



Impact of Liquidity Management on Profitability

a study of the adaptation of liquidity strategies in a financial crisis

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In Hamburg and Umeå,

Sanna Lamberg & Sandra Vålming

Summary

The ongoing financial crisis which has upset the financial markets of the world since the late summer of 2007 has not left Swedish corporations unaffected. The effects for the Swedish corporations have been tougher credit terms, with banks enforcing debt covenants such as demands of a higher share of own capital. Strategies which can be adapted within the firm to improve liquidity and cash flows concern the management of working capital and cash management, areas which are usually neglected in times of favourable business conditions.

In this study it is examined how companies have adjusted their liquidity strategies before the crisis started to spread worldwide and a year afterwards, in the beginning of the 2009 when economies are in the middle of the turbulence, still feeling the consequences of the financial crisis and not yet started to recover. Research problem was inferred from the existing literature of cash management and consisted of two main questions:

Do active liquidity strategies have a positive effect on company's profitability in times of financial turbulence/ economic turbulence?

Have the importance of key ratios in the measurement of liquidity changed during the time period?

The primary purpose of the study was to evaluate and compare the use and extent of the liquidity practices in two time points. Furthermore, the aim was to measure if the changing of liquidity strategy is related to the profitability measured by return on assets (ROA).

Sample consisted of companies listed on Stockholm Stock Exchange's Small and Mid cap-lists, with some restrictions. A quantitative research strategy was employed and data was collected by using telephone interviews and financial ratios from the financial statements. Hypotheses tested different aspects of cash management and liquidity practices. Statistical analysis was conducted by using regression analysis of the change scores and profitability.

Overall, the findings suggested that the adaptation of liquidity strategies do not have a significant impact on ROA. Only increased use of liquidity forecasting and short-term financing during financial crisis had a positive impact on ROA. Moreover, it was found that the importance of key ratios, which monitors companies liquidity have not changed between the studied time points. Working capital ratio is the most commonly used liquidity measurement and in addition the use of working capital and DIO metrics has increased most during the crisis.

More frequent monitoring and forecasting on liquidity levels and making more short-term investments can provide gains in profitability. Based on the findings, the adjustment of liquidity practices is beneficial for the companies, even though benefits are not always directly measurable as profitability. Furthermore, companies are recommended to maintain their focus on liquidity and working capital management in an economic downturn.

“It isn't so much that hard times are coming; the change observed is mostly soft times going.”

~Groucho Marx

TERMINOLOGY

Terminology

Cash Management

'Theories and methods for management of liquid means'. (Orgler 1970 in Larsson & Hammarlund, 2005:12)

Financial Performance

The financial performance of a company usually relates to how well a company can use its assets to generate revenue. (www.investopedia.com)

Liquidity

The liquidity of an asset means how quickly it can be transformed into cash. When referring to company liquidity one usually means its ability to meet its current liabilities and is usually measured by different financial ratios (www.investorwords.com).

Working Capital Balance

Expresses the balance between current assets and current liabilities (Pass & Pike, 1984:1)

Recession

A recession is said to occur when there is a decline in GDP for two following quarters. (www.businessdictionary.com)

Financial crisis

A financial crisis occurs when the demand for money is higher than the supply causing a shortage of liquidity on the market. (www.businessdictionary.com)

Profitability Ratios

The profitability of a company can be described as its ability to generate income which surpasses its liabilities. Profitability is usually measured by different ratios such as, price to earnings ratio, ROE and ROA. (www.businessdictionary.com)

ACRONYMS

Acronyms

CCC	Cash Conversion Cycle
CM	Cash Management
DIH	Days Inventor Held
DIO	Days Inventory Outstanding
DPO	Days Payables Outstanding
DSO	Days Sales Outstanding
ROA	Return on Assets
ROE	Return on Equity
WCM	Working Capital Management

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1. Background

The first chapter of this thesis introduces the reader to the area of study, providing a background for the paper as a whole together with its relevance. The research questions are presented together with the limitations of the study and choice of subject. The final section illustrates the outline of the study by a disposition.

1.1 The Financial Crisis

The financial crisis which has upset the financial markets around the world has had a real impact on corporations. The aftermaths of the credit crunch has decreased production, sales and the availability of funds for corporations. This has been coupled with an increase in layoffs, bankruptcies and central bank intervention – illustrating the serious consequences of the recent macroeconomic turbulence. (<http://di.se>)

The financial crisis is said to have started in the late summer of 2007 when two hedge funds collapsed, belonging to the American firm Bear Stearns (Foster & Magdoff, 2009:11). This was only one event that was to be followed by many others. In the following months the risk taking of banks in sub-prime loans started to unravel with the collapse and bailing out of the British bank the Northern Rock and central bank intervention in the U.S. with AIG, Freddie Mac and Fanny Mae, events that came to signify the beginning of the greatest financial crisis since the Great depression in the 1930s' (Foster & Magdoff, 2009:11).

Certainly, Sweden has not gone unaffected by these events. Primarily it was the banks which suffered credit losses due to investments in US sub-prime loans and their risk exposure on the Baltic markets. Due to the credit losses banks have seen their credit ratings go down and furthermore, have caused banks to seek liquidity from their owners by new emissions (www.va.se. and www.svd.se). Following these events they turned to safer investments which are more liquid, signaling that cash is king once again (Foster & Magdoff, 2009:97-98).

Banks have not been the only ones affected from these events but also corporations. Large lay-off has been made by major firms such as Volvo, Sandvik, Husqvarna, Skanska, Telia Sonera and Atlas Copco, resulting in about 23800 unemployed from those lay-offs thus far (www.e24.se). The ripple effects for the Swedish corporations have been tougher credit terms, with banks enforcing debt covenants such as demands of a higher share of own capital. The restriction of loans and credit has caused the investments to dramatically decrease and as 96% of sales of Swedish firms are made on credit this has had a major effect on corporations (www.smartwebbmedia.se).

Companies now have to look for other ways to gain liquidity and improve cash flows. Strategies which can be adapted within the firm to improve liquidity and cash flows concerns the management of working capital and cash management, areas which are usually neglected in times of favorable business conditions (Pass & Pike, 1984:1). The value of liquidity has been claimed to be one of the ten unsolved problems in finance (Brealy & Meyers 1996, cited in Kim, Mauer & Sherman, 1998) and has been investigated by many researchers. It is a

complex issue that involves many different parts of the firm and are therefore difficult to manage.

1.2 Working Capital Management

After reviewing the literature within the area of working capital management we had an impression that the subject increases its popularity with an economic recession. Majority of the sources were published before the late 1980's after world markets were recovering from events such as the oil crises and the Latin American debt crisis. Earlier focus in working capital management (WCM) has been on the close relationship between working capital and the company's liquidity and profitability as studied by Pass and Pike (1984), Shin & Soenen (1998) amongst others.

The area of working capital management involves several different departments within the firm and therefore it can be difficult to have an effective WC policy. Working capital usually represents a large part of a firm's assets and can be reduced by more efficient inventory and accounts receivables management. Several studies have concentrated on different aspects of working capital management and how managers could create more value by managing effectively different components of the working capital. Kolay (1991) stresses the importance of a proactive working capital strategy as working capital is situation dependent and strategy needs to be assessed and adapted. Kolay found benefits from both short- and long term strategies. Maynard E. Rafuse (1996:59) suggests that those companies who are aiming for minimizing their working capital strategies should concentrate on managing their stocks. The aim here is to study the short-term assessments of companies' liquidity strategies and how well firms have responded their working capital needs.

The importance of the subject has increased again during the latest years and the recent focus in studies has been on the cash flow implications of WCM. Chiou & Cheng, (2006) indicated the growing importance of financial ratios in working capital management. (Boisjoly, 2009) has investigated the effects of aggressive working capital management on companies' financial ratios, and his findings suggest that accounts payable and cash flow per share measures have become more important in the financial management practices. Other strategies to improve liquidity can be done by accelerate invoicing and collection processes.

When firms have problems with liquidity they may defer their payments to creditors which is a harmful for companies and can result in several consequences such as worse credit terms in the future. The importance of effective inventory management in WCM was also found in a study by Pedro Juan Garcia-Teruel & Pedro Martinez-Solano (2007:164). They studied effects on working capital management on Spanish SME's profitability and concluded that additional value can be created by reducing inventories and the number of day's accounts outstanding. Shortening the cash conversion cycle can also be a means to improve firm's profitability. In this study these areas will be touched upon through the corresponding ratios and how they have changed in importance in the selected time period.

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As statistics from the Swedish Bureau of Statistics have shown, inventory of Swedish industrial firms have decreased the latest year together with a decrease of accounts receivables (www.scb.se) which could be a sign that firms are trying to manage this area more effectively. Whereas, earlier studies of working capital management have focused on their analysis on the main goals and basic components of the WCM and how companies can improve their liquidity and profitability by managing effectively their working capital balances (Pass & Pike, 1984). When risk and uncertainty increases, so does the need for planning and forecasting of the company's liquidity. Turbulence on the financial markets around the world usually affects the exchange rates of currencies. For a small country such as Sweden, with an open economy, who has chosen to remain outside the European Monetary Union, will maybe be more affected than those countries which has adopted the Euro. During the financial crisis the Swedish krona has reached its weakest level in 17 years. Benefits of a weak currency for Swedish corporations are that it should boost their exports to other countries as it becomes cheaper (www.e24.se). However, it also means that imports become more expensive. To minimize the impact of fluctuations on exchange rates companies can hedge against these risks. These are all areas which will be discussed in the theoretical part of this thesis.

This study examines how companies have adjusted their liquidity strategies between the first quarter of 2008 and 2009. Starting from when the crisis started to spread worldwide and a year afterwards, in the beginning of the 2009. Capturing economies in the middle of the turbulence, still feeling the consequences of the financial crisis and have not yet started to recover. Further the focus will be on if these strategies are effective in times of a financial crisis as more and more reports shows that firms are having problems in meeting their obligations as they fall due and bankruptcies increased with 6 % during 2008 (www.kronofogden.se).

The previous discussion gives some evidence of the extensive amount of studies of different working capital strategies and their effects on company performance. What have received minor attention are studies of working capital policies and their impact during exceptional economic periods, such as the ongoing financial crisis. This is where the current study can contribute to some part of the knowledge that is lacking within this area and see what strategies can be beneficial in terms of return on assets (ROA) and if these strategies even are beneficial in a crisis. Jose, Lancaster and Stevens (1996) found that higher profitability could be achieved for corporations which maintained a more aggressive liquidity management in terms of reducing the CCC. We wanted to see if a more active strategy could be beneficial in terms of ROA in a financial crisis, which is one of many profitability ratios available.

1.1.2 Financial Constraints

The current study aims to find differences in firms' liquidity strategies during the last year, when global financial crisis started to spread around the world. Literature suggests that financial constraints are important determinants of firm behaviour.

As the theory chapter will show, working capital can tie up well needed funds for the company and can provide a source of liquidity. Fazzari & Petersen (1993) investigated cash

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flow fluctuations impact on working capital investments and found that working capital investments are indeed sensitive to cash flow fluctuations.

If fixed costs increase it will have a negative effect on the cash flow but the difference will be that constrained firms will adjust their working capital and investments while it will have no affect on non constrained firms (ibid). The change scores in this research will tell us if investments have decreased or increased, suggesting that those corporations which have decreased their short-term investments might be more financially constrained than others.

Kim, Mauer & Sherman (1998) found that companies start to build liquidity to meet favourable future investment prospectives. It is also suggested in the literature that a connection between financial constraints and firms' liquidity demand exists. Heitor Almeida, Murillo Campello & Michael S. Weisbach (2004:1778) have studied whether financial constraints are an important determinant of firm behaviour. Almeida et al. found that constraint firms display significantly positive cash-flow sensitivities, the firm's propensity to save cash out of cash flows, while unconstrained firms do not meaning that during the recession financially constrained firms should save larger proportion of their liquid assets than their better performing counterparts. "The cash flow sensitivity of cash refers to is a theoretically justified and empirically useful variable that is correlated with a firm's ability to access capital markets." (Almeida et al, 2004:1802).

K.C. Chan & Nai-Fu Chen (1991) argues that smaller firms tend to be more sensitive to changes in economy. Higher financial leverage, CF problems and less efficient management are attributes making Small and Mid Cap companies riskier than their larger counterparts. (Chan & Chen, 1991:1482)

There are studies that deal with economic condition and financial performance of the firm. According to Opler & Titman (1994) highly leverage firms, in particular those with high R&D costs, suffer most during the industry downturns. They have also argued that debt weakens firms' competitiveness. This is why the current study investigates if firms have increased their short-term loans during this turbulent time and if it has had a negative impact on their ROA.

Another way to face the uncertainties that arises in a recession is by hedging currency fluctuations. Purnanandam (2008) found that firms with high leverage hedge more than others and that hedging increases for financially distressed firms which have higher incentives to hedge and protect themselves against risk. Therefore it is our intention to measure if the currency monitoring has increased during this period and if this monitoring can have had a positive effect on corporations ROA as risk reduces.

The current study compared to previous will provide more practical knowledge into which strategy is not only beneficial but also profitable for companies' in terms of ROA. The most important aspect which have not been found in other studies is how these strategies change in a financial crisis and if they have any effect during such circumstances.

1.3 Research Questions

Do active liquidity strategies have a positive effect on company's financial profitability in times of financial turbulence/ economic turbulence?

Have the usage of key ratios in the measurement of liquidity changed during the time period?

1.3.1 Research Aim

The primary aim of this study is to evaluate liquidity strategies used in the last year and in order to accomplish this, overall two sub-aims need to be fulfilled, which are:

- To describe and compare to what extent companies have made changes in their liquidity strategy in the last year.
- To measure if and to what extent changing liquidity strategy has had an impact on the profitability as measured by ROA.

By achieving these aims we will be able to prove if having an active liquidity/cash management strategy provides beneficial aspects for companies and especially better financial performance. In this thesis by active strategy it is meant if the extent of these practises differs from these two current time points i.e. high change score.

1.3.2 Limitations of the Study

This study has focused on corporations listed on the Stockholm Stock Exchange Small and Mid Cap list. Due to the size and the location of these firms it sets limitations on the results of the study. Furthermore, when undertaking a quantitative study such as this one which includes questionnaires, the response rate will also offer a limitation as response rates are often low. Several companies refused to take part of the survey and this may have led to a slightly biased sample.

Problem formulation together with the construction of the questionnaire is based mostly on theoretical knowledge of the cash management and liquidity strategies. Due to lack of practical experience of the subject we may have missed some elements that could have been beneficial when preparing the questionnaire and planning the research design.

1.3.3 Choice of Subject

As students of finance we have followed the financial turbulence that has occurred the last year with great interest. During a course in cash management we came to understand that the use of zero working capital is very common amongst corporations in their quest for profit maximization and utilization. However, due to the current circumstances in our business environment a thought materialized about the implications of maintaining such a strategy when operating in an economic downturn and especially in terms of liquidity levels. How should a company best proceed with their cash management strategies to adapt to the changing economic environment? And do companies gain from trying to adapt?

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We wanted to learn more about this subject as we find it current as well as interesting and we aspire to work with cash management and treasury issues in the future. So not only do we expect that this study will contribute to knowledge within the area of cash management and liquidity but also enhance our own knowledge within this subject which will be valuable for our future career.

1.4 Disposition

As this chapter has provided an introduction to the study and the current area of research we continue with a short presentation of the structure of the research and of the following chapters.

Theoretical Methodology

The second chapter is the theoretical methodology which provides the foundation for this research.

Theoretical Framework

The theoretical framework is presented next in order to enable the understanding of the research and provide useful knowledge into the practices of cash management. Hypotheses from the existing literature are deducted and presented here in order to lead the research forward.

Practical Method & Data Collection

Before presenting the results of the study a description of the practical method used and the procedure of the data collection is given.

Empirical Findings

The empirical finding of the research is presented separately from the analysis in order to allow for the separation between the findings and the authors analysis of them.

Analysis and Discussion

The analysis and discussion naturally follows after the empirical findings, where these will be analyzed and discussed to fulfill the aim with the research.

Conclusion

Research questions are answered together with the discussion of the fulfillment of the research's purpose. Both practical and theoretical implications are presented. Ideas for further investigation stemmed from the current study are suggested.

Truth Criteria

The final chapter of this thesis discusses the reliability, validity and generalisability of the thesis and the process to achieve this.

