, but additionally they have seen decreasing market share and have been forced to use more foreign labour\textsuperscript{129}.

Based on this we conclude that the rivalry among competitors is intense, especially on large public projects. The large companies can roughly be separated into two groups, the “established” companies such as Veidekke, Skanska, AF Gruppen and NCC, and the “newly established” companies from other European countries entering the Norwegian market over the last couple of years searching for the growth that vanished from their domestic markets.

\subsection*{3.2.6 Review of findings from Porter’s five forces}

Table 2 below summarises the findings from Porter’s five forces and our conclusion of the competitive environment in the market. In this section we will sum up the reasoning behind our conclusions.

<table>
<thead>
<tr>
<th>Force</th>
<th>Today</th>
<th>2015-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threat of new entrants</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Threat of substitute services</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Suppliers bargaining power</td>
<td>Low/Medium</td>
<td>Low/Medium</td>
</tr>
<tr>
<td>Customers bargaining power</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Rivalry among competitors</td>
<td>High</td>
<td>High/Medium</td>
</tr>
</tbody>
</table>

\textbf{Table 2: The findings from our Porter’s five forces analysis}

Overall, the threat of new entrants has been and is currently high, but we except that the threat will not be as high if the European economy picks up. This is because the main threat comes from established European companies with the scale to compete for the large contracts. As the European economy is expected to continue its recovery, the threat of new entrants is expected to decrease somewhat in the future. With this being said, this can quickly change if the European economy worsens and the expected increase in construction demand fails to appear. The question is whether these companies have the resources to remain in the Norwegian market if the investment activity in their home country increases. This is one of the questions we will elaborate upon in the financial analysis.

The threat of substitute services is low or irrelevant for the construction industry.

\textsuperscript{128} KPMG, 2011, \textit{Oppkjøpsår i bygg- og anleggsbransjen}

\textsuperscript{129} Byggenæringens Landsforening, 2013, \textit{Byggenæringens fremtidsbarometer}, p. 20
The bargaining power of suppliers is expected to stay relatively unchanged maybe trending towards a slightly better position. Companies with a special skill or technique will continue to have a strong position, but companies delivering a relatively simple product or service will not have a strong position when negotiating, but if the demand for construction services increases drastically their position will improve.

Customer’s bargaining power has due to the threat of new entrants been high because of the low activity level in the European construction market. But, exactly as the threat of new entrants, the customer’s bargaining power will decrease along with the expected increasing activity in the construction industry.

The rivalry among competitors is very high at the moment, but as the rest of the European market is expected to be busier in the future the rivalry is likely decrease because the companies will have more projects to choose between, both in Norway and in their domestic markets. This will depend on the foreign companies’ ability to use resources in the Norwegian market.

Overall, we define the current competitive environment to be high, but in a decreasing trend as a pickup in European economy will lead to an increased demand for construction across Europe. With this being said, we will like to stress that we expect the competition of the attractive large projects to stay high, as we expect that the companies entering the Norwegian market after the financial crisis will stay to compete for large projects. The decrease from high to medium is in relative terms and not an indication of an easy environment to navigate within.

### 3.3 Porter’s Generic Strategies

When making a decision about a company’s competitive strategy, Porter points at two central questions. The first question considers how attractive an industry is in terms of the possibility of profitability. Our industry analysis describes the Norwegian construction industry as highly competitive. The second question considers a company’s position within an industry relative to its competitors. Porter then argues that the overall profitability of a company is determined by a combination of question one and two, meaning that a company’s profitability is determined by its position in its industry and the degree of profitability in the industry. In this section we will elaborate on Veidekke’s position in the competitive construction industry.

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130 Porter, 1985, *Competitive Advantage: Creating and sustaining superior performance*

Porter’s theory on competitive strategies divides strategy into two different areas. The first is the company’s competitive scope, meaning if the target is broad or narrow. The second is the basis of the company’s competitive advantage, defined by whether it stems from a cost leadership or a differentiation approach towards its customers. To analyse Veidekke’s position we will start by looking at their competitive scope and then their competitive advantage.

### 3.3.1 Competitive scope

As described in our section about Veidekke’s business model and organisational structure, Veidekke operates in three countries and three different areas of business. If a company tries to use its competitive advantage in a broad range of segments within its industry, Porter defines the competitive scope as broad\(^{132}\). Looking at Veidekke, the company serves three different areas within its industry. That is, entrepreneur, property and industry.

Within the entrepreneur segment, Veidekke offers a wide range of services\(^ {133}\). They build commercial real estate, private homes, schools and other public buildings. They also offer services within construction of roads, railways, wind- and hydropower and industrial projects. Further, these services are provided to both public and private customers.

Within the property segment, Veidekke offers expertise in land purchase, project development, implementation and sales\(^ {134}\). The projects range from affordable student homes to real estate represented by the upper price range. This segment is also offered to the private, commercial and public sector.

Within the industrial segment, Veidekke offers three different business areas, including asphalt, gravel and crushed stone and road maintenance\(^ {135}\). The asphalt service is offered to both public and private customers. Gravel and crushed stone is mainly used in infrastructure projects, but also a small part goes to other construction projects. Road maintenance is primarily public projects, as the Norwegian state is responsible for highways, country roads and pedestrian- and bicycle paths.

All of the facts above show us that Veidekke has a broad competitive scope as the company provides a wide range of products and services to many different customers. This put Veidekke in the upper section of Porter’s generic strategies model, and we will now analyse the

\(^{133}\) Veidekke, 2014, *Hva gjør Veidekke Entreprenør*  
\(^{134}\) Veidekke, 2014, *Hva gjør Veidekke Eiendom*  
\(^{135}\) Veidekke, 2014, *Hva gjør Veidekke Industri*
competitive advantage to determine whether Veidekke is located in the cost leadership or
differentiation block of the model.

Compared to its competitors, Veidekke represents a scope that is general for the construction
industry in Norway. At least all of its large competitors such as NCC\textsuperscript{136}, Skanska\textsuperscript{137} and AF
Gruppen\textsuperscript{138} also work within several business segments. All of the above-mentioned companies
offer services within entrepreneur, property development and road maintenance. This shows us
that large construction companies in Norway have the same competitive scope, and underlines
the need for a broad competitive scope in order to be competitive on a large scale.

3.3.2 Competitive advantage

In Porter’s generic strategy model the broad competitive scope has two different competitive
advantage strategies, which is cost leadership or differentiation. The difference between the two
is that a cost leader strives to be the producer with the lowest costs in its industry while a
differentiator seeks to be unique in its industry\textsuperscript{139}.

It is obvious that construction requires quality, both required from customers and by law. All the
companies in the construction industry have the same opportunities to use material resources,
such as technology and machinery, as long as they have access to capital, so the question
revolves around how the companies plan and implement their processes and services, in terms
of differentiation. We have found that Veidekke shows characteristics of both cost leadership
and differentiation.

Veidekke’s characteristics of cost leaderships are several. First, as 35% of Veidekke’s customers
are public clients we know that these projects are won in required public procurement
process\textsuperscript{140}, as it was explained in the PESTLE analysis. Since the public bidding process often
ultimately is decided by price, the bidding companies have to be able to place a competitive bid
in terms of their price. This process puts pressure on all the companies in the industry to
streamline their processes and cut costs. Second, Veidekke have implemented a methodology
called “Participating planning” (IP) to conduct future oriented planning in projects\textsuperscript{141}. The main
goal of the IP is to reduce lost time and create flow in the production. This measure is a way to

\begin{thebibliography}{99}
\bibitem{136} NCC, 2014, \textit{NCC - Norge}
\bibitem{137} Skanska, 2014, \textit{Om Skanska i Norge}
\bibitem{138} AF Gruppen, 2014, \textit{Om AF Gruppen}
\bibitem{139} Porter, 1985, \textit{Competitive Advantage: Creating and sustaining superior performance}, p. 12-14
\bibitem{140} Veidekke, 2013, \textit{Annual Report}, p. 62
\bibitem{141} Veidekke, 2014, \textit{Involverende Planlegging}
\end{thebibliography}
innovate the production process and lowering costs with up to 25%\textsuperscript{142}. Third, as a pioneer in the industry, Veidekke was the first entrepreneur company to have an upper limit of two subcontractors in projects\textsuperscript{143}. This is also a strategic measure that ensures more control of expenses and a larger part of the profits. The above three points goes to show that Veidekke is pursuing a cost leadership strategy. Recent events also seem to prove that this cost efficiency strategy is working as the company has won a lot of public biddings in recent time\textsuperscript{144}.

On the other hand, Veidekke shows emphasis on differentiation characteristics. First, Veidekke has a lot of experience in Norway since its start in 1936. This history has given Veidekke a strong brand in its home country that is reflected in the company’s markets position. This has given Veidekke a position in the market as both big geographically and locally, an important part of Veidekke’s competitive advantage as they are able to combine being large and local. Further, and secondly, this long period of time has also helped build a strong organisational culture based on teamwork and collective responsibility. As previously mentioned, about 20% of the company is owned by its employees, a feature that helps build commitment and ownership feeling. Third, Veidekke’s IP methodology is also a way of trying to differentiate from its competitors in terms of service and quality development. Veidekke has been a forerunner in working for a more streamlined production to ensure better planning, an innovating learning process they have encountered together with Stanford University. The fact that only five out of ten tasks get completed during a day at a construction site\textsuperscript{145}, points to the importance of an optimisation of the construction process. Fourth, the upper limit to subcontractors is not only a measure of cost efficiency, but also a measure to provide quality and lessen the risk of losing control of the value chain.

There is no doubt that Veidekke both points towards elements of cost leadership and differentiator. The company has during recent years implemented several measures to provide both cost efficiency as well as state-of-the-art process development to ensure the best projects for its customers. In Porter’s model this put Veidekke’s in between lower cost and differentiation as seen from the model above.

\textsuperscript{142} Seehusen, 2013, *Virtual Design and Construction – Tror byggeprisen kan halveres*
\textsuperscript{143} Henmo, 2013, *Veidekke strammer inn i leverandørkjeden*
\textsuperscript{144} Haakonsen, 2014, *Veidekke gjør det skarpt på Vestlandet og i Trøndelag*
\textsuperscript{145} Veidekke’s VDC day in Trondheim, 2013 https://www.youtube.com/watch?v=q9erhDNGGnU
This kind of positioning between a company’s competitive scope and competitive advantage might look like what Porter defines as “stuck in the middle”\textsuperscript{146}. However, a firm that is stuck in the middle is a company that fails to take advantage of neither of its competitive advantages. We argue that Veidekke is successful in implementing both cost efficiency and process quality for its customers. Further, it is important to emphasize that the industry does require both quality and low cost, and a company that purely pursue of these strategies will not be successful in the long run. AF Gruppen and Skanska, Veidekke’s competitors are an example of equal emphasis, as they also both deliver high quality and competitive prices\textsuperscript{147,148}. Porter also argues that if a firm is in an industry where competitors also are stuck in the middle this is less unfortunate compared to being the only one. As we just pointed to the fact that Veidekke’s competitors also are following the same dual-strategy, this is not a major issue.

Another important aspect of Veidekke dual-strategy is the fact that they are dealing with very different customer segments. Public customers, which comprise 35\% of the total customers\textsuperscript{149}, have a legal requirement of a bidding process, something that makes price a much more

\textsuperscript{146} Porter, 1985, Competitive Advantage: Creating and sustaining superior performance
\textsuperscript{147} AF Gruppen, 2014, Om AF Gruppen
\textsuperscript{148} NCC, 2014, NCC I Norge
\textsuperscript{149} Veidekke, 2013, Annual Report,
important trait in the segment. Commercial customers do not need to publicly announce a bidding round, and does not have the same pressure to choose the cheapest offer as they are dealing with their own money, not the taxpayers’ money. But even though Veidekke has two different customer segments to work with, we know that pressure from European companies is getting bigger. Research made by KPMG show that foreign construction companies go to Norway and take on projects in which they lose money, so they can win public bids and get a foot inside the market.

To sum up the model on generic strategies, Veidekke has a broad competitive scope and are located in-between cost leadership and differentiator in terms of competitive advantage. The question is whether this “stuck in the middle” position is a problem for the company, but as all of its competitors are located is the same position in the market this should not be a problem.

3.4 Porter’s Value Chain
How a firm obtain its competitive advantage is as described above a result of a combination of factors as different competitive strategies may represent different strengths from companies. In the value chain analysis the goal is to examine a company’s activities and how these different activities interact with each other\(^\text{150}\).

We will in this section start by looking at Veidekke’s support activities (firm, infrastructure, human resource management, technology development and procurement) and then examine the primary activities (inbound logistics, operations, outbound logistics, marketing & sales and service). As mentioned in the methodology, we will adapt the value chain analysis to better suit the construction industry, as the value chain analysis is mainly applicable to traditional manufacturing companies. Therefore, our emphasis of the primary activities will mainly focus on inbound logistics and production.

3.4.1 Support activities
Veidekke’s infrastructure is as described in the previous chapter divided into both business areas and countries where the business takes place. Each of the three main divisions (i.e. Industry/Property, Entrepreneur and Denmark/Sweden) is supported by financial, strategy, HR, legal and communication departments which are responsible for the representative activities in

\(^{150}\) Porter, 1985, *Competitive Advantage: Creating and sustaining superior performance*, p. 33
all divisions. Infrastructure is the only support activity that supports the entire value chain\textsuperscript{151}, and in Veidekke each of these support activities supports each division in reaching a common goal.

Looking at Veidekke’s human resource management, we find that Veidekke have a strong employee culture and an employee stock ownership program that helps build a strong ownership feeling for the employees\textsuperscript{152}. Together with involvement of employees through ownership, Veidekke also have a strong focus on learning and development. Veidekkeskolen (The Veidekke School) is an example of such focus. The Veidekke School is a centre for knowledge and development, and offers different programs and courses to employees in the entire organisation\textsuperscript{153}. Veidekke needs knowledge from different sciences, such as engineers, carpenters, asphalt workers, etc. All the different sciences require different educational background, and hence a different source of recruitment. In the field of craft certificate Veidekke has for a long period of time offered an apprentice program for young people seeking a career within construction, offering the education of professionals within masonry, timber, concrete, construction and asphalt\textsuperscript{154}. In 2013 Veidekke was the number one apprentice company in the construction industry with 180 apprentices\textsuperscript{155}. Skanska was number two with 170, and NCC was number three with 79 apprentices. In the recruitment process of engineers, Veidekke is present at large career fairs and career days at universities\textsuperscript{156}. They also offer bachelor and master engineer students the chance to write their master thesis together with Veidekke. Furthermore, Veidekke has a two-year trainee program for university students seeking a career within construction\textsuperscript{157}. However, Veidekke does not have an impressing position in the list of preferred employers for engineer students, as they ranked as number 103 out of 112 in the 2014 report, while Veidekke’s competitors Skanska, NCC and AF Gruppen ranked several dozens of places above them on the list\textsuperscript{158}. The position is also reflected by a negative trend, only in 2011 Veidekke placed 73 out of 100\textsuperscript{159}. This could be a serious problem

\textsuperscript{151} Porter, 1985, Competitive Advantage: Creating and sustaining superior performance, p. 43
\textsuperscript{152} Veidekke, 2014, Jobb og karriere – Medarbeidere som aksjeeiere
\textsuperscript{153} Veidekke, 2014, Jobb og karriere- Veidekkeskolen
\textsuperscript{154} Veidekke, 2014, Jobb og karriere- Lærlingprogram i Veidekke
\textsuperscript{155} Aarhus, 2013, Veidekke på lærlingtoppen
\textsuperscript{156} Veidekke, 2014, Jobb og karriere – Møt oss på universiteter og høyskoler
\textsuperscript{157} Veidekke, 2014, Jobb og karriere – Trainee i Veidekke
\textsuperscript{158} Studenttorget, 2014, Karrierebarometeret for Ingeniørstudentene
\textsuperscript{159} Studenttorget, 2012, Karrierebarometeret for Ingeniørstudentene
for Veidekke in the future, especially due to the short supply of engineers, if their competitors have a better reputation among engineer students, and manage to recruit all of the best candidates.

*Technology development* is for Veidekke a crucial part as most of their business areas are driven by technology. This is a part in which all players in the industry have to follow and develop to remain competitive against each other. We will not use time on discussing different excavator and cranes, but rather elaborate on Veidekke’s focus areas within technology development. Some traits that Veidekke themselves see as a competitive advantage is that they have their own engineering advisory, solely used for the purpose of assisting in technical demanding projects and development of offers. Further, Veidekke has their own laboratory working with the industrial segment and making sure that Veidekke is using state of the art products and processes.

*Procurement*, according to Porter, refers to the function of purchasing inputs such as raw materials, used in the firm’s value chain. As we have not been able to find detailed information on Veidekke’s procurement process, it is hard to establish whether this support function is an advantage or disadvantage for the company. We know that Veidekke prefers to enter large long-term contracts to have better control over the value chain and establish good relationships with their suppliers. However, we argue that this support function is not the most important function for the industry, as the process of how the material is built and processed is the most important part of the competitive advantage. On the other hand, it is important to minimize procurement costs to make sure that margins are optimized. This will be further investigated in the financial analysis.

### 3.4.2 Primary activities

The value chain model identifies five primary activities involved in competing in an industry, and each of these activities is important, but different activities can be fundamental for

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160 Veidekke, 2014, *V-teknikk*
161 Veidekke, 2014, *Asfaltteknologi*
162 Porter, 1985, *Competitive Advantage: Creating and sustaining superior performance*, p. 41
163 Veidekke, 2014, *Samfunnsansvarsrapport 2013*
competitive advantages in different industries. In the construction industry we argue that inbound logistics and production is the most important part and the part of the value chain in which a company can differentiate its selves from its competitors. We think this argument is plausible because companies in the construction industry pitch their sale on the basis of their production and inbound logistics, because this is where they are able to differentiate themselves from their competitors. The process of production is also what characterises the quality of the end product, combined with the inbound logistic (meaning the quality of the product and experience of the subcontractors used in the production).

*Outbound logistics* is almost non-existing in the construction industry as the building process unfolds on site. The only exception for Veidekke is gravel and crushed stone in the industry segment. However, as this segment represents such a small part of the business we want to use the entrepreneur segment as the main part of this analysis as we believe it is the most important part to analyse in terms of a value chain. Furthermore, a lot of the gravel and crushed stoned produced by the industry segment is used in the production of their own entrepreneur projects. From our previous analysis of Veidekke’s competitive advantage in the generic strategy model, we found that Veidekke is both striving towards cost leadership and differentiation. All of these competitive advantages are located in inbound logistics and production, as they can differentiate and optimize costs in these parts of the value chain.

