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## THE LIQUIDITY CRISIS IN 2008

A case study of how the financial crisis, in 2008, influenced the liquidity management in Norwegian companies. In cooperation with: Statkraft AS, Orkla ASA, Telia Norge AS and Equinor ASA.

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## **Executive summary**

The economy of the United States of America experienced a longer period of growth and optimism around the millennium. Increased confidence in the financial markets led to low risk aversion by the investors, while the increase grew in line with the rising house prices. In 2008 the bubble exploded, the money market froze and the world stood above one of the most chaotic financial periods since the 1930s. The crisis also affected the markets in Norway; therefore, it is appropriate to study the impact of the financial crisis on the liquidity management of the Norwegian companies. It is this financial area that is largely reflected in the research literature. To study how the financial crisis in 2008 has affected the liquidity management in the Norwegian companies, we have conducted a case study with four Norwegian companies. We chose to use interviews as method in our case study. In this way, we have gained experiences about the impact of the financial crisis on the companies' liquidity funds, financing, risk assessments and changes in how the liquidity management takes place in practice.

The case study has revealed several factors that increased the focus of the Norwegian companies after the financial crisis. The analysis shows that the companies experienced more uncertainty compared to the banks, which were considered less solid during the crisis. This resulted in a desire to reduce the bank exposure and diversify the loan sources, and utilizing the internal capital to an even greater extent. Several of the companies initiated projects of the working capital to free up internal capital. The data collection revealed that the companies wanted to secure a buffer in case the markets in Norway were shut down. For this reason, several of the companies increased their facilities in the banks as an added security. In this way, the study emphasizes the importance of credit facilities as sources of capital from the banks in crisis such as the financial crisis in 2008.

## **Acknowledgements**

With this master thesis, we complete our Master of Science (M.Sc.) in Business at the BI Norwegian Business School. This master thesis started with a great interest in and desire to acquire more knowledge about the liquidity management in Norwegian companies. It has been a long and educational process, and marks the end of a five-year study collaboration.

We have had many supporters with us on the road, and would like to give a big thank you to everyone. The process had not been the same without the support from family and friends. We are endlessly grateful for their continuous support during our studies. Most importantly, we would like to thank the four companies who took the time to cooperate with us, and especially a big thank you to the informants who had the opportunity to discuss our research question in the interviews, and were flexible and helpful throughout the process. It has been incredibly inspiring and educational to talk with people who burn for what they work with, and manage to convey the complexity of liquidity management in an educational and engaging way. A very big thank you goes also to our supervisor, Salvatore Miglietta, for his good input and contribution to the work of this master thesis. He has provided us with valuable insight and taken the time for meetings, as well as answering e-mails along the way.

Thank you!

Oslo, 24.08.2018

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# CHAPTER 1

## INTRODUCTION

In this chapter, we present the background and the development of the subject liquidity management, and we explain why we think it is an interesting topic to study. Furthermore, we present the main research question of this case study. We also present the underlying research questions that we think are appropriate for answering the research question. We then make some considerations about the limitations of the study and clarify key concepts, before we finally present the structure of this case study.

### 1.1 Background

Liquidity management is an important part of the financial strategy of any company and it is necessary to have a good liquidity strategy to have control on deposits- and payoffs payments. In companies with large variations in cash flows, projects, investments and significant loan maturities, the liquidity management will then be extra demanding. This is often seen in periods with disturbances in the financial markets or if the company experiences changes in the financial framework conditions. During the financial crisis in 2008, the liquidity management gained renewed interest, as access to external financing was abruptly limited.

Liquidity management is by no means a new concept, but it was with the financial crisis, in 2008, that the liquidity management gained the focus. The theories and the discussions about liquidity management extend back to the *General Theory* of Keynes (1936). Keynes argued for the tight link between liquidity management and financial limitations, claiming that the liquidity management of a company depends on the access to external financing. For a company that is not financially limited, and therefore has unlimited access to the external capital market, the liquidity decisions will be irrelevant. According to Keynes, it is only when the costs associated with acquiring external capital are higher than by holding capital internally that liquidity decisions become interesting.

It was at the beginning of the great depression, in the 1930s, that the first research on liquidity management was conducted (Acharya et al., 2007). The leaders were,

before, primarily concerned of choosing the right financial tools and to see what impact they had on the capital structure of the company. After the earnings of the companies were sharply reduced during the great depression, where several of the companies with high debt went bankrupt, the focus was on the importance of good liquidity management. It was common practice to prepare liquidity forecasts and budgets to have sufficient liquidity so that the companies maintained both the profitability and the solidity. For the first time, the cash flows were devoted the attention from the managers as much as the profits.

The most important development in the field of liquidity management occurred in the 1950s, and it was mainly American companies that were listed first. From the 1950s to the 1980s, there were numerous theoretical contributions, and great progress was made. Mainly, the developments in cash holdings, deposits and payoffs, planning and budgeting of cash occurred (Acharya et al., 2007). The focus was on the company's management of the liquid funds and the spotlight was on the importance of effective liquidity management and good follow-ups of the liquidity in periods of fluctuations in earnings and disturbances in the markets.

Recent research on liquidity management has focused on the value liquidity adds to a company. Among other things, Acharya, Almeida & Campello (2007) claim that liquidity gives a company valuable financial flexibility. They also point out that cash holdings are an important part of the optimal financing structure of a company. According to Acharya et al. (2007), a large part of the recent research shows that the management of cash holdings is empirically associated with corporate value, growth opportunities, corporate risk and performance. The research points out the importance of liquidity management as a research area in the future too. Among other things, it appears that there has been a development in the financial markets in the recent years that has influenced how companies control the liquidity. The financial crisis in 2008 has also emphasized the importance of focusing on liquidity management. The crisis replaced the focus on earnings with the focus on liquidity. They point out that the crisis marked the end of the time with easy access to liquidity for most of the companies and the beginning of a situation where financial markets were no longer able to guarantee access to financing. Increased focus on liquidity and risk assessments also caused major changes in the working days of a treasurer, from repetitive administrative work with liquidity management, to become a key part of the strategic function to

ensure the liquidity of the company and to map the risk profile of the company.

## **1.2 Exposition of the research question and the underlying research questions**

Liquidity management is a relevant theme in the companies, especially in the troubled companies. Liquidity management is referred as difficult, and the globalization and the recent international crises have made it even more difficult for small and large companies to keep track of the cash flow. The financial crisis in 2008 is a crisis that led companies to prioritize their liquidity management. Norway is a country that became less affected by this crisis than many other countries. This is the main reason why the effects the crisis had on Norwegian companies has not been studied. It has previously been researched, among other things, how the financial crisis hit the Norwegian banks and how the crisis affected the economic developments. Based on this, we want to study the liquidity management of the Norwegian companies and analyze how the financial crisis affected this. This has led to the development of the following research question:

*«How has the financial crisis, in 2008, influenced liquidity management in Norwegian companies?»*

To answer the research question, it is necessary to operationalize this in several underlying research questions. These questions will help reveal the various aspects of the research question. To arrive to the underlying research questions, it is necessary to consider the elements the liquidity management of a company consists of.

First and foremost, it is important that the company is liquid, thus that the company has sufficient funds to operate liabilities on maturity. This requires the implementation of budgets and forecasts, as well as assessments related to the placement of liquidity to ensure optimal utilization. Liquidity management will therefore provide security to the company, in the form of available capital. The strategy for the liquidity management must also be consistent with the strategy of the company. What is emphasized by, for example, the security or the flexibility is determined by the role of the liquidity management as part of the strategy, and the goals the company has with liquidity management. In addition, assessments of the liquidity of the company can ensure more efficient management, and in the way,

contribute to improved profitability. Furthermore, the liquidity management also consist of assessing expected borrowing needs and repayment ability to capitalize on investment opportunities. Based on these elements, we have prepared four underlying research questions, which are further specified in some subcategories.

The underlying research questions can be seen in the table 1.

<b>Underlying research questions</b>
<p><b>How has the crisis affected the liquidity management as part of the financial management?</b></p> <ul style="list-style-type: none"> <li>- Which role does the liquidity management play in the financial strategy?</li> <li>- What is the purpose of the liquidity management?</li> </ul>
<p><b>How has the crisis affected the processes of the liquidity management?</b></p> <ul style="list-style-type: none"> <li>- Which methods are used to manage the liquidity?</li> <li>- How does the company control the liquidity management in its subsidiary companies?</li> <li>- Is there a best practice for liquidity management?</li> </ul>
<p><b>How has the crisis affected the procurement and the management of available capital?</b></p> <ul style="list-style-type: none"> <li>- How is the surplus liquidity placed?</li> <li>- Which sources are used to raise capital?</li> <li>- Which relationship does the company have with the banks?</li> </ul>
<p><b>How has the crisis affected the assessments related to liquidity and risk?</b></p> <ul style="list-style-type: none"> <li>- How does the company assess and manage different types of risk?</li> <li>- Which assessments are used to follow up the liquidity?</li> </ul>

Table 1: The underlying research questions of the case study.

### **1.3 The limitations of the study**

The financial crisis also had an impact on the period after the year 2008. An example is the global economy that experienced strong cyclical fluctuations. We have therefore chosen to base the case study on a time perspective of eleven years, from 2006 – 2017. The main reason for this selection is to show the boom many companies experienced the years before the financial crisis began in September 2008, and how the disturbances after the crisis have affected the liquidity management until today.

In preparation for the study we were met with great interest from several of the

companies we contacted. Due to limitations related to time and resources, we chose to set a limit on four companies, to get the most profound knowledge. Since the banks have been the subject of much of the previous research on Norwegian conditions, we chose to focus on the liquidity management from a corporate perspective. Because of the central role of the banks during the financial crisis, we therefore choose to include some considerations about how the relationship between the companies and the banks changed after the crisis.

#### **1.4 Clarification of key concepts**

The research literature consists of the concepts liquidity management and cash management. Liquidity management is expected to have sufficient liquid funds to meet current needs. Cash management is often referred to as optimizing the mechanisms for deposits and payouts (Ross, Westerfield & Jaffe, 2013). This study addresses both fields, and we will use the concept liquidity management further in this study. The purpose of the liquidity management is to balance the benefits of having liquid funds available to meet liabilities, and avoid insolvency against alternative costs due to lower returns. According to Ross et al. (2013), it would be an appropriate strategy to have enough liquid funds to continuously fulfill the liabilities when they expire, and invest some of the surplus liquidity in transferable securities to secure themselves. The remaining surplus liquidity should be added to the company, or paid in dividends. This strategy includes all work areas for the treasury department of a company; management of the cash flow, financing of M&A activities, placement of the surplus liquidity and financial risk assessment and management.

The research literature often uses the concept cash. This cannot be directly translated into cash, as it is a collective term that includes cash, credit lines and other highly liquid funds. The companies that participate in this study often also use this concept. Further in this study, we have chosen to use the concept liquid funds there where the research and the companies use the concept cash.

#### **1.5 The structure of the case study**

This master thesis consists of totally seven chapters. The first chapter gives an introduction of the theme, and presents both the research question and the underlying research questions of this case study. Part two addresses the theoretical

foundation, and in part three the research methodology, the strategy and the design of the study are presented. Part four presents the companies that are participating in the study, their economic development during the period that we have chosen to study, as well as an explanation of why these companies are relevant to the study. Then, in part five, we analyze the data that we have collected from the companies. Part six consists of our discussions and interpretations of the analysis, while the seventh and the final chapter is devoted to answering the research question, as well as explaining the implications, the limitations and further research of the study.

# CHAPTER 2

## THEORETICAL FRAMEWORK

This chapter is dedicated to the theoretical framework that forms the basis for the study. Liquidity management, and its importance as part of a company's financial management, is also dependent on assessments related to finance and profitability. Therefore, we initially present the overall financial management of a company, and the three components it consists of; finance and solidity, profitability and liquidity. Furthermore, we focus on liquidity management, and explain relevant theory related to liquidity planning and liquidity assessment, placement of liquid funds, internal and external capital procurement and risk management. In the last section of this chapter we present the financial crisis in 2008 and how this has affected the liquidity management.

### 2.1 Financial management - contributes to the creation of value in a company

A central part of the financial management in a company is decisions related to investments and how these will be financed to increase the value of the owners, as well as the management of the company's cash flow to ensure the company's ability to pay daily (Berk & DeMarzo, 2014). The purpose with the financial management is to ensure that the company's short-term and long-term goals are within range, combining forecasts for earnings with financing- and investment decisions. According to Berk & DeMarzo (2014), finance is the foundation for making targeted decisions regarding capital procurement and capital utilization, and therefore plays a key role in a company's financial management. The decisions are based on economic analyzes, where the companies consider three areas (White, Sondhi & Fried, 2003):



Figure 1: The three areas within decisions regarding capital procurement and capital utilization (White, Sondhi & Fried, 2003).

Assessments related to a comprehensive picture of the company's economic development, through analyzes of profitability, financing and liquidity, enable a better financial management, which in turn can help increase the creation of value in the company (figure 2).

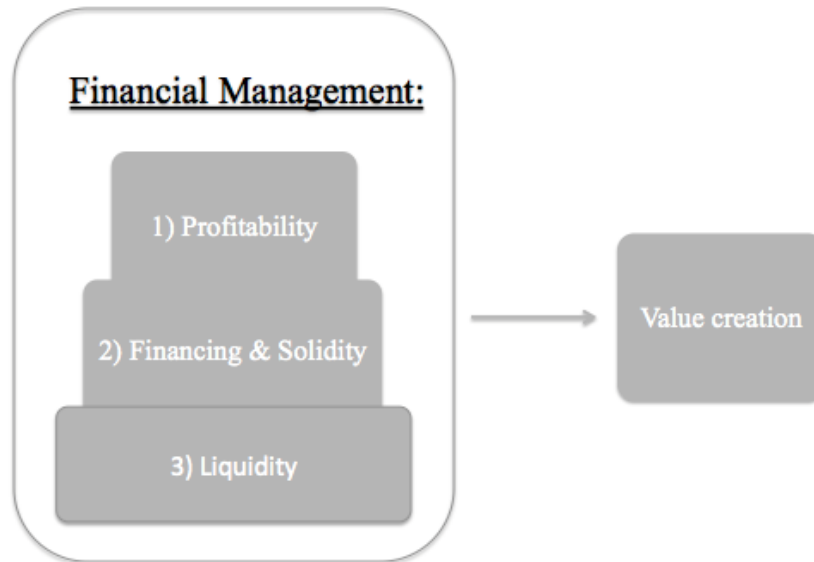


Figure 2: Different elements that are assessed as a part of a company's financial management to increase the value creation of the company.

The profitability goals are indicators of the company's economic condition, and tell us something about the company's ability to generate surplus. For most companies, achieving good profitability is the superior goal. Without satisfying profitability, a company cannot survive in the longer term. Return on total assets or on the equity are the most used goals of the profitability (Bodie, Kane & Marcus, 2014). Return on invested capital is called profitability and is calculated by evaluating the result relative to the average value of the capital. More profitable companies, such as those with higher equity profitability, will be ranked higher by an investor who is interested in buying the shareholdings, and will also have easier access to foreign capital.

Solidity and financing structure are in many ways alike, and are therefore considered as one. The balance sheet shows how the company is financed and is important for assessing the solidity. The credit side of the balance sheet shows how the company has financed its assets and the debit side shows what the capital is used for (Bodie et al., 2014). The solidity consists of the company's ability to withstand losses. If the company has high equity, this means that it is better able



to survive periods with weak results. This does not mean implied good liquidity as the capital can be invested in fixed assets (Bodie et al., 2014). Financing and solidity alone are not sufficient indicators for the company's performance, but must be considered together with liquidity and profitability to provide a complete picture. Most managers today focus most on the development of results, and less on the balance sheet and developments in the balance sheet. It has proven to be particularly important to focus on the balance during periods with strong growth. It is the duty of both the board of directors and the management's to ensure that the company has acceptable equity, so that the equity is in relation to the risk to the company. For this reason, the size of the equity and the need for equity will vary from company to company. The equity is the basic financing of any company. The higher the share of equity financing, the lower will the creditors' risk exposure be, which, in turn, enables more favorable financing for the company (Johannessen, Tufte and Christoffersen, 2010).

A reasonable financing structure will provide a basis for satisfying liquidity. Liquidity is a critical factor for the company's survival, and it can be argued that this should be paid more attention than it has previously received. This is partly because a profitable company can go bankrupt if the liquidity fails, but an unprofitable company can survive for a long time if the liquidity is good enough. Good profitability provides the basis for good liquidity, but good liquidity is determined not only by the funds, but also of how the funds are used. Liquidity says something about the company's ability to pay, such as to what extent the company can meet its obligations as they mature (Bodie et al., 2014). Since the liquidity represents what the company has of available capital at a given time it gives a representative picture of a company's financial situation.

There are several ways to assess the liquidity of a company, something we will study further in section 2.2.2. With this case study, we want to consider liquidity management as part of a company's financial strategy, we will then focus on liquidity in the next chapters and look at how better management of liquidity can have a positive impact on the entire financial relationship of the company.

## **2.2 Liquidity management – ensures more efficient utilization of the companies capital**

Liquidity management is an important theme in the field of the finance theory. The concept itself can be defined as planning, organizing and controlling the company's liquidity (Russell Research, 2013). According to Russell Research (2013), a company is liquid when it can meet its financial payment obligations on maturity. The purpose with the liquidity management is to ensure that the business of the company can operate without being disturbed by lack of liquidity, and that the company has the necessary liquidity reserves to ensure financial freedom of action in changing situations.

Liquidity management is an important part of the company's financial management as insufficient liquidity leads to reduced activity, and thus reduced profitability as investments and operations stagnate. In the worst case, bad liquidity can lead to bankruptcy. By increasing the focus on the liquidity management, the company will be able to utilize the capital more efficiently. This could lead to a reduction in the capital tied up, and thus reducing interest costs, which in turn will improve the profitability and the return. In addition, companies that consider liquidity management as a central part of the strategic financial management will experience good conditions not only for improving the liquidity, but also achieving the goals for future operations (Russell Research, 2013). Another aspect of the liquidity management is that financial contingency plans should be established to ensure the company in bad times and if unexpected situations arise. According to Russell Research (2013), liquidity management is the company's most important and critical task, and should therefore be a self-written focus area. Many professionals emphasize the importance of liquidity management to release capital in the company, which can again be placed to provide higher returns and increased profitability, but unfortunately there is still an area that is devoted little attention in many companies.

Although liquidity management has always been an important part of a company's financial management, it is only in the recent years that it has become an important research theme within financial management. Almeida, Campello, Cunha & Weidbach (2007) highlight the following themes that the literature has focused on in the recent years: how savings from the incremental cash flow reflect

economic limitations, choice of cash holdings or other methods to ensure future liquidity, how liquidity can lead to agent/principal problems, the effect liquidity has on investment decisions and the role of liquidity management during the financial crisis in 2008.

As described, liquidity management consists of several elements, and in the next subchapters we will consider these. We have chosen to divide these elements into five subchapters: liquidity planning, liquidity assessment, placement of surplus liquidity, capital acquisition and risk management.

### 2.2.1 Liquidity planning: a part of the company's long-term financial plan

To ensure good follow-up of the liquidity in a company, it is necessary to prepare liquidity plans, and reports that show the liquidity development of a company. According to Almeida, Campello, Cunha & Weidbach (2007) and others, in larger companies it is common to prepare three different liquidity overviews; long-term plans, liquidity budgets and short-term liquidity forecasts. Figure 3 shows these in context with a company's three management levels.

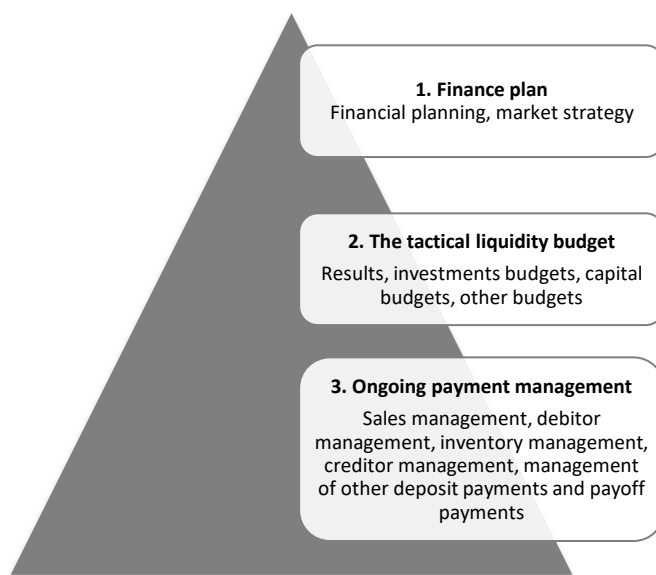


Figure 3: Liquidity planning in relation to a company's three management levels (Almeida, Campello, Cunha & Weidbach, 2007).

1. *Strategic level*  
Time perspective: year
2. *Tactical level*  
Time perspective: months
3. *Operational level*

### Time perspective: weeks

The figure shows the context between the different levels of the liquidity planning, and indicates that higher levels provide the basis for lower, more detailed levels.

The long-term liquidity plan, or the financial plan referred to by Visano, B. S. (2006), is an integral part of a company's strategic plan. Both the time horizon and the content in the financial plan will therefore follow the company's superior strategic plan, with the purpose of mapping how the company can finance the strategic choices and assess uncertainty and risk that may arise (Visano, B. S., 2006). The liquidity budget is an important part of the company's work with the preparation of the more longer-term liquidity plan. A liquidity budget provides an overview of available funds and shows the company's future liquidity development (Visano, B. S., 2006). According to Visano, B. S. (2006), the purpose with a liquidity budget is to:

1. Ensure that the other budgets the company prepares is feasible, viewed from the company's liquidity perspective.
2. Ensure that the acquisition of capital is as favorable as possible. Since the liquidity budget gives the company an overview of uncovered capital requirements at an early stage, this will allow for more thorough planning before the company acquires capital.
3. Ensure that available funds are placed as favorably as possible. Because of reduced uncertainty in relation to future liquidity development, the liquidity reserve will decrease. This gives the company a better overview of where the available capital can be placed at a higher return.

The liquidity budget is based on other budgets, such as the operating budget, but the difference is that the operating budget consists of revenues and expenses, while the liquidity budget consists of deposit payments and payoff payments (Visano, B. S., 2006). According to Visano, B. S. (2006), there is usually greater uncertainty about budgeting of deposit payments than payoff payments. This uncertainty increases the longer time it is until the post expires, and is therefore

associated with the credit period as the budgeted sales revenues can be based on already signed contracts. This will be discussed further in section 2.2.5 about risk.

To secure a real budget as possible, it is also common to supplement the liquidity budget with short-term liquidity forecasts (Visano, B. S., 2006). This forecast has as its purpose to ensure that there is sufficient capital so that the company can satisfy the needs that arise. For larger companies that experiences large fluctuations in the liquidity, this planning should be done daily (Samuels et al., 1999). The liquidity forecast is updated regularly with real figures (Visano, B. S., 2006), and in this way, the short-term liquidity overview will provide a correct picture of the liquidity development to the company as possible. The purpose of this type of liquidity planning is to manage the daily cash flows to receive the deposit payments as early as possible, postpone the payoff payments and ensure that the deposit payments are significantly higher than the payoff payments (Samuels et al., 1999). As we discussed initially, the most important to ensure good liquidity management is that the company has control on deposit payments and payoff payments. This can be challenging, as the company rarely have insight into future movements, and therefore are planning tools used, such as budgets, forecasts and reporting, so that companies can follow up and adjust continuously.

The liquidity budget will reveal whether it is a liquidity deficit or a liquidity surplus. If the company experiences deviations during the budget period, the capital acquisition should be reassessed and returned to the different departments. The next step in the process is to assess where a potential surplus should be placed, or how any deficit should be covered. These two elements of the liquidity management, placement and financing, will be discussed further in section 2.2.3 and 2.2.4.

### **2.2.2 Assessment of the liquidity of a company**

To assess a company's liquidity situation, it is necessary to look at some measurements of liquidity. The measurements make it possible to assess a company's performance, both over time and against other companies. Whether the measurements satisfy an acceptable level depends on the company that is being assessed and the industry the company operates in (Samuels, Wilkes & Brayshaw, 1999). In the formulas for the liquidity measurements, liquid funds are used. In

other words, funds with not much costs quickly can be converted into liquids at a price known in advance. Companies own assets that have different levels of liquidity. Assets such as cash holdings, bank deposits, securities etc., which can be quickly be traded, are very liquid funds. When we use the concept liquid funds further in this study, it will be in this sense. The liquidity of the inventories to the different companies varies according to which products and goods the company owns. In general, inventory is not considered to be particularly liquid as it may take a long time to convert the inventory to liquid funds, or the company may have to dump the prices to get it sold fast enough. According to Brealey, Myers & Allen (2011), assets that are initially liquid may become illiquid. This occurred, for example, during the financial crisis in 2008, where apparently favorable and short-term structured obligations that tempted investors with high returns, were in fact based on highly unsecured house loans. When the interest rates increased and borrowers failed to repay the loans, these liquid investments proved to be very illiquid and investors lost the entire investment. This is described further in the section 2.3 about the financial crisis.

### *Working capital*

Key figures relating to liquidity are usually calculated based on balance sheet items (Samuels et al., 1999). One of the most important figures that says something about the company's ability to pay is working capital, and can be calculated as follow (Johannessen, Tufte and Christoffersen, 2010):

$$\text{Working capital} = \text{Current assets} - \text{short-term debt}$$

Short-term debt is often covered by releasing the capital that previously were linked to current assets, and for this reason this relationship is widely used to assess the company's liquidity (Samuels et al., 1999). Short-term debt shows which claims are due soon, while current assets show the means of payment. It is important that the current assets are higher than the short-term debt, so that the company get a positive working capital. Working capital can also be calculated as follow (Johannessen, Tufte and Christoffersen, 2010):

$$\text{Working capital} = \text{Equity} + \text{long-term debt} - \text{fixed assets}$$

In general, fixed assets should not be financed by short-term debt, and the working capital should therefore not be negative. Negative working capital

indicates poor liquidity, and daily operations can therefore be challenging. The composition of the working capital is also important. It is an advantage if the working capital consists of funds that are easily available rather than a slow-moving inventory. Working capital is crucial for a company's survival. This because it constitutes the capital that is required for daily operations and ensures that the company has sufficient capital to pay debt and payment obligations when these expire (Samuels et al., 1999). For the financial management, the working capital is a key measurement, both for assessing and analyzing the profitability, the liquidity and the financing of the company.

To provide a complete assessment of a company's working capital, it is necessary to consider the credit facilities that the companies have in the banks. The credit facilities are available frameworks that a company has in the banks, and unutilized drawing rights affect the assessment of the working capital and is therefore important to have when assessing the company's liquidity (Samuels et al., 1999). How such facilities work will be described further in section 2.2.4, as these are part of the sources of financing for the companies.

### *Liquidity ratio 1 and Liquidity ratio 2*

In addition to working capital, both liquidity ratio 1 and liquidity ratio 2 are used to say something about a company's liquidity. Liquidity ratio 1 refers to current assets in relation to short-term debt, while liquidity ratio 2 refers to current assets excluding goods in relation to short-term debt (Johannessen, Tufte and Christoffersen, 2010):

$$\text{Liquidity ratio 1} = \frac{\text{Current assets}}{\text{Short-term debt}}$$

$$\text{Liquidity ratio 2} = \frac{\text{Most liquid current assets}}{\text{Short-term debt}}$$

Based on the accounting statistics, norms have been established for desirable values for the ratios, but these are only intended as guidance and not as explicit goals.

Liquidity ratio 1 should be  $> 2$ , while liquidity ratio 2 should have value  $> 1$  (Lins et al., 2010). The ratios, however, can be good indicators of how the liquidity

develops over time if the company study the change in these. An unfavorable development can be an evidence that the liquidity has had a negative development (Brealey et al., 2011).

***The liquidity reserve - is there an optimal level?***

In addition to liquidity ratio 1 and 2 and working capital, the liquidity reserve may also be an interesting size to consider when assessing the liquidity. According to Lins et al. (2010), companies should have a liquidity reserve to have a safety if major and unexpected payments occur. The liquidity reserve consists of cashier, bank deposits (excluding tax deduction), unused overdraft facilities and other posts that can be disposed immediately. Thus, a company's liquidity reserve consists of placements or drawing rights that quickly can be allocated when liquidity is needed (Brealey et al., 2011). As it may take a very long time to convert the inventory into liquids, therefore, it is usually not included in the liquidity reserve. Lins et al. (2010) points out three main motives for having a liquidity reserve; the transactional motive, the security motive and the speculation motive. The transaction motive addresses the problem that the company's deposits payments and payoff payments may occur at different times, so that the company at times will need a surplus liquidity to cover deficit liquidity in other periods. The security motive addresses that the time is changing and the future is uncertain, so that a company for this reason should have a liquidity reserve that can be used if the liquidity development becomes worse than expected. The speculation motive addresses that changes in the markets lead to fluctuations in, among other things, purchase prices. If the company has a liquidity reserve, it will have the opportunity to make favorable transactions when there are good opportunities for purchase, such as acquisition of another company.

What is the optimal reserve, and how it can be determined, will vary according to the type of company it is, and companies may have different motives that determine the size of the liquidity reserve. Many companies have a goal that the liquidity reserve should equal at least one month's turnover. Others use a goal that the liquidity reserve should constitute 8-10% of the turnover. What is certain is that a company is dependent on having available liquids. The optimal liquidity reserve is in the intersection between the curves that shows the interest rate cost by having the reserve, and costs associated with not having it. It may turn out to



be very expensive for a company to run out of liquids as this may cause them to be forced to use expensive credits. Another negative outcome due to insufficient liquidity may be that the company loses reputation with the suppliers if there is a demand for payment suspension etc. (Brealey et al., 2011). On the other hand, it is also expensive to have liquids, as this gives lower returns than other placement opportunities.

As we explained in the section above, it is a challenging balance between having too large and too small liquidity reserve, and it is difficult to determine what is an optimal liquidity reserve. One of the most important research articles about this theme was written by Opler, Pinkowitz, Stulz & Williamson (1999). They conclude that companies with good growth opportunities, more risky activities and smaller companies, have a larger relative liquidity reserve than other companies. Companies with easy access to the capital market, such as larger companies and companies with credit rating, tend to have smaller reserves. According to Opler et al. (1999), this conclusion is in line with the theory, which states that companies have a reserve with liquids funds to ensure that they can make investments even when the cash flow is low, and external financing is expensive. Furthermore, Opler et al. (1999) points out that the findings also are consistent with the theory about that the management accumulates liquid funds if they are given the opportunity. The security motive is therefore a strong motive for that a company wants to have a liquidity reserve.

To assess the liquidity of a company, the company can also use ratios such as customer- and supplier credit period, the liquidity reserve in relation to total capital or annual turnover, working capital in relation to total capital, etc. (Brealey et al. 2011).

### **2.2.3 The placement of liquid funds**

In the section about liquidity planning, we saw how liquidity plans, among other things, intend to ensure that available funds are placed as favorably as possible. A company has many opportunities when it comes to where the surplus liquidity should be placed, and which option that should be used may depend on several factors. Among other things, the expected return, the risk associated with the placement, tax and how quickly the placements can be traded in liquids if they were to report a capital need.

Central to liquidity management is the idea about that the company should receive the incoming capital as soon as possible on an interest-bearing account. When it comes to a company's daily payment stream, such as deposit payments from customers and payoff payments to suppliers, it is therefore common to use a company account. This function as a checking account for the company. Such an account may be granted overdraft facilities, which in turn can be used to finance current assets, such as inventory and customer receivables in anticipation of sales revenues. It is important that companies design their payment routines so that they have an effective control over maturity dates, credit periods and optimal utilization of different discounts based on the goals that the company has set (Brealey et al., 2011).

Brealey et al. (2011) points out that when it comes to payments it can occur situations that lead to alternative costs because the capital is not utilized efficiently. For example, companies may experience short-term profits in periods, which are often placed on a deposit account with low deposit rates until it is paid out. Although the time perspective is only a few days or a week, the company should have included ongoing routines to actively keep an overview of different placement options that gives greater returns than the deposit rate. Larger companies often need management and control of the subsidiary companies, and want to utilize and manage the company's total liquidity as efficiently as possible and at the lowest possible cost. This implies a need for a system where the company does not tie too much liquids, while providing available liquidity to cover ongoing needs (Brealey et al., 2011). For this purpose, management systems, such as a corporate account system, are particularly suitable.

A company can stand above a situation where there is surplus liquidity in one of the subsidiary companies, while at the same time there is a deficit of liquid funds in another subsidiary company. A corporate account system allows for better management opportunity of the cash flows in the company in total, and therefore better the utilization of the funds in the company. Through the corporate account system, all movements on the company's units are registered on their overdraft facilities accounts simultaneously on a common account for the entire company. Only the common account, or the top account, is subjected to normal interest- and commission calculation, while the accounts in the other units are considered as helping accounts. For companies operating internationally, the banks offer a

service called cash pool. A cash pool solution brings together all the accounts in the company in one place, across borders, currencies and accounts located in different banks. Such a solution, for example, provides the parent company a collected liquidity overview and simplifies reporting, control, follow-up of the subsidiary companies. In addition, it provides better control of the currency exposure while providing a lower credit framework and reducing commission and the costs of interest rates (Treasury Today, 2006).

The above-mentioned account types are generally about placement of the daily payment stream. When it comes to the surplus liquidity, there are several placement opportunities in the money market that provide a better return for a company than the bank placement provides. The possibility of higher returns, however, is associated with increased risk, and this is a consideration that the company must take. Placements in the money market can be performed on both short-term and long-term. Short-term placements last for up to one year, while long-term placements have a period of over one year. Certificates are an example of short-term placement. A certificate is a security issued by, for example, the Norwegian state (called treasury bills), the banks, credit companies or from companies. These have a fixed margin in the period the securities expire. Treasury bills indicate that they are approximately risk-free, and have therefore a low return. These are easily negotiable, and are also considered to be very liquid. When it comes to long-term placement forms, it may include shares, obligations and fund investments. Since these placement opportunities are risky and have relatively high establishment costs, it is most appropriate to use these for long-term placement.

The more overview and control the company has over the future liquidity development, the less uncertainty will the company experience. This also affects the liquidity reserve, since a natural consequence is that this is reduced because the company gets a better overview of where the available capital can be placed at a higher return. The assessment associated with the placement of the surplus liquidity is challenging, since there are both pros and cons associated with having large cash holdings in the company. If the company places the surplus liquidity in securities, they will receive interest rate income on it. On the other hand, these securities cannot be used to pay the company's bills on a continuous basis since the securities must be redeemed, which takes both time and lead to transaction

costs. The costs could have been great if the company sold the securities every time an invoice was due. The cash holding is therefore more liquid than securities (Brealey et al., 2011), and can, for example, quickly be used to acquire. Therefore, it must be included a weighing in relation to the disadvantage of sitting with lot of cash, through lost interest incomes, and the advantage that consists of saving transaction costs. For large companies, the transaction costs associated with the purchase and the sale of securities will be trivial compared with the alternative cost associated with holding "inactive" cash. Therefore, larger companies often buy and sell securities on a day to day basis. However, it is not the case that it will be profitable for a company to have a large cash holding. The value of being liquid decreases as the surplus liquidity increases. If the company has only a small share of cash, then an increase can be of great value, while a company that has a large share of cash will not have as much benefit from gaining extra cash.

Brealey et al. (2011) points out two main reasons why companies choose to hold on to the surplus liquidity in the company. Firstly, the companies may want to build better relationships with the banks, and compensate the banks for the services they offer. Secondly, large companies can have hundreds of accounts in a dozen different banks, and it may therefore be more appropriate to place the capital in these accounts instead of keeping an eye on each account daily and implementing daily transactions between them. It is an assessment case between time and benefit. One reason why some companies spreads the placements in several banks must do with the way a company manage. A company cannot provide full operational self-government law to a subsidiary company without that the management of this company is authorized to handle the cash in the company. According to Brealey et al. (2011), good liquidity management implies some degree of centralization. It is challenging and almost impossible to keep a desired cash level if all the subsidiary companies in the company are responsible for their own cash holding. In addition, the company can lose money on having little control over the liquidity in the subsidiary companies. Even in the decentralized company, there is generally a central control over cash level and banking relationships.

***Debt repayment, or keep the liquidity internally in the company?***

How debt affects the liquidity of a company has been the subject of discussion in

the research community, and it has resulted in varying conclusions. Several of the research contributions claims that there is a negative relationship between debt and cash holdings. In other words, that the companies by paying lenders will reduce their ability to accumulate a liquidity reserve over time (Lins et al., 2010). In addition, it is pointed out that it will be the same for companies if they have an increase in cash holdings or reduce the debt in the balance sheet (Acharya et al., 2007). On the other hand, other research, including Acharya et al. (2007), shows that there is a positive relationship between debt and cash holdings for companies that need to secure the earnings. According to Acharya et al. (2007), cash can only be considered as negative debt if the company is not financially limited. When a company is financially limited, the cash flow will be sensitive to those companies that also have a large variation in the earnings. Much of the research therefore claims that companies that have low profitability should hold higher cash holdings instead of repaying debt.

#### **2.2.4 Financing – internal and external capital procurement**

An important part of a company's liquidity planning is the assessment of future capital needs, and how this should be procured (Lederkilden.no, 2006). All companies make investments, in the form of acquisitions of companies, new equipment, factory facilities, etc., which in the long run creates income for the company and increases the value of the owners. When the decision about an investment project should be implemented, a central question emerges - how should the company finance this investment? Lederkilden.no (2006) mentions several sources of financing in his article;

- Supply of new equity
- Supply of responsible loan capital
- Various forms of public support and supplements
- Short-term/long-term foreign capital
- Self-financing from the operation
- Factoring and leasing

In the following sections, we will only highlight the forms that are most relevant for the case study. Factoring, leasing, and public support and supplements will not be further reviewed, but are mentioned to show the various financing

opportunities a company has.

It is normal for a corporate to be top-financed so that the parent company in the corporate retrieves external financing, such as bank loans or obligations loans, and then borrows it internally back to subsidiary companies that need financing. The internal bank is owned and managed by the parent company (through the treasury department), which in addition to being responsible for the collection of foreign capital also has responsibility for the management of the company's liquidity surplus and handling and assessing risk, such as currency- and interest rate risk. According to Lederkilden.no (2006), there are several considerations that should be taken when a company should make financing decisions. An important part of such decisions is the goal of minimizing the company's financial costs, but Lederkilden.no (2006) also mentions key considerations such as: the company's wish for return versus risk, the relationship between long-term and short-term financing, degree of flexibility in the financing, as well as that the company should hold an equity ratio that satisfies the creditors so that the lenders do not get uneasy.

There is a distinction between internal and external financing, where the equity is the most important source of internal capital, and debt is the most important source of external financing. The relationship between debt and equity in a company is often referred to as a company's capital structure (Investopedia, 2018). We therefore choose to divide the chapter into these two categories, internal and external financing.