“Spotlight falls on cash management”

~Financial Times, December 9, 2008

2. Theoretical Methodology

In this chapter the premise on which the thesis is built will be explained to enable further understanding of the research and the results it will give. The chapter starts with the authors' preconceptions and continues with a clarification of how the research have been approached and conducted. Furthermore, the process of information gathering and critique of sources is outlined and provided.

2.1 Authors Preconceptions

There are different types of preconceptions that refer to the prior knowledge or experience authors have in an area of study. General preconceptions concern personal experience and background, such as education and environment that may affect the way one *perceives the reality*. Theoretical preconceptions can affect the way one approaches the study and formulates the research strategy and should therefore be explored. (Maj-Britt Johansson Lindfors, 1993:76)

The preconceptions of the subject are closely related to the authors' theoretical knowledge. We have both studied the International Business Program at Umeå University and majored in finance both undergraduate- and graduate level. Because of the educational background we are aware of the effects it may have on the analysis of this study. In particular, the fact that Working Capital Management includes elements outside the finance area that we are not very familiar with. This was one of the reasons why the subject was deliberately narrowed down the problem formulation to concentrate on the liquidity and cash management sides of the working capital management.

The main preconception of the subject is in our view that working capital management has become increasingly important for companies as a result of the current economic downturn. This view has been supported recently in the media and also in some business literature. Prior to this study we did not know what kind of liquidity strategies companies' use and how they handle liquidity issues practically in their everyday business. An effort has been made to try and balance the lack of knowledge by learning more about it and keeping an open mind towards the subject and the results of the study.

2.2 Scientific Approach

Within research methodology there are two central views of knowledge which dominates this field: positivism and hermeneutics. Using a hermeneutic approach for this research would entail an interpretation and understanding of individual corporations' liquidity strategies. In this type of research the preconceptions of the researcher is an essential aspect of the analysis (Runa Patel & Bo Davidson 2003:30). Since the aim of this study is to evaluate liquidity strategies we do not believe that this corresponds to a hermeneutic standpoint. Therefore, the way that we will view knowledge in this study is more positivistic in nature and means that we believe that there is only one true reality which we will try to objectively measure (Runa Patel & Ulla Tebelius, 1987:30). The focus in this paper is on two separate time points and the measurement of change which might have occurred between these two points in time. The

tools of measurement in combination with the research question allow us to, a high degree, objectively measure this change and state within which confidence interval the results lay. The results of a positivistic study should remain the same even if the researchers are replaced and the study repeated, which will be our mission (ibid). Positivistic research can use questionnaires, as have been done in this study, or other tools of measurement which help the researcher to remain objective detached from what is being studied (Blaxter & Tight, 2006:60).

Critique against positivism has been concerned with the problems for a researcher to undertake a research project and remain completely objective (Patel & Tebelius 1987:44). We feel however that this problem occurs for all researchers and is not a problem solely for this study.

2.3 Research Approach

Knowledge creation can be made in a few different ways and that is mainly by deduction, induction and abduction (Patel & Davidson 2003:25). The start of this research began with the collection of theory about working capital and cash management and from there the research question where formulated and then further clarified by hypothesis. By the way of approaching the research it is believed that this work is leaning towards a more deductive perspective since theory was the starting point and we have set out to prove the hypothesis by the testing of theory (ibid 1987:17). Deduction is also the most commonly used research approach in combination with positivism (Mark Saunders, Philip Lewis & Adrian Thornhill, 1997:70) However, it is not believed the study is purely deductive as part of the research purpose was to find out to what extent companies have changed their liquidity strategies and should therefore have influences of an inductive approach as well. The inductive part of the study is the theory that will be generated from the findings from the questionnaire.

2.3.1 Quantitative Research

The two most common research strategies available for researchers are quantitative and qualitative strategy. The major reason for why this is a quantitative research is due to the research questions, which determines if the results one is looking for will use quantitative or qualitative strategy to answer them (Patel & Tebelius 1987:43). For the purposes of this study a quantitative strategy is best suited as the research has a large focus on numbers and the use of hypothesis and statistical tools to analyze them. The knowledge that is sought-after has to be measured in order to answer the research problem. The aim is not to use our experiences and values to interpret a particular situation such as a qualitative research might do. However, even though the majority of the data collection is made with a quantitative approach, there are some qualitative features to this research as well. In order to ensure that the data collection does not overlook anything the respondents will be asked to answer two open ended questions. As the aim with these questions are to make sure that the questionnaire measures what it is intended it to measure the contribution will not be for the bulk of the analysis but to increase the trustworthiness of the results.

2.4 Perspective on Research

According to Patel & Tebelius (1987:39) “The researchers’ perspective expresses the researchers view on themselves in relations to the object of study”. We have chosen to write this thesis from the financial management perspective. This perspective has helped to formulate the research question and guided the search of information. The chosen perspective was also an important factor when planning the empirical data collection and choosing the respondents. Respondents were mainly people responsible for financial management and planning in their companies such as CFOs and financial managers, since we wanted to know how liquidity planning is done in practice and what kind of effects adaptation of routines and strategies can have on the financial performance of the company.

2.5 Literature Search and Criticism of Sources

We have tried to sustain a critical approach when selecting and reviewing literature for this study and had in mind the criteria for good quality sources presented by Thurén (2000) among others. Independence is one of the most important criteria for a good source (Torsten Thurén, 2000:34) and this has tried to be maintained by including primary sources whenever it was possible. Although, it was not possible to rely purely on original sources and therefore the quality of secondary sources is ensured by using number of different criteria when reviewing the literature, such as peer-reviewed and full text articles. Mainly peer reviewed- and articles from academic journals were accepted, since they are published by professional organizations and the review process usually ensures that the trustworthiness of the text is maintained (Saunders et al. 1997:44).

For the same reason, an effort was made to include the most renowned researchers from cash management and working capital management area. As Thurén (2000:26) has stated, freshness of the source usually increases its trustworthiness. We have aimed to use as current research as possible in order to include the most recent publications from this field of research. However, it was noticed that majority of the articles about working capital management were published in the late 1980’s, but regardless of age it is believed that certain theories are still relevant and valuable and have also been recently cited by several scholars and therefore they have been included into the theoretical framework.

Other criterion for material that is collected includes reliability and validity for sources. When using information from the internet it is important to know the creator of the source and its authenticity (Eriksson & Wiedersheim-Paul, 2001:73). Special attention has been paid to the quality of internet sources and material obtained through the internet is accesses through reliable databases of scientific articles.

The theoretical framework of this thesis includes theories of cash management and working capital management and majority of information comes from scientific journals. The research work started out by browsing material for the theory chapter the following search words where used: “*working capital*”, “*cash management and liquidity*”, “*financial distress*”,

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“financial failure”. After initial search we had to specify the key words because of the vast amount of the hits received in order to get more relevant material. The literature search was specified by using key words... *“Working capital management”*, *“operating cash flow”*, *“profitability and liquidity”*... Material was obtained by using Umeå University library’s resources and electronic databases such as ISI web of science, Business Source Premier (EBSCO), Emerald and Google Scholar.

In the theoretical framework we have tried to avoid the extensive use of course literature, which itself can be considered of a high quality sources but may have been affected by interpretation and modification along the way. Above mentioned literature is mainly used for definitions and explaining different ratios and figures. An attempt was also made to support those parts with arguments from academic journals.

“Managers fail to control hazards”

~Financial Times, April 5, 2009

3. Theoretical Framework

In the theoretical framework of this study a discussion about the tools, strategies and implications of cash management will be carried out in terms of company liquidity. Emphasis will be put on how to improve firm liquidity and the usage of effective strategies and its benefits to corporations.

3.1 Working Capital

The chapter starts with the presentation of a wider concept of working capital, which can be seen as a part of the financial management. Working capital plays an important role in firm's growth and profitability and is tightly interlinked with the concept of liquidity that is discussed later on in context with cash management. In its simplest and probably the most common form working capital can be expressed as a difference between firm's current assets and current liabilities. (Claes-Göran Larsson & Lars F. Hammarlund, 2005:14).

$$\text{Net Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

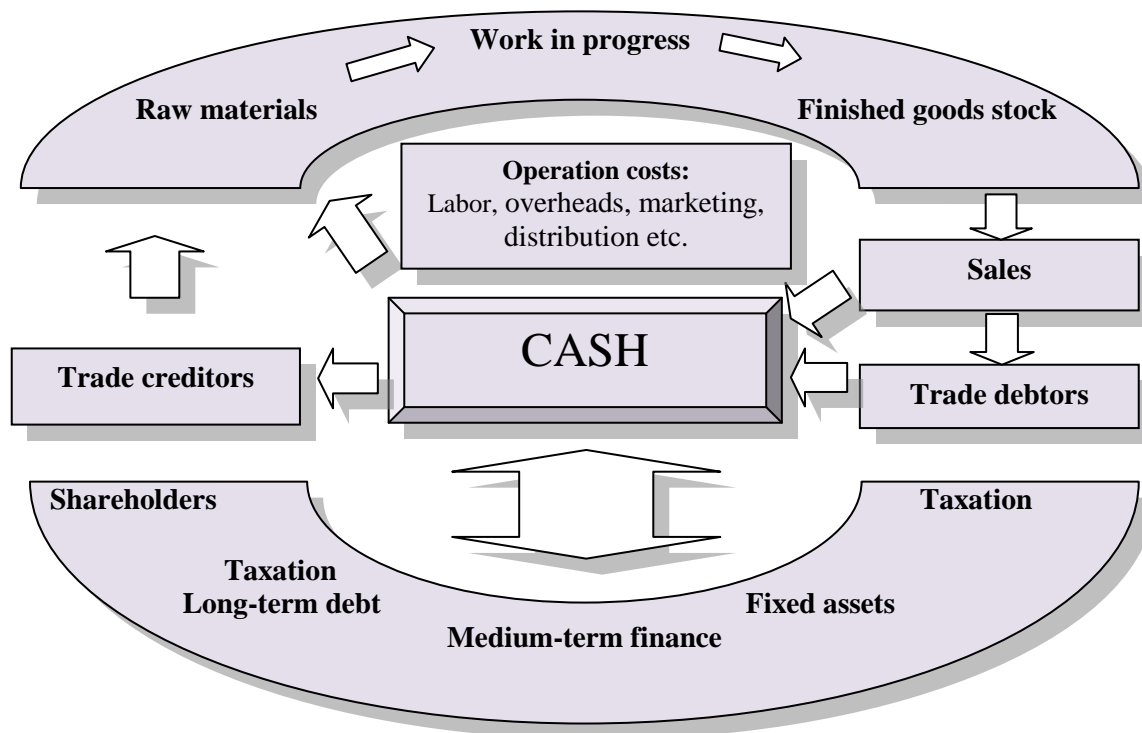
Shin and Soenen have defined working capital as a "time lag between the expenditure for the purchase of materials and the collection for the sale of the finished products" (Hyun-Han Shin & Luc Soenen, 1998). Working capital management (WCM) refers to a wider concept that covers both inventory and work in progress and thereby combining elements of operations, production and financial management.

All the components of the working capital formula above can be found from the balance sheet, although the way entries are labelled can vary. By definition, current assets are those assets that are expected to generate cash within one year and when looking at the balance sheet they are usually grouped under *cash and cash equivalents, short-term investments, receivables, prepaid expenses and inventories*, while current liabilities are obligations due to mature within one year. Different components of current liabilities on the balance sheet include *trade payables, short-term debt and accrued liabilities*. (Stephen H. Penman, 2007: 724)

Working capital represents a significant part of firm's assets and liabilities. Medium and small companies tend to have relatively larger amount of capital tied in current assets and liabilities than bigger firms (Pass & Pike, 1984:1). In a recent study of Spanish SME's it was discovered that current assets comprise 69% and current liabilities over 52% of total assets and liabilities. (Garcia-Teruel & Martinez-Solano, 2007:164.) Great variation across the sectors can be also found when comparing working capital structure.

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Figure 3.1 Working Capital Cycle



(Source: Adapted from Arnolds, 2008:529)

Figure 3.1 above exemplifies the so called working capital-cycle which is typical for manufacturing firms but can be applied for service companies by passing some steps. The cycle starts with the purchase of raw material inventories for production that are later turned into finished products. Completed products are then held in inventories before they are sold to customers. Selling transactions can be made by cash or by trade credit and hence, providing a delay until cash is received. There are several costs associated at each step of the cycle and these costs represent the opportunity cost for working capital. The purpose of WCM is to balance those costs and maintain optimal levels of cash, raw materials and finished goods (Arnold, 2008:529). Different elements of the cycle such as inventory management and trade debtors and creditors are explained more in detail as they all are means to affect the working capital balance. Purpose of this figure is to give a larger view of the several steps that together form a company's working capital policy.

Christopher Pike and Richard Pass (1987:18) have argued that inadequate planning and control of working capital are one of the main causes of business failures. The importance of effective WCM is often recognised (at the latest) during the times of financial distress (Kolay, 1991:46). Kolay has described the working capital crisis as an exponential path in which problems in the past escalates the distress on the following stages (Kolay, 1991:46).

3.1.1 Objectives of Working Capital Management

Working capital management is an important part of financial management and its primary task is concerned with the matching of asset and liability movements over time, which takes us to the two main purposes of WCM; liquidity and profitability (Pass & Pike, 1984:1). The situation of those dual targets of WCM is widely discussed in the literature and it is claimed that they are conflicting. Profitability refers to the shareholders' wealth maximization and liquidity is concerned with fulfilling financial obligations. Conflicts between these two goals can arise when for instance a profitable long-run investment opportunity erodes company's liquidity in the short-run (Pass & Pike, 1984:1). WCM is very often about trade-offs between these two main goals, since focusing entirely either on profitability or liquidity most probably shakes the balance between these two important components of company's financial status (Shin & Soenen, 1998:37). Pass & Pike (1984) emphasize also the importance of clearly defined goals, since the responsibility of the WCM is often spread over many departments in a company and several managers may pursue for different goals.

3.1.2 Working Capital Policy

A well established goal for many companies is to have as small working capital balance as possible and some well known companies pursue zero working capital strategies (Maness & Zietlow, 2005:17). Why should companies have any working capital if some firms are doing fine without it and what are the determinants of policies? Arnold (2008) has suggested three different working capital policies determined by the levels of working capital (Glen Arnold, 2008: 535). Companies having so called relaxed working capital policy have large levels of cash or near-cash balances with usually more generous customer credit terms and larger inventories. This kind of policy is suitable for companies operating in uncertain industries where liquidity buffers are needed. Companies with aggressive policy can be seen in business areas with more certain cash flows. Only minimal safety inventory and lower cash balances are needed. Moderate policy falls in between relaxed and aggressive policies. (Arnold, 2008: 535)

Concluding the above discussed, WCM has not been in focus for recent years but its importance has become more obvious in association with the economic downturn. Working capital policies vary across the industries and as discussed in the literature depend on the nature of the business company operates. Several means to control and monitor a working capital management are discussed later in this chapter. Empirical part of this study examines how companies monitor their liquidity, an important component of WCM.

3.2 Cash Management

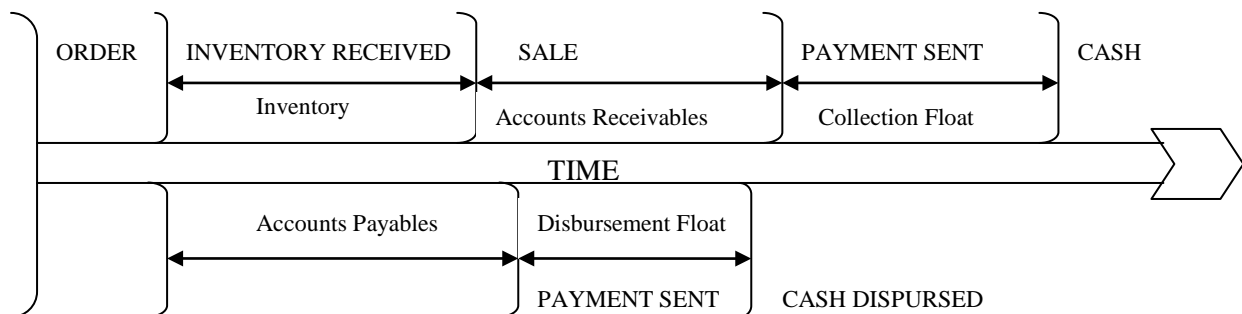
Cash management is one part of working capital management and usually concerns the different processes and procedures of handling a company's liquidity and the monitoring and planning of it. Larsson and Hammarlund (2005:12) define the different items included within this area as: payables systems, receivables system, management of liquid funds, currency management and risks, short term financing, accounts payables and accounts receivables.