*Inbound logistics* is defined as the part of a value chain where the input for the production phase is gathered and the production logistics is mapped. Inbound logistics in Veidekke comprises goods used in construction, such as steel and concrete, and services from sub-contractors used in projects. Procurement is secured through large and long-term contracts with suppliers. One of the most important strategic decisions Veidekke has made in terms of logistics was to set the maximum limit of two sub-contractors. This is a measurement which both works against criminal activity, as it is more controllable to oversee ever subcontractor, and also it creates a better overview of projects for project leaders. With better overview of the value chain it is easier to estimate time and hence value. In terms of use of illicit employment, earlier discussed in the section regarding social dumping, the leader of the Federation of Norwegian Construction

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166 Veidekke, 2014, *Samfunnsansvarsrapport 2013*
167 Veidekke, 2014, *Samfunnsansvarsrapport 2013*
Industry expressed his concerns about the topic and highlighted that better control of the value chain can help fight these offenses.

*Production* is definitely the part of the value chain that is the most important part of Veidekke’s business. An essential part of production is Veidekke’s infrastructure which is built in a way that the three different business areas work closely together and use each other on different projects. Further, as mentioned in the generic strategies model, Veidekke has implemented different measure to ensure both quality and cost-savings in their projects. “Participating planning” is such a measurement that is applied to the value chain to make sure that the production phase is as effective and standardised as possible. One of the important support functions of the production phase is human resource management. To be able to keep up a standardised production process employees need knowledge and training. We have seen many positive initiatives from Veidekke, such as the centre for knowledge and development, the Veidekke School. Another important support function of the production phase is technology development, and here the engineering advisory is an important function for new technology and to make sure that state of the art technology is used in the production process.

*Outbound logistics, marketing & sales and service* is mainly, as mentioned above, not the phase of the value chain in which a construction company is able to differentiate itself from competitors. For outbound logistics within crushed stone and gravel, Veidekke have several production units located around Norway and therefore the distance to customers is no long. For marketing & sale, the important segment is property development when Veidekke sell developed properties to customers. The property development business has eight sales offices located in east and south of Norway, covering both large and smaller cities. An important link in the value chain is that the production of property will not enter into a building phase (production) before 50% of the property is sold. This implies that the production phase is dependent on the sales force, and hence sale is an important part of the value chain for property development. Further, sale is also required to deliver reasonable and competitive offers to customers in the construction segment so Veidekke can win future projects. Although this is an important part of the value chain, we argue that this is a requirement for all companies in the industries and we assume that Veidekke knows how to deliver a proper sales offer as they have

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Byggenæringens Landsforening, 2014, *BNL-lederen bekymret over utviklingen*
been in the business for long, and has previously won offers. Furthermore, despite the importance of a solid sales force, the offers are developed based on Veidekke’s services and product, meaning that the production phase is the most important factor in an offer. This is because the production phase and inbound logistics is the significant factors when calculating the cost and price of an offer. If Veidekke is able to deliver state of the art production measures, and be more cost efficient than their competitors, this is what will in the end impact the offer provided for targeted customers. The importance of knowledge and previous experience with similar projects is also a factor influencing offers. As Veidekke has a long history in the Norwegian market, they have knowledge of what sort of resources and services is needed when building in difficult geographic parts of Norway. This is an advantage in such geographic area, and something that have shown to be a challenge for foreign companies. For example, foreign contractors underestimate the costs related to building in in a cold climate\textsuperscript{169}. Service for Veidekke is a part of the value chain in which they make money on recurring customers. Road maintenance is one of the services Veidekke Industry offers, and is an important part of contracts for the business segment.

To sum up Veidekke’s value chain, we have argued that the most important parts of the primary activities are inbound logistics and production. We know that Veidekke has implemented several measures to provide a more effective and cost efficient production phase. These measures are provided through important measures from the support activities human resource management and technology development.

3.5 Barney’s VRIN framework
As mentioned in the methodology one critique of Porter’s models stems from Jay Barney with his perspective on competitive advantages. In Barney’s resourced based view competitive advantages arise from the resources a firm obtain and are not based on the position a company has in a market\textsuperscript{170}. Barney’s argument is that, a theory of competitive advantage should be based on the assumption that firm resources are heterogeneous and not perfectly mobile, and further the characteristics of the resources not solely the opportunities and threats in the competitive environment. According to Barney a firm’s resources must have four attributes to achieve a

\textsuperscript{169} Janzon, 2013, Challenges in Norway for foreign contractors
\textsuperscript{170} Barney, 1991, Firm resources and Sustained Competitive Advantage
sustained competitive advantage, that is; 1) Valuable, 2) Rare, 3) Imperfectly imitable and 4) Non-substitutable. In this section will look at Veidekke’s resources to examine if they have a sustainable competitive according to Barney’s view.

3.5.1 Valuable
Veidekke uses, as all of its competitors, highly developed techniques and machinery to construct buildings, roads, bridges and homes. All of the machinery and technical attributes are available for anyone with enough capital to acquire it. In other words, material resources are not valuable because they are not unique resources that only Veidekke can acquire. According to Barney, a resource is valuable only when it exploits opportunities or avoid threats in the company’s environment\textsuperscript{171}. So, in the construction industry, we argue that what can make a difference is how the equipment and machinery is used in the process and how the processes planned by human resources are implemented. As mentioned earlier, Veidekke has been a pioneer in its “Participating planning” measure, developed closely with Stanford University. Further, their upper limit of sub-contractors is also an example of the way they try to distinguish themselves from their competitors.

To sum up, we believe that Veidekke only have valuable human resources. However, we know that Veidekke is not the preferred company for engineer students, and they should make sure that they can attract the best students also in the future.

3.5.2 Rare
In the construction industry, we know that all the players have to deliver on both quality and price to its customers, and it can be hard distinguish themselves from other competitors. We also know that the large players in the market offer the same products and services\textsuperscript{172}. This is further confirmed by the high entry of foreign companies going to Norway, as this goes to show how resources can be easily transferred from one local market to another. One aspect Veidekke can distinguish it selves from the other companies, and especially new foreign companies in the market, is the fact that they are the largest and most experienced Norwegian construction company. As opposed to both Skanska and NCC, Veidekke is a Norwegian based company built on Norwegian traditions from back in the start of the nineteen-century. This fact gives Veidekke

\textsuperscript{171} Barney, 1991, Firm resources and Sustained Competitive Advantage, p. 106
\textsuperscript{172} See section on Generic strategies
rareness in that they have a history and culture, which especially is important when delivering offers in geographical places that can offer difficulties related to climate and geography. As Veidekke has been in the industry for so long, and have, as mentioned earlier, bought a lot of smaller companies around in Norway they have acquired and gathered a lot of local knowledge over the years. This local knowledge gives Veidekke an extra competitive advantage in the smaller communities where the supply of construction companies are small, or the fact the geographical landscape scares new entry away from some parts of the country. As earlier described we have seen examples of foreign companies that underestimate the Norwegian surroundings when delivering an offer because they do not have this local knowledge, and thereby end up losing money on a project.

To sum up, Veidekke is not rare in the way they do business. All companies in the construction industry have to deliver both quality and cost-efficient projects, and it can be hard to distinguish themselves from each other. On the other hand, Veidekke is the company in Norway we the most local knowledge and history, something that can give them a competitive advantage when combining local knowledge with big strength. However, Veidekke has come to this position as they have acquired many small companies, and this is not impossible for other companies with capital.

3.5.3 Imperfectly imitable or non-substitutable?
It is hard to argue that Veidekke’s business is impossible to imitate for competitors. Within entrepreneur, property and the industrial segment there are competitors offering the same products/services that Veidekke offers to their customers. In other words, Veidekke is not imperfectly imitable. Despite Veidekke’s local knowledge in small areas of Norway and that their long history can be hard to imitate, we know that local knowledge and history can be acquired. Skanska and NCC are examples of companies that did just so; they acquired several companies in the Norwegian construction industry when entering the market in the early nineties. The fact that the business-model is not hard to imitate is confirmed by the rush of European construction companies entering the Norwegian market.

Veidekke’s customers cannot substitute Veidekke with any other business, as there is no product or service that can substitute construction. However, in the property development and industrial

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173 KPMG, 2012, Bygg-giganter satser i Norge
segments, customers can find substitutes. For property development, customers can choose to build their own home directly with a construction company, and for the industrial segments asphalt and gravel can be substituted with new technology currently entering the market\textsuperscript{174}.

3.5.4 Is Veidekke competitive according to Barney?
By looking at Barney’s definition of a competitive firm, Veidekke does not suit the perfect competitive firm with all resources with characteristics of being valuable, rare, imperfectly imitable and non-substitutable.

Veidekke does not have many valuable resources that competitors cannot get their hands on. The only exception is their human resources that are vital in creating state of the art technology processes. However, it is vital for Veidekke to position them as an attractive place to work for engineer students.

Veidekke is not rare in terms of the products and services they deliver; the only exception is the fact that they have a local knowledge based on a long history in smaller cities in Norway. However, as this position in acquired through many small acquisitions, it is hard to argue that Veidekke is rare.

Looking at imitable factors, almost any competitor can imitate Veidekke’s business model and this is especially emphasised by the fact that Veidekke does not have any rare resources that is impossible for competitors to use.

On the other hand, there are not many products/services that can substitute the construction business, and hence Veidekke is non-substitutable.

To conclude, Veidekke does not have strength in many competitive advantages according to Barney’s definition. The only attribute completely satisficing is non-substitutable. However, as Veidekke does not have any perfectly rare or imperfectly imitable resources, any competitor could possibly outperform them. Nonetheless, it is important for Veidekke to keep on attracting knowledgeable employees that can continue the evolvement of process improvement, as we have seen that Veidekke has been a forerunner in many process development implementations such as the upper limit on subcontractors and the “Participating planning” measure.

\textsuperscript{174} Solar roadways is an example of such technology
3.6 Veidekke’s strategic partnerships

In this section we are going to present some of Veidekke’s strategic partnerships. As the construction industry involve many extensive and large projects, a lot of the projects construction companies are involved in include partnerships with other companies. Partnerships in the construction industry can take many forms, both involving different private companies or private and public companies. The current Norwegian government has especially put focus on having public private partnerships (PPP). Many PPPs have in the recent years been used as a financing and execution model in private and public sectors. Entering into a strategic partnership is also a way for new and foreign companies to gain access to a new market.

PPPs are of such characteristics that we define them as a joint venture. A joint venture is an equity partnership where the partners provide financial capital and/or other forms of resources to the jointly owned company. The characteristics of a joint venture are that partners provide resources, the partners have common interests and therefore common control, the partners expect profit and have a right for profit and the joint venture has a certain purpose and time limit. One example of such PPP in a joint venture format is Allfarveg AS, which is Veidekke’s partnership with the investment company Sundt AS in building E39 between Lyngdal and Flekkefjord. Veidekke and Sundt AS each own respectively 50% of the project company. The project is initiated, planned and valued by The Norwegian Public Roads Administration, but they have contracted the project to Allfarveg AS. Another example of a large PPP is the building of the public activity centre AQUARAMA in Kristiansand, the project is the largest PPP besides road construction in Norway. In this case the centre was planned, built and is currently run by private companies.

European companies are also currently entering the Norwegian market by entering strategic partnerships with companies already positioned in the market. According to KPMG, this is also an important feature for Norwegian companies, as this is an important part of dealing with the

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175 Gustavsen, 2013, *Utenlandske entreprenører og det norske markedet*
176 KPMG, 2012, *Bygg-giganter satser i Norge*
178 Mitchell et. al, 2004, *Takeovers, Restructuring and Corporate Governance*
180 Garathun, 2014, *Offentlig-privat samarbeid gjorde svømmeanlegget fire ganger så stort*
new competition. Veidekke is one of the companies that have succeeded with exactly this according to KPMG. In 2012 Veidekke entered into a partnership with Hochtief on building highways and railways around Mjøsa.

According to theory and research regarding strategic partnerships, the characteristics of the partners can have important future consequences. If one small and one large partner join together, there is a large chance that the partnership will end up in a takeover. If two large partners join forces this can be a success as long as the partnership is well-defined both in terms of the outcome and time of partnership. For Veidekke, strategic partnerships can be important in three different ways. First, strategic partnerships can work as a source of finding subcontractors that might be of such quality that Veidekke can acquire the company if they see economic benefits of including the sub-contractor in their consolidation. As we have described, Veidekke has in recent years also been growing inorganically with mergers and acquisitions and strategic partnerships can be a smart way of investigating possible acquisitions. Second, as the construction industry is highly affected by business cycles, strategic partnerships are a way of adapting the business activity to the investment activity in the market. Third, strategic partnerships with new entrants in the market, especially foreign companies underbidding the existing companies, are a way of dealing with the increased competition in the market. On one side, the new foreign entrants receive significant knowledge and experience from well-established companies. On the other side, companies such as Veidekke, can deal with the new entrants and be a part of their projects when they underbid the existing companies in the market.

A more difficult aspect of strategic partnerships with new entrants, is the fact the new foreign entrants gets a chance of entering the market with local knowledge from existing players in the construction industry. As we have described earlier, the Norwegian geography can imply a need for knowledge and experience on how to perform different activities, and when this experienced is gained through experienced knowledge strategic partnerships can be a risk in terms of welcoming new entrants.

181 KPMG, 2012, Bygg-giganter satser i Norge
182 Veidekke, 2012, Veidekke og Hochtief skrev milliardkontrakt
183 Mitchell et. al, 2004, Takeovers, Restructuring and Corporate Governance
In conclusion, strategic partnerships are an important feature in the construction industry, both in terms of doing business with public and private competitors, and a way of dealing with new entrants. According to KPMG, entering strategic partnerships with new foreign entrants is a very good way of dealing with increased competition and they use Veidekke as an example of a construction industry which has done this is a smart way. On the other hand, there is a risk of being too generous with knowledge and experience, and partnerships with new entrants can be a way of welcoming new players in the market.

3.7 Concluding remarks on the strategic analysis

In this chapter we have conducted a strategic analysis on the Norwegian construction industry and Veidekke ASA. This section will sum up our main findings from the strategic analysis, and classify them as strengths, weaknesses, opportunities or threats, also called a SWOT analysis. The figure below shows the findings presented in bullet form featured in a SWOT-model. Underneath the SWOT we will elaborate on each point, to give a clear definition of Veidekke’s external opportunities and threats, and internal strengths and weaknesses.

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<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<td>- Broad competitive scope</td>
<td>- Little differentiation from competitors</td>
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<td>- R&amp;D</td>
<td>- Lack of rare resources</td>
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<td>- Local knowledge</td>
<td>- No clear competitive advantages</td>
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<td>- Domestic size</td>
<td>- Recruitment - Not attractive</td>
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<td>- Focus on employees</td>
<td>- M&amp;A</td>
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<th>Opportunities</th>
<th>Threats</th>
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<td>- Economic recovery</td>
<td>- Foreign competitors</td>
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<td>- Transport plan 2014-2023</td>
<td>- Rivalry among competitors</td>
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<td>- Population growth</td>
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<td>- Joint projects with other companies</td>
<td>- Public procurement process</td>
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<td></td>
<td>- Decline in applications to craft studies</td>
</tr>
<tr>
<td></td>
<td>- Shortage in supply of engineers</td>
</tr>
</tbody>
</table>

*Figure 13: SWOT analysis of Veidekke*
3.7.1 Opportunities

After the financial crisis in 2008, the Norwegian construction market has experienced a rush of European construction companies ready to take on onerous contracts to get a foot inside the Norwegian market and win public procurement processes. This has resulted in a hasty price war, and many of the Norwegian companies have experienced a drop in profits. An opportunity arising for Veidekke is the fact that the European market is slowly recovering. This is an external opportunity for Veidekke as the European companies now might focus more on projects in the home countries. However, as these companies are large-scale companies working in several countries in Europe, they might still stay in Norway as they have seen that the investment activity is high. This is a question we will look further into in our financial analysis.

Veidekke also does business in Sweden and Denmark, countries that have been hit much harder by the financial crisis in Norway. So, as these countries are experiencing European recovery, the business activity for Veidekke in these countries also improves. Furthermore, Veidekke could have the opportunity to seek projects in other countries if the price war stays fierce in Norway. This was not possible earlier since construction demand was extremely slow or non-existing in many other European countries.

Another important opportunity for Veidekke is the Norwegian Transport Plan for 2014-2023. The newly revised plan secures a lot of money in infrastructure projects, where 70 of them include projects worth 750 MNOK or more. As the construction industry is correlated with public funding, this is a big opportunity for Veidekke to pursue many of these large projects. In the fall of 2013, the Conservative Party and the Progress Party received a majority sum of seats in the Norwegian government; this is two parties working for more infrastructure and investment in roads and railways, so it can be safe to assume that the next Transport Plan also will include an increase in public funding.

Norway is today a country consisting of about 5 million people, and by 2029 the country is expected to exceed 6 million people. As most of the inhabitants are living in urban areas, there will be a need for more accommodation, schools, hospitals and etc. This is an important opportunity for Veidekke, as this implies more projects in the future along with the increasing number of people living in Norway.

Veidekke has previously been involved in joint ventures, both with governmentally owned and private companies. As the government initiates an increasing amount of projects, this is an opportunity Veidekke can take advantage of in the future.
3.7.2 Threats
The largest threat for Veidekke is the fact that European companies have pursued the Norwegian construction market. This is a threat because more companies result in increased competition, and especially the public procurement process, which is basically controlled by price, has experienced fierce price competition. The important question is how Veidekke can cope with this increased competition and whether many of the large companies will stay in Norway as the investment activity in their home countries is slowly recovering.

Along with the increased amount of foreign companies in the market, issues of social dumping have encountered the industry. Many foreign companies have a much lower minimum wage in their home countries, and the companies therefore are able to calculate lower employee costs in projects. This is however illegal in Norway and the government requires that work forces used in Norway have to include the minimum wages required in Norway. This is a threat for Veidekke as the foreign companies are able to deliver offers with lower costs compared to Veidekke. Further, this can be a threat if Veidekke uses a sub-contractor, which does not follow the minimum wage requirements, and in this way can put Veidekke in a negative position without even knowing that they are in one. To handle this threat, Veidekke has implemented an upper limit on sub-contractors to secure a better control of their value chain.