### ***Internal financing***

One way a company can finance its investments is by using capital generated from the operation. According to Ross et al. (2013), most of a company's financing is generated internally from the company's cash flow. The revenue from the operation is not always sufficient financing, and there is therefore a distinction between liquid funds generated from the operation and new equity contributed through emission. When it comes to emission, the company will receive new equity through new subscription of shares from new or existing shareholders. The income to the company can either be paid in dividends to the owners, or it can be retained in the company as equity. The owners usually expect this equity to be used to invest in projects that increase the corporate value (Ross et al., 2013). In

the assessing about using internal capital as a source of financing, the company must consider that the owners will expect a return on this investment, in the form of increased dividend payments. There are large variations in dividend practices both between industries and individual companies. Not all companies pay dividends. Whether a company chooses to pay dividends to the owners depends on certain characteristics of the company. Young companies with strong growth pay dividends very rare, as all profits are used to finance further growth. Several investors have dividend payments as one of the selection criteria for where they want to invest, and it is therefore often a goal for companies to have a steady and increasing dividend flow as this signals healthy underlying operations. The company's dividend policy includes, among other things, when the dividend should be paid, how high it should be in relation to the profit for the year, increase from last year's payment, etc. As a rule, the dividend payment occurs once a year, immediately after the general meeting. In recent times, more Norwegian companies have switched to quarterly dividend payments, while in the United States this has long been normal practice and functioned as a continuous source of income for many. The creditors can also influence the dividend payments through so-called clauses in the loan agreements. This is especially true if the companies have a high debt ratio and thus constitute a higher investment risk for new creditors. The clauses may then act as a company-specific dividend limitation (Acharya et al., 2007).

Internal financing avoids costs such as transaction costs that are associated with external financing. In addition, asymmetric information and incentive problems will lead to other types of costs, which in turn will result in that the costs of external financing will increase. It can therefore be profitable for most companies to build and maintain a cash holding, so that internal financing is possible in cases where it is most appropriate.

### ***External financing***

For many companies, it would be appropriate to use external financing to realize the investments. As mentioned initially, debt is the most common source of external financing. Such owners expect a return in the form of increased dividend payments if the equity is used to finance a project. Lenders also expect a price to lend capital to a company, in the form of interest rate. There are several forms of

debt financing that a company can use, and it is generally distinguished between short-term and long-term debt financing. Short-term financing means debt with maturity under one year, while long-term financing extends over a longer time horizon. A company is faced with a multitude of foreign capital opportunities. Typically borrowing can be made either from banking institutions or from the capital markets. The company that needs foreign capital issues what is called financial instruments, and offers of the capital, the creditors, they demand the financial instruments. According to (Ross et al., 2013), a financial instrument is a contract between the company that receives capital and issuer of the capital. Unlike using equity as a source of financing, a company that uses debt financing will increase the risk to its owners. Increased gearing in the company increases the risk of the equity, while providing opportunities for high return on the equity (Ross et al., 2013).

Like the placement opportunities that a company has to the surplus liquidity, the companies also have the opportunity to finance themselves in a short-term or long-term market. The banks offer, among other things, overdraft facilities, which are the most common form of short-term financing. In addition, it is also common to use so-called credit facilities at the banks, as a source of liquidity. Credit lines mean that a company has access to credit from a financial institution that can be used after the company's assessment, instead of the company having to provide liquidity itself (Acharya et al., 2007). Such a credit line can for example be loan obligations. The companies can also issue securities, such as shares and obligations, in the capital market to finance projects. Obligation loans are a form of long-term financing where the investor buys a portion of the loan. Thus, several investors can be together on a loan, unlike to bank loans where the bank is the only creditor. When it comes to short-term financing opportunities, there is an obligation loan with a shorter period than one year, known as a certificate loan. In the context of financing, there will be a company that is issuing the certificate in the capital market. Others buy the certificate as an investment, and in this way "fulfill" a short-term loan to the company that issues the certificate.

***Internal or external financing - the company's liquid funds vs. credit lines in the banks***

According to (Acharya et al., 2007), decisions related to capital procurement are mostly between pure equity financing, or a combination of debt financing and



equity financing. A large part of the research focuses on the use of external financing, through credit facilities at the banks, and internal financing, using existing cash holdings. Strategic gains are attached to the financial structure of a company. Lins et al. (2010) claims, among other things, that the company can improve its competitive position through credit lines and cash holdings, since this reduces the expansion costs, which in turn causes that the company can increase the level of threats to competing companies. Thus, in competitive markets, the liquidity of a competitor may affect which liquidity decisions a company takes.

Most of the research points out the benefits of having a cash holding, but there are also some studies that look at the benefits that the credit lines provide for a company's liquidity. Among other things, the information asymmetry between the management and the capital market is a factor that makes credit lines valuable to a company (Acharya et al., 2007). This is because a company will have problems with financing investments when the capital cost of acquiring external capital is high, for example, when the equity is underestimated. This is called in the literature for the precautionary motive of the liquidity. Another advantage is that liquid companies do not incur transaction costs by often obtaining funds (Lins et al., 2010). Lins et al. (2010) points out that credit lines are at least as effective liquidity buffers as cash holdings are. This is because they, like cash holdings, provide insurance against liquidity shock. However, Demiroglu & James (2011) finds that recent research on the subject indicates that the access to credit lines is dependent on the borrower's creditworthiness, in addition to the lender's financial situation. For this reason, they conclude that credit lines are not a perfect replacement for cash holding as a source of liquidity. Creditworthiness is measured through a credit rating. This can be official, through a credit agency, or unofficial, for example, from a bank.

Official credit rating is not as common among Norwegian companies, but is more common for example among American companies. In this study, only two of the companies have official rating. The three largest and most well-known rating companies are Moody's, Standard and Poor and Fitch IBCA. The rating is given in alphanumeric symbols to easily rate the credit risk to the individual companies. The best rating levels are AAA to BBB and represents the investment grade class. The rating levels below this are called high yield, speculative grade or junk bonds. The rating shall give an indication of which risk the company constitutes, but is

not alone sufficient to assess the risk. The rating companies therefore also define what is typical of the rating classes, and the rating will also capture the loss rate in case of default. For example, companies with the rating BBB are considered to have an adequate ability for timely settlement, but lack certain elements for protection. The higher the rating, the better the company is equipped to stand back through tough times and bad news (Demiroglu & James, 2011).

Lins et al. (2010) studied finance directors in companies from 29 different countries and their perception of important functions for their companies. They found that the two liquidity sources, credit lines and cash holding, are used to hedge against two different types of risk. In bad times, the cash holding is a good way to maintain the liquidity since it acts as a hedge against future shocks in the cash flow. In good times, credit lines will enable a company to exploit future business opportunities. Furthermore, Lins et al. (2010) found that there are credit lines that are the dominant source of liquidity for companies around the world, consisting of approx. 15% of the assets.

If the markets had been free from frictions, the need for liquidity in companies would not be available since they could have obtained external financing for investment projects. A large part of the empirical research on liquidity management focuses only on cash as a source of liquidity when a company have frictions in the capital markets. These studies show that companies with external financing limitations save more cash from the cash flows, especially if it is probable that the investment opportunities arise when the cash flows are low (Demiroglu & James, 2011). Demiroglu & James (2011) points out that companies with a high liquidity reserve are insured against cases where cash flow from operations is insufficient to finance investment opportunities. This is the security motive behind most of the research contributions for liquidity reserve and credit lines (Demiroglu & James, 2011).

### **2.2.5 Risk – variability in the cash flows**

Risks can be defined as deviations from the expected, and risk related to liquidity is about risk associated with the variability of the cash flows. The variability can mainly be attributed to two sources: general market factors, such as exchange rates and interest rates, and company-specific factors, such as loss of debtor (Business Dictionary (BD), 2016). Risk management is considered as one way a

company can avoid specific types of risk, such as liquidity risk, currency risk and risk related to, for example, commodities prices. For example, a company that bases a large part of its earnings on exports could experience a sharp reduction in the cash holdings if the exchange rates turn in a negative direction for the company. In this chapter, we will explain various types of risk associated with the cash flows. There are mainly four risk concepts that we will highlight; currency risk, interest rate risk, credit risk and liquidity risk. We will also explain counterparty risk and refinancing risk, which are key risk concepts related to the financial crisis.

Currency risk is applicable to companies that conduct international trade and, due to fluctuations in exchange rates, may experience changes in earnings. Currency risk arises from imports, exports, foreign investments and loans in foreign currency. A company may try to protect itself against currency risk about import and export by entering a currency clause in the agreement. Such a clause provides guidelines for what consideration should be given to exchange rate changes after that the contract has been concluded (Holden, 2009). Another way the company can secure against currency risk is by buying or selling a certain currency on an agreed day in the future, so that the company know the exact rate when the forward contract is settled. This is termed by Holden (2009) as forward securing. In addition, changes in payment deadlines, currency credit, balancing of accounts receivable and supplier debt in the same currency and strategic pricing are mentioned as possible methods for reducing currency risk.

Interest rate risk is the risk of loss or gain due to changes in the market rates (Bodie et al., 2014). This has consequences for the debt in the company, as an increase in the interest rate gives rise to interest expenses, unless the company has bonded the interest rate. The interest rate risk depends on the loan terms that the company has entered. For fixed rate loans, the risk will depend on how long the interest rate is tied. If the interest rate is tied for a longer period, the company will have an overview of future payoff payments, but may lose a profit if the market interest rate is reduced. If the company has loans with floating interest rate, the risk will then be associated with the movements in the market interest rate. If there is an interest rate jump, it may potentially be a loss for the company. Government obligations can be a sure alternative placement of surplus liquids instead of placement in the bank. By placement in government obligations, the cash flows,

in other words the interest rate payments, will be known to investors in advance. Such a placement will indicate minimal interest rate risk.

Liquidity risk is the risk that a company does not have sufficient with cash to meet claims in a timely and cost-effective manner (Holden, 2009). It may be challenging for a company to control liquidity risk, and it is therefore important to have a liquidity reserve that can be used when unexpected short-term liquidity needs arise (Bodie et al., 2014). Central to this risk assessment is also refinancing risk. Refinancing risk means the risk that the company will not get refinanced debt that matures. For example, one can imagine a scenario where a company has an obligation loan that matures in the middle of a financial crisis, and no one will reinvest. To handle the refinancing risk, the company can have a long maturity on the debt, and have an active relationship to the maturity profile, so that more loans do not mature at the same time. It may also be advisable to have a good spread on the debt, so that only a minor part is due each year.

Credit risk is defined as the risk that a customer, counterparty or supplier fails to fulfill its commitments (Holden, 2009). By investing in fully liquid assets, such as government securities, bank deposits etc., the company will not underwrite credit risk. For investments beyond this, the company should expect credit risk, and in such cases, careful assessments should be implemented so that the return is standing in relation to risk (Bodie et al., 2014). Most of the deposit payments of a company consist of revenues from sales, therefore it is possible for the company to influence how effective the liquidity management is already from the time of the sale. A large part of the working capital is tied up in customer receivables, such as claims that have arisen in connection with sales of goods and services to customers (Johannessen, Tufte and Christoffersen, 2010). The treatment of customer receivables affects the capital tied up in the company. It is important for good liquidity management that the company manages to make the time from the order confirmation to the deposit payment from the customer as short as possible (Bodie et al., 2014). There may be significant risk associated with credit sales because the company is not getting paid for the deliveries. Therefore, before credit is granted, it is very important that the company makes a credit assessment of the customer. The company then assesses the customer's ability to pay, so that the customers who probably cannot or will not pay don't get granted credit, while customers with a secure ability to pay will receive granted credit (Johannessen,

Tufte and Christoffersen, 2010).

The customer credit period may be affected by the seller, in the form of specific payment deadlines. Large, loyal customers will normally be granted longer credit period. It is important that the credit period is adjusted so that the payments are in line with the company's liquidity plan. In the case of non-payments, it is important to have good debt collection routines where it is possible to send claims to debt collection already next to the first payment reminder. In addition to good reminder routines and good follow-up routines, default interest rates can be effective. In the case of non-payment from the customer, the company must assess the credit sale as a loss on receivables. If it is clarified that the claim will not be paid, the loss must be assessed as ascertained and be expensed. At the end of the period, a risk assessment of the other receivables will be implemented. Here the company calculate expected, but not ascertained losses, by assessing each receivable. This can be very challenging to implement in practice for many companies, and it is therefore common to make a collected assessment of the receivables. If many of the customer receivable must be assessed as losses, this will then affect the company's liquidity in a negative way (Johannessen, Tufte and Christoffersen, 2010). How strong the impact this has will of course vary, but the company's financing and solidity will be crucial if they will overcome this or if the company will go against a bankruptcy. If the company creates well-developed billing routines, the quality on the credit assessment will increase and the credit period will reduce. This will lead to more efficient management of the liquidity and thus reduce the capital tied up (Holden, 2009). Because of this, the risk will be reduced.

If the company receives goods and services from suppliers before payment, such as on credit, the company will then have supplier debt. There are also suppliers that require a prepayment before receiving goods or services. In such cases, the company should assess the probability that the supplier delivers the product or the service. Like customer receivables, the supplier debt will also be included in value-added tax. The value-added tax will initially not affect the company's performance calculation, but since this is a debt to the public sector, will guilty value-added tax affect the company's liquidity (Johannessen, Tufte and Christoffersen, 2010). As described, customer receivables and supplier debt are central to the management of a company's credit. However, it is important to not

only look isolated on each of these elements, but consider them both together to get an overview of the company's credit flow. Companies should of course have a shorter customer credit period than the deadline for repayment of supplier debt, so that the company ensures payment from customers before settlement with the suppliers will be made. For larger companies, the time between payment from customers and payment to suppliers could constitute significant interest rate incomes.

In other words, there is risk related to trading on credit, especially if the company has not made good enough credit assessments of customers or suppliers. The number of outstanding receivables or payments someone has and the amount of how much risk that is related to these receivables varies from industry to industry. Some industries rely on large, but few orders, while for others it is more common with small, but regularly orders.

As this study addresses the effects of the financial crisis in 2008, it is particularly important to mention counterparty risk. Counterparty risk is the risk of financial loss for the company if a counterparty breaches the agreement before a final settlement (Bodie et al., 2014). For a company, this counterparty can be either a customer or a supplier, but it may also be a risk related to the banks. When the banks are experiencing challenges associated with lending money to the companies, as the case was during the financial crisis in 2008, this causes problems for the companies as they do not have access to foreign capital, which in turn can inhibit investments and growth for the company. A company's total risk is measured with the variance of the return or the cash flow. High total risk results in negative consequences for the future cash flows of the individual company, since, because of this, it will increase the probability of a financial crisis for the company. The outcome of such a crisis may be that customers, suppliers and employees will become less willing to invest in the company, which may result in lower turnover and higher costs. This means that the cash flows are reduced (Holden, 2009). Risks are linked to both microeconomic and macroeconomic fluctuations. Changes in the macroeconomic conditions will cause changes in the exchange rates and in the interest rates, which will increase or decrease the currency risk and the interest rate risk. The company's own liquidity management and assessment of investments affect the liquidity risk and the credit risk. In troubled times, the company will probably choose more secure placements of

surplus liquids. This will be discussed further in the next chapter, about the financial crisis in 2008.

### **2.3 The financial crisis 2008 – liquidity crisis with real economic consequences**

In autumn 2008, the world was above the most challenging financial periods since the 1930s. Cyclical fluctuations are a natural part of the modern economic cycle, but the 2008 crisis gave harder effects than many expected. The time before the crisis was characterized by stability and positivity. Several macro economists described the period as The Great Moderation, where the perception was that the economic fluctuations that a company experienced were less than before. In addition, the regulatory policy of the authorities was sufficient to stabilize the economy afterwards these fluctuations. The Greenspan Doctrine, the hypothesis that the central bank always will be able to prevent crises, contributed to increase the confidence and the trust to the markets. When the financial crisis was a fact in the fall of 2008, this contributed to a major deterioration of the prospects to the world economy.

The next sections introduce the reader to the development of the financial crisis, providing a discussion of the effect the crisis had on Norwegian economy. The final section illustrates how the disturbance in the financial markets in 2008 affects the liquidity management in companies.

#### **2.3.1 The development of the financial crisis**

Financial crisis, also called liquidity crisis, is defined as “*systemic disturbances to the financial system that impede the system’s ability to allocate financial capital and disrupt the economy’s capacity to function*” (Visano, 2006, p.3). In this way, the liquidity crisis will also receive real economic consequences since lower investments lead to increased unemployment and reduce productivity.

Minsky (1982) evolved a model (figure 4) that illustrate the development of the financial crisis:



Figure 4: The development of the financial crisis (Adapted from Charles Kindleberger's *Manias, Panics, and Crashes, A History of Financial Crises*; 1978, 1989).

The model illustrates how the crisis starts with a shock, such as financial liberalization or increased supply/demand after external credit. Often the shock is associated with that the trust in economic growth and positive possibilities in return for investments, will disappear. There occurs a total doubt about the future economic development. The reasons for this doubt vary from crisis to crisis. As the figure shows, the tendency is that after the first shock there will be a credit expansion, which gives a short increase in the prospects. This may be due to several factors. Firstly, the demand after credit will increase among both companies and households since expectations for profitability and income will increase significantly. Secondly, the supply of capital also increases due to lower risk awareness. Such an increased supply gives a brief economic upturn (see figure 4), which reinforces the first shock (Kindleberger and the Minsky model, 2014).

The financial crisis in 2008 came as all other crises: After long periods with solid, long-term upturn, the crisis comes. Not because there is any financial legality, but because the company forget about precautions. When key actors believe that the economy is at its strongest and there are great opportunities for short-term profit, an economic crisis may be dangerous close. However, there are few who realize this before it's too late and the crisis is a fact. People believe that today's situation is not comparable to historical crises, and thinks that "this time is different", which, however, rarely is the case. It is assumed that the financial crisis from 2008 was a result of a period with high growth and low interest rates, which led to a



historic rise in the real estate market of the United States. The low interest rate pushed the property prices upward, almost to a tripling in the period 1997 – 2007. In addition, during the crisis, there was a global increase in the saving inventory as well as a financial deregulation (Bodie et al., 2014).

In the process of the financial crisis in 2008, so-called subprime loans were granted in the United States. These loans were granted despite the basic principle of risk management, that loans should be granted based on the customers' ability to pay. Subprime loans gave customers with low ability to pay the opportunity to receive loans, which in combination with the rise in house prices resulted in strong lending growth. Subprime loans were "packed together" for so-called CDOs (Collateralized Bond Obligations) (Bodie et al., 2014). CDOs denote debt securities that have safety in a portfolio of loans or other debt securities. These appeared as obligations with high security, but were in fact a securitization of obligations with low creditworthiness that were approved by rating agencies and thus viewed as harmless by both those who sold them, and those who invested in them. When the macroeconomic conditions changed, and the housing bubble in the United States exploded, this resulted in major losses on the subprime loans, as well as other types of loans such as credit cards, student loans, car loans, corporate loans, etc.

The financial industry is based on trust, and this was severely weakened during the financial crisis. Because of the crisis, several banks had to be taken over by major banks. When banks go bankrupt, the rest of the industry becomes suspicious and wonder who's next. Thus, trust in the healthy banks will also be affected. Lack of trust leads to lack of liquidity, because the access and the price of capital in the internal banking market, and the possibility to raise foreign capital in the international financial market, are weakened. The financial crisis in 2008 therefore resulted in a liquidity drought. The development in the economy led to an increase in the systematic risk. The development in the economy also led to a spillover effect, such as when there is a drop in a market's financial system it will lead to the risk for transferring and disturbing this to other markets. When the banks and other lending institutions experienced limited capital, and therefore also were concerned about further losses, this led to that they chose to take all capital instead of lending it to individuals and companies, which worsened the conditions of the ordinary borrowers (Bodie et al., 2014).

Initially, it was primarily a liquidity- and a financing crisis, which made it necessary for banks and companies to get adequate financing. The uncertainty increased, the prospects for economic growth was revised down regularly, and companies became concerned for the long-term economic downturn. This hit hard on stock prices worldwide, and prices on goods and services thereafter (Holden, 2009).

The fall in stock prices, the expectations of economic downturn, the financing problems etc., led to a sharp fall in demand and production. The economic crisis reached its apex in September 2008, when the two federal mortgage providers, Fannie Mae and Freddie Mac, had to be under the control of the authorities and the investment banks Lehman Brothers and Merrill Lynch were on the verge of bankruptcy. In September 2008, Lehman Brothers demanded bankruptcy, and the financial crisis was a reality. Because the banks wasn't longer willing or had the possibility to give credit to their customers, it became difficult for smaller companies to finance their daily operations. This led to cuts and lower activity (Bodie et al., 2014).

The increased disturbance in the money market resulted to that banks that had low deposits in relation to loans received big problems. The access to capital was sharply reduced as short-term financing from the money market almost stopped. Therefore, the consequence of this was that people stormed to the British bank, called Northern Rock, to take out their savings. On February 17, 2008, the bank was nationalized, and the consequence of the financial crisis evolved into a serious liquidity crisis (Bårdsen et al, 2010). The financial crisis was no longer just a liquidity- and a financing crisis, but it also noted the real economic consequences of the crisis, such as reduced production and investments, as well as increased unemployment. The lack of liquidity also resulted in poorer access to credit for companies and households. Poor earnings in the companies and increased unemployment led to that companies and households failed to manage their loans while the consumption was reduced. This further increased the problems in the financial markets. At the same time, the uncertainty in the companies' earnings led to that the banks become more careful about lending, which in turn reinforced the weakness of the real economy (Holden, 2009; Cornett, McNutt, Strahan & Tehranian, 2011).

### **2.3.2 The impact of the financial crisis in Norway**

The ripple effects of the international financial crisis in the Norwegian economy was relatively not dramatic compared with other developed countries. Norway was significantly less affected by the real economic consequences of the crisis. The biggest consequence Norway experienced from the financial crisis is that the financial markets in Norway came in liquidity squeeze. As a result, none of the banks wanted to lend money to the companies.

Governmental initiatives, such as a sharp and rapid interest rate depreciation and supply of liquidity to the markets, helped to mute the effects of this capital drought. Another initiative was a swap arrangement implemented by Norges Bank, where obligations could be exchanged for government securities. These initiatives contributed to a reduced disturbance in the banks, and thus the lending policy became less restrictive. The crisis led to a slight increase in unemployment and a slight decline in economic growth (Norges Bank, 2010).

The Norwegian economy noted the crisis mainly in the form of a sharp fall on the Oslo Stock Exchange. The main index had an annual increase of 45% in the period 2003 – 2007, before it fell by 64% in the period 2007 – 2008 (Government, 2016). Since Norway has less stock shares than, for example, the United States, the stock bubbles are therefore less important for the economy and the stock exchange has little impact on the real economy. The consequences of the fall on the stock exchange were therefore not big.

Norway experienced a strong development in the last 20 years before the crisis. This is because the country has benefited from the increasing globalization through commodity exports and energy based exports. A long-term high oil price has also contributed to the good development, through major oil investments, solid public economy, employment growth and high wage growth, which in turn has resulted in increasing private consumption. The real disposable income of the Norwegian households increased by 75% from 1993 to 2010. At the end of the year 2007 and at the beginning of the year 2008, the Norwegian economy passed a cyclical upturn (Government, 2016). This was again compounded by the international financial crisis and the weakness in the demand after important Norwegian export products that followed.

There are several reasons for the soft impact the financial crisis had on the Norwegian economy. Among other things, the government's active economic politics, the favorable industry structure with a dominant petroleum sector, the solid banking system and the large public sector that Norway has. Financial regulations, capital requirements and financial supervision compromise all parts of the Norwegian financial market, unlike the United States where half of the financial market (including the investment banks) is outside capital requirements and financial supervision. In Norway, the banks are dominant in lending to homes, and do not offer such subprime mortgages that helped blow up the housing bubble in the United States. To be granted mortgage loans in Norway is significantly stricter regulated, and one must be able to document income, employment conditions and ownership rights. Only loans with collateral values up to 75% can be used as safety in obligations. This stands in contrast with the regulation of the securities in United States during the crisis, where it was possible to invest in structured obligations of subprime loans that gave possibilities to rise to high returns (Government, 2016).

Even though the crisis did not have the same direct effect on the Norwegian economy, the trading partners of Norway were affected hard. This affected Norwegian export companies by the fact that the demand after important Norwegian export products decreased. Reduction in earnings and more challenging access to financing also contributed to a decline in the investment activity. This development stabilized due to the initiatives by the Norwegian authorities, as also due to improved access to new loans for the Norwegian banks, households and companies. Even though the financial crisis had an impact on competitive industries in Norway, the development at home was much better than what was seen internationally (Hegnar, 2009).

### **2.3.3 Which effect had the disturbance in the financial markets on the liquidity management?**

The disturbance in the financial markets caused plenty of consequences. The consequence that stood out was a change in companies' risk image. Companies are increasingly experiencing challenges in predicting future earnings and result, which led to a need for price movements far above/below the normal than it was before the crisis. What started as a financial crisis on the American market quickly developed into a global, economic crisis, and for this reason the market conditions

have also changed significantly. Due to the extreme and unexpected price movements that have affected the market, the companies' willingness to assume risk has also changed (Finansdepartementet, 2011).

When Lehman Brothers went bankrupt in September 2008, this gave ripple effects to other banks, the counterparty risk increased and the banks were careful about lending money to companies. When the banks are experiencing challenges related to lending money to the companies, as the case was during the financial crisis in 2008, this causes problems for the companies as they do not have access to foreign capital, or must pay very much to get financed externally. This can again inhibit investments and growth for the company (Bodie et al., 2014).

Baum, Caglayan, Stephan & Talavera (2007) points out that by increasing macroeconomic or idiosyncratic uncertainty, companies want to increase their liquidity ratio. The companies can have a precautionary motive to keep liquids when the macroeconomic uncertainty increases. Due to the different market frictions, the liquidity ratio will vary between companies by size, industry and debt ratio. The use of credit lines helped to limit the financial crisis's impact on companies' expenses during the period.

The financial crisis in 2008 is an example of the tight link between the financial system and the real economy, and emphasizes the importance of good liquidity management and strict risk assessments. Although a large part of the research presents liquidity management as something that became more aware in the aftermath of the financial crisis in 2008, it has still been an important part of the company's financial management in the period before the crisis broke out. In other words, liquidity management has been of great importance and has been a key tool for managers worldwide, even before the crisis in 2008.

We assume that the liquidity management will be extra challenging for the companies that experience large fluctuations in cash flows, projects, investments and that has significant loan losses, especially with high short-term debt. In periods with high volatility in the financial markets, such as during the financial crisis in 2008, and in times when there are major changes in the financial framework conditions, these challenges will be increasingly visualized.

# CHAPTER 3

## RESEARCH METHODOLOGY

In this section, we will discuss our choice of research method for this case study. The purpose of this chapter is to describe choices made regarding the research method, research strategy and research design. The methodology often uses these concepts interchangeably, and it can be challenging to distinguish between them. In this study, when we discuss the choice of *research method*, it involves the choice of a quantitative or a qualitative approach. Furthermore, under the *research strategy* section, we will describe the most appropriate implementation method used for this study within the chosen methodological framework and the criteria underlying this choice. *Research design* includes how the study is structured and which methods of data collection we think are best suited to gather relevant data to answer the research question.

*«A method is an approach, a mean to solve problems and reaching at new knowledge. Any middle serving this purpose belongs to the arsenal of methods.»*

- Wilhelm Aubert, 1965.

Research methodology can be described as techniques and processes used to answer scientific questions and issues (Walliman, 2010). To provide solid assessments of previous research and being able to substantiate own choices along the way in the research process, it is necessary to have good insight into the research methodology. Therefore, a justification of the research method is essential to conduct research and to use it in scientific reports, journals, articles, projects and master theses.

The purpose of this case study is to resolve the following research question:

*«How has the financial crisis, in 2008, influenced liquidity management in Norwegian companies?»*

To resolve and answer the research question we have decided to choose a qualitative case study, consisting of several partially structured interviews of key informants from four Norwegian companies, conducted in February 2018. The interview questions have been drafted based on quantitative analysis of relevant

key figures. Furthermore, we decided to structure this chapter in such a manner, that the methodological choices that we have made are derived from discussion and analyzes of relevant method theory. Initially, we will start with describing our choice of the research method. Then we will present the choice of research strategy before we explain the design of the study and how the study is conducted. In addition, provide a description of the data analysis and how the data has been processed. In conclusion, we explain the quality of the data and the ethical assessments we have taken.

### **3.1 The choice of the research method**

According to Creswell (2003), the objective of research is to be able to answer the research question by using an appropriate scientific method. The reason behind our choice of method is that it will consist of assessment of our empirical approach and purpose of the study, and this will provide guidance on how to gather the experiences, which will help us to answer the research question. We therefore consider it appropriate to present our research perspective before explaining the chosen method.

#### **3.1.1 Our research perspective**

According to Brinkmann and Tanggaard (2012), the researchers' theoretical foundation creates base for the understanding of what the researchers develops along the way in the process. In addition, an explanation of this will also do us able to critically evaluate other researchers, the choice of the research method and the procedures of that (Kothari, 2009). As Troye (1994) points out, it will be impossible for both the researcher himself and others to make a definite and accurate classification of the science theory he or she represents based on the way he or she works in the research. This is because our position will be influenced by suggestions from several perspectives along the way, when working with the study. According to Kristoffersen, Tufte and Johannessen (2011) critical realism is a good foundation for scientific work as it allows critical reflection. In such a perspective, the researchers' role is to reveal and contribute to new knowledge. In addition, we want to be as objective as possible in relation to the phenomenon being studied, and therefore we are pragmatic in our approach. This means that we as researchers take the role of interested observers, and study the phenomenon from the outside. In pragmatism, knowledge is derived through observation of

interaction, and the sources are chosen according to what is most appropriate for answering the research question (Creswell, 2003).

The purpose of the study is to increase understanding of the phenomenon and to gather experiences around it, rather than searching for the truth. We want to search for the adjustments that were made in the companies' liquidity management, because of the financial crisis. For this reason, we consider this to be an exploratory study, where the goal is to gather experiences and, in this way, increase understanding of liquidity management in the companies before and after the crisis.

### **3.1.2 The qualitative research method**

Empirical study is research using empirical evidence. It is a way of gaining knowledge by means of direct and indirect observations or experiences. The purpose of an empirical study is to create and develop knowledge. Knowledge can either be formed from scratch or build on existing knowledge. Research methods can be classified in various ways, Myer (1997) however describes that one of the most common distinctions of research methods is between quantitative and qualitative research methods. Quantitative studies are based on formulations of the research question, to test current theory empirically, by using numbers or facts and a positivist or natural science model (Greener, 2008). A quantitative approach to research is likely to be associated with deductive approach (Greener, 2008). Deductive scheme is where one tries to divert certain research questions, to be based on the theory that is to be tested. Deductive reasoning begins with general statements (premises) and, through logical argument, comes to a specific conclusion (Walliman, 2010). In quantitative methodology, the aim is to generalize based on statistical analysis, while the purpose of qualitative studies is to gain better knowledge of a phenomenon.

Qualitative method is used to develop depth understanding of a social phenomenon, as it were experienced by the involved ones (Patton, 2001).

Qualitative methods involve action research, case study research, and grounded theory (Myer, 2009). Meanwhile, qualitative data sources include observations, interviews and questionnaires, documents and texts, and the researchers' impressions and reactions (Oates, 2005). Qualitative data are mostly a record of what informants have said. For example, the interviews record what the



informants said about a topic, field notes record what the researcher experienced or thought about a topic, and documents record what the author of the document wrote at the time. In all cases, these qualitative data can help us to understand people, their motivations and actions. They can also help us to understand the way they work and live (Myer, 2009). A qualitative approach to the research is likely to be associated with an inductive approach to generating theory, where the aim is to build a theoretical understanding based on the empirical analysis that is performed (Edmonds and Kennedy, 2016). Qualitative research is based on theory, with the purpose of exploring those areas where the theory is insufficient (Creswell, 2012). This implies to a combination of deduction and induction reasoning, and is referred to as abductive approach (Edmonds and Kennedy, 2016). All in all, a combination of the experience with deductive and inductive reasoning can be a foundation of the modern scientific research, and can be commonly referred to as scientific method.

Most phenomena can be studied with both qualitative and quantitative methods. Thus, the two methods cannot be considered as comparatives, but complementary, as they differ in different ways to answer different questions and have different purposes (Kvale, 2009). It is the research question and what you want to get answers to, which determines the method selection. As the purpose of the study is to gain more in-depth knowledge of the liquidity management, we have chosen to use qualitative methods. Although the methodological weight of the study is qualitative, the quantitative methodology will form the basis of our qualitative data collection. According to Tjora (2017), a quantitative survey can form an important basis for strategic assessments of the phenomena or the issues that is important to study while using qualitative methodology.

Although in qualitative research you want to be inductive, it may be challenging to be completely theoretical, as it is necessary to possessing a certain amount of foreknowledge. In preparation for the study we have read theory about the subject field and gained an overview of the theoretical perspectives to avoid revealing self-finding findings. Thus, we are not completely inductive in our approach. The challenge is the balance between having an overview of the theory, while the theoretical basis does not inhibit the research. We will try to be open to what the data reveals.

### 3.2 Selection of research strategy and research design

There are several possible research strategies that can be used. In addition, there are several possible research designs that we can choose, but it depends on the phenomenon that is to be studied. In the following sections, we will give explanations of our choice of choosing case as our research strategy, before presenting the case study design.

#### 3.2.1 Case study as research strategy

To determine which strategy is most appropriate for the study, we have based it on Yin’s (2013) overview of relevant situations for different research strategies (table 2). According to Yin (2013) there is three conditions which determines which research strategy should be used. The three conditions consist of (1) the type of research question posed, (2) the extent of control an investigator has over actual behavioral events, and (3) the degree of focus on contemporary as opposed to historical events.

<b>METHOD</b>	<b>(1) Form of Research Question</b>	<b>(2) Requires Control of Behavioral Events?</b>	<b>(3) Focuses on Contemporary Events?</b>
<b>Experiment</b>	how? why?	yes	yes
<b>Survey</b>	who, what, where, how many, how much?	no	yes
<b>Archival Analysis</b>	who, what, where, how many, how much?	no	yes/no
<b>History</b>	how? why?	no	no
<b>Case study</b>	how? why?	no	yes

Table 2: Relevant situations for different research methods.

In the case of this thesis study the research question is formulated as a how-to-question, and both experiments, historical studies and case studies are appropriate strategies. The more the research question wants to explain why or how a social phenomenon works, the more relevant is the use of a case study. In case studies,

the researcher does not have control or influence over the events. Since the purpose of the study is to investigate and gather experience, we therefore want to take an observational role. This also points to case as a suitable research strategy. In addition, we focus on a contemporary phenomenon, not a historical phenomenon. Although the financial crisis from 2008 is a historical phenomenon, it is not the intention to carry out an analysis of the crisis itself, but rather an analysis of the liquidity management in Norwegian companies. We therefore consider Yins (2013) criteria as fulfilled, and choose case study as a research strategy for the study.

Myers points out in his book on Robert K. Yin's classic "Case study research", where Yin has the following definition on a case study (Myers 2009); «*A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clear*». Furthermore, Myers (2009) elaborates on Yin`s definition, that the case study means that the phenomenon must be studied in its context and not separated from context. This is because the context is itself a part of the history. Creswell (2013) gives us a definition of the case study method, where it explores a real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time. This is through detailed, in-depth data collection that involves multiple sources of information and reports a case description and case themes needs.

### **3.2.2 The design of the case study**

According to Yin (2013), many researchers incorrectly believe they are sufficiently skilled to do case studies because they think the method is easy to use. In fact, case study research is among the hardest types of research to do and the most challenging of all research strategies. It is therefore important to explain and argue for the choices taken during the process. In addition, it is crucial that the researcher has a plan, or a design, to carry out a good case study.

The research design refers to the plan according to which the present study was executed. It refers to all the planning involved regarding the study as well as all the decisions that the researcher had to make to answer the research question as effectively and efficiently as possible. Yin (2008) describes that «*a research*

*design is the logic that links data to be collected (and the conclusions to be drawn) to the initial questions of a study».* While according to Martyn (2007) the research design is as a blueprint of a research project and the execution of the design, the research process or methodology as the construction process using methods and tools. The focus of the research design is on the type of study planned to reach specific outcomes. Thus, it is important to have it clear what design the study should have before proceeding to data collection, so that we can answer the research question. There are several different definitions and kinds of case studies. A study does not need to consist of only one specific case design, but can be based on several features of case design types. In this study, we have decided to use Yins (2008) four basic case design (figure 5).

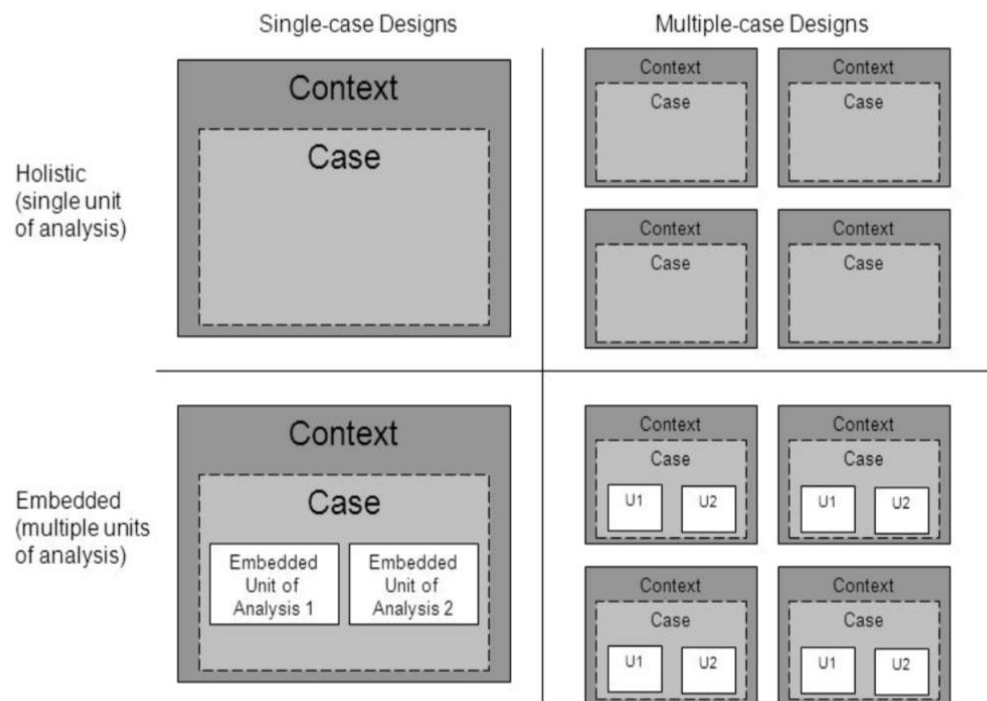


Figure 5: Basic types of designs for case studies. Source: Robert. K. Yin (2008).

The four designs are based on a 2 x 2 matrix as we can see in the figure 5. The matrix first shows that every type of design will include the desire to analyze contextual conditions in relation to the case, with the dotted lines between the two signaling that the boundaries between the case and the context are not likely to be sharp. The matrix then shows that single case and multiple case studies reflect different design situations, and that within these two variants there also can be multiple units of analysis. The resulting four types of designs for case studies are (Type 1) single-case (holistic) designs, (Type 2) single-case (embedded) designs,

(Type 3) multiple-case (holistic) designs, and (Type 4) multiple-case (embedded) designs.