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Improving a company's cash management can result in better profit margins and higher turnover ratio which in turn can lead to higher profitability. (Larsson & Hammarlund, 2005:16).

The cash flow timeline (figure 3.2) provides an overview of how cash is converted within a company or in other words the inflow and outflow of funds. The shorter cash conversion the better for the company and the way of achieving that is by looking at all the parts and understanding the relationship between them. Thus, it is the managerial decisions that cause changes in the timeline. Improvements can be made by speeding up the collection process and delaying the payment process (Maness & Zietlow, 2005:6).

Figure 3.2: Cash Flow Timeline



(Source: Maness & Zietlow, 2005:6)

As this study has set out to measure change in liquidity strategies and how it affects profitability one need to look at the cash management strategies that affects liquidity. The following sections will further explain how the different parts of the cash flow timeline can be made more effective and improve the cash flow of a company. The rest of the chapter will go through these liquidity strategies and as this is a large area, only certain sections will be represented by a hypothesis.

3.2.1 Inventory Management

Inventory management is one area which can significantly improve the cash flow of a company as it portrays pools of cash. One easy way of improving inventory management is to focus on sales forecasting and adapting a control system for this area. By accurately forecasting sales, inventory levels can be cut down and cash levels can improve.

Nelson (1977:56) identified several step in improving a firms inventory management. This included an analysis of the company's inventory levels in order to reduce its size. This means that the firm might be forced to accept a higher price for their inventory as their orders becomes smaller. Furthermore, slow-moving items needs to be identified and sold off to stimulate cash flow. Other steps include accepting more back orders which effectively reduces inventory levels. However, this is usually done on the expense of customer service and needs to be weighed against the benefits as it might be beneficial to other competitors. Moreover,

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reducing lead times which includes picking, packing and shipping may also contribute to improving the cash flow of the company, as this means that goods can be shipped sooner to customers and invoicing can take place. Last but not least Nelson also mentions closer supervision as step towards identifying lost inventory. By improving the supervision of warehouse and material-handling personnel lost inventory or inventory which has not been accurately recorded can be located and sold.

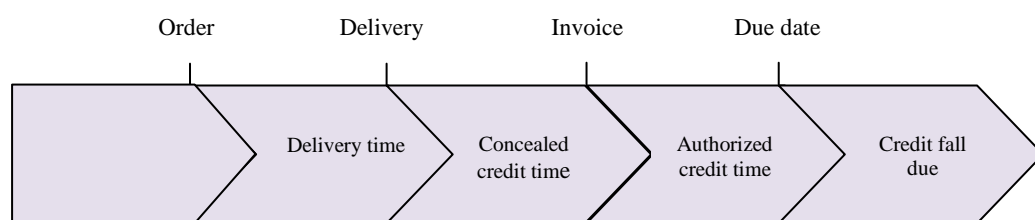
When evaluating the efficiency of inventory management it is very common to calculate “days inventory held” (DIH) which expresses the average time that a good is held in inventory before it is sold to customer. Since goods laying idle in inventory represents costs for the company, the shorter the DIH are more efficiently assets are managed (Maness & Zietlow, 2005:27-37).

$$\text{Days Inventory Held (DIH)} = \text{Inventory} / (\text{Cost of sales}/365)$$

3.2.2 Accounts Receivables

Accounts receivables can be seen as assets of the firm or as loans given to customers by the company. When there is a build-up of receivables, funds are unavailable that could otherwise be put to more efficient use within the company and earn a return. The credit arrow (figure 3.3) illustrates the time that it takes for the company to transform receivables into cash. After the delivery time, the time that receivables are tied up in can usually be divided into three categories which can be seen from the figure below. The first one is *concealed credit time* which is the time the company has given the customers to pay. The second is *authorized credit time*, which consists of the time between delivery of goods and invoicing. The last category is when *credit fall due* (Karlsson, 1996:17).

Figure 3.3 Credit Arrow



(Source: Figure adapted from Karlsson, 1996:17)

When it comes to the credit time that the company has given to their customers' one has to realize that the longer authorized credit time the more risk the company faces. A customer's payment behavior can change with time and so can the credit evaluation that the company has done on their customers. To minimize this risk companies should always try to shorten these credit times and if that cannot be done an adjustment of the price of the goods or services should be made to compensate for the added risk (Karlsson 1996:19). It is common practice by corporations to shorten the credit arrow in order to speed up collections. One reason for this is that the creditworthiness of customers can change over time and therefore needs to be

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revaluated. If corporations did not work actively with shortening down the credit arrow it would mean that it would take longer time for them to receive payment and that would reduce cash flow and might even result in liquidity problems. However, even though this is a good strategy to have in place, the question remains as to how beneficial this practice is for companies and if it might even be profitable and therefore the following hypothesis has been formulated:

H₁: The use of tighter credit routines is positively related to ROA

Concealed credit time can be hard to identify and the easiest way to do that is to follow deals from offer to sales and payment. Usually the concealed credit time can be shortened by achieving better contact between the different departments within the firm and especially between sales and the factoring department and thereby establishing more effective routines. (ibid) One important factor concerning when credit falls due is the relationship and contact with the client. Many times the problems occurring from when credit falls due can be caused by the company itself by unclear instructions etc. Also the contact with the customers when credit falls due is critical in shortening the collection process. Therefore collection routines become essential together with the understanding of all involved parties in the collection process and can also help the reputation of the company. (Karlsson 1996:17-19)

Companies can effectively measure the time it takes for their customers to pay their invoice by the days-sales-outstanding ratio (DSO)¹.

$$\text{Days Sales Outstanding (DSO)} = \text{Receivables} / (\text{Sales}/365)$$

This ratio measures how long it takes for the company's customers to pay for its goods and services and an increasing ratio will thus be negative for the company (Maness & Zietlow, 2005:37). For companies experiencing cash flow problems or just wanting to improve their cash flow, shortening of the credit arrow will provide gains in this area. This is the type of actions one might expect a company would aim at when economic conditions change to the worse. Therefore, we will measure the extent of these actions with our questionnaire.

Since a large part of a firm's working capital can be tied up in accounts receivables the strategy of speeding up this process should help the companies' cash flows and increase the efficiency of their assets. This can be particularly beneficial in times of financial turbulence as it ensures at least partial payments and hence, we have stated the following hypothesis:

H₂: More frequent invoicing is positively related to ROA

According to theory, by being active the collection process of accounts receivables should among other things help shorten down cash flow timeline minimizing the risk for liquidity

¹ All ratios can be defined in different ways and ratios within this text are only example definitions which has been adapted from Maness & Zietlow, 2005.

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problems. The interest for this study is whether this type of practices is profitable in a time of financial turbulence and therefore the following hypothesis have been formulated:

H_{3a}: The use of more invoice remainders is positively related to ROA

H_{3b}: An increase in late customer payments is negatively related to ROA

3.2.3 Accounts Payables

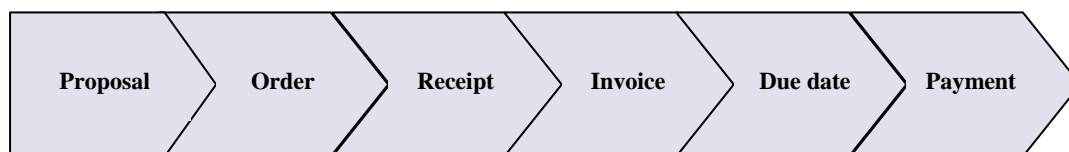
Dolfe & Koritz (1999:48) states that a company's short-term debt is very much influenced by the cash outflow and the major part of this outflow is made up by accounts payables. Accounts payables have many similarities with receivables and are mostly affected by changing the routines which can offer great savings for the company, usually in the form of interest and a reduction of penalty interest. Other step to improve the payment process is to try and keep company funds on an interest bearing account for as long as possible until payment to earn as much interest as possible. (Dolfe & Koritz, 1999:54-57)

One way of monitoring accounts payables are by the days payables outstanding ratio (DPO) which measures how long it takes for the company to pay for its goods or services (Maness & Zietlow, 2005:37).

$$\text{Days Payables Outstanding (DPO)} = \text{Payables} / (\text{Cost of Goods Sold} / 365)$$

The payment process of accounts payables are described in the figure below. One key element of cash management is to have a good policy concerning these issues and that those responsible are aware of it. The flow of accounts receivables will at times give raise to short-term surpluses and sometimes short-term deficits in companies' liquidity, establishing a need for short-term financing, and it is therefore important to have a well functioning payment routine. (Larsson & Hammarlund, 2005:52)

Figure 3.4: Payment Process



(Source: Dolfe & Koritz, 1999:49)

Obviously negotiating better credit terms will improve this area and a good guideline is to try and renegotiate all invoices with less than a 30 days credit and always aim for as long credit time as possible. When it comes to accounts payables a thing to keep in mind is to pay vigilant notice to the dates of the invoices and compare them to the delivery dates. If goods or services have been held up the date on the invoice could be different from the actual delivery date and the company should therefore immediately call the supplying company to have this corrected. It is considered to be good policy to effectively use the credit times that have been given to the company. Paying before the due date incurs loss in form of non-interest for the

company and if payables are paid too late, a penalty interest expense is incurred. (Karlsson, 1997:37-38) One of the major reasons for companies being charged with penalty interest is the late authorization of invoices. To improve this process steps can be made for invoice authorization to take place on a daily basis and through this avoid any penalty charges. Nevertheless, one should keep in mind that firms with severe liquidity problems can also deliberately delay payments to suppliers while waiting for cash inflows from customers. This precise then becomes a tradeoff between the cost of short-term financing and the cost of penalty interest. As the financial turbulence and the decrease in economic growth can have a negative impact on firms it is our purpose to measure if companies have used this practice and if the cost of it has had a negative effect on their return.

H₄: An increase in delay of account payables is negatively related to ROA

3.2.4 The Cash Conversion Cycle

The cash conversion cycle (CCC) is one measure that is available for companies when examining their cash cycle. Basically the CCC will tell how long it takes for the company to transform goods or services in to cash in the company account and hence a growing CCC ratio will negative for the company. The longer the CCC becomes the less liquid the firm gets. In order to calculate the CCC first three other ratios needs to be calculated and those are Days Inventory Held, Days Sales Outstanding and Days Payables Outstanding which has been discussed previously. The way to receive the CCC is to take DSO plus DIH minus DPO. (Maness & Zietlow, 2005:38)

Cash Conversion Cycle (CCC) = Days Sales Outstanding + Days Inventory Held – Days Payables Outstanding

One important note on the CCC is that since this measure is made up by several ratios one have to be cautious about what causes a change in this ratio. If for example there is an improvement of this ratio it can be because the DPO have increased and this is not a good sign. Therefore companies should always analyze what it is that have cause the change in this ratio (ibid).

3.3 Liquidity

As it is clear by now, liquidity is one of the most important goals of working capital management and central task of cash management. Several authors have expressed their definition of liquidity but in general “a firm is liquid when it can pay bills on time without undue cost” (Maness & Zietlow 2005:25). Liquidity can also mean the extent to how quickly assets can be converted into money (Howells & Bain, 2005:587) but in this study when referred to liquidity the former definition applies. Solvency and liquidity are two concepts that are closely related (sometimes used interchangeable?) and reflect upon the actions of company’s working capital policy. As Maness and Zietlow have defined; “a firm is considered solvent when its assets exceed its liabilities” (Maness & Zietlow 2005:25).

Kim et al. 1998 have cited Brealey and Meyers claiming that value of liquidity is among the ten unsolved problems in finance. Why do firms need liquidity and how much liquidity is enough then? Costs and benefits for holding liquid assets have to be carefully weighted against the opportunity costs for holding more productive but less liquid assets. Optimal amount of liquidity is determined by a trade-offs between the low return earned on liquid assets and the benefit of minimizing the need for external finance (Chang-Soo Kim, David S. Mauer, and Ann E. Sherman, 1998:335).

The main counter-argument for holding cash is usually connected with the low return it can offer. However, there are advantages for having liquidity reserves and three widely used motives for holding cash can be found in the literature:

- ***Transaction Motive:***
Companies hold cash for their daily expenses i.e. paying salaries, materials and taxes etc. Cash acts as a buffer for the mismatch between cash in- and outflows.
- ***Precautionary Motive:***
Future cash flows are uncertain and excess cash is hold to meet unexpected costs.
- ***Speculative Motive:***
Cash is kept easily available for profitable future opportunities that need to be undertaken immediately (Arnold, 2008:537-538).

Studies on big American companies show that liquid assets comprise a considerable amount of total assets and therefore affect a company's risk and profitability (Teresa A. John, 1993:91). Firms also invest considerable amounts in liquid assets, even though they are considered costly when transactions costs, taxes and potential agency problems are involved. (Kim et al. 1998:338)

Kim et al. (1998) argue that in the presence of optimal capital market conditions, firm should not have a need for holding excess liquidity, since the external finance to cover potential cash shortfalls should be obtained at a fair price, at any time (Kim et al. 1998:338). A study made by Kim et al. (1998:352) examined reasons for companies holding excess liquidity and their findings confirmed two already mentioned factors; need for excess cash is usually considered as economical way to decrease the firm's dependence on costly external financing and profitable future investment opportunities. Once again, optimal conditions are very seldom maintained in real life and firms prefer to hold some liquidity as a cushion against contingencies.

It is very difficult to make any rules of thumb for optimal for liquidity levels and as cited above it has remained one of the unanswered questions in finance. As already discussed in the context of working capitals needs, similarly the need of liquidity depends on many factors such as the industry and financial structure of the firm. (Kim et al. 1998:355) found in their study in the U.S. that firms with lower market-to-book ratios (P/B) have larger positions in liquid assets and also that firm size tends to be negatively related to liquidity. Firms with more

volatile earnings and lower returns on physical assets relative to those on liquid assets tend to have significantly larger positions in liquid assets.

3.3.1 Instruments for Liquidity Management

As mentioned before there are several benefits from having an effective liquidity management strategy but there are also some severe implications of misjudging the firm's liquidity needs such as risk of bankruptcy (Richards & Laughlin, 1980). In the following sections a discussion of the tools and strategies of handling a firm's liquidity will be conducted.

There are several measures for corporate liquidity and different ratios are more important for different stakeholders. Also from which perspective one is examining the company's liquidity levels affects the use of different measurements. Some of the ratios are more interesting for the bank than investors and accounting measures of liquidity adds another new perspective of the liquidity. As our approach in this study is to examine the liquidity from financial management perspective we have excluded accounting measures and concentrate on those ratios that financial managers use most often. Previous literature verified there are major differences even among the financial management field when it comes to the liquidity planning and monitoring and therefore we have tried to include just the most commonly used formulas, and therefore the list is not extensive.

Ratio information can be used in many ways but one group of the most important users of information are lenders. Huff, et al. (1999:97) have identified three important applications of liquidity ratio analysis: "evaluating companies before granting credit, designing of covenants to improve the odds for loan repayment and evaluation whether existing loan covenants are violated."

Current Ratio

One of the most common and also the oldest measure of corporate liquidity is current ratio. It was developed at the end of the 19th century in order to evaluate the credit-worthiness of the companies (William H. Beaver, 1966:71). In its simplicity it expresses the liquid resources available when current liabilities are met and is calculated as follows² (Maness & Zietlow, 2005:25):

$$\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$$

Maness & Zietlow (2005:27) has expressed that historically a current ratio of 2.0 has been a norm, meaning that company has approximately twice as much current assets as coverage for short term creditors. As the critique towards this measure often goes, it simplifies the protection available for short-term creditors as not all the current assets are easily liquidated but can be tied in the inventory.

² To be precise above presented ratios measure the degree of solvency i.e. the direct relationship between assets and liabilities.

Quick Ratio

Quick ratio or acid-test ratio is very similar to current ratio and solves the liquidation issues mentioned above by excluding inventories from calculation:

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$$

Usefulness of current and quick ratios for measuring working capital has been questioned because of their static nature. As a balance sheet is a statement of *stock* instead of *flows* with the result that ratios calculated from balance sheet accounts are liquidity stock measures at a certain point in time. (Penman, 2007:725) Shin and Soenen (1998) have studied alternative tools for measuring the effectiveness of working capital and they suggested Cash Conversion Cycle, which was presented earlier in this paper. (Shin & Soenen, 1998)

Up to date several other measures are used in addition to current ratio and quick ratios. On the other hand, even the importance of ratio analysis has been questioned and considered as a weak tool for monitoring liquidity. According to Campbell, Johnson and Savoie's study (in Maness & Zietlow 2005:32), monitoring of accounts receivables and good bank relations are valued over the traditional ratio analysis among the financial managers. A common practice is to combine several methods and use ratios as a part of liquidity management, but not rely solely on them. (Maness & Zietlow, 2005:32)

There are several factors that need to be taken into consideration when doing ratio analysis. Among the first conditions for ratio analysis is the good quality of accounting data which is a natural premise since the analysis relies exclusively on financial statements (Beaver, 1966:99). One of the earliest critiques towards ratios was concerned with the comparison among different industries and groups of companies. As a response for that, several industry averages and means have been developed ever since (Patricia Lee Huff, Robert M. Harper Jr & A. Elaine Eikner, 1999:96). Discussion around the ratio analysis has been vivid and still ongoing and the latest studies remind the danger of using benchmark values across the industries.