The public procurement process is also a threat in itself, as it is mainly controlled by price. When companies bidding on a public project are forced to decrease costs to deliver competitive offers, this creates a fierce price competition among competitors. Nonetheless, the public projects include a large part of the business activity in the construction industry and companies are forced to be a part of this competition if they want to stand a chance in the industry.

All of the three threats above result in another threat, which is rivalry among competitors. With even more companies in the industry, social dumping and priced-focused customers, the rivalry in the construction industry in Norway is very high. When rivalry is high and there are many players in a market, economic theory tells us that there will not remain any profit in the end. Moreover, a decline in the supply of young people seeking a career within construction might be a serious threat in the future.

3.7.3 Strengths
Although Veidekke is in a pressured situation, they still show internal strengths that are important factors when competing in the construction industry.
First of all, Veidekke has a broad competitive scope. They do business in all three of the Scandinavian countries and further offer many different services and products to public, private and commercial customers.

Veidekke is also the construction company in Norway with the most local knowledge. They have throughout their lifetime, and especially since the eighties, acquired many small companies situated in both small and large cities in Norway. This gives them strength and a competitive advantage because they are located in many areas, but also because they gathered knowledge from many different parts of Norway in terms of geographic knowledge.

Veidekke is also the largest company in the Norwegian market, and combined with local strength this gives them an advantage over other companies. Especially when competing against foreign companies that do not have experience in Norway and know how to cope with climate and geographically difficult areas.

Veidekke also show internal strength in R&D. As the industry is very technology dependent, Veidekke has introduced several measures to constantly improve construction processes and has also worked closely with Stanford University with measures involving more streamlined production processes.

Employees are important for Veidekke, and we consider their employee focus as an internal strength. It is important to have happy employees and Veidekke have strong emphasis on both development and training of employees as well as employee ownership.

3.7.4 Weaknesses

What we define as the largest weakness for Veidekke is the fact that they have a hard time differentiating themselves from competitors. To be able to compete in the construction industry companies have to offer a broad range of services and products, but this also makes it hard to stand out. Looking at the closest peers, Skanska, NCC and AF Gruppen, they all deliver the same services to the same scope of customers. In Porter’s generic strategies model we found that Veidekke is striving towards both cost leadership and differentiator, and this makes it even more difficult for them to stand out.

Further, Veidekke does not have many rare resources that can give them a competitive advantage. They are rare in terms of their local experience, but this resource has been acquired through time, and any other company with enough capital can pursue the same M&A strategy.
From the two points above, another weakness arises. It is hard to argue that Veidekke has any clear sustainable competitive advantage. As they offer many of the same services and products as their competitors and does not have any rare or perfectly imitable resources, Veidekke does not occur to have one sustainable competitive advantage.

Another weakness for Veidekke is that they are not a preferred employer for engineer students. All of their competitors (Skanska, NCC and AF Gruppen) ranks above them, and we believe this can be a problem in the long run if Veidekke are to keep up their work within R&D.

We will return to the findings from the strategic analysis in the end of this thesis when we present with our recommendations on how to exploit strengths and opportunities. And further how to minimize or avoid the impact from weaknesses and threats.

4 FINANCIAL ANALYSIS

In this chapter we are going to conduct a financial analysis of Veidekke and their competitors, in order to answer our second research question, *Analysing financial performance and balance sheet liquidity, how has Veidekke developed, compared to their competitors?*. The purpose of the analysis is to determine the impact the financial crisis has had on the market and further examine the financial strength of Veidekke and their competitors. By looking at the strength of each competitor, this gives us a better understanding of the possible threats and opportunities, when in the end of the thesis we are going to present our recommendations to Veidekke.

The chapter will start out with an analysis of each company’s stock price performance since 2007 and up until end of Q1 2014. Second, we will present an analysis of the growth in each company by looking at the development of their turnover and cost. Third, we will look further into the companies and analyse the profitability of each company by calculating key financial numbers such as return on invested capital (ROIC) and return on equity (ROE). Fourth, we will examine each of the companies’ credit strength by calculating long-term and short-term liquidity. Fifth, we will look further into each company and analyse from which segments they generate their turnover and profits.

Finally, we will present a sub-conclusion with the most important findings from our financial analysis.
4.1 Share price performance

The time period we have chosen for our financial analysis is a time characterised by heavy fluctuations in the global market economy. As mentioned earlier the construction industry is highly correlated with the general economic health, and the financial crisis that started in the end of 2008 had large effects on the industry and financial markets in general. The purpose of this share price analysis is to see how investors believe the companies have made it through the financial crisis and the difficult years following.

![Graph showing stock price performance](image)

**Figure 14:** Stock price performance for all six companies, European construction index and Eurostoxx 600. Numbers are indexed with 2007=100 2007-Q1 2014. The numbers are gathered from Bloomberg as weekly observations. See appendix 15 on CD-ROM.

The figure above shows us that all the companies analysed in this thesis have outperformed both the European construction and materials index\(^{184}\) and the Eurostoxx 600\(^{185}\) over the seven-year period. Further, four of the six companies took a harder hit from the financial crisis than the general economy represented by Eurostoxx 600 in the early after maths. This confirms that the construction industry in general is more sensitive to downturns in the economy. Moreover, the fast recovery of all the companies confirms that the construction industry is one of the first industries to benefit when the economic cycle turns back up. Another finding from the graph

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\(^{184}\)STOXX, 2014, *STOXX® Europe 600 Construction & Materials*

\(^{185}\)STOXX, 2014, *STOXX® Europe 600*
above is that two companies have significantly outperformed the other companies, this being AF Gruppen and Implenia. The following financial analysis could help clarify if their financial performance could explain the divergence in their price development. However, as the purpose of this thesis is not to perform a valuation we will not go into a discussion of whether or not the 6 companies are priced correctly.

4.2 Turnover and cost analysis
The development of both turnover and cost for the six companies will be analysed in this section. We will conduct a trend analysis along with a common size analysis to see both the overall development and if a rise in revenue have been gained sustainably or by pressuring margins. As stated in the introduction part of this chapter, this section will only analyse the companies on a consolidated basis and not analyse each segment, as this analysis will be conducted at the end of the chapter.

The graph below shows the development of turnover from 2007-2013 as index numbers with 2007=100.

When looking at the trend analysis of turnover the 6 companies can largely be divided into 3 groups, with AF Gruppen and Hochtief in the top tier group experiencing a turnover growth of more than 50% over the 7 year period. In the second tier, we find Implenia and Veidekke who have had a more modest growth in turnover in the 7 year period. In the bottom tier, both Skanska and NCC have not been able to recover to the same level of turnover as in 2007, but...
both companies are almost back at 2007 level. Based on this we can conclude that NCC and Skanska took the hardest hit from the financial crisis when looking at revenue, whereas both Hochtief and AF Gruppen were able to have high growth in the difficult period following the financial crisis.

Analysing costs, we have looked at how large a share sub-contractor expenses represent out of total cost. This is to determine if there is a difference between the companies’ business model, in the figure below the results are shown.

![Figure 16: Expenses too sub-contractors as percentages of total cost. The numbers are gathered from the individual companies’ annual reports. See appendix 6,7,8,9,10 and 11 on CD-ROM. *These companies did not separate materials and subcontractor cost, we have adjusted for this by subtracting the average percentage cost of materials for the industry (19,2%)](attachment:Figure16)

When looking at the above calculations there are two important findings. Firstly, the six companies can largely be divided into two different groups. One group consisting of Hochtief, Skanska and NCC all with sub-contractors accounting for more than 50% of their total cost, and another group consisting of Veidekke, Implenia and AF Gruppen, having sub-contractors accounting for less than 50% of their total cost. One reason for Veidekke’s relatively low usage of sub-contractors could come from their declared goal to lower the numbers of sub-contractors on projects as described in the strategic analysis. Secondly, this difference indicates that the companies in the first group have a tendency of using more sub-contractors than the second group. This could give an advantage when it comes to scaling their business up and down accordingly with the business cycle. On the other hand, they most likely have to give up a larger share of their profit margin since the sub-contractors also have to make a profit. We will return to this point when analysing the companies’ profitability in the following section.
Table 3: Veidekke’s cost structure both as items % of total cost, and total cost as percentages of revenue in 2007-2013. Data is obtained from annual reports and calculated in excel. See appendix 6 on CD-ROM

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcontractors</td>
<td>45,2%</td>
<td>45,1%</td>
<td>41,8%</td>
<td>39,3%</td>
<td>42,2%</td>
<td>46,8%</td>
<td>44,7%</td>
</tr>
<tr>
<td>Cost of materials</td>
<td>26,9%</td>
<td>24,1%</td>
<td>21,2%</td>
<td>22,0%</td>
<td>22,3%</td>
<td>19,6%</td>
<td>23,6%</td>
</tr>
<tr>
<td>Personnel expenses</td>
<td>20,8%</td>
<td>22,2%</td>
<td>25,4%</td>
<td>25,3%</td>
<td>24,0%</td>
<td>22,0%</td>
<td>21,0%</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>5,8%</td>
<td>7,0%</td>
<td>9,3%</td>
<td>11,0%</td>
<td>9,6%</td>
<td>10,1%</td>
<td>9,1%</td>
</tr>
<tr>
<td>Impairment of non-current assets</td>
<td>0,0%</td>
<td>0,0%</td>
<td>0,0%</td>
<td>0,1%</td>
<td>0,0%</td>
<td>0,0%</td>
<td>0,1%</td>
</tr>
<tr>
<td>Depreciation</td>
<td>1,3%</td>
<td>1,6%</td>
<td>2,2%</td>
<td>2,3%</td>
<td>1,9%</td>
<td>1,6%</td>
<td>1,5%</td>
</tr>
<tr>
<td>Total operating expense %share of revenue</td>
<td>95,5%</td>
<td>96,0%</td>
<td>96,8%</td>
<td>97,3%</td>
<td>97,7%</td>
<td>97,5%</td>
<td>97,1%</td>
</tr>
</tbody>
</table>

The table above gives a further look into Veidekke’s cost structure. Veidekke’s usage of subcontractors is as mentioned above fairly low relative to their competitors. However, the table above shows they are able to scale the usage of sub-contractors up and down according to the business cycle. This is seen by a decline after the financial crisis and after a couple of years, with below average share of total cost, Veidekke has increased the usage of sub-contractors again along with a more positive economic environment. Another point retrieved from the table is that it is somewhat worrying that Veidekke’s operating expenses relative to revenue have increased by more than 1,5% since 2007. This is worrying and will most likely show decreasing profits in the profitability analysis in the following section. It is especially worrying that the largest single item increase is from other operating expenses since they are harder to trace. Veidekke most likely has a better internal financial management and a good idea of what has caused the increase, if not, they need to figure this out as soon as possible, and preferably decrease this post again as it will hurt their profit margin.

4.3 Profitability
In this section we will examine Veidekke’s profitability and compare their profitability with their peers’. As the historic profitability is an important factor when determining expectations for the future, this section is an important indication of Veidekke’s future and also their competitor’s future strength and/or weaknesses. The section will first look into operational profitability by calculating ROIC and then decomposing it into profit margin and asset turnover. Following, ROE is used as a measure in defining the impact of financial leverage on

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profitability\textsuperscript{187}. Finally, we will sum up our findings on profitability for Veidekke and its peers.

We have chosen to examine the whole businesses, as opposed to only looking at the Norwegian segments, because it would not be possible to directly compare Veidekke’s results with the others firms and further because we want to determine the total strength of each company to establish the degree of flexibility in each company and their ability to penetrate the Norwegian market.

4.3.1 Operational profitability

In the table below we have listed the operational profitability after tax figures for Veidekke from 2007-2013. The numbers also include results from associated companies. Despite the transitory nature of some of these associates, we argue that the results from these companies are an important part of the operational activities. As mentioned in the strategic analysis, joint ventures and other collaborative strategic business formats are an important feature in the construction industry because many projects demand either large capacity or different capabilities. If we were to exclude the results from these associates an important part of Veidekke’s operational income would be excluded and therefore we have decided to include results from associates. The same procedure is applied with all of the peers, as long as we do not find any indication in the annual reports about the associates being financial investments rather than operational collaborations.

When calculating invested capital the same classification is applied, and therefore investments in associates is classified as operational assets.

\begin{table}
\centering
\begin{tabular}{|l|c|c|c|c|c|c|c|}
\hline
\hline
Profit margin & 5,3\% & 3,5\% & 2,6\% & 2,1\% & 3,1\% & 2,1\% & 2,5\% \\
Asset turnover & 7,4 & 7,3 & 6,3 & 6,8 & 6,5 & 5,7 & 6,3 \\
ROIC & 39\% & 26\% & 17\% & 14\% & 20\% & 12\% & 16\% \\
\hline
\end{tabular}
\caption{Operational profitability numbers after tax for Veidekke 2007-2013- Numbers are retrieved from Veidekke’s annual reports 2007-2013 and calculated in Excel. See appendix 6 on CD-ROM.}
\end{table}

The overall profitability measure, ROIC after tax, shows how the financial crisis affected the company’s profitability in 2008 and the following years. Invested capital has been rather stable, while net operating profits after tax (NOPAT) has been facing a distinct decrease. Six years after the crisis the company is still not able to deliver its 2007-level. ROIC after tax, has gone down from 39\% to 16\% in six years, a decrease that is mostly affected by a decreasing profit margin.

\textsuperscript{187} Petersen & Plenborg, 2012, \textit{Financial Statement Analysis}, p. 117
By decomposing ROIC into profit margin and asset turnover, we can give a better explanation of the decreasing return on invested capital. The profit margin explains the relationship between income and expenses by dividing NOPAT by net income\(^{188}\). Since 2007 Veidekke has experienced a decrease in profit margin from 5,3% in 2007 to 2,5% in 2013. The trend analysis of turnover shows that the profit margin has been characterised by a decrease in turnover up until 2011. On the other hand the profit margin is also negatively affected by the increasing proportion of operating expenses in percent of revenue, that have increased with 2% in 2007 to 2011. The revenue has increased in the two last years, and since the 2009 level the revenue has increased with 40%.

<table>
<thead>
<tr>
<th>Trend analysis</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating revenues</td>
<td>100</td>
<td>100</td>
<td>80</td>
<td>81</td>
<td>92</td>
<td>103</td>
<td>113</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>100</td>
<td>101</td>
<td>82</td>
<td>83</td>
<td>94</td>
<td>105</td>
<td>115</td>
</tr>
<tr>
<td>Total operating expenses</td>
<td>-95%</td>
<td>-96%</td>
<td>-97%</td>
<td>-97%</td>
<td>-98%</td>
<td>-97%</td>
<td>-97%</td>
</tr>
<tr>
<td>Operating profits</td>
<td>6%</td>
<td>5%</td>
<td>3%</td>
<td>3%</td>
<td>4%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Table 5: Trend analysis and common-size analysis of Veidekke’s income and expenses between 2007 and 2012. The numbers are calculated in Excel and retrieved from Veidekke’s annual reports 2007-2013. See appendix 6 on CD-ROM

The asset turnover gives an indication of how good a company is to utilise its invested capital, and is calculated by dividing net revenue by invested capital\(^{189}\). Veidekke has been relatively stable in utilising its invested capital in the time period, although the turnover has experienced a small decrease. In 2007, Veidekke tied up invested capital for 47 days \((360/7.4)\(^{190}\), while in 2013 the invested capital was tied up in 57 days. The decomposition of ROIC tells us that the return has been mostly influenced by the decreasing profit margin, and a small effect is caused by the company’s ability to utilise its invested capital.

We have now established the trend in Veidekke’s profitability in the time period. But another important aspect is the level, which can be defined by looking at peers in the industry, and we have therefore calculated profit margin before tax, asset turnover and return on invested capital for AF Gruppen, Skanska, NCC, Hochtief and Implenia. As the companies pay tax in different countries, we have used numbers before tax when comparing the companies. In the table below is the operational profitability numbers from 2007 to 2013.

As seen from the figure below, Veidekke was the company with the highest profit margin before tax in 2007. With a profit margin before tax of 6.2%, this was 1.4% higher than the second-best (NCC) and 4.6% higher than the lowest profit margin represented by Implenia. Compared to the average in 2007, Veidekke had a margin 2.3% above the average. What is interesting is that Veidekke has gone from having the highest profit margin before tax in 2007 to having the lowest profit margin before tax in 2013. Compared to the average in 2013 that can be found in the table above, Veidekke had a margin 1% below the average. In 2013 AF Gruppen achieved the highest profit margin before tax, with 5.6%, that is 2.4% higher than Veidekke. Implenia, which achieved the worst profit margin before tax in 2007, delivers a profit margin before tax of 3.8% in 2013 and is together with AF Gruppen and Hochtief the only three companies that increased its profit margin before tax during the financial crisis. In other words, Veidekke’s
level of profit margin before tax was very good before the financial crisis hit in 2008. However, the level is not satisfying in the end of 2013 as they have the lowest profit margin before tax.