In our research report, we must make a choice on the number of cases that we want to include in our study. This means, there is a need for a decision, prior to any data collection, on whether a single case or multiple cases are going to be used in the study to address the research question. Single case study is applied, when the researcher wants to study a single group or thing, with the purpose of getting a deep description of the phenomenon being studied. Meanwhile, when a study includes more than one single case, a multiple case study is needed. Such a design is also referred to as a comparative design.

A difference between a single case study and multiple case study is that in the last mentioned, the researcher is studying multiple cases to understand the differences and the similarities between the cases (Baxter & Jack, 2008; Robert, 1995).

Multiple case studies can be used to either argue contrasting results for expected reasons or either argue similar results in the studies (Yin, 2003). In this way, the author can clarify whether the findings are valuable or not (Eisenhardt, 1991).

According to Baxter & Jack (2008) evidence created from a multiple case study is measured strong and reliable. Furthermore, if the researcher only wants to study one single thing or a single group, a single case study is the best choice (Yin, 2003).

Dyer & Wilkins (1991) argue that single case studies are better than multiple cases because a single case study produce extra and better theory. When a single case study is used, the researcher can question old theoretical relationships and explore new ones, and because of that a more careful study is made. This makes also the researcher to get a deeper understanding of the subject (Dyer & Wilkins, 1991). On the other hand, Eisenhardt (1991) argue that multiple cases allow wider exploring of research questions and theoretical evolution. The researcher must choose case design based on what is most appropriate for the study. Herriott and Firestone (1983) points out that multiple cases are often considered as more compelling and the overall study is therefore regarded as being more robust. Yin (2008) believes that the researcher should choose multiple design over single design if time and resources allow this. By using a multiple case design the

research avoids being vulnerable, because by using single case design it is more likely to be vulnerable. Based on the argumentation over, we consider it appropriate to use a multiple case design. For studies that have a comparative design it is crucial that the case is carefully selected. This will be more discussed in the section 3.2.3.

As figure 5 shows, in this process of choosing the appropriate design, we must take a decision on the number of analytical units to be included in the study. The figure shows holistic designs and embedded designs. Yin (2008) distinguishes between holistic and embedded designs. Holistic design means that we have only one analysis unit, while embedded design involves several analysis units. Since our research study involves gathering experiences related to the liquidity management from the chosen companies, we therefore only study this one main function in these companies.

As mentioned earlier, all four designs include a desire to study contextual relationships in relation to the cases. The reason for why the line between case and context in the matrix is not sharp, is because a case study must cover both the phenomenon of interest, in addition to the context in which the phenomenon is located. To arrive at the most appropriate design for the case study, we must therefore define what the case is and what the context is. In accordance with the arguments in the section above and the research question, the cases in the study can be defined as the companies. Relevant aspect of a situation is the context. The companies participating in the study are complex, have several subsidiary companies and attached companies, and have offices both in Norway and abroad. In addition, the companies represent different industries. They operate in different markets, which limits the opportunities the companies have in terms of growth, earnings, etc. In this study the context will be the market effects of the various industry affiliations. If we focus isolated, and do not consider these contextual circumstances, we will also not be able to look at how these conditions affect our results, and we will therefore get an erroneous image.

Accordance with the argumentation and discussion above, we have decided to carry out this case study as multiple, holistic case study.

### 3.2.3 Selection of the case

Selection of case for the study is important in qualitative research. Random selection of cases is undesirable, and selection of cases is done only because of theoretical reasons and not for the representative reasons. The most important criterion is that the selection makes it possible to answer the research question. The selection technique for multiple case studies is based on a replication logic, which means that the cases are selected based on either predictive results (literal replication) or whether it is expected that the cases will give contradictory findings (theoretical replication). In this research study the selection is based on results from what the companies are coinciding, even though the companies are of different size and are in different markets. We find it necessary to collaborate with large companies in this study to ensure that the cases have resources allocated to the liquidity management. In small and medium – size companies, it is not always that there are separate functions for this. Another criterion is that companies were available in conjunction with collection of data, and they were willing to spend time and resources to participate in the study. Based on the selection criterions, we sent a request with information about our study by e – mail (attachment 1) to the largest, Norwegian stock exchange listed companies. After that, we received positive feedback from several of these. To stay within the framework of a case study, we decided to include four companies; Telia Norge AS, Orkla ASA, Statkraft AS and Equinor ASA. In figure 6 we have illustrated and summarized our case study design.

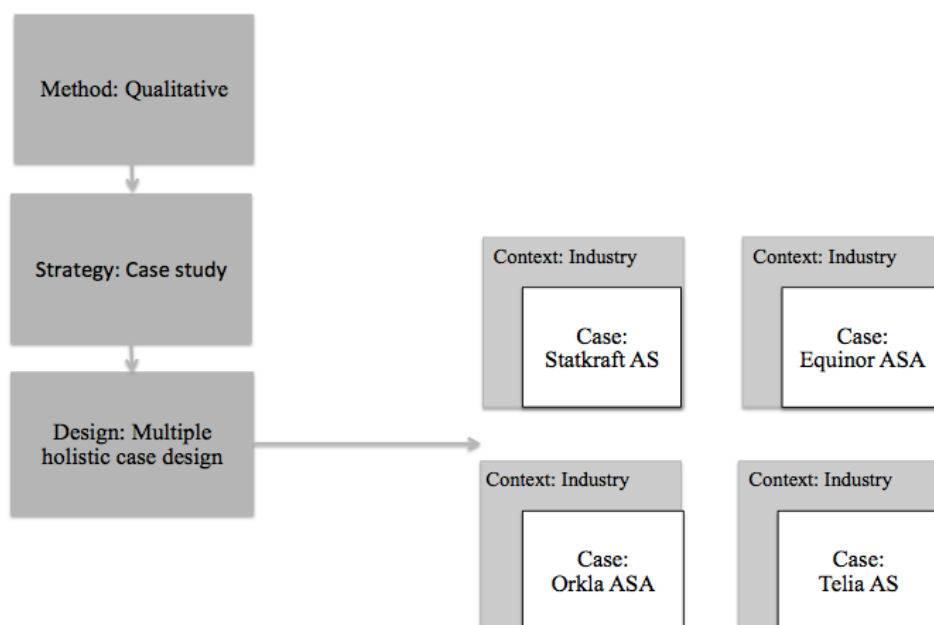


Figure 6: Our case study as a model.

The case study is based on this design, but Myer (2009) refers to that it is important that the research design is not to determined that it forces us on those paths that are not appropriate for the study. To avoid this, we decided that it is important for us to be flexible and adjust if it is necessary.

### **3.3 Data collection and accomplishment of the study**

The task of the data collection begins after a research question has been defined and a research design is chalked out (Kothari and Gaurav, 2014). Data collection is an integral part of any research effort. Just as important as it is to decide on a research design and on a research strategy, it is also important to decide the choice of specific data-collection methods when conducting the research (Maxwell, 2005). For data collection to be successful the goal of the data-collection operation needs to be established. Once the purpose of the data gathering is known and understood, it will be an indication of the format of the data-gathering operation and how the data should be analyzed. Accomplishment of research is achieved when we have collected, analyzed and interpreted the data (Johannessen, Tufte & Kristoffersen, 2011).

Case study research will involve more than one way of deriving data about the case study (Greener, 2008). This may include collecting and analyzing documents and reports, talking to people, survey data, participant observations, consumer research and any other data collection techniques, which offer qualitative information about the case. According to Yin (2013) it exists six common sources to data that can be used in case studies such as; documents, interviews, archive data, participant observations and physical objects. Myer (2009) refers to that once you have decided upon a research method, the next step is to decide upon which qualitative data collection technique (or collection of techniques) you want to use. Data collection techniques can be used singly or in combination in any qualitative research study. Yin (2013) refers to that data collection techniques are complementary and we will get more robust study if we use combination of data collection sources.

By the reasoning above, we have decided to use combination of several data collection techniques for the study, respectively document data and interview data. This phenomenon is called data triangulation (Dalen, 2011). In this chapter,



will we first start with presenting the concept of the data triangulation, then explain the two data collection methods and at the end describe how the accomplishment of the study have taken place. The process of the data collection for this thesis resulted in large amounts of information, therefore our analysis process will be particularly extensive for the qualitative data. We have therefore decided to include the accomplishment of the quantitative data analysis in this chapter, and explain the analysis of interviews in their own chapter.

### **3.3.1 Data triangulation**

Researchers can use combination of techniques to get different perspectives or to examine data in different ways (Dalen, 2011). Triangulation is a process of investigation in research whereby more than one data collection source or different data collection techniques are used to ensure that reliability, validity and good quality is achieved during data-collection procedures (Rogers, Sharp, Preece, 2011). Data triangulation helps to enhance the validity and the reliability of a study, as the use of multiple techniques makes it possible to uncover and understand more aspects of the phenomenon. In addition, it helps to tell if the results are convergent or whether different data sources give different directions to the result. Through triangulation, researchers can improve accuracy and support the conclusions of the research by collecting different types of data on the same phenomenon. One of the disadvantages of using data triangulation is that it involves far more extensive data acquisition, than if we were to use only one data acquisition technique. We believe, however, that the benefits are that it makes the study larger, the work wiser and more intensive. Therefore we choose to base the analysis on the use of both document data and interview data.

### **3.3.2 Document data**

The availability of data is crucial to the successful outcome of any research project (Mayer, 2009). Document data is the data that is already available, such as public documents, articles, journals, annual reports, budgets and surveys. This data material is often used to support and complement information from other sources. Document data is of great value in most case studies, and is particularly useful in advance of an interview or observation situation. In addition, Yin (2013) points out that one of the advantages of using such information sources is that it is

always a possibility to review the data material repeatedly and whenever one desire to do it. For this reason, such data is unobtrusive, and one does not need to go through third party to review the data. The information contained in the documents has been written and presented for a reason and for a purpose, something we have considered when we were analyzing the information, which could be useful for our study, and only picked out the elements and information that was relevant to the research question. In addition, there were overwhelming amounts of data and therefore we were careful to sort out the most important data.

In this research study, we are using annual reports as our document data, from a period of 2006 – 2017. The informants in the companies told us to search for the reports electronic on the web pages to each of the companies. An annual report is about goals that have been made last year and what the company has done in the last year. In addition, the annual reports contain statistical material. The aim of an annual report is to provide information about the company to a group that is not directly involved in day – to – day operations. The report includes the formal, statutory part of the companies' external accounts, which consists of the income statement, the balance sheet and the cash flow statement. The companies' income and expenses are presented in the income statement, while resources, assets and financing are presented in the balance sheet. Liquidity developments arise from the cash flow statement, which links the profit and the loss account and the balance sheet together (Bredesen, 2011). In the work with the annual reports, we have also considered other additional information. All annual reports from Norwegian companies shall contain the directors' report, assessment of prospects, financial management and control in the business (Directorate for Financial Management, 2017). In addition, some accounting information is also disclosed in the notes. The data we collected from the annual reports therefore contained both qualitative and quantitative data.

We can analyze accounting data by using methods like horizontal analysis, vertical analysis and key analysis. In this study, we use key figures analysis, since we only want to get an overall picture of the economic development of the companies during the period that have been studied. In key figures analysis, we calculate the ration of different amounts of accounts and several key figures. Both isolated and in context for a longer period, these provide increased knowledge of a

company’s financial situation and development. To provide a good assessment of the companies' liquidity management, it is also necessary to assess key figures for profitability and financing. The reason behind this is that these are closely linked to liquidity. All the companies that are participating in this study are associated of enterprises where the individual enterprises are legally independent but economically constitute a unit. The company with control is called parent company, and the companies controlled by parent companies are called subsidiary companies. Investment in other companies can complicate the accounting analysis of a company, because one must deal with two accounts; the company accounts and the consolidated financial statements. The treatment of different accounting items is somewhat different in the two of them. We will only use reported company figures in the work of key figures analysis.

We have used MS office Excel to systematize the figures. The key figures we have analyzed are presented in table 3.

Key figures for liquidity	Key figures for financing and solidity	Key figures for profitability	Economic development
Liquidity ratio 1	Equity	Total capital return	Turnover and earnings development over the last 11 years
Liquidity ratio 2	Interest coverage	Equity return	Average profit margin for the last 11 years
Working capital			
Liquidity reserve			

Table 3: Key figures included in the quantitative analysis.

To present the analysis, we designed concise reports for each company (attachment 2). The reports contain our considerations about the companies' economic development during the period, based on information gathered in the annual reports and key figures analysis. The document data gave us valuable insight into the companies' financial situation during the period that have been studied, and the information was used in the preparation of the interview questions. The reports provided information about the equity in the companies, various tools used to reduce the financial risk and dividend policy. The informants received the reports in advance of the interviews so that they could prepare. A

review of each company's economic development during the study period is presented in chapter 4.

### 3.3.3 Interview as data collection technique

The qualitative method is often done through interviews and observations, which involves collecting information that can be analyzed and interpreted into data. Kvale, Brinkman and Anderssen (2009) characterize the qualitative research interview as; «*it seeks to understand the world seen from the informant's side*». Here it is emphasized that the research interview is a professional conversation. The qualitative methods are characterized by the fact that the surveys are based on an interview guide, in other words an overview of the problem areas to be identified and not to be a traditional questionnaire that is used in the quantitative methods. An overview is given in figure 7.

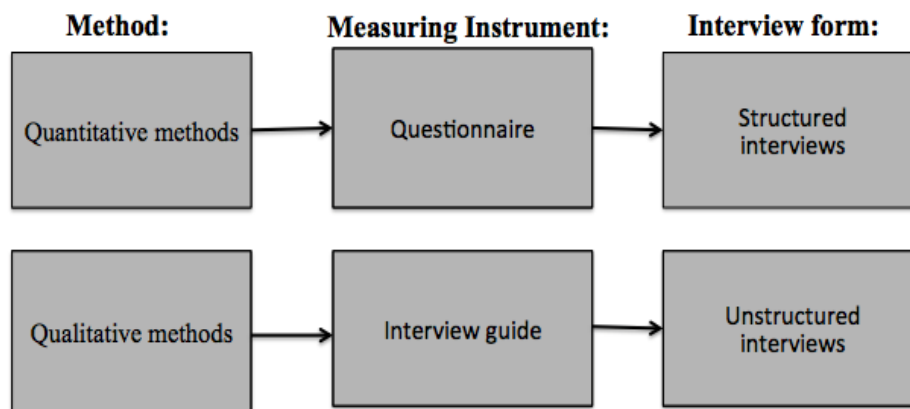


Figure 7: Overview of interview forms in quantitative and qualitative methods.

Interview is considered one of the most informative sources in a case study and is therefore widely used in case study research (Yin, 2013). According to Robert (2005) the purpose of interview as data collection method is to acquire the informants' experiences and different perceptions. In this way, we can get more comprehensive information on the topics around the research question. Interviews are more time – consuming and costly than, for example, a survey, but Oates (2005) points out several benefits of using interview as a data collection method. One of the benefits Oates (2005) points out is that an interview allows for a personal interaction between the researcher and the informant. In exploratory studies this will be particularly valuable as it allows the researcher to explain questions the informant does not understand, and ask follow-up questions if there is more to retrieve from the informant. In this way, one can add more depth to the

study by using an interview (Oates 2005). Furthermore, interviews can be classified into four main types; open-ended or unstructured, semi-structured, structured, and group interviews (Oates 2005).

Since we wanted to study experiences from the financial crisis impact on the liquidity management in the different selected companies, the most suitable technique for this was therefore interviews. We decided to use individual interviews with key informants from each company. To investigate our research question we conducted semi-structured interviews. This type of interview allowed us to follow an interview guide, while at the same time have some freedom, including the possibility to ask follow-up questions to the informants and change the sequences of the questions (Oates 2005). In this way, exploratory data is gathered. At the same time, the interview guide ensures that we cover all the areas we want to address in the interview, in addition to ensuring that the interview does not go off the track. The use of semi - structured interviews also allows room for interviewers to speak freely about the subject. This can lead to valuable additional information and add new perspectives to the study (Bryman & Bell, 2011).

It is challenging to plan and prepare for an interview situation, and we have therefore chosen to follow Yin (2013) five-step preparation process as a guide:

1. Identify our abilities and values as researchers
2. Practice for the interview situation
3. Develop an interview guide
4. Evaluate possible candidates
5. Conduct a pilot case study (not completed due to time limits)

#### *1. Our abilities and values as researchers*

Conducting of interviews involves a continuous interaction between the research question and the data collection. It is therefore also necessary to have some competence in the form of experience and knowledge of case studies. Since neither of us has previously conducted interviews of this kind, a thorough literature review was particularly important for us. To possess the necessary skills to conduct the interviews, we had reviewed the case study literature and studied previously conducted interviews in empirical articles. The lack of experience about interview situations also led to the choice that, both researchers conducted

the interviews together. In the interviews, we decided that one should lead and ask the interview questions, while the other one write notes down and possible ask follow-up questions in addition to ensuring that all the topics in the interviews were covered. By using an interview guide, we ensured that we had good, thoughtful questions to ask. As we wanted to get the most information from our informants, we focused on listening and giving them a good review time, as well as rooms to elaborate key themes.

### *2. Practice for the interview situation*

As part of the preparation for the interviews, we went through the questions in the interview guide, conducted interviews of each other and gave feedback. In addition, the supervisor considered the questions to ensure that the professional quality was satisfied. The topics around the research question have been the subject of much discussion between us. In combination with the literature review, this ensured that both researchers had sufficient knowledge of the subject, which enabled us to cope with unforeseen events and obstacles along the way. This is crucial for conducting good quality interviews.

### *3. Develop an interview guide*

According to Yin (2014), an interview guide is an agenda for the researcher in the interview situation. This gives an overview of the questions and topics that the interview should cover. In addition, it is important to prevent the interview from tracing. In a comparative case study, the interviews must be arranged, in such a way that the most central questions are answered by all the informants in the study. In the case of partially structured interviews, we consider it appropriate to have a well-designed interview guide while also allowing the informant to speak freely, but then deviations from the topics may occur.

The entire interview guide can be seen in attachment 4. In the first and introductory section, we decided to include some background questions to map the informants' experience, responsibility and background. Furthermore, we designed questions that address the research question. In these sections, we focused on initiating some open questions that deal with the concepts, to identify possible aspects that the informants can enrich the study with. The purpose of such open questions is to get answers that are not colored by the way the

questions are asked. The purpose of such open questions is also to reflect the opinions and views of the informants alone. To ensure efficient use of the material from the document data analysis, we chose to insert a separate column of keywords next to the three main sections. In this column, we noted some keywords to the question. This gave the interviews a nice flow, and made it easier as the informants were asked to comment firmly. The last section was devoted to final questions, such as questions that emerged along the way, and confirmation that we had understood the main lines that the informants expressed, and whether there were any informants who wanted to add some more information that could be of interest to the study. In this last part, we also questioned the possibility of contacting the informants after the interview, to ask follow-up questions if there were any shortcomings in the data material or the need for further clarifications.

#### *4. Evaluate possible candidates*

Step four in the preparation process is to select relevant candidates that can be used in the study. It is crucial for the further progress, that this step is done precise, as it will be time consuming if one start the data collection and realize that the informants are not eligible for the study anyway. According to Roulston (2010), the use of key informants is a good method of collecting information from organizations. When using key informants, Campbell (1995) points out on two criteria that should be considered:

1. The informants are in a position that provides information about the research question and the subjects being investigated.
2. It is important that the informant is cooperative, has communication skills and that the informant may be available for an interview.

According to Roulston (2010) it is essential for a good qualitative study that one considers and emphasizes the knowledge the key informants possess, instead of having a representative selection. It is argued that the use of key informants based on the knowledge they possess about the research themes versus a representative selection, gives a lower probability of bias in the findings (Kothari, 2009).

The process of obtaining informants can be challenging, as it is not always easy to get response from large companies associated with a master thesis. In contact with the companies, we have communicated that it was about an interview over one

hour, with a representative from the company's finance department. The information we sent out was forwarded within the company, and this resulted in key informants.

In large companies, it is common for the company's financial activities to be managed by a Chief Financial Officer (CFO). The CFO manages over the accounting department (controller) and the treasury department. It is the latter department that is the focus of this thesis, and the key informants are taken from here. In a company, the treasury department is an important resource for the design of the company's financial strategy and economic policy. The department is advisory to a company's asset management and performs risk assessments, so that the financial management and the capital structure are adapted to the company's wishes and needs. The department also tries to find the optimal balance between cost and risk and ensures that the company has the necessary liquidity to handle its payment obligations.

All four of the companies were cooperative and stood up with 2 - 3 informants for the interviews. This is considered in the assessment of data reliability in the section 3.5.1. We got the opportunity to interview two key informants at Orkla ASA, thereby we interviewed three key informants at Statkraft AS, furthermore we interviewed three key informants at Equinor ASA and at the end we interviewed two key informants at Telia Norge AS. Although we did not have a great influence on which informants that would be standing for the interviews from the different companies, we strongly believe that the informants participating in the study are the most qualified. All the informants work daily in the company's treasury department; thus, this provides a good base for answering the questions. Furthermore, all the informants had different responsibilities within external financing, bank relationships, credit rating and liquidity management in their companies. It was crucial for the study that the informants had sufficient knowledge about the liquidity management and insight into the financial management of the company. We believe that this is accomplished and we were satisfied with the information that we got through the interviews.

Since the study looks at the period from 2006 to 2017, it was also desirable that the informants had worked in the company during this period. This was largely satisfied. All the interviews were conducted face-to-face. The interviews lasted



approximately 1-2 hours. After conducting the first interview we adjusted and added some questions to improve further interviews. All the informants allowed us to record the interviews. Recording the interviews allowed us to focus more on the answers provided by the informants and plan follow up questions (Bryman & Bell, 2011). Thereafter, we transcribed the interviews. Transcribing the interviews can be an advantage since it keeps the informants' words intact (Bryman & Bell, 2011).

Table 4 gives an overview of the informants in the companies.

Informant	Number of years in the company
Informant 1 in Orkla ASA	10 years
Informant 2 in Orkla ASA	8 years
Informant 1 in Statkraft AS	8 years
Informant 2 in Statkraft AS	5 years
Informant 3 in Statkraft AS	2 years
Informant 1 in Equinor ASA	8 years
Informant 2 in Equinor ASA	12 years
Informant 3 in Equinor ASA	9 years
Informant 1 in Telia Norge AS	10 years
Informant 2 in Telia Norge AS	7 years
Informant 3 in Telia Norge AS	4 years

Table 4: The informants and their working experience in the company.

Through mail exchanges we discovered in advance whether the candidates had time and opportunity to be interviewed during February 2018. This was a necessary request from our side, as we are aware that the finance departments are subject to a large amount of work about annual reporting in January. Based on the review, we consider both the criteria by Campbell (1955) to be satisfied. All the informants participating in the study are in a position that indicates that they have knowledge of the subject of the study, as well as that they all have shown an interest in cooperating with us. It is also important to mention that the interviews were conducted at the companies' headquarters in Oslo, except for Equinor ASA. To conduct an interview with Equinor ASA we had to travel to Stavanger, since

they have their headquarters there.

In line with the requirement for free and informed consent from the National Research Ethics Committee for Social Sciences and Humanities (NESH), the informants gave, their written consent in advance of each interview (attachment 3).

### 3.4 Analysis of interview data

The working process of analyzing the data material started already in the data acquisition phase. In qualitative research where the context is important and can affect the phenomenon that is being studied, it is important that one is critical in the analysis work and makes sure to considerate that there are other explanations that may be the cause of the results. To get the most comprehensive image of this, we have extracted important contextual relationships that emerged during the interviews. This also ensures the validity of the study. Analysis of qualitative data is particularly extensive, as there are often large amounts of text material collected. The process of picking out and systematizing what information is central to answering the main research question of this study is complex. To make the data analysis work more manageable, we decided to use Miles and Huberman (1994) framework, see figure 8.

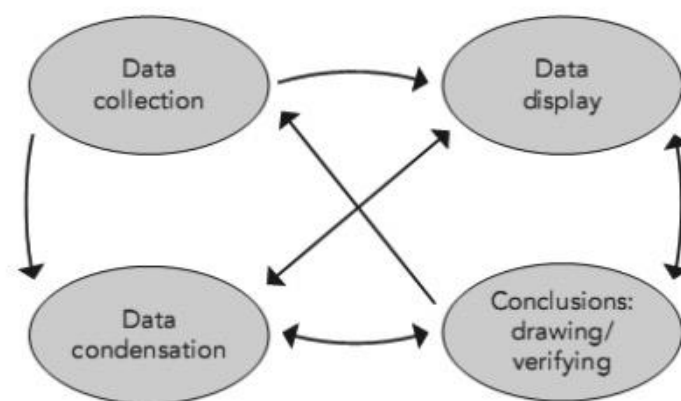


Figure 8: Component – component Analyze of Data: Interactive Model by Miles and Huberman (1994).

Qualitative data analysis consists of four processes, the first being data collection (Miles and Huberman, 1994), as we can see in the figure. The next step in the process is data condensation, which is the process of selecting, simplifying and transforming the data from the interviews. Data condensation is according to

Miles and Huberman (1994) an analysis process that sorts, focuses, rejects and organizes the data in a way that leads to final conclusions being taken and verified. Furthermore, display of the data is an important part of the analysis. This implies providing a clear, summary breakdown of the information, which provides the basis for drawing a conclusion. To get a robust qualitative analysis, good displayable methods are important. The last part of the analysis involves drawing conclusions and confirming the findings. Throughout the process, it is desirable that the researcher looks for patterns and explanations in the data, but the final conclusions should not be confirmed or confirmed before the entire data material has been analyzed (Miles and Huberman, 1994).

As mention earlier, before we started with the analysis part, we transcribed all the interviews. It means that the interviews were reproduced and printed just as they were expressed under the interviews. It was time consuming and took huge effort to get this done. Then we conducted the process of data condensation of the transcribed interviews, selecting the most central information from all the interviews, and then simplifying and revising the data. Simplifying and structuring the data from the interviews meant developing dimensions and looking for patterns in the data. Overall, we obtained approx. 90 pages of transcribed interviews, and such amounts of data are not appropriate to work with. By initially implementing a holistic coding, where we attach overall dimensions to larger amounts of data, it was easier to get an overview of the most important parts of the interviews.

The process of reducing the data was carried out using a table system in MS Office Word. In the introductory round, we encoded the data from each interview based on predefined dimensions that was based on the main research question and the underlying research questions. We presented the different dimensions in tables before we went through each interview systematically and extracted those parts that belonged to the different dimensions. In the analysis, we discovered several important factors, which led to the extension of the original model and the need to create more subdivisions. This is defined as subcoding (Miles, Huberman and Saldaña, 2014), and is a type of coding that can be used when the main dimensions along the way require more extensive categorization. Some dimensions were also changed along the way in the process. The data coding was

repeated repeatedly, which ensured that only the strongest findings were retained and that they were properly coded. Attachment 5 shows the complete overview of dimensions used in the last round of data encoding.

To display the findings from the data, we chose to use tables. In the work of the analysis, we assessed whether several of the findings from the different companies belonged to each other, and drew out what was designated by similarities. We have considered inequalities between the companies, in their assumptions and experiences, something that we discuss along the way in the analysis chapter. After structuring the findings according to the dimensions of the main research question in the tables, we collected the findings from the various underlying research questions in one and the same table. This gives an overall impression of the findings of the analysis.

### **3.5 Evaluation of the data material – data quality and ethical assessments**

Qualitative research is designed to look too narrow on a research question, when one studies a relatively small area (Stephen, Marylynn and Frances, 2011). One of the common criticisms of qualitative research is that the examples that are used are too few, and that the selection criteria are not explaining the importance of whether the examples are typical or representative. However, Svend Brinkmann (2012) experienced that qualitative research can operate more closely and is easier to relate to than quantitative research. Furthermore, it is crucial that the data collected should be of satisfactory quality for the study to be reliable and lucrative. The quality of the data can be seen when studying the main research question. If the data is of high quality, the more suitable it is to illuminate the main research question. To provide a comprehensive discussion of the quality of a study, it is common to describe this through assessments related to reliability and validity. These complements each other by referring to different prerequisites for what is good data quality, as well as to some extent overlap each other. The data collected is not relevant to the main research question if it is not credible at the same time. Thus, if the validity is high, then the reliability is high (Greener, 2008). In the following sections, we look at these two criteria, in addition to discussing whether the interpretation of the findings from the analysis provides the basis for transmissibility, in other words, whether the results from the analysis can be transferred to similar phenomena. In total, these three are included in the

Kvale (2009) term "*a scientific holy trinity*". In conclusion, we review the ethical assessments we have conducted in this study.

### **3.5.1 Reliability – How credible are the data?**

Reliability means reliable (Greener, 2008), and is about whether that result of a study can be considered reliable (Johannessen, Tufte and Christoffersen, 2010). Reliability relates to the accuracy of the survey data, the data used, the way in which they are collected and how they are processed (Johannessen, Tufte and Christoffersen, 2010). Reliability is that the results of a study will be the same in another study, where they will be tested under the same conditions. The answers that the informants gave were influenced by the relationship to the interview objects, that the context the interview was happening in, and that the informants was understanding the perception in the communication process. Therefore, it would not be possible for other researchers to repeat the same processes and get the exact same answers. In this thesis, where the focus has been on finding or gathering experiences, approaches and contexts, it was important to ensure that the interviewer as far as possible perceived the interview objects that wanted to convey. To ensure the best understanding, some questions were deepened and sought more thoroughly. According to Greener (2008), reliability is most often expressed by getting identical data if the same research scheme is used to study the same phenomenon, but in different data collections. In qualitative research this is not as relevant as the researcher cannot act in the same way and get the same results every time. The researcher will respond differently in relation to different participants and in relation to the same participant at several points (Greener, 2008). The argument for the reliability of this study will therefore involve discussions and reflection of data collection, and how the relationship of participants in the study can influence the information obtained.

According to Yin (2013), one of the most important prerequisites for achieving high reliability is documenting what is being done always. In the thesis work we have made an accurate description of the purpose of the study, method selection, design, as well as reproducing the method for obtaining and evaluating the data material that forms the basis for the analysis part. For this reason, we believe that we have taken care of the reliability of the study in a good way. In addition, we have had the ambition to provide accurate documentation of the process along the way, emphasizing openness about what has been done. Reliability is strengthened

with this as it allows tracking the documentation, methodology and decisions that was taken.

The qualitative data were collected in the form of interviews, where both researchers were involved and present during the accomplishment of the interviews. Since the interview objects received a simplified report of the results of the document analysis in advance, so that they could prepare, this limited our influence on the informants. This was to reduce the risk of questions coming abruptly up and being harder to answer for the informants. If one must elaborate and explain the questions, this could quickly lead to misinterpretation of the questions, which could be detrimental to reliability (Johannessen, Tufte and Christoffersen, 2006). The use of the document data prior to the interviews had facilitated the establishment of trust between researchers and informants. This was important to get on place, so the informants could share their experiences. Furthermore, all the companies that participated in the study are of a significant size, which means that the informants have pointed expertise within their felt or departments, and therefore it was challenging for them to comment on other areas or departments than their own. For example, it was difficult for them to give an answer on accounting questions when it was not their working department. According to McKenney and Thomas (2012), more than one key informant from each company should be used to increase the reliability of the results from the interviews. During the interviews with the companies more than two informants was present. This increases the reliability of our data collection from the interviews. In addition, this will also enhance the credibility of the findings in the analysis.

In addition to documentation along the process, the reliability of the study will be influenced by how we process, analyze and interpret the results from the data collection (Johannessen, Tufte and Christoffersen, 2010). The risk of misinterpretation will be greatest in the qualitative part of the survey, as the data is in text form and thus opens more possible interpretations than the quantitative data does. Interviews were intercepted via smartphones, and then transcribed to ensure that all information from the interviews was considered. In addition, we have requested clarifications and confirmations that the content is correctly understood and reproduced. This helps to strengthen the reliability of the study.

### **3.5.2 Validity – are the interpretations valid in relation to the reality we have studied?**

Discussions about validity in qualitative research are largely linked to the validity of the researcher's interpretations (Greener, 2008). As mentioned earlier we have taken recordings of all the interviews, and then transcribed these. This are relevant to the validity, since this means that the interpretations are based on material that is accurate reproduced of what was said during the interviews. It is also important that the researcher correctly understands the informants' views and perceptions of the phenomenon that is studied. Receiving feedback from the participants in the study can ensure this. We conducted this by consulting each informant in the closing part of the interviews if we had correctly understood him/her, and then we summarized the most important points from the interviews.

The validity of the study will therefore depend largely on whether the findings and the studies are reproduced in a precise and correct manner. The use of several researchers to collect and describe what is being observed is called research triangulation, and is an effective strategy to ensure the validity of the study. In this study, we are two researchers working together. In this way, we can double-check with each other and make sure that what we've experienced the same. This makes it less likely that others who go through our research will doubt on whether that what is reproduced has happened. The researcher's role is important in qualitative studies as the researcher himself is an instrument in the research. The proximity that the researcher must have towards the phenomenon, that is being studied, makes it necessary to explain the importance that the researcher has for the study. Our background and experience have an impact on the process and indicate how competent we are in relation to the field being studied. Our background from studying finance means that we both understand the phenomenon that is being studied.

We had in advance made some assumptions about what we could expect from this study, but during the working process we realized that these assumptions was largely influenced by the academic understanding we had of the research topic. In meeting with the informants, we have acquired a more practical approach. In this study, flexibility has been the most important part of the work, as we have had a theoretical basis, then gained practical experience about the subject, and finally we have gathered these two in our interpretation. Whether our knowledge in

advance has influenced the interpretation is also necessary to clear up, since skewedness in the findings will also affect the validity of the study. One of the pitfalls of qualitative research is the emergence of research bias, in which the researcher only relies on the data that he/she will find, and produce results and interpretations based on this. Although we are open to making other findings in the study than what we have assumed in advance, the pre-understanding will still affect the work of the study. It will therefore be challenging to take an objective role in qualitative studies. Both the researcher and the informant influence the data collection, and in this way, also the results. As researchers, we cannot be completely objective in such statements, as we are formulating the interview questions. As far as the informants are concerned, they are subjective, as it is their opinions and views expressed by the answers they give to the questions.

Several researchers, including Greener (2008), claims that a possible way to improve the validity of a study is by collecting and analyzing the data through data triangulation. This is because the use of multiple data sources makes the interpretation more robust as it reduces the risk that the findings reflect only systematic bias or the constraints contained in a method. The combination of quantitative and qualitative data collection methods in this study thus helps to strengthen the validity of the study.

### **3.5.3 Transferability - Can our interpretations be relevant in other contexts?**

Findings from case studies cannot be used as generalization, because the selection is not randomly drawn but chosen for theoretical purposes. In addition, the number of cases is too few to describe an entire population. Therefore, we are talking about transferability instead of generalization. This study uses case as a research strategy. One of the objectives of case studies is to gain an understanding of the phenomenon that is studied, which extends beyond the cases the study focuses on. According to Yin (2014), the design of case studies will be linked to the possibility that the results of the study are relevant in several contexts. It is important to consider the cases in the study as means of shedding light on the theory and giving an understanding that extends beyond the scope of the study. Our interpretations are based on experiences gained from key informants in the companies, and these may be transferable to other cases, but the context is crucial.



### **3.5.4 Ethical assessments**

Ethics is defined as the moral principles governing or influencing conduct or the branch of knowledge concerned with moral principles (Soanes and Stevenson, 2004). The first meaning is the one that is most relevant for us. According to Myer (2009), research ethics can be defined as the application of moral principles in planning, conducting and reporting the results of research studies. The fundamental moral standards involved focus on what is right and what is wrong (Mason, 2002). Therefore, it is necessary to conduct an ethical assessment of the research process, before, during and after the study. According to Mason (2002), the ethical assessments the researcher must make before any research project is linked to ethically responsible research and how research can be put up to avoid adverse consequences for the involved parties. By keeping this in mind we made an agreement with the ethical and legal guidelines developed by NESH (The National Research Ethical Committee for Social Sciences and Humanities) continuously in the work of this study.

Since the data collection took place using an interview of key informants as a technique, it is particularly important to draw up ethical assessments related to the use of people in research. Particularly important is the principle that participating in the research project should not harm interview objectives, and this should set the framework for how close the researcher in the interview situation can be. In this study, the questions are little or not at all personal, and we consider this part to be taken care of. In the interviews, the informants provide their views and experiences from the work of the company. We consider this to be the greatest ethical dilemma in this study. To handle this in the best possible way, we have asked for clarifications of certain topics after the interviews, avoiding misunderstandings that could potentially be harmful to the companies.

The informants were before the interview informed by consent, and explained that the study was voluntary and that all personal data were treated confidentially (attachment 3). This means that the information collected from the data collection is treated in a proper manner that ensures that the identity of the participants remains hidden. All participants in the study have been informed that the interviews are recorded on tape and transcribed, and that this is kept until the study period is over. These points provide the informant with some control over their own participation in the study. Although the data is processed confidentially

and the informants in the study are anonymized, there will be a risk of recognition if someone reads the report with sufficient insight into the company. For example, some of the information provided by the analysis will specifically address systems and routines that are only conducted in a treasury department, and in some cases these may be tasks performed by a person.

In qualitative research, ethical problems may also arise about the researchers wish to draw up findings that support their own perceptions. For this reason, it is important that we are open to contradictory findings so that we avoid bias. We have worked structured and followed a progress plan along the way. This has allowed us to spend time structurally, then structuring the findings and making more reviews along the way to ensure that all relevant findings have been included and discussed.

# CHAPTER 4

## THE COMPANIES

In this chapter, an overview of each company used in this case study will be provided, followed by a brief description of the economic development to each company in the period 2006-2017. Finally, it will be explained why these four companies are appropriate for the study. The main sources for this chapter are the companies' annual reports from the period 2006-2017, information obtained from the companies' websites, as well as information exchanged by email from key informants.

To be able to answer the research question, we select four major Norwegian companies. Table 5 gives an overview of the companies participating in the study.

Company	Industry	Turnover in billions of NOK*	Number of employees
Orkla ASA	Brands, materials and aluminum.	39,60	18178
Telia Norge AS	Wireless telecommunications.	6,08	26166
Statkraft AS	Production of electricity from hydroelectric power, the energy industry.	69,00	3400
Equinor ASA	The oil and gas industry.	17,11	20245

Table 5 The companies participating in the study.

*\*The turnover is taken from the companies' annual reports from the year 2017, consolidated numbers.*

## **4.1 Orkla ASA**

Orkla ASA is listed on the Oslo Stock Exchange as one of the largest companies in Norway, and is a leading supplier of branded consumer goods to the grocery, pharmacy, specialized retail, bakery sectors and out-of home. The main markets of Orkla ASA are the Nordic and Baltic regions, selected countries in Central Europe and as well as some selected product categories in India.

Orkla's Branded Consumer Goods business comprises the Orkla Foods, Orkla Confectionery & Snacks, Orkla Care and Orkla Food Ingredients business areas. Orkla also has operations organized under the Orkla Investments business area, consisting of its investment and financial assets in Hydro Power, Jotun, Grangers, Sapa JV etc.