Huff, et al. (1999:104) found evidence of differences in liquidity ratios when different size of companies compared. They put forward an argument that companies with little or no inventory tend to have lower current ratios since their current assets are smaller. Another finding suggested that current liabilities exceeded current assets, i.e. negative working capital balance, more often among the small than larger companies (Huff et al. 1999:100-101). Smaller companies have more extreme current ratio values (both very low and very high) than larger companies and therefore the comparison of current ratios among larger companies is more meaningful since there is likely to be less variation.

In summary, current and quick ratios have been traditionally most widely used tools monitoring corporate liquidity. External users, such as banks and other credit issuers have used them as measure for evaluation companies credit-worthiness, whereas internal users

have monitored how working capital policy is executed inside the company. These are only few applications for ratios we have discussed. Usefulness of ratio analysis is questioned time to time and one has to be careful when comparing companies across industries. In this study the focus is to examine how companies have adapted their liquidity strategies and one way to do that is to investigate the extent of the use of different cash management routines.

Also very common use of the ratios is the prediction of failure or financial distress. One of the first studies about the bankruptcy prediction based on ratio analysis was conducted by William H. Beaver in 1966 and his findings are still considered valid. He compared financial ratios of the companies that went bankrupt with those that did not and found evidence that carefully conducted ratio analysis can be a useful predictor of financial failure even five years prior to failure. As the bankruptcy became more evident, the difference in ratios became also clearer, comparing to surviving counterparts. (Beaver, 1966:102) The extent that Beaver used ratios in his analysis was much higher than the aim of the current study. Focus is neither in the bankruptcy prediction but on the differences in liquidity strategies and that is partly done by examining the use of liquidity ratios. However, Beaver's findings hold 40 years later and well conducted ratio analysis is considered a guiding tool to monitor liquidity and also financial performance and therefore ratio analysis is in such a central place in this chapter and leads to the following hypothesis:

H_{5a}: An increased practice of liquidity forecasting is positively related to ROA

All companies measure their liquidity in order to know their future need and to find a balance between having too much or too little. Maintaining this balance in times of economic turbulence should therefore increase this practice and be beneficial. As liquidity planning is such an important part of cash management and can have an impact on the short-term financing need we wanted to test if active liquidity planning have an impact on ROA and the next hypothesis were created as seen below:

H_{5b}: An increased practice of liquidity measurement is positively related to ROA

3.4 Short-Term Financing

The short-term financing of any firm is a complex issue and involves many parts of both the company and of the financing mix. It is usually when planning the budget that the company will know how the short term financing need will look like for the coming year. There are some different options available to companies in need of short term financing and they will be dealt with in the following sections. However, the focus will be common occurring short-term financing in Sweden.

3.4.1 Short-Term Loans

Short-term loans are one of the most common ways for treasurers to finance a firm's working capital needs. Usually it is used to finance build-ups of inventory and receivables. This type of loan is generally unsecured debt and has a maturity of 90 days. (Shapiro, 2006:669) there are also other forms of short term debt such as bankers' acceptance, letter of credit and reverse purchase agreement. All of which includes the bank's guarantee of payment. (Maness & Zietlow, 2005:574-575)

3.4.2 Trade Credit

For companies in need of additional working capital, a trade credit can serve as a liquidity reserve. This is a credit which is connected to one of the company's accounts. Usually the company pays a yearly fee for the use of a trade credit and interest can be charged quarterly (Larsson & Hammarlund 2005:130). What should be considered is that when interest is charged quarterly it gives an interest on interest effect which can become very expensive for the company. Other options should therefore be explored as means for short-term financing which offer lower costs for the firm.

3.4.3 Leasing

Leasing is a popular way of financing which can be particularly suited for companies that are in an expansive phase and are operating under strictly limited financing. Companies can lease almost anything they need such as machinery and equipment but it can be an expensive form of financing. Leasing companies charge a periodic fee, usually quarterly and is set as a percentage of the total price. Naturally, leasing companies also take into account the lessee's payment capability and other risk factors when setting the price (Larsson & Hammarlund 2005:137-138).

3.4.4 Factoring

When a firm sells its receivables to a finance company, this procedure is called factoring. As mentioned before, a build-up of receivables can tie up a significant share of a company's working capital and a company can sell a flow of receivables. By doing this a company can receive a credit up to 70-80%, including VAT, of the receivables value and in this way improve their liquidity. However, it is worth noting that the default risk of clients is not transferred. The finance company can also provide companies with an administrative service and when doing this they provide the company with an extensive service. They manage all the accounts receivables, accounts payables, collections and supply information for budget planning and so on. The advantages for companies using these services are usually shorter credit times, better liquidity, savings in administration and fewer bad debts. The costs of these services are usually the fees that the finance company charges. (Larsson & Hammarlund 2005:134-136)

If liquidity decreases, the need for cash can be filled by taking more short-term loans but short-term loans can also be expensive and can be a sign of illiquidity and should have a negative impact on firms. We therefore wanted to test for if it can have a negative impact on the company's return. We aim to achieve this by the test of the next hypothesis:

H₆: An increase of short term loans taking is negatively related to ROA

3.5 Short-Term Investments

For a company's short term investments there are several options available including different bank accounts, which is the most liquid option. The most common ones are regular transactions accounts, fixed-interest accounts and corporate group accounts. There are several different transactions accounts which are foremost used for the company's receivables and payables and can also be connected with a credit and giro. The corporate group account is an account where all the groups' subsidiary accounts can be seen. (Larsson & Hammarlund 2005:79-81) there are also more specific accounts which can be tailored for the company. These accounts are either fixed interest accounts for 30 days or used as a regular account with variable interest.

Treasury notes are also one option for investing any excess cash a firm might have and this type of investment have an active secondary market. The most common smallest denomination is one million SEK and with varying maturity but the longest one is 360 days. (Larsson & Hammarlund 2005:87)

Short-term investments are usually undertaken when the firm has an excess of cash and can invest it in order to receive a higher return since having idle cash is considered inefficient. Thus, we want to test if making short-term investment can actually have a positive impact on firms profit and formulated the following hypothesis:

H₇: An increase in short term investments is positively related to ROA

3.5.1 Currency Risks

In today's global business environment most companies faces some sort of currency risks. Larsson and Hammarlund (2005:119) have listed some actions which involve currency risks and those are: foreign investment, foreign debt, import and export. There are different steps that a company can take in order to minimize these risks. Actions which companies can take include receiving payments in their own currency or a strong currency when exporting and the opposite for import. Terms in contracts can also be negotiated to include a clause about fluctuations of the currency.

Futures and forwards is another way for corporations to protect themselves against currency risks and achieve currency coverage. Futures and forwards are contracts for either selling or buying a certain asset or currency at a certain price, at a specific date in the future. (Larsson & Hammarlund 2005:123) This type of contract is binding for both parties and the price or exchange rate is usually determined by differences in interest rates between the different currencies. Banks does not charge for this service but there are normally some differences in exchange rate between the banks so companies gain from making a comparison between them.

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Furthermore, companies can also make use of so called currency accounts which they can utilize for both their payables and receivables and eliminate the currency exchange transactions. Interest is calculated for when the money is available on the account and follows LIBOR. Corporations can usually gain from establishing one central account if there are several currency accounts within the corporation. However, a good relationship with the company bank is important when they usually have a vast amount of services to offer corporations within this area. (Larsson & Hammarlund 2005:126)

An important step for corporations to monitor and control their currency exposure and risks is to have a set currency policy. Larsson and Hammarlund (2005:124) have made a distinction between three different types of policies and they are: no currency coverage, selective coverage and maximum currency coverage. When having no currency coverage it implies that the company believes that the gains and losses of having a currency policy will eventually equal out. The selective policy is to for example only use some of the tools available for certain risky currencies. The maximum currency coverage policy involves using all the tools available for managing this type of risks including balancing receivables and payables in the same currency, using futures and forwards and negotiating contracts to include currency clauses. The most important thing is that management actively takes decisions within this area and that the policy is reevaluated from time to time. (Larsson & Hammarlund 2005:124-125)

As fluctuations in exchange rates have a direct impact on corporations and the value of their accounts receivables, especially in a country such as Sweden which is likely to do business in other currencies than the Swedish kronas due to the size of the country. The increase in monitoring of this area should be beneficial as risks are minimized and direct exchange rate losses can be avoided. For the purpose of this study the objective is to see if the area of currency exposure and risks have increased in importance the latest year and if it has, does it provide any positive gain for the companies profits. Therefore, the last hypothesis is as follows:

H₈: An increase in currency risk monitoring is positively related to ROA

“Many voices in quest for transparency”

~Financial Times, September 13, 2009

4. Practical Method and Data Collection

This chapter describes the development of the tool for the primary data collection, means of sampling and target population. The chapter starts with a brief summary of overall research design. Construction of the questionnaire and procedure for conducting telephone interviews are discussed together with more detailed presentations of data collection process. Reader is also provided with the description of the companies included in the study.

4.1 Research Design

Empirical part of this study is made up of two different sections. First part consists of telephone interviews, which purpose was to get information about companies' cash management practices and strategies and in particular if strategies had changed during the previous year. In the second part of the study, the financial statement of selected firms' are compared in the beginning of 2008 (Q1) and 2009. This particular time period was chosen in order to capture the effects of the events in financial world during the last year. First signs of the coming financial turbulence started to show prior to the selected time frame, in the late summer 2007 and the crisis eventually hit in the autumn 2008 (Foster & Magdoff, 2009:11). The first quarter was selected for our time points were several. Firstly, the study was conducted in this time of the year. Secondly, we wanted to avoid certain sales peaks such as Christmas that would have an impact on certain industries. Lastly, an earlier time point could have been chosen for "the time before the crisis" but the further one goes back in time, the harder it becomes for the respondents to remember events and that in turn may affect the reliability of the results. Therefore we have aimed to include in this study a period both before crisis and when economic downturn was ongoing.

One financial ratio (ROA) is calculated from the financial statements and with the help of statistical analysis a comparison between adaptations of liquidity strategies and profitability is made. More detailed discussion about practical steps is presented next.

4.2 Construction of the Questionnaire

The work began by identifying several liquidity strategies and different tools and techniques that are used in cash management. For these study questionnaires was selected as means of primary data collection. Based on the theoretical findings a questionnaire was constructed, which purpose was to find out how companies had adapted their cash management strategies between the first quarters of 2008 and 2009. Questionnaires are usually employed when wanting to measure behaviours or beliefs, and in this case the interest was on measuring the change in behaviour of companies' liquidity strategies (Kreuger & Neuman, 2006:259). Therefore it is believed that questionnaires are best suited for the purposes of this study.

The work on the questionnaire started out by looking at the research question and thinking about the different parts that are included in liquidity management. From there questions were formed that were thought to be relevant for our intentions. A ten point Likert-scale was used in all questions, except the open ended ones, in order to accurately measure the change

between two time points. Efforts were made to avoid being ambiguous, using slang, asking leading questions and so on in order to create a good quality questionnaire which will provide as accurate information as possible (Kreuger & Neuman, 2006:263-267).

The questionnaire began with a small introduction and explanation of how to answer the questions and also an example question. This was done with the intention of exemplify the process of answering the questions so that respondents would understand the process before commencing and be able to ask questions.

Questions focus on the liquidity practises of two time points, in the beginning of the 2008 (quarter one in 2008) and beginning of this year, marked as quarter one in 2009. Questions measured mainly three things: accounts payable-, accounts receivable- and short-term financing practices. It is believed that these areas are most important for this study and will help answer the research question.

In addition to these questions the questionnaire were concluded with two open-ended questions. The reason for this was to pick up on information which might have been overlooked or might otherwise be important for the company. Before proceeding with the interviews our supervisor were consulted and a professor at the Umeå School of Business, who has written a book on cash management in order to get feedback on the questionnaire and the topics it deals with.

4.2.1 Criticism of Questionnaire

The problem with this type of questions included in the questionnaire, which deals with events that have taken place in the past, is that respondents can have problems remembering accurately. However, for the purposes of this study it was not only the extent of the actions that where in focus but the change in actions. Even if respondents were unsure of how to grade the companies actions it is our belief that they would be able to remember a change in procedures and if that change was large or small, which was most important. Other aspects involved if respondents are willing to answer certain questions (Dillman, 2007:37-38). As discussed previously, it was noted in the pre-test that some questions could be sensitive and were therefore reformulated. Moreover, it was emphasised that the interview would be completely anonymous in order to minimize the chance of both untruthful answers and non-responses.

When conducting a questionnaire interview there is always a chance for the misunderstanding of the questions and this can be avoided when doing telephone interviews when respondents have the opportunity to ask help from the interviewer. There occurred a few situations when respondents did not understand the questions and further explanations where needed about what information was wanted with a particular question. Since the population covered a wide range of industries, not all the questions of the interview were as relevant for all the companies and sometimes we had a feeling that some respondents were frustrated since they did not know what to answer. However, this could be reduced as further explanations could be given at appropriate times. Due to the personal contact on the phone we were able to explain

that we are aware of the fact that some questions fit better than other for certain industries and the interview could be continued.

4.2.2 Concept of Change Score

The change score is a way to measure change between two different time points. It is calculated in a straightforward manner as $X_1 - X_2 = C_x$. The respondents can evaluate the extent of the use of certain cash management practises at time point one (X_1) and at time point two (X_2). The difference then between these time points results in the change (C_x). In this study we have used a Likert scale ranging from one to ten, one being “to no extent” and ten “to very large extent”. The change score can take any value from zero to nine and the change can be either positive or negative. A drawback with this method is that it can be subject to errors but on the other hand it is a simple concept and easy to understand. (Donald D. Bergh and James F. Fairbank 2002:360-362)

4.3 Empirical data collection

4.3.1 Practical Aspects of Data Collection

The aim was that the respondents of the questionnaire would be persons who are in charge of cash management planning and have in depth information of liquidity practices in a company and therefore CFO's or finance managers of the target companies were contacted. In few cases we were directed to other employers of the finance department but majority of the respondents were CFO's.

4.3.2 Description of the Sample

The sampling frame of this study consists of the Swedish companies that are listed on NASDAQ OMX Stockholm's Small and Mid Cap list which makes it all together 199 companies (www.nasdaqomxnordic.com)³. Definition of small and mid cap can vary among brokerages. *Cap* is an abbreviation for the term *capitalization* and is usually calculated by multiplying company's outstanding shares with a current stock price (www.investopedia.com). OMX Nordic in which Stockholm Stock exchange belongs to follows the definition of small cap companies with a market capitalization of less than 150 million Euros and mid cap, with 150 million to 1 billion Euros (www.nasdaqomxnordic.com).

The intention was not to concentrate primarily on listed companies, but small and middle size firms. The reason for why it was decided to narrow down the population to cover only listed companies was the easy access to quarterly published financial reports that unlisted companies could not offer.

When planning the data collection it was decided to exclude companies which head offices were not registered in Sweden, furthermore, holding companies and banks were excluded from the sample. The nature of holding companies and banks is quite different from for

³ A complete list of Small and Mid Cap companies can be found at www.nasdaqomxnordic.com.

instance manufacturing and other service companies and liquidity requirements for banks are not easily comparable with other industries and for that reason those companies are not included in this study. After eliminating above mentioned companies the final size of our target population was 183 firms.

In principle, we have not limited companies geographically, they are located all parts of the country but majority have their head offices in the Stockholm area. They also represent diverse industries. OMX Nordic uses a classification system that divides all the shares into ten sectors: *energy, materials, industrials, consumer, discretionary, consumer staples, health care, financials, IT, telecommunication services and utilities* (www.nasdaqomxnordic.com). In our sample, all sectors except *energy* and *consumer staples* were represented. The reason for this is the lack of response from corporations belonging to these sectors. (see table 4.1).