![Bar chart showing profit margin before tax for Veidekke, NCC, Skanska, AF Gruppen, Implenia and Hochtief from 2007 to 2013]

Figure 17: Profit margin before tax 2007-2013 for Veidekke, NCC, Skanska, AF Gruppen, Implenia and Hochtief. Numbers retrieved from annual reports and calculated in excel. See appendix 6,7,8,9,10,11 and 12 on CD-ROM

Looking at asset turnover, Veidekke has been below the average in all years in the time period. In 2007, Veidekke achieved an asset turnover of 11.3 below the best company, Skanska. This means that Skanska tied up capital for 19 days (360/18.7) while Veidekke tied up capital for 47 days in 2007. However, Skanska has experienced a significant drop in asset turnover and was also below the average in 2013. The company that achieved the best utilisation of invested capital in 2013 was AF Gruppen, the same company that achieved the best profit margin before tax. All the companies experienced a drop in asset turnover when the financial crisis hit in 2008, and the average has fallen from 9.8 to 7.9. This would say that on average the companies now tie up capital for about 9 days more than in 2007.
Figure 18: ROIC before tax for Veidekke, NCC, Skanska, AF Gruppen, Implenia, and Hochtief in 2007-2013. Numbers are retrieved from the annual reports and calculated in excel. See appendix 6,7,8,9,10,11 and 12 on CD-ROM

The chart above shows the ROIC before tax for all the companies. Veidekke achieved the second highest ROIC before tax in 2007, a result of their high profit margin before tax. However, their ROIC before tax decreased along with the financial crisis, and in 2010 they only had the fifth best ROIC before tax compared to their competitors. AF Gruppen delivered the best ROIC before tax in 2013 and have been the most stable company throughout the time period. From the table above the average ROIC before tax have been around 30%, and the only years Veidekke has been above average is in 2007 and 2008. The following years Veidekke has been below the average. Skanska had the best ROIC before tax before the financial crisis, and also had a high level compared to the other companies up until 2011. In 2012 and 2013 Skanska’s ROIC before tax has fell significantly, this is both caused by a decrease in asset turnover and a decrease in profit margin. Even though Skanska’s revenue increased with 8% from 2010 to 2011, their EBIT decreased with about 50%. The reason for Hochtief’s ROIC before tax is significantly different in 2011 is due to a negative result in a joint venture project in their Asian division.
4.3.2 The impact of financial leverage on profitability

In the table below we have listed the return on equity before tax for Veidekke and its peers between 2007 and 2013. As seen from the average, the level in return on equity has had a decreasing trend after the financial crisis in 2008. From the years between 2007 and 2012 the average ROE before tax went from 32% to 21%. In general, the decrease is mainly caused by a decrease in profits in the years around the financial crisis. However, some companies have also increased their equity causing the return to decline.

<table>
<thead>
<tr>
<th>ROE before tax</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>58,1%</td>
<td>37,1%</td>
<td>25,1%</td>
<td>23,5%</td>
<td>34,5%</td>
<td>25,4%</td>
<td>29,9%</td>
</tr>
<tr>
<td>NCC</td>
<td>37,0%</td>
<td>33,8%</td>
<td>23,3%</td>
<td>25,4%</td>
<td>22,0%</td>
<td>26,4%</td>
<td>27,2%</td>
</tr>
<tr>
<td>Skanska</td>
<td>28,3%</td>
<td>22,1%</td>
<td>29,4%</td>
<td>26,5%</td>
<td>41,7%</td>
<td>19,4%</td>
<td>26,1%</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>42,1%</td>
<td>46,9%</td>
<td>44,2%</td>
<td>39,4%</td>
<td>35,4%</td>
<td>24,8%</td>
<td>45,6%</td>
</tr>
<tr>
<td>Implenia</td>
<td>8,1%</td>
<td>12,1%</td>
<td>14,7%</td>
<td>14,8%</td>
<td>15,7%</td>
<td>18,1%</td>
<td>18,3%</td>
</tr>
<tr>
<td>Hoechtief</td>
<td>18,8%</td>
<td>17,1%</td>
<td>19,6%</td>
<td>20,0%</td>
<td>-3,0%</td>
<td>13,0%</td>
<td>21,2%</td>
</tr>
<tr>
<td>Average</td>
<td>32,1%</td>
<td>28,2%</td>
<td>26,1%</td>
<td>24,9%</td>
<td>24,4%</td>
<td>21,2%</td>
<td>28,1%</td>
</tr>
</tbody>
</table>

Table 7: Return on equity after tax for Veidekke 2007-2013, numbers retrieved from Veidekke’s annual reports 2007-2013. See 6,7,8,9,10,11 and 12 on CD-ROM

Looking at Veidekke, the company has for most of the years been above the average ROE before tax, except 2009 and 2010 where their ROE before tax was just below the average. As seen from return on invested capital, AF Gruppen is the strongest company in 2013 and has achieved a rather stable return on equity in the time period. Implenia and Hoechtief are the two companies with the poorest return on equity, and Hoechtief is also the only company that achieved a negative return on equity before tax in the time period. Hoechtief’s negative return in 2011 is caused by a negative profit before tax. Veidekke has, as the average, experienced a boost in its return on equity before tax from 2012 to 2013, a boost caused by a 22% increase in profit before tax.

From the return on equity before tax calculation we can conclude that financial leverage is not the main source of decrease in profitability, as the reduction in return of equity is mainly caused by a decrease in profit before tax and not a reduction in equity.

To sum up the profitability analysis, Veidekke has experienced a significant decrease in operational profitability in the time period. This decrease is mainly caused by a decrease in profit margin, as the turnover of assets has remained rather stable. The negative development in
profit margin is caused by both a negative trend in operating revenue and an increase in operating costs as a percentage of operating revenue. However, there has been a weak positive trend in 2013 compared to 2012 for Veidekke. Compared to the other companies, Veidekke was the most profitable company in 2007. However, as the profit margin has gone from representing the highest level in 2007 to 2013, this is also reflected in their return on invested capital. The most profitable company in the whole time period is AF Gruppen, which is the only company that managed to achieve a better return on invested capital in 2013 compared to the level before the financial crisis. In the section analysing each company’s segment we will further look into where the operating profit stems from.

4.4 Credit analysis
In this section we are going to define the liquidity in Veidekke and its peers based on balance sheet terms. A good liquidity is essential for companies to carry out their business, in terms of paying bills and invest in future projects\cite{Petersen & Plenborg, 2012, Financial Statement Analysis, p. 150}. The section is divided into short-term and long-term liquidity. In the part describing short-term liquidity we will look at the current ratio and cash flow to short-term debt. In the part describing long-term liquidity we will look at financial leverage and cash flow from operations to debt ratio.

4.4.1 Short-term liquidity
In this part we are going to address the short-term liquidity of Veidekke and its peers, by looking at current ratio and cash flow to short-term debt. In the table below, the current ratios are listed for all of the companies.

<table>
<thead>
<tr>
<th>Current ratio</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>1,10</td>
<td>1,01</td>
<td>0,90</td>
<td>0,94</td>
<td>1,13</td>
<td>1,14</td>
<td>0,98</td>
</tr>
<tr>
<td>NCC</td>
<td>1,31</td>
<td>1,36</td>
<td>1,59</td>
<td>1,57</td>
<td>1,57</td>
<td>1,69</td>
<td>1,63</td>
</tr>
<tr>
<td>Skanska</td>
<td>1,19</td>
<td>1,16</td>
<td>1,17</td>
<td>1,15</td>
<td>1,12</td>
<td>1,17</td>
<td>1,25</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>1,12</td>
<td>1,02</td>
<td>0,96</td>
<td>1,21</td>
<td>1,00</td>
<td>0,95</td>
<td>0,91</td>
</tr>
<tr>
<td>Implenia</td>
<td>1,04</td>
<td>1,06</td>
<td>1,10</td>
<td>1,12</td>
<td>1,44</td>
<td>1,40</td>
<td>1,39</td>
</tr>
<tr>
<td>Hochtief</td>
<td>1,10</td>
<td>1,12</td>
<td>1,14</td>
<td>1,24</td>
<td>1,25</td>
<td>1,35</td>
<td>1,40</td>
</tr>
<tr>
<td>Average</td>
<td>1,14</td>
<td>1,12</td>
<td>1,14</td>
<td>1,21</td>
<td>1,25</td>
<td>1,28</td>
<td>1,26</td>
</tr>
</tbody>
</table>

Table 8: Current ratio for Veidekke, NCC, Skanska, AF Gruppen, Implenia, Hochtief in 2007-2013. Numbers are retrieved from the annual reports and calculated in excel. See 6,7,8,9,10 and 11 on CD-ROM

\cite{Petersen & Plenborg, 2012, Financial Statement Analysis, p. 150}
The current ratio is calculated by dividing current assets by current liabilities, and gives an indication of how equipped a company is to cover its current liabilities with its current assets\textsuperscript{192}. A low current ratio can be an indication of bankruptcy risk and the investors might not find the liquidity in a company satisfying to continue as an investor. On average the companies have fully covered its current liabilities with current assets. Veidekke has also been able to cover its current liabilities in every year except from 2009 and 2010 where the coverage only included around 90%. However, Veidekke has been below the average coverage ratio for all years, and have for most of the years achieved the poorest coverage ratio compared to its peers. NCC is the company that has had the most solid current ratio in all years, with ratio coverage one and a half times its current liabilities.

In general, all of the companies have been satisfying in the time period. None of the companies show weaknesses in current coverage of current liabilities, however Veidekke and AF Gruppen should have a higher current ratio to ensure that they at all times are able to cover their current liabilities.

The table below shows the cash flow from operations to short-term debt for all the companies. Cash flow to short-term debt is an indication of how many percent of a company’s short-term debt that can be covered with the cash flow from operations\textsuperscript{193}.

<table>
<thead>
<tr>
<th>CFO to short-term debt</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>30 %</td>
<td>21 %</td>
<td>22 %</td>
<td>8 %</td>
<td>6 %</td>
<td>-6 %</td>
<td>21 %</td>
</tr>
<tr>
<td>NCC</td>
<td>5 %</td>
<td>1 %</td>
<td>22 %</td>
<td>15 %</td>
<td>-9 %</td>
<td>0 %</td>
<td>13 %</td>
</tr>
<tr>
<td>Skanska</td>
<td>17 %</td>
<td>1 %</td>
<td>13 %</td>
<td>12 %</td>
<td>0 %</td>
<td>0 %</td>
<td>11 %</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>57 %</td>
<td>9 %</td>
<td>33 %</td>
<td>15 %</td>
<td>35 %</td>
<td>13 %</td>
<td>3 %</td>
</tr>
<tr>
<td>Implenia</td>
<td>-9 %</td>
<td>9 %</td>
<td>9 %</td>
<td>15 %</td>
<td>11 %</td>
<td>17 %</td>
<td>10 %</td>
</tr>
<tr>
<td>Hoechtfief</td>
<td>10 %</td>
<td>4 %</td>
<td>15 %</td>
<td>14 %</td>
<td>12 %</td>
<td>11 %</td>
<td>3 %</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>18 %</td>
<td>7 %</td>
<td>19 %</td>
<td>13 %</td>
<td>9 %</td>
<td>6 %</td>
<td>10 %</td>
</tr>
</tbody>
</table>

\textit{Table 9: CFO to short-term debt for Veidekke, NCC, Skanska, AF Gruppen, Implenia, Hoachtief in 2007-2013. Numbers are retrieved from the annual reports and calculated in excel. See appendix 6,7,8,9,10 and 11 on CD-ROM}

On average the coverage of short-term debt by cash flow from operations have been fluctuating in the time period. Veidekke has in the three first years of the time period been above the average, and then been below the average in 2010, 2011 and 2012 before they are well above the average again in 2013. The decrease in CFO to short-term debt has decreased from 30\% in

\textsuperscript{192} Petersen & Plenborg, 2012, \textit{Financial Statement Analysis}, p. XXX

\textsuperscript{193} Petersen & Plenborg, 2012, \textit{Financial Statement Analysis},
2007 to -6% in 2012. The decrease is both caused by a decrease in cash flow from operations and an increase in current liabilities. Compared to the other companies, Veidekke had the second best coverage of current liabilities by cash flow from operations in 2007 and the highest coverage in 2013. AF Gruppen, which had the most solid coverage in 2007 was in 2013 one out of two companies (AF Gruppen and Hoectief) with the lowest CFO to short-term debt. For AF Gruppen the decrease from 57% in 2007 to 3% in 2013 is caused both by a decrease in cash flow from operations and an increase in current liabilities. NCC and Implenia are the only two companies that have a better CFO to short-term debt compared to before the financial crisis.

4.4.2 Long-term liquidity
In the table below we have listed financial leverage and cash flow from operations for Veidekke and its peers for 2007 to 2013. A high financial leverage can be an indication of a high long-term liquidity risk, because debt payments need to be serviced. The risk is especially high if most of the debt is due at the same time. Cash flow from operations to total debt ratio is an indication of how many percent of a company’s total debt it can cover with its operating cash flow.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>2.8</td>
<td>3.2</td>
<td>2.8</td>
<td>3.0</td>
<td>3.3</td>
<td>3.8</td>
<td>3.7</td>
</tr>
<tr>
<td>NCC</td>
<td>3.7</td>
<td>4.3</td>
<td>2.9</td>
<td>2.8</td>
<td>3.0</td>
<td>3.3</td>
<td>3.5</td>
</tr>
<tr>
<td>Skanska</td>
<td>2.8</td>
<td>3.3</td>
<td>3.2</td>
<td>2.7</td>
<td>3.2</td>
<td>3.6</td>
<td>3.1</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>3.3</td>
<td>3.2</td>
<td>2.3</td>
<td>2.1</td>
<td>2.6</td>
<td>3.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Implenia</td>
<td>2.5</td>
<td>2.3</td>
<td>2.2</td>
<td>2.2</td>
<td>2.4</td>
<td>2.5</td>
<td>2.8</td>
</tr>
<tr>
<td>Hoectief</td>
<td>2.6</td>
<td>3.3</td>
<td>2.8</td>
<td>2.5</td>
<td>2.8</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Average</td>
<td>2.9</td>
<td>3.3</td>
<td>2.7</td>
<td>2.6</td>
<td>2.9</td>
<td>3.2</td>
<td>3.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CFO to total debt</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>25%</td>
<td>17%</td>
<td>19%</td>
<td>7%</td>
<td>5%</td>
<td>-4%</td>
<td>18%</td>
</tr>
<tr>
<td>NCC</td>
<td>4%</td>
<td>0%</td>
<td>15%</td>
<td>11%</td>
<td>-6%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>Skanska</td>
<td>16%</td>
<td>1%</td>
<td>12%</td>
<td>11%</td>
<td>0%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>51%</td>
<td>8%</td>
<td>29%</td>
<td>13%</td>
<td>29%</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>Implenia</td>
<td>-9%</td>
<td>9%</td>
<td>9%</td>
<td>15%</td>
<td>9%</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Hoectief</td>
<td>10%</td>
<td>3%</td>
<td>10%</td>
<td>11%</td>
<td>10%</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>Average</td>
<td>16%</td>
<td>6%</td>
<td>16%</td>
<td>11%</td>
<td>8%</td>
<td>5%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Table 10: Financial leverage and CFO to total debt for Veidekke, NCC, Skanska, AF Gruppen, Implenia, Hoectief in 2007-2013. Numbers are retrieved from the annual reports and calculated in excel. See appendix 6,7,8,9,10 and 11 on CD-ROM.

Looking at financial leverage, the average has been around 3 in the time period. In other words, on average the six companies have had about three times more debt than equity in the period. In
the chart below there is an illustration of the development of financial leverage, comparing Veidekke and the average of Veidekke and its peers. The chart shows that the movement in Veidekke’s financial leverage is very correlated with the average development in financial leverage. The level of financial leverage in Veidekke has been above the average after the financial crisis and is also the highest level compared to its peers in 2011, 2012 and 2013. Implenia is the company with the lowest financial leverage in the period. The reason behind the increase in financial leverage for Veidekke is an increase in debt, as equity has remained stable in the time period. This is the case for most of the companies, except for NCC which has both increased their debt and increased their equity by retaining profits.

![Financial leverage for Veidekke and peer average in 2007-2013](image)

Figure 19: Financial leverage for Veidekke and peer average in 2007-2013. Numbers are retrieved from the annual reports and calculated in excel. See appendix 6,7,8,9,10 and 11 on CD-ROM

Operating cash flow to total debt has been very different for all the companies in the time period, both in terms of level and trend. Looking at the average coverage of total debt from operating cash flow, the average level has decreased with 50% in the time period. Veidekke has gone from having the second best coverage to the highest level in 2013, however this level was negative in 2012 as is not representative for the whole time period. Compared to its peers, Veidekke had a CFO to total debt above the average in the three first years of the time period, years in which the level of both operating cash flow and total debt remain stable. On the other hand, Veidekke’s level has been below the average in 2010, 2011 and 2012, a result caused by a
decrease in operating cash flow with -125% from 2007 to 2012 and an increase in total debt of 38%. AF Gruppen has experienced a drop in CFO to total debt from 51% in 2007 to 3% in 2013, a result which has also decreased because of a fall in operating cash flow and a large increase in total debt. NCC and Implenia are the only two companies that have achieved a better level of coverage of total debt in 2013 compared to 2007, as they both have improved their operating cash flow in the period.

To sum up the liquidity analysis, Veidekke is one of the most liquid companies. Along with NCC, Veidekke had the best short-term liquidity in 2013 and they also achieved the best coverage of total debt by operating cash flow. Veidekke does have the highest financial leverage, meaning that they are the company with the highest share of debt compared to equity. As they have a good coverage of short and long term debt, they are able to obtain a high financial leverage. It is interesting to see that AF Gruppen is the company with lowest level of short-term liquidity and one of the lowest coverage of total debt as they the most profitable company. Obviously, equity investors are more focused on the profitability of AF Gruppen, as their share price has gone up in the time period despite their relatively low liquidity. Another aspect of AF Gruppen’s liquidity is that the company is financed with almost 90% short-term debt, whereas almost 90% of the short-term debt is debt to suppliers and other non-interest bearing debt.

4.5 Segment analysis
In this section we will look further into the different segments for each of the six analysed companies. We have chosen to look at business segments instead of geographical segments, as we believe the barriers of moving services are fairly low and the most important factor for a company is how large business segments are and not where they are currently located. We will look at size related to total revenue, and also the profitability of the segments to see where each company generates their profits. As we did in the overall profitability analysis we will focus on Veidekke and compare them to the other analysed companies. Since Hochtief’s segment reporting differentiate substantially from the other companies we have chosen to do a separate analysis of Hochtief before we present out most important findings in a sub-conclusion.
4.5.1 Share of revenue

We will start out by looking at how large a share each segment has of each company’s total revenue, to figure out if the companies are specialised in segments or if they are generalists. Since every company segment is different we have changed the name of some segments and then combined different segments for some companies to make it as comparable as possible. The table below shows the top three segments measured as percentages of revenue for each company.