Orkla's history dates back over 350 years and is a company that started out as purely a mining company. Orkla is one of Norway's oldest business, and has evolved into an international company with a turnover of NOK 39,60 billion in 2017. The company has a strategy to strengthen their position as a leading brand and organic growth, and is working each year to achieve this.

### **4.1.1 The economic development of Orkla ASA in the period 2006 – 2017**

The period that we study in this case is characterized by uneasy markets for several of the segments that Orkla ASA operates within. Orkla ASA has been active in several areas, and the company has therefore been affected by fluctuations in several markets. The company has, during the studied period, worked hard to make the company a branding company. This has caused to several strategic adjustments with both sales and acquisitions, which also has affected both the revenue development and the earnings development of the company. The financial crisis in 2008 led to a big fall in demand in several of the markets of Orkla ASA. This resulted in a big drop in the company's profit and margins in 2008. The negative result during the financial crisis can be explained primarily due to significant accounting write-downs on the share portfolio because of the big fall in the financial markets, as well as write-downs of goodwill and fixed assets. The business areas of Orkla ASA were, during the financial crisis, affected by the disturbances in the market. The costs of restructuring and write-

downs of the company comprised totally 1 billion of NOK in 2008. At this time, Orkla ASA had its own business area in management, named Orkla Finance, which had the ability to sense the disturbances in the financial markets. Orkla Brands and Jotun, where Orkla ASA is a shareholder, experienced strong results in 2009 while other segments experienced very weak markets right after the financial crisis in 2008. The equity ratio has been stable during the studied period, and the company has also had a robust capital structure despite major strategic adjustments. Orkla ASA has throughout the period proved to be a solid company with strong reserves, and therefore good ability to tolerate fluctuations and losses. The financial crisis had the strongest impact on the profitability of the company, but already in 2009 this stabilized and the company has, in the recent years, experienced growth on the profit and good margins.

## **4.2 Telia Norge AS**

Telia Norge AS, earlier named Netcom AS, was founded in 1989, and is today the second largest supplier of mobile services in Norway, after the company Telenor ASA. The company is a result of a merger between the Swedish company Telia and the Finnish operator Sonera, hence TeliaSonera. The company is today named TeliaCompany and has operations in Nordics, Baltics, Central and South Asia. This leading Telecom service has a nationwide mobile network who offers a complete range of services for businesses, consumers and organizations.

As stated in the Telia Norge AS annual report of 2017, the industry of telecommunications has undergone major changes in the recent years. This is because more and more people achieve access to the communication technology. This technology has an important part of the society; therefore, it leads to increased demand. The changes in the industry makes harder competition, and it is therefore a major focus in Telia Norge AS to meet existing and new requirements in the market to ensure the company's position, service offer and customer relationship.

### **4.2.1 The economic development of Telia Norge AS in the period 2006 – 2017**

Telia Norge AS has experienced revenue growth throughout the period that have been studied. The company maintained its income level even during the financial crisis in 2008. The company also had very good profit margins and strong results

during the period 2006 – 2017, but had weaker developments in the year 2009 and 2012. The main reason why the result was reduced in the year 2009 is mainly due to the challenging business markets during the financial crisis in 2008, as well as the introduction of sector specific taxes and fees in several countries that the company operates in. However, the company experienced a slight increase in turnover during the crisis. This is mainly because of the positive currency effects that the weakened Norwegian krone (NOK) has caused. Even if the global economy was, in the period 2006 – 2017, more turbulence, the company sensed a strong organic income growth. The reason for this is mainly because of the massive customer growth internationally and increased demand for data services. The company has experienced stable growth in both earnings and sales since the year 2012. The good results from the year 2017 confirm Telia's position as one of the Europe's fastest growing telecommunications companies, after the company Telenor ASA. In the year 2014, the company decided to have a transition to semi-annual output payments. In this way, the company can adjust Telia's payment to shareholders to the cash flow profile of the company throughout the year. This causes an output payment in both June and November. Telia Norge AS believes that this will optimize the funding flexibility and the liquidity management of the company.

### **4.3 Statkraft AS**

Statkraft AS is an international power company. The company is a leading international hydropower company, and is the largest supplier of renewable energy in Europe. The company's core business is the production and the development of hydropower, wind power, gas power, solar power and district heating. Statkraft AS is a global market player in energy trading and was established as a state enterprise in 1992. The company is wholly owned by the Norwegian state, respectively, the Ministry of Trade and Industry from October 1<sup>st</sup> 2004. In total, the company operates with 403 power plants and 29 district heating plants, and with 3400 employees in more than 16 countries. The vision of the company is to deliver clean energy, since the demand of the company's core products is high due to increasing global climate challenges. The history of Statkraft AS dates to 1895, when the state bought its first power plant, Paulenfossen. In 1992, Statkraft's plants, consisting of power plants and central power grids, were split into Statkraft and Statnett. The 1990s and 2000s have been

characterized by several acquisitions and developments of regional power companies in both Norway and abroad. From 2004, Statkraft AS has been organized as a joint-stock company, with the state as its owner.

In 2008, the largest agreement a Norwegian company has made abroad has been carried out through a swap agreement made by Statkraft AS with E.ON AG. This agreement was worth around € 4.5 billion. The swap traded the shares of Statkraft AS in the Swedish company, against several hydropower plants, district heating plants and gas power plants in Germany, Sweden and the United Kingdom, as well as shares in E.ON AG. Barter with the German E.ON AG made Statkraft AS Europe's largest producer of renewable energy, and the year 2008 is therefore considered to be Statkraft's international breakthrough. At that time, Statkraft did not have ambitions for strong growth outside of Europe, nor was it a secret.

The red-green government carried out an equity contribution of NOK 14 billion in Statkraft AS in December 2010. The purpose of the government contribution was to help Statkraft AS to implement its investment plan, thus further developing its position as Europe's largest producer of renewable energy.

#### **4.3.1 The economic development of Statkraft AS in the period 2006 – 2017**

In 2011 Statkraft AS continued to invest in international hydropower and wind power, and in 2009 the company entered the Turkish market. It would turn out to be a key market for the company. In the period that we are studying, Statkraft has grown through mergers and acquisitions, and during this period the company got its international breakthrough and became Europe's largest producer of renewable energy. The company has experienced some fluctuations in the profit during the period, but has experienced a solid increase in sales, also during the financial crisis. During the crisis, the company delivered a strong result, mainly due to a fall in power prices and increased production. In addition, the company had a significant book gain from the trade with E.ON AG in 2008. This gave an accounting effect and impact on earnings performance during the period that we are studying. The company has significantly strengthened the liquidity in the years after the financial crisis. Especially in 2010 when the state contributed NOK 14 billion into the company, and in 2014 with a new contribution from the owner with NOK 5 billion, and the decision to reduce future dividends by NOK 5 billion.

This happen because Statkraft AS needed a profitable and climate-friendly strategy. For Statkraft AS the year 2014 was also a good growth year with strong sales and profit growth despite low Nordic power prices.

#### **4.4 Equinor ASA**

Equinor ASA is an international energy company. The company was established with the name The Norwegian State Oil Company AS in 1972, and was listed on Oslo and New York (USA) stock Exchange in June 2001. The Norwegian Government is a majority shareholder with a 67 percent stake, managed by the Ministry of Petroleum and Energy. Statoil merged with Hydro's oil and gas division in October 2007, and in May 2008, in the General Meeting, they approved to change the company's name to Equinor ASA. Equinor ASA is the leading operator on the Norwegian continental shelf. From the early 90's they have built a global business with a strong foothold in Europe, Africa, North America and Brazil. They are engaged in exploration, development and production of oil, gas, wind power and solar energy. They sell crude oil and are also a significant supplier of natural gas. They also have operations in processing, refining and trading. The company is divided into eight business areas and staffs.

The company has 20245 employees, where 16300 employees are in the parent company itself. Equinor ASA is represented in approx. 36 different countries. With a market value of around NOK 400 billion, the company in Norway is by far the most valuable, and it is among the world's 50 largest companies independent of industry.

The company knows that they must relate to new realities, both in terms of climate changes, geopolitics and energy markets. Therefore, Equinor ASA sees new ways of utilizing its expertise in the energy industry, developing opportunities for new energy and creating innovation in oil and gas worldwide. They know they must have a low carbon society in the future, so their ambition is to become the world's most carbon-efficient oil and gas producer, and to be a driving force for innovation on offshore wind power. Their vision is therefore that they form the future of the energy, and the purpose of converting resources into energy for the people, and progress for the society.



Equinor ASA has developed with the Norwegian oil industry, which began in the late of the 60s. In addition to being one of the world's largest oil and gas suppliers, the company is becoming a broad energy company with significant growth in renewable energy. In 1974, two years after the Norwegian State Oil Company AS, Statoil was created, the Statfjord field was found in the North Sea. In 1979, the Statfjord field was put into production, and in 1981 Statoil became the first Norwegian company to have operator responsibility for a field at Gullfaks in the North Sea. They grew significantly in the 1980s through the development of the major fields on the Norwegian continental shelf, such as Statfjord, Gullfaks, Oseberg Troll, etc. They also became a major player in the European gas market by securing large sales agreements for the development, and for the operation of gas transportation systems and terminals. During the same decade, they became involved in production and marketing in Scandinavia and established an extensive network of gas stations. Since 2000, their business has grown because of significant investments on the Norwegian continental shelf and internationally. In 2001, Statoil was listed on the Oslo Stock Exchange and the New York Stock Exchange, and it began a new era in the concern`s history. They then established businesses in Algeria, Azerbaijan, the Gulf of Mexico, Nigeria and Angola, and several other countries.

#### **4.4.1 Equinor ASA economic development in the period 2006 – 2017**

Equinor's ability to realize the full potential on the Norwegian Continental Shelf, was strengthened through the merger with Hydro's oil and gas division in 2007, making it the world's largest offshore operator. Norsk Hydro's oil history dates to the late 1960s, and the company was one of the licensees when the large Ekofisk field was found in the North Sea in 1969. After the merger, Equinor ASA became partners with Brazil's Peregrino field, and later they became operator there. They delivered the world's longest multi-phase pipelines at Ormen Lange and snow white gas fields, and the giant Ormen Lange development was completed. In recent years, they have used their skills to design and manage operations in different environments, to increase their upstream business outside of their traditional area, which is offshore production. This includes the development of heavy oil and shale gas projects.

Equinor ASA has been one of the most important players in the Norwegian oil industry, and has helped to develop Norway into a modern industrial country. Today, Norway is one of the world's most productive petroleum provinces, and a test lab for technology development. In 2010, Statoil Fuel & Retail ASA was listed on Oslo stock Exchange market, at the same time as they reduced their shares through sales in the business related to the gas stations. In 2012, they sold all their remaining shares in Statoil Fuel & Retail ASA. Equinor ASA participates in projects that look at other forms of energy, such as ocean wind and carbon capture and storage. The company does this to meet the future need of increased energy production, increased energy supply and the fight against negative climate impact.

During the interview, the informant in Equinor ASA, stated that the economic development over the last 11 years in the company has been very varied. The informant pointed out that the economic development is very dependent on oil and gas prices. It was also pointed out that it has been made two solid downturns in the specified period from 2006 – 2017.

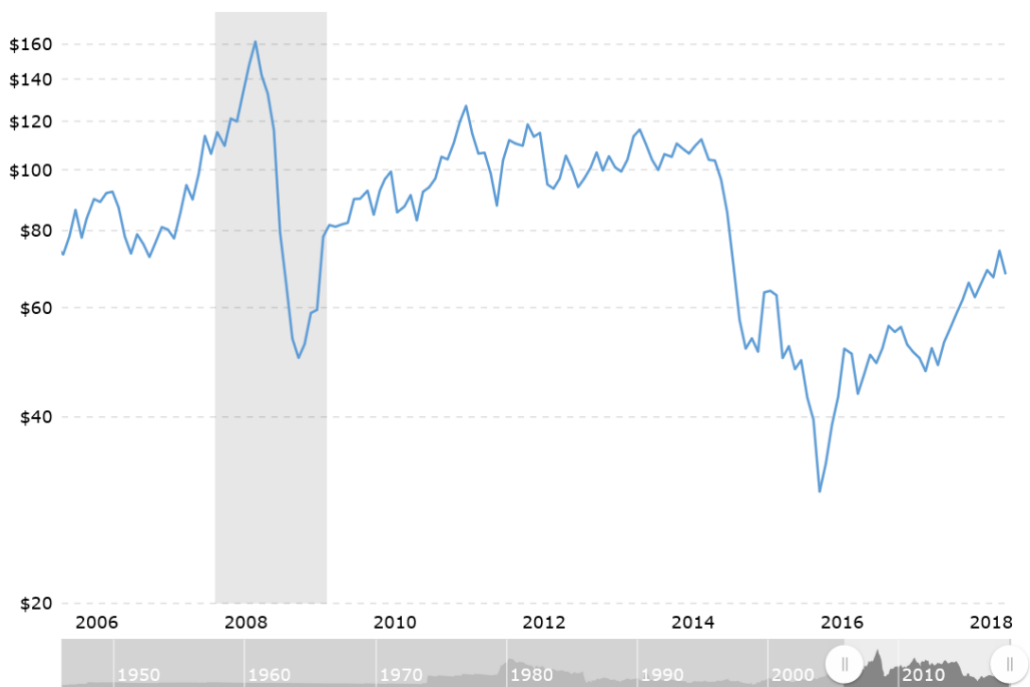


Figure 9: Graph of fluctuations in oil prices over a period.

The graph indicates that:

1. 2008 – 2009: The drop of the oil price coincided with the financial crisis. But; Relatively fast return when it comes to good prices.

2. 2014 – 2016: Low prices versus 5 years' average, with a cost level adjusted for higher prices.
3. 2016 – : Adjustment of cost level and price improvement.

#### **4.5 Why are these four companies appropriate for this case study?**

The financial crisis in 2008 was a global crisis that hit many markets and economies, especially in the United States of America and Europe. The companies participating in this case study operate both in Norway and internationally. Since Norway was not directly affected by the financial crisis, we chose to analyze Norwegian companies operating in the international markets, such as Orkla ASA, Telia Norge AS, Statkraft AS and Equinor ASA. We chose these companies to obtain important information about the impact the financial crisis had on liquidity management. Some markets became harder affected by the financial crisis, hence the choice of studying companies from different industries, but even if Statkraft AS and Equinor ASA are within the same industries, they were different affected by the financial crisis. Therefore, we think that it is reasonable to include both in this case study. All in all, the choice of the companies in this case study is because of the unequally impact the four different companies had from fluctuations in the markets. Some of the companies are especially interesting since they are big companies that are diversified across several industries. Although the companies are in different industries, they are all considerable size. This provides a good basis for comparison in terms of funding opportunities and capital utilization. Overall, we think this could give more approaches to the subject, and lead to increased breadth in the data collection.

# CHAPTER 5

## ANALYSIS OF THE EMPIRICAL DATA

In this chapter, we have decided to include the most relevant data material from the informants that participated in the interviews. The content of this chapter will have the purpose to answer the research question of this case study. We will start to give a short introduction as well as present a model that will summarize the relevant findings during this study. Thereby, we present key quotes from the interviews of the informants in the different companies. These key quotes will be both used as comments during the analysis and to illuminate the findings. After each underlying research question, we mention the main findings that we find most important related to answer the main research question. At the end of this chapter we present a model that will summarize all the findings of the analysis.

### **5.1 Liquidity management as part of the financial management**

To provide a comprehensive assessment of whether the financial crisis has affected the liquidity management in the companies, it is necessary to investigate whether there has been a change in how the liquidity management totally is rooted in the companies. This implies an assessment of the role that the liquidity management has in the companies, both operational and strategic, and if this has changed during the period that we have chosen to study. The goals the companies have with the liquidity management, and whether the financial crisis has affected these goals, is also a central part of this assessment. Table 6 summarizes the findings.

How has the financial crisis affected the liquidity management as part of the companies' financial management?	
<p><b>The role of the liquidity management in the company:</b></p> <ul style="list-style-type: none"> <li>• Cash situation and access to external funding essential for focus.</li> <li>• Increased focus during the crisis due to increased uncertainty linked to access to capital.</li> <li>• Flowering of the Treasury Department.</li> </ul>	<p><b>The objective of the liquidity management:</b></p> <ul style="list-style-type: none"> <li>• Consistent goal of easy access to and sufficient capital to pay financial obligations before they expire.</li> <li>• Interest rate developments after the financial crisis have led to a focus on reducing liquidity.</li> </ul>

Table 6: Liquidity management as part of the financial management.

### 5.1.1 The role of liquidity management in the companies

Throughout the interviews, solidity was emphasized as a reason why the role of the liquidity management is somewhat lower priority. According to the informants, their overall perception of liquidity management is that it is an important part of the financial management, but it is not the first priority. The companies have strong banking relationships, effective financial strategy, generally easy access to capital, a strong balance etc., also during the financial crisis in 2008. This leads therefore to less focus on the liquidity in the companies. The companies are in a situation where they are quite comfortable in the sense that the market is available to them. This means that the companies have the option of both short-term bank loans and long-term bank loans. In other words, they do not have any stress, but it is important for them not to "relax". They must still work hard to stick to the strategy they have and that works for them.

*«Liquidity has been quite far down on the priority list. It became a little more focus on the liquidity management during the financial crisis, but it is still very low priority. Since we have such a strong balance, good banking relationships and can easy borrow money, we almost do not have to worry about it.»* (Informant Orkla ASA)

Furthermore, the informants conveyed that financial imbalances, such as the financial crisis in 2008, increase focus on liquidity management, but this normalizes as soon as the prospects are safer. The companies also believed that they did not spend as much time and resources on liquidity management before the crisis compared to during the crisis.

*«We spent more time on liquidity management during the financial crisis, not before the crisis.»* (Informant Equinor ASA)

Several informants claimed that in periods of less cash lead to increased focus on liquidity management, the next two statements underlay this assertion.

*«If you have less liquidity, then you definitely have a greater focus on it and work in a different way. In Orkla, when we present numbers, and we have low debt, and the financial items does not effect on the total that much, and we have good with cash, then it becomes a little difficult to focus on the liquidity, because it will not be as important for us when everything else goes well in the company.»*  
(Informant Orkla ASA)

*«In times when we have less liquidity, there will be a lot of focus. It will be a focus from, for example, the management and the board in the company.»* (Informant Statkraft AS)

It may be problematic for the treasury department to convey the importance of monitoring liquidity developments, due to the impact of the cash situation in which the companies are.

*«We never have a situation where, for example, we have made a purchase and have to borrow money specifically for that. In such cases, we have the money there and then. It is also true that when we have long-term liquidity available, then we also have a short-term liquidity available. This is basically the most important driving rule we have, and it gives the company financial freedom of action, and it is also the most important thing we manage after.»* (Informant Orkla ASA)

The common denominator for all companies is that they made some measures and increased focus on the liquidity management during the financial crisis. According to Orkla ASA, they spent more resources and time on the liquidity management during the crisis, not before the crisis. This was because of the greater uncertainty surrounding capital markets during the crisis, and the fear of reduced access to capital.

*«The consequences of the crisis were that the short-term markets, such as the certificate market, disappeared completely. This market was not a financing option for us, the liquidity is considered more as a financing option to our company. In addition, there were large fluctuations in prices in the bond market, but now the price levels are higher than they were before the crisis, this applies to both banks and bonds.»* (Informant Orkla ASA)

*«Statkraft has the opportunity and facilities to acquire short-term liquidity very quickly to withstand fluctuations. We saw during the crisis that the strength we have with the banks is very worthy.»* (Informant Statkraft AS)

The companies generally asserted that the financial crisis was perceived as a head-on collision and there was much uncertainty about it.

*«We saw that at times there were liquidity deficiency, which made it challenging for some companies to raise funds for financing various projects»* (Informant Equinor ASA)

The companies that participate in this case study operate in international markets, and considering the growing disturbances in the world economy the effects can come abruptly and from several teams. If there is a new crisis, it will hit some of the companies harder than during the financial crisis in 2008, as companies have more international cooperation and markets now than before. For example, after the crisis, Statkraft AS has received more new countries and new exposures in the company, which means that Statkraft AS must think more internationally compared to what they did before the financial crisis in 2008.

*«International focus and focus on financial risk are the biggest changes after the financial crisis, it was not as much emphasis on the pre-crisis as it is now.»*  
(Informant Statkraft AS)

*«The good cash situation you have one period, you may not have it for a long time. It can turn around suddenly.»* (Informant Telia Norge AS)

*«Before the financial crisis, we did not have many business overseas, but over the years (after the crisis) we have focused more on innovation abroad, which means that we have huge currency transactions. With other crises in the picture, these currencies will be affected, especially the euro, which in turn will affect us harder than we were in 2008.»* (Informant Orkla ASA)

The above statements show that the focus on international cooperation has increased after the liquidity crisis in 2008. The companies speculate that if a new crisis arises it will affect the companies harder, since the euro may be threatened. The cooperation between the EU and Norway through the EEA agreement has become stronger in focus now than before the crisis.

*«So, if the EU cooperation collapses, the business we've done within the euro zone will be threatened and adversely affected. It is important to specify that this is just a speculation.»* (Informant Orkla ASA)

As the crisis led to some concrete measures, the focus of the treasury department also increased during the crisis, and in several of the companies, the department gained a permanently greater focus generally in the company. It is important to bring along that during the interviews the importance of the treasury department in the companies were highlighted. The informants claimed that the finance is one of the areas that the companies have centralized, so that the subsidiary companies do not need to think about it. The reason behind it is that the subsidiary companies then could only focus on EBIT results. The treasury department in the various companies is responsible for the capital structure (how much debt and equity the subsidiary companies will have). It means that the treasury department in the companies is responsible for the liquidity and the finance, so that the subsidiary companies does not need to think or worry about the liquidity



management or the financing since the treasury department does this for them. This is the reason why this department gained increased focus during the financial crisis in 2008. This department also has other responsibilities, such as working with derivatives, currency derivatives, interest rates, etc. There are demanding rules on how this should be posted, and it falls on the treasury department to be certain competent within accounting.

*«After that time, we noticed that the focus on treasury has increased very much. This was because the risk became very clear during the financial crisis. At that time, there was so much focus on liquidity, especially from the banks. This has influenced the mentality and focus of the company in general, on everything that has to do with the finance department.»* (Informant Telia Norge AS)

*«The treasury department manages currency positions in the company, we have a policy that the company must follow for hedging currency. They must do business with us as counterparts (we have systems for that too). For example, if they need X quantity of euros to pay an invoice, they buy the euros from us. The most important thing to keep in mind is that this is very transactionally intensive and system-intensive, and it makes treasury a very big company itself.»* (Informant Orkla ASA)

The informants stated that the liquidity management has gained more attention in the recent years, and this is due to a lot of volatility and media attention. According to an informant from Equinor ASA, they previously had more focus on growth than liquidity, which resulted in falling profitability both for them and for the competitors. This changed the view on the importance of the liquidity management.

*«We have increased our focus on liquidity management to avoid a liquidity crisis by following the following strategy; where we are committed to always repay debt that we have so that we can always borrow money from our bank connections. Our faith in this strategy has strengthened since we got through the crisis. This was because of our strong banking relationships. This strategy is managed daily with many banks and many currencies. In other words, it is important for us to*

*manage and have control over the many accounts that we have every single day. We must have the systems in order at all times.» (Informant Orkla ASA)*

It is important to specify that the informants pointed out that the financial field has gained attention in the recent years, and this can also affect the focus on the liquidity management. A general perception among the companies in the study is that they have gained more attention to the liquidity management after the crisis, but that they had good liquidity management in the company in the pre-crisis period, and thus did not have to make major changes during the crisis. According to the informants, this is due to good routines and procedures, which resulted in very little consequences for them both during and after the financial crisis in 2008.

*«The industry that we are in is consumer goods, which is quite stable and remained stable during the financial crisis as well. We were thus less affected than others. We did not experience any serious and lasting consequences of it. It's said to be thanks to our market operations, which was then stable throughout the crisis. We also had large financial reserves in the equity portfolio before the crisis occurred, so the market maintained the faith in Orkla throughout the crisis.» (Informant Orkla ASA)*

The informants from the different companies that participated in this study pointed out during the interviews, that much had change from 2006 to 2017, but the one thing that has not changed and has been solid is their financial policy and how they finance and manage the liquidity. According to the companies, this policy is still good. Since it worked well during the crisis, the companies gained even more credibility for the policy.

*«Well, both the level of debt and the financial structure of the company has changed. We have become a smaller and simpler company, which means that it has become easier to manage. It is also good to mention that we now have fewer volumes of foreign exchange transactions. The policy is robust and it is how it should be, because if the financial policy is changed every year then it is considered not good at all. The financial policy must be robust, especially during crises and through major strategic changes.» (Informant Orkla ASA).*

*«We in Statkraft have a solid bottom line, strong cash flow and margin, thus very good ability to withstand losses. We have a banking group and those in a banking group have a facility, and a facility is a commitment of the banks that can lend us money if we ask. This is very common to have to ensure that you have enough available capital. This also worked during the financial crisis. Right after the financial crisis there were some banks that struggled very much. We in Statkraft have changed our strategy in relation to which banks we want in our banking group. The number of banks have been stable, and there have been about 10 banks over the years in over company.» (Informant Statkraft AS)*

*«The financial crisis has affected our financial strategy in a small extent directly. But one of the lessons we take with us is that access to financing in the capital market may be unavailable for short or long periods. It is therefore important to be prepared to utilize other sources of funding (for example available liquidity, banks, etc.).» (Informant Equinor ASA)*

All in all, one of the most important changes in the role of the liquidity management is that there is greater uncertainty about access to capital from the market, which has led to increased focus on liquidity management in the companies that participated in this study.

### **5.1.2 The objective of liquidity management in the companies**

The companies are concerned and focus on financing, which is the long-term capital in the companies. For the companies, there are two things that are very important, the first thing is to have control over refinancing and the other thing is to have a good return on the money they have.

*«Liquidity management is important for Statkraft, we have a strong focus on it in the company.» (Informant Statkraft AS)*

*«We make profitability assessments by focusing on return on total capital and on return on average capital employed. It is important to focus on both and on total level.» (Informant Equinor ASA)*

When we analyzed the collected data, it emerged from the interviews that none of the companies today have placement of capital, with the intention of obtaining the best possible return. It is important for companies to have easy and sufficient access to capital to secure their ability to pay. They focus a lot on this. The focus is divided in to two parts. The first part of the focus for some of the companies is on the total level and for other companies the focus is at the project level. Some of the companies also mentioned that the target is to have knowledge of and to benefit from all the available capital in the company.

*«The company shall at all times have sufficient funds to meet its obligations, both short-term and long-term. The aim is to ensure the most efficient use of liquidity and ensure that we have sufficient liquidity for our financial obligations.»*

(Informant Statkraft AS)

*«At the total level, we are a company with cash flow from operations that should cover investments and dividends. In addition, it is important for us to have ROACE (return on average capital employed) in focus. It is also important to focus on being robust for lower oil/gas prices. This is focused on project level.»*

(Informant Equinor ASA)

The informants in the study explained that it is not positive to hold back too much of available liquidity. The biggest changes for the companies during the period 2006 - 2017 have been through acquisitions and sales. The companies believe that they have a reasonable capital structure, where they always pay.

*«It is important for us to utilize the company's total liquidity. We have target figures that shows us that we will have enough long-term lending to cover next year's maturity in addition to a buffer. This and all other liquidity we receive can be used to repay on loans, and then borrow from banks. This is how the process proceeds. In other words, we use all the liquidity to pay off flexible debt, which can be withdrawn later.»* (Informant Orkla ASA)

*«Our business is not trying to earn on liquidity. Our business is reducing the liquidity. Total development has been more focused on risk, and it is part of the*

*market that you get much cheaper prices if you only pay what you owe.»*

(Informant Statkraft AS)

It is also important to mention that, through the interviews, the companies, in addition to payments related to wages and loan maturities, have enough liquidity available due to future investment opportunities, where it may often be necessary to have quick access to capital. The way companies handle the capital can be decisive for profitability. For large companies, even small adjustments will make big effects on the very bottom line. The informants in the companies stated that effective liquidity management affects profitability in larger concerns in general. Incorrect or poorly routines may cause negative effects on the bottom line.

*«It is important to determine the desired level of liquidity, as well as ensure this and justifiable stewardship of available liquidity. It is a very important focus that the company has funds available if good investments in the short-term should arise. In addition, it is important to avoid operational risk, in other words it is important to avoid the risk of loss due to inadequate or failing internal processes or systems, human errors or external events.»* (Informant Equinor ASA)

The impact of the financial crisis on the objective of liquidity management in the companies must be seen in connection with the interest rate developments. The low interest rate after the financial crisis has been difficult for the companies to bind themselves to. Since, the interest rate is so low after the crisis, it has resulted into a target to minimize individual placements, as returns are so marginal.

*«Experience from the crisis is that the margin is high while the interest rates are absurdly low. In many cases, the current year has consisted of both zero interest rates and negative interest rates in the market, and it has been better to have the money in an account rather than placing it in the market.»* (Informant Telia Norge AS)

All in all, the view on the objective of liquidity management has changed after the financial crisis. The companies have more consistent targets for simple and adequate access to capital to secure their ability to pay, in addition to minimizing surplus liquidity due to interest rates following the financial crisis.

## 5.2 Liquidity management as a process

The easiest way to assess the impact of the financial crisis on the liquidity management of the company is to investigate the actual implementation of the liquidity management in the companies on an operational level. This gives a picture of the concrete measures that was taken in the light of the financial crisis. In this section of the analysis we will explain this by assessing the companies' procedure for both planning and follow up of the liquidity. Follow up of the liquidity also involves the companies' follow up of liquidity in both subsidiary companies and affiliated companies. Procedure means the work the companies do in relation to liquidity forecasts and reporting to the CFO. We have chosen to include an elucidation of what is considered as best practice within liquidity processes, and if the financial crisis has influenced what is denoted as best practice within the field. Figure 10 summarizes the findings.

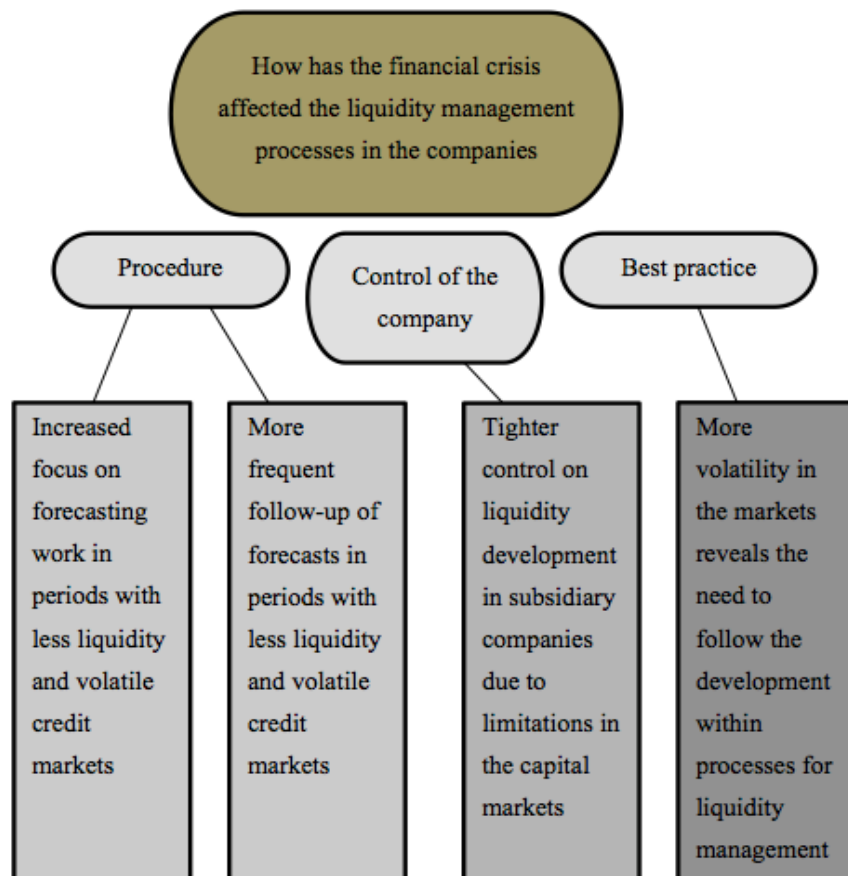


Figure 10: The role of the liquidity management.

### 5.2.1 The procedure for liquidity planning in the companies

To be ahead of any breach of loan terms and to take measures to free up capital and to improve liquidity it is important to know that the control of liquidity development is very crucial here. All the companies participating in this analysis follow up the liquidity daily. Major maturity profiles, such as supplier payments, salary and debt maturity are also followed up by the companies. This is very crucial to be able to reach success. It is very important that the companies always have an overview of what expenses and incomes are coming. If this overview is not present, then the companies can ultimately be bankrupt. Fortunately, this is not the case for Orkla ASA, Statkraft AS, Telia Norge AS and Equinor ASA.

*«The company has an important toolbox that is used often. We spend time on liquidity forecasts every month so that we can always schedule whenever we need to fetch in money or finance. These forecasts last up to 12 months. In other words, we make a total update once a month, while every little change we adjust up and down daily.»* (Informant Statkraft AS)

*«We have liquidity forecasts that are basis for the assessing of future financing needs. These are prepared at least quarterly (or when needed).»* (Informant Equinor ASA)

*«A kind of liquidity forecast that we own is that every day, at 2:00 pm, we sit down and check each account to see what has gone out and in of goods. Thereafter, we create our own statuses on this so that we can get a proper overview of how we should manage further away. In other words, we have a forecast that we manage daily. The reason why we manage this daily is because we want to have the system in place all the time.»* (Informant Orkla ASA)

There are some differences in how detailed the daily management is from company to company, and what they focus on. This depends, of course, on the size of the company, and on the cash situation and the strategy of the company. The companies participating in this study have collected Cash Management under the same department. An overview of how the treasury department of the four companies is organized can be found in the attachment 6.

An informant pointed out how important the communication between the parent company and subsidiary companies is when it comes to the follow up of the liquidity forecasts and the causes behind the negative and the positive changes in the forecasts. The follow up, named *one-on-one*, can provide better liquidity forecasts, and can make the subsidiary companies more aware that reporting of the changes in the forecasts has an effect that gives better estimation.

The informant also pointed out that MS Office Excel is a program suitable for manual forecast reporting from the subsidiary companies. In such a computer program, the companies can set a forecast each week. This will give the companies an overview of the amount of liquidity that must be available in the account, and if there are possibilities of a big surplus liquidity, which then can be placed and give profit. The downside here is that the liquidity forecasts will not always be as precise. This will therefore cause the need of liquidity buffers that provide security if the forecasts fail, in a negative direction.

*«We have measures that shows us that we will have enough long-term loan frameworks to cover next year´s maturity. We also have a financial buffer that we have on top of known outlays of capital. This buffer is predefined and can be used, together with all other liquidity that the company receives, to pay of the flexible debt that can be retracted later. Here at Orkla we work hard to maintain this buffer all the time.»* (Informant Orkla ASA)

In the interviews, the informants pointed out that when the financial crisis, in 2008, hit the Norwegian market, the focus on the liquidity forecasts increased. The intervals for reporting and the follow-up became also more frequent. Good routines for the liquidity forecasting were formed to give the management in the companies an early indication of capital shortage. Such routines facilitate to always give an overview of available funds, and enables the capital allocation of the business areas where the need always is greatest.

*«The liquidity was followed up extra strict, almost daily, in periods with less liquidity and volatile credit markets. It was very important for us to have increased focus on the forecasting work. Other areas that was important for us was both having more frequent reporting and more frequent follow-up. The reason to why this was important for us is because in this way we had the*



*possibility to check if there were deviation from the forecast and what it was due to. This gave us then the opportunity to estimate much better the days ahead.»*  
(Informant Statkraft AS)

*«It became more natural for us to focus on the liquidity. We made closer follow-up on reporting, from period to period. We also focused strongly on having good financial management. The reason why we focused on this is because good financial management will give us better liquidity, and better liquidity will look after the underlying values of Orkla. Our main message is to align the financing so that we always have a defensible liquidity. This is very important for us because if the liquidity fails, then the underlying values will also crumble quickly. Orkla has now more intensive calculations and forecasts, as well as cyclical business.»* (Informant Orkla ASA)

All in all, the interviews show that the companies have high confidence in the processes of their own liquidity management, and believe that they can respond quickly on changes in the market.

### **5.2.2 The companies' control of liquidity in the subsidiary companies**

The interviews discovered major variations from company to company when it comes to how the reporting and the follow-up to the subsidiary companies take place, and how much central management it is from the company to the subsidiary company. The interviews discovered, among other things, that both Statkraft AS and Orkla ASA follow-up the subsidiary companies, and have a central management where they study each subsidiary company so they can capture the development of the liquidity. Statkraft AS follow-up the largest subsidiary companies very closely and is frequently in dialogue with these so they can discuss the cause of the development of the liquidity and any deviations. The interviews also discovered that the cash situation also has an impact on the requirements of the reporting of the subsidiary companies.

The companies also informed that there are some clear differences in the companies' desire about the control regarding the reporting from the subsidiary companies. Telia Norge AS is not dependent of the reporting from the subsidiary companies they have. The reason for this is because they have systems that will enable to make final reports. This gives the company 100% control over the process and they believe it has led to an improvement in the quality of the

forecasting. In Orkla ASA, however, the largest companies give the reporting of the liquidity forecasts to the company, while in Statkraft AS all the operating subsidiary companies report to the company.

*«We receive a forecast from all of our subsidiary companies. All the subsidiary companies who generate cash or have costs provide a report to us, an expected development in cash. Afterwards it only remains to aggregate it.»* (Informant Statkraft AS)

Equinor ASA stands out since they did not have any kind of liquidity forecasts from their subsidiary companies before the financial crisis. The reason for this is because of the prime culture that Equinor ASA has so they can give their trust to the subsidiary companies that they have. However, during the financial crisis the access to capital became more uncertain. Equinor ASA had, therefore, to introduce the liquidity forecast from the subsidiary companies for a period.

*«We keep an eye on our companies, what they do, sometimes quarterly and other times through monthly reports, once a month, or when it's needed. A part of the culture at Equinor is to trust that people do a good job out there. Therefore, we have little central control, and little forecasting. During the financial crisis, we introduced it for a short period, and asked all the companies to report to us about what they had of the liquidity need ahead, so that we could be early out when it comes to obtain bank financing locally, or from us.»* (Informant Equinor ASA)

All the companies participating in this study are agreed that the financial crisis led to stricter liquidity management. The crisis made it necessary to get an overview of the development of the liquidity in each of the subsidiary company, and overall ensure better control of the company.

*«There have been few fundamental changes, but more focus on control of the liquidity in the subsidiary companies and abroad our cash pool arrangement.»* (Informant Statkraft AS)

The interviews also gave an indication of an increasing focus on the liquidity and the liquidity need in the subsidiary companies in the future. The reason for this is because of the tightening liquidity and the increased uncertainty and/or the constraints in the capital markets because of the development in the global economy.

*«Being more focused on the liquidity means that all of our companies need to have good control over their own liquidity, and afterwards report it to us.»*  
(Informant Orkla ASA)

### **5.2.3 Best practice for the liquidity processes**

All the informants that are participating in the study agree that there does not exist a universal best practice for the liquidity management. They agree that differences in the company's lead to different needs and different focus. What's right or what's not right will depend, among other things, on how loose or tight the management the companies want to have in the organization.