Table 4.1 Summary of Companies

Sector	Number of companies NASDAQ OMX Stockholm*	% of total	Number of Companies included in sample	Number of respondents	% of total respondents
Consumer Discretionary	29	15	25	7	28
Consumer Staples	3	2	3	0	0
Energy	1	1	1	0	0
Financials	33	17	29	2	7
Health Care	24	12	22	1	5
Industrials	52	26	50	13	26
IT	48	24	44	9	20
Materials	7	4	7	1	14
Telecommunication services	2	1	2	1	50
Total Companies	199		183	34	19
Small Cap	124	62		17	50
Mid Cap	75	38		15	44

(Source: Nasdaq OMX, authors' own calculations) (* As in March 2009)

4.3.3 Sampling Method

Since the population of interest consisted of the companies listed on the Stockholm Stock Exchange's Small and Mid cap lists, the aim was to study the whole population, The aim was to get at least 50 replies in order to make a generalizations and to have statistically significant results. Despite several attempts to contact all the companies that were included in this study, we did not receive as high response as was anticipated. The final sample included 34 firms and after subtracting the companies that were unreachable or for other reasons excluded from the sample the response rate was 19% (Saunders et al, 1997:130). Although, the response rate is low, the respondent companies represent relatively well the whole population, as can be seen from table 4.1. Largest sectors on the Small and Mid Cap list are *industrials* and *IT*, 52 and 48 companies respectively, and those sectors are also highly represented among the

respondents. When calculated the response rates in all sectors they follow quite well the variation of the whole population.

Probability sampling method was chosen since statistical analysis was conducted and in order to have generalisability for the results it is necessary to have such a sampling method (Saunders 1997:152). The sampling method is considered to be simple random sampling with some restrictions, since all the companies that were listed on the Small and Mid cap list and had offices in Sweden had equal chance to get chosen to the study.

4.3.4 The Pre-Test of the Population

The first questionnaire consisted of 18 questions and took about 15 to 20 minutes to complete. Nevertheless, after conducting a pre-test with three firms of the target population it was decided to modify the questionnaire. These firms were all from different industries which is believe to have provided good information of the population. It was noted that when doing the pre-test interviews some of the respondents were reluctant to answer some of the questions and the feeling occurred that they were not truthful in their response. In addition, some of the questions were not relevant for companies that were non-manufacturing firms and do not have a physical inventory or suppliers. Therefore the choice was made to re-formulate the questions due to the belief that some of the questions could be sensitive in nature.

Some questions were also excluded as they were not applicable for companies in all industries and we tried to make the questionnaire more general. Additionally, more information was given concerning the study and what steps would be taken in the analysis. This was done for the respondents to understand that the questionnaires are not the only source of information for this study and that their identity would be protected. Needless to say, careful choices had to be made in designing the questionnaires.

The last and final questionnaire comprised of 11 short questions where respondents were asked to evaluate the extent of the firms' actions, on a scale from one to ten. Approximate time consumption of the questionnaire was ten minutes.

4.3.5 Data-Gathering Process for Telephone Interviews

The work started by examining the different options of how to distribute the questionnaire. Out of the alternatives of mail, email and phone interview the decision was reached to focus on phone interviews as firstly it would allow respondents to ask question if there was something that they had not understood or were hesitant about to reduce misunderstandings. Secondly, it was believed that phone interviews could improve the response rate as it is perceived to be more difficult to decline to participate over the phone than with regular mail surveys. Thirdly, the cost and time available were considered and the conclusion was made that phone interviews were the best options when bearing in mind these issues.

Before starting to conduct the phone interviews emails were sent to all the companies included in the sample. The aims of the study were introduced and then a time for a short interview was asked. Responses to the emails were rather low, and 18 rejected directly the

request for an interview. A week after the first contact, reminders were sent to those companies that had not replied the first email. This time the questionnaire was included with the email, as some respondents asked to see the questions beforehand, referring to tight schedules. As a final attempt we started to call through the list of companies and aimed for those who had neither rejected the request for interview nor replied the emails.

Telephone interviews took place during the weeks 14 to 20. Timing of the interviews was not optimal since when starting with the interviews, it was the Easter week and people had holidays and on the other hand, listed companies were preparing their quarterly reports and several companies referred to the lack of time in their decline to participate. For above mentioned reason we had difficulties to get hold of the respondents and hence, the data collection itself was spread over several weeks.

4.3.6 Analysis of Non-Responses

The relatively small sample size is taken into consideration when making generalizations about the population and what limitations it sets to the study. All the respondents answered all the questions in the questionnaire and no replies had to be eliminated for that reason. It is believed that this was one of the strengths of the telephone interviewing that non-response for individual questions could be kept low. Main reasons affecting the low response rate were refusals to participate, as well as, problems to contact all the respondents inside the sampling frame.

Furthermore, we have also computed ROA values for those companies that declined to take part of the study but were included in the sampling frame. This procedure was done in order to evaluate the representativeness of the sample and generalisation of the results. A comparison between 34 studied and 129 non-studied companies revealed that in the sample the proportion of the firms having positive ROA outnumbered the whole population. On average, ROA values for the first quarter 2009 in the sample was 0.99%, whereas for the whole population -0.51%. Also the spread of the ROA ratios in the sample was wider, although differences were not great, ranging from -22,39% to 13,12% (-18,52% -10,19%). It can be concluded that firms taking part of the telephone interviews showed on average higher ROA values than those firms that did not take part of the study.

4.4 Numerical Data Collection

After concluding the phone interviews the second part of the data collection was commenced, which was to withdraw the financial statements of the sampled firms. Financial statements were found through company web pages. According to EU's Transparency Directive (2004/109) all the listed companies have to follow certain reporting requirements and that includes publishing of annual and interim financial reports (<http://eur-lex.europa.eu>). Hence, we did not find any problems to access financial information. Quality of the financial data of the annual reports is also considered high since they are usually signed by authorised public accountants.

Most of the companies have published their interim financial reports in Swedish but we do not consider that translation have had any effect on the reliability of the results, since we have studied accounting both in English and Swedish and are familiar with the terminology in both languages. There are differences how companies have defined the financial year. For majority of the sampled firms fiscal year constituted a calendar year so that first quarter took place from the beginning of January until the end of March. However, some companies used alternative ways to divide the financial year and for them beginning of the year was either Q2 or Q3. During the telephone interviews it was made clear for the respondents that with quarter one, we meant the first three calendar months of that year. The impact of this variation is taken into consideration when financial statements are analyzed.

4.5 Processing the Data

After concluding both steps of the data collection we conducted a statistical analysis of the data by using SPSS-program. The purpose of the SPSS analysis was to test if the financial profitability of the firms, measured by ROA, relates to the use of liquidity strategies, measured with the questionnaire (Keller, 2005:578).

Furthermore, three statistical models were conducted:

1. Descriptive statistics
2. Pearson correlation
3. Multiple regression

The results from the linear regression model enabled the measurement of the relationship between dependent variable and several independent variables and test the hypotheses that were deducted earlier from the theoretical framework of this study. If the null hypothesis is rejected, the test gives sufficient statistical evidence that the relationship between dependent and independent variables is significant at 90% confidence level. On the other hand, if a null hypothesis is not rejected, the relationship between the studied variables is influenced by other factors than those that have been suggested. In order to determine whether one should reject or confirm the null hypothesis we have looked at the p-values that point the significance of the relation (Saunders et. al. 1997:316).

As Saunders, et al. have argued, that it is very difficult to obtain a significant t-statistics with a small sample size. However, the impact of the sample size decreases when more than 30 observations are included in the study (Saunders, et al, 1997:317). In current study there are 34 cases, which is very close to the critical 30 observations. Even though, the sample size was relatively small, it was assumed to be normally distributed. We considered using the significance level of 0.05, which is most often used in statistical test but because of the small sample size it was decided on having the 90% confidence level on SPSS analysis. We have acknowledged the low statistical power that the findings have, and aimed to compensate it by choosing lower confidence level, even though, setting the 90% confidence level means that

there is a higher risk that the relationship between variables has occurred by chance (type I error) we wanted to ensure that we do not falsely reject the null hypothesis (Kreuger & Neuman, 2006: 351). By increasing the sample size the probability of type II error, the failure to reject false null hypothesis, could have been reduced (Keller, 2005:326). That was not possible in current study despite the several attempts to increase the number of respondents bur we have recognised the possible effects that small sample size and confidence level can have on the results and furthermore, on the generalization of the findings.

We began by calculating change scores for different variables i.e. questions in the questionnaire. Change scores were calculated by simply subtracting the difference between respondents' answers in 2009 and 2008 on a Likert-scale. These change scores are used as independent variables later in a regression analysis. Questions 1 to 11 are used in a multiple regression analysis. Answers from question number eight, in which respondents were asked to evaluate the importance of several liquidity ratios, are asked in order to measure their relation to ROA to see if some ratios are more important than others. Answers from this question will be analysed separately from the other questions. We have separated the questions from the questionnaire into different groups of independent variables. Each group are one or two hypothesis and the numbers in the second column are referring to the number of the question on the questionnaire (see table 4.2 below). Null hypotheses were set to stipulate that there is no relation between the variables and for that reason only the alternative hypotheses are presented throughout the paper.

Table 4.2 Variable Descriptions and Expected Signs.

Variable	Question no.	Hypothesis	Expected relation to ROA
<i>The use of tighter credit routines is positively related to ROA</i>	1.	H_1	(+)
<i>More frequent invoicing is positively related to ROA</i>	3.	H_2	(+)
<i>The use of more invoice remainders is positively related to ROA</i>	2.	H_{3a}	(+)
<i>An increase in late customer payments is negatively related to ROA</i>	4.	H_{3b}	(-)
<i>An increase in delay of account payables is negatively related to ROA</i>	5.	H_4	(-)
<i>An increased practice of liquidity forecasting is positively related to ROA</i>	7.	H_{5a}	(+)
<i>An increased practice of liquidity measurement is positively related to ROA</i>	6.	H_{5b}	(+)
<i>An increase of short term loans taking is negatively related to ROA</i>	10.	H_6	(-)
<i>An increase in short term investments is positively related to ROA</i>	11.	H_7	(+)
<i>An increase in currency risk monitoring is positively related to ROA</i>	9.	H_8	(+)

One financial ratio, return on assets (ROA) in the beginning of the 2009 was used as a dependent variable in regression analysis. ROA ratios were calculated from companies' financial statements for the first quarter 2009 by using the following formula:

$$\text{ROA} = \text{EBIT} / \text{Total Assets}$$

ROA measures the profitability of operations relative to company's assets, displayed as a percentage (Penman, 2007:377). It is a bold simplification to rely only on one ratio when assessing a company's profitability but it was necessary to do that in order to keep the data amount manageable. Some previous studies of liquidity management (Claessens, Djankov & Xu, 2000 and Jose, Lancaster & Stevens, 1996) have also used ROA as a measure of corporate profitability. ROA is argued to be a good measure of management efficiency that is not affected by the financing structure and debt of the firm (Jose, et al., 1996:36).

EBIT and total assets values were found from the income statements and balance sheets. EBIT is an earnings measure of company's operating profit before interest and taxes and thus

not affected by accounting and tax regulations. On the other hand, Opler and Titman (1994:1019) have argued that financially distressed companies may manipulate their accounting policies, which would cause bias in EBIT values. Moreover, criticism towards ROA states that it mixes returns from operations and returns on financial assets as company's total assets (both liquid and illiquid) are included in the denominator (Penman, 2007:378).

One needs to be careful when interpreting the values and comparing ROA ratios among different industries. Our sample represents respondents from several areas of business but as we are not purely comparing profitability ratios but investigating a relationship between profitability and a liquidity strategy ROA was chosen.

An alternative and also a very common ratio to measure profitability is the Return on Equity. ROE is calculated as follows:

$$\text{ROE} = \text{Net income} / \text{Shareholder's Equity}$$

Since we have included companies from different industries and with different sizes, their debt structure will naturally differ. This will affect the ROE ratio and it will not be beneficial for our purposes and it was therefore not included. (www.investopedia.com)

“Liquidity emerges as key concern”

~Financial Times, Mars 27, 2009

5. Empirical Findings

Empirical findings from telephone interviews and statistical analysis are presented in this chapter. This study explores the influence of the change of liquidity strategies on the return on assets. A SPSS program was used to examine the relationship between aforementioned factors and the profitability of the sampled Swedish companies. Hypotheses created in chapter two are reintroduced.

Processing of the empirical findings began by calculating the change scores for the answers in the questionnaire using the technique described in the previous chapter. After computing the change scores for each question one could see that that majority of the companies were agile when it came to the change of their routines. Statistical tests results from statistical analysis are presented next.

5.1 Descriptive Statistics

Descriptive statistics of the variables are presented in table 5.1. One can see that the general level of the mean for the change scores is very low; values vary between -0.35 and 1.24. A natural explanation for low mean values could be a little change of the practices but on the other hand, reasons can be partly technical since we have treated the “loosening” of the practices as a negative change, i.e. negative change score which lowers the mean value.

Highest mean value was observed in question seven, which measured the change of the forecasting practices. According to the findings, forecasting of liquidity levels has increased most among the sampled companies. Lowest mean change score -0.35 was observed in the question eleven, negative value indicates that in general, companies have reduced the use short-term investments. In table 5.1 the minimum and maximum change scores are presented together with the standard deviations for each question, to describe the variation of the change of the routines.

Highest standard deviation can be seen in questions ten and eleven that measured the use of short-term loans and short-term investments. This suggests that liquidity practices have varied most on this area. It has to be kept in mind when reading these results that even if there have appeared few extreme cases meaning that some companies have radically changed their practices, the low mean value demonstrates that in overall little change has occurred. In contrast to high variation in the use of short-term loans and -investments, least variation is observed with the use of frequent invoicing, suggesting that invoicing practices to customers have remained very stable, very few companies have started to invoice more frequently.

EMPIRICAL FINDINGS

Table 5.1 Descriptive Statistics of Change Scores (N=34)

Change Score	Minimum	Maximum	Mean	Standard Deviation
Q1: The use of tighter credit routines	-4	5	0.65	1.921
Q2: The use of invoice remainders	-9	4	0.65	2.130
Q3: More frequent invoicing	-1	3	0.29	0.760
Q4: Late customer payments	0	7	0.91	1.640
Q5: Delay of account payables	-2	5	0.44	1.330
Q6: Liquidity measurement practices	0	7	1.14	1.758
Q7: Liquidity forecasting	-5	6	1.24	1.970
Q9: Currency risk monitoring	0	5	0.76	1.327
Q10: The use of short-term loans	-3	9	0.76	2.133
Q11: The use of short-term investments	-9	7	-0.35	2.533

(Source: Authors own calculations)

5.2 Pearson's Correlation

Pearson's correlation coefficients were tested in order to quantify the strength of the relationship between independent variables. The closer the relationship is to 1, the stronger two variables are correlated. In a table 5.2 where results from Pearson's correlation are presented, it can be seen that some independent variables are highly correlated. Liquidity measurement and liquidity forecasting practices (questions six and seven) in particular are of interest because of their high positive correlation (0.647). It is clear that these two measures are correlated as one has to measure liquidity first in order to begin the action of forecasting. Multicollinearity or intercorrelation can distort the results suggesting lower t-statistics leading misinterpretation of the linear relationship between tested variables (Keller, 2005:646). However, the cut off rate for this kind of study is considered to be 0.7 and correlation between liquidity measurement and forecasting was lower than this and both variables can be still included in the model.

EMPIRICAL FINDINGS

Table 5.2 Pearson's Correlation Coefficients and Descriptive Statistics (N=34)

Variable	1	2	3	4	5	6	7	9	10	11
1.The use of credit routines										
2.The use of collection practices (e.g. invoice reminders)	-0.017									
3. Invoicing	0.302	0.085								
4. Late customer payments	0.153	0.147	0.021							
5. Accounts payables	0.075	-0.040	0.287	-0.037						
6.Liquidity measurement	0.018	-0.289	-0.102	-0.014	0.243					
7. Liquidity forecasting	-0.057	-0.377*	-0.108	0.035	0.433*	0.662**				
9. Currency risk monitoring	-0.176	0.088	-0.200	0.018	0.164	0.154	0.254			
10. The use of short-term loans	0.393*	-0.012	-0.199	0.081	0.102	0.263	0.194	-0.159		
11. The use of short-term investments	0.354*	0.027	0.056	-0.044	-0.096	0.030	-0.286	-0.080	-0.010	
Mean	0.65	0.65	0.29	0.91	0.44	1.14	1.24	0.76	0.76	-0.35
Min.	-4	-9	-1	0	-2	0	-5	0	-3	-9
Max.	5	4	3	7	5	7	6	5	9	7
S.D.	1.921	2.130	0.760	1.640	1.330	1.758	1.970	1.327	2.133	2.533

* Correlation is significant at the 0.05 level.