<table>
<thead>
<tr>
<th>% of group revenue</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>Construction*</td>
<td>Industrial</td>
<td>Real Estate</td>
</tr>
<tr>
<td></td>
<td>76,34%</td>
<td>15,64%</td>
<td>8,02%</td>
</tr>
<tr>
<td>Skanska</td>
<td>Buildings</td>
<td>Civil Engineering</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>45,39%</td>
<td>32,04%</td>
<td>7,12%</td>
</tr>
<tr>
<td>NCC</td>
<td>Construction*</td>
<td>Industrial</td>
<td>Housing</td>
</tr>
<tr>
<td></td>
<td>60,25%</td>
<td>18,46%</td>
<td>13,89%</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>Buildings</td>
<td>Civil Engineering</td>
<td>Off Shore</td>
</tr>
<tr>
<td></td>
<td>47,42%</td>
<td>29,18%</td>
<td>14,33%</td>
</tr>
<tr>
<td>Implenia</td>
<td>Buildings</td>
<td>Industrial</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td></td>
<td>48,88%</td>
<td>36,73%</td>
<td>8,05%</td>
</tr>
</tbody>
</table>

*Construction segment for NCC and Veidekke contains civil engineering business unit.

We can derive multiple findings from the table above. Firstly, all companies have one business unit that accounts for approximately 50% or more of the total revenue generated. All companies have their largest business unit within construction of buildings and civil engineering, although Veidekke and NCC does not split up these two units in their annual report. However, it is clear when reading about the largest projects in their annual reports that Civil engineering on a standalone basis would be either the largest or second largest business unit\(^\text{194}\). Looking at the historic numbers, all companies have had a fairly stable revenue contribution from each segment over the 7 year period from 2007. The only company with a big change is AF Gruppen who in 2013 introduced the offshore segment as a standalone business unit. These operations were earlier split between the environment and energy unit, when looking at the sum of these three

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\(^{194}\) Annual reports from 2007-2013 for Veidekke and NCC
units in the 7 year period the 2013 numbers show us that they are back at all-time high levels and AF Gruppen expects high revenue contribution from the offshore segment in the years to come. Secondly, it is an interesting finding to see that Veidekke, NCC and Implenia have integrated their supply chain by having an industrial unit which produce gravel, asphalt and other construction supplies. These units both deliver building materials to the other business units and sell to external sources. A common factor across companies for industrial units is that they all are most exclusively located in the company’s domestic market, i.e. for Veidekke this is Norway, NCC industrial is in Sweden and Implenia have the largest parts of their industrial business in Switzerland. For foreign companies this can imply a higher price when moving production material from one country to another. This could be a possibility for Veidekke to enter partnerships, where the new market entrants can become a customer of their industrial products.

Implenia has unlike most of their competitors focused their civil engineering unit on tunnel building, whereas the other companies have a broader scope within the civil engineering segment. This is interesting because they have chosen to go with a specialisation strategy within this business area.

To sum up, the companies have many similarities when looking at the different business units share of revenue and only minor differences such as specialisation within a business area or integrated supply chain can be derived from this section.

### 4.5.2 Share of operating profit

In this section we will establish which segments the respective companies earn the largest share of their total EBIT. We will look at 2013 and comment on the cyclicality in the time period. We will dig further into the individual business segments profit margins in a later section.

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195 Appendix 7 on CD-ROM
196 Implenia, 2013, *Annual Report*
The table above shows us that the top three ranks of segments, when looking at EBIT contribution, are the same for Veidekke as it was for revenue contribution. However, both real estate and industrial contribute more to EBIT in terms of what could be expected from their revenue share. Real estate contributes with twice as much as their percentage share of revenue.

When looking at Skanska it is interesting to see that their commercial property segment contributes with 18% of the EBIT, as this segment is not in the top three of revenue contributors\(^{197}\). This is also the case for NCC´s property development that contributed with more than 25% of the company’s total EBIT, but only accounted for less than 10% of the total revenue. The largest profit contributor for AF Gruppen is civil engineering with almost 50% of the company EBIT coming from only one third of the total revenue. As Skanska and NCC, Implenia has a large share of their EBIT coming from a business unit not represented in the top three revenue contributors.

From this section we can conclude that there is a big difference between revenue and EBIT contribution for most of the companies’ business units, which tells us that there is a big difference in the profitability across segments. In the next section we will analyse the profitability of the different segments in the time period, to figure out if there is a common

\(^{197}\) See appendix 9 on CD-ROM
factor of the most profitable segment over time and across companies, or if some companies are experts in a certain construction type, and if business cycles affects this.

### 4.5.3 Profit margin analyses

To figure out which business segments are the most profitable for the companies, we will now conduct an analysis of this, both to conclude on areas of expertise and vulnerability to negative business cycles. In the table below we have listed the profit margin before tax for each segment in all the companies. The colours are used to visualise the level of profit margin in each segment, the colours are relative within each year where dark green if the most profitable and red is the least profitable.

#### Table 13: Profit margin for each segment in all companies from 2007-2013. Numbers are retrieved from annual reports are calculated in Excel. See appendix 6,7,8,9,10,11 and 12 on CD-ROM. *Construction segment for NCC and Veidekke contains civil engineering business unit.

<table>
<thead>
<tr>
<th>Veidekke</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>2.97%</td>
<td>3.89%</td>
<td>4.28%</td>
<td>4.01%</td>
<td>1.72%</td>
<td>2.73%</td>
<td>2.41%</td>
<td>3.14%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>13.32%</td>
<td>8.73%</td>
<td>-3.05%</td>
<td>-1.56%</td>
<td>7.10%</td>
<td>5.46%</td>
<td>6.59%</td>
<td>5.23%</td>
</tr>
<tr>
<td>Industrial</td>
<td>5.18%</td>
<td>3.34%</td>
<td>0.95%</td>
<td>2.78%</td>
<td>3.96%</td>
<td>1.65%</td>
<td>4.58%</td>
<td>3.21%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skanska</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>3.06%</td>
<td>2.23%</td>
<td>4.01%</td>
<td>3.52%</td>
<td>2.87%</td>
<td>2.20%</td>
<td>2.97%</td>
<td>2.98%</td>
</tr>
<tr>
<td>Residential</td>
<td>9.35%</td>
<td>0.00%</td>
<td>2.60%</td>
<td>6.70%</td>
<td>3.04%</td>
<td>0.00%</td>
<td>5.81%</td>
<td>3.93%</td>
</tr>
<tr>
<td>Commercial property</td>
<td>29.22%</td>
<td>18.01%</td>
<td>20.24%</td>
<td>16.75%</td>
<td>21.26%</td>
<td>16.15%</td>
<td>18.31%</td>
<td>19.99%</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>N/A</td>
<td>50.56%</td>
<td>-19.28%</td>
<td>49.62%</td>
<td>771.54%</td>
<td>75.93%</td>
<td>63.31%</td>
<td>165.28%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Af Gruppen</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building</td>
<td>2.41%</td>
<td>4.85%</td>
<td>8.51%</td>
<td>2.03%</td>
<td>3.94%</td>
<td>1.10%</td>
<td>3.53%</td>
<td>3.77%</td>
</tr>
<tr>
<td>Civil engineering</td>
<td>21.17%</td>
<td>13.97%</td>
<td>12.50%</td>
<td>20.67%</td>
<td>21.22%</td>
<td>39.09%</td>
<td>56.41%</td>
<td>26.43%</td>
</tr>
<tr>
<td>Property</td>
<td>8.67%</td>
<td>-32.55%</td>
<td>-19.61%</td>
<td>33.58%</td>
<td>53.62%</td>
<td>126.67%</td>
<td>53.33%</td>
<td>31.96%</td>
</tr>
<tr>
<td>Environment</td>
<td>16.73%</td>
<td>8.39%</td>
<td>5.79%</td>
<td>11.73%</td>
<td>10.30%</td>
<td>9.79%</td>
<td>5.85%</td>
<td>9.80%</td>
</tr>
<tr>
<td>Energy</td>
<td>7.95%</td>
<td>8.82%</td>
<td>3.51%</td>
<td>-2.66%</td>
<td>1.08%</td>
<td>6.21%</td>
<td>6.36%</td>
<td>4.47%</td>
</tr>
<tr>
<td>Off shore</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>4.83%</td>
<td>4.83%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implenia</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modernisation &amp; development</td>
<td>-132.79%</td>
<td>-234.84%</td>
<td>-129.13%</td>
<td>-21.94%</td>
<td>-11.70%</td>
<td>-4.74%</td>
<td>1.23%</td>
<td>-76.27%</td>
</tr>
<tr>
<td>Development</td>
<td>11.09%</td>
<td>11.28%</td>
<td>16.80%</td>
<td>12.04%</td>
<td>11.13%</td>
<td>14.92%</td>
<td>25.38%</td>
<td>14.66%</td>
</tr>
<tr>
<td>Buildings</td>
<td>0.54%</td>
<td>2.31%</td>
<td>1.57%</td>
<td>1.35%</td>
<td>1.66%</td>
<td>1.61%</td>
<td>1.57%</td>
<td>1.52%</td>
</tr>
<tr>
<td>Tunnelling &amp; civil engineering</td>
<td>16.87%</td>
<td>17.08%</td>
<td>17.81%</td>
<td>12.26%</td>
<td>13.50%</td>
<td>11.97%</td>
<td>8.26%</td>
<td>13.96%</td>
</tr>
<tr>
<td>Infraconstruction</td>
<td>0.81%</td>
<td>2.51%</td>
<td>2.19%</td>
<td>2.09%</td>
<td>1.58%</td>
<td>2.56%</td>
<td>2.91%</td>
<td>2.09%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NCC</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>4.42%</td>
<td>4.10%</td>
<td>4.01%</td>
<td>3.90%</td>
<td>2.53%</td>
<td>2.83%</td>
<td>2.49%</td>
<td>3.47%</td>
</tr>
<tr>
<td>Roads</td>
<td>6.86%</td>
<td>3.94%</td>
<td>3.74%</td>
<td>3.33%</td>
<td>3.52%</td>
<td>3.41%</td>
<td>3.38%</td>
<td>4.03%</td>
</tr>
<tr>
<td>Housing</td>
<td>N/A</td>
<td>-7.52%</td>
<td>-1.40%</td>
<td>4.75%</td>
<td>8.04%</td>
<td>9.70%</td>
<td>6.70%</td>
<td>3.88%</td>
</tr>
<tr>
<td>Property development</td>
<td>21.77%</td>
<td>34.46%</td>
<td>17.83%</td>
<td>5.74%</td>
<td>2.05%</td>
<td>10.36%</td>
<td>14.82%</td>
<td>15.29%</td>
</tr>
</tbody>
</table>
Veidekke has three different business units, as all of their civil engineering work is included in the construction unit. This unit has in 2013 and historically had the lowest profit margin compared with the other business units. Second, it is noteworthy that the real estate segment by far is the most profitable division with a profit margin of 6.59% in 2013, and an average over the 7 years above 5%, which is 2% higher than the average of Veidekke’s two other business units. When comparing these findings, with the earlier findings from the financial analysis, this explains why the real estate segment is a relatively large contributor to the total EBIT despite their modest share of total revenue. We can also conclude from Veidekke’s table above that the real estate segment is more sensitive to business cycles; during the financial crisis the profit margin fell more than 11% from 2008 to 2009 and was the only unit with negative profit margins in 2009-2010.

Skanska has decided to split their business into four different areas, with infrastructure by far being the most profitable business area. The reason why infrastructure is able to have a profit margin of 771% in 2011 is income from associates\textsuperscript{198}. However, the 2011 observation is quite an outlier and by adjusting the average profit margin for 2011 the average profit margin is 44% over the period, which still leaves it as the most profitable division in Skanska. Commercial property, which is Skanska’s property development unit, is the second most profitable unit, with an average profitability of 20%. As for Veidekke, Skanska’s largest division measured on revenue is also the least profitable, this is the construction division.

AF Gruppen’s most profitable segment is their civil engineering unit, followed closely by their property development business unit. Both civil engineering and property development achieved a profit margin of more than 50% in 2013. This is not surprising as the largest EBIT contributor is civil engineering. However, the profitability in civil engineering of 56% in 2013 is not representative for the time period, as the historical average is 26%. The most profitable division, historically, is development, which like Veidekke’s Real Estate division works with building and selling real estate areas. They have a historical profit margin of 32%, but it is noteworthy that they have a negative profit margin of more than 20% in both 2008 and 2009, showing that real estate is especially sensitive to business cycles. AF Gruppen’s largest unit, measured on

\textsuperscript{198} Skanska, 2011, \textit{Annual report}, p. 118
revenue, buildings had the lowest profit margin of only 3.5%, which is 2% lower than AF Gruppen’s total profit margin.

**Implenia** has a business unit called modernisation and development, this unit has negative margins in all the analysed years except 2013. The historical average is -76%, but this is based on a very low revenue, less than 1% of the total revenue and therefore it does not make a big difference when looking at the larger picture. The most profitable business unit in both in 2013 and historically is, as for Veidekke and AF Gruppen, the development unit. When excluding the modernisation unit, the least profitable unit both in 2013 and historically is the building unit, this is like for Veidekke the largest revenue contributor but the lowest profit margin.

In common with the other analysed companies the most profitable division in **NCC** is the property development division with a margin of 14.8%, slightly below the historical average of 15.3%. The largest division in NCC, construction, does like Veidekke have the lowest profit margin of 2.5%. However, the reason for why they have an overall better profitability, as seen in the previous section analysing this, is that this division has a lower share of total profit.

To conclude, the general rule is that the largest division, measured on revenue, in a company is usually the least profitable. This could have more than one explanation but it is most likely because the largest department is general construction, which is the most competitive market since all companies are focus intensely on this market. Furthermore, there is a pattern showing that the property development division is either the most or second most profitable division in a company. However, this is also the most volatile division as it is very sensitive to economic cycles. Another high profit division in many of the analysed companies is the civil engineering division this is most because the projects requires large scale which lower the degree of competition somewhat compared with general construction.

### 4.5.4 Hochtief segments

Unlike the other analysed companies, Hochtief only divide their segments geographically, and they are therefore not directly comparable with the other companies. However, we have chosen to analyse their geographical segment to see in which regions they are largest, and where they are most profitable. Due to changing reports of segments over time, the only segment we can
analyse is the construction services for Hochtief across the three regions, but as this segment covers more than 95% of the total revenue it therefore gives a good picture of their performance. Hochtief’s geographical segments are Americas, Asia and the Pacific, and Europe. In the years between 2007 and 2009 Hochtief also had segments on smaller divisions, such as airports, but since they stopped this in 2009 and the segments are really small we have chosen not to analyse these segments. The number presenting profit in each segment is EBITDA, as this is the only segment numbers Hochtief publish.

Firstly, we will look at the percentage revenue shares for the three regions, and how this has developed over time. These results are presented in the table below.

<table>
<thead>
<tr>
<th>Share of revenue</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>41.43%</td>
<td>40.60%</td>
<td>35.20%</td>
<td>29.40%</td>
<td>26.16%</td>
<td>27.16%</td>
<td>29.53%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>42.22%</td>
<td>43.21%</td>
<td>50.45%</td>
<td>54.97%</td>
<td>60.45%</td>
<td>61.58%</td>
<td>59.29%</td>
</tr>
<tr>
<td>Europe</td>
<td>16.35%</td>
<td>16.20%</td>
<td>14.34%</td>
<td>15.63%</td>
<td>13.39%</td>
<td>11.26%</td>
<td>11.18%</td>
</tr>
</tbody>
</table>

*Table 14:* The top three segments in Hochtief and their percentage share of total revenue. Numbers are retrieved from annual reports and are calculated in Excel. See appendix 10 on CD-ROM.

From the table above it is clear that despite Hochtief being domiciled in Germany, Europe is by far their smallest region only accounting for 11% of the total revenue in 2013. Asia is the largest region accounting for approximately 60%, while the Americas accounts for the remaining 30%. It is also interesting to look at the development over time. In 2007 the Americas and Asia accounted for approximately 40% each, while Europe accounted for more than 16%. The rise in Asia’s percentage share of revenue is not a result of a decreasing revenue in Europe or Americas, Hochtief’s total revenue is up 56% since 2007 and all regions have grown since then.

The reason for Asia’s remarkably higher revenue share in 2007 is simply significantly higher growth more than doubling their revenue, while America and Europe have seen growth modest growth of less than 20% in the period.

When looking at where the profits are generated the contribution is more volatile than when analysing revenue share. The table below shows the region’s share of total profit.

<table>
<thead>
<tr>
<th>Share of EBITDA</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>19.9%</td>
<td>20.6%</td>
<td>16.4%</td>
<td>14.9%</td>
<td>112.0%</td>
<td>9.8%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>114.1%</td>
<td>85.5%</td>
<td>79.7%</td>
<td>72.5%</td>
<td>-126.9%</td>
<td>78.1%</td>
<td>73.6%</td>
</tr>
<tr>
<td>Europe</td>
<td>-34.1%</td>
<td>-6.1%</td>
<td>4.0%</td>
<td>12.6%</td>
<td>114.9%</td>
<td>12.1%</td>
<td>15.1%</td>
</tr>
</tbody>
</table>

*Table 15:* The top three segments in Hochtief and their percentage share of total EBITDA. Numbers are retrieved from annual reports and are calculated in Excel. See appendix 10 on CD-ROM.
The table mainly shows us that Asia, along with being the largest region, also is the highest contributor when it comes to operating profits. On average, Asia contributes with more than 70% of Hochtief’s total EBITDA. The table also explains the low profit margin seen in 2011 in the profitability analysis, as this was caused by massive losses in Asia. The development of Europe is positive for Hochtief, they have turned it from a negative contributor to a stable profit given region.

To conclude on this section, Asia is by far the largest region for Hochtief, both when considering revenue and EBITDA. Europe has had a down trending share of revenue, but an up trending share of profits, which indicates that Hochtief have managed a turnaround of this region. The Americas currently look like the most troubling region for Hochtief, since they have seen a declining share of revenue and EBITDA. But, when looking deeper into the numbers this is only a relative measure, as the Americas have seen growth in both revenue and EBITDA the explanation is simply higher growth in Asia and the turnaround in Europe.

4.6 A peek into 2014 – First quarter
In this section we want to present some of the key financial numbers for all of the companies for first quarter of 2014. However, as Implenia does not publish quarterly reports, only half year and annual report, we cannot analyse their first quarter. Although the construction industry is highly affected by seasonality, and one quarter might be affected by revenue recognition of different projects, we argue that a comparison with the first quarter of 2013 against 2014 can gives us some indications about the first year after our analysed time period.
Figure 20: Percentage change in revenue in the first quarter 2013-2014 for Veidekke, NCC, Skanska, AF Gruppen, Hochtief. Numbers are retrieved from the annual reports and calculated in excel. See appendix 16 on CD-ROM.