*«It's up to each company what they're willing to pay for security and flexibility, in other words if one is willing to manage very tight, but then have less flexibility, and vice versa. We are more willing to pay a little extra to have great flexibility. There is always possible to improve, and have even tighter forecasts, but I think it's marginally how much you will save on it. When it comes to the liquidity, I think maybe it's easier to just decide what your comfort zone is.»* (Informant Orkla ASA)

Liquidity management can be performed in many ways in practice, and several factors determine what is best suited for a company. An informant gave a nice summary of the factors that may influence which approach the companies should have to the liquidity management:

*«One has to balance the desire to get a return on the liquidity it has, versus the cost of having it, and the risk of sitting with a lot of liquidity.»* (Informant Statkraft AS)

All the informants mentioned the goal of making the management more efficient. They also mentioned that the efficiency of the processes of the liquidity management is closely linked to the technical solutions and tools. The informants also mentioned the changes that will make the processes easier, such as the use of the internal bank. It was also mentioned how services for the personal markets also will be possible to use in the business market.

*«There will be a lot of new technology, which provides other ways of working in the relationship between banks, companies, customers and suppliers. If we get*

*such a system, the possibilities begin to open up for a more efficient liquidity management.» (Informant Equinor ASA)*

The informants agreed on that it is all about the purely operational when it comes to what is the best practice for the treasury. One of the most important tools for the liquidity management of the companies is the cash pool. All informants emphasized the importance of the cash pools, and how much this tool simplifies the management. We therefore expect this to be part of what is considered as best practice in the liquidity management.

*«Most people might say that creating account structures of the company, and cash pool structures, is the easiest form to increase the efficiency of the money you have in a company.» (Informant Telia Norge AS)*

During the interviews, it was stated by the informants that best practice depends on the companies' own assessments, and that the companies are of a general opinion that their processes are of a satisfying character. The importance of keeping track of and not hanging out in the development was also stated by the informants. This is very important in periods with more volatility in the markets, and there is therefore focus on preparing for a possible crisis.

*«Changing focus and thinking new, thinking differently, are focus areas. Especially when there are much tougher times. And we think it will be tougher in the future, so it's a good idea to have done those measures before a new crisis enters. Nobody knows how the future will look, so we must focus on these things all the time.» (Informant Equinor ASA)*

It has been challenging to find a clear conclusion on whether the financial crisis has affected what is the best practice for the liquidity management or not. This is because there is no a universal best practice for the liquidity management. What was clear in the interviews is that disturbances in the markets can quickly reverse the situation of a company, and therefore it is very important to update continuously. More volatility in the markets will also reveal the need to follow the development in the processes of the liquidity management. This together with being at the front and having effective processes, even though the cash situation in the company is good today, is very important for each company participating in this study.

### 5.3 Managing and acquiring capital

Prognosis work and liquidity reporting is the managing of liquid funds and the acquiring of capital. These are key components of a company's liquidity management in addition to liquidity planning. The impact of the financial crisis led to increased focus on the financing part, as access to liquidity was reduced. In this section, we have chosen to include an assessment of how the companies' relationship with the banks changed during this period, as this is one of the main affects the crisis had in general at the Norwegian companies. Table 7 summarizes the findings.

Placement of surplus liquidity	Acquiring of capital	Bank Relationships
1) Increased focus on liquidity management. 2) Diversified asset management.	1) <i>Internal financing:</i> - More focus on the use of internal capital and internal financing. 2) <i>External financing:</i> - Secured multiple credit facilities to hedge against capital drought. - Diversified sources of financing, in order not to be dependent on bank financing only.	1) Important with good relationships and additional business at the banks. 2) No less confidence in the Norwegian banking system after the crisis. 3) Good relationships made the companies avoid financial covenants as they increased the credit facilities.

Table 7: Managing and acquiring capital.

#### 5.3.1 Placement of surplus liquidity

In general, the capital cost is assessed by keeping liquidity in the company against the risk associated with placement opportunities in the markets. In terms of placement of capital, companies are generally very conservative when it comes to it. Most of the companies place short-term surplus liquidity in bank papers and bank positions if a payment or if an investment is close. In the interviews, it was pointed out that there are different practices regarding the balance between using short-term placement opportunities, such as the certificate market, or repayment

of current liabilities. As several of the companies have little debt, it is therefore more appropriate to utilize surplus liquidity through placement in the short-term market. Some informants pointed out how the interest rate affects this weighing, where debt repayments are preferred as the return on placing the money in the market is so low.

*«In our company, surplus liquidity is actively managed in, for example time deposits in banks, certificates and money market funds, but this is very conservative.»* (Informant Equinor ASA)

*«When we are going to invest in low-risk money market funds, it goes without saying that it will be quite low interest income relative to a shareholder. Perhaps the philosophy is that you should have more debt than what we have.»* (Informant Orkla ASA)

*«We are quite conservative in terms of surplus liquidity; we are quite boring when it comes to this. The return is not the most important thing to us, but it is to ensure that the cash is not lost. This is very important to us.»* (Informant Statkraft AS)

*«It is not necessary to sit with a lot of surplus liquidity that you place at zero interest when you have debt to pay.»* (Informant Telia Norge AS)

The way in which the companies in the study manage liquidity has a major impact on the bottom line, as different placements provide different return opportunities. The companies involved in the study have a high turnover in addition to managing large amounts of cash. In the post-crisis period, the low interest rate has affected the position of surplus liquidity, as the return on the bank account is so low. This shows how important it is to closely monitor the liquidity of the companies to ensure the best possible return. It is important to mention that the interest rate level was repeatedly highlighted in the interviews as crucial to the liquidity management. It was pointed out that the low level of interest rates can cause the companies to get a more relaxed relationship with placement, and must consider that this can change at any time. In general, the companies felt that it is important to think that interest rates can return to higher levels, as before the financial crisis.

*«Interest rates have gone down considerably since 2006. For example, we had bonds we issued which stood at 7-8 percent for 6 to 8 years ago, while now the rates are around 1.5 percent.»* (Informant Statkraft AS)

*«With the big volumes that Telia has in circulation, there are only small differences in the interest margin on what's on the account and what we get in the market. It actually gives a lot of millions on the bottom line over a year.»*  
(Informant Telia Norge AS)

During the financial crisis, the companies focused on several things. They, among other things, focused on asset management and to reduce risk. The diversification of the placements was particularly emphasized, in other words the companies did not let the entire capital be in only one bank, but spread capital over several banks.

*«In the period when we had a lot of liquidity, we had to do something with the cash. And although Nordea is a very solid bank, we could not let twenty billion standing in Nordea's account. In such cases is time to spread the money beyond, to several banks not just one bank. There was an increased focus on how to manage liquidity, and especially bank exposure.»* (Informant Statkraft AS)

All in all, the biggest change in placement of surplus liquidity has been that the companies have gained increased focus on the liquidity management and the importance of diversification.

### **5.3.2 Financing - Internal and external capital procurement**

We decided to divide the purchase of capital into two parts. The first part presents internal financing, while the other part presents external financing. Under internal financing, we discuss what the informants stated during the interviews related to the use of equity and cash pool as tools to keep track of the companies' internal circulation of capital. The second part, external financing, consists of interview data relating to the capital markets, hence a separate part of credit facilities, as well as material on credit rating. In addition to financing, we will also include material in this section regarding the companies' objectives related to solidity.

### ***Internal financing***

The companies have a toolbox for managing and utilizing liquidity. Through an analysis of the interview data, it was covered that there is a mutual perception among the informants that the financial crisis challenged the financing in the companies. This led to an increased focus on internal capital and utilization of this, so that the need for external financing will be reduced.

*«There were too many companies that found it too difficult to get financing. And it has influenced the entire mentality and focus of the market in general, on everything that must do with the finance department's business. We are now much more focused on utilizing our capital more optimally than we did before.»*

(Informant Telia Norge AS)

All four companies have a strong equity ratio, but there are various reasons for that. Among other things, Statkraft AS is 100% state-owned, and equity is strengthened through increased supply from the state. In the last 10 years, Statkraft AS has received its equity by its owner (the state). However, the state was on an ad hoc basis also during the crisis. In general, all the companies in the study have a strong cash situation, and they are concerned with circulating cash internally to avoid a high proportion of external financing.

*«We pay a high dividend to the owners, and once we have an investment strategy that we think is reasonable, we go to the owner (i.e. the state) and we ask them if they want to contribute some equity so we can implement that strategy. There was a slight change in 2017 where we still pay high dividends from Statkraft's revenues from Norwegian water, and pay 25% of dividends from other activities, so Statkraft can keep more of the profits from other businesses to finance growth on our own.»* (Informant Statkraft AS)

Some of the companies also use loan financing related to acquisitions, such as Orkla ASA, while others want to minimize this type of financing and works with maintaining a very low debt ratio. In other words, the equity ratio has been quite stable in the recent years, it will always have some up and down, but if we look at the net debt, then it's quite stable.



*«The operative systems take more care of the long-term liquidity, such as acquisitions and other businesses in general. The cash flow to Orkla is positive throughout the year, but by acquisitions, the cash flow can be changed as acquisitions gives load on the short-term liquidity. If this happens then we have the long-term borrowing frameworks and reserves that we have spared up to such situations. Acquisitions also load on the reserves, which is why we have to work to increase the long-term borrowing frameworks so we can keep the cash flow positive throughout the year.»* (Informant Orkla ASA)

For the companies, the cash pool solution from banks has become a very important tool to handle. This will give a better overview of the company's internal capital. The company's account systems ensure good overview and effective management of the company's total assets. In such a company account system, it's the company that manages the system, so the different companies can have different levels of cash if they have sufficient cash in the pool. It's important for the company that they use internal cash, so that they do not have to go out into the external market and get financing, because it is quite expensive. The solution makes it possible to utilize internal capital by giving the subsidiary companies internal loans, for example, that the subsidiary companies do not have to go out in the external market to acquire capital for, for example, investments. This gives the company a good overview of the exposure they face.

*«We in Statkraft control this at company level. All the companies in Statkraft participate in a joint company account order that we have in Danske Bank. There it is possible to see all the bank balances of the various companies. All this aggregates and accumulates in an account that is managed at the top of Statkraft. When it comes to our hundred percent-owned subsidiary companies, we are the ones who control the liquidity. And we do this through a cash pool solution. In this way, we can exploit the liquidity of the subsidiary companies all the time.»* (Informant Statkraft AS)

All the companies that participate in this study use such a solution, which includes accounts from the subsidiary companies in those countries where such a solution is possible. The informants expressed the challenges of introducing cash pool structures in Asian countries, where banking systems do not provide the same

opportunities. In the interviews, it emerged that some of the companies have cash pool in one bank, while others have chosen to use more banks. This is due to both the history of the companies and the relationship with the banks, which we will study in section 5.3.3. Even with a solution with cash pools in several banks, it is possible to co-operate these, and in this way, manage in a comprehensive solution.

*«The company's account system works great. Furthermore, it's important to us that we summarize everything and relate to the totals. Since we have more banks we borrow from, we only need to adjust a little between the systems daily. Furthermore, when the subsidiary companies receive money from a sale and they have the money in their bank account, we borrow that money indirectly. This is done daily through the account system in the company. This money is used again to repay on debt that we have.»* (Informant Orkla ASA)

The use of the cash pool solution from the banks was present in all companies in the pre-crisis period, and became an important tool that helped simplify the liquidity management when the crisis first became noticeable in the Norwegian market. Because of the reduced capital inflows in the banks during the crisis, the focus on internal finance became even greater, and all the companies emphasized the importance of not only being dependent on bank financing if there was a need for financing in the company.

*«We finance ourselves at the top (parent company) and distribute the capital to our subsidiary companies by means of equity or debts. So, the company is integrated with Equinor ASA's internal banking solution, in which those involved are jointly and severally liable. The solution entails those in the company having a common cash pool and that the accounts are reset daily. The top account is held with the parent company; thus, the company will have an account payable/receivable toward the parent company.»* (Informant Equinor ASA)

*«I think there is more and more focus on using and managing internal capital, so that you do not have to go out and finance yourself externally. This applies both after the crisis from 2008, and further ahead now, as it is tougher times.»*  
(Informant Telia Norge AS)

All in all, the change in internal financing in the companies is that there is more focus on the utilization of internal capital and internal financing.

### *External financing*

In addition to an increased focus on better utilization of internal capital, the crisis also led to changes in which external capital sources the companies will use. In the case of external financing, there were three parts that were addressed during the interviews, which underline this change from the financial crisis; credit facilities in the banks, where we also enter credit rating, and the use of several capital markets during the financial crisis.

### *Credit facilities and credit rating*

Immediately after the financial crisis, there were some banks that struggled very much according to the informants. This led to that some of the companies having to change their strategy. The companies have a banking group and those in this banking group have facilities, and a facility is a commitment of the banks that they can lend them (the companies) money if the company asks them. This is a common practice among the companies in this study, to ensure that they have enough available capital. Thus, the companies have credit facilities at the banks, and all the companies involved in the study use syndicated credit facilities, except for Orkla ASA, which borrows bilaterally with each bank. The banks participating in the facilities constitute the companies' core banks. For some of the companies, credit lines function only as a backstop, in other words as a strategic reserve that can be used if the ordinary loan sources do not work or if the subsidiary companies do not get refinanced short-term loans. Other companies have available facilities that they can retrieve at any time, in addition to having their own lines that only serve as a backstop. A company stands out if the credit facility is actively used as the source of capital.

*«All the banks that choose to join must commit to approx. 1 billion that Statkraft can draw in a very short period, and it is quite expensive for banks to sit with this on their balance, because it is a commitment that they have. Therefore, some of the banks have worn with their earnings and have wanted to go out of the Statkraft's banking group. In addition, Statkraft has changed its strategy in*

*relation to which banks they want in the banking group. The number of banks has been stable and it has been about 10 banks throughout the years.» (Informant Statkraft AS)*

*«A typical loan form is a deducting facility, which we can deduct and pay back if needed, with the interest periods and currencies we want. Having a portfolio with bilateral frameworks is the essence of the way we manage, both long-term financing and access to the liquidity. It's a good idea to borrow money when you do not need them.» (Informant Orkla ASA)*

How the companies determine the size of the credit facilities vary slightly, but all companies consider it necessary that the credit facilities are of a size that covers loan losses one year ahead, other known capital issues, as well as a reserve on top of that. The companies prefer indifferent agreements between the banks, such as conditions. As Orkla ASA borrows money in the banking market on a bilateral basis and does not have syndicated loans, in exchange for this type of facility, they provide other types of business such as cash management, currency transactions and guarantees etc. Such things have been valuable to companies during the financial crisis. Some of the companies have an official credit rating, and the size of the credit facility is also affected by the support from the rating agencies.

*«However, we have a committed credit facility, also a \$ 5 billion lending rights with 21 banks. These banks contribute the same amount, i.e. about USD 240 million. This credit facility is important to us as it ensures a good short-term rating to borrow short in the U.S. certificate market. We have increased the credit facility gradually over time, last time in 2015 from USD 3 billion to USD 5 billion. The banks participating in the facility are Equinor's core banks.» (Informant Equinor ASA)*

*«With us lies the draft limits of approx. 10 billion and is therefore quite stable. We have a backstop facility; the idea here is that this should not be used unless it must. This is based on how much activity the company has in terms of investments.» (Informant Statkraft AS)*

A credit rating express a view of the issuer's credit risk, and their capacity and willingness to pay interest and principal on maturity. In other words, it's an expression of the issuer's likelihood of default, and their expected loss in such a situation. We distinguish between official credit ratings and unofficial credit ratings. Although not all companies have official credit ratings, it appeared in the interviews that the companies' cash position provides a good unofficial rating from the banks, which again provides better terms at the banks and ensures a better negotiating position for the companies. The companies' financial conditions also get affected when it comes to maintaining a good rating. Furthermore, an informant from Orkla ASA mentioned that they are concerned about borrowing cash as inexpensive as possible, and keeping the costs down by maintaining the financial buffer they have. It is important for Orkla ASA to be perceived as strong credit in the market, which they are since they are good at negotiating. The informant points out that as the EU has "*wrinkled on their nose*", they no longer dare to use ratings, but they are still considered as a good investment grade credit to the market. They have a minus A grade in the rating terminology, which is a strong credit rating. According to the informant from Equinor ASA, they have an A – category rating on a stand-alone basis, that means no uplift related to the Norwegian state as majority owner. The debt ratio of Equinor ASA, according to the informant, is between 15 – 30%. The net debt ration for the company Equinor ASA is defined as:

$$\text{Net debt ratio} = \frac{\text{Net debt} = (\text{Gross debt} - \text{Cash})}{\text{Capital employed} = (\text{Equity} + \text{Net debt})}$$

*«We in Equinor have a very good ability to withstand losses, given the relative low debt ratio. As we operate in a highly cyclical industry, such as significant oil price volatility, we must therefore be prepared to tolerate losses in short periods.»*  
(Informant Equinor ASA)

*«We have publicly stated that we want to continue to be perceived as an investment grade company, and we have a strategy on how much we should maximize borrow. The usual key figures we are looking at are debt to EBITDA, and we can allow ourselves to have a debt and EBITDA ratio of 2.5 - 3 max. Branded companies have a stable business and can afford to have more debt than, for example, an oil service company, shipping company or anyone engaged in more cycling business. The industry we are in is conveniently located, which*

*means that we can achieve very good financial conditions.»* (Informant Orkla ASA)

Both Statkraft AS and Telia Norge AS have official rating and they need to know what they have of commitments in the next six or twelve months. They have an internal measurement card and an external demand for credit rating that they receive. An important part of a credit bureau's total is to understand what liquidity risk the company is having.

*«Credit bureau ranks companies based on liquidity, and they have a similar approach as Statkraft has on its key figures.»* (Informant Statkraft AS)

During the financial crisis, it became even more important to ensure sufficient facilities at the banks, as a guarantee if the market should shut down completely. Some of the companies went out into the market and negotiated agreements on multiple credit facilities when the crisis struck. In general, all companies believed the need for a backstop facility that is alpha and omega in times of crisis. Even though companies do not necessarily make use of these frameworks, it is important to be prepared.

*«We were very uncertain on whether those sources would be there for us in the future. Therefore, one thing that we did during the crisis was to secure some extra facilities at the banks. We went out, and did it, but canceled them a few years later. It was relatively expensive compared to what we used to, but it was obvious that we needed to get such a framework. So, we secured an extra buffer in 2008 and some into the year 2009.»* (Informant Orkla ASA)

### *Capital Markets*

Foreign capital is capital that companies collect from elsewhere, which are not equity. The companies can here collect bank loans (in other words borrow from banks) or borrow capital from the capital markets. In the capital markets, one borrow directly from the investors, as well as through a bank in a form of intermediary (as a transaction). Some of the companies that are participating in this study borrow money from Norway, Sweden and Europe. This shows that

there is also interest on foreign capital in the companies, which has become very low.

*«We mostly borrow money in the capital markets, which means for us; not directly from the banks.»* (Informant Equinor ASA)

*«In the recent years, Statkraft has spent more and more time lending money from Europe. This is because you get the maturity you want. You also get the flexibility you do not get in Norway, and it consists of more volume.»* (Informant Statkraft AS)

In this study, the companies are concerned of using more of other financing sources, and there is a difference in how much of the financing is from the banks and how much of the financing is from the bond markets. This depends on the companies' financing needs, related to acquisitions and other investments, and on the companies' strategy and financing model, and other factors.

*«In terms of financing, we use more sources, but it is primarily from the banks. In addition to the Norwegian bond market, we have occasionally borrowed money from other markets that do not require rating, such as the private placement market in the US, which is a financial bond market. Here we were in for 10 years. Similar loans have also been made in Germany. We do not buy government certificates, money market funds and such things. Other financing options are the Nordic investment banks owned by the Nordic states, which lend money for good purposes such as acquisitions, crises, etc. The Nordic banks are the most solid in the world, therefore wasn't the countries in the Scandinavia so hard affected by the crisis.»* (Informant Orkla ASA)

Some of the companies were in a position where there was no need for further financing during the crisis. Some of them are still not so active in the loan market today. Despite this, all companies emphasized the importance of not only relying on the bank financing. The crisis led to capital tightening, and the banks therefore tightened their lending. Companies that were dependent on bank financing had to pay expensive to renew the loans and, in some cases, accept lower capital volumes. The crisis highlighted the risk of only relying on bank financing, and

one of the most obvious changes after the financial crisis is the companies' need to diversify financing in the loan markets by, for example, entering the bond market. Diversification was also motivated by the fact that the bank's finance costs increased during the crisis, and even though the bond market also had its price during the crisis, it gave the companies more flexibility.

*«It is desirable to spread financing sources as much as possible. We have had a clear strategy that we should have access to more capital markets, and generally move away from the bank financing. We have the facility with the banks, but all other financing that we have done in the recent years has been in the bond market. The main reason for this is that we think it's the reasonable way to get money, and it gives us some form of flexibility.»* (Informant Statkraft AS)

Some of the companies also went into other capital markets than the Norwegian market. This is largely because the Norwegian bond market at this time had poor liquidity. The year 2008 is considered to be the most turbulence year, but money was still available, because in 2009 several traders came to the field. The state also established what is called the Government Bond Fund, and came in with the rescue packages. This boosted the market and increased investments in the Norwegian bond market.

*«We borrowed bonds in Norway in 2008, and even more in the year 2009. This was because the crisis was much more markedly in 2009 than it was in 2008.»* (Informant Orkla ASA)

The mindset of getting the most capital to secure during the crisis was occurred repeatedly in several of the companies. Because of the increased disturbance linked to the borrowing opportunities during the crisis, many companies raised extra loans to have a collateral if the financial crisis escalated in Norway as well. As we will see in the section 5.4.2, about liquidity assessments, several of the companies also launched working capital projects to release capital, which contributed to the fact that the additional frameworks turned out to be unnecessary. Other companies regarded the frameworks as a buffer, which provided security during the crisis.



Regarding the need for financing, it also emerged that it is important to think about the time perspective when the need for financing arises, since it takes time to get the capital from the banks.

*«A company can not come the same day they need capital. They must start the process very early since it takes a long time. It is normal to be in dialogue with different banks about different offers. This is the reason why it takes too much time before a company get the financing in place.»* (Informant Telia Norge AS)

All in all, we can say that the change in the external financing has been that the companies secured more credit facilities to hedge against capital crisis in times of crisis. The companies diversified financing sources to not only rely on the bank financing.

### **5.3.3 Bank relationships**

Commonly for all the companies are that they are concerned with having a good relationship with the banks. Some of the companies have self-imposed policies regarding banking relationships. The companies also have long-term views on it. The companies do not have many relationship banks, only those who are in their banking group. The informants pointed out how the relationship with their core banks, in addition to the companies' solidity, helps ensure easy access to liquidity. Good banking relationships also ensure a favorable negotiating position in times when there is more challenging access to external financing. The informants emphasized the importance of giving the banks additional business so that, in addition to loans, they also allow them to deliver, for example, cash management services to the companies.

*«We may have a group of eight, which is not much for such a big company. Five of the eight banks are considered as core banks, which we have had relationships with for ten years. If we go out in the bond market to borrow money, as we do occasionally, the same banks will compete for the assignment, so it is our responsibility to take care of the banking relations.»* (Informant Orkla ASA)

The informants focused a lot on how fast the financial crisis came and spread to the Norwegian market. A consequence of this was increased disturbance in relation to the bank financing during the crisis, which underlined the crucial need for a good banking relationships if there was a need for financing during an emergency. Many of the companies have the same banks now as they had before the crisis. The companies that participated in the study received loans from the banks. Loyalty and trust were very important during the crisis, and that was the key for the companies in the study why they did not get much affected by the crisis. This is also due to good banking connections. The backbone of the companies' financing is good banking relationships, as they were there for them at any time during the financial crisis, which made the companies less affected by the consequences of the financial crisis.

*«In practice, these banking connections have remained unchanged in the last 10-12 years, but have been explicitly stated in the last 6 – 8 years.»* (Informant Equinor ASA)

*«The market turns around very fast, therefore we repeat that good relationships with the banks are very important. The key to good banking relationships is for them to know us and know how we are as a company. But this can still go against us, because it's typical that when a financial crisis occurs then all the banks may not be able to stand up for us. Suddenly they get some new capital requirements that make them unable to turn around and give us financing.»* (Informant Telia Norge AS)

*«We borrowed money during the crisis. This was because the banks associated us with being loyal. Loyalty is very important to Orkla, and we expect the same loyalty from the banks as well.»* (Informant Orkla ASA)

The companies' good relationships with the banks, and the solid cash situation, gave significant benefits during the crisis, where they, despite the crisis conditions, avoided so-called financial covenants. A mutual opinion among the informants is that the financial crisis, despite the banks' liquidity skepticism, has not weakened the banking relationships, but instead brought a change in the perception of the banks' solidity. The companies pointed out that it has been a

favorable measure to diversify loan sources to reduce the risk incase similar situations occurs in the future.

*«When it went bad, we were a bit nervous about what could happen to the banking world. But we have quite a lot of confidence in the banking system in Norway anyway.»* (Informant Telia Norge AS)

*«It was possible for us, during the crisis, to go to the banks and ask for quite a big extra framework. Of course, we paid the current market price, but otherwise we did not have any stricter terms. We came through it without having to accept financial covenants and such things.»* (Informant Orkla ASA)

All in all, the most important thing in the companies' relationship with the banks are that it is important to have good relationships and additional business with the banks. There is no less confidence in the Norwegian banking system. Loyalty was put to the test during the crisis, and both the companies and the banks have gained loyalty and trust in each other. Good relationships made the companies avoid financial covenants as they increased credit facilities.

#### **5.4 Reviews related to the volatility of the cash flows**

To form a picture of a company's liquidity management, there are several factors that need to be considered. The most important factors are, among other things, handling of risk and assessment of the liquidity in the companies. This applies both in terms of internal size, such as the liquidity reserve and the working capital, but also assessments up against the industry. Figure 11 summarizes the reviews related to the volatility of the cash flows.

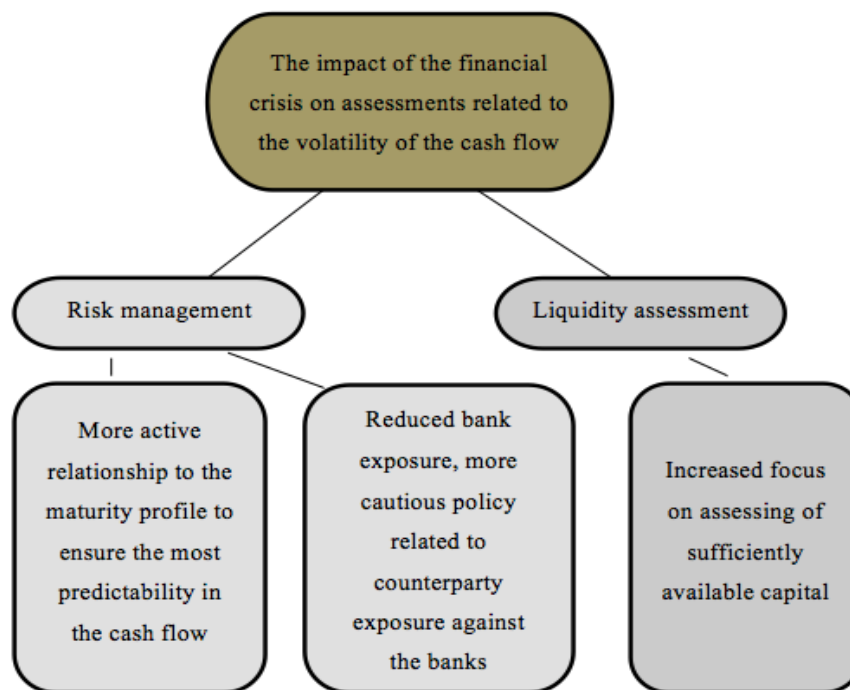


Figure 11: Assessments related to the volatility of the cash flow.

#### 5.4.1 Risk management

The informants focused on several types of risk, and they specifically drew attention to the risk assessments that were made in view of the financial crisis's impact on the liquidity of the company. In the following sections, we have chosen to present the most important from the interviews that are related to the general risk assessment in the companies, where we specifically highlight the types of risk that the crisis had a direct impact on.

The informants conveyed that the companies control all types of risk so that they achieve the greatest possible predictability in relation to the cash flows. This has probably been the focus both before and after the crisis, but as the statement below shows, the financial crisis has resulted in a stronger focus on reducing risk as the market became more unpredictable.

*«In the upturn to the financial crisis, most companies, on the same line as Telia Norge AS, had a high-risk appetite and thus underestimated the risk significantly. This led to events with negative consequences which in turn composed more risks to us. This prevented value creation and reduced existing values. The goal for us is to create events with positive consequences so that risks can be reduced, negative consequences can be outweighed and opportunities can be represented.*

*To achieve this, it is important that we are more on our toes.»* (Informant Telia Norge AS)

Several of the informants mentioned that they have an active relationship with the maturity profile of the debt. This can be related to the management of the refinancing risk of the company, and that there was more focus on this after the crisis. To reduce this type of risk, the informants mentioned some considerations that the companies can take, for example, make sure to divide the maturity of the loan over several years. The maturity of the debt will also affect the refinancing risk, thus the evaluations related to the relationship between short-term and long-term debt in the company.

*«Before the financial crisis, we were not so worried about the refinancing because there were always opportunities to make a new bond etc. After the financial crisis, we wanted to make sure to reduce the refinancing risk, and make it as small as possible. We had a lot of certificate financing, bonds shorter than twelve months, etc., but we went away from it. There was an increased focus on evaluating long-term vs. short-term debt, which backs down to the refinancing risk.»* (Informant Statkraft AS)

It was also mentioned that a way to guard against risk associated with crisis situations that consists of capital drought and the challenges of refinancing loans is that the companies should have credit limits as a back-stop for short-term debt.

*«If the market closes completely, as it partly did during the financial crisis, it will then not be possible to issue debt from a bond, it will also be difficult to issue the debt from a certificate. Then you must have back-stops in place. And then it should at least be able to cover up the short-term debt up to 12 months.»*  
(Informant Telia Norge AS)

Even if the companies have back-stops, it will not always be possible to pull on these, since the banks may experience capital drying and can therefore not fulfill these lines. Thus, squeezing the liquidity among banks could also lead to liquidity squeeze in the companies.

*«Even if the company has credit facilities with the banks, they would prefer not to use these in case the banks experiences a liquidity squeeze. At times during the financial crisis, the short-term interest rates went high, and companies generally*

*had better conditions on terms than the banks could borrow. It has probably been a very good learning after the financial crisis, in relation to how to deal with such situations.» (Informant Telia Norge AS)*

The desire to minimize the refinancing risk also contributed to the need to diversify the borrowing sources. If some of the loan markets were to "freeze" and the companies struggle to gain access to capital, one of the measures was to bring in frameworks from several markets.

*«Most of what we have are borrowing frameworks from the banks, something that we've had throughout the period. These long frames are unused but are available as a reserve. These are used, for example, if the bond market is weakened. If the case is that we cannot refinance in the bond market, then we can go to the bank and vice versa. We have a policy that states that at any time we must have free borrowing frameworks. During the financial crisis, we managed to increase these frameworks, which has strengthened the strategy of the company. In addition, we are still working hard to increase the long-term borrowing frameworks to keep the cash flow positive throughout the year.» (Informant Equinor ASA)*

The financial crisis also affected the assessment of the risk associated with the management of the liquidity. The most obvious effect the financial crisis had on the risk assessments in the companies was that there was increased focus on the counterparty risk, primarily the risk associated with the bank placement. This led to that the companies become stricter with the liquidity management after the crisis, but in what way it became stricter, an informant explains in the statement below.

*«This was related to the management of the surplus liquidity, where of course the counterparty exposure is important. Banks are often counterparties, and during the financial crisis there were of course a lot of adjustments in the creditworthiness of banks. We therefore followed the development of various banks very closely, and made sure to limit our exposure by reducing large deposits in a bank and distributing it to several banks.» (Informant Statkraft AS)*

Banks were heavily downgraded through the financial crisis, and the companies wanted reduced bank exposure, either by distributing the placement of more banks or by placement in other capital markets. As one of the informants said, it is not

necessarily that if the bank the company had the highest exposure against would go bankrupt it would cause the company to lose the money, but it may take time to get the money. This emphasizes the importance of the following up of the liquidity stock daily, and ensuring that you are within the desired framework. The situation of the banks, during the crisis, therefore led to the companies becoming more aware that there may be situations where the banks become less solid, and that there will be risk of placing everything in one and the same bank, and only using the banks as a placement opportunity. There was a general perception that diversification of the loan sources became more important. However, the interviews revealed that assessment related to the refinancing risk do not have equal focus at all companies. This is because several of the companies have very high equity capital and low debt.

*«But one thing we got a greater focus on was counterparty risk against the banks. Banks have previously been regarded as very solid. During the crisis, we gained an increased focus on providing an overview of which exposure we had against the banks, and other counterparties. In periods where we had a lot of liquidity, it became an increased focus for us on how to manage the liquidity, and especially the bank exposure. The focus was the banks, so it was much more focus on keeping track of the market, and getting a better and perhaps more carefully policy on the counterparty exposure. You get a much more active relationship with it and increased focus, although it may not be very big changes in the policy.»* (Informant Statkraft AS)

In relation to the risk factors related to the counterparties, some of the companies pointed out that in addition to the internal rules for the size of the frameworks that can be placed in each bank, they also use rating as an element in the assessment. Which rating the counterparty have can be crucial for the company's exposure against the individual bank.

*«They must have a minimum rating of single A minus. And if they go underneath, we must take action and do things in the portfolio.»* (Informant Telia Norge AS)

For the international companies, one of the most important risk assessments is the currency. All the companies participating in the study operate internationally, and large shares of the company's revenues are generated outside Norway, which causes significant currency exposure. For some of the companies, a large part of

the payments related to purchases are also in foreign currencies. Due to different currencies in the cash flow, is it affected by fluctuations in the exchange rate between Norwegian kroner and other currencies.

*«We have something on the purchasing side, for example, we buy a lot of raw materials in Euro.»* (Informant Orkla ASA)

The interviews revealed that the companies use different ways to reduce the currency risk, such as different forms of hedging, or ensuring. The companies mainly use derivatives to ensure against losses.

*«A way to reduce the currency risk is through debt. If we raise the Euro debt, then it is a natural hedge for the euro income. Another thing is that we make FX derivatives. For example, if we have expected a lot of Euro, we will sell on a term, in other words we then sell Euro in half a year, a year, depending on how much of the expected earnings we have. It is a very dynamic approach that we have, where we adjust constantly.»* (Informant Statkraft AS)

An informant from Equinor ASA pointed especially out the company's goals of limiting the currency risk. For this company, an established currency policy implies that all contractual currency flows must be secured with futures contracts, and that a portion of the expected order intake is secured through what is known as forecast hedges. The goal is to attenuate the effects of the currency fluctuations in one to three years' term. The informant also emphasizes that this policy adds some guidance, and that it may be challenging to go away from the policy when there are changes in the market.

Several of the companies experience major cash flow effects when it comes to the currency development. During the financial crisis, there was a sharp rise in the dollar exchange rate and this affected how the focus on the currency hedges changed for the companies in the period after the crisis.

Although the currency development, during the crisis, had major consequences for some of the companies in the study, there were other factors that led to significantly less currency risk for others. Among other things, this is due to long-term contracts, where revenues and expenses are brought in the same currency, and which markets the companies are exposed in.



Generally, the interviews show that the companies should focus on having a more active relationship with their maturity profile to ensure the most possible predictability in the cash flow. In addition, the companies should also focus on reducing the bank exposure, to reduce the counterparty exposure against the banks.

#### **5.4.2 The assessment of the liquidity**

Generally, there were significant differences in the measurements used by the companies to assess the liquidity of the company. Some of the companies pointed out the solid balance as a reason of the liquidity goals being less prioritized, while others focused more on the follow-up of key figures related to the liquidity. Some of the companies also made assessments based on ratings from the rating agencies. There was an agreement that the working capital plays an important role in the liquidity assessments, simultaneously as the liquidity reserve provides a clear indication of the liquidity in the company. We will therefore focus on these two assessment forms, and highlight the impact the financial crisis has had on how the companies assess the liquidity and use measures to keep an eye on and improve it. During the interviews, it emerged that the liquidity profile of the companies and assessments related to the industry has a big role in the liquidity assessment. For this reason, we will highlight the assessments that the companies do in this made by the companies in this regard.

The liquidity profile of each company shows the large payments, and it is varying when they enter the various companies. These are affected by seasonal variations, for example, Statkraft AS has a significantly strengthened liquidity in the winter months due to the cold and higher power consumption. The profile also depends on the dividend payment (s). Some of the companies have gone from one annual payment to two payments annually, and others have also paid extraordinary dividends in good years with a high proportion of liquid funds. In addition to dividends, investments make a large payment for the companies, and the investment periods lead to higher fluctuations in the liquidity. This must therefore be included in the assessments of what is required to have of light available liquidity.

*«We have had an increasing liquidity reserve; this applies to the years before the financial crisis and the years after that. We got an increasing liquidity reserve*

*throughout the financial crisis because the banks stood up for us. We saw during the crisis that the strength we have with the banks is worth gold. Other important reasons that indicate our rising liquidity reserves are greater volume and higher fluctuations in the liquidity. To have been in an investment period is an example of another important reason for higher liquidity reserves.» (Informant Statkraft AS)*

To assess the liquidity goals of the company, it is very important to consider the liquidity profile. For example, the period around the dividend payments will affect the key figures for liquidity because the companies during this period will be less liquid. The measures can therefore give a wrongly picture of the situation because the payments cause misleading share of high short-term debt.

Throughout the interviews, the working capital was pointed out as a liquidity goal that the companies consider carefully, and have become an increasingly important part of the capital management. Everyone emphasized that there has been a change in the period associated with assessments of capital commitments, and that there is an even greater focus on reducing the capital tied up and utilizing the company's capital more optimally than before. This involves reducing the number of payment days above customers, having longer payment periods above suppliers, as well as assessments related to the warehouse. There are high costs associated with having goods in stock, and therefore should the warehouse be as small as possible, but at the same time adequate for delivery to customers. In this connection, all the companies have been through, and some are still inside, so-called working capital projects.

*«There has been a lot of focus on increasing the profitability within the financial area, by doing some effort. One of the most important efforts has been the working capital project, which has produced very good results. And that's not something we do once, it's a continuous mentality change. That you must focus on the processes that ties unnecessary capital in the company. In the context with the financial crisis and what happened afterwards, we have much more efficient and, can say profitable, finance department than before.» (Informant Telia Norge AS)*

Even though the companies are busy with reducing the working capital, some are

also showing positive effects of having a high working capital. For example, the informant from Orkla ASA stated that, being less concerned with shortening the payment periods above customers, could contribute to better customer relationships and thus increased sales and profitability. This also depends on the industry and the markets which the company operates in. For example, different countries have different business culture, which may require different payment processes.