** Correlation is significant at the 0.01 level.

(Source: Authors own calculations)

5.3 Linear Regression

An SPSS multiple linear regression model was used to test the hypothesized effects of the independent variables on the ROA. Results of the questionnaires were plotted on a graph in order to determine whether a linear relationship existed between variables. A t-test was also conducted in order to ensure that coefficients differ from zero (Keller, 2005:633).

In order to determine whether the findings are statistically significant the fit of the model was assessed. ANOVA was used to test whether the groups are clearly different. Significance test is used to determine the probability of a relationship between variables (Saunders, et al., 1997:316). From table 5.3 it can be seen that the model was significant, as indicated by the adjusted R² value 0.456 and thus it can be stated that a linear regression model is a valid predictor of the changes in companies' ROA levels as 45.6 % of the variation can be explained by the factors in the model. Moreover, F-value 3.683 (>1.96) indicates that the model can be trusted. A large F indicates that most of the variation in dependent variable can be explained by the regression equation (Keller, 2005:634).

By using the following multiple linear regression equation has enabled the measurement of the relationship between the change of liquidity routines and the ROA variable:

$$Y_{i,n} = \beta_0 + X_1 \beta_{\Delta 1} + X_2 \beta_{\Delta 2} + X_3 \beta_{\Delta 3} + X_4 \beta_{\Delta 4} + X_5 \beta_{\Delta 5} + X_6 \beta_{\Delta 6} + X_7 \beta_{\Delta 7} + X_9 \beta_{\Delta 9} + X_{10} \beta_{\Delta 10} + X_{11} \beta_{\Delta 11} + \varepsilon$$

β_0 = intercept of the regression line for firm i

$\beta_{\Delta 1}$ = parameters of the linear regression, where for sample company i footnote $\Delta 1$ denotes the for question number one in the questionnaire, $\Delta 2$ for question number two etc.

ε = random error variable

5.4 Hypothesis Testing

Multiple regression results are reported in table 5.3. Starting with the question one in the questionnaire and H_1 , in which it was wanted to test if tighter credit routines are positively related to ROA. One can see that the p-value 0.201 > 0.10 and t -value 1.319 indicate that there is no evidence to infer that alternative hypothesis is true. Hence, the use of tighter credit routines is not significantly related to the profitability of the companies in this study.

We wanted to investigate accounts receivables practices and asked respondents to evaluate the change of their invoicing routines. Alternative hypothesis two was formulated as follows: *frequent invoicing is positively related to ROA*. P-value 0.564 > 0.10 indicates that there is no evidence to infer that alternative hypothesis is true. Hence, more frequent billing is not significantly related to the profitability of the companies in this study.

Collection practices and the amount of late customer payments were asked to evaluate in questions number two and four in the questionnaire and therefore the hypothesis three consisted on two sub hypotheses. The amount of collection clients and so called bad debt can

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be assumed to increase during the times of financial distress. Bad debt also represents a loss for the company; therefore hypothesis 3b was formulated to test the negative relationship with the amount of collections customers and the profitability of the firm.

H_{3a}: The use of more invoice remainders is positively related to ROA

H_{3b}: An increase in late customer payments is negatively related to ROA

P-values for the use of invoice remainders and late customer payments were 0.107 and 0.291, t-values being 1.680 and -1.083 respectively. One can conclude that there is evidence of a weak positive relationship between the use of invoice reminders and company profitability but the relationship is not significantly strong. Moreover, strong beta value 0.253 gives evidence of the possible relationship between the use of invoice reminders and profitability. Whereas t-value of 1.753 does not support the more frequent use of invoice reminders is significantly and positively related to ROA and as we have chosen to follow a careful approach in the analysis the null hypothesis *H_{3a}* cannot be rejected. Furthermore, the relationship between late customer payments and ROA is not statistically significant and therefore we cannot reject the null hypotheses here either. Although, the negative beta coefficient -0.953 confirms that the relationship is in expected direction.

In hypothesis four we wanted to test if *the delay of account payables is negatively related to ROA* and the expected relationship was assumed to be negative. SPSS- analysis tells that p-value was 0.754 and t-statistic value 0.317, which demonstrates that there is no evidence to conclude that linear relationship between the delay of account payables and ROA exist. This allows inferring that the null hypothesis is true and cannot be rejected.

The questionnaire continued with the more general survey of the liquidity planning practices of the companies. Hypothesis five had two parts:

H_{5a}: An increased practice of liquidity forecasting is positively related to ROA

H_{5b}: An increased practice of liquidity measurement is positively related to ROA

First aspect of the liquidity planning, namely forecasting was investigated in question seven (hypothesis 5a) and we have detected a positive (beta = 0.457) and a strong relationship (p-value $0.078 < 0.10$) between change in forecasting practices and change in return on assets. When the relation was also in expected direction one can infer that there is strong evidence that alternative hypothesis *H_{5b}* is true. Second part of the hypothesis tested the relation between liquidity measurement practices and profitability. When looking at the regression results one can see that relationship between question six and ROA is positive which is in the direction that was anticipated beta coefficient 0,271 (t = 1.424. High p-value 0.169 implies that there is evidence that the alternative hypothesis is true but the relationship was not sufficiently strong and therefore we confirm the null hypothesis. Thus, hypothesis five can be partly rejected; strong evidence was found that forecasting practices and ROA are linearly

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related, whereas, liquidity measurement does not have a statistically significant impact on return on assets.

The three last hypotheses are formulated to test another new approach of cash management. The respondents were asked to evaluate their routines of the short-term financing practices together with the exchange risk management. In hypotheses six it was assumed that the use of short-term loans would have a negative impact on the return on assets. Empirical findings did not confirm expectations: beta value was positive 0,212 and t-value 1.224 and more importantly, p-value $0.234 > 0.10$ indicating that there is no evidence that the alternative hypothesis is true and therefore the null hypothesis was confirmed

The extent of the use of short-term investments was surveyed in question eleven in the questionnaire and hypothesis seven was set out to test:

H₇: An increase in short term investments is positively related to ROA

Results from statistical analysis imply that the relationship between variables exists and it is in the expected direction. P-value $0.006 < 0.05$, (t-value 3.077) and therefore it was concluded that there is overwhelming evidence that the relationship is statistically sufficient and one can reject the null hypothesis.

Last hypothesis was testing whether the currency risk monitoring is related to the ROA. We could not find statistically sufficient evidence of the linear relationship, p-value $0.134 > 0.10$ and $t = -1,557$. Hence, the null hypothesis is not rejected.

In the table 5.3, positive signs on beta coefficients point to a positive relationship between that variable and ROA in the beginning of 2009.

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Table 5.3 SPSS Analysis (N=34)

Independent variables	ROA 2009 as dependent variable p-value (<i>t</i>)	Beta
<i>Accounts receivables</i>		
1. Use of credit routines	0.201 (1.319)	0.223
3. Invoicing	0.564 (-0.586)	-0.098
<i>Collection</i>		
2. Use of collection practices (e.g. invoice reminders)	0.107 (1.680)	0.253
4. Late customer payments	0.291 (-1.083)	-0.150
<i>Accounts payables</i>		
5. Accounts payables	0.754 (0.317)	0.051
<i>Liquidity planning</i>		
6. Liquidity measurement	0.169 (1.424)	0.271
7. Liquidity forecasting	0.078* (1.849)	0.457
9. Currency risk	0.134 (-1.557)	-0.237
10. Use of short-term loans	0.234 (1.224)	0.212
11. Use of short-term investments	0.006* (3.077)	0.496
<i>Model indices:</i>		
Significance of model	0.005	
Adjusted R ²	0.456	
F	3.683	

t-statistics in parenthesis

*p-value significant at 0.10 level $p < 0.10$

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Results of the hypothesis testing are summarized in table below.

Table 5.4 Summary of the Hypothesis Testing

Variable	Hypothesis	Result of the hypothesis
<i>The use of tighter credit routines is positively related to ROA</i>	H_1	<i>Rejected</i>
<i>More frequent invoicing is positively related to ROA</i>	H_2	<i>Rejected</i>
<i>The use of more invoice remainders is positively related to ROA</i>	H_{3a}	<i>Rejected</i>
<i>An increase in late customer payments is negatively related to ROA</i>	H_{3b}	<i>Rejected</i>
<i>An increase in delay of account payables is negatively related to ROA</i>	H_4	<i>Rejected</i>
<i>An increased practice of liquidity forecasting is positively related to ROA</i>	H_{5a}	<i>Confirmed</i>
<i>An increased practice of liquidity measurement is positively related to ROA</i>	H_{5b}	<i>Rejected</i>
<i>An increase of short term loans taking is negatively related to ROA</i>	H_6	<i>Rejected</i>
<i>An increase in short term investments is positively related to ROA</i>	H_7	<i>Confirmed</i>
<i>An increase in currency risk monitoring is positively related to ROA</i>	H_8	<i>Rejected</i>

(Source: Authors Regression Analysis)

5.5 Ratio-analysis

So far in the discussion of the empirical findings, question number eight in the questionnaire, which measured the use of the several liquidity and solvency ratios has been neglected. The respondents were asked to evaluate the use of seven different liquidity ratios and gave an opportunity to add an optional ratio if it was of importance to the company and was not included in the list suggested by us. Seven ratios under the evaluation were: *quick ratio*, *current ratio*, *working capital*, *cash conversion cycle*, *days sales outstanding (DSO)*, *days inventory held (DIH)* and *days payables outstanding (DPO)*. The intent of this question was to compare the change score of different ratios to ROA in order to see which one had the most impact on ROA. However, when performing the linear regression analysis the discovery was made that the statistical model did not hold and there were severe problems of multicollinearity between different variables. When Pearson correlation of ROA values and different liquidity ratios were conducted, no significant relation between variables was found. Therefore, there was no other option than to exclude this from the research.

Table 5.5 below illustrates the results from the Pearson correlation between profitability and different key ratios. As can be seen key ratios themselves are strongly intercorrelated, whereas correlation between ROA and liquidity ratios does not exist.

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Table 5.5 Pearson's Correlation Coefficients of the Key Ratios (N=34)

Variable	1	2	3	4	5	6	7	8
1. ROA 2009								
2. Quick ratio	0,122							
3. Current ratio	0,180	0,562**						
4. Working capital	0,056	0,259	0,477**					
5. CCC	0,122	0,134	0,273	0,464**				
6. DSO	-0,119	-0,099	0,230	0,802**	0,507**			
7. DIO	-0,099	-0,127	0,210	0,733**	0,570**	0,896**		
8. DPO	0,226	0,243	0,214	0,206	0,575**	0,168	0,091	

* Correlation is significant at the 0.05 level.

(Source: Authors own calculations)

** Correlation is significant at the 0.01 level.

Nevertheless, some information was gathered from this question which indicates that the working capital-ratio has been mostly used (mean values 5.7 and 6.7) and current ratio used the least (3.0 and 3.3 in 2008 and 2009 respectively), in both time periods (see table 5.5 below). When it comes to the changes the results showed that working capital-ratio (change score 1.0) and DSO (change score 0.8) are the ratios which have increased the most in importance between the time points. When asking for other important liquidity ratios only a few new suggestions were provided, giving evidence that the most important ones were picked in the questionnaire. Those companies that mentioned other ratios indicated that cash- and bank levels as well as the degree of debt were most important of all ratios. The degree of solvency that is to some extent measured with the ratios provided in the questionnaire was also mentioned more than once.

Table 5.6 Mean Values of the Key Ratios

Key ratio:	Mean values Q1/2008	Mean values Q1/2009	Change score
<i>Quick ratio</i>	3.8	4.0	0.2
<i>Current ratio</i>	3.0	3.3	0.3
<i>Working capital</i>	5.7	6.7	1.0
<i>Cash conversion cycle</i>	3.1	3.9	0.4
<i>DSO</i>	5.6	6.4	0.8
<i>DIO</i>	4.4	5.1	0.7
<i>DPO</i>	4.4	4.8	0.4

(Source: Authors own calculations)

5.6 Summary of the Open Questions

Telephone interviews were concluded by asking respondents two open questions. First if the economic routines had changed in any other way other way than investigated by our questions since the beginning of 2008. This could provide more evidence of the changes made in liquidity routines and gave respondents an opportunity to add some aspects that were not

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necessarily covered in the questionnaire. Many respondents answered no to this question but those who said yes indicated the growing importance of the routines concerning accounts receivables and collections.

Secondly, the respondents were asked to give a personal opinion of what aspects of cash management are most important on the financial performance of the company? The purpose of this question was to make sure that the questionnaire covered the most important aspects of cash management in regards to liquidity practices.

The responses to this question seem to indicate that all aspects of cash management are important for the financial performance of the company, according to CFOs. Once again certain aspects were mentioned more often, the importance of receivables monitoring was highlighted and also currency handling. Credit times and terms were also important. All these aspects could be related to efficient working capital management.

“What Came First, The Rumor Or The Liquidity Crisis?”

~The Wall Street Journal, April 13, 2009

6. Analysis and Discussion

The following analysis is organized in nine sections based on the hypotheses deduced in the theoretical methodology chapter. Analysis starts with the discussion on the statistical findings of accounts receivables and payables practices and continues with short-term investment and currency risk monitoring decisions. Usage of the key ratios in liquidity management is analyzed after findings from hypothesis testing. A summary discussion of general findings ends the chapter.

6.1 Importance of Liquidity Strategies

One of the main objectives of this study was to evaluate if companies had changed their liquidity strategies during the past year and what effect this might have had on ROA. The analysis of this study is mainly based on the descriptive statistics and multiple regression analysis. Empirical findings from the telephone interviews with the companies implied that majority of the firms had adjusted their strategies. The extent of the adaptation of routines varied both among the companies and between different areas of cash management.

The literature review revealed that vast amount of studies about WCM was published in the 1980's. The latest focus on the subject was in connection of the worldwide economic downturn few decades ago. On the other hand, recent articles have raised the need again for focusing on working capital management. However, very few have dealt with liquidity strategies impact on profitability or financial performance.

The importance of the WCM on company's profitability is recognised in the literature as it covers many areas of the firm's operations. Kolay (1991) has highlighted the importance of the WCM during financial distress. The general findings in this current study also suggest that companies have recognized the importance of the working capital management as proven by the increase in the change scores.

6.1.1 Impact of Tighter Credit Routines

Practices around accounts receivables and payables were set to measure in hypotheses one to four. Hypothesis one tested the relationship between the use of tighter credit routines and ROA. According to findings from the multiple regression analysis, no evidence of the relationship was found and the null hypotheses were therefore accepted.

According to theory, shortening down the credit arrow will provide gains such as improved cash flow for the company and minimizes the risks of a build-up of receivables. The risk associated with longer credit terms refers to the change of the payment behaviour of the customer as it was pointed out by Karlsson (1997:14). A test were conducted to see if these gains could be found in firms' ROA ratio by measuring the relationship between this ratio and the use of shorter credit times and tighter credit terms. However, no such relationship could be found and implying that these practices have not been beneficial for the companies in terms of profitability in the latest year. Even if we could not find relation between the tighter credit routines and ROA as it was hypothesised, it was found that companies have tightened up their

credit terms. Some of the respondents answered that during the last year more careful follow-up on customers' ability to pay had been used and more credit controls have been made. This kind of behavior has happened inside the selected time frame and can be argued to be the result of the prevailing unsecure economic environment and when there is an increase in customers that take longer to pay or fail to do so at all. Perhaps this is a way for companies to minimize bad debt and ensure that the customer that they do have can live up to the stricter credit terms and a way of doing this is by asking for more credit controls.

6.1.2 Frequent Invoicing Practices

Collection practices and frequent invoicing were also classified under the accounts receivables- and payables practices. When cash becomes scarce, as can happen when business slows down, instead of receiving payments once in a three months period companies can divide the invoice amount and invoice their customers more often in order to improve the cash flow. More frequent invoicing practice should have increased if slow cash inflow was the case and would indicate that firm's financial performance is worsening. However, the empirical findings could not find a relation between the frequent invoicing and profitability as measured by hypothesis two. The change score also portrays that this practice have not increased or decreased during the time period as it received a low mean and standard deviation.