The chart above shows the percentage change in revenues for Veidekke, NCC, Skanska, AF Gruppen and Hochtief from Q1 2013 to Q1 2014. As seen from the chart, Veidekke is the only company with a positive development in revenue in the first quarter, and further their change is relatively high compared to the other companies. According to the CEO, the positive development for Veidekke is caused by a higher activity in the construction segment.199

When looking at the profitability of the revenue each company has generated, Veidekke and Skanska are the two companies with the best development in profit margin before tax. On the other hand, Veidekke is the company with the second lowest profit margin before tax in Q1 2014 despite that they are the company with the most positive change in revenue.

<table>
<thead>
<tr>
<th>Profit margin before tax</th>
<th>Q1 2013</th>
<th>Q1 2014</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>-2,0 %</td>
<td>0,5 %</td>
<td>2,5 %</td>
</tr>
<tr>
<td>NCC</td>
<td>-2,2 %</td>
<td>-1,6 %</td>
<td>0,5 %</td>
</tr>
<tr>
<td>Skanska</td>
<td>2,1 %</td>
<td>4,9 %</td>
<td>2,8 %</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>3,7 %</td>
<td>3,7 %</td>
<td>0,0 %</td>
</tr>
<tr>
<td>Hochtief</td>
<td>2,8 %</td>
<td>3,1 %</td>
<td>0,3 %</td>
</tr>
</tbody>
</table>

Table 16: Profit margin before tax for Veidekke, NCC, Skanska, AF Gruppen and Hochtief Q1 2013-2014. Numbers are retrieved from their annual reports and calculated in excel. See appendix 16 on CD-ROM

199 Aarø, 2014, Bedring for Veidekke
The backlog is the aggregate of the sales price of orders received from customers less the revenue recognised\(^{200}\). The backlog is a good indication of future activity in a company, and is an important benchmark when analysing the construction industry. According to Statistics Norway, the backlog in the Norwegian construction industry has never been higher, as a result of the public investment activity\(^{201}\). By the end of the first quarter 2014, all of the companies except from Hochtief had a higher backlog compared to the respective numbers in the end of the first quarter 2013. Veidekke increased their backlog with 8%, and is therefore the company with the second highest percentage change.

<table>
<thead>
<tr>
<th>Backlog</th>
<th>Q1 2013</th>
<th>Q1 2014</th>
<th>% - Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>16.808</td>
<td>18.182</td>
<td>8 %</td>
</tr>
<tr>
<td>NCC</td>
<td>32.607</td>
<td>33.595</td>
<td>3 %</td>
</tr>
<tr>
<td>Skanska</td>
<td>142</td>
<td>146</td>
<td>3 %</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>9.257</td>
<td>10.521</td>
<td>14 %</td>
</tr>
<tr>
<td>Hochtief</td>
<td>50.691</td>
<td>40.207</td>
<td>-21 %</td>
</tr>
</tbody>
</table>

*Table 17: Backlog for Veidekke, NCC, Skanska, AF Gruppen and Hochtief Q1 2013-2014. Numbers are retrieved from their annual reports and calculated in excel. See appendix 16 on CD-ROM

4.7 Concluding remarks for the financial analysis

Veidekke has seen decreasing profit margin and asset turnover which have resulted in pressure on the ROIC. Unlike Veidekke, our analysis of share performance showed AF Gruppen stood out as especially well performing. This was further backed up by the profitability analysis which showed that AF Gruppen have been really good at improving their asset turnover which have directly spilled over in a positive development of their ROIC. This, combined with a high revenue growth, has created a lot of value. The second best performing share was Implenia, they also saw a positive development of their ROIC and like AF Gruppen this was driven by a significant improvement of their asset turnover. Based on this, we can conclude that asset turnover is a really important value driver, especially when profit margins are under pressure with steady state or negative development as a result.

When analysing the cost distribution we found that the companies are split into two different groups; one group using a lot of sub-contractors, while the other group have a relative large share of their cost in-house. Veidekke is in the second group with the largest share of their cost going to sub-contractors. However, the difference between the two groups has narrowed down

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\(^{201}\) Garathun, 2014, *Ordnereserven i bygg-og anleggsbransjen har aldri vært høyere*
during the analysed period. Another interesting finding is that especially AF Gruppen has increased their share of cost of to sub-contractors; this could be part of the explanation of how they have been able to increase their asset turnover significantly since 2007 while seeing increasing revenue.

When analysing the credit situation the picture is somewhat different with Veidekke being one of the best performing companies while AF Gruppen could be hit hard if short term liquidity froze. This could become a problem if markets see a downturn again but for now AF Gruppen’s situation is not alarming, especially not taking the expectations for the coming years in the construction business into account.

We have also analysed the profitability of different division in each company, here we found the rule of thumb was that the largest division usually was the least profitable. This is most likely caused by the general construction market is the largest area for all companies and therefore has most competition. Another interesting finding is that property development and infrastructure/civil engineering seem to be divisions that are able to generate higher profit margins. The analysis of Hochtief’s segments showed that they have been successful with high growth in Asia both regarding profit and revenue growth.

Lastly, we looked at the financial development in the first quarter of 2014 (except for Implenia which does not present quarterly numbers). Veidekke is the company with the highest percentage change in revenue compared to its first quarter of 2013. All of the other companies have experienced a negative change in revenue. On the other hand, Veidekke is still one of the companies with the lowest profit margin before tax although they have managed to improve their profit margin with 2,5% compared to their first quarter of 2013.

5 CAPITAL STRUCTURE ANALYSIS

In this chapter we are going to conduct an analysis of Veidekke’s and their competitors’ capital structure, in order to answer our third research question, *Does Veidekke’s capital structure generate a competitive WACC, compared with their competitors’?*. The WACC is an important competitive factor in the construction industry because it is used to discount future cash flows of possible projects. Therefore, it is essential to have a competitive WACC in an environment where price competition is fierce.
The chapter will begin with a calculation of WACC, and following we will then compare the companies’ WACC to determine which company is the most competitive on this parameter and how Veidekke is positioned compared to some of its competitors.

### 5.1 Weighted average cost of capital

In this section we are going to calculate the WACC for Veidekke, NCC, Skanska, AF Gruppen, Hochtief and Implenia. First, we will present the WACC formula. Second, we will present our calculations of costs of equity. Third, we will present our calculations of cost of debt. Finally, we will use the formula presented to calculate the WACC for each company.

We have chosen to use the WACC formula presented by Petersen & Plenborg\(^{202}\):

\[
WACC = \frac{NIBD}{(NIBD + E)} \times r_d \times (1 - t) + \frac{E}{(NIDB + E)} \times r_e
\]

where

- \(NIBD\) = Market value of net interest-bearing debt
- \(E\) = Market value of equity
- \(r_d\) = Required rate of return on NIBD
- \(r_e\) = Required rate of return on equity
- \(t\) = Corporate tax rate

We chose this formula as it only includes the interest bearing debt, and not all liabilities from the balance sheet\(^{203}\). We argue that this is an important factor when analysis construction companies, as most of the companies have a lot of trade payables that is not interest bearing and therefore it would not be representative to apply a cost of debt on this proportion on the liabilities. Further, for the market value of equity we will apply the market value of equity end of Q1 2014. For the market value of net interest-bearing debt we will apply the book value of net interest-bearing debt from the end of Q1 2014, as according to IAS 39, concerning financial liabilities, companies are obligated to quote bonds at market value\(^{204}\).

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\(^{203}\) Koller et. Al (2011) use a formula where all debt on the balance sheet is included

\(^{204}\) IFRS, 2011, *A guide through IFRS*, p. A1168
We will now present our calculations of cost of equity and cost of debt, and then return to the calculation of WACC.

5.1.1 Cost of equity
We have chosen to use the most commonly used model, which is the capital asset pricing model (CAPM)\textsuperscript{205} to estimate the cost of equity. CAPM consist of three different components, these being a risk-free rate, a market risk premium and the systematic risk of a company in this case measured by beta. In this section we will calculate an estimate for the cost of equity which we will use to determine the WACC of the six companies analysed in this thesis.

As mentioned above we will use the CAPM to estimate the cost of equity, the equation for this is

\[ E(R_i) = r_f + \beta_i (E(R_m) - r_f) \]

Where,

- \( E(R_i) \) = the cost of equity for the stock
- \( r_f \) = the risk-free rate
- \( \beta_i \) = beta (measure of a stocks systematic risk)
- \( E(R_m) \) = risk premium for equities

In the following sections we will explain have we have estimated each of the components needed in the CAPM model used to estimate the cost of equity.

5.1.1.1 Risk-free rate
The first parameter we need to estimate is the risk-free rate. The most common solution is to use a default free government bond. It can be questioned in the aftermaths of the financial crisis if a default free government bond exists, but government bonds from the United States of America and western European countries such as Germany, Switzerland and Scandinavian countries are generally accepted as being low beta bonds and therefore practically default free\textsuperscript{206}. Further, we need to consider which maturity we should use. If our purpose was valuation, the ideal solution would have been to use the same maturity as the cash flows valuated. It is most common to use

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\textsuperscript{205} Koller et al, 2010, *Valuation: Measuring and Managing the Value of Companies*, p. 234
\textsuperscript{206} Koller et al, 2010, *Valuation: Measuring and Managing the Value of Companies*, p. 236
the yield to maturity of STRIPS\textsuperscript{207} with 10 year maturity\textsuperscript{208} as risk free rate. This is because bonds with 30 years to maturity tend to be illiquid, which affect price and yield. The reason to use STRIPS is that the interim interest payment is causing the duration of traditional government bonds to be shorter than the stated maturity\textsuperscript{209}. We are using German 10 year strips since we believe they are practically risk free, while still having enough liquidity to always reflect the current rates in the market.

The risk-free rate as of end of December 2013 obtained from Bloomberg and used in this thesis is 2,04\%. An argument for choosing the risk free rate of 2,04\% is that the current risk free rate is 1,41\% as end of May 2014, which is unusually low. In fact lower rates have only been observed 6 times, all within the last year. Professor Damodaran from Stern therefore argues for choosing a higher risk free rate than the current\textsuperscript{210}. Further, Veidekke has presented a cost of debt in their annual report of 4\%. As will be shown in the section on cost of debt, a risk free rate of 2,04\% gives a more realistic picture of Veidekke’s cost of debt of 4\%, when they are provided with a credit spread of 2,5\% as a result from their credit rating.

5.1.1.2 Market risk premium
The second parameter we need to estimate is the market risk premium, which describes the difference between the equity markets expected return and the above found risk-free rate. This is one of the most discussed subjects within finance, which this section shows.

There are three overall methods to estimate the equity premium\textsuperscript{211}. The first is to measure it based on historic returns and extrapolate these data. Second, is to use a regression analysis explaining returns by dividend-to-price or similar ratios. The third method is to use DCF valuation, along with estimates of growth and ROIC and thereby reverse engineer the market risk premium. We have chosen to use the first method, which is the historical market risk premium because the method is the most easily accessible and most commonly used.

There is an on-going discussion about what time-period to use when analysing the historic risk premium. Some argue that the risk premium changes over time at therefore newly available data

\textsuperscript{207} Fabozzi & Mann, 2010, \textit{Introduction to Fixed Income Analytics}, p. 33
\textsuperscript{208} Koller et al, 2010, \textit{Valuation: Measuring and Managing the Value of Companies}, p. 237
\textsuperscript{209} Fabozzi & Mann, 2010, \textit{Introduction to Fixed Income Analytics}, p. 334
\textsuperscript{210} Professor Damodaran, 2011, \textit{Risk free rates and value: Dealing with historically low risk free rates}
\textsuperscript{211} Koller et al, 2010, \textit{Valuation: Measuring and Managing the Value of Companies}, p. 238
should be used, i.e. 5-10 years\textsuperscript{212}. Others argue that the longest period of time available should be used since the statistical noise when using short time periods is large\textsuperscript{213}. Due to the recent financial crisis there is a lot of noise when using short-term data and therefore we have chosen to use the longest available data series.

We have calculated the risk premium by using the EUROSTOXX 600 index\textsuperscript{214} as we believe this is the best benchmark for all the analysed companies, and because of the size and number of companies along with differentiated sector representation in the index give a good representation of a market portfolio. However, this gave us a result of ERP\textsuperscript{215} of 4.65% after subtracting the risk free rate. This seems fairly low especially considering the low risk free rate. It is found in several studies, one of them performed by Nenkov\textsuperscript{216}, that risk premium rises when risk free rates go down. Damodaran also argues that the situation the last couple of years is out of the ordinary\textsuperscript{217}, and other estimates only relying on history is necessary. As the risk free rates since 2012 have become even lower we believe another risk premium is necessary to get a more reliable result. Pablo Fernandez, holder of the PWC chair of corporate finance at IESE, did a survey in June 2013 along with two professors from IESE business school regarding market risk premiums. They had more than 6000 responses\textsuperscript{218} including both professors and investment professionals. These premiums varies from 5.5% to 8% for European countries with a median of 6.0% for Europe. Therefore we have chosen to use this market risk premium in our calculations.

\subsection*{5.1.1.3 Beta}
To estimate beta we are going to use the CAPM theory where beta measures the systematic risk of a security. The most important discussion regarding beta estimation is which time period to use, and whether to use a regression or the beta formula, which divides the covariance between a security and the market index with the standard deviation of the market index\textsuperscript{219}. We have chosen to both on a 1 year, 5 year and 10 year horizon and afterwards chose one of these and argue for how we make our decision.

\begin{thebibliography}{9}
\bibitem{212} Koller et al, 2010, \textit{Valuation: Measuring and Managing the Value of Companies}, p. 238
\bibitem{213} Koller et al, 2010, \textit{Valuation: Measuring and Managing the Value of Companies}, p. 239
\bibitem{214} STOXX, 2014, \textit{STOXX® Europe 600}
\bibitem{215} Equity Risk Premium
\bibitem{216} Nenkov, 2012, \textit{Dynamics of capital markets and its impact on the cost of equity}
\bibitem{217} Professor Damodaran, 2011, \textit{Risk free rates and value: Dealing with historically low risk free rates}
\bibitem{218} Fernandez et al, 2013, \textit{Market Risk Premium and Risk Free Rate used for 51 countries in 2013: a survey with 6,237 answers}
\bibitem{219} Bodie et. Al, 2011, \textit{Investment and portfolio management}, p. 322
\end{thebibliography}
Based on the results from the table above, we have chosen to use the beta estimated on 5 years data, this giving us a total of 60 observations in the estimation. This is because this gives us the highest R-squared of 0,29, and this estimation horizon is further backed by studies of CAPM\textsuperscript{220}. However, this still does not give us a robust estimation of beta since the standard error of 0,224 makes the beta of Veidekke in a 95\% confidence-interval between 0,635 and 1,531. Therefore we have chosen to estimate a raw beta for the six companies, and then calculate unlevered beta based on the raw beta by the following equation\textsuperscript{221}:

$$
\beta_u = \frac{\beta_{\text{raw}}}{(1+(1-t)\times \left(\frac{\text{NIBD}}{\text{Equity}}\right))}
$$

Afterwards we calculate an industry beta and then calculate the levered beta for each company based on their capital structure by:

$$
\text{Industry } \beta \times (1 + \frac{\text{NIBD}}{\text{Equity}}).
$$

This approach makes the estimated betas more robust\textsuperscript{222}. The results and the final beta are presented in the table below. The industry beta is based on an average of Veidekke, NCC, Skanska and Hochtief, this is because AF Gruppen and Implenia have exceptional low betas in the estimation period, and since they are small companies we have chosen not to include them in the average, and thereby get closer to industry Beta’s hovering around 1,3\textsuperscript{223} found by other estimations.

<table>
<thead>
<tr>
<th>Industry Beta=1,17</th>
<th>Veidekke</th>
<th>NCC</th>
<th>Skanska</th>
<th>AF Gruppen</th>
<th>Hochtief</th>
<th>Implenia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Beta</td>
<td>1,08</td>
<td>1,19</td>
<td>1,09</td>
<td>0,40</td>
<td>1,70</td>
<td>0,57</td>
</tr>
<tr>
<td>Unlevered Beta</td>
<td>0,95</td>
<td>0,97</td>
<td>1,06</td>
<td>0,45</td>
<td>1,69</td>
<td>0,72</td>
</tr>
<tr>
<td>Relevered Beta</td>
<td>1,39</td>
<td>1,49</td>
<td>1,22</td>
<td>1,01</td>
<td>1,18</td>
<td>0,87</td>
</tr>
</tbody>
</table>

Table 19: The results from our regression analysis conducted in SAS-enterprise guide, the regression is based on data obtained from Bloomberg. Afterwards adjustments are made in Excel. See appendix 14 on CD-ROM.

\textsuperscript{220} Alexander & Chervany, 1980, \textit{On the Estimation and Stability of Beta}

\textsuperscript{221} Investopedia, 2014, \textit{Unlevered Beta Definition}

\textsuperscript{222} Koller et al, 2010, \textit{Valuation: Measuring and Managing the Value of Companies}, p. 250

\textsuperscript{223} Professor Damodaran, 2014, \textit{Total Betas by Sector}
The relevered Beta’s will be used to calculate the WACCs presented in the following section.

5.1.2 Cost of debt
The next step of our WACC calculations is to determine the cost of debt for all the companies. According to Plenborg one method is to calculate the cost of debt as a combination of the risk free interest rate and the risk premium on debt (credit spread)\(^{224}\), where the risk premium is calculated based on the company’s debt’s credit rating\(^{225}\). Koller et. al. also propose this method when calculating cost of debt\(^{226}\). A third approach could be to look at the company’s most recent issue of debt and thereby define the respective risk premium based on the size of the risk related to the financing\(^{227}\).