*«If we use our balance correctly, we can get a higher margin, which leads to more sales for Orkla. We have a balance that can contribute that way. Therefore, it is not clear that a high working capital is negative for the company. Especially when the interest rates are low and many customers may have difficulties, it may be a good way to spend the capital on.»* (Informant Orkla ASA)

Several of the informants pointed out how important it is to focus on the working capital in crisis periods. Even though Equinor ASA raised loans to secure themselves during the financial crisis, they simultaneously launched a working capital project, which released so much capital that the loan was redundant.

*«The year 2008 was the first time we went out and collected capital. We see now that we then instead should have had more focus on the working capital, and to look at the capital tied up in the company. At that time, we drove a working capital project and released a lot of capital.»* (Informant Equinor ASA)

Several of the informants drew attention to how the cash situation of the company can make it difficult to determine the importance of such working capital projects. They pointed out that it will often be that the less money the company has, the more focus it will be on making money from the customers. Even though the company can have a lot of capital that is tied up, and is working with the working capital, it is not always that it gets a lot of focus as the company considers the access to capital to be particularly good, the level of interest rates low and the balance strong.

Although there has been a greater focus on the working capital in the studied period, this is not necessarily a consequence of the financial crisis. The contributions reduced capital formation has for a company is a driver to launch a working capital project.

*«Reducing the working capital is an effective way of reducing a potentially unnecessary cost, as capital has a cost. I think we previously had less focus on the working capital than certain other companies, and we therefore considered it appropriate to ensure efficient use of the capital within the company.»* (Informant Statkraft AS)

Increased focus on the working capital may also be due to the industry affiliation, as some of the companies are compared to others in the same industry for just the liquidity goals as working capital. For Orkla ASA, the transition to a more purely industry also helped make it more clear and simpler, because they experienced less fluctuations than before.

*«We have many initiatives to get it down, and it has become increasingly more clear after we became a purely branded brand company. We are compared to large international companies in the same industry, and then it can be that we get estimated and measured with working capital, operating margins and such things. It also raises the awareness of it.»* (Informant Orkla ASA)

What industry the companies operate in can, in addition to focusing on the benchmarking of the liquidity, also affect which assessment the companies make in relation to the liquidity reserve. During the interview, the informant from Statkraft AS pointed out how the power industry has generally been a very solid and low volatile industry, which results in a reduced need for having too much liquidity.

The industry affiliation was not an advantage for all the companies in this case study, as some industries became significantly harder affected than others during the crisis. Companies in some industries experienced an increased need to increase the liquidity reserve, to secure a buffer if unexpected situations, that could affect the liquidity of the company on a day-to-day basis, could occur.

*«We did some measures during the crisis, to secure us a buffer. We have the liquidity reserve, as we always have, but we increased it quite strongly.»* (Informant Orkla ASA)

For several of the companies, the requirements of the rating agencies are used as guidelines for, among other things, liquidity sizes such as the liquidity reserve. In this way, the liquidity reserve, like other ratings from the rating agencies, will also

be affected by market conditions and the ratings that the rating agencies consider critical.

Orkla ASA stands out by having a share portfolio as part of the liquidity reserve until the year 2011. These liquidates were possible to sell and thus receive a satisfied liquidity need if it should occur. As the statement below shows, this was precisely what happened during the financial crisis.

*«Now it was very rare that we used the share portfolio to finance something or to implement acquisitions, but in one case we did it, and it was in the year 2009 during the financial crisis. Then it was very convenient to make use of it as a source of liquidity as well.»* (Informant Orkla ASA)

The interviews have revealed that increased focus on assessing of the sufficient available capital and reducing the capital tied up are the two factors that are highest on the list of companies that have participated in this case study.

## **5.5 Other explanations**

Throughout the interviews, we received many other explanations, not just explanations about the financial crisis and how that affected the liquidity development in the companies that participated in this case study. Therefore, in this chapter we will explain the factors that have had the greatest impact, and that was highlighted by the informants. The complexity of the companies in the study leads to a challenging picture to draw clear conclusions, and we wish with this section to show that there have been many factors to consider in the work with the data. For companies, it is important to be updated and to keep up with developments so they can utilize technological solutions to streamline financial work. This may affect the change of the liquidity management and the organization of the financial function in the companies in the future. This is a factor for change in the liquidity management that was emphasized in the interviews. Below is a summary of the factors that have influenced the focus on the liquidity management in the individual companies.

### **Orkla ASA:**

The period that we are studying, from 2006 to 2017, the company was in the process of becoming an unmitigated brand company.

When it comes to this, they had several operations related to the reduction of accounts receivable and inventory. In 2006 and during the financial crisis, Orkla ASA had many cyclical businesses. They consisted of, for example, aluminum. This was upstream and downstream and generally. And then we have Elkem, who was in Orkla ASA for 20 years, and Sapa, which was sold to Hydro, who had 40% stake in the RSE solar industry. All of this led to positive cash position. However, the positive effects of these measures were transient, which resulted in a need to secure a larger liquidity buffer. Orkla ASA had to increase the liquidity reserve during the period 2006 – 2017. During the financial crisis, they managed to increase their long-term borrowing frameworks, which gradually strengthened their strategy. They got a completely different balance regarding debt levels and debt size. In 2008, Orkla ASA was up to 30 billion in debt and at that year-end, according to the informant from Orkla ASA, they were down to 0 billion in debt (and that is special). In general, we can say that Orkla ASA was not affected hard by the financial crisis, they benefited from it and did not receive major consequences from the crisis. The informants from Orkla ASA believed that since Norway was mildly affected by this crisis in 2008, this could be a reason that Orkla ASA also came out so well.

**Equinor ASA:**

The informants from Equinor ASA pointed out that the financial crisis led to a fall in oil prices, with a significant negative impact on the company. The crisis led to an increased financing requirement. According to the informants, the financial crisis had a negative effect in some of the areas that the company operates in, while other areas were less affected. The fact that the company have had more legs to stand on has reduced the effects of the crisis. Compared with the rest of the industry or with the competitors, the informants believed that they were somehow similarly affected. In the aftermath of the financial crisis, Equinor ASA has gained increased focus when it comes to more strategic discussions around the "right level of liquidity", and around the management of liquidity (including credit risk related to placement in the banks). The company's liquidity depends on defined "minimum liquidity" and on pre-financing for future identified needs. The development of the liquidity in Equinor ASA have had a strong focus the last 11 years, including during the financial crisis. They have been working to have an increased minimum liquidity, and they have managed this compared to what they

had before the financial crisis occurred. Furthermore, the minimum liquidity is affected by the cost of keeping liquidity. In the recent years, this has been very lowly influenced, because the central bank intervention keeps the long-term interest rates low.

**Telia Norge AS:**

In addition to the strong cash situation of the company, industry affiliation has also had a major impact on the effects of the crisis. The good cash situation has been repeated several times as an explanation factor for the effects after the financial crisis and for other reasons, both in Telia Norge AS and in the other companies. The company had more predictability in payments, as most people have monthly subscriptions and are invoiced only further for exceeded data usage. In addition to half-yearly dividend payments, this resulted in less fluctuation in the liquidity profile, as well as more predictability.

**Statkraft AS:**

In relation to the financial crisis, Statkraft AS has increased focus on the counterparty risk, in other words to reduce it. In addition, the length of the loans and the maturity of the financing has increased. It was common during the crisis to borrow more shortly, since it was more exposed when you have to refinance if the markets are bad. Furthermore, it is difficult to compare Statkraft AS with other Norwegian companies because Statkraft AS is a large company compared to others. Statkraft AS have also a larger geographical area. The assets of the company have been written down in Norway, which means that they have high earnings on them and low depreciation. Statkraft AS achieves good profitability compared to its competitors, this is according to Statkraft's informant since they have knowledge of the power market and how they use this in the industry/market. Statkraft AS also has a solid bottom line, strong cash flow and margin, thus very good ability to withstand losses. The company also has a free input - cost that is in the form of rain in periods when the power prices are falling. All of the information mentioned about are reasons to why Statkraft AS was less affected by the crisis. Statkraft AS increases their production volume in times when the prices are good, and this will affect their financial situation. During the interview, it also emerged that the reason for the liquidity development in the

company, such as the increased liquidity reserve, is mainly due to factors other than the financial crisis, such as increased volumes and increased investment pace.

### 5.6 The main findings of the study

The analysis of this case study has discovered several aspects. These aspects are summarized in figure 12. The analysis also discovers four main findings, as shown in figure 13. These four main findings are discussed in the next section.

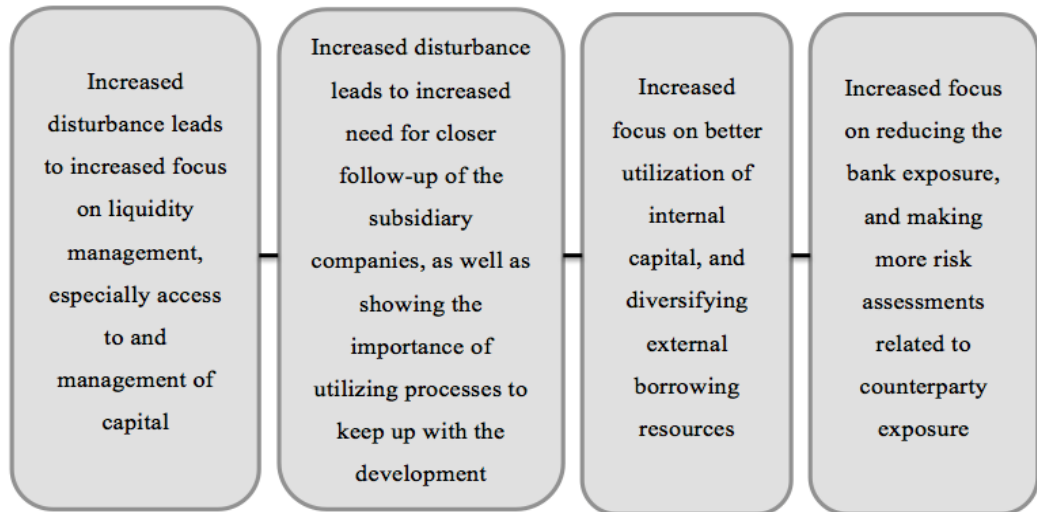


Figure 12: The main findings from the analysis.



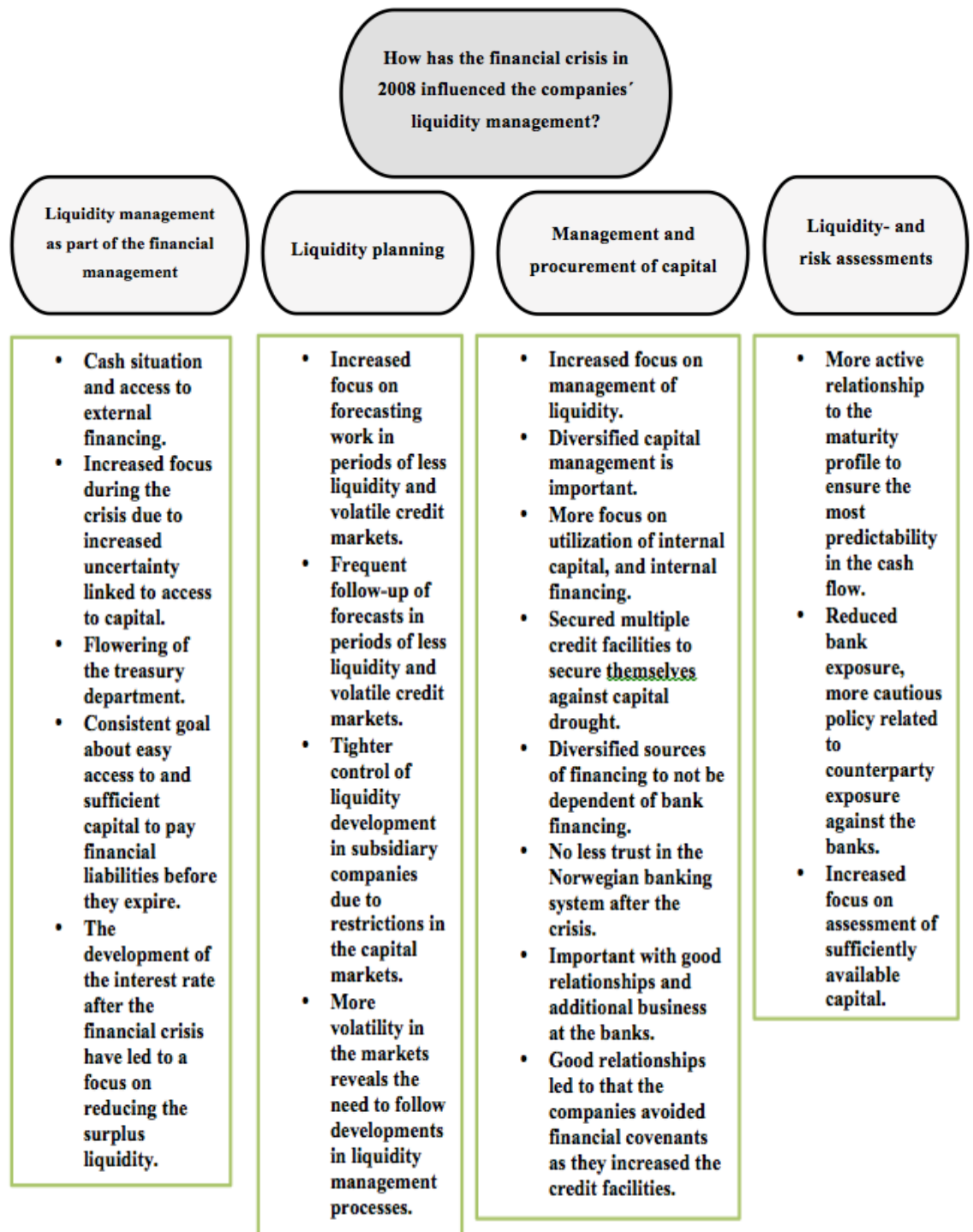


Figure 13: Summary of the results from the analysis.

# CHAPTER 6

## INTERPRETATION

In this section, we have chosen to discuss the main findings from the analysis and look this up against existing research and theory. Interpretation of the findings from the analysis involves evaluating the meaning of content and comparing it with what the theory conveys.

The purpose of the study is to answer the research question: «*How has the financial crisis, in 2008, influenced liquidity management in Norwegian companies?*» Discussions and answers to the main research question involves to also answering the underlying research questions:

- How has the crisis affected the liquidity management as part of the financial management?
- How has the crisis affected the processes of the liquidity management?
- How has the crisis affected the procurement and the management of available capital?
- How has the crisis affected the assessments related to liquidity and risk?

Liquidity management has been part of the strategic management in the companies also in the period before the financial crisis, but not to the same extent before like it is now. The reason why there is more focus on the liquidity management now than before the crisis is due to the growing disturbance in the financial world. These are the first main findings of the study. The benefits of active liquidity management became more visible during the crisis, and liquidity management gained a more central role during this period.

The analysis section shows that the focus on liquidity management is influenced by the cash situation of the company. All the companies that participated in this study have a strong cash situation. The experience that the companies are left behind with after the crisis is how the situation can turn quickly around, and this was a wakeup call for the companies. The companies now have more focus on being prepared for changes in the cash situation. This also correlates with the theory, which says that the focus on liquidity in a company increases during

periods when the company has less liquidity, and in periods when access to external financing is more challenging.

*«There was closer follow-up and closer reporting from period to period.»*  
(Informant Telia Norge AS)

It was also emphasized in the analysis part, that the companies speculate that if a new crisis occur, it may be worse compared to the one in 2008. The companies speculate this because they think that the central bank has used up all the "gunpowder". This means that they cannot lower the interest rates more than what they already have, and the state cannot use fiscal policy anyway, at least not in the vulnerable countries. Therefore, can a new crisis be more difficult to handle and much worse than the crisis in 2008. This is purely hypothetical from the companies' side, but if there is a new crisis then the companies will have huge and negative consequences. This was also discussed in the analysis section, and is one of the reasons why the companies have increased focus on the liquidity management. We can therefore say that the importance of the liquidity management as part of the company's financial management was revealed as the crisis caused an increased risk of insufficient access to capital. Increased focus on the liquidity management in these periods also brings more attention to the treasury department, as the measures require to use more time and resources.

It is important to note that the researchers and the informants in the study indicates that the liquidity management has been a key part of the companies' financial management also in the pre-crisis period, but that the theme has gained attention only in the recent times, especially in the post-crisis period. Although it is emphasized that the liquidity management has had an important role in the companies historically, it is not necessarily that the companies have followed up and handled the liquidity in the best possible way. The companies have become more aware of the value that the liquidity adds to a company, and that this has therefore led to increased focus on optimizing the liquidity management.

*«It was noted that the entire focus on the treasury has increased significantly after the financial crisis, because the risk became very clear during the crisis. This has*

*influenced the mentality and the focus of the company in general, on everything that has to do with the finance department.» (Informant Statkraft AS)*

In the analysis section, other main findings also emerged. The most important finding was that the financial crisis developed and impacted globally, and led to an increased need for closer monitoring and control of the liquidity in the subsidiary companies. Part of this follow-up meant revealing liquidity needs ahead of time. This was so the companies could obtain available lines that would be managed from the company level, if there would be limited capital inflows because of the crisis. There was also more focus on follow-up of the liquidity forecasts, and several of the companies closely followed the liquidity daily during the period when it was at the worst. The desire for increased control also resulted in stricter reporting requirements internally. Intervals of reporting are more frequent during the period, as the crisis resulted in a need to follow-up more actively on the liquidity development in the companies, also from the top level. This also opened the eyes to the value of a system that can provide an overview of the company's liquidity development more automatically, allowing economists to focus on tasks other than reporting. The importance of keeping up with the development of the increasingly advanced technology was thus revealed.

The study revealed that the financial crisis has led to increased focus on follow-up of the liquidity development to get the most predictability in the cash flow. The companies emphasized the importance of day-to-day liquidity management, and regular update of the liquidity forecasts to gain the best possible overview of the capital requirements and the capital adequacy. The liquidity budgets were less emphasized as these have a longer time horizon. The interviews showed that the short-term liquidity planning gives a better overview and guidance for real liquidity developments, especially in increasingly changing markets. This is supported by existing theory. Much of the theory about the liquidity planning focuses on long-term liquidity budgets, but emphasizes that the long-term liquidity budget should be supplemented by short-term liquidity forecasts. Knut & Steen (2006) states that for the liquidity forecast to provide the correct picture of the liquidity, then the forecast must be regularly updated with real numbers. Furthermore, it is pointed out that there is usually greater uncertainty about budgeting deposit payments than payout payments, and the uncertainty increases

the longer the post is due. This is linked to the credit period as the budgeted sales revenues can be based on already signed contracts. This theory corresponds to the findings in our study.

*«There is greater focus on using and managing internal capital so that the company do not have to go out and finance externally. This is both after the crisis in 2008 and now, as it is tougher times.»* (Informant Orkla ASA)

The third main finding from the analysis section showed that the financial crisis led to an increased need to utilize internal capital in a more optimal manner, as well as diversify the external sources of borrowing to reduce the bank exposure. The study shows that when the crisis struck, the companies were anxious for the situation to be worsen, and many of the companies therefore made some short steps to secure more available capital. One of these measures was, among other things, to increase the banks' credit facilities so the companies can secure a buffer. This is confirmed in the theory, which states that companies can have a precautionary motive for holding liquidity when macroeconomic uncertainty increases (Ringstad, 2017).

It is important to look at the liquidity measurements and be able to assess the company's liquidity situation, to see whether the liquidity planning has been effective or not. The goals make it possible to assess a company's performance, both over time and between companies. Whether the key figures are at what is considered acceptable levels depends on the company being assessed and the industry the company operates in (Holden, 2016), as well as what objectives the company has and how it complies with the liquidity planning or the liquidity forecasts. Theory emphasizes key figures such as liquidity rates, liquidity reserve and working capital. (Knut & Steen, 2006; Kristoffersen, 2014; Ringstad, 2017). The study showed that the liquidity rates are not common practice in assessing the companies' liquidity, but instead they use internal targets, and the focus is more directed to the liquidity reserve and the working capital. Furthermore, the analysis revealed that several of the companies assess their cash situation so satisfactorily that for this reason it is not necessary for them to assess other liquidity targets.

*«Banks have previously been regarded as very solid, but during the financial crisis we gained an increased focus on providing an overview of the exposure we had against banks and other counterparties. By this the company got a more active relationship with the banks and increased focus.»* (Informant Equinor ASA)

The fourth main finding from the analysis section, shows the extreme and unexpected price movements that affected the market during the financial crisis. This led to a change in the companies' willingness to take on risk. Prior to the crisis, the companies experienced access to external financing as very robust, and were therefore not concerned about refinancing loans, as there were always opportunities for issuing new bonds or retrieving capital in another way.

The liquidity drought during the financial crisis prompted a desire to reduce the refinancing risk to a minimal level. This also led to the companies becoming more critical to the proportion of short-term debt, so they could consider the situation more carefully before using, for example, certificate financing. The crisis also showed how challenging it could be to control the liquidity risk, and underlined the importance of having a satisfactory liquidity reserve that can be used when unexpected short-term liquidity needs arise (Jens Henrik, 2016).

The desire to minimize the refinancing risk also resulted in a need to diversify loan sources. If some of the loan markets would stop completely, it was important that the companies had the opportunity to raise funds from several other markets. The study revealed increased focus on diversification, where the companies wanted to reduce the bank exposure by entering the bond market. Previously, the banks were very solid, but after the bankruptcy of the Lehman Brothers in 2008, it was seen how the ring effects of the banking collapse spread rapidly, so that the Norwegian financial market came into liquidity shifts and that the Norwegian banks became more reluctant to lend. At that time, several government measures were implemented to diversify the market, among which Norges Bank made it possible for a swap arrangement where the companies could swap bonds against government securities. This meant that the disturbance in the banks was reduced and lending slowly but surely became less restrictive.

The financial crisis also showed the importance of daily follow-up of the liquidity reserves, as in times of crisis it might be time consuming to obtain sufficient capital. The liquidity management became more tighten after the financial crisis, so did the management of surplus liquidity and the assessment of counterparty risk. The companies carefully considered how the surplus liquidity should be placed, and how to reduce the deposits in a bank and how to distribute it to several banks or other money markets. Several of the companies experienced the crisis like a lightning from clear skies and clearly showed how quickly the situation could turn, even in safe countries as Norway. The crisis has largely resulted in a much greater focus on keeping track with the markets and having a more active relationship with the assessment of the companies' risk exposure.

# CHAPTER 7

## CONCLUSION, IMPLICATIONS AND FURTHER RESEARCH

In this final section of the case study we provide a concise summary of the research question. We also provide a conclusion based on the analysis and the interpretation. Furthermore, we discuss which implications the experiences related to the financial crisis' influence on the liquidity management of the companies may have. We do this both practical and theoretical.

Then we give an account of the experiences we have made during the work with the case study. We also implement a critical review of the study. Finally, we present some suggestions for further research in this area and how this can be implemented.

### 7.1 Summary and conclusion

Through the work with the study about the liquidity management in four Norwegian companies, we have been able to respond on the research question *"How has the financial crisis, in 2008, influenced liquidity management in Norwegian companies?"* The main findings from the data analysis have revealed that the financial crisis, in many ways, has highlighted the importance of good liquidity management, and access to and management of available capital was especially emphasized as critical factors during the crisis. Due to increased disturbance, stronger and more frequent fluctuations, and changing markets in the economic image, it has become important to reduce risk by diversifying the loan sources. The findings also show that it is appropriate to diversify the markets where the companies operate in, and utilize the internal capital and thereby reduce the external exposure. The study also show that the macroeconomic uncertainty that was caused because of the financial crisis resulted in increased focus on generating an own liquidity buffer. Something can be seen in the context of the financial crisis, but in general the world has become more unpredictable and more complex. This is mainly due to increased globalization and rapid technological development. The period after the financial crisis has also been characterized by disturbance, both in the financial world, such as the Euro crisis, and in the



markets, that was affected by the oil price crisis, and generally with more uncertainty and increased war and conflict levels, which in turn will rise the ripple effects in the financial world. The financial crisis is an example of how crises affect the strategies and the operations of the companies.

During the financial crisis, in 2008, the banks changed from being associated with safety to being associated with fear and bankruptcy. This study shows how the Norwegian companies experienced more uncertainty compared to the banks during the financial crisis, and how this resulted in the reduction of the banks as a source of borrowing and to less confidence in the banking system. All in all, this case study contributes to confirm the existing theory and the research on the theme liquidity management and the impacts the disturbances from the market has on this. The study also provides an insight into the liquidity management of the Norwegian companies, which is interesting since it is mainly just the American companies that have been the focus of the earlier research.

## **7.2 Practical and theoretical implications**

The study can contribute with experience exchange on the theme liquidity management among the Norwegian companies. As the analysis reveals, there are some differences in what is emphasized in the theory and what is implemented in practice. Routines and focus areas that are more open in each individual company can thereby contribute to the theory by linking a closer string between theory and practice. Furthermore, we believe that the study can contribute to awareness raising around the impact that the uneasy and the unpredictable markets have on the financial management of the Norwegian companies that operates in the international markets. The study also shows the importance of effective liquidity management as part of the financial strategy of a company.

The findings show that the companies have tightened the financial strategy after the financial crisis in 2008, both in terms of measurement and follow-up of the development of the liquidity. As the model by Minsky shows, the disturbance in the financial markets is inevitable. It is, therefore, naturally that the cyclical periods with stability in the economy are relieved by temporary setbacks. The study shows that a natural accommodate for the companies, to be more robust and less exposed with tremors in the real economy or in the financial markets, is to build up an "extra" liquidity reserve so that the companies can come through

periods with disturbances.

### **7.3 The limitations of the case study and the experiences we have made along the way**

In the beginning of the work with this case study, we focused on the liquidity management. As we deepened ourselves in this theme, it became evident that other elements included in the financial management of a company should also be commented. In this way, we can get the most comprehensive picture. This was implemented in the preparation of the interviews, but was not specified in the preliminary the email that we used to contact the topical companies. The informants from the interviews works mainly with liquidity management and have less overview of the economic development of the companies. Despite this, we experienced that the informants were helpful to interrogate across the departments, and in this way, they could obtain sufficient information.

During the interviews, it became evident that some of the concepts and the phenomena of the theory were little used in practice, and the informants had little knowledge of what was behind these concepts. This included, among other things, some key figures for the liquidity, as well as the above-mentioned issues related to other themes that are included in the financial management of a company. Therefore, in some cases it was necessary to elaborate the questions, which again may have led to leading questions.

The study was conducted as a case study with four companies and four interviews, with a total of 10 key informants. By using more informants in the study, we could enrich our analysis. In the work with the study we have experienced that qualitative research method is to the highest degree a learning process, and we have made several discoveries along the way in the conversations with the informants' that was unknown to us. Therefore, we believe that more informants would have deepened the existing findings so that we could discover more new aspects of this theme.

One of the weaknesses of the study is the selection of the case companies. They all operate in markets that were not severely affected by the financial crisis. It might have been interesting to include a bank as one of the case companies in the study. This because we can then see the impact of the crisis from several perspectives, both from the companies and the banks. The financial crisis affected

the banking world first, and for this reason, a bank as a case company would add more breadth to the study. In addition, three of the case companies are wholly or partly owned by the State (Equinor ASA, Telia Norge AS and Statkraft AS), which has shown to have a major impact on the cash situation of the companies. In retrospect, we see that it could be useful for the case study to include a company with a weaker balance that experienced major challenges with the financing situation during the financial crisis.

It would have been interesting to elaborate an industry accounting to get deeper insights and better assessment of the impact factors, but this was considered too extensive for the framework underlying this case study. One possible solution would have been to include only one company in the study, and to conduct some accounting analyzes for the industry. In this way, it would have been possible to get a comprehensive comparison. This had also contributed to an even larger quantitative part, and we would have had approached a triangulation method. A triangulation method can contribute to the findings by supporting them with multiple sources, and this will strengthen the quality of the data in the case study. On the other hand, we had lost some of the breadth knowledge and would not have the opportunity to draw any general lines between the Norwegian companies.

When it comes to the request about the participation in this case study, some of the key informants had the impression that we had connection with the Norske Bank. This is because of the role of the supervisor in the company. We emphasized this in the interviews, but we still believe that it may have had a certain impact considering the questions that went directly on the bank relations.

#### **7.4 Further research and some closing comments**

The study was implemented as a qualitative study of four cases. An opportunity for further research is to further develop the study by implementing a more comprehensive data collection. For example, using more cases, key informants and interviews. This could add more aspects to the theme and provide a more robust study.

In the work of the study it was clear that the industries the companies operate in is

an important explanation factor for the impact that the financial crisis had on the companies and thus also the effects on the liquidity management. Even if we have considered other explanations and reasons for the findings in this case study, we have not been able to adequately address the depth of the impact on the industry. This is because of the frameworks for the study. For this reason, it can be of great value to further research if it can be implemented an industry accounting, and look deeper into how the companies operated in relation to others in the same industry.

We also think that it may be fruitful to implement corresponding case studies in other contexts to contribute to theoretical generalization. For example, the oil crisis, we once were in, will affect the liquidity management of the companies. It would have been interesting to look at companies that are particularly exposed to fluctuations in oil prices.

The data collection revealed how important the CFO's tradeoffs of what is interesting and important for the company, and what is less important, is. This was especially related to the liquidity assessments, the forecast- and reporting work. Among other things, one of the companies had a former CFO who did not emphasize the work with the working capital, and this became less prioritized until a new CFO took over and focused on this work. When it comes to the forecasting work, there may be, in some cases, different perceptions between the management and those who work daily with the liquidity management, considering which timeframe the forecasts should be prepared for. The management has often a desire to look further ahead in time, while the cash manager claims that longer time horizons will give worse management and overview in the short term. This could have been interesting to consider, and study the effects this management has on the liquidity of a company.

We believe the above-mentioned proposals for further research on the theme can form the basis for the improvement and the development of the theoretical contribution from the case study. In conclusion, we can conclude that the statement *Cash is King* is still applicable, and given the more unpredictable macroeconomic image, the liquidity management will continue to be a key factor in the financial management of a company.

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## **Attachments**

Attachment 1: Request about depth interview

Attachment 2: Analysis of the document data

Attachment 3: The approval form

Attachment 4: Interview guide

Attachment 5: Overview of the dimensions' interview data analysis

Attachment 6: The treasury department of the companies

**Attachment 1: Request about depth interview****Request about depth interview in conjunction with the master thesis about liquidity management.**

We are two MSc in business students at BI Norwegian Business School, campus Nydalen, which is in the phase where we write a master thesis. We are both studying finance. The study we are in the process of writing takes a methodological basis in a comparative case design, in other words a study where we want to compare several Norwegian companies.

Based on available information about you, we see that your position in the industry, and as a large company will add our study width and valuable insight into how the financial management in major Norwegian companies works. The main emphasis will be on liquidity management. We are therefore dependent on contact with companies of a certain size and with a high level of activity, where the focus on liquidity is a crucial factor, especially in economic turbulent times. It is for this reason that we contact you.

As part of the master thesis, we started a pre-project in the spring of 2017 to lay the foundation for further work in the autumn of 2017 and in the spring of 2018. The pre-project is a theoretical part where we charted research on the chosen topic and looked at the possibilities for further research. The theme of the pre-project was liquidity management, and based on a thorough theoretical review, this has resulted in us wishing to proceed with the same theme in the master thesis. The financial crisis in 2008 is also called a liquidity crisis, and it is claimed that the crisis has in many ways changed the focus of financial management in companies. The purpose of this master thesis is to investigate the impact the financial crisis has had on the liquidity management in four major Norwegian companies, where we hope to draw some lines both across and inside in industries, as well as look at the superior picture. It is therefore crucial for us to get in contact with companies in different industries.

As we mentioned initially, we want to make a comparative case study, where we work with the depth of the liquidity management in the companies and look at the



effect the financial crisis has had on this. Since we want to look at and compare several companies, we are therefore not looking for a long-term, resource-demanding collaboration with you, but we are only looking for 1-2 hours of your time, to perform an interview (possibly some follow-up questions per mail or phone). In this way, we can add our master thesis our depth and look closer into the effects the financial crisis has had in relation to the development of the liquidity management in the company. This will then, together with the interviews from the other companies, form the qualitative data in the study. Furthermore, we will conduct quantitative surveys where we make use of already available annual reports.

We hope that this may be of interest to you, and that it is possible for you to put off 1-2 hours for an interview as soon as possible. Feel free to contact us for more information, or to arrange a meeting.

Best regards,

Fiola Hasani

Phone number: 916 17 568

E – mail: [fiola-h@hotmail.com](mailto:fiola-h@hotmail.com)

Madhia Maihak Muneer

Phone number: 412 66 936

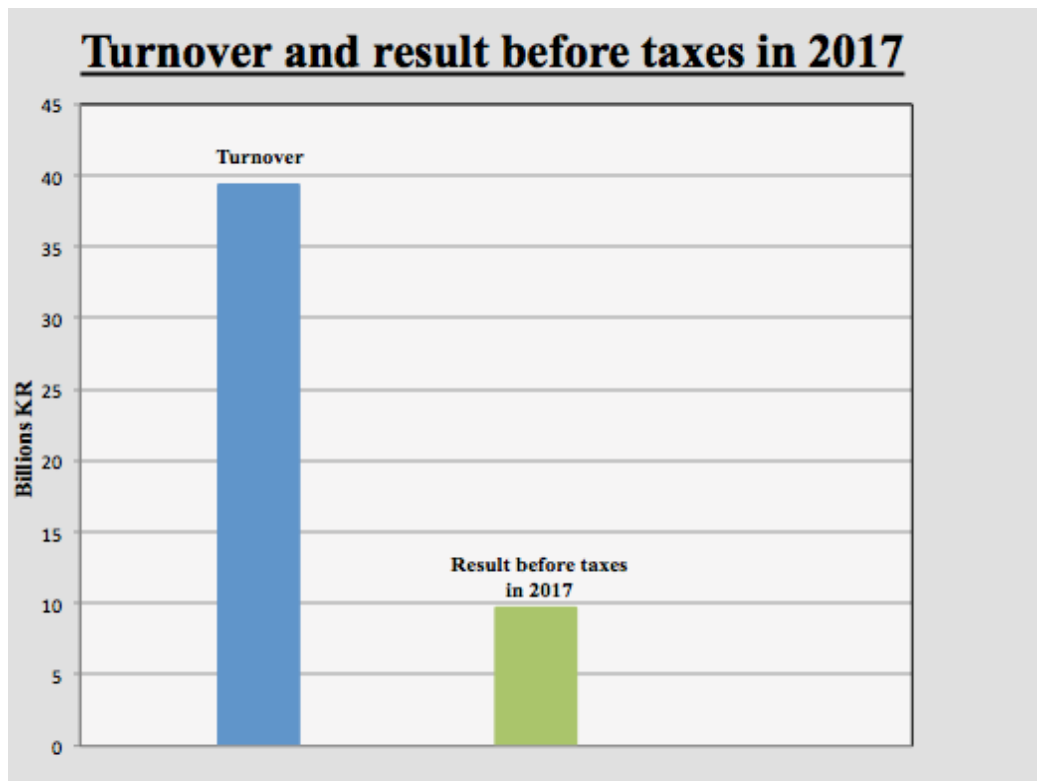
E – mail: [Madhia.Muneer@gmail.com](mailto:Madhia.Muneer@gmail.com)

**Attachment 2: Analysis of the document data**



**Economic development in the period 2006 – 2017**

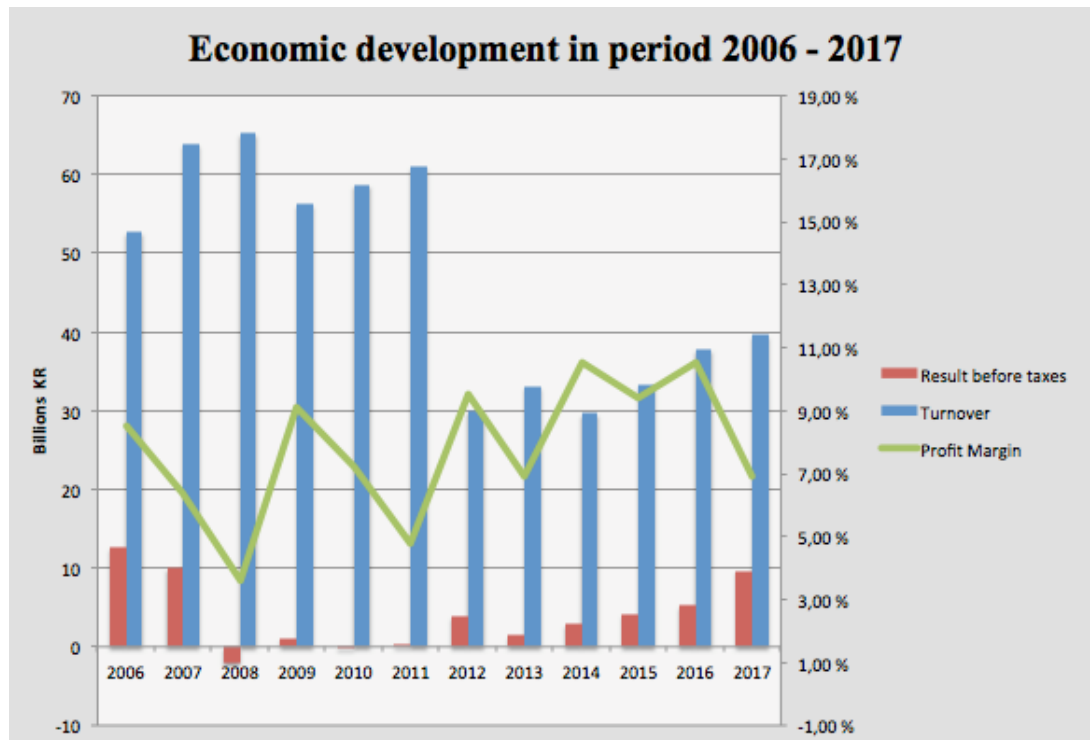
**ECONOMIC STATUS IN 2017**



- In 2017, Orkla experienced increased sales and results for the brand area, with organic growth, strong innovations and improved operations.

Source: Annual report 2017, page: 133 and 149.