One can also infer that this is not a very common practise for the companies included in the sample. Moreover, companies that do practice this strategy will probably acquire a cost connected with this routine and will therefore have to weigh the cost against the benefits for this type of practise, when others can be more beneficial. This might explain the low use of frequent invoicing.

6.1.3 Collection Practises

During the time of economic downturn money are tight in many companies as customers either stretch their payments or are not able to pay. It is assumed that firms increasingly use invoice reminders to collect their receivables and to avoid bad debt. It was found that the use of reminders had increased during the last year which could imply that the time for the companies to receiving payment for their goods or services had stretched as measured by question two (*the use of credit routines such as invoice reminders*). Consequently it is positive that companies actively try to collect their outstanding receivables as increased use of invoice reminders can be considered as a proactive strategy that in turn improves the cash flow and is profitable for the firm. When firms have collected their receivables then these funds can be put in more efficient use to earn a return for the company or as Almeida et al. (2004:1777) suggested, "During recession financially challenged companies should save larger amount on their cash flows in order to maintain financial agility and liquidity management may become a key issue for corporate policy".

It became clear that companies have started to work more intensively with their collection practices and aim to shorten the credit arrow. We could not find clear statistical evidence of the relation between collection practices and ROA (hypothesis H_{3a}) but the importance of the subject in practice was proved by this study. However, what the findings did not convey is if

the increase of this practice was because of build-ups in receivables or just a proactive measure by the companies. Several respondents expressed their focus on receivables and collections in the open questions. Even though one could not find the relationship to ROA, the increased importance of collections practices should imply that they provide practical benefits for the companies however not on a ratio such as ROA.

Second part of the hypothesis (H_{3b}) measured the extent of late customer payments and we could find a clear increase in postponed receivables demonstrated by the high change score. The increased use of invoice reminders can be a sign of companies working proactively and preventing increased amount of late customer payments. The reporting of late customer payments could be a way for companies to tighten up credit routines and receive their money more promptly to improve the cash flow which could then be used for more productive purposes. Nevertheless, no evidence was found for that which signify that in times of economic uncertainty the extensive reporting of late customer payments does not contribute to return on assets.

Even though we cannot reject the hypothesis concerning the collection practices we found weak evidence of the positive relationship to ROA. In addition to this question number one and two (*the use of tighter credit routines* and *the use of invoice remainders*) are very similar and both concerns the collection practices of the company and could also be a reason for the similarities in results. Nevertheless, it supports the theory that there are gains to be had when shortening the credit times and tightening the terms as these actions were confirmed by the change scores.

6.1.4 Delaying Account Payables

No statistical evidence was found on the relationship between delaying accounts payables and ROA. As put forward by Rafuse, companies with severe liquidity problems can delay payments to their suppliers until they receive cash from receivables (Rafuse, 1996:59). One need to weight the cost of the penalty interest and the cost of short-term loans Therefore, assumptions were made if companies which delay their payments to suppliers will have a negative impact on the ROA, as cost arises in terms of penalty interest.

On the other hand companies with severe liquidity problems may not be able to have an access to loans and the delay of the payment is the only way of balancing the flow of cash. Rafuse states that delaying payments is harmful and this practice is done mostly by larger companies and it is in turn the SMEs who will finance these with their outstanding receivables and have very little to say about it. In turn this practise has tremendous impact on both the SME's and the economy as it provides a harsh business environment for SME's (ibid). As one of the respondents expressed in the question for the financial position of the company; "one of the most important aspects of cash management is to ensure that one receives payment before any cash goes out". Delaying accounts payables practices have not increased significantly between the two time points and therefore the importance of this practice is not highly valued among the studied companies. Due to this finding it is important to remember that the

sampled companies are listed ones and may therefore have a greater access to funds than smaller ones making this practise uncalled for.

6.1.5 Liquidity Planning and Forecasting

One of the goals was to see if liquidity planning had increased in importance and therefore it was asked the extent of liquidity forecasting and measurement had changed during the past year but also if it had impacted on ROA (H_{5a} and H_{5b}). Liquidity measurement and forecasting received the highest change scores implying that these areas had increased most in importance. The findings indicated that only liquidity forecasting is positively related to ROA. Companies focusing on prediction have received benefits from their active strategy especially in times like these when the economic conditions are characterized by uncertainty the importance of measurement and frequent forecasting has increased.

Motives why companies should plan and forecast their liquidity levels mainly concerned with the unexpected future costs and profitable investment opportunities that would need a quick response (Arnold, 2008:538). It could be assumed that during times of economic uncertainty when cash inflows can become more insecure and liquidity buffers are needed, also the importance of risk management increases.

When companies estimate and measure their liquidity the focus is on bank levels and what funds they have at present. Forecasting however, is a prediction on what the levels are going to be. It is hard to change what one already has but future levels can be affected with the right strategies. However, relationship between liquidity measuring and estimation and ROA was not found implying that liquidity measurement has no effect on ROA but can still be important for companies to do as it contributes to control and estimation of future liquidity needs.

When it comes down to liquidity measurement, all companies are measuring their cash levels on a regular basis and clear difference among practices could not be found that could be an indication why measurement did not relate to ROA. Other gains from liquidity measurement could be related to the fulfilling of debt covenants. It is a common practice that banks set solvency requirements for the companies that they have to reach in order to sustain credit terms. Respondents of this study expressed the important relationship between a company and the bank and some respondents said that they have some special ratios that were calculated exclusively for the banks.

If one would like to order these two strategies in importance, it could be argued that forecasting should receive more attention. It is easy to measure the numbers but forecasting the numbers might be more difficult and the need to predict has grown during the last year.

6.1.6 Use of Short-term Loans

Liquidity forecasting is mostly used to determine how much short-term financing is needed to cover the liquidity needs and this information can then be used to adapt routines and prices. Debt weakens the competitive position of the firm and financially leveraged firms are more

likely to violate their debt covenants (Purnanandam, 2006:707). Excessive need for short-term loans can be a sign of cash problems in a company and it was anticipated that an increased use of short-term financing is negatively related to ROA as it can be costly for the company and may imply liquidity problems. Statistical findings could not prove the negative effect on ROA. The results showed weak signs of the increased use of short-term loans which could imply the increased the need of liquidity. If we had included earlier time period in our study for instance first quarter of 2007 we could have get even higher change score, since financial crisis started in the summer of that year.

Short-term loans are a way for companies to finance their working capital needs. We have seen in the previous questions that there has been a build up in receivables and payables within the companies during the latest year. Their increased focus in accounts receivables and payables management might explain why the use of short-term loans have not been higher and companies have managed their working capital needs effectively.

6.1.7 Use of Short-term Investments

Companies engage in short-term investments when they have excess liquidity, the reason could be to gain better return on their funds. The motive for having short-term investments lies in the liquidity of such assets and companies can have an easy access to them when they have unexpected investment opportunities or need to finance sudden expenses. The results of the study confirm the positive relation, indicating that the increased use of short-term investments has positive impact on ROA. Interesting finding, against the before mentioned relationship was that in general firms had decreased the use of short-term investments which could be explained by the fact that due to harder economic conditions excess liquidity is not readily available and are therefore missing out on ROA gains. As argued by Fazzari and Petersen (1992:328) the decrease of investments could be a sign of that the firms are under financial constraint and have used these funds to manage cash flow fluctuations which unconstrained firms would not have to do. Furthermore, it would give some support for the findings of Kim, Mauer & Sherman (1998) that companies have decreased their liquidity due to the poor outlook on future investments opportunities.

6.1.8 Currency Risk Monitoring

A clear distinction between monitoring and concrete actions against currency exposure, such as hedging has to be made when analysing this question. What we measured was only the extent of the monitoring of the currency risk. Volatility of the exchange rates represents a risk for the companies operating in an international environment as the sample companies do. The change in exchange rates can be both negative and positive but the monitoring is still important. More active monitoring of currency exposure could be an indication of the increased macroeconomic risk. Our findings suggest that companies had slightly increased their practices on this area during the selected period. A relationship between currency monitoring and ROA was, however, not found. This means that corporations adapt their strategies within this area when there is an increase in macroeconomic risk. The monitoring only does not provide ROA gains for the company but the question remains if the actual hedging practises do? This is however not within the scope of this research. Furthermore,

there is no evidence that monitoring could not have other gains for the company than those expressed by the ROA ratio, something that future studies might investigate.

6.2 The Usage of Key Ratios in Liquidity Management

Academic literature of cash management has questioned the importance of ratio analysis time to time. Our findings suggest that companies do rely on certain key ratios in their liquidity management. It was anticipated in the theoretical part that the practices around sales outstanding would become more focused when economic conditions turn worse, current findings confirmed the expectations. When the importance of different financial ratios as a measurement tools for company's liquidity was evaluated, net working capital and DSO were ranked highest among the respondents, suggesting that managers have focused on the net working capital balance and want to make sure that firm has a enough liquid assets to cover current liabilities. Alternatively, the increased importance of days sales outstanding ratio could imply that firms have laid more focus on their receivables. Another purpose was to investigate what areas have become more important in the evaluation of the liquidity. In addition to net working capital also the use of DIO had increased most during the last year. This was measured by the change scores in the questionnaire. Companies have focused increasingly to monitor their inventory levels, as inventory represents an asset that does not generate wealth when being idle. The importance of forecasting comes also in the picture here, not only in the form of predicting liquidity levels but also in terms of inventory management.

The importance of traditional ratio analysis has been questioned by some authors (e.g. Huff et al. 1999). We have also found support that other factors are overweighting the use of liquidity ratios, as was found from the answers to open questions. These were maintaining a good relationship with the bank and to focus on debt and cash levels. Importance of such practices might be because of the fact that these tasks are more easily achieved and with better results than forecasting, especially in times of economic turbulence.

6.3 Reflections on findings

In the questionnaire several concepts of WCM and liquidity are measured separately, whereas in reality they are intertwined and cannot be taken apart in the analysis. Moreover, WCM strategies depend very much on the industry the firm operates in. The sample consisted of companies from different sectors but in order to make comparisons among the sectors the sample size was too small and not in the scope of this study. What is also worth considering when reflecting on the findings is the time it takes until the benefits from the change of the strategy can be seen. ROA is a so called lagging indicator, measuring the past performance and our attention in this study has been the recent changes in liquidity strategies. ROA captures the past financial performance, namely the last three months' performance as quarterly reports were studied. It could be possible that the effects of the strategy adaptation are visible later in the future.

We have measured if the strategies have changed during the year and the impact of these strategies to the ROA ratio. The findings indicate that the strategies have changed somewhat as indicated by the change scores and mostly in the areas of liquidity measurement and forecasting indicating the increased importance of these areas for corporations in a financial crisis. According to the results these are also the only areas that a relationship to ROA could be found signifying that there are gains to be had from focusing on these areas when there are more market volatility than usual. The question is if there are any strategies that can be undertaken by corporations that will provide them with real gains under such extraordinary circumstances such as a severe financial crisis? The effect on some other measurements of the financial performance could possibly give other results.

In financial turbulence, actually two liquidity strategies were found to have an impact on ROA. From the sample we knew that some companies that have faced financial problems did not want to participate, the comparison of ROA values also supported this observation, as our sample showed on average higher profitability ratios than the whole population.

The results from the change scores demonstrated that frequent invoicing and the use of short-term investing are the strategies that have changed the least during the time period while liquidity measurement and forecasting are those that have changed the most.

Financial crisis was said to have started in the US already in the late summer of 2007. It is hard to put a date on when these events started to spread and effect the Swedish economy. If corporations started to prepare to meet the consequences of this crises before the selected time period it could explain why many corporations received no relation to ROA, which suggested that little change had occurred in their practices. One could argue that they have already changed their behaviour before the selected time period or that need for the adaptation of liquidity strategies had not been recognised. As some of the respondents expressed, these issues have been prioritized earlier and they did not have a recent need to change practices in this area.

The findings of this study recommend that if corporations want to achieve gains in their ROA ratio (profitability) through cash management policies during a time of economic turbulence one should focus on the areas of liquidity measuring and forecasting. Nevertheless, this does not imply that there are not other gains to be had from adapting routines in the area of WCM and CM, they have just not been proved by this study as the focus have been on impact on ROA.

However, alternative way to look at the outcome would be through the financial statements of the sampled companies. A build-up of receivables is sorted under asset in the financial statements, which in turn will increase the denominator of the ROA formula and have a negative effect on the operational profitability and therefore offering alternative explanation for the weak evidence of the positive relation of the change of strategies and ROA.

ANALYSIS & DISCUSSION

When reflecting upon the study and the problems that occurred in progression we can ask why so many hypotheses were rejected and such few strategies had impact on profitability. One can discuss if the profitability is the correct measurement to assess the effect of the cash management or liquidity strategies. It can be questioned if the correct variables were chosen. In our minds we are most questionable about the ROA variable and if that was the correct measurement. For instance the impact of cash management strategies on liquidity measure would have become too correlated with the questionnaire. We believe that we have measured what we were set out to measure, since the strategies were important for us. When reflecting back the measurement of the change, it can be asked whether the change scores were the best way to receive the information, longitudinal study could have been an alternative method but that was not a suitable option in our time frame.

CONCLUSIONS

“One Year Later: Lessons Learned From the Downturn”

~Wall Street Journal, September 16, 2009

7. Conclusions

The research problem and aim of the study are reintroduced and main findings summarized before concluding the study. Both theoretical and practical contributions of the findings are discussed. Ideas for complementing current study as well as suggestions further research are made.

7.1 Concluding Remarks of the Findings

The primary aim of this study was to examine if the change in liquidity strategies was related to the profitability of the company, as measured by ROA. It was hypothesized that the companies that had tightened up their routines in the area of liquidity management would receive financial benefits of their actions. According to our findings, in general respondents had to some extent adjusted their liquidity strategies during the previous year and thus the first aim of this study, which was to examine whether the liquidity strategies had changed was achieved.

Valuable information of Swedish companies' liquidity practices during the financial crisis was collected and the importance of WCM during the recession was recognized, as the companies had made adaptations of liquidity strategies and tightened certain practices. However, the relationship between the change of strategy and profitability was not found at such extent as it was hypothesized. Nevertheless, we could find statistical evidence of the relationship between adaptation of forecasting practices and the increased use of short-term investments and ROA. This finding suggests that in a financial crisis corporations can achieve ROA gains from strategies such as the increased use of forecasting liquidity and making more short-term investments, which provides an answer to the first research question.

Second part of the research problem was to find out whether the usage of key ratios in the measurement of liquidity had changed. As our findings implied the use and follow up of several liquidity metrics has not changed drastically during the last year.

Previous research suggested that during a recession the importance of WCM is often recognized, whereas in good times it receives less attention (Pass & Pike, 1984:1). One of the key findings of this study supported that suggestion. The Working capital ratio was found to be the most important key ratio and the importance of DIO as the ratio which had increased the most. Solvency ratios and certain ratios for external users such as the banks and lenders were also of importance. No relationship between the key ratios and profitability was found but as it was stated in theoretical part, WCM touches upon several parts of the organization and it can be difficult to separate a direct impact on company's performance but instead several parts of the organization benefit from improved WCM. The close connection of the concepts of liquidity and WCM may have partly affected the outcome of the study. It can be a matter of judgment and therefore difficult to separate what belongs to liquidity and on the other hand to inventory management. Certainly ratios such as WCM and DIO involve several parts of the organization.

CONCLUSIONS

Based on our analysis, the adjustment of liquidity practices is beneficial for the companies, even though benefits are not measurable as profitability, but probably as something else, since changes in this area had occurred and are also suggested by theory.

Prior to this study it was assumed that when time becomes harder companies would tighten up their routines but we found only small evidence from that as was found from the change scores. This could imply that companies already had strong and effective liquidity practices in place, so liquidity practices are does not need to be changed much by companies when in financial turbulence. In spite of these findings, more practical knowledge about liquidity strategies in a financial crisis has been gained.

Through the open questions it was found that the importance of sound cash flow and thorough customer follow-ups were considered very important, both practices that not necessarily have direct implications on profitability but can be considered preventive methods of sound liquidity management.

Based on our findings we recommend companies maintain their focus on liquidity and WCM. When in an economic downturn more frequent monitoring and forecasting on their liquidity levels and making more short-term investments can provide them with gains in profitability. Especially important as that is usually a time when profitability decreases. However, it is also important the quality of forecasts should receive attention as decisions are only as good as the facts they are based on.

7.2 Suggestions for Further Research

In our contact with the companies that were part of this research, they expressed some topics which could be part of further studies. One further study area could be prognostication of cash flow. Many firms have the knowledge to accurately monitor and measure cash flows but problems occur when prognosis are made of future cash flow. It is our belief that corporations need more accurate models for forecasting.