We have chosen to use the Plenborg approach, and calculate the cost of debt based on a computation of the risk free rate and a risk premium on debt with the formula stated below\(^{228}\):

\[
    r_d = (r_f + r_s) \times (1 - t)
\]

where
- \(r_f\) = risk free rate
- \(r_s\) = risk premium on debt
- \(t\) = corporate tax rate

However, as all the companies are not investment graded we cannot use this method directly. An alternative could be to perform the credit rating ourselves based on Moody’s credit rating model presented by Plenborg, however, as we do not have access to the appropriate credit spreads from this model, it will not do us any good. To calculate an appropriate credit spread, we have chosen to use an approach presented by Professor Damodaran, a professor in corporate finance and valuation at the Stern School of Business at New York University\(^{229}\). In his webpage he has presented a spreadsheet for calculating costs of debt in the same way presented

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\(^{228}\) Petersen & Plenborg, 2012, *Financial Statement Analysis*, p. 265

\(^{229}\) Professor Damodaran, 2014, *Spreadsheet Programs – Estimating a synthetic rating & cost of debt*
by Plenborg, the only difference is that his approach uses a credit spread from a credit rating based on the interest coverage ratio and further there are three different credit spreads tables based on the profile of the company analysed\textsuperscript{230}. The interest coverage ratio is calculated by dividing EBIT by interest expenses. Then the interest coverage ratio is paired with a rating with a corresponding credit spread from the table of the correct classification of firm characteristics. However, as Professor Damodaran’s approach is only based on one parameter (that is the interest coverage ratio), we have decided to compare our results from Professor Damodaran’s approach with the credit ratings performed by financial institutions of each the companies’ issued bonds. For the risk free rate we have, as described in the section on risk free rate in the cost of equity, chosen to use a German 10 year zero coupon bond.

Starting with the risk free rate, the German 10 year zero coupon government bond is 2.04\% and will be applied for all companies. This is also the same risk free rate applied when calculating cost of equity.

For the credit spread, we have used an adjusted Professor Damodaran’s approach and calculated the interest coverage ratio for each company. We will now show an example of the calculation of Veidekke’s credit spread. All the other calculations are included in the appendix and can also be found on the CD-ROM. The corresponding credit spread is found in the tables in the appendix, and is divided into three different categories: 1) Large manufacturing companies, 2) Smaller and riskier firms and 3) Financial service firms. We have chosen to put all of our companies in category 2 – Smaller and riskier firms. This is because the companies have a market value below $5 billion and also because we argue that the construction industry, which is highly correlated with business cycles and seasonal cycles, is more risky than manufacturing firms.

For Veidekke the calculations look as follows:

\[
\text{Interest coverage ratio} = \frac{\text{EBIT}}{\text{Interest expenses}} = \frac{692}{54} = 12.81
\]

\textsuperscript{230} Appendix 2 – Stern Synthetic rating estimation
From the table presented in appendix X, an interest coverage ratio of 12.81 corresponds to an AAA rating, giving Veidekke a spread of 0.40%. With a risk free rate of 2.04% this results in a cost of debt before tax of 2.44%. Compared to DNB Markets’s and SEB’s credit rating of Veidekke, which is a BBB- credit rating, this rating is not representable. Further, from our liquidity analysis we also found that Veidekke is one of the most liquid companies but the analysis does not show numbers resulting in an AAA rating. Therefore, we have decided to combine the approach from Professor Damodaran and Elling & Sørensen, and use the credit rating from banks and apply the rating to the respective credit spreads for the category “smaller and riskier firms”. With this approach Veidekke receives a credit spread of 2.5%\textsuperscript{231}, and with a risk free rate of 2.04% this results in a cost of debt before tax of 4.54%. This credit spread is also very close to what Veidekke pays on their issued bond, which is 3.97% in a fixed interest rate\textsuperscript{232}.

For Hochtief and AF Gruppen, our approach has been a little different as there are no official credit ratings we can use to compare our results from Professor Damodaran’s approach. AF Gruppen has not issued any bonds nor have they been credit rated\textsuperscript{233}. Hochtief has issued bonds; however, there are no official credit ratings on these bonds\textsuperscript{234}. As there are no ratings we can compare our results to, we have chosen to apply the credit spreads calculated by the interest coverage ratio.

After calculating the credit spread for all of the companies, with the approach described above, the cost of debt before tax for all the companies is as follows:

<table>
<thead>
<tr>
<th>Company</th>
<th>Credit spread</th>
<th>Risk free rate</th>
<th>Cost of debt before tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veidekke</td>
<td>2.50%</td>
<td>2.04%</td>
<td>4.54%</td>
</tr>
<tr>
<td>NCC</td>
<td>2.50%</td>
<td>2.04%</td>
<td>4.54%</td>
</tr>
<tr>
<td>Skanska</td>
<td>2.00%</td>
<td>2.04%</td>
<td>4.04%</td>
</tr>
<tr>
<td>AF Gruppen</td>
<td>0.40%</td>
<td>2.04%</td>
<td>2.44%</td>
</tr>
<tr>
<td>Hochtief</td>
<td>4.00%</td>
<td>2.04%</td>
<td>6.04%</td>
</tr>
<tr>
<td>Implenia</td>
<td>2.00%</td>
<td>2.04%</td>
<td>4.04%</td>
</tr>
</tbody>
</table>

\textit{Table 20:} Cost of debt before tax for Veidekke, NCC, Skanska, AF Gruppen, Hochtief and Implenia. Calculations can be found in appendix 13 on CD-ROM.

\textsuperscript{231} Appendix 2 – Stern Synthetic rating estimation
\textsuperscript{232} Venvold, 2013, Veidekke utsteder obligasjonslån
\textsuperscript{233} Se appendix 4 with e-mail correspondence with CFO Sverre Hærem, confirming that there is no credit rating of AF Gruppen.
\textsuperscript{234} Se appendix 3 with e-mail correspondence with Stefan Zander (Corporate finance), confirming that there is no official credit rating of Hochtief’s bonds.
We will apply the tax rate directly in the WACC formula, when calculating WACC in the next section.

### 5.1.3 Is Veidekke’s discount rate competitive?

In this section we will present the calculated WACC and comment on our results and furthermore compare them with numbers obtained from DNB equity research. Below is a table with the WACC estimates found by using the WACC formula and the estimated parameters from the sections above.

For the tax rate we will apply the respective tax rate for each companies’ home country. The list of applied tax rates can be seen in the table below.

<table>
<thead>
<tr>
<th>Corporate tax rate table</th>
<th>2014 Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>27,00%</td>
</tr>
<tr>
<td>Sweden</td>
<td>22,00%</td>
</tr>
<tr>
<td>Germany</td>
<td>29,58%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>17,92%</td>
</tr>
</tbody>
</table>

*Table 21*: Corporate tax rates for Norway, Sweden, Germany and Switzerland in 2014. The tax rates are gathered from KPMG’s webpage under “Tax tools and resources”.

Below is a table with the estimates and numbers necessary to complete the WACC calculations. All numbers for debt and equity are at market value from 31-03-2014 except for Implenia they are from 31-12-2013.

<table>
<thead>
<tr>
<th>Beta</th>
<th>Veidekke</th>
<th>NCC</th>
<th>Skanska</th>
<th>AF Gruppen</th>
<th>Hochtief</th>
<th>Implenia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,39</td>
<td>1,49</td>
<td>1,22</td>
<td>1,01</td>
<td>1,18</td>
<td>0,87</td>
</tr>
<tr>
<td>Cost of equity</td>
<td>10,36%</td>
<td>11,00%</td>
<td>9,34%</td>
<td>8,07%</td>
<td>9,10%</td>
<td>7,25%</td>
</tr>
<tr>
<td>Cost of debt</td>
<td>4,54%</td>
<td>4,54%</td>
<td>4,04%</td>
<td>2,44%</td>
<td>6,04%</td>
<td>4,04%</td>
</tr>
<tr>
<td>DEBT (NIBD)</td>
<td>1540</td>
<td>7117</td>
<td>2676</td>
<td>-911</td>
<td>33</td>
<td>-320,6</td>
</tr>
<tr>
<td>Equity</td>
<td>8289,4</td>
<td>25655,1</td>
<td>65081,4</td>
<td>6518,6</td>
<td>4704,7</td>
<td>1245,9</td>
</tr>
<tr>
<td>Total</td>
<td>9829,4</td>
<td>32772,1</td>
<td>67757,4</td>
<td>5607,6</td>
<td>4737,7</td>
<td>925,3</td>
</tr>
<tr>
<td>WACC</td>
<td>9,25%</td>
<td>9,38%</td>
<td>9,10%</td>
<td>9,10%</td>
<td>9,07%</td>
<td>8,61%</td>
</tr>
</tbody>
</table>

*Table 22*: Input data for WACC calculations and results. Data sources: Bloomberg, annual reports, and own estimations. All market values are in local currencies. See appendix 14 on CD-ROM.

<table>
<thead>
<tr>
<th>WACC</th>
<th>Veidekke</th>
<th>NCC</th>
<th>Skanska</th>
<th>AF Gruppen</th>
<th>Hochtief</th>
<th>Implenia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9,25%</td>
<td>9,38%</td>
<td>9,10%</td>
<td>9,10%</td>
<td>9,07%</td>
<td>8,61%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DNB</th>
<th>Veidekke</th>
<th>NCC</th>
<th>Skanska</th>
<th>AF Gruppen</th>
<th>Hochtief</th>
<th>Implenia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10,75%</td>
<td>9,35%</td>
<td>9,50%</td>
<td>9,50%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Table 23*: WACC from our calculations in the top row, and estimates from DNB markets below. See appendix 14 on CD-ROM.
As we have now calculated the WACC for Veidekke and all of its peers, we can determine whether Veidekke has a competitive discount rate when they bid on future projects. The calculations show us that the difference between the discount rates is fairly low and that most of the construction companies have a discount rate around 9%. A comparison with DNB Market’s “Nordic Construction and Housebuilders” report shows that our WACC calculations are somewhat lower. However, DNB’s calculations are still fairly similar across the companies. The difference may come from differences in risk premiums or beta, however, DNB would not discuss their WACC and therefore we have not been able to find the specific reasons for the differences. Nonetheless, one explanation could be that DNB is using DEBT instead of NIBD in the weighted average. We believe NIBD gives the best result in the construction industry since the industry is characterised by having a lot of financial assets and a negative NIBD is not uncommon, which is shown by two companies having negative NIBD and this number was three using 2013 numbers\textsuperscript{235}.

We believe the difference in WACC between the six companies is fairly low because capital structure and discount rates are such essential competitive factors that the companies already focus on minimizing them. Thereby it’s hard to obtain and keep and advantages on this point, however, it is still crucial to have a competitive WACC to be able to compete in the future and a continuous focus on keeping the WACC low is important.

According to our calculations, Veidekke’s capital structure generates a competitive WACC at the moment, and we do not see the capital structure as a critical part of Veidekke’s business model. On the other hand, Veidekke’s WACC presented by DNB is fairly higher than the other companies which could indicate a problem. Nonetheless, it is important to continuously work on having an optimized capital structure.

\textsuperscript{235} Appendix 7,10 and 11 on CD-ROM
6 RECOMMENDATIONS
In this chapter we are going to gather the most important findings from our strategic and financial analysis, and based on these findings, we will present our recommendations for Veidekke. The chapter will start out with a strategy map, giving a clear overview of Veidekke’s strategic and financial situation, compared with their competitors. Following, we will present Veidekke’s Business Model Canvas\(^{236}\). The canvas is included because it describes Veidekke’s core business model and how they generate value in a simple and comprehensible way. After the Canvas is presented, our recommendations will be categorised according to the Canvas building blocks, to give a clear overview of why our recommendations are proposed and where the recommendations stem from.

6.1 Strategy map
In this section we will present our strategy map, mapping out where Veidekke and their competitors are situated in the construction market, in terms of competitive scope and degree of geographical diversification. The intent of the strategy map is to define the companies’ competitive situation. The map has two parameters: 1) competitive scope and 2) the degree of geographical diversification. The competitive scope relates to the number of a company’s offered products and services. The degree of geographical diversification relates to how diversified a company is, in terms of how many different geographical markets the company operates in. Further, to show the degree of relative profitability, we have chosen to include a table in the map with profit margins before tax from 2013 and an average profit margin before tax between 2007 and 2013. The map is not based on any theoretical models, but is our own creation. The intent of the map is not to show where a company should be placed in the market, but rather to describe the market situation using common criteria, and thus be able to show the differences between competitors. Our strategy map can be seen below.

\(^{236}\) Osterwalder et. al, 2012, Business Model Generation
The most important characteristic of the construction market, found from our strategy map, is that all of the companies are located above the middle line of competitive scope. In other words, the construction industry requires companies to have a rather broad scope of products and services. Not only is the relatively broad competitive scope important to be competitive, but the broad scope also secures a diversification of risk. As mentioned in the strategic analysis, Veidekke’s competitive scope (as defined by Porter) is very normal for the construction industry in Norway. AF Gruppen is the company that differs from the companies established in Norway as they have an offshore segment. With regards to profitability, there does not seem to be any connections between the level of competitive scope and profit margin. On average, AF Gruppen achieved the highest profit margin before tax and Hochtief achieved the second lowest profit margin before tax, and the two companies represent highest degree of competitive scope.

Considering the degree of geographical diversification, the companies are more spread out on the map, implying a larger difference of geographical market presence. As the companies we have chosen to analyse are not perfect peers, this is an explanation of the wide range of
geographical presence. However, we believe it is important to show the wide range of size in the market and give a description of the companies that currently are some of the most important players in the Norwegian construction market.

AF Gruppen and Hochtief represent the two different sides of the geographical differentiation scale, with AF Gruppen being the least and Hochtief being the most geographically diverse, with Hochtief essentially being a global firm that is represented worldwide. Looking at the profit margins achieved by the two companies, this indicates that geographical diversification does not necessarily result in a higher profitability. Hochtief achieved the second lowest profit margin before tax between 2007 and 2013 of the group, while AF Gruppen achieved the highest profit margin before tax. However, as Skanska and NCC both are relatively diverse and achieved the second and third best profit margin in the time period, this can be an indication of the opposite.

For Veidekke, our financial analysis shows that the company had the lowest profit margin before tax in 2013. They are also one out of two companies that has a lower profit margin before tax in 2013, compared to the average of the time period. From the analysis of our map above, we can conclude that there is no optimal area to be located in, as there is no clear connection between profitability and the degree of competitive scope.

The map also points to the difference between what in the financial analysis was defined as two different cost groups of sub-contractors. While the group with the highest percentage share of sub-contractors (Hochtief, NCC and Skanska) is located in the “international diversification” box, the other group (Veidekke, AF Gruppen and Implenia) is located in the “domestic diversification” box. This implies that a high degree of geographical diversification can be an explanatory factor of the different utilisation of sub-contractors. Further, if we were to place sub-contractors on our strategy map, they would be located in the domestic-narrow box, showing how the international groups can complement their size with local presence.

To sum up, we have three main conclusions from our strategy map. First, the construction industry requires a broad competitive scope as none of the companies are located below the middle line. Second, there does not seem to be any connection between Veidekke’s relatively
low profitability and its position in the industry measured on these two axes. Moreover, these two conclusions confirm that there is no perfect position in the market, as different placements generate different levels of profitability. Finally, we found that the companies can be divided into two cost groups, with the three most international companies utilising a larger share of subcontractors.

### 6.2 Veidekke’s Business Model Canvas

In this section we are going to present Veidekke’s Business Model Canvas. Osterwalder & Pigneur’s model is a concept that easily allows us to describe and consider Veidekke’s business model and works as an inspiration to create new strategic alternatives. The model has been praised for its simplicity and practice-orientation. On the other hand, the model has been criticised for its lack of competition analysis, the lack of a box describing competitive advantage and a problem of understanding how to fill the boxes. However, as we have performed a solid analysis of the competition and competitive advantages, we argue that our view of Veidekke is solid enough to use the model in a meaningful way.

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237 Osterwalder et. al, 2012, Business Model Generation
238 Ching & Fauvel, 2013, Criticisms, variations and experiences with Business Model Canvas
239 Kraaijenbrink, 2012, Three shortcoming of the Business Model Canvas
240 Maurya, 2010, Why Lean Cancas vs Business Model Canvas?
241 Ching & Fauvel, 2013, Criticisms, variations and experiences with Business Model Canvas
Veidekke’s business model canvas is presented above with our main points in each of the building blocks. We will now go through all of them and describe why we find these points to be the most important features of Veidekke’s present business model.

**Key partners**
Veidekke’s key partners are its different strategic alliances. First of all, suppliers are essential partners whom Veidekke prefers to enter long-term relationships with. Further, cooperation with other firms, such as Hochtief, is important because the companies can merge their strengths in order to be competitive together in a project. Joint ventures are also especially important for Public-Private-Partnerships as described in the strategic analysis.

**Key activities**
We have defined Veidekke’s key activities in terms of what is most important for them to be able to perform their offered products and services. First of all, the bidding processes in which

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**Figure 22: Veidekke’s Business Model Canvas. Osterwalder & Pigneur’s template is downloaded from [www.businessmodelgeneration.com](http://www.businessmodelgeneration.com)**
they get contracts are essential for the business, both securing revenue and profits. Second, without R&D a construction company is not capable to deliver state of the art production with the most efficient and environmental friendly solutions. Third, we argue that strong relationships, both internally and externally, are very important for Veidekke to have satisfied employees, satisfied recurring customers and strategic partnerships.

**Key resources**
For Veidekke, and any other construction company, we argue that the most essential resources are human resources and capital. Without any of these Veidekke will not be able to perform its key activities. One might say that capital is the only essential resource, as capital can be used to acquire human resources. However, we believe it is important to have highly motivated and capable employees, and money is not the only factor when recruiting personnel.

**Cost structure**
Veidekke’s cost structure can be defined as in between cost-driven and value-driven. This is because cost is mainly the most important feature when creating value for customers, because customers want projects with quality for the lowest price possible. On the other hand, Veidekke’s cost structure can be characterised as value-driven because of their local presence which offers an extra value for their customers. Further, R&D is conducted, not only to be able to deliver streamlines production, but also to secure energy efficient products. The characteristics of the cost structure involve both fixed and variable costs, as well as economies of scale and scope.

**Value proposition**
Veidekke performs construction services for their customers, by building roads, buildings etc. What we argue is Veidekke’s value proposition when conducting these services is 1) an advantage in both been large (on the Norwegian market) and holding a great local knowledge in smaller geographical areas, 2) because they are large and local, Veidekke can customise each project (independently of size) because they have local knowledge required when planning and designing a contract and 3) Veidekke’s focus on risk reduction, in terms of their upper limit on sub-contractors, gives their customers a security both with regards to the timing, quality and implantation of projects.
Customer relationships
Veidekke creates long-term relationships with their customers. This is first of all normal in the industry as most projects span over a long time period. But, it is also important because Veidekke often does maintenance work on their delivered projects, giving them a long-term relation with their customers. Further, Veidekke also has strategic partnerships with their public customers. Another important feature of Veidekke’s customer relationships is that Veidekke can provide local expertise and local presence for their customers all over the Norwegian market. This is significant because they are able to establish both long and strong relationships with their customers.