## ECONOMIC DEVELOPMENT IN THE PERIOD 2006 – 2017



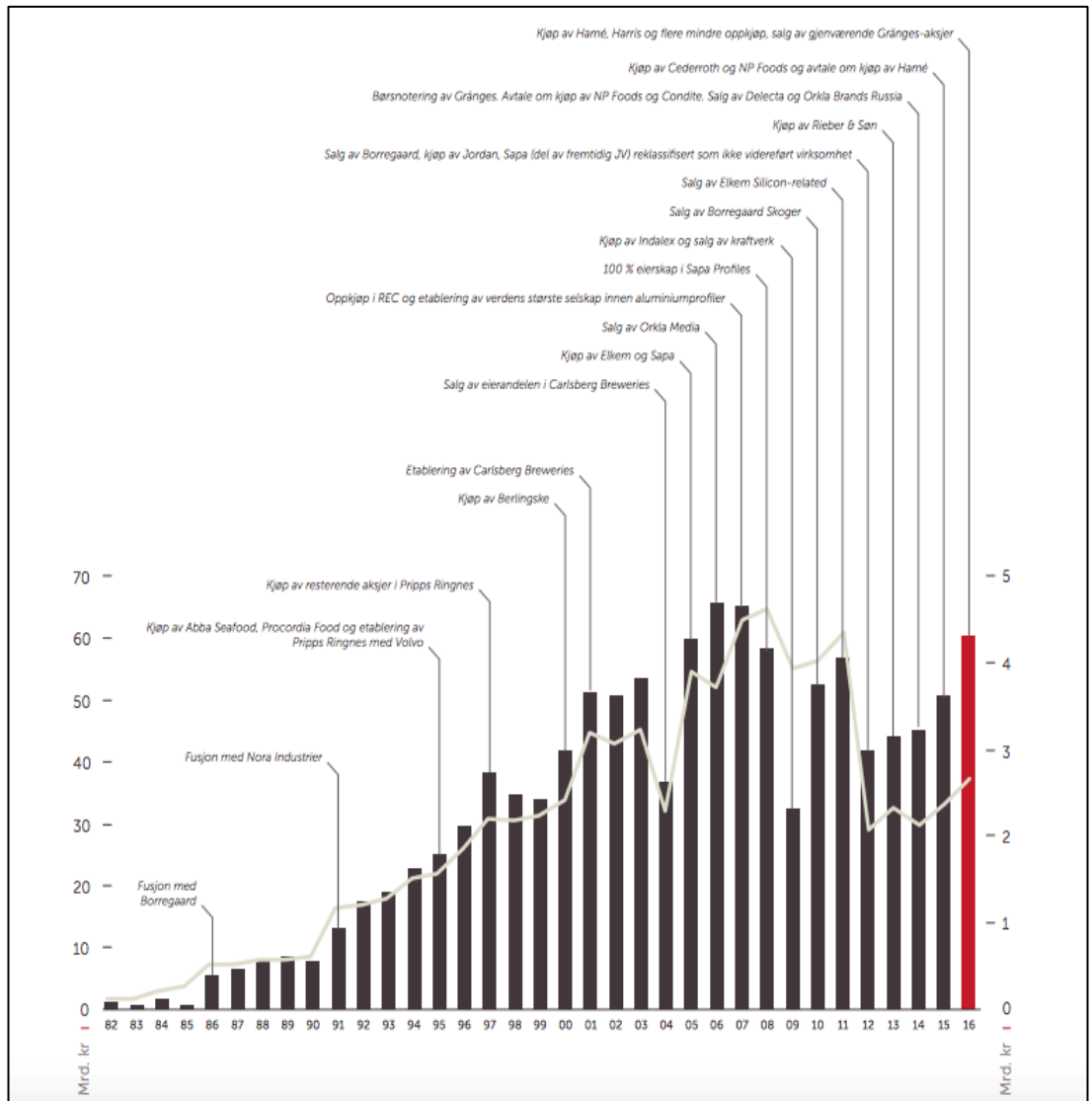
- Profit margin explains how much remains of the operating profit for each krone in the operating income that the company has. This is a measure of the company's ability to obtain a margin of operating income.  
We have used following formula to calculate this figure:  
Profit Margin in % = (Operating result/Total revenue) \* 100
- Strong falls in profit and margin in 2008. This is due to the financial crisis, which affected the real economy with strong fall in demand in several of Orkla's markets. The negative result is due to accounting write-downs on the equity portfolio because of the fall in the financial markets, as well as impairment of goodwill and fixed assets.
- Orkla's business areas were, in the time around the financial crisis, affected to different degree by the disturbances in the market.
- Reduction in turnover in transition 2011-2012 is due to sales of Borregaard and other Mergers and acquisitions (M & A).
- Operating profit and margin increased in 2014 - 2017 and was largely driven by underlying sales growth, but also acquired business and currency translation gave positively effects.

- The period that we study is characterize of troubled markets for several of the segments that Orkla ASA operates within, and significant strategic adjustments with several M & A have resulted in fluctuations in revenue and earnings.

Source: Annual report 2006 - 2017.

## Economic development in the period 2006 – 2017

### Development in operating income and EBIT (adj.)



**EBIT (adj.) (right-hand scale).**

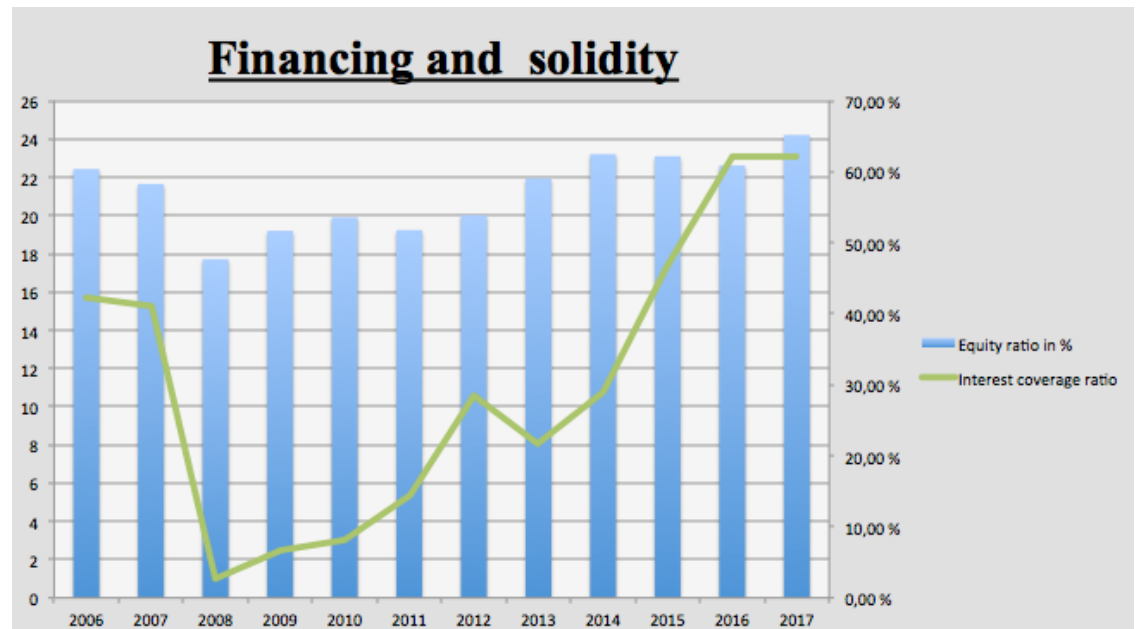
**Operating revenue (left-hand scale).**

- Shows how the company strategic works with sales and acquisitions to create an unmitigated brand company that affect the company's revenue and earnings.

- The graph start from 1982, but we only focus on the period from 2006 to 2017.

Source: Annual report 2016, page: 21.

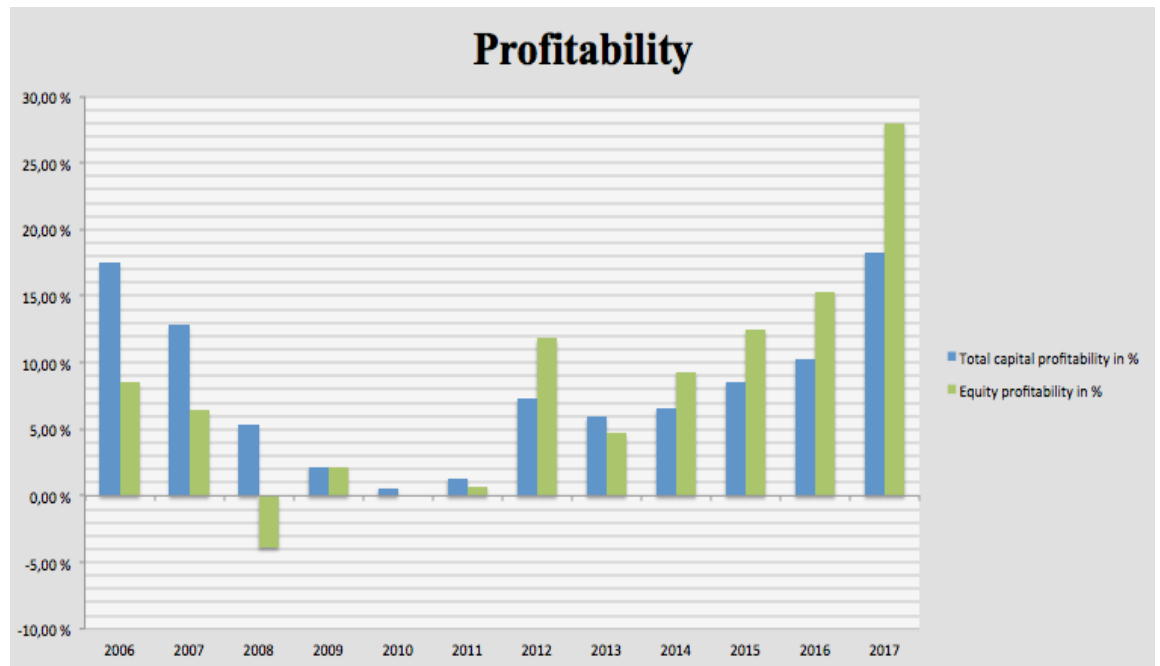
## FINANCING AND SOLIDITY



- The interest coverage ratio is a debt ratio and profitability ratio that is used to determine how easily a company can pay interest on its outstanding debt. The company can be covered by profit from capital employed. A challenge with this figure is that it is not considering loan deductions but only interest costs.
- Equity ratio is stable during the study period, despite several M & A.
- The company has a robust capital structure and financial flexibility to support the business priorities.
- Swinging interest rate coverage, where the years 2008 and 2012 stand out.
- The interest coverage ratio is here calculated using financial income, including gains from affiliates, dividends, etc. Orkla ASA reports in its annual reports higher interest coverage ratios, for example 17.3 in 2015 against our calculation 13.2.

Source: Annual report 2006 – 2017.

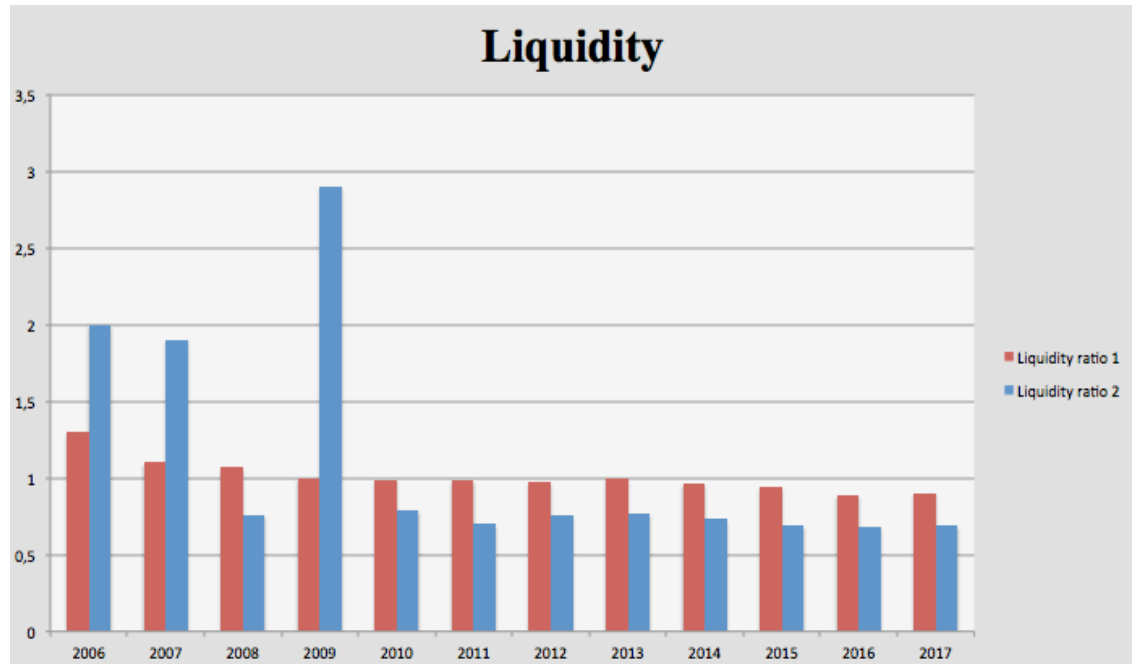
## PROFITABILITY



- The total capital profitability of a company is a measure of the return on the assets. While, return on equity: shows the equity's ability to return, including any dividend and before extraordinary items and taxes.
- Smooth development of total capital return during the period that has been studied. Equity return was clearly strongest before the financial crisis struck. 2008 is the weakest year in terms of profitability. Equity return is highly strengthened in 2017.
- Equity return: Equity is at the highest level in 2006 and 2017, but decreases considerably in the years after 2006, which is considered as the lowest levels. We have calculated the profitability with an average equity and total capital, calculated for over the last 11 years that are relevant for this study. Strongest results in equity profitability was in the period before the financial crisis, a negative result occurred in 2008. Total capital return: Total capital in 2008, despite reduced equity from 2007, indicate significant increase in debt. Total capital has declined every year since its peak in 2008 and is in 2014 at the lowest level in the period that have been studied. Financial income falls sharply from 2007 to 2008.

Source: Annual report 2006 – 2017.

## LIQUIDITY



- Short-term debt at its highest level in 2008, a sharp reduction in 2009, then relatively stable.
- Current assets increase each year until 2009, reach the top level in 2010, and subsequently reduce the following years.
- Liquidity ratio 1 is satisfied ( $< 2$ ) all years except from the year 2009.
- Liquidity ratio 2 is satisfied ( $> 1$ ) in the years 2006 – 2007 and 2009, except the years: 2008 - 2017. Liquidity ratio 2 is especially strong in 2009 due to reduced debt while current assets have remained stable, and there are less that are tied up in inventory.

Source: Annual report 2006 – 2017.

## SUMMARY

- 1) During the period that have been studied, Orkla ASA has been working on rendering the company to become a brand company. This has resulted in several M & A in the period, which has also affected the company's results.
- 2) Stable equity in the period that have been studied, and the company has a robust capital structure.
- 3) Profitability clearly marked by the financial crisis, but overall a profitable company.

4) Satisfactory liquidity despite restructuring and acquisitions/sales during the period that have been studied.

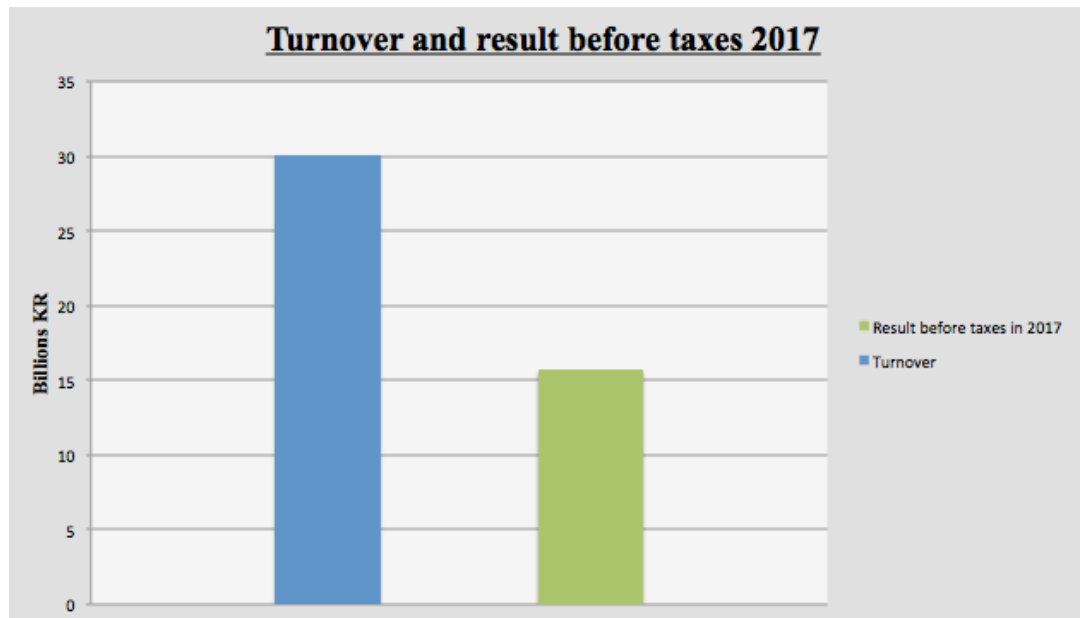


**Attachment 2: Analysis of the document data**



**Economic development in the period 2006 – 2017**

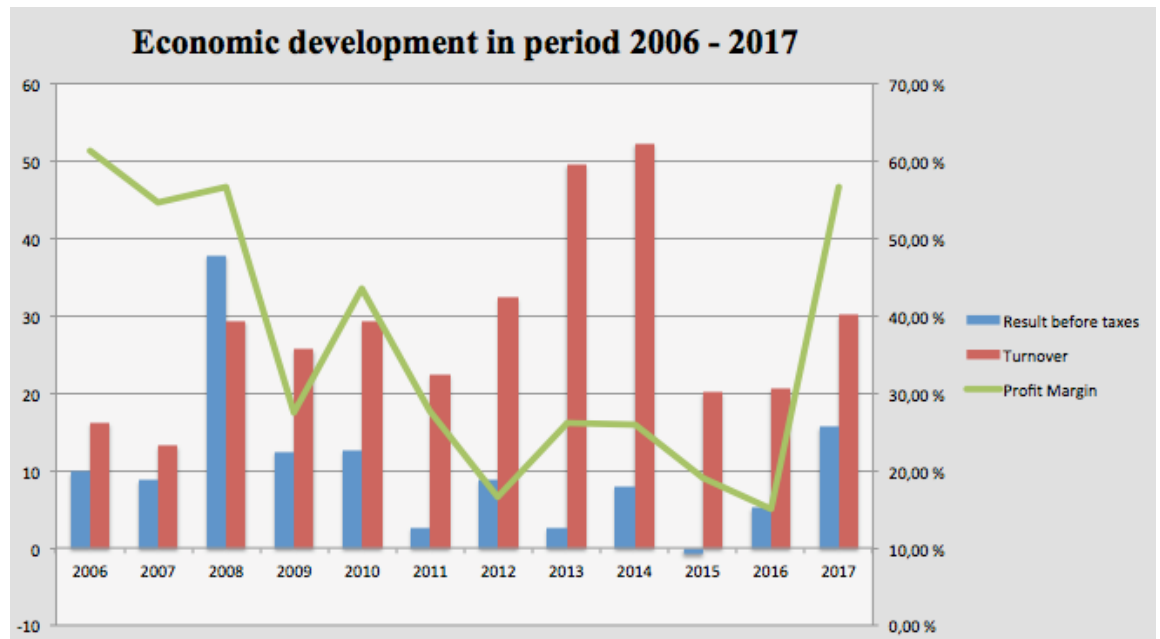
**ECONOMIC STATUS IN 2017**



- Revenues are kept high in 2017 and maintain a stable growth from previous years. The result before taxes is also stable.
- Profit before taxes was NOK 15.7 billion in 2017, an increase with NOK 10.5 billion compared with 2016. Gains from transactions and from positive unrealized changes in value from energy derivatives affected the earnings for the year.

Source: Annual report 2006 – 2017.

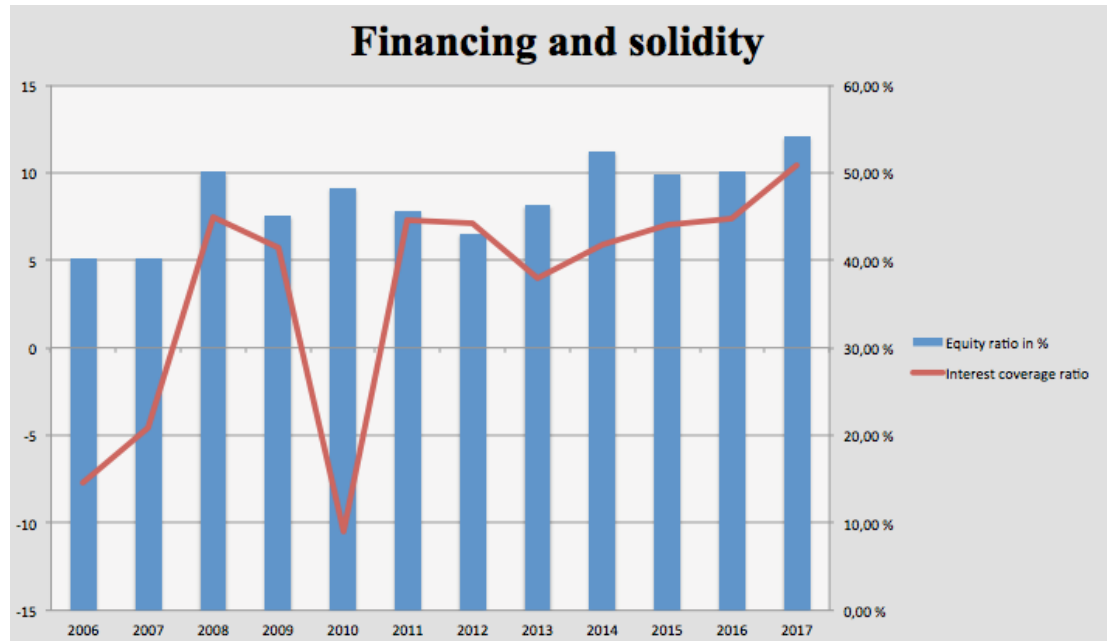
## ECONOMIC DEVELOPMENT IN THE PERIOD 2006 – 2017



- Revenue has increased considerably from 2006 to 2017.
- Deflections in results during the period.
- During the period that have been studied (2006 – 2017), Statkraft AS grew through mergers and acquisitions. Thus, they became Europe's largest producer of renewable energy.
- During this period, Statkraft AS gained its international breakthrough.
- The results from 2008 indicate that due to a significant book value from the trade with E.ON AG, as well as historical high power prices, the production, efficient operation and good results from hedging activities has increased.

Source: Annual report 2006 - 2017.

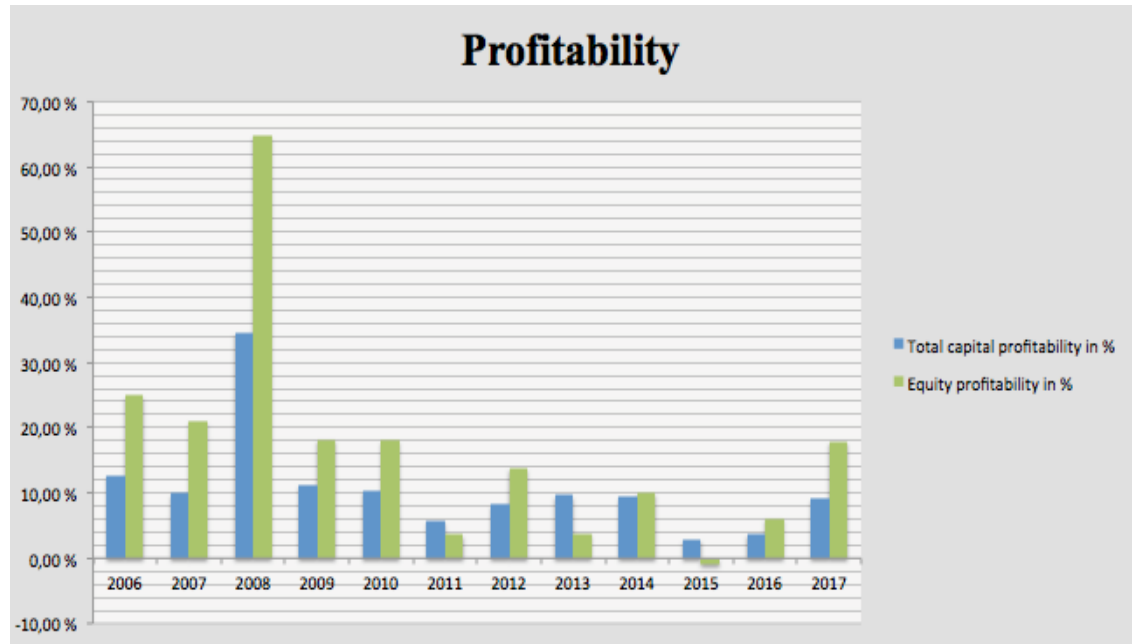
## FINANCING AND SOLIDITY



- Stable equity ratio in percent, but rises in 2012 - 2017 because of good operating profit and new capital, as determined by the Storting, to strengthen Statkraft's equity with NOK 5 billion by reducing future dividends.
- Strengthened financing in the years 2012 - 2017, which helps to realize Statkraft's strategy for further growth in renewable energy.
- Interest rate coverage is periodically negative, indicating high financial costs.

Source: Annual report 2006 - 2017.

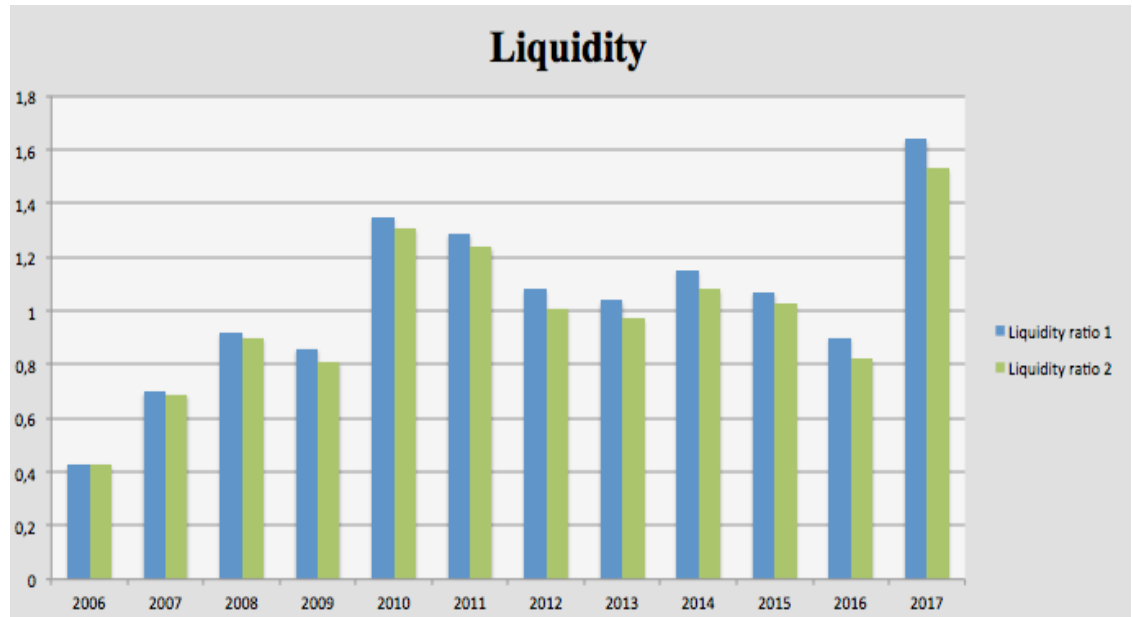
## PROFITABILITY



- As the chart shows, 2008 was a good year for Statkraft AS. This was the year the swap agreement with E.ON AG was completed, which resulted in a significant book value. In addition, Statkraft AS had strong earnings from underlying operations this year.
- Equity return: Equity has increased all the years except from the years from 2009 to 2016. During these years, the reduction was at the highest. The year 2011 is also, in addition to 2013 - 2015, the year with the weakest earnings after taxes, as evidenced by the graph of the weak equity return.
- Total capital return: total capital has increased all years except from the years 2011 and 2015. Total capital increases in 2009, despite lower equity, which means an increase in debt.

Source: Annual report 2006 - 2017.

## LIQUIDITY



- Short-term debt increases annually, except from 2009 and 2011.
- Current assets (excluding goods) increase annually, except from 2009, 2011 and 2012 etc.
- Liquidity ratio 1 is not satisfactory ( $< 2$ ), but is strongest in 2010 and 2017.
- Liquidity ratio 2 is satisfied ( $> 1$ ) in the years 2010, 2011, 2014, 2015 and 2017.

Source: Annual report 2006 – 2017.

## SUMMARY

- 1) Statkraft AS delivered a solid operating profit in 2017. Significant gains from transactions also contributed to a very good result before taxes for the year 2017. In line with the strategy, project activities have been scaled down in the recent years, reflected in the level of investment for the year.
- 2) Solid growth in sales, also through the financial crisis.
- 3) Statkraft's power production returned to a more normal level after record high production in 2016. Higher power prices in the Nordic countries and increased contribution from market activities were the main drivers behind the increase in underlying EBITDA and ROACE.
- 4) Strong results despite the fall in power prices because of the financial crisis.
- 5) Weakest results in 2011 and 2013.
- 6) Solid company.

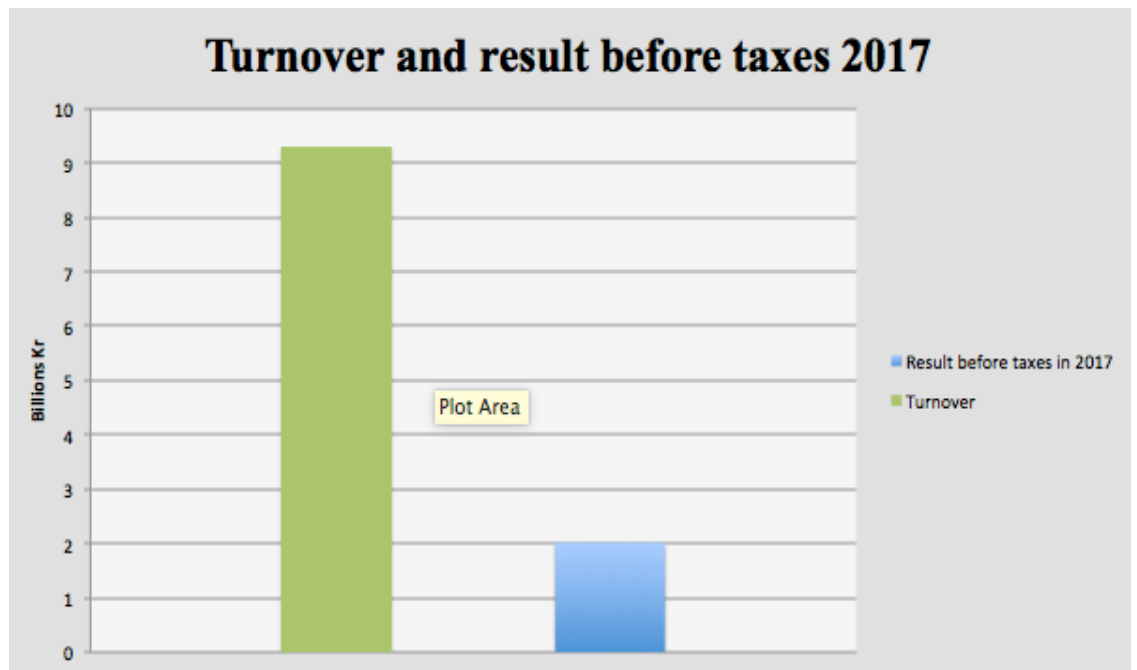
7) Significantly strengthened liquidity in the years after the financial crisis from 2008.

**Attachment 2: Analysis of the document data**



**Economic development in the period 2006 – 2017**

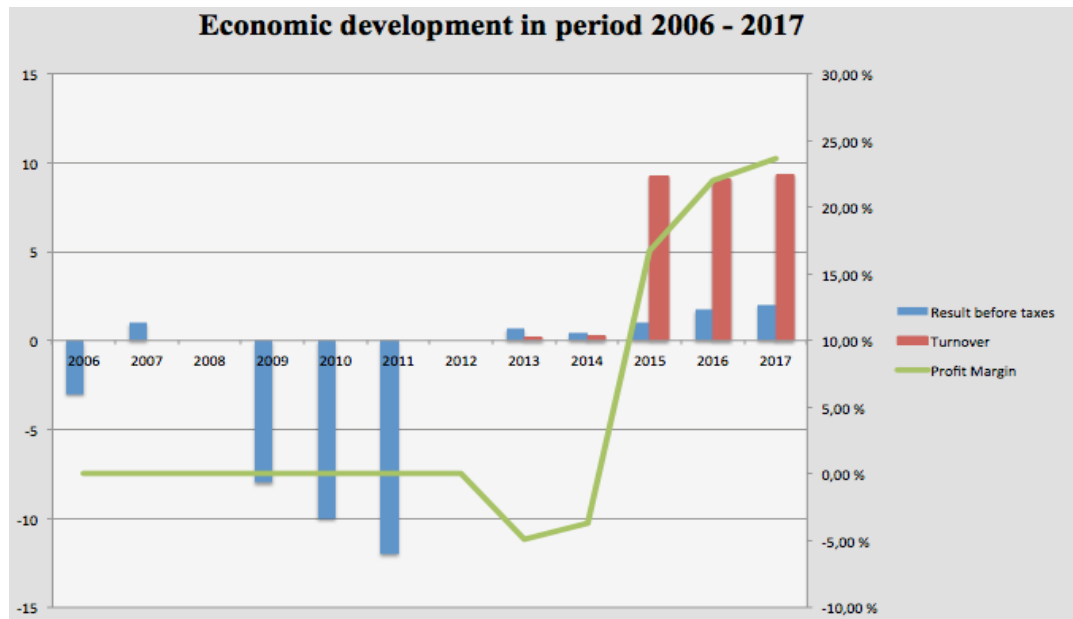
**ECONOMIC STATUS IN 2017**



- In 2017, Telia Norge AS experienced growth and solid financial results.
- The results in 2017 confirm the company's position as one of Norway's fastest growing telecommunications companies, with strong organic growth. The growth is a result of the strong development in the Norwegian business.

Source: Annual report 2006 - 2017.

## ECONOMIC DEVELOPMENT IN THE PERIOD 2006 – 2017

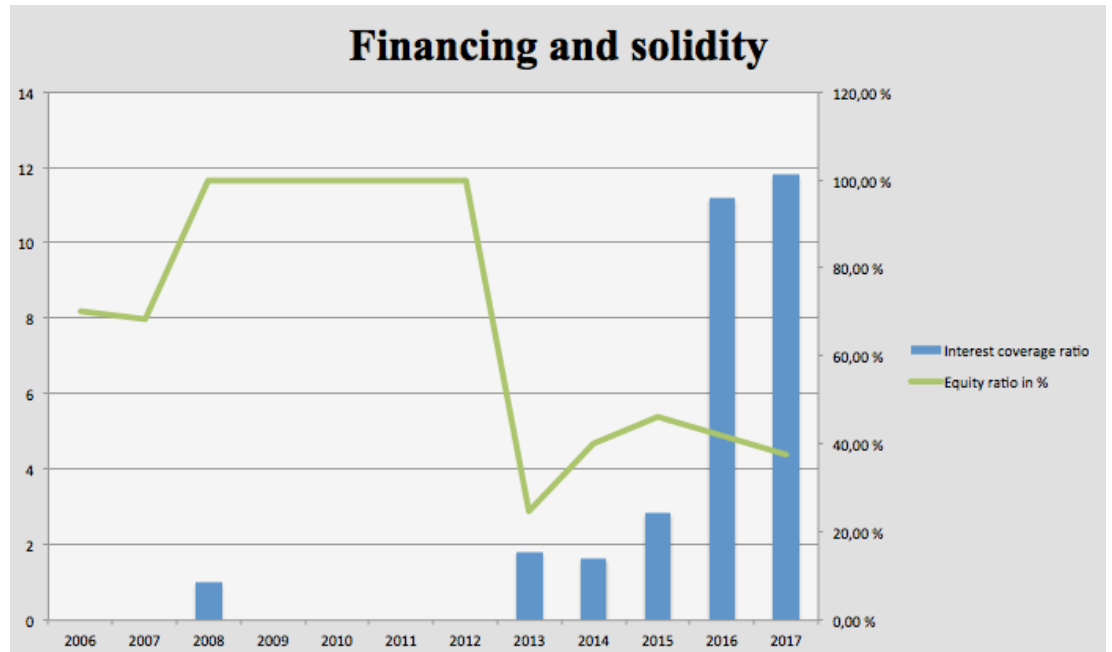


- According to the Norwegian Post and Telecommunications Authority, there were around 5.2 million mobile subscribers in Norway in 2007, with a population of 4.7 million; there was a strong competition between the providers.
- In 2006 there were more than 30 providers in the market, and 2007 was characterized by strong competition and price reductions. The margins for Telia Norge AS were pushed down. This comes because of price reductions while the company had high costs associated with marketing and sales costs towards retailers and end customers. The hard competition also led to decline in Telia's own customers.
- The investment need in 2007 was high, especially due to the capacity requirement in connection with the Tele2 agreements, and the focus on future-oriented mobile broadband. The Tele2 agreement involves a transfer of all Tele2 subscribers to Telia's network. For the first time, the company passed 2 million and ended at almost 2.2 million at the end of the year. Telia Norge AS had a turnover of MNOK 7 568 in 2007 (2006: MNOK 7 315). This is a growth with 3.5 percent. Operating profit was reduced by MNOK 96 to MNOK 2,013 (2006: 2,109), mainly due to the Norwegian Post and Telecommunications Authority's order to reduce interconnection costs. Other operating expenses grew in line with the company's revenue growth.



Source: Annual report 2006 - 2017.

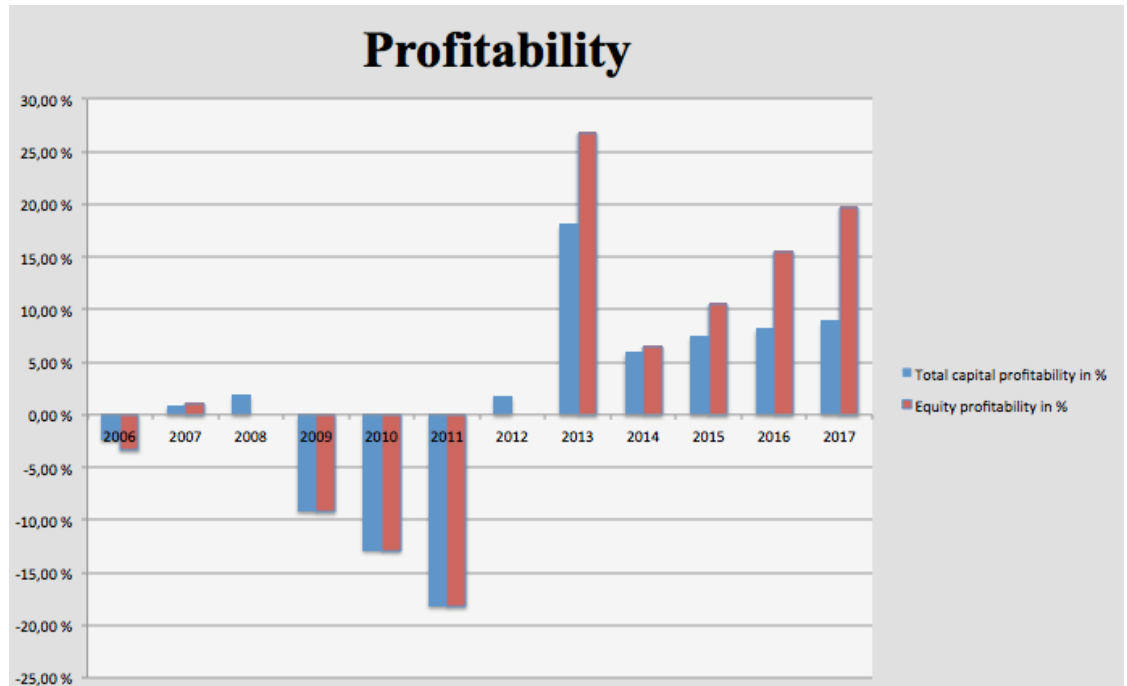
## FINANCING AND SOLIDITY



- Interest rate coverage is a tool for measuring both equity and profitability. The interest rate hedge indicates the extent to which the company manages to handle interest expenses. It also gives an indication of the company's ability to assume heavier debt obligations. Telia Norge AS has improved the interest rate coverage after 2012, from 0 to 11.8 in 2017. This indicates that Telia Norge AS has a better ability to assume heavier debt obligations now than before.
- Equity ratio was at its highest from 2008 - 2012, which represented a total of 100%. Equity ratio decreases after 2012 from 100% to 37.60% in 2017. Telia Norge AS finances more with debt now than equity since the year 2006.