Other areas of research could be to take the customers' perspective of the current topic and examine how they have been affected during the latest year, especially in the area of credit terms. Several corporations expressed that customers have started to demand longer credit times and this have an effect on corporations' cash flow.

A suggestion for the future would also be to conduct a similar study as ours but compare liquidity strategies among different business sectors. Our study lacks of the sufficient sample size for comparisons but instead of concentrating on listed companies, one could study non-listed SMEs where the population is much larger and comparisons among sectors could have been easier to conduct. As SMEs are also argued to be more sensitive to changes in economy, it could be interesting to see how proactive they are when it comes to the liquidity strategies.

“Risk management rises on the agenda”

~Financial Times, September 13, 2009

8. Truth Criteria

The final chapter of the thesis presents the truth criteria of the research. Problems faced during the research process as well as processes and choices made to achieve the reliability, validity and generalisability of the findings are discussed.

8.1 Reliability

Reliability refers to the consistency of the findings if the research is repeated (Kreuger & Neumann, 2006:177). Throughout the study we have aimed to describe procedures at each stage in great detail. This was done, firstly in order to show that the bias of the results caused by our personal judgment would have been minimized and secondly to make this study easily repeatable. The extent how similar outcome one would get by following our research design and procedures should be high in quantitative study like this. Questionnaire that was used in telephone interviews is attached in its entirety, and financial reports that provided the numerical data are public documents.

Threats to reliability were if the results would be unstable, erratic or inconsistent. Judgment of the scores by respondents is subjective and may differ if the study is repeated. Another aspect that can influence the results is if the study is repeated in the different time period, as the financial crisis is very specific circumstance. Even if the study is repeated during another time, each crisis is very special and the extent of the different crises vary and so will firms' strategies and how they react to them. It is our belief that repeated study will find evidence of changing strategies but the extent of this change may differ.

In order to improve the reliability a pre-test was used to improve the quality of the questionnaire and to ensure that the questions were relevant which is also considered to increase the reliability of the results. Furthermore, we have included multiple indicators to measure the same variable from different perspectives. As an example, in the questionnaire we have included several questions that measure accounts receivables practices providing more stable results (Kreuger & Neumann, 2006:180). Some questions can be considered sensitive and we cannot guarantee that respondents were truthful in their answers, even though we highlighted the fact that responses were anonymous.

8.2 Validity

In order to our study to have a high validity it is important that chosen variables measure what the research problem was set out to study (Johansson Lindfors, 1993:108). A possible threat for validity could be badly formulated questions and the misunderstanding of the questions in the questionnaires. To face this threat a pre-test was conducted and some questions were reformulated. Furthermore, by making phone interviews the respondents had the possibility to ask questions if there was something that they did not understand. We therefore consider this threat to be reduced.

Another threat could be if the questions did not cover or correspond to the relevant theories. However, as our findings from the open-ended questions suggested, the questionnaire covered

the most important and relevant aspects of liquidity management. The critique towards the questionnaire could be the divisions of questions between the different areas and that some questions did not fit for all companies as they belong to different industries. With hindsight, further changes could have been made. Prior to this, we did not have practical experience of the subject and how companies practically managed their liquidity but we have worked towards achieving an appropriate measurement of the construct of liquidity management and learnt a great deal in the process.

8.3 Generalisability

Generalisability refers to the extent how results of the study can be applied outside the studied population. In a quantitative study the generalisability is often considered to be high, especially when probability sampling is used (Johansson Lindfors 1993:162). We have brought up certain issues throughout the paper that we have recognized that may have had impact on the generalisability. Probability sampling is enabled us to generalize our results to some extent.

Response rate of the current study was very low causing the sample size to be a relatively small and that has set limitations to the generalisability of the findings. Moreover, the larger sample size would have enabled to make comparisons between active and non-active strategy groups. We would have like to have more companies which would have given us better grounds to generalize the results and more significant results for the statistical analysis. However, our sample mirrors the population in many attributes; industry-wise companies from several areas of business and also companies of different size both in terms of personnel and turnovers are included, which could improve the generalisability of the study. As it was argued earlier, banks and some other financial institutions differ so much in their financial structure and for that reason the findings are not transferable for those industries. We have been well aware of the limitations of the study and therefore have been very careful when interpreting the findings. In the analysis it became clear that companies with positive ROA values were overrepresented in this study. Naturally that was beyond our actions but it could be speculated whether the results had differed if more companies with negative ROA values / weaker financial performance had been interviewed.

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Appendix 1: Questionnaire in Swedish

Enkät om företags likviditet

Nedanstående frågor berör **ert företags ageranden** mellan första kvartalet 2008 och första kvartalet 2009. Skalan sträcker sig mellan ett och tio, där nummer **1** är "till ingen utsträckning" och nummer **10** är "till mycket stor utsträckning".

Exempel: Till vilken utsträckning har företaget accepterat kundbeställningar innan en kreditutvärdering har färdigställts under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning under Q1:2009? 1 2 3 4 5 6 7 8 9 10

1) Till vilken utsträckning...
Använde företaget andra kreditrutiner, såsom kortare kredittider och kreditvillkor Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och hur såg det ut Q1:2009? 1 2 3 4 5 6 7 8 9 10

2) Till vilken utsträckning...
Använde företaget kravrutiner såsom fakturapåminnelser under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning under Q1:2009? 1 2 3 4 5 6 7 8 9 10

3) Till vilken utsträckning...
Använde företaget delfakturering till kund under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning under Q1:2009? 1 2 3 4 5 6 7 8 9 10

4) Till vilken utsträckning...
Anmälde företaget inkassokunder under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och hur såg det ut Q1:2009? 1 2 3 4 5 6 7 8 9 10

5) Till vilken utsträckning...
Har företaget medvetet fördröjt utbetalning till leverantörer under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning har detta skett under Q1:2009? 1 2 3 4 5 6 7 8 9 10

6) Till vilken utsträckning...
har företaget mät och uppskattat sin likviditet under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning har detta skett under Q1:2009? 1 2 3 4 5 6 7 8 9 10

7) Till vilken utsträckning...
Fokuserade företaget på likviditets prognostisering under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning har detta skett under Q1:2009? 1 2 3 4 5 6 7 8 9 10

8) I denna fråga ombeds respondenten att, på en skala 1 till 10, ange hur viktiga följande nyckeltal är i företagets utvärdering av sin likviditet, där **1** är "av ingen vikt" och där **10** är "av mycket stor vikt" (2008 samt 2009).

Kassalikviditet (%) (Quick Ratio) 1 2 3 4 5 6 7 8 9 10
=omsättningstillgångar - varulager+
outnyttjad checkkredit/kortfristiga skulder 1 2 3 4 5 6 7 8 9 10

Balanslikviditet (%) (Current Ratio) 1 2 3 4 5 6 7 8 9 10
= omsättningstillgångar + outnyttjad checkkredit 1 2 3 4 5 6 7 8 9 10

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/kortfristiga skulder

Rörelsekapital (kr) (Working Capital) 1 2 3 4 5 6 7 8 9 10
= samtliga omsättningstillgångar+ 1 2 3 4 5 6 7 8 9 10
outnyttjad checkkredit - kortfristiga skulder

Kassaflödescykeln (Cash Conversion Cykel) 1 2 3 4 5 6 7 8 9 10
= tid för kundfodringarna + tid 1 2 3 4 5 6 7 8 9 10
i råvarulager + tid för produkter i arbete + färdig
varulager - tid för leverantörsskulder

Genomsnittlig kapitalbindning i kundfordringar (DSO) 1 2 3 4 5 6 7 8 9 10
= genomsnittlig kredittid/360 gånger årets 1 2 3 4 5 6 7 8 9 10
varuförsäljning till inköpsspris

Lagrets omsättningshastighet (DIH) 1 2 3 4 5 6 7 8 9 10
= lager/(kostnad för sålda varor/365) 1 2 3 4 5 6 7 8 9 10

Genomsnittlig leverantörskredit (DPO) 1 2 3 4 5 6 7 8 9 10
= genomsnittlig kredittid/360*årets varuinköp 1 2 3 4 5 6 7 8 9 10

Om företaget använder något annat än de ovan nämnda nyckeltal
ange vilket och dess vikt (2008 samt 2009)

_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

9) Till vilken utsträckning...

Följde företaget sin valutaexponering under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning har detta skett under Q1:2009? 1 2 3 4 5 6 7 8 9 10

10) Till vilken utsträckning...

tog företaget kortfristiga lån under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning har detta skett under Q1:2009? 1 2 3 4 5 6 7 8 9 10

11) Till vilken utsträckning...

Använde företaget kortfristiga placeringar så som certifikat,
statskuldväxlar och specialinlåning under Q1:2008? 1 2 3 4 5 6 7 8 9 10
Och till vilken utsträckning har detta skett under Q1:2009? 1 2 3 4 5 6 7 8 9 10

12) Har de ekonomiska rutinerna förändrats på något annat sätt sedan början av år 2008? (än de ovan nämnda aspekterna) _____

13) Vilka aspekter av cash management är viktigast enligt din åsikt för företagets finansiella performance? _____

Tack för din medverkan!!

APPENDICES

Appendix 2: Questionnaire in English

Questionnaire about companies' liquidity

The questions below concern your company's actions between the first quarter of 2008 and the first quarter of 2009. The scale reaches between one and then, where one is "to no extent" and number 10 is "to very large extent"

An example question: To what extent have the company accepted customer orders before a credit evaluation have taken place during Q1:2008?

1 2 3 4 5 6 7 8 9 10

And to what extent during Q1:2009?

1 2 3 4 5 6 7 8 9 10

1) To what extent...

Did the company use other credit routines, such as shorter credit times and credit terms during Q1:2008?

1 2 3 4 5 6 7 8 9 10

And to what extent during Q1:2009?

1 2 3 4 5 6 7 8 9 10

2) To what extent...

Did the company use credit routines such as invoice reminders during Q1:2008?

1 2 3 4 5 6 7 8 9 10

And to what extent during Q1:2009?

1 2 3 4 5 6 7 8 9 10

3) To what extent...

Did the company use partial invoicing for customers during Q1:2008?

1 2 3 4 5 6 7 8 9 10

And to what extent during Q1:2009?

1 2 3 4 5 6 7 8 9 10

4) To what extent did the company report late customer payments during Q1:2008?

1 2 3 4 5 6 7 8 9 10

And to what extent during Q1:2009?

1 2 3 4 5 6 7 8 9 10

5) To what extent...

Have the company deliberately delayed payment to suppliers during Q1:2008?

1 2 3 4 5 6 7 8 9 10

and to what extent have this occurred during Q1:2009?

1 2 3 4 5 6 7 8 9 10

6) To what extent...

Have the company measured and estimated their liquidity during Q1:2008?

1 2 3 4 5 6 7 8 9 10

and to what extent have this occurred during Q1:2009?

1 2 3 4 5 6 7 8 9 10

7) To what extent...

Did the company focus on liquidity prognosis during Q1:2008?

1 2 3 4 5 6 7 8 9 10

and to what extent have this occurred during Q1:2009?

1 2 3 4 5 6 7 8 9 10

8) in this question the respondent is asked to on a scale from one to ten state how important the following ratios are in the companies' evaluation of their liquidity, where one is "of no importance" and ten "of large importance" (2008 and 2009).

Quick Ratio

= Current assets – Inventories / Current liabilities

1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

Current Ratio

= Current assets / Current liabilities

1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

Working Capital

= Current assets – Current liabilities

1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

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Cash Conversion Cycle 1 2 3 4 5 6 7 8 9 10
 = Days Sales Outstanding + Days Inventory Held 1 2 3 4 5 6 7 8 9 10
 – Days Payables Outstanding

Days Sales Outstanding 1 2 3 4 5 6 7 8 9 10
 == Receivables / (Sales/365) 1 2 3 4 5 6 7 8 9 10

Days Inventory Held 1 2 3 4 5 6 7 8 9 10
 = Inventory/(Cost of sales/365) 1 2 3 4 5 6 7 8 9 10

Days Payables Outstanding 1 2 3 4 5 6 7 8 9 10
 = Payables / (Cost of goods sold / 365) 1 2 3 4 5 6 7 8 9 10

If the company uses any other than the above mentioned ratios state which and its importance (2008 and 2009)

_____ 1 2 3 4 5 6 7 8 9 10

_____ 1 2 3 4 5 6 7 8 9 10

_____ 1 2 3 4 5 6 7 8 9 10

_____ 1 2 3 4 5 6 7 8 9 10

9) To what extent...
 Did the company follow their currency exposure during Q1:2008? 1 2 3 4 5 6 7 8 9 10
 and to what extent during Q1:2009? 1 2 3 4 5 6 7 8 9 10

10) To what extent...
 Did the company take short-term loans during Q1:2008? 1 2 3 4 5 6 7 8 9 10
 And to what extent during Q1:2009? 1 2 3 4 5 6 7 8 9 10

11) To what extent...
 Did the company use short-term investment such as money market instruments during Q1:2008? 1 2 3 4 5 6 7 8 9 10
 And to what extent during Q1:2009? 1 2 3 4 5 6 7 8 9 10

12) Have the economic routines changed in any other way since the beginning of 2008? (than the above mentioned aspects) _____

13) What aspects of cash management is most important according to your view for the company's financial performance? _____

Thank you for your participation!!

Appendix: 3: Answers to Open Questions:

Have the economic routines changed in any other way since the beginning of 2008, than the above mentioned aspects?

- No changes have been noted during the year but we started reporting differently in June.
- It has become more focus on key ratios and spot checks. We have to prove our routines.
- There are more focus on receivables and collections. We are more active now.
- No they have not.
- More active handling of currencies and cash management
- More focus on cash management, taxes and cash pooling
- More thorough follow-up on customers' ability to pay.
- No, since we have good liquidity, strong financial performance and high profitability. We have prioritized these questions earlier.
- Credit control of customers.
- Focus has shifted towards controlling cash flows instead of profits.
- We have not noted any change during this year.
- We have tightened our routines such as collections, currencies and purchase routines. This was not done due to the last year but due to bad routines.
- We have looked at the process, especially customer follow-up and accounts receivables.
- No there is always a focus on cash flow, when we as a company are not self financed yet and have relied on added capital from our owners. However, it should be mentioned that the above mentioned ratios are not calculated explicitly but are important partial components in the cash flow calculation.
- No but there are more focus on these issues now.
- Focus on cash and bank levels.
- We have negotiated so called payment holiday with our suppliers at the years closing and half year closing to help our parent company fulfill bank covenants. Our owners focus is on working capital which means for us to maintain a low level of inventory and payments due.
- The financial management contains shorter reporting periods and a more frequent use of prognoses and scenarios.
- No.
- More focus on credit evaluation, currency handling and return on capital.
- Improved reporting and general quality improvement.
- Unpaid receivables are sent directly to collections after 10 days.
- The establishment of 12 month on going liquidity reporting as a complement.

What aspects of cash management are most important in your view on the financial performance of the company?

APPENDICES

- To have a good credit policy. A build-up in receivables is very costly.
- To manage currency risks.
- That is receivables and the handling of currencies.
- Working capital, inventory and accounts receivables.
- DSO. We have a large focus on DSO.
- Banks need to be more brave and businesslike.
- Capital tied up in accounts receivables are important.
- Operating liquidity prognostication and invoicing in time.
- Accounts receivables and the negotiation credit terms.
- Investments without speculative features.
- Make sure that customers pay on time.
- Working capital
- To create cash flow.
- All aspects of cash is king.
- To send invoices early.
- To optimize flows such as cash flows and to shorten long credit times.
- Control of working capital, inventory and receivables and payables.
- Currency handling, risks and financial instruments
- It is important with an understanding of the process both in negotiations and in the relationship with all involved.
- Working capital and availability.
- To decrease the financial risks and always have money coming in first and then out.
- Less focus on ratios and more on the credit worthiness of the company in order to receive loans.
- Inventory turnover, sales, credit time to suppliers and size on investments.
- Credit times and receivables and payables.
- That focus is on local processes for cash flows and that incentives are put in relation to cash flow.
- Liquidity prognosis, the monitoring of receivables and control of penalty interests.
- As we don't have any large surplus of liquidity our focus have been on reducing capital tied-up in inventory and getting paid from customers as soon as possible.
- To work with keeping late payments low, with reminders, collection routines and so on. To negotiate favorable credit terms with suppliers and to buy inventory in a good way, where we buy the right amount in the right time.



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