Channels
The channels a construction company can reach their customers through are limited, compared to for example the retail industry. The only exception is Veidekke’s property development division that has eight sales offices in Norway. But, the most important channel Veidekke can use in their value chain is the sale and marketing division, which creates and offers contracts to possible customers. Another important channel, is the public procurement process and to some degree commercial projects, where construction companies can bid on projects. Further, we argue that customer relationships are an important channel in the industry as close relationships may result in early information from customers who are considering projects.

Customer segments
Veidekke has three different customers segments. First, their public customers whom consist of 35% of Veidekke’s total revenue. Second, commercial customers, that include companies and other industrial competitors, using Veidekke as either their contractor or to cooperate on projects. Third, private customers are customers who buy private housing or products/services for private use.

Revenue streams
Veidekke’s revenue streams are mostly characterised by transaction revenues generated by asset sale with one-time payments which are divided into several payments over the time horizon of a project. For a single project, for example building an office building, the price of the project is determined in a contract and the payment will most likely happen along with completion of steps in the building process. Veidekke has recurring revenue streams for example if they get a maintenance contract for a stretch of road, but mainly we define the revenue streams as
transaction revenues. The pricing mechanisms of Veidekke’s revenue streams can be defined as dynamic pricing, where the prices change accordingly to market conditions and the scope of each project.

To sum-up Veidekke’s Business Model Canvas, Veidekke creates value for its customers by being both large and local with risk reducing production measures. Veidekke has three different customer segments, which can be reach through different channels. One of the most important channel and part of key activities is Veidekke’s strong and local relationships with both customers and partners.

6.3 Recommendations
We have just presented the main characteristics of Veidekke’s business model as we define it today. In this section we are going to present what we believe is some important recommendations for Veidekke, to optimise their business model and be competitive in the Norwegian construction market. The recommendations will be presented in the Business Model Canvas building blocks, so that it will be easier to understand why we recommend the initiatives and where they stem from.

Key partners
Entering into strategic partnerships with foreign market entrants can be a risky business for Veidekke, as the Norwegian construction industry is as competitive as it is. Entering into a partnership with a foreign competitor is the same as welcoming them into the market and giving them experience and knowledge on how to operate. However, companies such as Hochtief are experienced companies that are located around the world, and if Veidekke does not enter into a partnership with Hochtief, another company will do it or maybe they will enter on their own.

There is a large risk when welcoming more competitors into the market, but we argue that the benefits will be larger in the long run. A possibility could be to have a mutual agreement in the future, where Veidekke cooperates with foreign companies and help them with demanding projects Veidekke has valuable knowledge about. Especially Implenia and Veidekke could have a mutually beneficial agreement in an R&D alliance as both of their domestic countries are
characterised with mountainous terrain. Lastly, the upside of cooperating is limiting risk on individual projects since the total risk is shared between two or more companies. The private-public partnerships are very important to focus on, just as Veidekke is doing today. As the new government puts emphasis on both developing infrastructure and the use of more private companies, it is important to maintain in a position where Veidekke can get these contracts.

Veidekke prefers to go into long-term contracts with suppliers, and this is positive as it brings along economies of scale. However, as the total operating costs as a percentage of revenue has increased from 95% to 97% between 2007 and 2013 we believe it might be beneficial to make sure that the current deals are the most valuable for Veidekke, since an effective cost structure is essential to stay competitive.

**Key activities**
In terms of key activities, we do not have any special recommendations except for an emphasis on the need of a sharp and efficient bidding process. This is essential because it firstly generates revenue and second a good bidding process ensures that projects actually generate profits too. Further, we believe that Veidekke is a solid R&D company which has been a forerunner in doing research of streamlining the production phase. However, just because one is good at something does not mean that one should not expand. As mentioned above, we do believe it could be beneficial for Implenia and Veidekke to enter a strategic R&D alliance.

**Key resources**
Human resources are the most valuable assets most constructions companies have, and Veidekke is no exception. Veidekke has a strong culture of creating an ownership feeling for its employees by having employees as co-owners of the company, and according to principal agent theory this is a good measure of securing motivation among employees\(^\text{242}\). Considering recruitment, Veidekke is doing a good job with recruitment of both employees with a craft certificate and employees seeking to enter a career within construction. As mentioned, in the 2013 Veidekke was the number one apprentice company. However, Veidekke has a challenge in terms of recruitment of engineers, and there is a shortage of supply of engineers in Norway. In the list of preferred employers for engineering students, Veidekke ranks at the bottom and far

\(^{242}\) Hendrikse, 2003, *Economics and Management of organizations: Coordination, Motivation and strategy*
behind its competitors. The position is also reflected by a negative trend during the recent years. If Veidekke does not do anything about this critical development, it will be very difficult to produce state-of-the-art technology and production processes in the future. We therefore recommend that the HR division should implement initiatives to improve the reputation among students.

From our macro analysis, we found that there is a decreasing trend of applicants in craft studies. If this trend continues it will be a serious problem for all companies in need of professional craftsmen. As a result of this, we recommend that Veidekke should, preferably in cooperation with other construction companies, initiate campaigns to increase the popularity of this field of study.

Our third chapter contains an analysis of Veidekke’s capital structure. The aim of the analysis was to determine whether Veidekke needs to improve their capital structure, in order to ensure that their discount rate is competitive relative to their competitors. Our analysis showed that the discount rates among competitors in the construction industry are very similar, and that Veidekke does not need to adjust their capital structure to be competitive at the moment. However, without a competitive discount rate construction companies are not able to offer competitive contracts to their customers, so our conclusion stresses the importance of continuous work regarding an optimization of capital resources.

**Cost structure**
Veidekke’s cost structure has characteristics of being both cost-driven and value-driven. On one side, this dual-side cost structure creates a solid brand among customers. When Veidekke gets a contract, meaning that they have delivered a cost-competitive bid, their customers know that the product/service they acquire will be of high quality. On the other side, when Veidekke is in a position between being cost-driven and value-driven, it can be hard to compete with foreign new entrants in a market that is highly focused on cost. During the last years, Veidekke has implemented several measures to streamline its production, mainly to reduce the risk of miscalculating production costs. We believe that this is a very important focus, and something Veidekke should keep on working on. From our cost analysis we found that Veidekke’s total operating costs as a percentage of revenue have increased from 95% in 2007 to 97% in 2013, an explanatory factor of the decreasing profit margin. As the post “other operating expenses” has increased with 3% in the time period, we strongly recommend a revision of this post to have awareness of the cause of the increase and possibly lower it again.
Further, the variable cost of using sub-contractors has decreased from 2012 to 2013, likely a cause of Veidekke’s upper limit on sub-contractors. We believe this is an important measure for the company, both in terms of risk reduction and in terms of quality for the customers and the society (i.e. social dumping). However, we recommend that while decreasing the number of sub-contractors is a good idea, it is important to keep using sub-contractors both to get special knowledge on certain projects, and to scale the company up and down during business cycles.

**Customer segment**
As many of the foreign competitors are cost focused and can win projects in the very cost-focused public procurement processes, there is a risk of Veidekke (and other established companies) loosing parts of their public sector customers. The segment consists of 35% of their total customers, and is defined as a segment with little or no financial risk attached. When 35% of the company’s revenue is generated from customers with low risk, it is important to make sure this segment is not decreased since this could lead to increasing cost of capital. We argue that the cost-driven structure will be a better match with regards to the public customer segment.

The private segment mainly comprises customers from the property development sector. From our segment analysis we also found that in-house property development is by far the most profitable segment for the construction companies, and this is a segment which has good potential in positive business cycles. However, the segment is highly affected by economic conditions which lead to a higher risk.

As mentioned in the segment analysis, Veidekke’s integrated value chain provides an opportunity of entering material-partnerships with foreign companies that have their integrated material supply located in their domestic country and local companies without an integrated value chain. As an example, Implenia is one of the companies with an integrated value chain, as they produce materials in Switzerland. We therefore argue that Veidekke not only should use partnerships to cooperate, but they should seize the opportunity of having partners as a fourth customer segment.

**Revenue streams**
We know that Veidekke’s revenue has increased with 13% from 2007 to 2013, and after the dip of the financial crisis the revenue increased with 40% from 2009 to 2013. This is good.

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243 Veidekke, 2013, *Annual Report*
However, with a decreasing profit margin we want to stress a cost focus for Veidekke, so that the revenue they generate will be more profitable. The profit margin before tax of 3.2% in 2013, is 3% lower than the profit margin before tax in 2007, and compared to the competitors, Veidekke and NCC are the only companies with a lower level of profit margin today compared to the start of our chosen time period. Specifically, we recommend that Veidekke should improve their utilisation of assets, as our analysis has shown the importance of this ratio, in terms of generating a good return on invested capital. The segment analysis showed that the entrepreneur segment is the cause of the low profit margin, as real estate especially was a much stronger contributor to EBIT. In light of this, we believe that it is important to place the cost focus in the entrepreneur segment, especially, as this by far the largest segment (measured by revenue).

The dynamic pricing mechanism makes is difficult for companies to foresee the cost of materials and human resource in the future. But, as mentioned under cost structure, we believe Veidekke is in need of a stronger cost-driven structure to be able to deliver profitable revenue in the future.

**Value proposition**

We would like to add three value propositions to Veidekke’s business model. First, we argue that the company should have a stronger focus on attracting the best engineers in the industry to secure long-term growth and focus on attracting young towards craft studies. Second, we argue that Veidekke should have a stronger focus on costs, both to secure a competitive position in the market and to turn a decreasing trend of profitability, especially in the entrepreneur segment. Furthermore, a leaner cost structure will make them less vulnerable to economic downturns. Finally, we argue that partnerships are important in a pressured industry, and Veidekke should use partnerships both for R&D, cooperation and as customers.
7 Conclusion
We will now conclude our thesis, by answering the research questions and the problem statement.

The macro factors affecting the construction industry are generally pointing towards an increase in construction demand. Most importantly, on one hand we have argued that a recovery in the European economy will be a beneficial factor for the industry. As the competition in the Norwegian construction industry has increased, due to many new entrants in the market, we argue that a recovery in Southern Europe will to some extent lessen the pressure previously seen in the Norwegian market. Furthermore, better economic conditions will ceteris paribus create a higher demand for construction. On the other hand, the Norwegian Transport Plan will allocate more public funding to infrastructure, a factor both pointing to an increase in demand, but also a factor that will uphold the attractiveness of the Norwegian construction industry. While the Transport Plan is positive for the industry, the public procurement process makes it easy for foreign new entrants to remain in the market. In sum, we believe the level of competition regarding public projects will remain at its current level.

We define Veidekke’s strategic position as broad, both in terms of competitive scope and their dual-focus strategy of cost and quality. However, they do not clearly differ from their competitors. Veidekke’s main advantage is that they are both large and local. Further, Veidekke is good at developing their processes through R&D. 20% of Veidekke’s shares are owned by employees, reflecting upon Veidekke’s focus on human resources. On the other hand, we have found that Veidekke is a relatively unattractive employer among engineer students. In addition, the decreasing trend of choosing craft studies can be worrying in the long run.

Financially, Veidekke has experienced decreasing profit margins since 2007. Before the financial crisis, Veidekke was the most profitable company. However, due to an increase in costs and a small decrease in asset turnover, Veidekke was in 2013 the least profitable company in our analysis. While Veidekke’s profitability is unsatisfying, they have a relatively solid liquidity. In the same period, AF Gruppen has managed to both increase their profit margin and their asset turnover, resulting in the highest return on invested capital. Results from the first quarter of 2014 show that Veidekke increased turnover and profitability. Although the profitability has improved in the first quarter, it is hard to conclude if this is a new trend on the
basis of quarterly numbers. Our financial analysis does not give us any reason to believe that the new market entrants will pull back from the Norwegian market. Across all companies, real estate is the most profitable segment, but also the segment most sensitive to business cycles. In general, the construction segment is the largest, however, also the least profitable segment.

In the capital structure analysis we found that the difference between the companies’ discount rate was minimal. In other words, Veidekke’s capital structure is currently generating a competitive WACC and our analysis show that all the companies are focusing on this and therefore it is hard to use the WACC as a competitive advantage.

All of the above findings have led us to the following recommendations for Veidekke, in order for the company to be competitive in the Norwegian construction industry:

First of all, we recommend that Veidekke should implement a stronger cost focus. The main cause of their decreasing profit margin is due to an increase in operating costs. Especially the item “other operational expenses” needs to be revisited, as this post has increased drastically. As the entry of foreign competitors, after the financial crisis, has increased the rivalry among competitors in the industry, we argue that it is important for Veidekke to have a more lean cost structure in order to be competitive. This is especially enhanced by the public procurement process, in which competition is mainly based on price.

Second, we recommend that Veidekke should face the competition of foreign companies by entering strategic partnerships. This is a way of coping with the pressured competition, and we believe Veidekke should both cooperate on projects as well as enter joint ventures. We also believe that it will be beneficial for Veidekke to enter a R&D partnership with Implenia, as the two companies can benefit from mutually valuable knowledge on doing construction in difficult terrain. Furthermore, Veidekke should seize the opportunity of being a supplier of industrial material to other companies.

Finally, we recommend that Veidekke should improve their reputation among engineer students as they at the moment are ranked far below their competitors, and there is a shortage in supply
of engineers. In addition, Veidekke should initiate a campaign focusing on attracting young students towards craft studies to accommodate the risk of future shortage of craftsmen.
8 Bibliography


9 Appendix
(Appendix 5-16 can be found on CD-ROM)

Appendix 1 - FORMULAS

Return on invested capital:

\[ \text{ROIC} = \frac{\text{Net Operating Profit after Tax (NOPAT)}}{\text{Invested Capital}} \times 100 \]

\[ \text{ROIC (before tax)} = \frac{\text{EBIT}}{\text{Invested Capital}} \times 100 \]

Profit margin:

\[ \text{Profit margin (PM)} = \frac{\text{NOPAT}}{\text{Net revenues}} \times 100 \]

\[ \text{Profit margin (PM) before tax} = \frac{\text{EBIT}}{\text{Net revenues}} \times 100 \]

Turnover rate of invested capital:

\[ \text{Turnover rate} = \frac{\text{Net revenue}}{\text{Invested capital}} \]

Return on equity:

\[ \text{ROE} = \frac{\text{Net earnings after tax}}{\text{Book value of equity}} \times 100 \]

\[ \text{ROE} = \text{ROIC} + (\text{ROIC} - \text{NBC}) \times \frac{\text{NIBD}}{\text{BVE}} \]

\[ \text{NBC} = \frac{\text{Net financial expenses after tax}}{\text{Net interest bearing debt}} \times 100 \]

Financial leverage:

\[ \text{Financial leverage} = \frac{\text{NIBD}}{\text{BVE}} = \frac{\text{Net interest bearing debt}}{\text{Book value of equity}} \]

Current ratio:

\[ \text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} \]

CFO to short-term debt:

\[ \text{Cash flow from operations (CFO) to short term debt} = \frac{\text{Cash flow from operations}}{\text{Current liabilities}} \]

Financial leverage:
Financial leverage = \( \frac{Total\ liabilities}{Equity} \)

Solvency ratio = \( \frac{Equity}{Total\ liability + equity} \)

**Interest coverage ratio:**

\[ Interest\ coverage\ ratio = \frac{Operating\ profit\ (EBIT)}{Net\ financial\ expenses} \]

\[ Interest\ coverage\ ratio\ (cash) = \frac{Cash\ flow\ from\ operations}{Net\ financial\ expenses} \]

**Cash flow from operations to debt ratio:**

\[ CFO\ to\ debt\ ratio = \frac{Cash\ flow\ from\ operations}{Total\ liabilities} \]

**Capital expenditure ratio:**

\[ Capital\ expenditure\ ratio = \frac{Cash\ flow\ from\ operations}{Capital\ expenditures} \]
### Appendix 2 – Stern Synthetic Rating Estimation

#### Inputs for synthetic rating estimation

Please read the special cases worksheet (see below) before you use this spreadsheet.

**Before you use this spreadsheet, make sure that the iteration box (under calculation options in Excel) is checked.**

Enter the type of firm: 1 if large manufacturing firm, 2 if smaller or riskier. Small: <35 billion.

- **Do you have any operating leases or rental commitments?**
- **Enter current Earnings before interest and taxes (EBIT) =**
- **Enter current interest expenses =**

#### Output

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#### For large manufacturing firms

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For the calculation of interest coverage ratio, please visit http://www.bondzonline.com.
Good morning Mrs. Jørgensen,

all outstanding HOCHTIEF bonds are not externally rated. The market sees HOCHTIEF as a kind of cross over credit meaning one rating investment grade and a second rating being allocated in the non investment grade area. Due to our activities in domestic and international capital markets we have not felt a particular need yet to have an external credit rating. Please contact me for any further questions and / or comments. And last but not least all the best for your Master Thesis!

Kind regards
Stefan Zander

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mailto:stefan.zander@hochtief.de
www.hochtief.de
Appendix 4 – Mail correspondence with AF Gruppen’s CFO

Fra: Sverre Hærem
Emne: SV: Masteroppgave om den norske bygg- og anleggsindustrien
Dato: 28. mai 2014 16:40:22 GMT+02:00
Til: Rikke Hegge Jørgensen

Hei Rikke

Vi har ingen som har kjørt noen offisiell credit rating på oss.

Med vennlig hilsen
Sverre Hærem
Konserndirektør/CFO

AF Gruppen
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--- Opprinnelig melding ---
Fra: Rikke Hegge Jørgensen [mailto:rikke.h.jorgensen@gmail.com]
Sendt: 28. mai 2014 14:06
Til: Sverre Hærem
Emne: Masteroppgave om den norske bygg- og anleggsindustrien

Hei Sverre,

Jeg har skrevet til deg tidligere, da jeg skriver en masteroppgave om Veldekk og den norske bygg- og anleggsindustrien. AF Gruppen er i den forbindelse en av selskapene som blir analysert som peers.

Mitt spørsmål er om det finnes noe credit rating på AF Gruppen? Jeg har tatt kontakt med analytikere fra DNB Markeds og Danske Bank, men ingen av de har credit analyser på dere.

Hadde satt utrolig stor pris på hjelpen!
Ønsker deg en fortsett fin dag :) 

Mvh: Rikke H. Jørgensen