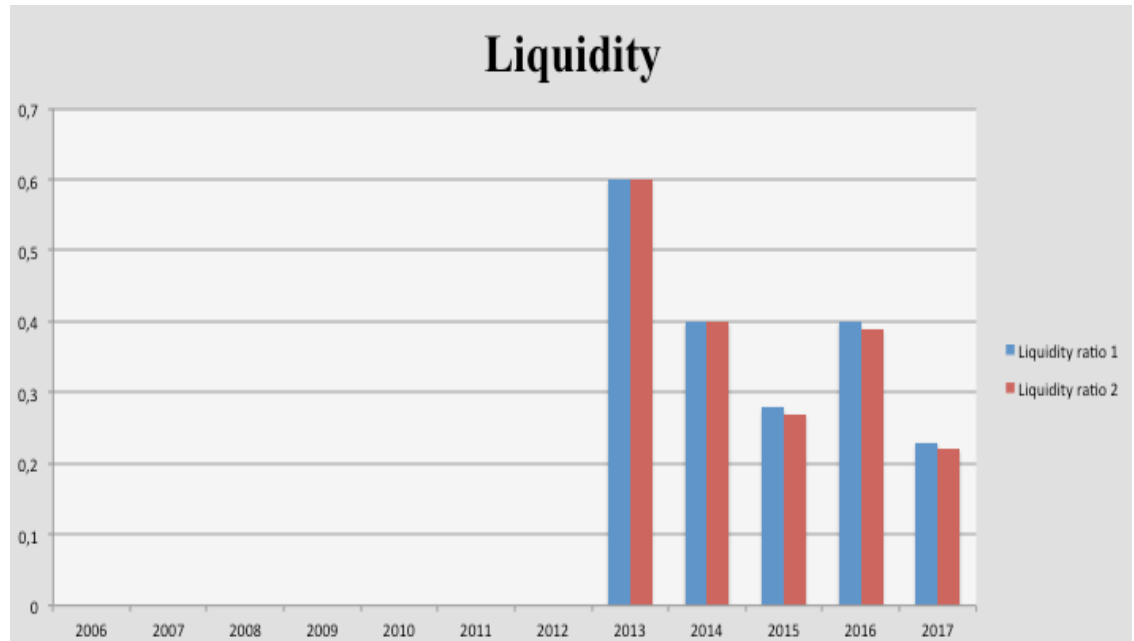
Source: Annual report 2006 - 2017.

## PROFITABILITY



- In the period that have been studied, the total capital and the equity are at the highest level in 2013. Until 2013, equity was low for Telia Norge AS. It was negative. In 2013 it increased to 26.80%, and then in 2017 it was 20%. The weak earnings also reduced operating profit, while pre-tax profit was also negative until 2013. Total capital return was at its weakest in 2011, but was positive from 2012, and was strongest in 2013 with 18%. Total capital is strengthened despite reduced debt, with a sharp increase in the equity. As of 2013, the equity increases and the reason may be increased debt.

## LIQUIDITY



- Short-term debt does not increase annually; it starts from the year 2013.
- Current assets begin to increase from the year 2013.
- Liquidity ratio 1 is satisfactory ( $< 2$ ) for all the years, but is strongest in the year 2013.
- Liquidity ratio 2 is not satisfactory ( $> 1$ ) in all the years, but is strongest in the year 2013 with the ratio of 0,6.

Source: Annual report 2006 – 2017.

## SUMMARY

1) Continued mobile development will require sustained high annual investment. Good profitability is a prerequisite for being able to withstand competition. The Board is confident that the management of Telia Norge AS will ensure the necessary profitability for the company to be at the forefront of customer driven innovation.

2) Increased interconnection costs due to the authorities' injunction result in a slightly weaker result compared to the year 2006. Otherwise, cost developments are in line with the company's other growth.

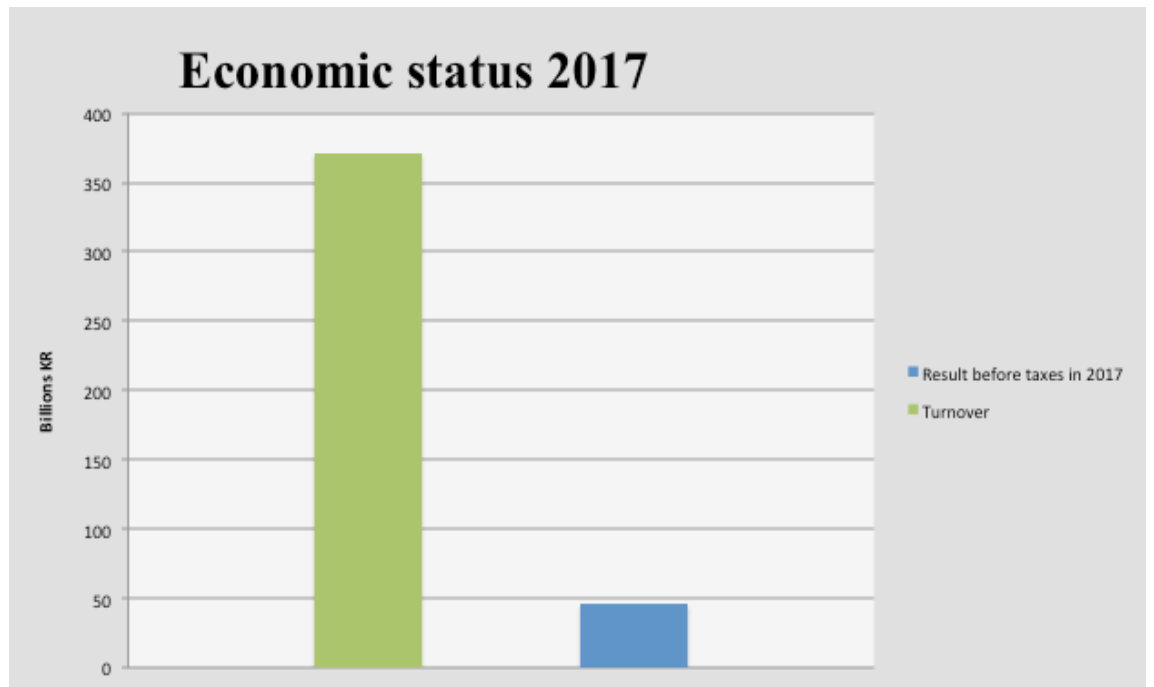
3) Strong competition and price reductions negatively affected Telia Norge AS.

**Attachment 2: Analysis of the document data**



**Economic development in the period 2006 – 2017**

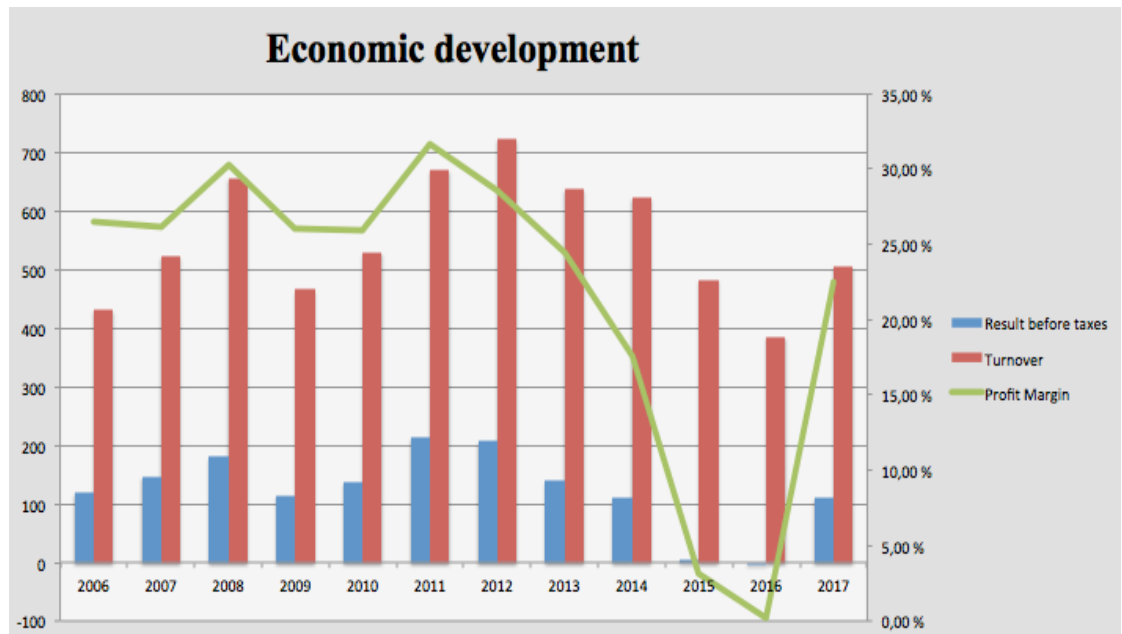
**ECONOMIC STATUS IN 2017**



- In 2017, the world's economy delivered the highest growth rate in 6 years. The largest economies in the world show growth near or above historical development, and emerging economies are strengthened after the economic downturn they experienced in 2016.

Source: Annual report 2006 – 2017.

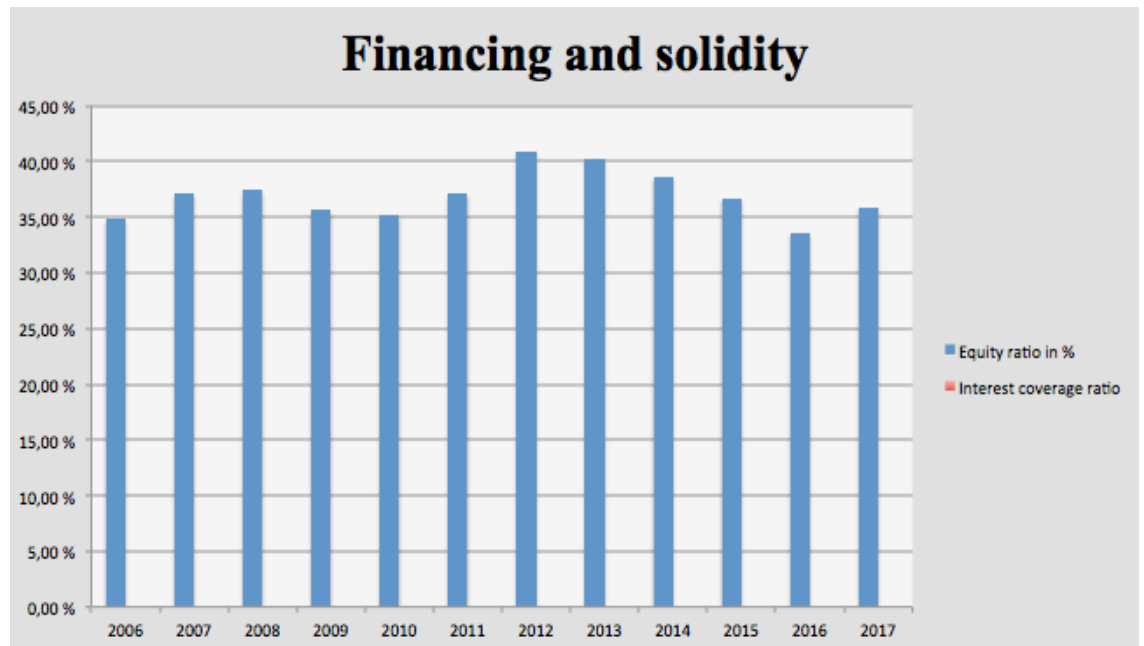
## ECONOMIC DEVELOPMENT IN THE PERIOD 2006 – 2017



- Like the previous two years, the oil market was characterized by sharp fluctuations. There was a decline in the oil prices in the first half of the year 2017, but a strong second half came with rising prices, and the year ended with an oil price of 66.5 USD per barrel. The refining margins were solid, driven by strong demand for most of the oil products.
- High demand and strong LPG prices, driven by changes in China's energy mix, made the petrochemicals industry more naphtha, as again led to less available raw materials for making gasoline, and thus increased the prices. Furthermore, a strong demand in Europe supported diesel margins.
- The rise in gas prices in the second half of the year 2016 continued in the first quarter of the year 2017, before it reversed in the second quarter of 2017. In the fourth quarter of 2017 the prices rose sharply. Result before taxes increased from -1,49 to 110,9 in the year 2017.

Source: Annual report 2006 – 2017.

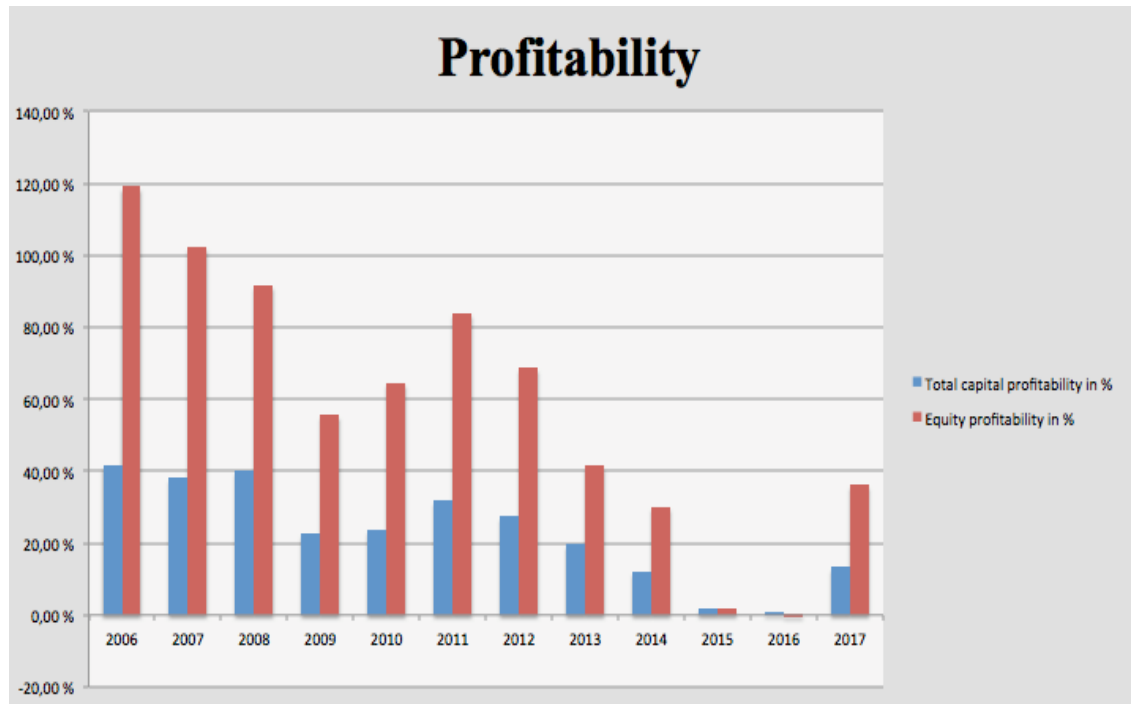
## FINANCING AND SOLIDITY



- Equity ratio was at its highest in the year 2012, which represented 40.80%. Equinor ASA has a strong economic position and economic flexibility. Over the last few years, the company has reduced its debt ratio before adjustments from 23.5% in 2010 to 10.9% in 2012. At the same time, Equinor's total equity has increased from NOK 226.4 billion to NOK 319.9 billion. The reduction is due to solid cash flow from operations and active portfolio management (gains on disposal of assets and operations). At the same time, Equinor ASA has continued its investment activities and provided attractive returns to its shareholders.
- Equinor's overall policy is to maintain liquidity reserves in the form of means of payment, unused credit facilities, and other granted credit to ensure that they have sufficient financial resources to meet short-term capital requirements. Equinor ASA acquires long-term capital when the company considers that such financing is required, based on business activities and cash flows. It is assumed that the market conditions are favorable.
- Interest coverage ratio for Equinor ASA is equal to 0,00% for all the years, due to no interest costs.

Source: Annual report 2006 – 2017.

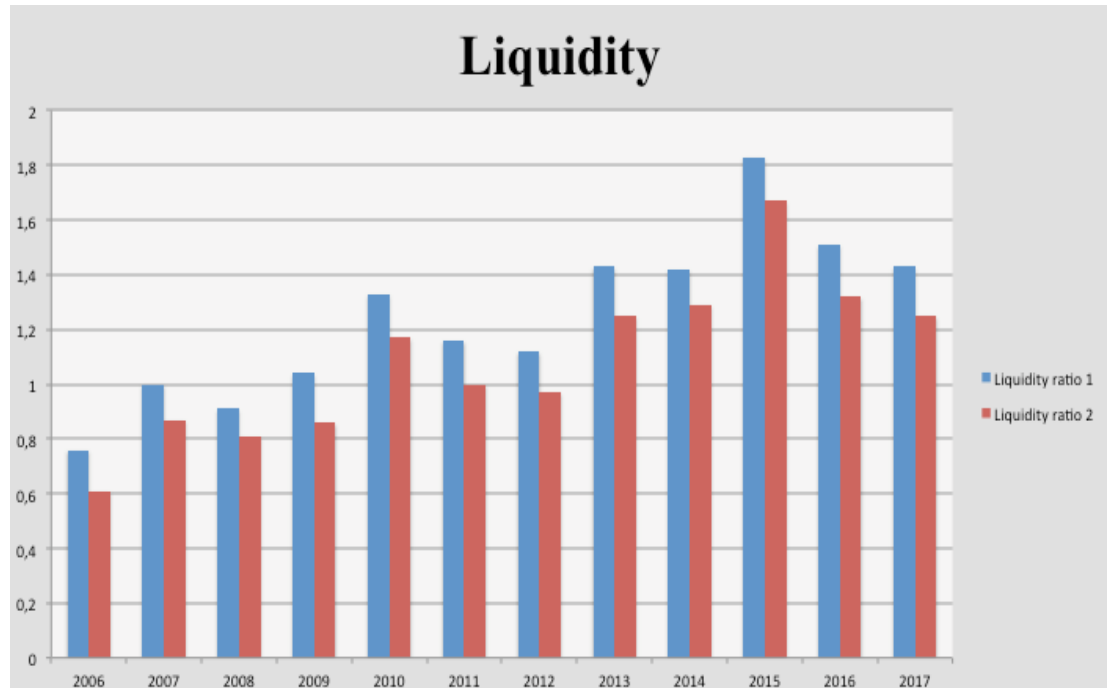
## PROFITABILITY



- In the US, Equinor ASA continued its commitment to improving the profitability of existing assets in the portfolio. There is progress towards the goal of reducing this portfolio's balance sheet for profitability to below USD 50 per barrel, and increase production by 50% from the year 2014 to the year 2018.
- In addition, Equinor ASA aims to strengthen safety, reduce carbon footprints and increase profitability.
- 188 million USD in the year 2017, up from a loss of 119 million USD in the year 2016, due to increased profitability from the investment in Lundin Petroleum AB.

Source: Annual report 2006 – 2017.

## LIQUIDITY



- Short-term debt does increase annually, except from the years 2011, 2012, 2016 and 2017.
- Current assets begin to increase annually, except from 2011 – 2012 and from 2016 – 2017.
- Liquidity ratio 1 is not satisfactory ( $< 2$ ) for all the years, but it is strongest in the year 2015.
- Liquidity ratio 2 is satisfactory ( $> 1$ ) in all the years, except from the years 2006 and 2008. It is strongest in the year 2015 with the ratio of 1,67.

Source: Annual report 2006 – 2017.

## SUMMARY

- 2017 was a good year for Equinor ASA, both operational and financial. The improvement program has yielded significant positive results for the company. Equinor ASA has benefited from a strengthened oil and gas market. Furthermore, Equinor ASA has delivered on the focused strategy that the company presented in February 2017.
- Operating profit for the year 2017 was positive by USD 13.8 billion, increased from around zero in the year 2016. Equinor ASA continues to deliver on its improvement ambitions, and has a strong operation. With a free cash flow at 3.1



billion USD, Equinor ASA achieved positive free cash flow at an oil price well below \$ 50 per barrel.

- Equinor ASA has increased its production forecasts while reducing investment costs. The improvements that have been delivered in the recent years have significantly strengthened Equinor's financial position and competitiveness. This is reflected in the operation and in the next generation project portfolio at a price of USD 21 per barrel.

### **Attachment 3: The approval form**

## **Information about participation in the research project**

### ***Liquidity management in Norwegian companies***

#### **Background and purpose**

This project is part of a master's degree at BI Norwegian Business School, campus Nydalen. The focus in this master thesis is the financial strategy of Norwegian companies, with especially focus on liquidity management. The purpose with the study is to uncover which adjustments were implemented to the strategy after the financial crisis. Based on this we have developed the research question:

*«How has the financial crisis, in 2008, influenced liquidity management in Norwegian companies?»*

The selection consists of four major Norwegian companies. The companies form the basis for comparison, and belong to different industries to create width in the study. By studying the companies' financial strategy, focusing on liquidity, from 2006 to 2017 we will be able to draw some general lines to how the financial crisis in 2008 has influenced the focus on liquidity management in companies in the Norwegian business sector.

#### **What does participation in the study involve?**

The data collection to the project takes place by using an interview as a method. The interview will take about 1 hour. The questions in the interview will address the company's financial strategy, with especially focus on liquidity management, and the company's experiences about the financial crisis's impact on the liquidity management. The interviews will be recorded and written down, and kept until the study is over.

#### **What happens with the information about you?**

All personal information will be treated confidentially. Only the students (Fiola Hasani and Madhia Maihak Muneer) and the supervisor (Salvatore Miglietta) will have access to the data material.

The project is scheduled to end on 03.09.2018. Name list and interviews will be kept separately and data will be deleted after the study is over. The name of the company and quotes from the interview will be used in the publication.

**Voluntary participation**

It is voluntary to participate in the study, and you can at any time withdraw your consent without giving any reason. If you withdraw, all information about you will be anonymized.

If you have questions about the study, please contact the student Fiola Hasani/916 17 568, the student Madhia Maihak Muneer/412 66 936 or the supervisor Salvatore Miglietta/464 10 657.

I have received information about the study, and I am willing to participate.

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(Signed by project participant, date)

**Attachment 4: Interview guide**

**Date:**

**Time:**

The form "*information about participation in the research project*" (attachment 3) is reviewed. The informant signs and agrees. The background and the content of the study is summarized.

**The background of the informant and the company**

Questions	Notes
Tell a bit about yourself? Name, age, education, position, department, etc.	
We have received an impression of your company through the annual reports, but can you tell briefly about who you are?	
Since our focus is on the last 11 years (2006 - 2017), would you like to tell us a little about the economic development of the company during this period?	

**Financial strategy**

Keywords	Question	Note
<b>Financial management</b>	Tell about the company's financial management, focusing on how you	

	<p>emphasize profitability, liquidity and financing/solidity?</p> <ul style="list-style-type: none"> <li>● Tell about the development of the financial management (has it changed during the period we are looking at?)</li> <li>● How is this managed out in the organization? (are the different departments following this?)</li> <li>● Do you have your own teams/departments for each of these areas?</li> </ul>	
<b>Profitability</b>	<p>Tell about the development of the profitability in the company as part of the financial strategy during the last 11 years?</p>	
<b>Profitability in industry</b>	<p>Tell about the company's profitability in relation to the industry/competitors.</p>	

<p><b>Financing/solidity</b></p>	<p>Tell about the financing/solidity of the company as a part of the financial strategy during the last 11 years.</p> <ul style="list-style-type: none"> <li>● The equity ratio 2006 versus 2017, how is the strategy for this?</li> <li>● Explain how your bank connections are, and how these have developed over the last 11 years?</li> <li>● Do you have interest rate on foreign capital?</li> <li>● Do you have fixed interest rate? How do you experience that the banks stand up for you?</li> <li>● How is the company's ability to withstand losses?</li> </ul>	
<p><b>The financial crisis/financial strategy</b></p>	<p>In which way has the financial crisis affected the company's financial strategy?</p> <ul style="list-style-type: none"> <li>● How has the focus changed?</li> </ul>	
<p><b>Other factors</b></p>	<p>Are there other factors that have affected the financial</p>	

	strategy?	
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**Liquidity management**

Keywords	Question	Notes
<b>Liquidity management</b>	What is your understanding of the concept liquidity management?	
<b>Liquidity management/role</b>	Which role does liquidity management have in the company's financial management?	
<b>Liquidity management</b>	<p>Tell about the liquidity management in the company?</p> <ul style="list-style-type: none"> <li>● Tell about your process for preparing the liquidity budget? Are there any forecasts for this?</li> <li>● How do you handle surplus liquidity?</li> </ul>	
<b>Liquidity, development</b>	<p>Tell us about the company's liquidity development as part of the financial strategy for the last 11 years?</p> <ul style="list-style-type: none"> <li>● How do you assess the liquidity ratio 1 and liquidity ratio 2?</li> <li>● Explain why the working capital is</li> </ul>	

	<p>negative (in some periods).</p> <ul style="list-style-type: none"> <li>• Is there any good explanation to why you have such a situation?</li> <li>• How do you assess/handle the liquidity risk?</li> </ul>	
<b>Pull limit</b>	<p>In relation to available capital, what are your thoughts about the pull limits and the overdraft facility?</p> <ul style="list-style-type: none"> <li>• How has this changed during the period?</li> </ul>	
<b>Industry</b>	<p>How does the industry affiliation affect the liquidity management?</p>	
<b>Best practice</b>	<p>Do you have any thoughts about best practice regarding the liquidity management? Are there other companies you think have a good policy regarding this?</p>	



**The financial crisis 2008: which impact did the financial crisis have on the company's financial strategy, focusing on the liquidity management?**

<b>Keywords</b>	<b>Question</b>	<b>Notes</b>
<b>The impact of the financial crisis</b>	How did the financial crisis affect your company in 2008?	
<b>Change in time and resources</b>	Do you have the impression that there has been a change given the amount of resources and time spent on the liquidity management now, versus the time before the financial crisis?	
<b>Industry</b>	How did you suffer from the financial crisis compared to the rest of the industry/competitors?	
<b>Risk</b>	How has the risk assessment been affected by the crisis?	

**Closing questions**

<b>Question</b>	<b>Notes</b>
If we have questions wroted down during the interview, we ask about them now.	
Is there anything you will add to in relation to what we have talked about?	
If we have more questions after the interview is completed, is it possible to contact you by phone, mail og similar to	

answer these questions?	
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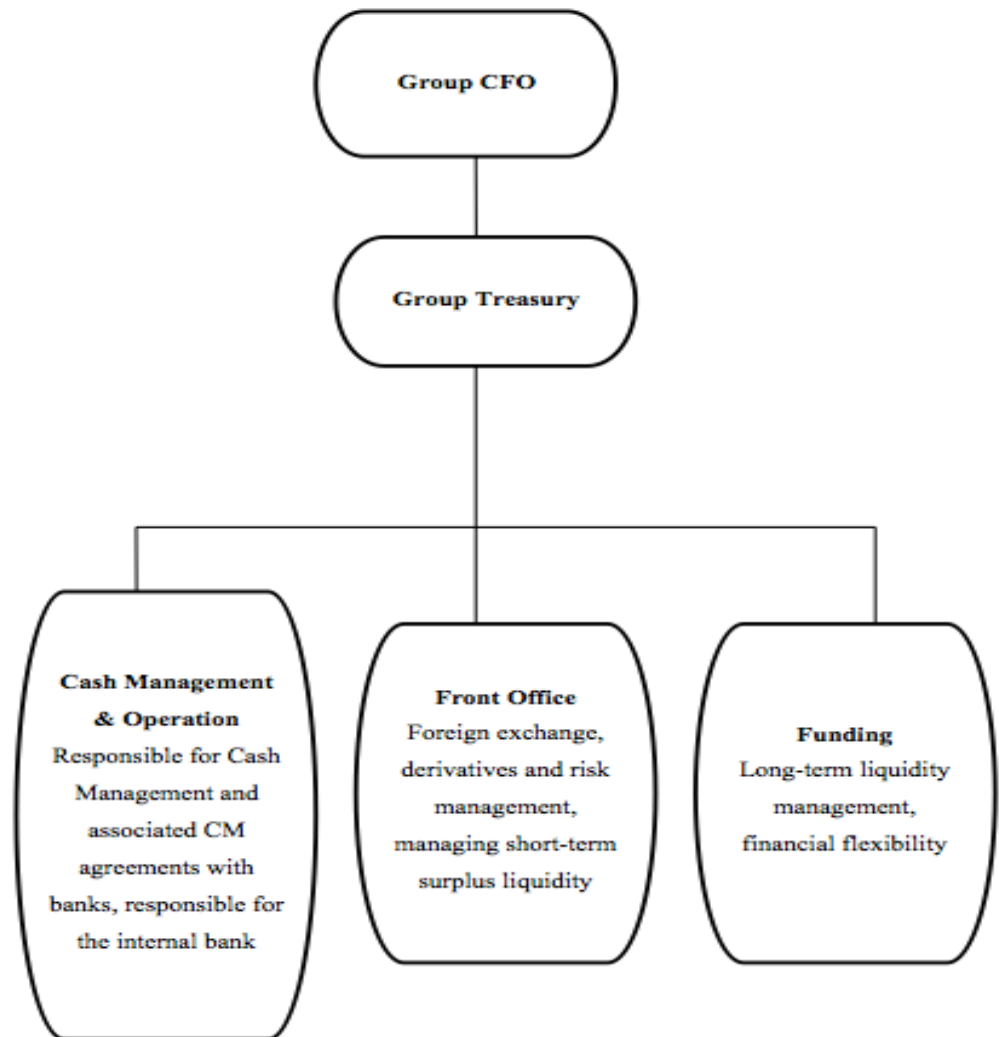
**Attachment 5: Overview of the dimensions' interview data analysis**

<b>The underlying research question:</b> <i>Characteristics of the liquidity management before and after the financial crisis:</i>		
<b>Dimension 1:</b>	<b>Dimension 2:</b>	<b>Dimension 3:</b>
<ul style="list-style-type: none"> <li>• <b>Liquidity management as part of the financial strategy</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>The role of liquidity management</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Approach</b></li> <li>• <b>The company`s control</b></li> <li>• <b>Best practice.</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Liquidity management as a process</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>The goal of liquidity management</b></li> <li>• <b>Forecasts</b></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>Placement of capital</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>M &amp; A / investment in fixed assets</b></li> <li>• <b>Financial placement</b></li> </ul>	
<ul style="list-style-type: none"> <li>• <b>Financing - Acquisition of capital</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Internal financing</b></li> <li>• <b>External financing</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Equity</b></li> <li>• <b>Cash pool</b></li> <li>• <b>Credit facilities</b></li> <li>• <b>Capital Markets</b></li> <li>• <b>Credit rating</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Bank Relationship</b></li> </ul>		
<ul style="list-style-type: none"> <li>• <b>Liquidity profile</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cash flow</b></li> </ul>	

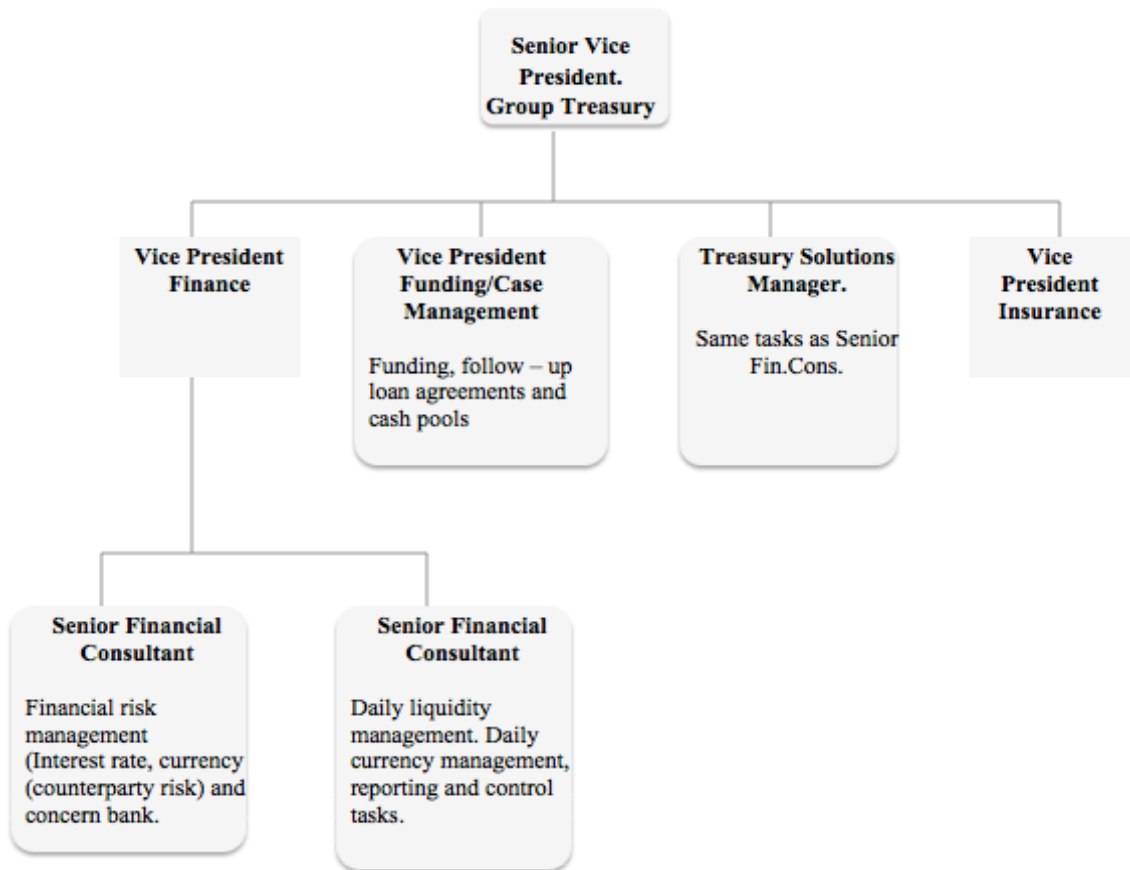
<ul style="list-style-type: none"> <li>• Risk Management</li> </ul>	<ul style="list-style-type: none"> <li>• Liquidity risk</li> <li>• Refinancing risk</li> <li>• Counterparty risk</li> <li>• Currency risk</li> </ul>	
<ul style="list-style-type: none"> <li>• Liquidity Rating</li> </ul>	<ul style="list-style-type: none"> <li>• Working capital</li> <li>• The liquidity reserve</li> <li>• In relation to industry</li> </ul>	
<p><b>The underlying research question:</b></p> <p><i>Summary:</i></p> <p><i>How has the focus on the liquidity management changed after the financial crisis in 2008?</i></p>		
<p><b>The underlying research question:</b></p> <p><i>Other:</i></p>		
<b>Dimension 1:</b>	<b>Dimension 2:</b>	<b>Dimension 3:</b>
<ul style="list-style-type: none"> <li>• Other explanations of the crisis's impact on the company</li> </ul>		
<ul style="list-style-type: none"> <li>• Other explanations for changes in liquidity sizes (and other relevant figures showing economic development during the period)</li> </ul>		

Attachment 6: The treasury department of the four companies

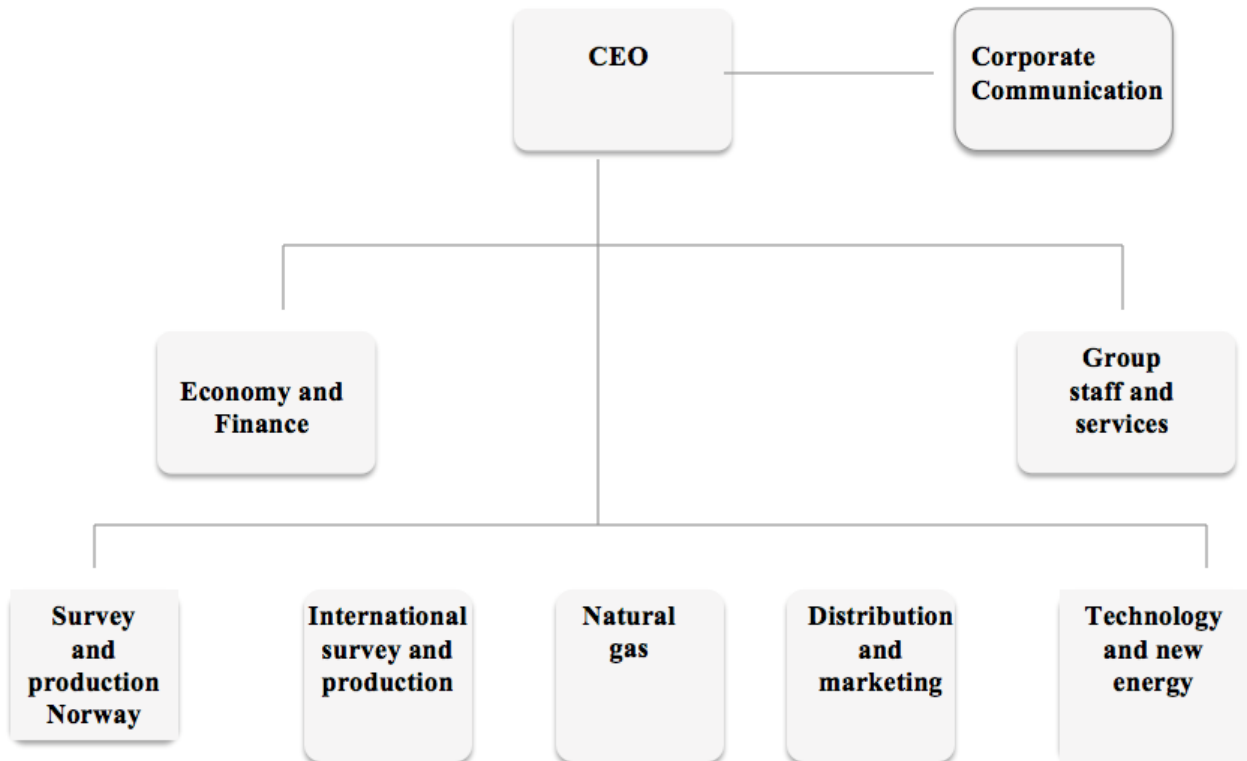
**Telia Norge AS**



## Orkla ASA



## Equinor ASA



# Statkraft AS

